UK Covid-19 Inquiry

Module 7:

Test, trace and isolate

A report by The Rt Hon the Baroness Hallett DBE
Chair of the UK Covid-19 Inquiry

November 2026

HC 705

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Contents

Introduction by The Rt Hon the Baroness Hallett DBE vi

Voices ix

Executive summary 1

Chapter 1: The UK's readiness to implement a test, trace and isolate system 6

Introduction 7
The purpose of a test, trace and isolate system 8
Testing, tracing and isolation in previous epidemics and pandemics 10
International examples of test, trace and isolate readiness 12
The UK's preparedness to test, trace and isolate 17
Lack of readiness to test, trace and isolate at scale 21

Chapter 2: Testing 22

Introduction 23
Principles of testing 23
Test types 24
RT-PCR testing during Covid-19 26
Antibody testing during Covid-19 45
Antigen testing during Covid-19 47
Consideration of alternative test types 60
Adherence to testing guidance 63
Accessibility of tests 66
A future testing strategy 69

Chapter 3: Contact tracing 71

Introduction 72
Overview of contact tracing 72
Manual contact tracing during the Covid-19 pandemic 78
Digital contact tracing during the Covid-19 pandemic 91
Developing a new digital tool for contact tracing 112

Chapter 4: Isolation 116

Introduction 117
Development of self-isolation policies 118

Adherence to self-isolation measures 124
Support to self-isolate 132

Chapter 5: Border control measures 150
Introduction 151
International good practice during the Covid-19 pandemic 152
Border control in the UK during the Covid-19 pandemic 155
Enforcement of and adherence to border control measures 175
A future border control strategy 178

Chapter 6: Communications and data 181
Introduction 182
Test, trace and isolate communications across the four nations 182
Data and evaluation 196

Chapter 7: An effective future test, trace and isolate system 201
Introduction 202
The lessons from Covid-19 for test, trace and isolate 202
Developing a UK-wide system for the future 207

Appendix 1: The background to this module and the Inquiry's methodology 212

Appendix 2: Glossary 226

Appendix 3: List of recommendations 240

List of figures

Figure 1: Key steps for a test, trace and isolate programme 8

Figure 2: Number of Covid-19 deaths per million people in the UK, Italy, Germany, Australia and Singapore, 30 January to 30 June 2020 16

Figure 3: Map of Lighthouse laboratories in the UK 37

Figure 4: Comparison of two forms of contact tracing 76

Figure 5: How contact tracing apps can identify more potentially infected people 91

Figure 6: NHS COVID-19 app uptake per local tier local authority 99

Figure 7: Timeline of border measures implemented in the UK 156

Figure 8: Messages from the 'Let's get back' campaign (Department of Health and Social Care and NHS Test and Trace, July 2020) 186

Figure 9: 'We're not giving in' (Scottish Government, April 2021) 187

Figure 10: 'Protect your loved ones. Get the app' (NHS Test and Trace, England and Wales, September 2020) 188

Figure 11: 'Test, Trace, Protect: A Step-by-Step Guide' (Public Health Agency, Northern Ireland, July 2020) 191

List of tables

Table 1: Examples of international border measures, December 2019 to April 2020 153

Table 2: Module reports published by the Inquiry 214

Table 3: Module 7 Core Participants 216

Table 4: Expert witnesses 219

Table 5: Module 7 witnesses from whom the Inquiry heard evidence 220

Table 6: Module 7 Counsel team 223

Introduction by The Rt Hon the Baroness Hallett DBE

An effective test, trace and isolate system is well recognised as a major tool in the armoury of pandemic response. When Covid-19 reached the UK, had a robust test, trace and isolate system been in place, it would have identified positive cases, traced their contacts and ensured that all those affected were isolated from others as quickly as possible. In the absence of a vaccine, this was the only way to stop the new and deadly virus taking hold of the country.

Yet the UK entered the Covid-19 pandemic woefully ill prepared to implement effective, nationwide test, trace and isolate systems. It had the scientific expertise – Public Health England developed a reliable test within days of the identification of the genome of the virus that causes Covid-19 – but it lacked the infrastructure and equipment required to test and trace at scale.

Previous pandemic preparedness exercises had highlighted the need for a system that could be scaled up to the level required to meet the demands of a pandemic. Yet, when Covid-19 emerged, the existing test, trace and isolate system in the UK could only handle a relatively small number of cases. There were no adequate plans to test people who might have been infected, to trace their contacts or to isolate. As the number of cases began to rise exponentially, capacity for testing, tracing and isolation was soon overwhelmed.

This meant that, just as cases began to spike in the UK, community testing had to be paused in March 2020 and tests restricted to specific groups such as healthcare workers. Without the surveillance of the population offered by community testing, decision-makers had no idea of the extent of community transmission and any attempt at containment of the virus was doomed to fail.

When they realised the scale of the crisis, the four governments of the UK invested considerable time, effort and resources in developing a scaled-up system of test, trace and isolate measures that could meet the demands of a pandemic. Once established, it was extremely effective. However, their initial efforts were hindered by the lack of planning, a lack of knowledge of the existing testing capabilities of the private and public sectors, and a failure to work with them and local authorities with expertise in contact tracing.

Contact tracing can be either manual or digital. Manual contact tracing during the Covid-19 pandemic did not always make adequate use of local authorities or health boards. Digital contact tracing (through mobile phone apps) failed to take adequate account of language barriers or the challenges some people would face in having access to a phone or digital device. At the same time, digital contact tracing was hindered by concerns about privacy and mistrust in the effectiveness of the apps. Engagement was ultimately much lower than expected.

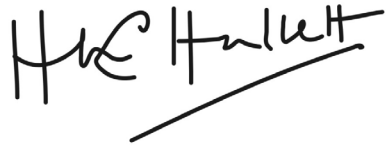
For those advised to isolate, many felt forgotten and let down by the lack of practical or financial support when trying to follow the rules. I heard distressing accounts from individuals who were faced with the unenviable choice of self-isolating and losing income, or going to work and risking spreading the virus.

Unclear messaging left sections of the population uncertain about how to comply with the measures, including what symptoms to look for before taking a test, or how to access vital support during self-isolation. Many people found themselves unable to access the test, trace and isolate system designed to protect them from Covid-19. It is therefore unsurprising that levels of compliance with self-isolation measures were low during the pandemic.

The response to Covid-19 marks an extraordinary moment in modern history: unprecedented restrictions and expectations were placed on the entire population. The UK's effort to fight the virus demanded not only compliance, but a profound shift in daily life. Without high levels of compliance, the entire test, trace and isolate system risked breaking down.

As discussed in earlier modules, the UK government and devolved administrations must be better prepared for the next pandemic, drawing on lessons from the past and from pandemic preparedness exercises. My overarching recommendation in this Report is that the UK government and the devolved administrations must work together now to formulate a comprehensive and adaptable test, trace and isolate system, capable of being deployed at the outset of any future pandemic.

This Report and my nine recommendations are only possible thanks to those who provided the wealth of evidence I received during my investigation in Module 7. This included 200 written statements, over 23,000 documents and two expert reports, as well as the oral evidence of 41 witnesses at the public hearing in May 2025. I am also grateful to the 24 Core Participants and the Inquiry's secretariat and legal team. I offer my sincere thanks to them all and especially to those who contributed to the Inquiry's listening exercise, Every Story Matters, and to the impact film.



The Rt Hon the Baroness Hallett DBE

19 November 2026

Voices

> "*I believe an effective TTIS* [test, trace, isolate and support] *programme could have played a crucial role in protecting my mother from contracting Covid-19. At the time, her domiciliary carers had inadequate access to testing and, even more concerningly, lacked the financial and practical support needed to isolate when necessary.*"[1]
>
> **Professor Naomi Fulop, Covid-19 Bereaved Families for Justice UK, speaking about her mother who died from Covid-19 in January 2021**

> "*My father was admitted for a gallbladder infection and was subsequently placed on a ward where a significant Covid-19 outbreak occurred. His discharge summary indicated that he had been 'potentially exposed to Covid', yet no testing was carried out before his release. This failure to test meant that his infection was not identified until his condition deteriorated rapidly at home, leading to his readmission and ultimately his death from nosocomial (hospital acquired) Covid-19.*"[2]
>
> **Anna-Louise Marsh-Rees, Covid-19 Bereaved Families for Justice Cymru, speaking about her father who died from Covid-19**

> "*Our members believe that tracing infrastructure was complicated, with existing staff often redeployed to other roles. One of our members reported that in the Highlands, the lack of staff meant that contact tracing was delayed. In some cases, it was delayed for a minimum of one week. Our member believed this delay in tracing to be beyond the point of being useful in that it was past the stage that anyone could remember everyone that they had been in contact with, and/or beyond the point at which the person was still infectious.*"[3]
>
> **Nicola Boyle, Scottish Covid Bereaved, speaking about the delay in contact tracing experienced by a person living in the Scottish Highlands**

1 INQ000587244_0004 para 17
2 INQ000587321_0004 para 12
3 INQ000587320_0009 para 41

> "*I asked … when was the last time the carers would have been tested? More thinking of them, rather than, you know, that they had spread it. And his answer was it wasn't the hospital trust's policy to actually test carers who were going into the homes of vulnerable people. And that was the shocking realisation of -- that this was what was happening in the country: that carers were going into the homes of people who were not tested.*"[4]
>
> **Hazel Gray, Northern Ireland Covid-19 Bereaved Families for Justice, speaking about her parents who died from Covid-19 one month and a day apart**

> "*I heard then through the grapevine that if you were attending hospital for some reason, there was another centre where you had to go, and you could go there, be tested and then two or three days later they'd let you know and then you could go and get your appointment at the hospital. I thought, this is brilliant why can't they include people with disabilities and older people.*"[5]
>
> **Eileen, Northern Ireland, speaking about her experience as a vulnerable person obtaining access to testing centres**

> "*They were very, very well-organised. When we went out for the tests, everything was well-signposted, well-directed. We were able to keep our distances; parking was easy. We had our timeslots and they were kept to. It was good.*"[6]
>
> **Clinically vulnerable person, Every Story Matters, speaking about the test centre process**

> "[T]*here are structural injustices and structural barriers that were, I believe, exposed. There was a lack of accessible communication and the system made to protect us in our health and care and community often operated in silos, not in unity or solidarity.*"[7]
>
> **Dr Clenton Farquharson CBE, speaking about his experience during the Covid-19 pandemic as a black and disabled person managing complex health needs**

4 Hazel Gray 13 May 2025 6/14-22
5 UK Covid-19 Inquiry, Module 7 Hearing, 12 May 2025 AM, module opening impact film, 07:33-07:58 (https://webarchive.nationalarchives.gov.uk/video/UC9eFdKVwD1ARs3j9BSoGndw/gUCHA2JPT8s)
6 *Every Story Matters: Test, Trace and Isolate*, p38 (INQ000475132)
7 UK Covid-19 Inquiry, Module 7 Hearing, 12 May 2025 AM, module opening impact film, 00:10-01:19 (https://webarchive.nationalarchives.gov.uk/video/UC9eFdKVwD1ARs3j9BSoGndw/gUCHA2JPT8s)

> "*Most of our neighbours turned off test and trace as they saw it as punishment and if they were pinged it would stop them from being able to go out.*"[8]
>
> **Jane, member of Clinically Vulnerable Families, speaking about her observations of compliance with a test and trace app**

> "[T]*here's an awful lot of people in industry that don't have sick pay, so if you are having to [self-]isolate for whatever reason, they just weren't paid for two weeks.*"[9]
>
> **Carer, Every Story Matters**

> "*It's [self-isolation] one of the few things that made sense, because what you're really doing is you're protecting the people you care about.*"[10]
>
> **Carer, Every Story Matters, speaking about self-isolation**

8 INQ000587425_0041 para 111
9 *Every Story Matters: Test, Trace and Isolate*, p93 (INQ000475132)
10 *Every Story Matters: Test, Trace and Isolate*, p6 (INQ000475132)

Executive summary

It has long been recognised that widespread testing, combined with the rapid isolation of infectious individuals, is one of the most effective means of limiting the transmission of infectious diseases. Over more than two decades, experience from public health emergencies, outbreak responses and pandemic preparedness exercises has consistently demonstrated that test, trace and isolate measures, when implemented quickly and at scale, can reduce transmission, support front-line services and save lives.

The UK entered the Covid-19 pandemic underprepared to deliver test, trace and isolate measures at scale and at speed.

The evidence presents a complex picture. While elements of the test, trace and isolate systems across the UK were developed quickly and worked effectively, they came too late and at a huge cost. The Inquiry has identified significant weaknesses in pandemic preparedness and delivery.

The UK moved at speed to develop a reliable diagnostic test for Covid-19, testing the first symptomatic people and confirming clinical diagnoses of the virus as early as January 2020. This reflected the strength of the UK's scientific and research capability. However, the development of an effective test for Covid-19 was only the first step. Delivering testing at population scale was a greater challenge and proved much harder to achieve. As community transmission increased dramatically, the UK's existing testing infrastructure could not be expanded quickly enough to meet demand. The pause in widespread community testing in March 2020 came at a time when the virus was spreading rapidly, leaving decision-makers to manage the pandemic with limited information about cases, transmission and the range of symptoms.

Future preparedness depends on sustaining and strengthening the expertise of the UK's research and clinical capabilities and the networks that connect them. It is essential that the UK builds on the infrastructure developed during the pandemic to ensure that testing capacity can be scaled rapidly when needed, without the cost and delay associated with building mass testing systems from the ground up and in the middle of a crisis.

Testing is only effective when coupled with measures to reduce onward transmission. Isolation of positive cases was a fundamental component of the UK's response. However, when the UK public was first asked to self-isolate, people were provided with limited practical and financial support. Although support mechanisms for self-isolation emerged over time, this initial gap weakened adherence and exposed the limitations of relying solely on individual responsibility.

The challenges associated with self-isolation were foreseeable. Planning for the financial and practical support required to help people overcome those challenges proved inadequate. In a future pandemic, individuals should not be expected to bear the burden of isolation without adequate support.

Alongside testing and isolation, contact tracing played a critical role in efforts to break chains of transmission. However, as case numbers surged during the first wave of the pandemic, manual contact tracing infrastructure was unable to keep pace with demand. The temporary suspension of community contact tracing removed an important mechanism identifying infected people across the country.

Digital tools offered some mitigation. The UK eventually developed three digital contact tracing apps, which enhanced the reach and scale achievable through manual contact tracing alone, but this took valuable time and faced a number of challenges. The effectiveness of test, trace and isolate systems depends not only on technical capability but on the broader social, economic and operational context in which they operate. This was not fully recognised. Certain groups – including older people, ethnic minority groups and those experiencing digital exclusion – faced barriers to accessing the systems intended to protect them.

Future systems should be designed with accessibility at their core, combining digital capabilities with non-digital methods of engagement to ensure that all communities can be effectively engaged, regardless of their access to technology or confidence in digital communication.

The UK must learn from the experiences of those who were most affected during the pandemic, in particular those who were socially and economically disadvantaged. It is imperative that test, trace and isolate measures are designed to be accessible from the outset. They must enable access for all communities – including those who may face barriers – to ensure that future systems are equitable as well as effective. Clear, consistent and accessible communication is also essential in giving people the best possible chance to understand the importance of test, trace and isolate measures, why they are necessary and what they are being asked to do.

Test, trace and isolate capabilities have an important role beyond domestic transmission control. When applied proportionately and based on evidence, they can help identify and manage risks associated with international travel, providing an additional layer of protection against the introduction and spread of emerging infectious diseases. However, at the outset of the pandemic, the UK lacked a strategy for the implementation of international border controls. It is therefore vital that the UK considers the complexities in implementing and enforcing international border control measures as part of its pandemic planning.

All four governments lacked robust mechanisms to monitor and evaluate the effectiveness of the measures they implemented. Data on compliance, particularly with respect to self-isolation, were often unreliable. This limited their value for informed decision-making. Greater emphasis should have been placed on the systematic assessment of policies. With more accurate and comprehensive data, decision-makers would have been better equipped to adapt and refine policies to ensure that they were followed by as many people as possible.

Many elements of the UK's test, trace and isolate systems were developed and adapted in real time. By contrast, several countries and territories, including Singapore, Australia and Germany, were comparatively better prepared to respond to the emergence of Covid-19. These countries experienced markedly lower death rates than the UK during the first six months of the pandemic. The Inquiry recognises that their response overall may have had other social and economic consequences that are unacceptable to some. However, these examples show that detailed pandemic planning, together with significant investment in public health infrastructure and diagnostic capacity, can enable a government to implement scalable test, trace and isolate measures at an earlier stage of a pandemic.

The UK's test, trace and isolate response to Covid-19 came too late because it relied too heavily on plans and capabilities that had to be built from the ground up during the emergency itself. Testing infrastructure, contact tracing systems and self-isolation support schemes were constructed under pressure and scaled to levels that no plan had anticipated.

Once established, the systems were highly successful and those involved deserve our thanks. Yet, their impact might have been greater had clearer strategic plans, stronger preparedness arrangements and scalable operational systems been in place before the pandemic began.

The financial cost of building the UK's test, trace and isolate systems was extraordinary. The UK government spent in excess of £25 billion on NHS Test and Trace in England between the start of the pandemic and June 2022. Better planning – including clearer requirements, proper evaluation and earlier testing – is required to avoid that level of expenditure next time.

The UK must take steps now to ensure that it is equipped with a comprehensive system to test, trace, isolate and support individuals during a public health emergency.

To ensure that the UK is prepared to identify and control transmission in a future public health emergency, this Report makes nine recommendations. In summary, these are:

- **monitoring the UK's testing capabilities** to ensure that the diagnostics sector is used effectively;
- **ensuring that plans are in place to deliver manual contact tracing on a large scale**;
- **developing a UK-wide digital contact tracing tool**;
- **ensuring that local plans are in place to deliver practical support to communities** if self-isolation is required;
- **ensuring that plans are in place for financial support** if self-isolation is required;
- **planning for the use of international border control measures**;
- **developing aligned communications campaigns about testing, tracing and isolation**, to avoid confusion or ambiguity;

- **improving data collection and evaluation of testing, tracing and isolation** so that the impact on the public and levels of adherence can be monitored effectively;
- **producing a single UK-wide system for testing, tracing and isolation**.

A full list of the Inquiry's recommendations is included in Appendix 3.

As noted in the Inquiry's Module 1 Report, it is not a question of 'if' another pandemic will strike but 'when'. The UK and devolved administrations should work together to develop a UK-wide test, trace and isolate system that is scalable, adaptable, accessible and trusted. By embedding the lessons of the Covid-19 pandemic into long-term preparedness planning, the UK can move from a reactive approach to one that is resilient and capable of responding quickly. The recommendations in this Report should be implemented without delay to ensure that the UK is equipped with a system capable of testing, tracing, isolating and supporting people from the earliest stages of the next pandemic to reduce widespread transmission and, ultimately, to save lives.

Chapter 1: The UK's readiness to implement a test, trace and isolate system

Introduction

1.1. When the coronavirus (Covid-19) pandemic struck, there was nothing new about the concept of testing, tracing and isolation to prevent the spread of infectious disease. For centuries, the identification and isolation of people exposed to infection has been an important part of pandemic control. In the 14th century, Venetian laws mandated 40-day quarantine to prevent the spread of bubonic plague.[1] In the 16th century, English households infected with plague were required to shut themselves away from the rest of society.[2] Cholera outbreaks in the 19th and 20th centuries led to quarantine laws around Europe.[3] More recently, contact tracing was used during the 2009 to 2010 H1N1 influenza pandemic ('swine flu').[4]

1.2. A system for testing, tracing and isolating cases of infectious disease is therefore an established and fundamental public health tool. If done well, it identifies sources of outbreaks, controls the spread of infection and ultimately saves lives. Without an effective system to do this, governments may have little choice but to impose more severe restrictions, which cause economic disruption and place significant restraints on people's lives.[5]

1.3. However, there was no plan to implement wide-scale testing, tracing and isolation in the UK in January 2020. As noted in the Inquiry's Module 1 Report, the UK was ill prepared for dealing with a catastrophic emergency, let alone the Covid-19 pandemic.[6] This chapter examines the UK's readiness to control the spread of Covid-19 through testing, tracing and isolation. It explores the lessons about the importance of testing, tracing and isolation that could and should have been learned from previous epidemics and pandemics. It sets out examples of international good practice in terms of readiness to test, trace and isolate at scale, and how that contributed to effective pandemic response.

1.4. The systems for testing, tracing and isolation adopted in the four nations of the UK were given different names: Test and Protect (in Scotland); NHS Test and Trace (in England); Test, Trace, Protect (in Wales); and Test, Trace and Protect (in Northern Ireland). This Report uses the overarching term 'test, trace and isolate' to refer generally to testing, tracing and isolation and makes clear when it is referring to a particular system in one of the four nations.

---

1 *Emergency State: How We Lost Our Freedoms in the Pandemic and Why It Matters*, Adam Wagner, 2022, pp34-35 (INQ000346112)

2 *Emergency State: How We Lost Our Freedoms in the Pandemic and Why It Matters*, Adam Wagner, 2022, p35 (INQ000346112)

3 *Emergency State: How We Lost Our Freedoms in the Pandemic and Why It Matters*, Adam Wagner, 2022, p36 (INQ000346112)

4 *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 7: contact tracing and isolation, Department of Health and Social Care, 10 January 2023, p3 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation; INQ000505923)

5 *A Blueprint to Achieve an Excellent Find, Test, Trace, Isolate and Support System*, The Independent Scientific Advisory Group for Emergencies, 16 October 2020, p2 (https://www.independentsage.org/wp-content/uploads/2020/10/New-FTTIS-System-final-06.50.pdf; INQ000474857); INQ000575291_0002

6 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Executive Summary and Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)

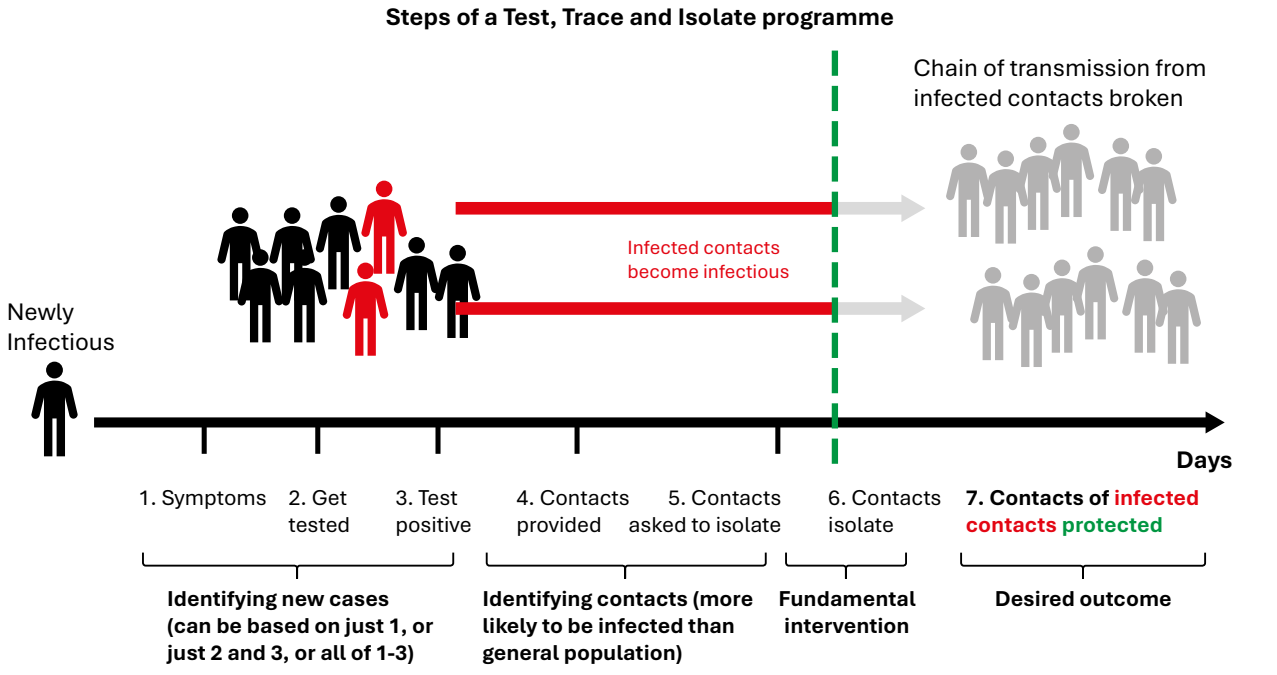
The purpose of a test, trace and isolate system

1.5. The purpose of a test, trace and isolate system (ie a response to infection outbreak that incorporates testing, contact tracing and requirements to self-isolate) is to identify people who have been exposed to infection and to isolate them to reduce further spread of that infection.[7] There are three elements that make up such a system (see Figure 1):

- **testing** – identifying newly infected, or potentially infected, people as quickly as possible;
- **tracing** – finding the contacts of identified infected people as quickly as possible; and
- **isolation** – ensuring that as many infected people and their contacts as possible are isolated to reduce further spread.[8]

Such a system can also capture useful data on infected people and their contacts – improving understanding of the virus and the way it spreads.[9] It may also reduce the need for other interventions (excluding vaccines, drugs or other medical interventions).[10]

Figure 1: Key steps for a test, trace and isolate programme



Graphic by Prof Christina Pagel

Source: INQ000575988_0006

7 INQ000587542_0018 para 6.9
8 INQ000575988_0005 para 10; INQ000587542_0018 para 6.9; INQ000587649_0008 para 21; INQ000575986_0008 para 18
9 INQ000194035_0001
10 INQ000194035_0019

1.6. The public health response to an infectious outbreak – particularly a pandemic – will include a wide-scale system for testing, tracing and isolation.[11] A Covid-19 modelling study conducted in May 2020 estimated that combining social distancing and household self-isolation substantially reduced virus transmission. Adding contact tracing to this package of interventions reduced subsequent Covid-19 infections by an additional 5 to 15%.[12] Modelling has its limitations, but that study was one of a number of sources during the Covid-19 pandemic that recognised the value of a system to test, trace and isolate (as discussed in the Inquiry's combined Report relating to Modules 2, 2A, 2B and 2C).[13] For example, a paper from the Independent Scientific Advisory Group for Emergencies (Independent SAGE; a group of UK scientists, independent of the UK government, set up to monitor and assess UK strategy in relation to the Covid-19 pandemic) in October 2020 concluded that the Covid-19 pandemic would "*never be brought under control in the UK without every community having access to a …* [test, trace and isolate] *system that actually works*".[14] Similarly, a report from the Scientific Pandemic Insights Group on Behaviours (SPI-B) dated 22 April 2021 confirmed that identification and isolation of infectious people could have a significant impact on transmission of Covid-19 and that a test, trace and isolate system was key to achieving this.[15]

1.7. Some pathogens may not require a response focused on all the elements of a test, trace and isolate system. For example, during the HIV/AIDS epidemic in the 1980s and 1990s, key measures to prevent the spread of infection were avoiding unprotected sex and avoiding exposure to infected blood, rather than self-isolation.[16] However, for pathogens spread through contact transmission and airborne transmission, such as Covid-19, trying to stop contact through self-isolation is a main way to reduce the chance of exposure.[17]

1.8. A test, trace and isolate system is most effective in containing the spread of infection when the number of people infected is relatively low, such as at the start of a pandemic.[18] Studies suggested a notable difference between the effectiveness of a test, trace and isolate system in periods of low prevalence, compared with periods of high prevalence. One study of Covid-19 data from Switzerland estimated that contact

11 INQ000587542_0018-0019 para 6.10; INQ000351836_0004

12 INQ000351836_0004. Statistical models are tools for analysing complex data, identifying patterns and informing evidence-based decision-making where direct measurement is not possible. Figures from modelling are estimates only, and different statistical models will produce different outcomes. These estimates are not based on direct observations. They are therefore limited by the underlying assumptions used in the models and are subject to uncertainty.

13 For example: *A Blueprint to Achieve an Excellent Find, Test, Trace, Isolate and Support System*, The Independent Scientific Advisory Group for Emergencies, 16 October 2020 (https://www.independentsage.org/wp-content/uploads/2020/10/New-FTTIS-System-final-06.50.pdf; INQ000474857); *Considerations in Implementing Long-Term 'Baseline' Non-Pharmaceutical Interventions (NPIs)*, 22 April 2021 (INQ000074989). See also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Chapter 9 (https://covid19.public-inquiry.uk/documents/module-2-full-report).

14 *A Blueprint to Achieve an Excellent Find, Test, Trace, Isolate and Support System*, The Independent Scientific Advisory Group for Emergencies, 16 October 2020, p2 (https://www.independentsage.org/wp-content/uploads/2020/10/New-FTTIS-System-final-06.50.pdf; INQ000474857)

15 *Considerations in Implementing Long-Term 'Baseline' Non-Pharmaceutical Interventions (NPIs)*, 22 April 2021 (INQ000074989_0004)

16 'Three lessons for the COVID-19 response from pandemic HIV', J Hargreaves, C Davey, *The Lancet HIV* (2020), 7, e309-e311 (https://doi.org/10.1016/S2352-3018(20)30110-7; INQ000050017)

17 INQ000575988_0004 para 8

18 INQ000575986_0014 para 37; INQ000075783_0001, 0004 paras 3, 31; INQ000587340_0029 para 9.44

tracing could identify up to 60% of infected contacts during periods of low prevalence, but less than 25% during epidemic peaks.[19] This is because public health resources can be targeted to where they are most needed when there are low numbers of infected cases.[20] Modelling conducted during the Covid-19 pandemic also estimated that a system of testing, tracing and isolation was most effective when there was a quick turnaround of testing and tracing, a high proportion of people following guidance to test, trace and isolate, and consistent data collection and population surveillance.[21]

1.9. However, even during periods of high prevalence, a test, trace and isolate system can reduce transmission, which is a key objective of any public health response to an infectious disease.[22]

Testing, tracing and isolation in previous epidemics and pandemics

1.10. As noted in the Inquiry's Module 1 Report, the years leading up to the Covid-19 pandemic presented numerous opportunities to learn lessons for pandemic preparedness. These included the vital role of a test, trace and isolate system in curbing the spread of infection.[23]

1.11. In 2003 and 2004, various pandemic preparedness exercises across the four nations noted the importance of contact tracing and quarantine, of preventing the initial spread of a virus rather than simply dealing with its impact, and of having a national response plan.[24]

1.12. Contact tracing was used during the swine flu pandemic, but only for three months. There were also significantly fewer cases of infection during swine flu than during the Covid-19 pandemic. Despite this, according to a 2023 Department of Health and Social Care report about contact tracing, pressures on existing systems rapidly became unsustainable during the swine flu pandemic.[25]

19 INQ000575988_0004-0005 para 9; 'Time trends and modifiable factors of COVID-19 contact tracing coverage, Geneva, Switzerland, June 2020 to February 2022', D Mongin, N Bürgisser, Covid-SMC Study Group, DS Courvoisier, *Eurosurveillance* (2024), 29(3) (https://doi.org/10.2807/1560-7917.ES.2024.29.3.2300228; INQ000573915). The UK Operational Research Society is "*the organisation for professionals, academics and students who work in operational research, decision analytics, and data science*" (https://www.theorsociety.com).
20 'Effectiveness of testing, contact tracing and isolation interventions among the general population on reducing transmission of SARS-CoV-2: a systematic review', H Littlecott, C Herd, J O'Rourke, L Toncon Chaparro, M Keeling, GJ Rubin et al, *Philosophical Transactions of the Royal Society A* (2023), 381(2257), p2 (https://doi.org/10.1098/rsta.2023.0131; INQ000564294)
21 INQ000194035_0001
22 INQ000562931_0001
23 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
24 INQ000235217; INQ000206664; INQ000187903. For further details, see *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report).
25 *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 7: contact tracing and isolation, Department of Health and Social Care, 10 January 2023, p3 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation; INQ000505923)

1.13. In response to the 2013 to 2016 outbreak of Ebola virus disease in West Africa, the UK set up symptom screening at ports of entry, which included contact tracing for positive cases.[26] Professor Julian Hiscox (Professor of Infection and Global Health at the University of Liverpool and Director of the UK International Coronavirus Network) said that an important lesson from the Ebola outbreak was:

> "*that early diagnosis and rapid response was the most important factor in controlling and eliminating the outbreak. This relied on setting up isolation facilities to help prevent spread of the virus (and to treat infected individuals).*"[27]

Professor Hiscox told the Inquiry that this information was known by Public Health England and the UK government in late 2015.[28]

1.14. In February 2016, the UK government conducted Exercise Alice, a simulation of an outbreak of Middle East respiratory syndrome (MERS).[29] Not all recommendations arising from Exercise Alice had been implemented fully by the time of the Covid-19 pandemic, including the development of a plan about quarantining and self-isolation.[30]

1.15. In October 2016, Exercise Cygnus assessed the UK's preparedness for a pandemic-scale influenza outbreak. It simulated the seventh week of a pandemic, with participants working where they usually would during a pandemic, communicating with each other and attending simulated COBR meetings.[31] The Exercise Cygnus report concluded that the UK's preparedness and response – in terms of its plans, policies and capability – were still not sufficient to cope with a severe pandemic with nationwide impact.[32] It did not specifically consider testing, tracing or isolating but identified 22 lessons and 4 key 'learning outcomes' in relation to an influenza outbreak. The report identified a lack of capability and capacity to surge resources in a number of key areas, including healthcare, social care and the management of increased death rates.[33]

1.16. In response to Exercise Cygnus, a Pandemic Flu Readiness Board was established in March 2017.[34] However, it did not meet between November 2018 and November 2019. Following that year-long hiatus, it was recognised that there was a need to reinvigorate the board and to prioritise workstreams. However, the UK government's priority did not move back to pandemic preparedness because its focus shifted to

26 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
27 INQ000475074_0007 para 21
28 INQ000475074_0007 para 22
29 INQ000212312_0024 para 98
30 INQ000212312_0025 para 100; see also *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
31 *Exercise Cygnus Report: Tier One Command Post Exercise Pandemic Influenza – 18 to 20 October 2016*, Public Health England, 13 July 2017, p5 (https://data.parliament.uk/DepositedPapers/Files/DEP2020-0621/Exercise_Cygnus_Report.pdf; INQ000056232)
32 *Exercise Cygnus Report: Tier One Command Post Exercise Pandemic Influenza – 18 to 20 October 2016*, Public Health England, 13 July 2017, p6 (https://data.parliament.uk/DepositedPapers/Files/DEP2020-0621/Exercise_Cygnus_Report.pdf; INQ000056232)
33 *Exercise Cygnus Report: Tier One Command Post Exercise Pandemic Influenza – 18 to 20 October 2016*, Public Health England, 13 July 2017, pp8-9 (https://data.parliament.uk/DepositedPapers/Files/DEP2020-0621/Exercise_Cygnus_Report.pdf; INQ000056232)
34 INQ000022752_0002 para 1

work on the UK's exit from the European Union.[35] The Pandemic Flu Readiness Board did not meet again until 23 January 2020, by which time the Covid-19 pandemic had probably already reached the UK.[36]

1.17. In summary, despite repeated warnings about the importance of testing, tracing and isolation, prior to the Covid-19 pandemic (as noted in the Inquiry's Module 1 Report):

- None of the governments of the UK conducted pandemic exercises that tested testing, tracing or isolation measures in relation to an epidemic or pandemic-scale outbreak of an emerging infectious disease.[37]
- Neither the Department of Health and Social Care nor Public Health England adequately considered how the UK might slow or halt the transmission of a novel and significant pathogen that could cause a pandemic.[38]
- Lessons from previous exercises were not sufficiently debated and shared – in many cases, learning and recommendations were not acted upon or were forgotten.[39]

International examples of test, trace and isolate readiness

1.18. Pandemic preparedness plans for testing, tracing and isolation were established in countries, territories and regions, such as Hong Kong, Australia, South Korea, Singapore, Taiwan and Germany, years before the Covid-19 pandemic.

1.19. Hong Kong was significantly affected by the 2002 to 2003 severe acute respiratory syndrome (SARS) outbreak, experiencing almost one-quarter of the 8,098 cases worldwide, with 302 deaths. There followed significant public investment in health infrastructure and diagnostic testing capacity.[40] During the Covid-19 pandemic, the

35 INQ000195845_0007-0008, 0010 paras 3.20, 3.23; INQ000198252_0003-0004 paras 13-15; see also INQ000022752_0003 para 4

36 INQ000195845_0007-0008 para 3.20; INQ000198252_0003-0004 paras 13-15; see also INQ000022752_0003 para 4; *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)

37 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)

38 *Report: Exercise Alice – Middle East Respiratory Syndrome Coronavirus (MERS-CoV)*, Public Health England, 15 February 2016 (https://assets.documentcloud.org/documents/21080373/report-exercise-alice-middle-east-respiratory-syndrome-15-feb-2016.pdf; INQ000090431); *Exercise Cygnus Report: Tier One Command Post Exercise Pandemic Influenza – 18 to 20 October 2016*, Public Health England, 13 July 2017 (https://data.parliament.uk/DepositedPapers/Files/DEP2020-0621/Exercise_Cygnus_Report.pdf; INQ000056232); Clara Swinson 19 June 2023 164/16-166/14; *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)

39 *Report: Exercise Alice – Middle East Respiratory Syndrome Coronavirus (MERS-CoV)*, Public Health England, 15 February 2016 (https://assets.documentcloud.org/documents/21080373/report-exercise-alice-middle-east-respiratory-syndrome-15-feb-2016.pdf; INQ000090431); *Exercise Cygnus Report: Tier One Command Post Exercise Pandemic Influenza – 18 to 20 October 2016*, Public Health England, 13 July 2017 (https://data.parliament.uk/DepositedPapers/Files/DEP2020-0621/Exercise_Cygnus_Report.pdf; INQ000056232); Clara Swinson 19 June 2023 164/16-166/14; see also *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)

40 *COVID-19: Examining the Effectiveness of Non-Pharmaceutical Interventions*, The Royal Society, August 2023, p15 (https://royalsociety.org/-/media/policy/projects/impact-non-pharmaceutical-interventions-on-covid-19-transmission/the-royal-society-covid-19-examining-the-effectiveness-of-non-pharmaceutical-interventions-report.pdf; INQ000250983)

Hong Kong government was able quickly and effectively to put in place a system with one of the highest per capita testing rates in the world.[41] In May 2020, the UK's Foreign and Commonwealth Office observed:

> "*The real difference in Hong Kong is the comprehensive test and trace regime and people's sense of personal responsibility. It is the combination of these issues which mean, despite having been affected by COVID-19 since January 2020, Hong Kong has kept its spread under control.*"[42]

As at April 2021, Hong Kong had avoided any city-wide lockdowns and the government had been successful in controlling the rate of infection.[43]

1.20. The Singapore government also learned lessons from its experience with the 2002 to 2003 SARS outbreak.[44] As a result, it developed a comprehensive crisis management plan, which was refined over the years, and it invested heavily in epidemic preparedness and response.[45] This included the expansion and upgrade of its medical facilities and the development of advanced research and diagnostic capabilities to study viruses and identify treatment, detection and prevention options.[46] The Singapore government's priority at that early stage was to "*detect every possible case early, contact trace, and contain further spread*".[47]

1.21. Similarly, after Taiwan suffered the impact of the SARS outbreak in 2003, significant action was taken to ensure that it would be prepared for future international health emergencies. This included enhancing the functions of its Centers for Disease Control (at the time an agency of Taiwan's Department of Health), expanding the medical workforce and improving its digital technology, disease investigation capabilities and strategies for emergency responses.[48] The measures meant that Taiwan could take early action in response to the Covid-19 pandemic.[49] As soon as reports of a new and unknown disease in China reached Taiwan in January 2020, an inter-ministerial Central Epidemic Command Center was activated. This focused on measures for blocking transmission of Covid-19.[50] In May 2020, the UK's Foreign and Commonwealth Office listed Taiwan as one of the effective examples of a test, trace and isolate strategy in the international community, noting: "*Proactive containment efforts and comprehensive contact tracing have kept the number of cases low.*"[51] Evidence from April 2021 suggests that, by that point, Taiwan had one of the lowest

41 INQ000050573_0020
42 INQ000050573_0020
43 'COVID-19, community response, public policy, and travel patterns: A tale of Hong Kong', H-Y Chan, A Chen, W Ma, N-N Sze, X Liu, *Transport Policy* (2021), 106, 173-184 (https://doi.org/10.1016/j.tranpol.2021.04.002; INQ000110973)
44 INQ000228694_0003
45 INQ000228694_0003
46 INQ000228694_0003
47 INQ000228694_0005
48 'Taiwan's experience in pandemic control: Drawing the right lessons from SARS outbreak', W-C Lee, *Journal of the Chinese Medical Association* (2020), 83(7), 622-623, p622 (https://doi.org/10.1097/JCMA.0000000000000350; INQ000050422)
49 INQ000050573_0027
50 'Taiwan's experience in pandemic control: Drawing the right lessons from SARS outbreak', W-C Lee, *Journal of the Chinese Medical Association* (2020), 83(7), 622-623, p622 (https://doi.org/10.1097/JCMA.0000000000000350; INQ000050422)
51 INQ000050573_0027

per capita incidence and mortality rates of Covid-19 in the world and had reduced the spread of Covid-19 without strict lockdowns or school closures.[52]

1.22. During the MERS outbreak in 2015, proactive tracing tools and practices were developed in South Korea.[53] In May 2020, the UK's Data Evaluation and Learning for Viral Epidemics (DELVE), a multidisciplinary group convened by the Royal Society, conducted analysis of testing, tracing and isolation to inform discussions of the Scientific Advisory Group for Emergencies (SAGE) in relation to the Covid-19 pandemic. DELVE reported that the total time it took in South Korea to test an infected person, trace their contacts and advise self-isolation was about two to three days.[54] (This was about half the UK's then average of five days to test, trace and isolate cases.)[55] DELVE's simulation model suggested that reducing the overall turnaround time from five to three days could lead to a 60% improvement in the effectiveness (defined as a reduction in the reproduction number: the average number of people that one person with a disease infects) of the test, trace and isolate system.[56]

1.23. South Korea's well-resourced contact tracing network and high testing capacity contributed to keeping infection rates low and avoiding severe lockdowns.[57] Its Covid-19 pandemic strategy would become globally recognised as a gold standard approach.[58]

1.24. Germany also entered the Covid-19 pandemic armed with a detailed National Pandemic Plan. This plan was developed between 2016 and 2017 and a supplement relating specifically to Covid-19 was published on 4 March 2020.[59] It aimed to test anyone with symptoms, track down all the people with whom they had had contact and isolate those contacts.[60] Together with generic preparedness plans and other disease-specific plans and documents, the National Pandemic Plan allowed the German government to activate a Covid-19 response quickly, with rapid development of a Covid-19 test and scale-up of testing capacity, efficient use of intensive care unit bed capacity, and early visiting restrictions in high-risk settings.[61] For example, Dr Peter Cotgreave (giving evidence on behalf of the Microbiology Society) told

52 'Comparison of estimated effectiveness of case-based and population-based interventions on COVID-19 containment in Taiwan', T-C Ng, H-Y Cheng, H-H Chang, C-C Liu, C-C Yang, S-W Jian et al, *JAMA Internal Medicine* (2021), 181(7), 913-921, p914 (https://doi.org/10.1001/jamainternmed.2021.1644; INQ000249699)
53 INQ000065811_0006
54 INQ000351836_0009
55 INQ000351836_0012
56 INQ000351836_0012
57 INQ000088574_0019
58 INQ000587449_0010 para 25
59 *COVID-19-Strategiepapiere und Nationaler Pandemieplan*, Robert Koch Institut, 19 March 2020 (https://www.rki.de/DE/Themen/Infektionskrankheiten/Infektionskrankheiten-A-Z/C/COVID-19-Pandemie/Strategie/Pandemieplan Strategien.html; INQ000662100); *Erganzung zum Nationalen Pandemieplan – COVID-19 – neuartige Coronaviruserkrankung*, Robert Koch Institut, 4 March 2020 (https://www.rki.de/DE/Themen/Infektionskrankheiten/Infektionskrankheiten-A-Z/C/COVID-19-Pandemie/Strategie/Ergaenzung_Pandemieplan_Covid.pdf?__blob=publicationFile&v=1; INQ000660495)
60 'Inside Germany's Covid-19 testing masterclass', *Prospect*, 1 May 2020 (https://www.prospectmagazine.co.uk/politics/40165/inside-germanys-covid-19-testing-masterclass; INQ000582850)
61 'Emerging COVID-19 success story: Germany's push to maintain progress', LH Wieler, U Rexroth, R Gottschalk, 20 March 2021, pp3-4 (https://doi.org/10.25646/8786; INQ000576052); INQ000223473_0002-0003

the Inquiry that, in a seven-day period in March 2020, 143 laboratories in Germany conducted and reported the results of 352,000 tests.[62]

1.25. The first Covid-19 infections in Germany and the UK were recorded within days of each other (27 and 31 January 2020 respectively).[63] However, by 17 April 2020, there were about 49 deaths for every million people in Germany, whereas the UK's average was 202 deaths per million people.[64] The UK's Foreign and Commonwealth Office noted in May 2020:

> "*Heavy focus on contact tracing and effective management of infection chains since the beginning is widely viewed as having been an important contributor to Germany's relatively low infection rates.*"[65]

1.26. Australia's main pre-existing pandemic plan was the *Australian Health Management Plan for Pandemic Influenza*. This resulted from lessons learned from previous public health emergencies and outlined a strategy for minimising the impact of a pandemic on health systems and communities.[66] It was activated formally on 25 February 2020, when the Australian government declared Covid-19 a pandemic.[67] On 27 February, the government's response was adapted to take account of the specific nature of Covid-19 and it implemented a new Covid-19 response plan, the *Australian Health Sector Emergency Response Plan for Novel Coronavirus*.[68] This pandemic preparedness laid the foundation for the swift implementation of measures, such as activating and maintaining contact tracing from 25 January 2020, when the first confirmed case of Covid-19 in Australia was identified.[69] The Australian government's early approach meant that it was successful in the initial phase of its response to Covid-19, significantly slowing the import and spread of the virus.[70]

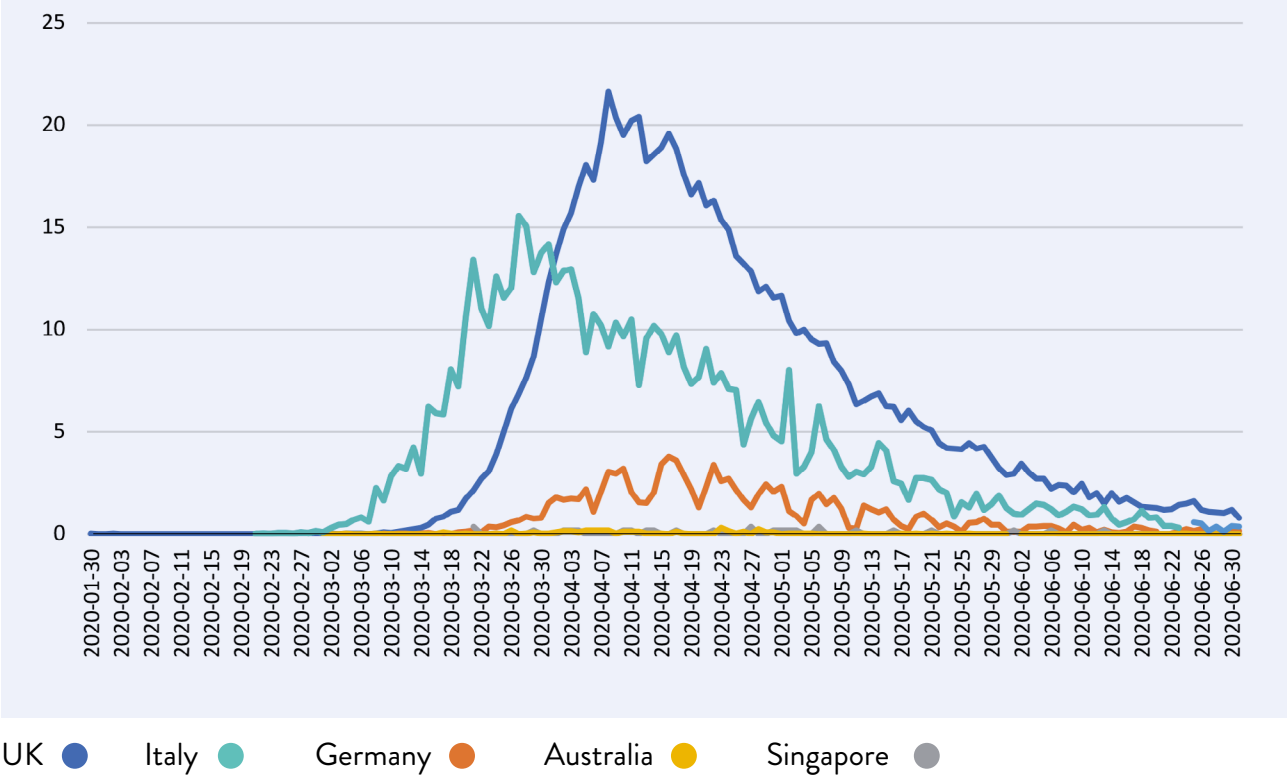
62 INQ000587449_0010 para 25
63 Germany: INQ000151365_0003-0004; UK: *National Risk Register: 2020 edition*, HM Government, 2020, p50 (https://assets.publishing.service.gov.uk/media/6001b2688fa8f55f6978561a/6.6920_CO_CCS_s_National_Risk_Register_2020_11-1-21-FINAL.pdf; INQ000055874)
64 INQ000223473_0001
65 INQ000050573_0020
66 *Crisis Preparation in the Age of Long Emergencies: What COVID-19 Teaches Us About the Capacity, Capability and Coordination Governments Need for Cross-Cutting Crises*, University of Oxford, 30 March 2023, p145 (https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long-emergencies.pdf; INQ000183325); *Australian Health Management Plan for Pandemic Influenza*, Department of Health Australia, August 2019 (https://www.health.gov.au/sites/default/files/2026-08/australian-health-management-plan-for-pandemic-influenza-ahmppi.pdf; INQ000660329)
67 *Crisis Preparation in the Age of Long Emergencies: What COVID-19 Teaches Us About the Capacity, Capability and Coordination Governments Need for Cross-Cutting Crises*, University of Oxford, 30 March 2023, p146 (https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long-emergencies.pdf; INQ000183325)
68 *National Contact Tracing Review*, Commonwealth of Australia, 2020, p30 (https://www.health.gov.au/sites/default/files/documents/2020/11/national-contact-tracing-review-national-contact-tracing-review.pdf; INQ000062889); *Crisis Preparation in the Age of Long Emergencies: What COVID-19 Teaches Us About the Capacity, Capability and Coordination Governments Need for Cross-Cutting Crises*, University of Oxford, 30 March 2023, p146 (https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long-emergencies.pdf; INQ000183325)
69 *Crisis Preparation in the Age of Long Emergencies: What COVID-19 Teaches Us About the Capacity, Capability and Coordination Governments Need for Cross-Cutting Crises*, University of Oxford, 30 March 2023, p146 (https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long-emergencies.pdf; INQ000183325); INQ000050573_0004
70 *Crisis Preparation in the Age of Long Emergencies: What COVID-19 Teaches Us About the Capacity, Capability and Coordination Governments Need for Cross-Cutting Crises*, University of Oxford, 30 March 2023, p149 (https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long-emergencies.pdf; INQ000183325)

1.27. There was, therefore, a clear link between planning and investment and early control of the Covid-19 pandemic. In May 2020, in a presentation about international testing, tracing and isolation responses to Covid-19, the UK's Foreign and Commonwealth Office noted:

> *"All leading schemes are born from previous pandemic experience. Hong Kong, South Korea and Singapore have all invested heavily in contact tracing over the last 17 years and modelled how this would operate."*[71]

1.28. There was evidence that a number of countries with detailed pandemic preparedness plans (such as Singapore, Australia and Germany) were able to set up testing, tracing and isolation far earlier than the UK. Those countries also had markedly lower death rates than the UK in the first six months of the pandemic (see Figure 2).[72]

Figure 2: Number of Covid-19 deaths per million people in the UK, Italy, Germany, Australia and Singapore, 30 January to 30 June 2020



Source: Crisis Preparation in the Age of Long Emergencies: What COVID-19 Teaches Us About the Capacity, Capability and Coordination Governments Need for Cross-Cutting Crises, University of Oxford, 30 March 2023, p29 (https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long-emergencies.pdf; INQ000183325)

71 INQ000088574_0009

72 In relation to Italy, see: *Crisis Preparation in the Age of Long Emergencies: What COVID-19 Teaches Us About the Capacity, Capability and Coordination Governments Need for Cross-Cutting Crises*, University of Oxford, 30 March 2023, p152 (https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long-emergencies.pdf; INQ000183325).

1.29. The Inquiry recognises that every country has its own political, demographic and geographical characteristics. What suits one country may not suit another. It also recognises that success in suppressing the virus in the early stages of the Covid-19 pandemic may have come at a high social and economic cost that would be unacceptable to some and may have unacceptable consequences later in the pandemic. However, these examples show that some decision-makers learned important lessons from earlier public health emergencies. They improved their infrastructure and developed comprehensive strategies for implementing large-scale test, trace and isolate systems in the event of a pandemic. They were therefore far better placed than the UK government and devolved administrations to respond quickly and effectively to Covid-19.[73]

The UK's preparedness to test, trace and isolate

1.30. Although health has been a devolved (or transferred) matter in Scotland, Wales and Northern Ireland since 1999, whole-system civil emergencies (ie events or situations that threaten serious damage to human welfare, the environment or the security of the UK) impact the whole society of the UK.[74] They therefore require a cross-departmental approach within the UK government and devolved administrations, as well as a coordinated approach across the four nations.[75]

Lack of a suitable pre-pandemic plan

1.31. There were numerous opportunities over the years for the UK government and devolved administrations to learn lessons about the importance of testing, tracing and isolation in order to develop an aligned, UK-wide pandemic preparedness plan that included all three elements. The Welsh Government developed the Wales Framework for Managing Major Infectious Disease Emergencies in 2014, which included broad plans for Public Health Wales to lead contact tracing and isolation in a public health emergency.[76] However, there was no detailed, scalable operational plan for a UK-wide test, trace and isolate system capable of responding to a pandemic such as Covid-19.

1.32. The *UK Influenza Pandemic Preparedness Strategy 2011* (the 2011 Strategy) was prepared jointly by the UK government and devolved administrations as a UK-wide

73 For example, INQ000223473_0001 (Germany compared with UK); *Crisis Preparation in the Age of Long Emergencies: What COVID-19 Teaches Us About the Capacity, Capability and Coordination Governments Need for Cross-Cutting Crises*, University of Oxford, 30 March 2023, pp24-25, 29 (https://www.bsg.ox.ac.uk/sites/default/files/2023-03/BSG-Crisis-preparation-age-long-emergencies.pdf; INQ000183325) (Germany and Singapore compared with UK).
74 See the definition of an 'emergency' in section 1 of the Civil Contingencies Act 2004 (https://www.legislation.gov.uk/ukpga/2004/36/contents).
75 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-1-full-report); see also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Chapter 1 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
76 *Wales Framework for Managing Major Infectious Disease Emergencies*, Welsh Government, October 2014, pp13-14 (INQ000183456)

plan for an influenza pandemic.[77] However, the influenza virus has different characteristics from Covid-19.[78] In an influenza pandemic, for example, testing and contact tracing does not make a meaningful difference to transmission because the incubation period is too short and the transmission rate is too high.[79] It is not surprising, therefore, that the 2011 Strategy did not envisage either mass testing or mass contact tracing beyond the initial phase of a pandemic.[80] Accordingly, it was not a suitable strategy to use to respond to a novel infectious virus with the characteristics of Covid-19.[81] As identified in the Inquiry's Module 1 Report, the absence of a detailed, UK-wide scalable pandemic plan limited the UK's readiness to test, trace and isolate at scale in January 2020.[82] It also limited the time the four governments of the UK had to assess how test, trace and isolate measures would be deployed separately and in combination.

1.33. The May 2020 DELVE report explained:

> "*Each of these three aspects of TTI* [test, trace and isolate] *needs careful attention, as do the trade-offs implicit in choices of how precisely to implement TTI in terms of who to test, trace and isolate, and when to do so.*"[83]

However, plans for how to implement test, trace and isolate had to be developed after Covid-19 had arrived in the UK and the pandemic was rapidly unfolding.

1.34. The Department of Health and Social Care, along with its counterparts in the devolved administrations, should have developed a pandemic plan well in advance of 2020 that was capable of being adapted to the specific needs of a novel pathogen such as Covid-19.

Capability for mass testing as at 1 January 2020

1.35. Before the Covid-19 pandemic, the infrastructure for diagnosing infection in the UK largely consisted of routine testing in NHS and public healthcare laboratories. The testing system was only capable of dealing with small numbers of cases.[84] Matt Hancock (Secretary of State for Health and Social Care from July 2018 to June 2021) told the Inquiry:

77 *UK Influenza Pandemic Preparedness Strategy 2011*, Department of Health, 10 November 2011, pp6-8 (https://assets.publishing.service.gov.uk/media/5a7c4767e5274a2041cf2ee3/dh_131040.pdf; INQ000022708)
78 *Biosecurity and National Security*, Joint Committee on the National Security Strategy, First Report of Session 2019-21, 14 December 2020, p15 (https://committees.parliament.uk/publications/4035/documents/40449/default; INQ000054361); *UK Influenza Pandemic Preparedness Strategy 2011*, Department of Health, 10 November 2011 (https://assets.publishing.service.gov.uk/media/5a7c4767e5274a2041cf2ee3/dh_131040.pdf; INQ000022708)
79 INQ000587298_0008-0009 paras 21-24
80 INQ000475007_0006 para 3.4; *UK Influenza Pandemic Preparedness Strategy 2011*, Department of Health, 10 November 2011, p21 (https://assets.publishing.service.gov.uk/media/5a7c4767e5274a2041cf2ee3/dh_131040.pdf; INQ000022708)
81 INQ000587298_0008-0009 para 24
82 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
83 INQ000351836_0004
84 INQ000587699_0003 para 9; INQ000587344_0071 para 296

> "*The UK entered the pandemic with a very small private sector diagnostics industry and a public sector diagnostic capacity that was … not scalable. This meant we were not well placed.*"[85]

1.36. In order to conduct mass testing during the Covid-19 pandemic, laboratories were required that could process tests on a large scale (as discussed in Chapter 2: Testing). As a result, as described by Professor Alan McNally (Head of the School of Infection, Inflammation and Immunology at the University of Birmingham from August 2024 and former Director of the Institute of Microbiology and Infection at the University of Birmingham), the UK was "*horribly under prepared to develop and deploy a mass testing system for a novel pandemic pathogen*".[86]

Capability for widespread contact tracing as at 1 January 2020

1.37. Contact tracing was used routinely in the UK at a local level for smaller-scale outbreaks of diseases, such as norovirus, salmonella or Legionnaires' disease, or for specific instances of infection with a sexually transmitted disease.[87] Public health officers and environmental health officers in local authorities had extensive experience of contact tracing.[88] England, Wales and Scotland – though not Northern Ireland – had local directors of public health (specialists who lead public health responses in a particular area).[89]

1.38. However, there was relatively limited experience of large-scale contact tracing in the UK before 2020. Contact tracing was used for only three months during the 2009 to 2010 swine flu pandemic to prevent the spread of infection.[90] During the Ebola outbreak between 2013 and 2016, it was used along with symptom screening to identify potentially infected people at ports of entry but, fortunately, there were only three Ebola cases in the UK, with no onward spread.[91] Large-scale contact tracing was not necessary.[92]

1.39. Professor Dame Jenny Harries (Deputy Chief Medical Officer for England from July 2019 to March 2021, Chief Executive of the UK Health Security Agency from April 2021 to May 2025) told the Inquiry that contact tracing systems before the Covid-19 pandemic "*were not designed to surge to the scale required by, nor to control, an established whole-population national pandemic*".[93]

85 INQ000587294_0020-0021 para 65
86 INQ000587245_0006 para 13
87 INQ000587454_0011 para 48
88 INQ000587454_0011 para 48
89 INQ000546017; INQ000259851_0005
90 *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 7: contact tracing and isolation, Department of Health and Social Care, 10 January 2023, p3 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation; INQ000505923)
91 INQ000177796_0004 para 15; INQ000184643_0069 para 363; *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
92 INQ000184643_0069 para 363
93 INQ000587365_0033 para 3.65

1.40. Contact tracing across the UK during the Covid-19 pandemic on the scale required involved establishing call centres and recruiting staff for manual contact tracing, as well as developing digital tools for digital contact tracing (see Chapter 3: Contact tracing). This took time.

1.41. As with testing, the UK was wholly unprepared in January 2020 to scale up contact tracing to the levels required by the Covid-19 pandemic.

Capability to implement effective self-isolation as at 1 January 2020

1.42. Self-isolation does not require specific infrastructure to implement it on a wide scale in the same way that testing requires the capacity to develop and process tests or contact tracing requires human or digital contact tracers. People can simply be requested to self-isolate if they meet specific criteria. The challenge is encouraging and enabling compliance.

1.43. Previous international epidemics indicated that financial concerns were a significant factor influencing people's adherence to self-isolation requirements. During the 2002 to 2003 SARS outbreak in Toronto, Canada, fear of loss of income was the most common reason for non-adherence to self-isolation measures among healthcare workers.[94] In Australia during the swine flu pandemic, a need to work was cited as a factor in breaking isolation rules.[95]

1.44. Professor James Rubin (Professor of Psychology and Emerging Health Risks at King's College London) told the Inquiry that the requirement for practical and financial support for those self-isolating was foreseeable before January 2020. In January 2020, he asked the Health Protection Research Unit at King's College London to produce systematic reviews of the literature on how people cope when isolating.[96] The reviews (published in February and March 2020) indicated that self-isolation can be distressing and that people sometimes struggle to adhere to the rules. The reviews identified financial and practical support as two ways to mitigate the negative impacts of self-isolation.[97] According to Professor Rubin, the reviews were widely cited in academia and circulated within Public Health England.[98] Although they were based entirely on evidence from 2019 or earlier, there is no indication that the evidence on which they were based led to any pre-pandemic plan for self-isolation.[99]

1.45. As with testing and contact tracing, there was no plan in place as at 1 January 2020 to implement effective, widespread self-isolation, as was required during the Covid-19 pandemic.

94 INQ000137934_0007
95 INQ000137934_0007
96 INQ000474964_0011 para 4.10
97 INQ000474964_0011 para 4.10
98 INQ000474964_0011 para 4.10
99 INQ000474964_0022 para 5.5

Lack of readiness to test, trace and isolate at scale

1.46. Years of public health emergencies and pandemic preparedness exercises in the lead-up to the Covid-19 pandemic should have meant that the UK government and devolved administrations were fully prepared to deploy widespread testing, tracing and isolation when Covid-19 struck in January 2020. However, as Professor Keith Godfrey (Professor of Epidemiology and Human Development at the University of Southampton) told the Inquiry, it was clear that "*effective systems were not in place for any of testing, tracing or isolation*" as at 1 January 2020.[100]

1.47. An effective Covid-19 test was developed by mid-January 2020 and infection rates were still low in January and much of February 2020.[101] January and February 2020 would have been the optimum time for the UK to implement a pre-prepared plan for a wide-scale test, trace and isolate system. Yet, despite a test being almost immediately available, there was no system of widespread testing, tracing or isolation for several months. Covid-19 was allowed to spread with deadly speed across the country, virtually unchecked.

100 INQ000587490_0011 para 28; see also INQ000587520_0032 para 96

101 INQ000383645_0002; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol 1, Chapter 1 (https://covid19.public-inquiry.uk/documents/module-2-full-report); Neil Ferguson 17 October 2023 134/7-20. See also the SAGE meeting on 10 September 2020, which noted that a review of 22 studies put the figure of asymptomatic cases at 28%, albeit with very wide confidence intervals ('SAGE 56 minutes: Coronavirus (COVID-19) response, 10 September 2020', Scientific Advisory Group for Emergencies, 23 October 2020, para 31 (https://www.gov.uk/government/publications/sage-56-minutes-coronavirus-covid-19-response-10-september-2020/sage-56-minutes-coronavirus-covid-19-response-10-september-2020; INQ000061564).

Chapter 2: Testing

Introduction

2.1. Testing plays a vital role in diagnosing and preventing the spread of infections. Identifying people who are infected enables treatment to be provided to them where appropriate and helps keep them from contacting others, thereby reducing transmission among the wider population. Testing can also identify people who are not infectious, allowing them to end self-isolation and to avoid its social and economic consequences.[1]

2.2. A highly accurate test for Covid-19 was developed by mid-January 2020. However, between January and March 2020, demand rapidly outstripped the supply of tests and the laboratory capacity to process them. This meant that community testing of people with Covid-19 symptoms was paused, and access to testing was subject to eligibility requirements.

2.3. Testing capacity increased during 2020, in large part due to the establishment of Lighthouse laboratories (discussed further below), but some prioritisation remained until rapid tests for use at home were developed. By April 2021, free lateral flow tests (which provided results within 30 minutes) were available for regular use by the UK public, including people without Covid-19 symptoms. The introduction of rapid, at-home testing significantly improved the UK's ability to identify infection and monitor the spread of the disease across the population.

2.4. This chapter examines the development of diagnostic tests and the decision-making of the UK government and devolved administrations about testing during the Covid-19 pandemic.

Principles of testing

2.5. Testing is primarily used to diagnose people who have symptoms of a disease (symptomatic testing). It helps healthcare professionals decide on an appropriate treatment. Testing also improves understanding of the disease and how it spreads.[2] This means that diseases can be monitored and controlled, allowing outbreaks and pandemics to be identified. In the UK, the public health agencies of the four nations of the UK are responsible for monitoring diseases: the UK Health Security Agency (prior to October 2021, Public Health England), Public Health Scotland, Public Health Wales and the Public Health Agency (Northern Ireland).[3] Public Health England

1 INQ000587347_0003-0004 paras 10-11

2 *COVID-19 Testing: A National Strategy*, Royal College of Pathologists, June 2020, p5 (https://www.rcpath.org/static/2e8d8771-f85a-408a-b5c8e68969cd21d5/5293a4bb-cd96-42ff-8de231d47e637aab/RCPath-COVID-19-testing-a-national-strategy.pdf; INQ000369638); INQ000349696_0003; INQ000475144_0007-0008 para 23; INQ000587365_0005 paras 2.1-2.2; INQ000587649_0006-0007 paras 17-18; INQ000587347_0003-0004 paras 10-11

3 *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020, p12 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380); INQ000549191; INQ000303959_0001-0002

was the designated UK body responsible for communication with the World Health Organization in the event of a disease spreading.[4]

2.6. Testing strategies are likely to change during a pandemic as knowledge of the disease develops, patterns of transmission evolve, and testing capacity increases.[5] They must take into account when people are most infectious, how long it takes for an infection to become detectable, and how long infection is likely to last.[6] They must also consider the availability of tests and the capacity of the systems needed to produce and process them.[7] Where sufficient capacity exists, testing people without symptoms in the community (asymptomatic community testing) can help reduce the spread of the disease.[8] Where resources are limited, testing may need to be prioritised for certain groups or high-risk settings.[9]

Test types

2.7. Viruses are pathogens made up of genetic material contained within a protective layer. This genetic material is either DNA (deoxyribonucleic acid) or RNA (ribonucleic acid).[10] When a virus infects a person, it enters the body's cells and uses them to make copies of itself.[11]

2.8. Tests check whether the genetic material of a virus (DNA or RNA) or another substance is present in a biological sample. Testing technologies vary in what they can detect, how they are used, how long they take to produce results, and in their cost and accuracy.[12] Tests developed for Covid-19 mainly used samples from the nose, throat or saliva. However, samples can also be taken from blood, urine, stool, cerebrospinal fluid or tissue.[13] Some tests require more specialist training and equipment to carry out, and to analyse results, than others.[14]

2.9. The polymerase chain reaction (PCR) test and a modified version of the PCR test, the reverse transcription polymerase chain reaction (RT-PCR) test, are well-established and highly accurate forms of molecular testing. They work by detecting the genetic

4 INQ000192266_0029 para 108
5 *Technical Report on the COVID-19 Pandemic in the UK*, 1 December 2022, pp193-205 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)
6 Iain Buchan 14 May 2025 12/5-9; 'The timing of COVID-19 transmission', L Feretti, A Ledda, C Wymant, L Zhao, V Ledda, L Aberler-Dörner et al, medRxiv (2020), 1-16, pp1-2 https://doi.org/10.1101/2020.09.04.20188516; INQ000574796); 'Are you infectious if you have a positive PCR test result for COVID-19?', T Jefferson, C Heneghan, E Spencer, J Brassey, Centre for Evidence-Based Medicine, 5 August 2020 (https://www.cebm.net/covid-19/infectious-positive-pcr-test-result-covid-19; INQ000268283_0001-0002)
7 INQ000439815_0003
8 INQ000422255_0002
9 INQ000395822_0001
10 INQ000587245_0003-0004 para 7
11 INQ000271559_0015
12 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, pp194-196 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)
13 *PCR Testing for SARS-CoV-2 in the UK During the COVID-19 Pandemic*, UK Health Security Agency, 27 April 2023, p23 (https://assets.publishing.service.gov.uk/media/64464e26529eda000c3b02c0/Testing_in_the_UK_during_the_SARS-1.pdf; INQ000504170); *Diagnostic Testing for SARS-Cov-2: Interim Guidance*, World Health Organization, 11 September 2020, p17 (https://iris.who.int/server/api/core/bitstreams/7caa3b48-f99b-4cc2-b0f3-a954da4060d7/content; INQ000478206)
14 INQ000587342_0170-0171

material of the virus that causes disease. Standard PCR tests detect DNA. However, Covid-19 is caused by a virus that uses RNA, so the modified version was required. The RT-PCR test includes an additional step that first converts RNA into DNA (known as 'reverse transcription') so that it can be detected.[15] Samples of genetic material are collected using nasal or throat swabs and are sent to a laboratory to be processed, and the results returned to the person tested.[16] This process takes time, which can be critical when quick action is needed to limit the spread of the disease.[17]

2.10. Other molecular tests use saliva samples rather than throat or nasal swabs. This includes loop-mediated isothermal amplification (LAMP) testing and its equivalent for RNA targets (known as reverse-transcription loop-mediated isothermal amplification or RT-LAMP testing).[18] For Covid-19, RT-LAMP tests can provide fast and accurate results, but they require new, large-scale machinery and additional staff training.[19]

2.11. Molecular testing is highly accurate because it works by detecting genetic material. Antigen testing (using lateral flow tests) detects specific proteins produced by the virus in liquid samples. Lateral flow tests are less accurate than molecular tests, but they are low-cost, do not need specialised equipment or processing, produce results quickly, and can be used at home and without the need to transport samples.[20]

2.12. Both molecular and antigen testing detect the virus itself, but antibody (serology) testing works by detecting the body's response to a virus. It is used to identify whether a person has previously been exposed to a pathogen rather than to diagnose a current infection.[21] It is carried out using blood samples and can be an important tool for research.[22]

2.13. Another important research tool is wastewater testing, which detects viral pathogens to monitor the spread of disease across populations, including at the community level.[23] This approach can be particularly valuable where individual testing rates are low, as it can help build understanding of how widely a disease is circulating.[24]

15 INQ000587344_0009-0010 paras 30-31; INQ000251906_0089 para 395; INQ000587347_0009, 0011 paras 35, 44; INQ000511020; 'PCR past, present and future', H Zhu, H Zhang, Y Xu, S Laššáková, M Korabečná and P Neužil, *BioTechniques* (2020), 69, 317-325 (https://www.tandfonline.com/doi/epdf/10.2144/btn-2020-0057; INQ000660153)
16 INQ000251906_0089 paras 395-396
17 'Put to the test: Use of rapid testing technologies for covid-19', A Crozier, S Rajan, I Buchan and M McKee, *British Medical Journal* (2021), 372, n208, p1 (https://doi.org/10.1136/bmj.n208; INQ000488611)
18 INQ000062435_0001
19 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, pp198-199 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)
20 INQ000587347_0030 para 140; INQ000587241_0010-0011 para 23
21 INQ000587347_0029-0030 para 137
22 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, p200 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)
23 INQ000251906_0163-0164 para 709
24 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, p186 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)

2.14. Other diagnostic methods include imaging scans (eg MRI scans, ultrasound scans or X-rays) and biopsies (where small tissue samples are taken). These methods were not suitable for detecting a respiratory virus such as Covid-19, but they may be relevant for identifying diseases in the future.

RT-PCR testing during Covid-19

2.15. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes the disease Covid-19, was confirmed as a new virus when the Chinese government shared its genetic sequence on 12 January 2020.[25] Although no diagnostic test was then available, existing testing methods used for other diseases could be adapted for Covid-19.[26]

2.16. Public Health England led the testing response in the early stages of the pandemic, working with its counterparts in the devolved administrations.[27] By 21 January 2020, before the World Health Organization declared Covid-19 to be a public health emergency of international concern, scientists at Public Health England had developed an accurate diagnostic test using RT-PCR technology.[28] The speed with which the test was produced put the UK at the forefront of Covid-19 diagnostic capability internationally. It became the "*gold standard*" for diagnosing Covid-19, with a sensitivity (correctly identifying infected people) and a specificity (correctly identifying those who were not infected) of more than 95%.[29] By the end of January 2020, daily testing capacity was about 300 to 400 tests per day.[30]

Determining the number of tests required (January to February 2020)

2.17. Modelling shared by Imperial College London with the UK government on 23 January 2020 estimated that the reproduction number (R) for Covid-19 (in this case R_0, the average number of people that one infected person would pass the virus to in a population with normal mixing behaviour and no prior immunity) was above 1 and likely between 2 and 3.[31] If accurate, this meant that, on average, each infected person would pass the virus on to two or three others.[32]

2.18. On 12 February 2020, NHS England applied the reasonable worst-case pandemic scenario developed for influenza to assess the potential impact of Covid-19.

25 INQ000587294_0023 para 74; 'Disease outbreak news: COVID-19 – China', World Health Organization, 12 January 2020 (https://www.who.int/emergencies/disease-outbreak-news/item/2020-DON233; INQ000183385_0001)
26 INQ000251906_0073 para 337
27 INQ000587292_0015 paras 46-47
28 INQ000269203_0046 para 6.45
29 INQ000587347_0009, 0011 paras 35, 44
30 INQ000587294_0029 para 99
31 Statistical models are tools for analysing complex data, identifying patterns, and informing evidence-based decision-making where direct measurement is not possible. Figures from modelling are estimates only, and different statistical models will produce different outcomes. These estimates are not based on direct observations. They are therefore limited by the underlying assumptions used in the models and are subject to uncertainty.
32 INQ000249526_0039 para 122

The model projected that about half the population in England would become infected, with a peak of new symptomatic cases on day 42 of the outbreak, when an estimated 1.1 million people would experience new symptoms.[33] Modelling may have its limitations, but this was, nevertheless, a daunting prospect.

2.19. By 16 February 2020, testing capacity was approximately 2,000 per day, with results returned within 24 hours.[34] Taking into account the modelling projections that suggested a large increase in people with symptoms, this meant that those responsible for decision-making were aware of the risk that testing capacity would be overtaken by demand.[35] Matt Hancock (Secretary of State for Health and Social Care from July 2018 to June 2021) told the Inquiry:

> "*While testing capacity at that stage exceeded demand given the limited number of suspected cases in the UK, it was clear that it would be quickly overwhelmed as transmission escalated.*"[36]

Decision-makers therefore turned their attention to increasing the availability of RT-PCR testing.

Initial limitations in rolling out RT-PCR testing (February 2020)

2.20. RT-PCR testing was first introduced in the UK, and the assay (test methodology) was published, in January 2020. Throughout January and February 2020, organisations outside government (including those in the private sector and academia) worked to develop their own RT-PCR tests.[37] This marked an important moment in the early response to the Covid-19 pandemic, demonstrating the strength of diagnostic expertise available across the UK.

2.21. Early in the pandemic, the capacity to process tests increased gradually. Although more than 10,000 tests had been conducted by the end of February 2020, the available daily testing capacity was not being fully utilised, indicating that there were barriers to expanding access to testing during February.[38]

Limited laboratory capacity

2.22. At the outset of the pandemic, the UK did not have sufficient testing capacity within publicly owned laboratories to meet the demand for Covid-19 testing. In an effort to increase capacity, Public Health England expanded its diagnostic capacity

33 INQ000087427_0005. A reasonable worst-case scenario is a tool used for planning purposes to illustrate the worst manifestation of a risk that can reasonably be expected potentially to occur. See *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
34 INQ000587294_0029-0031 paras 99, 105; INQ000527886
35 INQ000587294_0029-0030 para 99; see *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
36 INQ000587294_0029-0030 para 99
37 INQ000475007_0011 para 5.7
38 INQ000527893

in February 2020, from a single London-based laboratory to a network of 12 laboratories across the UK.[39] Despite this expansion, the UK government's approach to scaling up existing systems was not capable of meeting testing demands.

2.23. However, laboratory testing capacity did not only exist in publicly owned laboratories. Across the UK, diagnostic testing capacity was spread across a combination of public health institutions and private sector laboratories, some of which were working on behalf of the UK government and devolved administrations.[40]

2.24. Senior decision-makers in the UK government had limited knowledge of this diagnostic laboratory infrastructure and its scalability. Mr Hancock described the UK's laboratory network as "*a cottage industry of testing in little centres*" – he understood capacity to be either embedded in the NHS and not scalable or embedded in research labs and also not scalable.[41] Boris Johnson (Prime Minister from July 2019 to September 2022) told the Inquiry that he did not recall being made aware of the existing level of infrastructure capacity before the pandemic, but that "*the scales fell from* [his] *eyes*" during a trip to Public Health England's Colindale laboratory on 1 March 2020.[42]

2.25. As discussed in Chapter 1: The UK's readiness to implement a test, trace and isolate system, no pandemic preparedness exercise adequately assessed the UK's readiness for testing on a large scale. The Department of Health and Social Care should have developed a greater understanding of the condition and capabilities of the diagnostic testing network during appropriate pandemic response exercises.[43]

2.26. Limited awareness of the existing infrastructure meant that plans to increase testing capacity were not developed prior to the Covid-19 pandemic nor in its very early stages. Combined with the view held by senior decision-makers in the UK government that diagnostic testing could not be scaled up quickly, this resulted in lost time in February 2020. Professor Sir Christopher Whitty (Chief Medical Officer for England from October 2019) acknowledged that scaling up capacity "*was our great weakness in our response at the start of the pandemic*".[44]

Constraints on laboratory containment levels

2.27. On 13 February 2020, the Advisory Committee on Dangerous Pathogens (an expert committee of the Department of Health and Social Care that provides scientific advice on the risks of exposure to pathogens) provisionally classified Covid-19 as a 'Group 3' hazard under the Control of Substances Hazardous to Health Regulations

39 'PHE novel coronavirus diagnostic test rolled out across UK', Public Health England, 7 February 2020 (https://www.gov.uk/government/news/phe-novel-coronavirus-diagnostic-test-rolled-out-across-uk; INQ000582848)
40 INQ000575987_0031 para 96; INQ000587250_0050 paras 202-204; INQ000587301_0053 paras 120-121; INQ000475006_0054-0055 paras 175-179; INQ000589775_0023-0024 para 87
41 INQ000587294_0020-0021 para 65; Matt Hancock 22 May 2025 5/19-6/7
42 INQ000587378_0008-0010 paras 20, 24
43 INQ000212312_0024-0025 paras 99-100. See also *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report).
44 INQ000251645_0231 para 16.26

2002.[45] Group 3 classification required test processing to take place in Containment Level 3 laboratories – the second highest biological containment level. This meant that samples had to be handled by suitably trained staff in controlled environments subject to stringent safety measures. This limited the number of laboratories and the methods of transportation that could be used.[46]

2.28. Professor Dame Jenny Harries (Deputy Chief Medical Officer for England from July 2019 to March 2021, and Chief Executive of the UK Health Security Agency from April 2021 to May 2025) told the Inquiry that the Containment Level 3 designation acted as a "*brake on the expansion of testing*".[47] With laboratories subject to containment restrictions, capacity to process tests remained constrained, while demand continued to rise.

2.29. On 28 February 2020, Public Health England formally requested that, provided appropriate safety conditions were met, test processing could be carried out in laboratories operating at less restrictive containment levels (Containment Level 2+).[48] This request was supported by the Health and Safety Executive and approved by the Advisory Committee on Dangerous Pathogens on 1 March 2020, widening the range of facilities that could be used.[49] By that date, 11,750 people had been tested across the UK. Of these, 11,715 people had received negative results and 35 people had tested positive – 33 in England, 1 in Wales, 1 in Northern Ireland and none in Scotland.[50] The UK continued to have a much lower testing capacity than other economically comparable countries, including South Korea and Germany.[51]

2.30. Following the change in containment level requirements, daily NHS and Public Health England laboratory capacity increased substantially, rising from 2,336 tests per day on 2 March 2020 to 10,949 tests per day on 23 March.[52]

2.31. February 2020 presented an opportunity to prepare for the rapid expansion that modelling and international evidence suggested would be necessary. However, as set out in the Inquiry's combined Report relating to Modules 2, 2A, 2B and 2C, February was a lost month.[53] The UK entered March 2020 without a clear testing strategy.

45 INQ000587731_0007 para 25
46 INQ000587365_0030 para 3.52
47 INQ000587365_0030 para 3.53
48 INQ000587319_0025-0026 para 92; INQ000587347_0012 para 52
49 INQ000587319_0025-0026 para 92
50 INQ000527896_0006
51 INQ000566069_0020
52 INQ000223435_0013
53 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)

Pausing community testing (March 2020)

2.32. On 3 March 2020, the Department of Health and Social Care's *Coronavirus: Action Plan* set out the UK-wide approach to responding to the pandemic. It described a four-stage framework to contain the spread of the virus:

- 'contain' – preventing the spread of the disease for as long as reasonably possible;
- 'delay' – slowing the spread of the disease and reducing the peak impact;
- 'research' – gaining a better understanding of the virus to inform care; and
- 'mitigate' – providing the best possible care, maintaining essential services and minimising the wider impact on society and the economy.[54]

The plan outlined action already taken in the UK's response and action that may be taken in future, but the only reference to testing was that work was under way on the "*rapid development of specific tests*" for Covid-19.[55]

2.33. At the next two meetings of COBR (the UK government's national crisis management centre for responding to whole-system civil emergencies), on 9 March and 11 March 2020, testing was not explicitly discussed.[56]

2.34. The move from the 'contain' to the 'delay' stage was agreed at a COBR meeting on 12 March 2020 following advice about widespread community transmission from the Chief Medical Officers for the four nations and Professor Sir Patrick Vallance (later Lord Vallance of Balham), Government Chief Scientific Adviser from April 2018 to March 2023.[57] As part of the 'delay' stage, a seven-day self-isolation policy was to be introduced. Professor Whitty informed the meeting that, once this policy was in place, all testing of people in the community would stop. Only those who had symptoms would be advised to self-isolate.[58]

2.35. Professor Whitty told the Inquiry that limited testing capacity meant there was "*no obvious viable alternative*".[59] Professor Vallance added that there were not enough tests to test people coming into hospital and that it was a pragmatic decision to use the tests for those who were ill.[60]

54 *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK,* Department of Health and Social Care, 3 March 2020, p10, para 3.9 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)
55 *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020, p15, para 4.28 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)
56 INQ000056192; INQ000585492_0002, 0004; INQ000280628_0048-0049 para 92
57 INQ000255836_0037 para 154; INQ000056221; INQ000421704_0040 para 94; INQ000391237_0048-0049 para 196; INQ000339033_0070-0071 para 188; INQ000049539; INQ000587340_0005, 0033 paras 3.2, 9.60; INQ000587301_0075 para 182
58 INQ000056209; INQ000056221_0005, 0007-0008 paras 3, 12
59 INQ000587340_0014 para 9.6
60 Patrick Vallance 22 May 2025 180/10-17

2.36. Mr Johnson announced the move to the delay stage at a press conference on 12 March 2020.[61] Community testing was paused in England the following day, on 13 March.[62]

2.37. In Northern Ireland, community testing was paused on 12 March 2020. The level of transmission among the community was not known, but significant numbers of undiagnosed cases were suspected. Professor Sir Michael McBride (Chief Medical Officer for Northern Ireland from September 2006) told the Inquiry that testing capacity was insufficient to identify all cases, and so self-isolation and social distancing "*superseded*" community testing.[63]

2.38. In Scotland, community testing was paused on 13 March 2020, and this was announced to the public on 15 March.[64] Professor Sir Gregor Smith (Interim Chief Medical Officer for Scotland from April to December 2020 and Chief Medical Officer for Scotland from December 2020) told the Inquiry that "*insufficient testing capacity and infrastructure*" made community testing not feasible.[65]

2.39. In Wales, the pause in community testing was recommended on 13 March 2020 by Dr (later Sir) Frank Atherton, Chief Medical Officer for Wales from August 2016 to January 2025.[66] By 17 March, community testing had paused.[67] Vaughan Gething, Minister for Health and Social Services in the Welsh Government from May 2016 to May 2021, told the Inquiry that the decision ensured that "*testing capacity was focused where there was greatest need*".[68]

2.40. Although testing continued for those requiring hospital care across all four nations, the suspension of community testing meant that the Department of Health and Social Care, the Welsh Government, the Scottish Government and the Department of Health (Northern Ireland) were no longer able to monitor how the disease was spreading through the wider population. It was estimated that between 5,000 and 10,000 people had Covid-19, but, without community testing, it was not possible accurately to measure its prevalence.[69] Professor Alan McNally (Head of the School of Infection, Inflammation and Immunology at the University of Birmingham from August 2024 and former Director of the Institute of Microbiology and Infection at the University of Birmingham) described this as the UK "*trying to manage Covid blind with no information on cases, transmission, range of symptoms*".[70]

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61 'COVID-19: Government announces moving out of contain phase and into delay', Department of Health and Social Care, 12 March 2020 (https://www.gov.uk/government/news/covid-19-government-announces-moving-out-of-contain-phase-and-into-delay; INQ000052485); INQ000255836_0038 para 159

62 'SAGE 15 minutes: Coronavirus (COVID-19) response, 13 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020, para 33 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-13-march-2020; INQ000109142)

63 INQ000587301_0075-0077 paras 182-186

64 INQ000496466; 'COVID-19 testing update', Scottish Government, 15 March 2020 (https://www.gov.scot/news/covid-19-testing-update; INQ000571250)

65 INQ000576032_0085 para 312

66 INQ000267867_0012 para 50; INQ000147243_0001-0002

67 INQ000509416

68 INQ000575989_0023-0025 paras 104-107

69 INQ000056221_0005 para 1

70 INQ000587245_0005-0006 para 11

2.41. At the same time as community testing was paused in the UK, the importance of continuing to test was emphasised by the World Health Organization. Dr Tedros Adhanom Ghebreyesus, Director-General of the World Health Organization from July 2017, said the message to all countries was to "*test, test, test*".[71] He added:

> "*This is a controllable pandemic. Countries that decide to give up on fundamental public health measures may end up with a larger problem, and a heavier burden on the health system that requires more severe measures to control.*"[72]

2.42. Professor Whitty told the Inquiry that, although the UK was aware of this advice, "*the limited availability of tests*" meant that the UK could not follow it.[73]

2.43. The consequences of being unable to test suspected cases in the community were threefold: monitoring of community transmission became far more difficult; tracing the contacts of infected people, and therefore isolating them, became problematic (this is considered further in Chapter 3: Contact tracing); and the likelihood increased that more restrictive measures, such as lockdowns, would later be required.

2.44. The governments of the UK may not have been forced to pause community testing had they been better prepared to deliver diagnostic testing at scale (see Chapter 1: The UK's readiness to implement a test, trace and isolate system). In the future, the UK must be able to scale up testing capacity rapidly in order to avoid a recurrence of this situation in health emergencies.

Scaling up testing capacity (March to May 2020)

2.45. By mid-March 2020, Mr Hancock had transferred responsibility for testing in England from Public Health England to the Department of Health and Social Care, as a result of concerns about Public Health England's ability to expand testing capacity at the pace required.[74]

2.46. A meeting was held at 10 Downing Street on 17 March 2020 to consider how testing capacity could be "*urgently ramp*[ed] *up*".[75] Those attending included representatives from private sector organisations, the Welsh Government, the Scottish Government, the Department of Health (Northern Ireland), the Department of Health and Social Care, and Public Health England.[76] They discussed increasing NHS laboratory-based testing capacity used for testing patients and hospital staff from 5,000 to 25,000

71 'WHO Director-General's opening remarks at the media briefing on COVID-19 – 16 March 2020', World Health Organization, 16 March 2020 (https://www.who.int/news-room/speeches/item/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---16-march-2020; INQ000512530)
72 'WHO Director-General's opening remarks at the Mission briefing on COVID-19 – 12 March 2020', World Health Organization, 12 March 2020 (https://www.who.int/news-room/speeches/item/who-director-general-s-opening-remarks-at-the-mission-briefing-on-covid-19---12-march-2020; INQ000660302)
73 INQ000587340_0010 para 4.6
74 INQ000587294_0021 para 66
75 INQ000119570_0002
76 Matt Hancock 22 May 2025 8/13-16; INQ000119570

tests per day, as well as expanding capacity to test key workers and their families.[77] Although this marked the first UK-wide plan aimed at mass testing, it came too late.[78]

2.47. Private sector representatives at the meeting were asked to consider how their organisations could support the testing strategy. In the period that followed, they were repeatedly asked to make commitments beyond the capacity they had indicated was achievable.[79]

2.48. Testing capacity increased during March 2020 through a combination of expanded activity in NHS and Public Health England laboratories and collaboration with private sector providers. This enabled all four governments to begin widening access to testing – initially for clinical purposes – with the intention of extending testing further to healthcare and social care workers.[80]

The National Testing Programme

2.49. Although public health is a devolved (or, in Northern Ireland, 'transferred') matter, the Covid-19 pandemic required close cooperation between the UK government and devolved administrations.[81] This coordinated approach led to the creation of a National Testing Programme, announced in April 2020, to expand testing capacity across the UK and to secure testing technologies across the four nations.[82]

2.50. On 4 April 2020, the UK-wide *Coronavirus (Covid-19): Scaling Up Our Testing Programmes* was published. This was the first publicly available document that explained plans to expand testing capacity through five pillars:

- **Pillar 1** – scaling up RT-PCR testing for people with a medical need and, where possible, the most critical key workers – using both NHS and Public Health England laboratories;
- **Pillar 2** – mass RT-PCR testing for key workers in healthcare, social care and other sectors, including the establishment of new laboratories;
- **Pillar 3** – mass antibody testing to help understand levels of population immunity;
- **Pillar 4** – surveillance testing to improve understanding of the spread of Covid-19; and
- **Pillar 5** – the Diagnostics National Effort to build overall mass testing capacity.[83]

77 INQ000055915; INQ000587383_0012 para 19
78 INQ000587245_0018 para 34
79 INQ000587452_0011-0015 paras 41-49
80 INQ000273560_0014
81 INQ000587292_0022-0023 para 85
82 INQ000587365_0031 para 3.57; INQ000325522; INQ000106318
83 *Coronavirus COVID-19: Scaling Up Our Testing Programmes*, Department of Health and Social Care, 4 April 2020 (INQ000106325); INQ000587294_0043-0045, 0048-0049 paras 132, 144

2.51. The cooperation between the four governments was formalised in an agreement signed by the four health ministers in April 2021, which authorised the Department of Health and Social Care to procure and deliver tests on behalf of the four nations.[84]

2.52. Although it will not always be appropriate for testing decisions to be taken at a UK-wide level, during the Covid-19 pandemic this approach delivered clear benefits, particularly in relation to the procurement of tests.[85] To support close working during future public health emergencies, a formal agreement should be established at an early stage, setting out the roles and responsibilities of each government, to provide clarity and to support effective cooperation.

2.53. By the start of June 2020, each government announced its own approach to testing (including eligibility and allocation of available tests), tracing and isolation, while continuing to work together on the National Testing Programme:[86]

- The Northern Ireland Executive's Test, Trace and Protect scheme became fully operational on 18 May 2020. This was led by the Department of Health (Northern Ireland) and the Public Health Agency (Northern Ireland).[87]
- In England, NHS Test and Trace was established on 28 May 2020, taking over responsibility for testing in England from the Department of Health and Social Care.[88] Its establishment was followed by rapid and substantial expansion of testing capacity in England.[89]
- In Scotland, Test and Protect launched on 28 May 2020.[90] This was a partnership led by the Scottish Government and involved NHS Scotland health boards, Public Health Scotland and NHS Scotland.[91]
- In Wales, Test, Trace, Protect was implemented on 1 June 2020. The Welsh Government provided oversight, and Public Health Wales contributed technical expertise and experience.[92]

Daily testing targets

2.54. Mr Hancock announced a target of carrying out 100,000 tests per day in England by the end of April 2020.[93] He told the Inquiry that the purpose of setting this target

84 INQ000203653_0001; INQ000203654_0001; INQ000182594_0001
85 INQ000244088
86 INQ000182594_0005 paras 1.7.4-1.7.5
87 INQ000587301_0163 para 420
88 'Government launches NHS Test and Trace service', Department of Health and Social Care, 27 May 2020 (https://www.gov.uk/government/news/government-launches-nhs-test-and-trace-service; INQ000107094); 'New chair of coronavirus "test and trace" programme appointed', Department of Health and Social Care, 7 May 2020 (https://www.gov.uk/government/news/new-chair-of-coronavirus-test-and-trace-programme-appointed; INQ000107093); INQ000587322_0005, 0007-0008 paras 3.1, 4.3-4.5; INQ000587294_0021 para 66
89 INQ000587322_0005, 0007-0008 paras 3.1, 4.3-4.5
90 INQ000475006_0125
91 INQ000587297_0063 para 197
92 INQ000587297_0063 para 198; INQ000575983_0029 para 104
93 'Matt Hancock sets target of 100,000 coronavirus tests a day', *The Guardian*, 2 April 2020 (https://www.theguardian.com/world/2020/apr/02/matt-hancock-sets-target-of-100000-coronavirus-tests-a-day; INQ000474859_0001)

was "*to galvanise the system to grow radically*".[94] Oliver Munn (Director of Testing and Tracing Delivery in the Cabinet Office Covid-19 Taskforce from April 2020 to February 2022) explained that the figure would have been intended "*to challenge departments to aim high*".[95] Professor John Newton (Director of Health Improvement at Public Health England from October 2017 to October 2021) said it was based on high-level modelling rather than being a "*precisely calculated figure*".[96]

2.55. The devolved administrations adopted different approaches to testing targets. The Scottish Government set a target of 3,500 tests per day by the end of April 2020 and announced on 1 May 2020 that this target had been exceeded.[97] The Welsh Government set a target of 9,000 tests per day by the end of April but abandoned it on 20 April because of limitations in the supply of test kits.[98] The Department of Health (Northern Ireland) did not set a specific testing target.[99]

2.56. On 1 May 2020, the UK government announced that it had met the target of carrying out 100,000 tests per day.[100] That claim was subsequently challenged.[101] Sir Paul Nurse (Director and Chief Executive of the Francis Crick Institute from 2010 to 2025), for example, told the Inquiry that the UK government had stated that:

> "*100,000 had been reached when in fact over half of them or thereabouts was actually in the post … when that emerged it actually undermines the public confidence. That if a government can say they are meeting 100,000, when 50,000 of them are in the post, what else are they meant to believe?*"[102]

2.57. The testing target was also criticised for being arbitrary. NHS Providers described the focus on meeting the target as a "*red herring*", arguing that it did not provide the most meaningful or comprehensive measure of testing effectiveness.[103] Dr Duncan Robertson (Senior Lecturer in Management Sciences at Loughborough University, with expertise in simulation modelling) expressed concern that an arbitrary target risked becoming an end goal, rather than supporting the broader aim of expanding testing.[104] Professor Mark Woolhouse (Professor of Infectious Disease Epidemiology at the University of Edinburgh) described daily test counts as "*uninformative*", combining different types of tests and testing approaches.[105]

94 Matt Hancock 22 May 2025 71/10-12
95 Oliver Munn 27 May 2025 168/5-11
96 INQ000575987_0022-0023 paras 64-65
97 INQ000214575_0003 para 10; 'Testing expansion', Scottish Government, 1 May 2020 (https://www.gov.scot/news/testing-expansion; INQ000357884)
98 INQ000391237_0122-0123 para 469
99 INQ000587301_0281 para 709
100 INQ000565944_0002
101 'Statement on the reporting of results from Home-Swab-Test Kits', Royal Statistical Society, 4 May 2020 (https://rss.org.uk/RSS/media/File-library/Policy/RSS-statement-reporting-results-from-home-swab-test-Kits_final.pdf; INQ000114802); 'Hancock says UK hit 100,000 tests amid claims tally is artificially boosted', *The Guardian*, 1 May 2020 (https://www.theguardian.com/world/2020/may/01/ministers-accused-of-changing-covid-19-test-tally-to-hit-100000-goal; INQ000587070); 'Coronavirus: Target reached as UK tests pass 100,000 a day', BBC News, 1 May 2020 (https://www.bbc.co.uk/news/uk-52508836; INQ000608269)
102 Paul Nurse 15 May 2025 48/16-49/12
103 INQ000162249_0003
104 INQ000587690_0009-0010 paras 39-46
105 INQ000587355_0004 para 18

2.58. The target placed significant pressure on laboratory staff. Dido Harding, Baroness Harding of Winscombe (Executive Chair of NHS Test and Trace from May 2020 to May 2021), said that it left staff "*utterly shattered*".[106] Laboratory workers described sustained pressure on facilities that were already understaffed and under-resourced before the pandemic.[107]

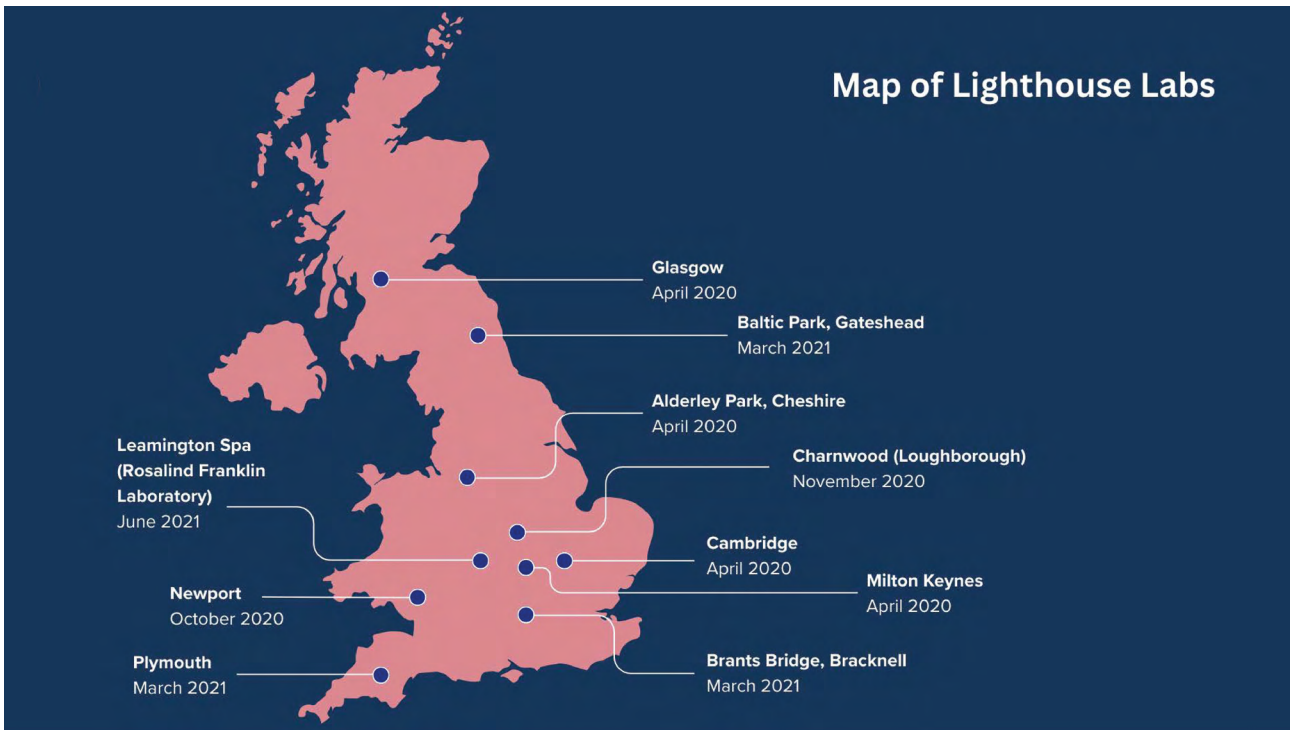
2.59. Nonetheless, the testing target contributed to an overall increase in testing capacity during March and April 2020. As capacity increased, the UK government was able to extend eligibility for testing. By 18 May 2020, anyone experiencing Covid-19 symptoms was eligible for testing across the UK.[108] At that point, testing capacity had reached about 120,000 tests per day, and the UK government had announced a further target of 200,000 daily tests, reaching that target on 30 May.[109] Both testing capacity and the number of tests carried out continued to rise throughout 2020, reaching capacity for more than 500,000 daily tests on 31 October 2020.[110]

Lighthouse laboratories

2.60. This increase in testing capacity was largely driven by the establishment of a new network of laboratories created by the UK government, known as the Lighthouse laboratories. These were set up to provide mass testing across the UK, and they aimed to process tests within 24 hours, using a single shared IT system and coordinated end-to-end processes.[111] Mr Hancock formally opened the first Lighthouse laboratory in Milton Keynes on 9 April 2020.[112] Between April 2020 and June 2021, a total of 10 Lighthouse laboratories were established, including one in Scotland and one in Wales (see Figure 3).[113] The Lighthouse laboratory network was used by England, Scotland and Wales. The Department of Health (Northern Ireland) relied primarily on the Randox laboratory in Northern Ireland to process tests.[114]

106 INQ000587322_0016 para 4.22
107 UK Covid-19 Inquiry, Module 7 Hearing, 12 May 2025 AM, module opening impact film, 13:50-16:04 (https://webarchive.nationalarchives.gov.uk/video/UC9eFdKVwD1ARs3j9BSoGndw/gUCHA2JPT8s)
108 INQ000587297_0022 para 60; 'Everyone in the United Kingdom with symptoms now eligible for coronavirus tests', Department of Health and Social Care, 18 May 2020 (https://www.gov.uk/government/news/everyone-in-the-united-kingdom-with-symptoms-now-eligible-for-coronavirus-tests; INQ000497453)
109 INQ000587347_0042 para 178; INQ000587322_0009 para 4.7(a); 'UK reaches 200,000 coronavirus testing capacity target a day early', Department of Health and Social Care, 31 May 2020 (https://www.gov.uk/government/news/uk-reaches-200000-coronavirus-testing-capacity-target-a-day-early; INQ000527952)
110 '500,000 daily testing capacity reached in ongoing drive to boost test and trace', Department of Health and Social Care, 2 November 2020 (https://www.gov.uk/government/news/500000-daily-testing-capacity-reached-in-ongoing-drive-to-boost-test-and-trace; INQ000223450)
111 INQ000587294_0051-0052 para 153; INQ000511300_0001-0003; INQ000323666_0007
112 INQ000587347_0025 para 110
113 INQ000587456
114 INQ000587647_0023-0025 paras 52, 57

Figure 3: Map of Lighthouse laboratories in the UK



Source: INQ000587456

Under-utilisation of academic and local capacity

2.61. The UK government's centralisation of testing was intended to simplify logistics and reduce duplication.[115] Although Lighthouse laboratories ultimately became an important and necessary part of the testing system, they took time to establish and equip.

2.62. In the meantime, universities, medical schools and existing private laboratories already had suitable machinery, equipment and expertise that could have been used to support early testing efforts. Professor Deenan Pillay (Emeritus Professor of Virology at University College London and Consultant Medical Virologist at University College London Hospital from about 2007 to October 2022) told the Inquiry that insufficient use was made of the many clinical virologists who were considering how testing could be scaled up and who had "*the capacity, insight and knowledge to develop plans through their own laboratories and institutions*".[116] Sir Paul Nurse described this as a "*fundamental strategic error*".[117]

2.63. While local, academic and existing private laboratories would not have been capable of providing the level of capacity required over the longer term, they could have

115 INQ000562617
116 INQ000475152_0006 paras 21, 23
117 'UK testing was "a shambles" so why hasn't the government learnt from its mistakes, asks Paul Nurse', interview with M-K Looi, *British Medical Journal* (2022), 376, o168 (https://www.bmj.com/content/376/bmj.o168; INQ000618232)

contributed to scaling up testing in the short term. Professor McNally and Dr Peter Cotgreave (Chief Executive of the Microbiology Society) told the Inquiry that local laboratories could have helped the system to increase capacity to meet testing demands.[118] Many university and industry laboratories can accommodate between 50 and 100 laboratory staff and have access to the necessary equipment to process tests.[119]

2.64. However, Professor McNally told the Inquiry that universities with existing laboratory capacity, equipment and expertise were "*plundered*" to resource the new Lighthouse laboratories rather than being used primarily as test-processing facilities.[120] In the short term, establishment of the Lighthouse network involved the redistribution of existing capacity rather than the creation of new capacity.

2.65. The Inquiry accepts that the ability to use existing capacity may have been constrained early in the pandemic by the high level of containment required by laboratories handling SARS-CoV-2 samples. However, testing capacity remained low after the containment level was changed at the end of February 2020, and existing laboratory capacity was still not used. The capacity to process tests could have been increased – while the Lighthouse laboratories were being established – by using academic and local laboratories.

2.66. Industry expertise was also not consistently recognised or used by the UK government and devolved administrations. One private sector organisation reported that, in April and May 2020, guidance was issued by Public Health England's Colindale laboratory that advised NHS hospitals not to use private commercial laboratories to diagnose Covid-19.[121] There was no clear alternative provider for many hospitals, so some did not follow the guidance.[122]

2.67. The Inquiry was told that the development of the Lighthouse laboratories could have been approached differently, and that better value for money might have been achieved through closer partnership with existing laboratories. Dr Colin Fink (co-founder of Micropathology Ltd, a diagnostic and research company) explained:

> "*We had 26 years of rapid diagnostic assay development and laboratory rapid diagnostic service experience and we had privately estimated that we could set up a high through put facility in the University Science Park for about 15% of the cost of the later published £1.1 billion which was finally spent on the Mega* [Lighthouse] *laboratory in Leamington.*"[123]

118 Alan McNally 15 May 2025 89/21-90/6; INQ000587449_0035-0036 para 87
119 INQ000587245_0012-0013 para 25
120 INQ000587245_0020 para 37
121 INQ000587545_0002 para 4; INQ000587449_0028 para 68; INQ000508619
122 INQ000587545_0001-0002 paras 2, 4-5; 'Independent SARS-CoV-2 staff testing protected academic and health-care institutions in northwest London', C Bailey, T Sanderson, H Townsley, J Goldman, JRM Black, G Young et al, *The Lancet* (2023), 402(10395), 21-24 (https://doi.org/10.1016/S0140-6736(23)00917-0; INQ000587090)
123 INQ000587545_0002-0003 para 6

2.68. A number of possible explanations were advanced for the limited use of existing laboratory networks. These included:

- a lack of awareness within the UK government of existing capacity;
- a lack of engagement with existing laboratories;
- the view that such capacity was "*not scalable*";
- concerns about data protection and the complexity of data-sharing;
- the challenge of maintaining consistent testing quality; and
- the logistical difficulties associated with coordinating multiple smaller providers.[124]

2.69. Professor McNally considered these concerns to be overstated. He told the Inquiry that staff processing diagnostic tests did not require access to patients' personal information and that the tests being used were validated using appropriate controls to monitor quality.[125]

2.70. Existing private and academic laboratories represented a valuable but under-utilised resource in the early months of the pandemic. Many were effectively 'ready to go', with established equipment, laboratory space and trained staff. There was typically a delay of one to two months between the decision to establish a Lighthouse laboratory and it becoming operational.[126] Making greater use of existing sites could therefore have provided a reasonable, and possibly more cost-effective, short-term means of increasing testing capacity while longer-term solutions were developed.

The UK's diagnostic testing infrastructure

2.71. Professor McNally told the Inquiry that having a stronger testing infrastructure in place "*could have allowed us to very quickly identify hotspots of transmission and get slightly ahead of the virus*".[127] As noted in the Inquiry's Module 1 Report, the UK government and devolved administrations should have invested in this infrastructure in advance of the Covid-19 pandemic.[128]

2.72. Internationally, the governments of Germany and South Korea provide funding to academic, clinical and commercial laboratories that are accredited as emergency testing laboratories.[129] In Germany, these laboratories register their trained staff and remain on standby to divert to diagnostic testing when required – overseen by the

124 INQ000587294_0020-0021 para 65; INQ000587245_0020-0021 paras 37-38; INQ000551844; INQ000587449_0020-0021 para 50
125 INQ000587245_0020-0021 para 38
126 INQ000235921_0001; INQ000144913_0003
127 Alan McNally 15 May 2025 72/21-23
128 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
129 INQ000587245_0026 para 50a; INQ000587449_0010 para 25

Federal Government.[130] Their ability to switch rapidly to infectious disease diagnostic testing is reviewed on an annual basis.[131]

2.73. Establishing a comparable laboratory funding model in the UK would require investment.[132] However, the use of such 'surge' laboratories and staffing could strengthen routine diagnostic capacity and provide a more resilient and flexible infrastructure for future pandemics. The UK government and devolved administrations should examine the feasibility of adopting a similar approach.

2.74. Since the pandemic, most Lighthouse laboratories have been decommissioned, and the testing infrastructure created for Covid-19 no longer exists.[133] Although it would not be appropriate to maintain full testing infrastructure outside of a pandemic, the UK government and devolved administrations must be prepared to scale up again. Professor McNally told the Inquiry that if another pandemic were to occur in the near future, "*in terms of delivering tests, we'll be exactly where we were at the start of 2020*".[134] In March 2026, the UK government committed to working with industry and academia to explore the use of surge laboratories and a reserve scientific workforce in England.[135] The Inquiry supports this commitment, which should also be considered by the devolved administrations.

2.75. The UK government and devolved administrations should prioritise developing a clearer understanding of the existing life sciences and diagnostic expertise available across the UK, alongside stronger working relationships with those sectors. It is vital that, in a future outbreak of a highly infectious disease, decision-makers have immediate access to accurate and comprehensive information about the infrastructure available to support testing.

2.76. The Inquiry recommends that the UK government and devolved administrations maintain up-to-date information on the UK's research and clinical laboratory capabilities, including details of laboratory accreditation, equipment and staffing expertise. This would support the ambition described by James Bethell, Lord Bethell (Parliamentary Under Secretary of State for Technology, Innovation and Life Sciences at the Department of Health and Social Care from March 2020 to September 2021, who had junior ministerial responsibility for the establishment of NHS Test and Trace), of having a comprehensive, pre-established testing strategy that could be implemented immediately at the outset of a pandemic.[136] Plans for the rapid repurposing of these laboratories during a pandemic should be developed and kept under regular review, alongside plans to increase testing capacity swiftly.

130 Alan McNally 15 May 2025 69/12-70/14
131 INQ000587449_0010 para 25
132 Alan McNally 15 May 2025 70/1-6
133 INQ000532752_0007; INQ000223459; INQ000064431; INQ000587403_0010; INQ000119437
134 Alan McNally 15 May 2025 103/17-19
135 *UK Government Approach to Implementing the Strategy (England Only)*, Department of Health and Social Care, 25 March 2026 (https://www.gov.uk/government/publications/pandemic-preparedness-strategy-building-our-capabilities/uk-government-approach-to-implementing-the-strategy-england-only; INQ000660258_0037)
136 James Bethell 22 May 2025 104/17-105/19

Recommendation 1: Monitor testing capabilities and prepare plans for rapid scale-up of test processing

The UK government, Scottish Government, Welsh Government and the Northern Ireland Executive should compile information about the testing capabilities of academic, clinical and research laboratories, including the types of diagnostics they process and the equipment they use.

This information should be updated regularly and shared between the four governments of the UK.

Each government should also develop a plan, as part of their wider planning for pandemics, to enable the test processing capacity in these laboratories to be increased quickly in a public health emergency.

Material shortages

2.77. Between March and April 2020, the number of tests processed was considerably lower than the laboratory capacity available, despite the increased capacity. It soon became clear that laboratory capacity alone was not the only factor limiting testing.

2.78. The UK-wide *Coronavirus (COVID-19): Scaling Up Our Testing Programmes* policy paper acknowledged that a range of other challenges affected testing output such as "*global shortage of materials needed to run the end-to-end testing process at full capacity*".[137] This included reagents – the substances used to trigger chemical reactions to detect the presence of a virus.

2.79. As discussed in the Inquiry's Module 5 Report, the production of healthcare equipment, including diagnostic tests, relies on a global supply chain involving raw-material suppliers, manufacturers and distributors cooperating and competing in the open market to meet the demands of end users. The pandemic placed great pressure on supply chains and created challenging market conditions. This made it difficult for the UK government and devolved administrations to secure and distribute essential materials.[138] These included supplies for testing, such as swabs, the single-use plastics required for laboratory analysis and reagents.[139]

2.80. The UK government and devolved administrations recognised the risk of supply constraints at an early stage. Professor (later Sir) Jonathan Van-Tam, Deputy Chief Medical Officer for England from October 2017 to March 2022, had noted in early January 2020 that it can take several weeks to distribute reagents internationally.[140]

137 *Coronavirus COVID-19: Scaling Up Our Testing Programmes*, Department of Health and Social Care, 6 April 2020 (https://www.gov.uk/government/publications/coronavirus-covid-19-scaling-up-testing-programmes/coronavirus-covid-19-scaling-up-our-testing-programmes; INQ000106460)
138 *Module 5: Procurement*, UK Covid-19 Inquiry, July 2026, Chapter 4 (https://covid19.public-inquiry.uk/documents/module-5-full-report)
139 INQ000251906_0094 para 416; INQ000324985; INQ000587856_0002 para 6
140 INQ000151292_0001

A Department of Health and Social Care presentation dated 9 February 2020 referred to joint working with the devolved administrations to "*improve the supply chain for reagents*".[141]

2.81. The UK did not produce sufficient volume of the necessary chemical reagents domestically. Plans to increase domestic manufacture were considered in March 2020.[142]

2.82. The issue of reagent supply was not one that the UK faced alone. Between 4 and 5 March 2020, the European Centre for Disease Prevention and Control (an agency of the European Union focusing on infectious diseases surveillance, response and preparedness) identified a number of key material shortages that could restrict testing efforts across Europe, which included shortages of RT-PCR reagents.[143]

2.83. By 19 March 2020, reagent supply was described as a "*limiting factor*" to the expansion of RT-PCR testing capacity by officials in NHS England.[144] The UK government started directing resources to the issue, with close working between Public Health England and NHS England, supported by procurement specialists from the Department of Health and Social Care and the Cabinet Office.[145]

2.84. On 2 April 2020, Mr Hancock publicly stated that the UK was "*tackling the shortage of reagents*".[146] By mid-April, a dedicated triage team and expert procurement group had been formed, and the Department of Health and Social Care reported that current reagent suppliers could meet demand sufficiently.[147] The UK's testing capacity continued to increase, but the reliance on international suppliers amid global competition meant the supply of reagents remained precarious.[148]

2.85. Reagent supply constraints were also compounded by reliance on 'closed' RT-PCR testing platforms. These platforms require reagents produced by the same manufacturer that supplies the machine to test the sample.[149] Although 'closed' platforms were considered to be more efficient, the UK's dependence on a small number of global manufacturers further limited supply options, particularly as none of those suppliers were manufacturing test kits or reagents in the UK at that time.[150] Efforts were later made to expand the use of 'open' platforms (testing machines that

141 INQ000106321
142 INQ000535892_0008; INQ000064828_0002 para 1.4; INQ000587304_0044 para 18.42; INQ000233793; INQ000497128
143 *Novel Coronavirus Disease 2019 (COVID-19) Pandemic: Increased Transmission in the EU/EEA and the UK – Sixth Update*, European Centre for Disease Prevention and Control, 12 March 2020, p15 (https://www.ecdc.europa.eu/sites/default/files/documents/RRA-sixth-update-Outbreak-of-novel-coronavirus-disease-2019-COVID-19.pdf; INQ000421752)
144 INQ000563030
145 INQ000563030; 'SAGE 18 minutes: Coronavirus (COVID-19) response, 23 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-23-march-2020; INQ000052717); INQ000048174
146 INQ000565903
147 INQ000088702_0007; INQ000562636_0007
148 INQ000521972_0019 para 3.37; INQ000497128; INQ000090086; INQ000064828_0002 para 1.4; INQ000562654_0010
149 *Coronavirus (COVID-19): Scaling Up our Testing Programmes*, Department of Health and Social Care, 6 April 2020 (https://www.gov.uk/government/publications/coronavirus-covid-19-scaling-up-testing-programmes/coronavirus-covid-19-scaling-up-our-testing-programmes; INQ000106460_0006-0007)
150 INQ000535889_0009, 0011; INQ000562617_0002; INQ000309991_0002; INQ000233793_0027

are able to use a wider range of reagents), including by utilising machines within the NHS and in academic and university laboratories.[151]

2.86. Better planning is needed. It should include measures to secure the supply of the materials required for laboratory testing alongside expanding laboratory processing capacity. The Inquiry has already recommended (see Recommendation 6 of the Inquiry's Module 5 Report) that emergency and international trade arrangements, together with domestic industry, should form part of the whole-system civil emergency strategy to support testing efforts and to ensure that testing capacity can be scaled up efficiently.[152] In March 2026, the UK government committed to build appropriate stockpiles for England of chemicals and equipment required for testing, to increase UK-based production of critical diagnostic components, and to put in place mitigations for supply chain risks.[153] The UK government and devolved administrations should also consider targeted investment to support increased domestic production of essential testing materials, including reagents. This should be considered alongside efforts to expand the use of 'open' testing platforms.

Prioritisation of RT-PCR tests

2.87. Prioritising access to RT-PCR testing was necessary in the early stages of the pandemic, because of limited testing capacity across the UK. The principal purpose of prioritisation was to identify the people who required urgent clinical care and to protect workforces in high-risk settings.

2.88. Once RT-PCR tests had been allocated to the four nations of the UK according to population share, each government retained discretion over how those tests were prioritised within its jurisdiction.[154] Weekly meetings between health ministers from the UK government and devolved administrations provided a forum to discuss testing policy and to align approaches, where appropriate. Robin Swann (Minister of Health for Northern Ireland from January 2020 to October 2022 and from February to May 2024) told the Inquiry:

> "*While I do not now remember the detail of all policy changes, timings and differences, I believe that, in general, across the course of the pandemic, eligibility and prioritisation of PCR and LFD* [lateral flow device] *testing at strategic, population level was generally consistent.*"[155]

151 INQ000547872; INQ000088699; INQ000233793_0027
152 *Module 5: Procurement*, UK Covid-19 Inquiry, July 2026, Recommendation 6 (https://covid19.public-inquiry.uk/documents/module-5-full-report)
153 *UK Government Approach to Implementing the Strategy (England Only)*, Department of Health and Social Care, 25 March 2026 (https://www.gov.uk/government/publications/pandemic-preparedness-strategy-building-our-capabilities/uk-government-approach-to-implementing-the-strategy-england-only; INQ000660258_0036-0037)
154 INQ000467330_0006-0007 para 10; INQ000182594_0005 para 1.7.4
155 INQ000587297_0048 para 146

2.89. In England, the Department of Health and Social Care, Public Health England and NHS England agreed initial testing priorities on 11 March 2020. This resulted in a focus on testing symptomatic hospital patients, with priorities as follows:

- **Group 1** – patients requiring critical care for the management of pneumonia, acute respiratory distress syndrome or influenza-like illness, or an alternative indication of severe illness;
- **Group 2** – all other patients requiring hospital admission for pneumonia, acute respiratory distress syndrome or influenza-like illness; and
- **Group 3** – clusters of disease in residential or care settings, such as long-term care facilities, prisons and boarding schools.[156]

The devolved administrations adopted similar approaches to prioritisation during this period. Testing for symptomatic hospital patients was rolled out across all four nations between 13 and 19 March 2020.[157]

2.90. Prioritisation was later extended beyond clinical care. By the end of March 2020, symptomatic healthcare workers across the UK were entitled to access testing.[158] Symptomatic residents of residential care (care home) settings became eligible for testing across the UK between March and May 2020.[159] Testing for symptomatic social care workers was also introduced across the UK during the same period.[160]

2.91. While the UK government and devolved administrations broadly followed similar approaches to prioritisation, the timing of policy implementation differed. For example, in Northern Ireland, routine symptomatic testing of all care home residents and staff followed an initial focus on settings experiencing potential outbreaks or clusters of infection.[161] Offers of asymptomatic testing for care home

156 INQ000587347_0017 para 74; 'Priority of SARS-CoV-2 (COVID-19) testing during periods of significant demand', Public Health England, 12 March 2020 (INQ000527898)
157 INQ000587342_0133-0135 paras 416-417; INQ000587347_0017 paras 74-76; 'Coronavirus testing: How PHE, together with NHS England and DHSC, will prioritise testing for those most at risk of severe illness from the virus', Public Health England, 14 March 2020 (https://www.gov.uk/government/news/coronavirus-testing; INQ000562606); INQ000575989_0025 para 108; INQ000587301_0063 para 148
158 INQ000069540_0001; INQ000252513_0001-0002; INQ000587342_0025 para 72; 'COVID-19 testing to get key workers back to work', Scottish Government, 24 March 2020 (https://www.gov.scot/news/covid-19-testing-to-get-key-workers-back-to-work; INQ000496422); INQ000587301_0118 para 299
159 *COVID-19: Our Action Plan for Adult Social Care*, Department of Health and Social Care, 15 April 2020, p9, para 1.27 (https://assets.publishing.service.gov.uk/media/5e973154d3bf7f412a086070/covid-19-adult-social-care-action-plan.pdf; INQ000299661); INQ000338307_0001-0005; INQ000587347_0017 paras 74(c), 76; INQ000227087; 'Coronavirus (COVID-19) update: Health Secretary's statement 21 April 2020', Scottish Government, 21 April 2020 (https://www.gov.scot/publications/coronavirus-covid-19-update-health-secretarys-update-tuesday-21-april-2020; INQ000292544_0003); INQ000606530_0053-0054 para 207; 'Evolution and impact of COVID-19 outbreaks in care homes: Population analysis in 189 care homes in one geographic region', JK Burton, G Bayne, C Evans, F Garbe, D Gorman, N Honhold et al, medRxiv (2020), 1-22, p19 (https://doi.org/10.1101/2020.07.09.20149583; INQ000323969); INQ000587301_0122-0123 paras 312.i, 312.vi
160 INQ000069540_0001; *COVID-19: Our Action Plan for Adult Social Care*, Department of Health and Social Care, 15 April 2020, p14, para 2.8 (https://assets.publishing.service.gov.uk/media/5e973154d3bf7f412a086070/covid-19-adult-social-care-action-plan.pdf; INQ000299661); INQ000338307_0005-0007; INQ000587702_0030 para 97c; 'Coronavirus (COVID-19) update: Health Secretary's statement 21 April 2020', Scottish Government, 21 April 2020 (https://www.gov.scot/publications/coronavirus-covid-19-update-health-secretarys-update-tuesday-21-april-2020; INQ000292544_0003); INQ000606530_0053-0054 para 207; INQ000587301_0122-0123 paras 312.ii, 312.vi; INQ000613603_0142-0143, 0152 paras 494-495, 520
161 INQ000587297_0038-0039 para 116

residents and social care workers varied, reflecting differences in the resources available in each nation.[162]

2.92. Given the constraints on RT-PCR testing in the early stages of the pandemic, some form of prioritisation was necessary. The Inquiry notes the UK government's commitment to develop a prioritisation model for testing in the early stages of a pandemic.[163] Any such model – and any equivalent models developed by the devolved administrations – must be adaptable to different types of virus and to varying levels of testing capacity.

2.93. However, decisions to prioritise groups for testing are of limited value if, in practice, those groups cannot access the tests. During the Covid-19 pandemic, concerns were raised about instances in which healthcare and social care workers were unable to obtain testing, despite being designated as priority groups.[164] In future pandemics, the UK government and devolved administrations must ensure that prioritisation decisions are supported by sufficient and accessible testing capacity.

Antibody testing during Covid-19

2.94. An antibody is a component of the immune system that is produced after infection or vaccination with a pathogen, and it identifies – and helps to neutralise – future infections from the same pathogen. Testing for antibodies involves analysing blood samples to identify people who have previously been exposed to a pathogen, rather than diagnosing an active infection.[165] It can be used to build an understanding of how many people have been infected with a virus. The presence of antibodies does not, however, mean that a person is immune from being infected again or from transmitting the virus to others. Scientific assessment is required to determine how long antibodies persist and the extent to which they provide protection.[166]

2.95. The UK government and devolved administrations considered the role of antibody testing for Covid-19 as early as February 2020.[167] Antibody testing was discussed at a mass testing meeting at 10 Downing Street on 17 March 2020 and was included as

162 *Module 6: Care sector*, UK Covid-19 Inquiry, October 2026, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-6-full-report)
163 *UK Government Approach to Implementing the Strategy (England Only)*, Department of Health and Social Care, 25 March 2026 (https://www.gov.uk/government/publications/pandemic-preparedness-strategy-building-our-capabilities/uk-government-approach-to-implementing-the-strategy-england-only; INQ000660258_0018-0019, 0036-0038)
164 'Only 25% of eligible care home staff tested', National Care Forum, 21 April 2020 (https://www.nationalcareforum.org.uk/ncf-press-releases/only-25-of-eligible-care-home-staff-tested; INQ000572366); INQ000525617_0004-0005; INQ000587520_0051-0052, 0059-0062 paras 160, 185; INQ000475185_0012 paras 51-53; *Decision Making in a Crisis: First Responses to the Coronavirus Pandemic*, Institute for Government, August 2020, p22 (https://www.instituteforgovernment.org.uk/sites/default/files/publications/decision-making-crisis.pdf; INQ000215634)
165 INQ000587347_0029-0030 para 137; INQ000547873_0002; *Coronavirus COVID-19: Scaling Up Our Testing Programmes*, Department of Health and Social Care, 6 April 2020 (https://www.gov.uk/government/publications/coronavirus-covid-19-scaling-up-testing-programmes/coronavirus-covid-19-scaling-up-our-testing-programmes; INQ000106460_0011)
166 INQ000089673; *Wales' Test, Trace, Protect Strategy: COVID-19 Guidance for Childcare Settings*, Welsh Government, July 2020 (https://www.gov.wales/sites/default/files/publications/2020-07/test-trace-protect-guidance-for-childcare-settings-30-july-2020.pdf; INQ000081320); INQ000349537_0011-0012
167 INQ000106318

Pillar 3 in the UK-wide *Coronavirus (COVID-19): Scaling Up Our Testing Programmes*, published in April 2020.[168]

2.96. At this early stage of the pandemic, antibody testing was viewed by the UK government and devolved administrations as a means of enabling people who had previously been infected to "*get back to work and normal life*".[169] However, at that time, there was no definitive scientific evidence to establish whether a positive antibody test meant that a person was protected from reinfection.[170]

2.97. Scientific understanding of the role and significance of Covid-19 antibodies began to develop in April 2020. On 9 April, the Scientific Advisory Group for Emergencies (SAGE) advised that it was not yet known whether antibodies provided protection against infection or transmission and noted that international data showed low levels of antibodies in the population.[171] By 21 April, SAGE reported that a clear understanding of the duration of any protection provided by antibodies would not be available for some time.[172]

2.98. On 21 May 2020, the UK government purchased 10 million antibody tests and announced that testing would be offered to NHS and care staff in England. It stated that a positive antibody result did not indicate immunity from Covid-19, and that those tested would still need to follow public health measures, including social distancing measures and the use of personal protective equipment (PPE). The stated purpose of the programme was to support scientific understanding of the prevalence of the virus.[173] The devolved administrations received antibody tests through the UK government's procurement arrangements and made their own decisions about their use. The Welsh Government offered antibody testing to NHS staff, care staff and teachers from June 2020, whereas the Scottish Government and the Department of Health (Northern Ireland) limited the use of antibody tests primarily to research purposes.[174] By late August 2021, a UK-wide antibody surveillance programme allowed all adults to opt in to antibody testing when booking an RT-PCR test. Of those who volunteered, up to 8,000 per day would receive two antibody tests to complete at home.[175]

168 INQ000055915; INQ000592582; *Coronavirus COVID-19: Scaling Up Our Testing Programmes*, Department of Health and Social Care, 6 April 2020 (https://www.gov.uk/government/publications/coronavirus-covid-19-scaling-up-testing-programmes/coronavirus-covid-19-scaling-up-our-testing-programmes; INQ000106460_0011-0012)
169 INQ000562618; INQ000592582; INQ000384780_0001 para 2
170 '"Immunity passports" in the context of COVID-19: Scientific brief', World Health Organization, 24 April 2020 (https://www.who.int/news-room/commentaries/detail/immunity-passports-in-the-context-of-covid-19; INQ000496763)
171 'SAGE 24 minutes: Coronavirus (COVID-19) response, 9 April 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-9-april-2020; INQ000120504_0003)
172 'SAGE 27 minutes: Coronavirus (COVID-19) response, 21 April 2020', Scientific Advisory Group for Emergencies, 21 April 2020, para 27 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-21-april-2020/sage-27-minutes-coronavirus-covid-19-response-21-april-2020; INQ000061535)
173 'Government to offer antibody tests to health and social care staff and patients in England', Department of Health and Social Care, 21 May 2020 (https://www.gov.uk/government/news/government-to-offer-antibody-tests-to-health-and-social-care-staff-and-patients-in-england; INQ000237519_0003)
174 INQ000581497; INQ000241112; INQ000250429
175 'Government launches UK-wide antibody surveillance programme', Department of Health and Social Care and Sajid Javid, 22 August 2021 (https://www.gov.uk/government/news/government-launches-uk-wide-antibody-surveillance-programme; INQ000592900)

2.99. The Inquiry understands the decision of the UK government to purchase antibody tests at a time when scientific understanding of Covid-19 antibodies was still developing. It wished to procure a range of testing technologies in order to assess their effectiveness and to support research into the disease, and it expressed caution about their likely effectiveness.[176]

2.100. However, even if a large proportion of the population had been tested and found to have antibodies, it would not have been possible to ease measures such as social distancing or to reduce tracing or self-isolation requirements, without scientific evidence that antibodies provided protective immunity.[177] Antibody testing was a useful research tool to develop understanding of Covid-19, but testing methods capable of identifying active infection offered greater potential to support the safe easing of restrictions.

Antigen testing during Covid-19

2.101. Antigen testing is not a new public health concept. By way of example, pregnancy tests are a form of lateral flow test.[178] In the context of Covid-19, lateral flow tests involved nasal and throat swabs, similar to the RT-PCR test, but they produced results at home within minutes.[179]

2.102. Although lateral flow tests are less sensitive than RT-PCR tests, they are effective at identifying most people who are infectious. Their relative speed and low cost mean that they can be deployed more readily for repeated mass testing.[180] Mass testing enables rapid identification of infections, including among people without symptoms.[181] It can also allow earlier initiation of contact tracing and self-isolation which, taken together, may reduce the spread of a virus.[182]

Development and rollout of lateral flow testing

2.103. Antigen testing was considered an "*urgent need*" at the 17 March 2020 meeting at 10 Downing Street, about testing.[183] In August 2020, Public Health England established an evaluation programme for lateral flow devices.[184] Most of the products assessed were found to be non-viable. The first lateral flow test passed validation

176 *Coronavirus COVID-19: Scaling Up Our Testing Programmes*, Department of Health and Social Care, 6 April 2020 (https://www.gov.uk/government/publications/coronavirus-covid-19-scaling-up-testing-programmes/coronavirus-covid-19-scaling-up-our-testing-programmes; INQ000106460_0011-0012); 'Government to offer antibody tests to health and social care staff and patients in England', Department of Health and Social Care, 21 May 2020 (https://www.gov.uk/government/news/government-to-offer-antibody-tests-to-health-and-social-care-staff-and-patients-in-england; INQ000237519_0003)
177 INQ000575986_0027 para 72; INQ000527928
178 INQ000587347_0030 para 140
179 INQ000587301_0080 para 194; INQ000587365_0010 para 2.11
180 INQ000587347_0047 para 203; INQ000587241_0010-0011 para 23; INQ000587365_0010 para 2.12
181 INQ000585869_0001; INQ000585981_0002 para 2
182 'The impact of population-wide, rapid antigen test based screening in reducing SARS-CoV-2 infection prevalence in Slovakia', M Pavelka, K Van-Zandvoort, S Abbott, K Sherratt, M Majdan, CMMID COVID-19 Working Group et al, *Science* (2021), 372(6542), pp1-3 (https://doi.org/10.1126/science.abf9648; INQ000660516); INQ000585869_0001; INQ000198958_0002
183 INQ000527910; INQ000527908
184 INQ000587365_0063-0064 para 4.107

in September 2020.[185] Following direction from Mr Johnson in October 2020, the Department of Health and Social Care bought lateral flow tests from three suppliers whose products had successfully completed validation.[186] In a public statement on 16 October 2020, Mr Johnson announced that millions of the lateral flow tests had been purchased. He stated that these tests would be trialled and distributed across the UK over the following weeks.[187]

Operation Moonshot

2.104. At about this time, the UK government was also considering a proposal to eradicate or substantially reduce the prevalence of the virus through mass population testing. The proposal involved testing the entire population over a one- to two-week period, requiring those who tested positive to self-isolate, and allowing those who tested negative to resume normal activities without restrictions. This became known as 'Operation Moonshot'. It was distinct from the broader test, trace and isolate system and was intended to reduce the need for lockdowns.[188] The concept had been under consideration by the UK government since the summer of 2020, and it was launched by the Department of Health and Social Care in September 2020.[189]

2.105. Baroness Harding identified two significant challenges with Operation Moonshot. The first, as she told the Inquiry, was that the success of the proposal depended on extremely high levels of public participation and compliance.[190] Even relatively small levels of non-participation could enable continued transmission of the virus.[191] Lord Bethell also expressed reservations about the possibility of eradicating the virus through this approach, particularly given the high levels of prevalence of the virus at the time the proposal was being considered.[192]

2.106. The second difficulty with the Moonshot programme was the sheer scale of testing it required.[193] Delivering the volume of tests envisaged would have required a substantial expansion in testing sites and associated infrastructure.[194] Baroness Harding told the Inquiry that she was "*deeply sceptical that it was practically possible*".[195] This assessment was shared by Professor Van-Tam, who described the proposal as "*practically unworkable*".[196]

185 INQ000223449_0010-0011
186 INQ000223449_0010-0011; INQ000587347_0048 paras 205-206
187 'Prime Minister's statement on coronavirus (COVID-19): 16 October 2020', Prime Minister's Office and Boris Johnson, 16 October 2020 (https://www.gov.uk/government/speeches/prime-ministers-statement-on-coronavirus-covid-19-16-october-2020; INQ000086826_0004)
188 INQ000587365_0044-0045 para 4.30; INQ000587378_0015-0018 para 42; James Bethell 22 May 2025 146/4-147/3; INQ000587326; 'Operation Moonshot: What do the leaked documents say?', E Mahase, *British Medical Journal* (2020), 370:m3558 (https://doi.org/10.1136/bmj.m3558; INQ000510821)
189 'Prime Minister's statement on coronavirus (COVID-19): 9 September 2020', Prime Minister's Office and Boris Johnson, 9 September 2020 (https://www.gov.uk/government/speeches/pm-press-conference-statement-9-september-2020; INQ000086845_0006); INQ000565791_0013-0014 paras 37-42; INQ000129445
190 INQ000587322_0022-0023 para 5.15
191 Dido Harding 28 May 2025 59/19-60/4
192 James Bethell 22 May 2025 146/4-147/3
193 INQ000587322_0022-0023 para 5.15
194 Dido Harding 28 May 2025 59/1-60/6
195 Dido Harding 28 May 2025 59/19-20
196 INQ000587542_0020 para 7.7

2.107. The Moonshot programme was influenced, in part, by plans for a similar mass-testing initiative undertaken in Slovakia.[197] In October to November 2020, the Slovakian government tested approximately 97% of its population aged between 10 and 65 over a two-day period, identifying about 38,000 new cases.[198] In November 2020, there was a reduction in infection rates in Slovakia, but there was a subsequent increase in the number of people becoming ill and requiring hospital care in December 2020. This led to the imposition of a lockdown and the abandonment of further mass testing.[199] Given that the UK's population is more than 10 times larger than Slovakia's population of 5.4 million, it is likely that the scale and cost of delivering a comparable programme in the UK would be far greater.

2.108. As doubts about the value and practicality of the Moonshot programme grew, the UK government shifted its focus towards more targeted community testing. Lateral flow tests that had been procured for the Moonshot programme were repurposed for this plan.[200] On 9 November 2020, Mr Johnson announced that lateral flow tests would be used for asymptomatic community testing among people living in selected English local authorities with a high prevalence of Covid-19.[201] Baroness Harding told the Inquiry that she and her team were relieved by this change in direction, as focus on the Moonshot programme "*undoubtedly*" delayed the development of alternative testing strategies by NHS Test and Trace during October and November 2020.[202]

Testing pilots

2.109. Research played an important role in demonstrating the potential effectiveness of community-based lateral flow testing to the UK government and devolved administrations.

2.110. The most notable early trial of lateral flow tests was the Liverpool mass testing pilot, which began on 6 November 2020 and focused on testing people without symptoms.[203] It represented an early step towards the use of mass testing in the UK. It achieved voluntary participation from approximately one-quarter of Liverpool's population within one month.[204] It increased the identification of people infected with Covid-19 by about a fifth, including people who were likely to be infectious but who did not have symptoms, enabling them to self-isolate promptly.[205] There was also a reduction in the number of people in Liverpool requiring hospital care for severe Covid-19.[206] Although the pilot exposed limitations (including the significant proportions of the population that did not participate and the lower-than-expected sensitivity of lateral flow tests), it also demonstrated the value of collaborating with

197 Martin McKee 13 May 2025 107/3-110/2; James Bethell 22 May 2025 146/45-147/3; INQ000587322_0022 para 5.13
198 INQ000546327_0001, 0004
199 INQ000072154
200 INQ000587322_0023 para 5.17
201 INQ000587347_0049 para 211; INQ000587365_0047 para 4.38; INQ000515727_0016-0017 para 34
202 INQ000587322_0023 para 5.17
203 INQ000587365_0066 para 4.114; INQ000587241_0005, 0007-0009 paras 13, 18-20; Iain Buchan 14 May 2025 2/12-3/5, 10/12-14
204 INQ000587241_0008 para 19
205 Iain Buchan 14 May 2025 19/18-20/2; INQ000587241_0007-0009 paras 18, 20
206 INQ000587241_0008-0009 para 20

local networks and engaging communities directly.[207] These important practical lessons informed the continued rollout of lateral flow testing across the UK.

2.111. The devolved administrations also implemented pilot exercises for lateral flow testing. Trials began in Wales and Scotland in November 2020 and in Northern Ireland in December 2020.[208] As with RT-PCR testing, lateral flow tests were procured centrally by the UK government and allocated to the four nations on the basis of population share.[209] The devolved administrations retained discretion to opt out of procurement arrangements, to request additional procurements by the UK government, and to determine how to use their supplies of tests.[210]

Expansion of community testing

2.112. As transmission of the virus increased during the second wave of the pandemic, the UK government published its *COVID-19 Winter Plan* on 23 November 2020. The plan formally launched the community testing programme.[211] This programme aimed to deliver mass testing in local authority areas with high levels of Covid-19 transmission.[212] It was subsequently expanded to cover all local authorities in England, following the announcement of lockdown restrictions on 4 January 2021.[213] Expansions of community testing using lateral flow tests also took place in Scotland from 18 January and in Wales and Northern Ireland from March 2021.[214]

2.113. The *COVID-19 Winter Plan* also set out an expansion in asymptomatic testing. This included the introduction of rapid testing for patient-facing healthcare staff, social care staff and care home residents and visitors.[215] By January 2021, lateral flow testing was available to patient-facing staff across all healthcare systems in the UK.[216] Testing for social care staff and care home visitors became available across all

207 INQ000251645_0195 paras 10.7-10.8; 'Liverpool COVID-19 community testing pilot: Interim evaluation report summary', Department of Health and Social Care, 14 January 2021 (https://www.gov.uk/government/publications/liverpool-covid-19-community-testing-pilot-interim-evaluation-report-summary/liverpool-covid-19-community-testing-pilot-interim-evaluation-report-summary; INQ000562688)
208 INQ000575989_0059-0060 paras 204-206; INQ000587342_0105 para 313; INQ000587301_0108 para 272
209 INQ000111487_0009 paras 39-40; INQ000136875_0001; INQ000503801_0004 para 11
210 INQ000410867_0033 para 95; INQ000503801_0007-0008 paras 33-34
211 *COVID-19 Winter Plan*, HM Government, November 2020, p9, para 5 (https://assets.publishing.service.gov.uk/media/5fbbc6848fa8f559e32b4cab/COVID-19_Winter_Plan.pdf; INQ000137262)
212 *COVID-19 Winter Plan*, HM Government, November 2020, p21, para 44 (https://assets.publishing.service.gov.uk/media/5fbbc6848fa8f559e32b4cab/COVID-19_Winter_Plan.pdf; INQ000137262)
213 'Asymptomatic testing to be rolled out across the country starting this week', Department of Health and Social Care, 10 January 2021 (https://www.gov.uk/government/news/asymptomatic-testing-to-be-rolled-out-across-the-country-starting-this-week; INQ000086661); 'Prime Minister announces national lockdown', Prime Minister's Office and Boris Johnson, 4 January 2021 (https://www.gov.uk/government/news/prime-minister-announces-national-lockdown; INQ000065415)
214 INQ000587342_0125 para 382; *COVID-19 Community Testing Framework*, Welsh Government, 28 January 2021 (INQ000513997_0010); INQ000587301_0110 paras 277-278; INQ000587297_0028-0029 para 83; 'Workplace covid testing for key sector employers', Department of Health (Northern Ireland), 10 March 2021 (https://www.health-ni.gov.uk/news/workplace-covid-testing-key-sector-employers; INQ000276617)
215 *COVID-19 Winter Plan*, HM Government, November 2020, p9, para 5 (https://assets.publishing.service.gov.uk/media/5fbbc6848fa8f559e32b4cab/COVID-19_Winter_Plan.pdf; INQ000137262)
216 INQ000485652_0143 para 537; INQ000485721_0126 para 316; INQ000421784_0236 para 408; INQ000485979_0084 para 312

four nations between December 2020 and March 2021.[217] The impact of rapid testing on these sectors is considered in the Inquiry's Module 3 and Module 6 reports.[218]

2.114. Asymptomatic testing was later extended to the education sector, following pilot exercises in late 2020. Regular testing of school staff and pupils began to be implemented in Wales and England in January 2021, in Scotland in February 2021, and in Northern Ireland in March 2021.[219] In England, modelling estimated that regular testing in secondary schools prevented between 5,000 and 8,000 infections among pupils during a five-week evaluation period, between March and April 2021.[220] The Inquiry is examining the use of rapid testing in schools during this period in Module 8: Children and young people.

2.115. The successful expansion of asymptomatic lateral flow testing across the four nations during late 2020 and the spring of 2021 increased the identification of people with Covid-19. In the absence of this testing, many infected people would have remained undetected, increasing transmission and the risks for those who were clinically vulnerable or working in high-risk settings. Strategies that combined testing in specific sectors with targeted testing in areas with high transmission made effective use of the growing availability of lateral flow tests.

2.116. As the Covid-19 pandemic continued into 2021, lateral flow testing was applied in a number of additional contexts:

- The universal testing offer enabled anyone in the population (including people without symptoms) to access free lateral flow tests. This was rolled out across England, Wales, Scotland and Northern Ireland in April 2021.[221]

217 INQ000575989_0062, 0065 paras 210, 220; *Adult Social Care Rapid Testing Fund: Guidance*, Department of Health and Social Care, 1 July 2022 (https://www.gov.uk/government/publications/adult-social-care-rapid-testing-fund/adult-social-care-rapid-testing-fund-guidance; INQ000576744_0001-0002); INQ000587347_0052-0053 para 228; INQ000587342_0049; 'Testing expansion in adult social care settings – overview of approach and links to supporting materials', Scottish Government, no date (https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2021/01/coronavirus-covid-19-adult-care-home-testing-guidance-for-visiting-professionals/documents/guidance/adult-social-care-testing-overview-25-january-2021/adult-social-care-testing-overview-25-january-2021/govscot%3Adocument/Pandemic%2BResponse%2B-%2BAdult%2BSocial%2BCare%2Btesting%2Boverview%2BEXTERNAL%2Bversion.pdf; INQ000581883); INQ000581154_0002-0003; INQ000615082_0075 para 231

218 *Module 3: The impact of the Covid-19 pandemic on the healthcare systems of the United Kingdom*, UK Covid-19 Inquiry, March 2026, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-3-full-report); *Module 6: Care sector*, UK Covid-19 Inquiry, October 2026, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-6-full-report)

219 INQ000587365_0050, 0068 paras 4.53, 4.117; *Mass Asymptomatic Testing for COVID-19 in Schools, Colleges and Higher Education Institutions: Findings of 2 Large Scale Asymptomatic Testing Interventions in Winter of 2020 and Spring of 2021*, UK Health Security Agency, January 2024, p13 (https://assets.publishing.service.gov.uk/media/657c5af695bf65000d719093/HEI-and-schools-report.pdf; INQ000496282); INQ000587559_0061 para 5.18; 'Written statement: Covid-19 testing of staff and pupils', Welsh Government, 14 December 2020 (https://www.gov.wales/written-statement-covid-19-testing-staff-and-pupils; INQ000660305); INQ000146054_0082-0083 paras 18.7.7, 18.8.1; INQ000582793_0001-0002; INQ000567491; *Cases of COVID-19 Among Pupil Contacts of Cases in School: Findings from the 2020-21 School Year in Scotland*, Public Health Scotland, 1 September 2021, p23 (https://publichealthscotland.scot/media/8911/cases-of-covid-19-among-pupil-contacts-of-cases-in-school-sep21-english.pdf; INQ000202562)

220 *Mass Asymptomatic Testing for COVID-19 in Schools, Colleges and Higher Education Institutions: Findings of 2 Large Scale Asymptomatic Testing Interventions in Winter of 2020 and Spring of 2021*, UK Health Security Agency, January 2024, p19 (https://assets.publishing.service.gov.uk/media/657c5af695bf65000d719093/HEI-and-schools-report.pdf; INQ000496282); INQ000587365_0068 para 4.117

221 INQ000587347_0058-0059 para 260; INQ000587301_0112 para 282iv; 'Regular rapid testing for everyone', Scottish Government, 25 April 2021 (https://www.gov.scot/news/regular-rapid-testing-for-everyone; INQ000571260); 'People in Wales who cannot work from home encouraged to use lateral flow self-tests', Welsh Government, 14 April 2021, (https://www.gov.wales/people-wales-who-cannot-work-home-encouraged-use-lateral-flow-self-tests; INQ000660304); INQ000587349_0072 para 253

- Workplace testing programmes were introduced in all four nations, covering both public and private sector employers.[222]
- Pilot events in England and Wales explored the safe return of large-scale events using pre-event lateral flow testing.[223] Similar testing arrangements were also used for some events in Scotland and Northern Ireland.[224]
- Testing requirements were introduced for people arriving at the UK border, which are considered further in Chapter 5: Border control measures.

2.117. Over time, lateral flow testing was also used across the four nations to enable people who tested negative to shorten their period of self-isolation.[225]

2.118. In the spring of 2022, the UK government and devolved administrations began transitioning from an emergency pandemic response to 'living with' Covid-19.[226] As part of this transition, between March and April 2022, free lateral flow testing for people without symptoms ended across all four nations. In England and Scotland, lateral flow testing for those with symptoms ended at the same time.[227] Wales and Northern Ireland retained access to free symptomatic testing for a longer period, until July and August 2022 respectively, in response to rising numbers of

222 INQ000587347_0058-0059 para 260; 'Workplace testing expanded', Scottish Government, 5 March 2021 (https://www.gov.scot/news/workplace-testing-expanded; INQ000571259); 'Workplace testing rolled out to boost recovery', Scottish Government, 11 August 2021 (https://www.gov.scot/news/workplace-testing-rolled-out-to-boost-recovery; INQ000571261); 'Written statement: COVID-19 workplace testing', Welsh Government, 24 February 2021 (https://www.gov.wales/written-statement-covid-19-workplace-testing; INQ000516426); INQ000587297_0028-0029 para 83

223 'Notice: Information on the Events Research Programme', Department for Business and Trade, Department for Digital, Culture, Media and Sport, Department of Health and Social Care, and Department for Business, Energy and Industrial Strategy, 26 November 2021 (https://www.gov.uk/government/publications/information-on-the-events-research-programme/information-on-the-events-research-programme; INQ000182243); *Events Research Programme: Phase I findings,* Department for Digital, Culture, Media and Sport, 1 July 2021 (https://www.gov.uk/government/publications/events-research-programme-phase-i-findings/events-research-programme-phase-i-findings; INQ000370314_0030); INQ000182590_0002

224 'TRNSMT fans must show proof of negative Covid test', BBC News, 12 August 2021 (https://www.bbc.co.uk/news/uk-scotland-glasgow-west-58187779; INQ000660281); 'COP26: First Minister's speech – 29 October 2021', Scottish Government, 29 October 2021 (https://www.gov.scot/publications/first-ministers-speech-before-start-cop26-1; INQ000660280); 'Belsonic and Custom House Square concerts ask for proof of Covid status', BBC News, 26 July 2021 (https://www.bbc.co.uk/news/uk-northern-ireland-57974083; INQ000660279)

225 'Self-isolation for COVID-19 cases reduced from 10 to 7 days following negative LFD tests', UK Health Security Agency, 22 December 2021 (https://www.gov.uk/government/news/self-isolation-for-covid-19-cases-reduced-from-10-to-7-days-following-negative-lfd-tests; INQ000520743); 'Self-isolation period reduced', Welsh Government, 25 January 2022 (https://www.gov.wales/self-isolation-period-reduced; INQ000513955); 'Self-Isolation and testing changes', Scottish Government, 5 January 2022 (https://www.gov.scot/news/self-isolation-and-testing-changes; INQ000571375); 'Statement from the Executive: COVID-19 Omicron update', The Executive Office, 30 December 2021 (https://www.executiveoffice-ni.gov.uk/news/statement-executive-covid-19-omicron-update; INQ000357321)

226 *COVID-19 Response: Living with COVID-19*, HM Government, 21 February 2022, pp11-14 (https://assets.publishing.service.gov.uk/media/621400ede90e0710b73fd459/COVID-19_Response_-_Living_with_COVID-19.pdf; INQ000086652); 'Living safely with Covid', Scottish Government, 22 February 2022 (https://www.gov.scot/news/living-safely-with-covid; INQ000131003); *Together for a Safer Future: Wales' Long-Term Covid-19 Transition from Pandemic to Endemic*, Welsh Government, March 2022, p5 (https://www.gov.wales/sites/default/files/publications/2022-05/wales-long-term-covid-19-transition-from-pandemic-to-endemic.pdf; INQ000066072); 'Minister Swann announces easing of Covid regulations', Department of Health (Northern Ireland), 14 February 2022 (https://www.health-ni.gov.uk/news/minister-swann-announces-easing-covid-regulations; INQ000357330)

227 'Government sets out next steps for living with COVID', Department of Health and Social Care, 29 March 2022 (https://www.gov.uk/government/news/government-sets-out-next-steps-for-living-with-covid; INQ000543910); 'Changes to testing and care homes as we all learn to live safely with coronavirus', Welsh Government, 28 March 2022 (https://www.gov.wales/changes-testing-and-care-homes-we-all-learn-live-safely-coronavirus; INQ000660278); 'Update on COVID regulations', Scottish Government, 15 March 2022 (https://www.gov.scot/news/update-on-covid-regulations; INQ000131013); *Test and Protect Transition Plan*, Scottish Government, March 2022, p9 (https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2022/03/test-protect-transition-plan/documents/test-protect-transition-plan/test-protect-transition-plan/govscot%3Adocument/test-protect-transition-plan.pdf; INQ000235186)

people with Covid-19 over the summer.[228] After this time, although targeted groups remained eligible for free lateral flow tests, access for most people shifted to the private market.[229]

Limitations to the rollout of lateral flow tests

Route to market

2.119. While the introduction of lateral flow tests represented a significant turning point for the UK's testing capability and eventually allowed for asymptomatic community testing, their development and rollout were subject to important limitations. One significant limitation was the substantial delay before lateral flow tests were available at scale. Widespread use was not achieved until almost 10 months after the first people with Covid-19 were identified in the UK.

2.120. Prior to the summer of 2020, no lateral flow test kits met the required standards for use in the UK. To support the development of viable test kits, the Medicines and Healthcare products Regulatory Agency (the UK's medicines regulator) produced 'Target Product Profiles' of tests, which summarised key features and anticipated performance standards.[230] These profiles were published on 15 June 2020, approximately three months before equivalent test profiles were issued by the World Health Organization. This earlier publication likely supported manufacturers in aligning test development with UK regulatory requirements.[231]

2.121. Once manufacturers had developed a test kit, it was required to undergo validation against pre-determined standards in order to comply with The Medical Devices Regulations 2002 and to be placed on the UK market.[232] In addition to regulatory approval, test kits were required to pass further evaluation by Public Health England.[233] This evaluation programme assessed whether test kits met the required standards for specificity (the accurate identification of people who were not infected) and sensitivity (the accurate identification of people who were infected).[234]

228 'Availability of Covid-19 lateral flow testing is extended', Department of Health (Northern Ireland), 1 July 2022 (https://www.health-ni.gov.uk/news/availability-covid-19-lateral-flow-testing-extended; INQ000383288_0002); 'Wales extends COVID-19 testing throughout July', Welsh Government, 24 June 2022 (https://www.gov.wales/wales-extends-covid-19-testing-throughout-july; INQ000513966); 'Changes to Covid-19 testing in Northern Ireland', Department of Health (Northern Ireland), 19 August 2022 (https://www.health-ni.gov.uk/news/changes-covid-19-testing-northern-ireland; INQ000383302)
229 INQ000587365_0021-0022 para 3.22; 'Government sets out next steps for living with COVID', Department of Health and Social Care, 29 March 2022 (https://www.gov.uk/government/news/government-sets-out-next-steps-for-living-with-covid; INQ000543910); 'Changes to Covid-19 testing in Northern Ireland', Department of Health (Northern Ireland), 19 August 2022 (https://www.health-ni.gov.uk/news/changes-covid-19-testing-northern-ireland; INQ000383302); INQ000231330; INQ000325680
230 INQ000587249_0031-0032 paras 103-107
231 *Target Product Profiles for Priority Diagnostics to Support Response to the COVID-19 Pandemic V.1.0*, World Health Organization, 28 September 2020, pp4-6 (https://cdn.who.int/media/docs/default-source/blue-print/who-rd-blueprint-diagnostics-tpp-final-v1-0-28-09-jc-ppc-final-cmp92616a80172344e4be0edf315b582021.pdf; INQ000283518)
232 INQ000587249_0028 para 90
233 INQ000251906_0103-0104 para 456; INQ000587249_0029 para 91
234 INQ000251906_0103-0104 para 456

2.122. All lateral flow tests procured by the UK government were subject to this evaluation programme.[235] Although a large number of potential suppliers were identified, most did not have products that met the required performance standards.[236] By July 2021, 34 lateral flow tests had successfully passed all phases of validation, from a pool of more than 500 products reviewed by the Department of Health and Social Care.[237] The evaluation protocol and the process through which lateral flow tests were validated are considered further below.

2.123. Following successful validation, manufacturers were required to comply with the regulatory requirements set by the Medicines and Healthcare products Regulatory Agency.[238] While regulatory standards for Covid-19 testing kits were not reduced, the agency adopted a flexible and pragmatic approach to support a timely response to the pandemic.[239] This included permitting components of sample collection kits – such as swabs and test containers, which would ordinarily require separate conformity assessments – to be assessed and approved as a single unit.[240]

2.124. In addition, where sample collection kits met the necessary criteria but had not yet received formal assurance marking, they could be authorised for use under 'exceptional use authorisations'.[241] These provided temporary permission to place devices on the UK market in the "*interests of protection of public health*".[242] Manufacturers operating under such authorisations were required to report any adverse incidents to the Medicines and Healthcare products Regulatory Agency on a monthly basis.[243]

2.125. Once lateral flow tests had been authorised for use in the UK, the Department of Health and Social Care and NHS Test and Trace were responsible for recommending purchasing decisions.[244] In total, more than 2.7 billion lateral flow tests were procured for use across the UK during the course of the pandemic.[245]

2.126. The Medicines and Healthcare products Regulatory Agency played an important role in enabling the timely approval of diagnostic testing technologies during the pandemic. Its flexible approach enabled diagnostic tools to be approved at pace to support the pandemic response. Although the rollout of lateral flow tests took many months, the UK's experience broadly reflected the pace at which such technologies were introduced worldwide.[246]

235 INQ000518354_0027-0028 para 4.21
236 INQ000223449_0010
237 INQ000223449_0002 para 2
238 INQ000518354_0028 para 4.23
239 INQ000587249_0032 para 108
240 INQ000587249_0007-0008 paras 25-26
241 INQ000587249_0033 para 111
242 INQ000587249_0032-0033 paras 108-109
243 INQ000587249_0033 para 110
244 INQ000587365_0064 para 4.108
245 INQ000574833_0013 para 56
246 *Rapid Evaluation of Lateral Flow Viral Antigen Detection Devices (LFDs) for Mass Community Testing: Preliminary Report*, Joint Public Health England (Porton Down) and University of Oxford SARS-CoV-2 test development and validation cell, 8 November 2020 (INQ000396180_0001)

2.127. Nonetheless, the first lateral flow test manufactured in the UK was not deployed until September 2021.[247] This highlighted limitations in the UK's domestic diagnostic manufacturing capability. The UK government and devolved administrations must invest in the diagnostics sector to enable the early development of rapid at-home tests in a future pandemic. Earlier development and rollout of lateral flow tests would reduce reliance on tests requiring laboratory processing capacity.[248] This would help alleviate the challenges in laboratory capacity experienced during the Covid-19 pandemic. Professor Vallance told the Inquiry: "[T]*he ability to make an effective lateral flow type test should be a priority for any future pandemic of this type*."[249]

2.128. Professor Christopher Molloy (Chief Executive Officer from November 2016 to January 2026 of Medicines Discovery Catapult, a service that was instrumental in the scaling up of testing) emphasised that it was:

> "*an important part of our preparation to make sure that we have lateral flow ready to go, and it is vital that we maintain a UK manufacturing capacity, and a supply chain of invention and innovation through our diagnostic companies, to make sure that we have sovereign capability for, if this happens again, we can turn lateral flow on more quickly*".[250]

2.129. The 100 Days Mission, co-chaired at its establishment in 2021 by Professor Vallance, identified the need for rapid at-home tests to be available within 100 days of the emergence of any new epidemic or pandemic.[251] During the Covid-19 pandemic, however, the first rapid diagnostic tests that did not require laboratory processing did not receive World Health Organization approval until 236 days had elapsed.[252] The Inquiry endorses the objective of accelerating the development of rapid diagnostic tests through investment in diagnostic research and improved coordination between government, the diagnostics industry and research institutions.[253]

2.130. The Inquiry also welcomes the UK Health Security Agency's announcement in December 2024 of a 'Diagnostic Accelerator', a specialist team intended to enhance the UK's preparedness to diagnose and test for new and emerging infectious disease threats.[254] In March 2026, the UK government further committed to strengthening

247 'First UK manufactured rapid tests deployed across England', Department of Health and Social Care, 22 September 2021 (https://www.gov.uk/government/news/first-uk-manufactured-rapid-tests-deployed-across-england; INQ000660158)
248 Jenny Harries 28 May 2025 162/17-163/25; INQ000587344_0072 para 303
249 INQ000575986_0007 para 15
250 Christopher Molloy 19 May 2025 84/19-85/1
251 INQ000474482_0052 para 140; INQ000575986_0028-0029 para 76; *100 Days Mission to Respond to Future Pandemic Threats*, Cabinet Office, 12 June 2021 (https://www.gov.uk/government/publications/100-days-mission-to-respond-to-future-pandemic-threat; INQ000064653)
252 INQ000575986_0029 para 77
253 *100 Days Mission: Implementation Report*, International Pandemic Preparedness Secretariat, 31 January 2025, p8 (https://d7npznmd5zvwd.cloudfront.net/prod/uploads/2025/01/IPPS_100-Days-Mission_2024_WEB_V2-1.pdf; INQ000575831)
254 INQ000587365_0106-0107 para 7.24; 'Diagnostic Accelerator launched to speed up pandemic preparedness', UK Health Security Agency, 12 December 2024 (https://www.gov.uk/government/news/diagnostic-accelerator-launched-to-speed-up-pandemic-preparedness; INQ000655991)

this resource with the intention of improving the speed and effectiveness of diagnostic technology development for a wider range of pathogens.[255]

Quality of lateral flow test kits

2.131. While speed was a critical factor in developing testing devices, it was also essential that such tests met sufficiently high quality and safety standards.

2.132. The first lateral flow test to pass validation, Innova, was reported to have a specificity of 99.68% and an overall sensitivity of 76.8%.[256] However, subsequent assessments indicated that sensitivity was lower when tests were self-administered. A Public Health England evaluation estimated the sensitivity of Innova at 57.5%, while an independent study estimated it to be as low as 47.9%. This meant that about half of infected people might have been given false reassurance by a negative result.[257] This variability in sensitivity was not reflected in official press communications, which tended to emphasise the high sensitivity of lateral flow tests.[258]

2.133. The deployment of lateral flow testing generated debate within the scientific community. Some scientists expressed concerns that lower sensitivity could result in infected people failing to self-isolate, particularly if they relied on negative test results. Others welcomed the use of lateral flow tests as a valuable tool for widespread screening, enabling the identification of infectious people who might otherwise not have been tested, rather than limiting testing to people with symptoms.[259]

2.134. International approaches to lateral flow testing reflected similar uncertainties. In some countries, the greater accuracy of RT-PCR tests and uncertainty about the performance of antigen tests led to their more cautious adoption. New Zealand relied primarily on RT-PCR testing for much of 2021, introducing antigen testing in November 2021, in response to emerging Covid-19 variants.[260]

2.135. Lateral flow testing was also deployed in the USA, but concerns later emerged about the clinical performance of certain tests. On 10 June 2021, the Food and Drug Administration advised people in the USA to stop using the Innova lateral flow test

255 *UK Government Approach to Implementing the Strategy (England Only)*, Department of Health and Social Care, 25 March 2026 (https://www.gov.uk/government/publications/pandemic-preparedness-strategy-building-our-capabilities/uk-government-approach-to-implementing-the-strategy-england-only; INQ000660258_0057)
256 INQ000223449_0011; INQ000475156_0019 para 4.2.2
257 INQ000475156_0024-0025 paras 4.2.17-4.2.19; *Rapid Evaluation of Lateral Flow Viral Antigen Detection Devices (LFDs) for Mass Community Testing: Preliminary Report*, Joint Public Health England (Porton Down) and University of Oxford SARS-CoV-2 test development and validation cell, 8 November 2020 (INQ000396180_0005); INQ000575985_0017-0018 para 3.4.10
258 INQ000475156_0024 para 4.2.18; 'Oxford University and PHE confirm high-sensitivity of lateral flow tests', Department of Health and Social Care, 11 November 2020 (https://www.gov.uk/government/news/oxford-university-and-phe-confirm-high-sensitivity-of-lateral-flow-tests; INQ000498352)
259 'Expert reaction to government announcement that asymptomatic testing is to be rolled out across country starting next week', Science Media Centre, 10 January 2021 (https://www.sciencemediacentre.org/expert-reaction-to-government-announcement-that-asymptomatic-testing-is-to-be-rolled-out-across-country-starting-next-week; INQ000474909)
260 *Whītiki Aotearoa: Further Lessons from COVID-19 to Prepare Aotearoa New Zealand for a Future Pandemic,* New Zealand Royal Commission Covid-19 Lessons Learned, February 2026, pp200-201 (https://www.covid19lessons.royalcommission.nz/assets/Uploads/Royal-Commission-Covid-19-Lessons-Learned-Ph2-Main-Report.pdf; INQ000660277)

due to a range of concerns, one of which was test performance.[261] In response, the Department of Health and Social Care conducted an investigation into whether these concerns applied to use of the Innova test in the UK. It concluded that they did not, because the tests were used for different purposes in the UK, and because additional mitigations were in place that had not been adopted in the USA. The Department of Health and Social Care also relied on real-world use, which suggested that the tests were performing better than early sensitivity estimates.[262] Although the department was the legal manufacturer of the Innova lateral flow test in the UK, the Medicines and Healthcare products Regulatory Agency accepted the findings of the investigation and did not require tests to be recalled.[263]

2.136. Developing a clearer and more standardised process for the evaluation of diagnostic tests would help to ensure that appropriate tests are deployed quickly and to avoid these concerns. Such a process should be developed in consultation with scientists, regulators and manufacturers, and it should be made publicly available to support transparency.[264]

2.137. Ongoing (or 'post-market') surveillance is also necessary to monitor the performance of rapid testing tests, particularly where emerging disease variants may affect test reliability. During the Covid-19 pandemic, the Medicines and Healthcare products Regulatory Agency relied on its Yellow Card scheme, through which individuals could report adverse incidents, faults or concerns relating to testing kits.[265] While useful, the Yellow Card scheme relies primarily on members of the public voluntarily submitting reports.

2.138. The post-market surveillance regime has been strengthened since the Covid-19 pandemic, through legislative reform, providing the Medicines and Healthcare products Regulatory Agency with enhanced powers to monitor medical devices and impose more stringent obligations on manufacturers. The Medical Devices (Post-market Surveillance Requirements) (Amendment) (Great Britain) Regulations 2024 came into force on 16 June 2025.[266] The Inquiry endorses these reforms: in a future public health emergency, they should contribute to improved device quality and to the availability of diagnostic tests that are both rapid and reliable.

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261 *Incident and Corrective and Preventative Action Report MHRA Incident Reference: 2021/006/011/601/004*, NHS Test and Trace, June 2021, p1 (https://khub.net/documents/135939561/978066242/Incident-CAPA-report-to-MHRA.pdf/4a9ce557-3814-074d-d31a-5b865b032e6f; INQ000496261); INQ000575023

262 *Incident and Corrective and Preventative Action Report MHRA Incident Reference: 2021/006/011/601/004*, NHS Test and Trace, June 2021, p1 (https://khub.net/documents/135939561/978066242/Incident-CAPA-report-to-MHRA.pdf/4a9ce557-3814-074d-d31a-5b865b032e6f; INQ000496261)

263 INQ000587249_0018-0019, 0021-0022 paras 55, 66-68; INQ000531145_0002

264 INQ000575985_0039-0041 paras 7.1.1-7.1.7; INQ000475156_0033-0034 para 6.5.1

265 INQ000587249_0038-0039 paras 130-132; see *Module 4: Vaccines and therapeutics*, UK Covid-19 Inquiry, April 2026, Chapter 7 (https://covid19.public-inquiry.uk/reports/module-4-full-report)

266 The Medical Devices (Post-market Surveillance Requirements) (Amendment) (Great Britain) Regulations 2024 (https://www.legislation.gov.uk/ukdsi/2024/9780348264593); see also INQ000587249_0055-0056 paras 197-199; *Medical Devices: Post-Market Surveillance Requirements*, Medicines and Healthcare products Regulatory Agency, 5 September 2025 (https://www.gov.uk/government/publications/medical-devices-post-market-surveillance-requirements; INQ000660307)

Trust in lateral flow testing

2.139. Public and media scepticism about the accuracy of lateral flow testing emerged as the tests became more widely used.[267] Throughout 2021, levels of confidence in the accuracy of RT-PCR tests remained higher than confidence in lateral flow tests.[268] For example, some contributors to the Inquiry's listening exercise, Every Story Matters, were not convinced that a lateral flow test done at home, which provided a result so quickly, could be accurate when they were accustomed to accurate medical testing being done in a clinical setting.[269]

2.140. Differences in the underlying technology of diagnostic tests contributed to public confusion. Different diagnostic tests could produce different results. This is because RT-PCR tests detect fragments of RNA before, during and after the infectious period; lateral flow tests primarily detect infection during the infectious period. As a result, RT-PCR tests could return positive results for days – and sometimes weeks – after a person was no longer infectious.[270]

2.141. The distinctions were well understood by the scientific community and by officials, who advised decision-makers about the relative strengths and limitations of different testing technologies.[271] In recognition of this, the UK government and devolved administrations introduced confirmatory RT-PCR testing following a positive lateral flow test result to mitigate the limitations.[272]

2.142. Nonetheless, evidence indicates that some members of the public remained confused about the difference between the two diagnostic tests and the role of asymptomatic testing. As a result, some public behaviour was not aligned with the testing guidance in place.[273] Detail about the ways in which testing was communicated to the public, including areas for improvement, is set out in Chapter 6: Communications and data.

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267 Iain Buchan 14 May 2025 20/7-10; INQ000587241_0010-0011 para 23; *Evaluation of the National COVID-19 Testing Programme in England Between October 2020 and March 2022*, EY-Oxford Health Analytics Consortium, April 2023, p32 (https://www.ey.com/content/dam/ey-unified-site/ey-com/en-uk/generic/documents/evaluation-of-covid-19-testing-in-england-eoha-conference-edition.pdf; INQ000655992)

268 *Evaluation of the National COVID-19 Testing Programme in England Between October 2020 and March 2022*, EY-Oxford Health Analytics Consortium, April 2023, p32, para 2.3.4 (https://www.ey.com/content/dam/ey-unified-site/ey-com/en-uk/generic/documents/evaluation-of-covid-19-testing-in-england-eoha-conference-edition.pdf; INQ000655992)

269 *Every Story Matters: Test, Trace and Isolate,* p48 (INQ000475132)

270 INQ000587241_0010-0011 para 23

271 INQ000356824; INQ000475066_0022-0023 para 59

272 INQ000241381_0001 para 3; INQ000241261_0005

273 *Evaluation of the National COVID-19 Testing Programme in England Between October 2020 and March 2022*, EY-Oxford Health Analytics Consortium, April 2023, p32 (https://www.ey.com/content/dam/ey-unified-site/ey-com/en-uk/generic/documents/evaluation-of-covid-19-testing-in-england-eoha-conference-edition.pdf; INQ000655992); INQ000287604_0033 para 2.3.5; *Testing When Symptomatic, and Staying at Home with Influenza-like Illness, During Autumn and Winter 2021 [30.09.2021],* Scientific Advisory Group for Emergencies, October 2021, pp7-8, paras 17-18 (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1027649/S1402_Testing_when_symptomatic__and_staying_at_home_with_influenza-like_illness_during_autumn_and_winter_2021__30.09.2021_.pdf; INQ000087022); *Scotland's Asymptomatic Testing Programme: An Evaluation: November 2020–June 2021*, Scottish Government, 14 December 2021, pp35-37 (https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2021/12/scotlands-asymptomatic-testing-programme-evaluation-november-2020-june-2021/documents/scotlands-asymptomatic-testing-programme-evaluation-november-2020-june-2021/scotlands-asymptomatic-testing-programme-evaluation-november-2020-june-2021/govscot%3Adocument/scotlands-asymptomatic-testing-programme-evaluation-november-2020-june-2021.pdf; INQ000571139)

Impact of lateral flow testing

2.143. The development and distribution of lateral flow tests across the UK represented a significant advance in the testing response to Covid-19. Their widespread availability had a considerable impact on the UK's ability to monitor infection and manage transmission. By June 2022, more than 2.4 billion lateral flow tests had been distributed across the UK, compared with more than 178 million RT-PCR tests distributed over the same period.[274] The UK implemented large-scale lateral flow testing earlier than other countries did.[275]

2.144. The sustained use of lateral flow testing also played an important role in enabling the majority of the population to adapt to living with Covid-19. Lateral flow tests provided results directly to users within minutes, cost about 10 times less than RT-PCR tests and removed the need for laboratory-based sample processing and transport.[276] Professor Julian Hiscox (Professor of Infection and Global Health at the University of Liverpool and Director of the UK International Coronavirus Network) described lateral flow tests as a "*game changer in handing responsibility to people for their own disease management*".[277] Similar themes were reflected through Every Story Matters.

> "*The lateral flow testing was so much easier than the PCR in the sense of not having to wait for the results to be sent away and come back. You knew there and then whether you had to start your … isolation or not […] if you were to have sent a PCR away, thinking you had Covid, you'd … been … isolating for three days …, and then it … turns out you've … isolated for nothing because it's not Covid. So that aspect of it was great, I thought.*"[278]
>
> **Carer, Every Story Matters**

2.145. The Inquiry recognises the considerable contribution made by rapid at-home testing to the UK's pandemic response, as well as the significant efforts of those who developed, validated, manufactured and distributed lateral flow tests at scale across the UK. Planning for future pandemics should place greater emphasis on the role of rapid at-home testing and on the steps that the UK government and devolved administrations can take to support its early development and deployment. Improving preparedness in this area will be an important element of strengthening the UK's resilience to future public health emergencies.

274 INQ000498390; INQ000498388
275 'Performance of lateral flow devices during the COVID-19 pandemic', UK Health Security Agency, 27 April 2023 (https://www.gov.uk/government/publications/lateral-flow-device-performance-data/performance-of-lateral-flow-devices-during-the-covid-19-pandemic; INQ000496299_0007)
276 INQ000587241_0010-0011 para 23
277 INQ000475074_0013 para 46
278 *Every Story Matters: Test, Trace and Isolate*, p39 (INQ000475132)

Consideration of alternative test types

2.146. Throughout the Covid-19 pandemic, the UK's testing strategy focused predominantly on RT-PCR testing and the later introduction of lateral flow tests. While both technologies played an important role, there were opportunities for the UK government and devolved administrations to improve access to testing, or to make greater use of alternative testing methods.

2.147. RT-PCR testing provided high accuracy but involved significant cost, complex laboratory processing, and, in some circumstances, it was overly sensitive. Lateral flow tests, by contrast, provided rapid results and could be used at home, but concerns about their quality remained, particularly in the early stages of deployment. Although the UK government and devolved administrations focused efforts on these two technologies, the use of other diagnostic and surveillance tests could have strengthened and enhanced the effectiveness of the National Testing Programme.

Diagnostic testing

2.148. RT-LAMP is a well-established rapid diagnostic technology.[279] LamPORE, which combines RT-LAMP with nanopore sequencing (a technology that reads genetic code), was developed in England during the Covid-19 pandemic.[280] Both technologies demonstrated high sensitivity and specificity, and they were capable of producing laboratory results in under 90 minutes.[281]

2.149. Pilot exercises using RT-LAMP and LamPORE were carried out in July and October 2020: both demonstrated effectiveness.[282] Although the tests were validated by the Department of Health and Social Care in the final months of 2020, their implementation remained limited.[283] The UK government and Health and Social Care (Northern Ireland) deployed RT-LAMP testing on a small scale for healthcare workers.[284] The Scottish Government and Welsh Government opted not to adopt the tests.[285]

2.150. Several barriers contributed to the limited use and deployment of these technologies.[286] The *Technical Report on the Covid-19 Pandemic in the UK*,

279 'Loop-mediated isothermal amplification (LAMP): The better sibling of PCR?', M Soroka, B Wasowicz, A Rymaszewska, *Cells* (2021), 10(8), 1931 (https://doi.org/10.3390/cells10081931; INQ000660154)
280 'Diagnostic accuracy of loop-mediated isothermal amplification coupled to nanopore sequencing (LamPORE) for the detection of SARS-CoV-2 infection at scale in symptomatic and asymptomatic populations', A Ptasinska, C Whalley, A Bosworth, C Poxon, C Bryer, N Machin et al, *Clinical Microbiology and Infection* (2021), 27(9), 1348.e1-1348.e7 (https://doi.org/10.1016/j.cmi.2021.04.008; INQ000547728); 'Oxford Nanopore Technologies partners with UK Government to roll out LamPORE, a new generation of COVID-19 test', Oxford Nanopore Technologies, 3 August 2020 (https://nanoporetech.com/zh/news/news-oxford-nanopore-technologies-partners-uk-government-roll-out-lampore-new-generation; INQ000582842)
281 INQ000497243_0004; INQ000070318
282 INQ000587294_0069 para 211; INQ000587352_0060 para 3.84; INQ000070320; INQ000071445
283 INQ000587301_0079-0080 para 193(i); INQ000587349_0058 para 202; INQ000437614
284 INQ000587383_0032 para 66; INQ000587301_0119 para 302
285 INQ000587342_0172 para 523; INQ000587349_0059-0060 para 206
286 INQ000587301_0079-0080 para 193(i); INQ000587383_0032 para 66

from the UK's Chief Medical Officers and Chief Scientific Advisers in December 2022, stated that RT-LAMP testing was "*challenging to deploy … at scale*".[287]

2.151. Nonetheless, RT-LAMP and LamPORE offered potential advantages for certain groups – in particular, for those who were unable to tolerate nasal or throat swabs. This is because both technologies use saliva samples rather than the more invasive sampling required for RT-PCR.[288]

2.152. Through Every Story Matters, the Inquiry heard from autistic people and carers describing the distress caused by nasal and throat swabbing.

> "*It was distressing. I think because […] there's a lot of stimulations that I have issues with. So, with people, with noise, smells, and stuff like that. […] I was at the doctors and they had to do the test, and they spent about an hour trying to force me. And then, they just said, 'You've got to go home because we can't test you. You've got to go home, we can't have you here.'*"[289]
>
> **Contributor with autism, Every Story Matters**

> "*Because of his autism-related sensory sensitivities, he found nose swabs very distressing and throat swabs completely unbearable – we had to hold him down screaming in the car at testing stations while he vomited onto the swabs in severe distress.*"[290]
>
> **Contributor, referring to her five-year-old son, Every Story Matters**

2.153. In Northern Ireland, schools for children with special educational needs began weekly use of RT-LAMP testing in February 2021. The programme stopped using RT-LAMP in January 2022 following the availability of nasal-only lateral flow test swabs, which were easier for children with special educational needs to use.[291] No similar provision was offered in England, Wales or Scotland.

2.154. Future pandemic planning should consider the targeted use of alternative testing technologies across the UK – even where they are less scalable – where they could

287 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, p195 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)
288 'Diagnostic accuracy of loop-mediated isothermal amplification coupled to nanopore sequencing (LamPORE) for the detection of SARS-CoV-2 infection at scale in symptomatic and asymptomatic populations', A Ptasinska, C Whalley, A Bosworth, C Poxon, C Bryer, N Machin et al, *Clinical Microbiology and Infection* (2021), 27(9), 1348.e1-1348.e7 (https://doi.org/10.1016/j.cmi.2021.04.008; INQ000547728); INQ000251906_0089 paras 395-396
289 *Every Story Matters: Test, Trace and Isolate,* p71 (INQ000475132)
290 *Every Story Matters: Test, Trace and Isolate,* p80 (INQ000475132)
291 INQ000587301_0129-0130 para 325

improve access and reduce distress for those who are unable to tolerate standard testing methods.

Wastewater surveillance

2.155. Wastewater testing is a well-established public health tool. It has been used to monitor diseases, following the discovery of a link between high concentrations of polio virus in sewage and increases in polio infection in the population.[292] Unlike individual diagnostic testing, wastewater surveillance does not depend on public participation or adherence to self-reporting, reducing the impact of behavioural factors on surveillance.[293]

2.156. Internationally, the first wastewater testing studies for Covid-19 were initiated in February 2020.[294] By March 2020, research studies had begun across England, Wales and Scotland.[295]

2.157. Wastewater monitoring programmes were initiated in England, Wales and Scotland following these research studies. In England, a wastewater monitoring programme was established by the Joint Biosecurity Centre in the summer of 2020, following a pilot programme coordinated by the Department for Environment, Food and Rural Affairs.[296] By 2022, the UK Health Security Agency led the programme, which covered approximately 74% of the population of England.[297] In Wales, a wastewater monitoring programme began in September 2020, following monitoring earlier in the year, capturing close to 70% of the Welsh population by December 2020.[298] Scotland's wastewater monitoring programme launched in June 2020 and covered more than 60% of the population by February 2021.[299] At a SAGE meeting on 8 April 2021, Professor Vallance described wastewater surveillance as being "*particularly useful in detecting outbreaks when prevalence was low, and to detect the presence and geographic spread of new variants*".[300]

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292 June Raine 27 May 2025 64/25-65/23; INQ000475152_0008 para 30
293 INQ000587352_0056-0057 para 3.72
294 *SARS-CoV-2 Surveillance Employing Sewage: Towards a Sentinel System*, BM Gawlik, S Tavazzi, G Mariani, H Skejo, M Sponar, T Higgins et al, Joint Research Centre, European Commission, European Union (2021), pp1-10 (https://dx.doi.org/10.2760/300580; INQ000660323)
295 June Raine 27 May 2025 65/3-9; INQ000587342_0129 para 404; INQ000587349_0063 paras 220-221; *Wastewater COVID-19 Monitoring in the UK: Summary for SAGE*, M Wade, D Jones, A Singer, A Hart, A Corbishley, C Spence et al, Scientific Advisory Group for Emergencies, 19 November 2020, pp4-5 (https://assets.publishing.service.gov.uk/media/5fc8d6a2e90e07629f7fe1c6/S0908_Wastewater_C19_monitoring_SAGE.pdf; INQ000412140); INQ000660428
296 *Wastewater COVID-19 Monitoring in the UK: Summary for SAGE*, M Wade, D Jones, A Singer, A Hart, A Corbishley, C Spence et al, Scientific Advisory Group for Emergencies, 19 November 2020, pp4-5 (https://assets.publishing.service.gov.uk/media/5fc8d6a2e90e07629f7fe1c6/S0908_Wastewater_C19_monitoring_SAGE.pdf; INQ000412140); INQ000136895
297 *EMHP Wastewater Monitoring of SARS-CoV-2 in England: 15 July 2020 to 30 March 2022*, UK Health Security Agency, 12 May 2022 (https://www.gov.uk/government/publications/monitoring-of-sars-cov-2-rna-in-england-wastewater-monthly-statistics-15-july-2020-to-30-march-2022/emhp-wastewater-monitoring-of-sars-cov-2-in-england-15-july-2020-to-30-march-2022; INQ000223911_0004, 0019); *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 4: 'Situational awareness, analysis and assessment', Department of Health and Social Care, 10 January 2023 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-4-situational-awareness-analysis-and-assessment; INQ000268203_0007)
298 INQ000587349_0063 paras 220-221
299 INQ000587342_0129 para 404; INQ000218091
300 INQ000575986_0023-0024 para 60

2.158. In Northern Ireland, wastewater surveillance was adopted more slowly. A research study was initiated and samples were taken from two sites in Northern Ireland by the end of 2020.[301] A full surveillance programme was initiated by the Department of Agriculture, Environment and Rural Affairs (Northern Ireland), with support from the Department of Health (Northern Ireland) in April 2021, and it covered approximately 64% of the population by February 2022.[302]

2.159. While it is disappointing that a full wastewater testing programme was not initiated in Northern Ireland until April 2021, this delay may, in part, have been linked to a lack of existing wastewater research into other viruses in Northern Ireland prior to 2020.[303]

2.160. A key legacy of the Covid-19 pandemic should be the improved and continued use of wastewater surveillance to monitor infectious diseases across the UK. Retrospective studies have demonstrated the value of wastewater surveillance for Covid-19: analysis, in July 2020, of archived sewage samples from February 2020 showed that the virus was present in north London three days before the first person with Covid-19 was identified in the relevant catchment area.[304] The Inquiry therefore welcomes the UK Health Security Agency's announcement on 26 August 2025 of a programme to evaluate how wastewater monitoring could be used to detect a range of high-risk pathogens.[305]

Adherence to testing guidance

2.161. Levels of adherence to testing guidance varied over time, across communities and regions and for different testing strategies and test types.[306] The COVID-19 Rapid Survey of Adherence to Interventions and Responses (CORSAIR) study in England estimated that, in January 2021, during the third lockdown in England, 62.5% of the population intended to request a test if they developed symptoms. This represented an increase compared with earlier stages of the pandemic.[307]

2.162. Despite this increase in expressed intention, the proportion of people who reported actually requesting a test when they experienced symptoms remained consistently lower than the proportion who stated an intention to do so. In January 2021, 22.2% of people reported having requested a test when symptomatic, illustrating what has

301 INQ000222351_0004
302 INQ000587297_0020-0021 para 53; 'Wastewater surveillance system underway', Department of Agriculture, Environment and Rural Affairs (Northern Ireland), 1 March 2021 (https://www.daera-ni.gov.uk/news/wastewater-surveillance-system-underway; INQ000276620); INQ000396944_0082
303 *Wastewater COVID-19 Monitoring in the UK: Summary for SAGE*, M Wade, D Jones, A Singer, A Hart, A Corbishley, C Spence et al, Scientific Advisory Group for Emergencies, 19 November 2020, p2 (https://assets.publishing.service.gov.uk/media/5fc8d6a2e90e07629f7fe1c6/S0908_Wastewater_C19_monitoring_SAGE.pdf; INQ000412140)
304 INQ000587249_0026 para 82; June Raine 27 May 2025 64/9-19
305 'UKHSA launches development programme for wastewater monitoring techniques which could catch pandemic threats early', UK Health Security Agency, 26 August 2025 (https://www.gov.uk/government/news/ukhsa-launches-development-programme-for-wastewater-monitoring-techniques-which-could-catch-pandemic-threats-early; INQ000588204)
306 INQ000587239_0056-0059 paras 185-195
307 'Intention to adhere to test, trace, and isolate during the COVID-19 pandemic (the COVID-19 Rapid Survey of Adherence to Interventions and Responses study)', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, *British Journal of Health Psychology* (2021), 27, 1100-1118, pp1103-1107 (https://doi.org/10.1111/bjhp.12576; INQ000196870)

been described as an 'intention–behaviour gap'.[308] Similarly, uptake of asymptomatic testing remained limited. When twice-weekly asymptomatic testing was available to the UK population, a survey of more than 6,000 adults in England and Scotland conducted between April and June 2021 found that only 11% had completed at least two lateral flow tests in the previous week.[309]

2.163. Much of the data collected to measure adherence to testing was based on self-reported information, for example, through survey responses.[310] Although some objective data were collected (eg the number of tests carried out), it was not possible to determine objectively how many people should have sought testing.[311] Given the likelihood of 'social desirability bias' (ie people are likely to answer questions in a way that will be viewed favourably by others), estimates of adherence to testing were likely to be overstated.[312]

2.164. Adherence to testing guidance required people to navigate a series of steps. They needed to recognise when testing was required and then either book and attend a testing centre for an administered test, or order, complete and report the results for self-administered tests. At each stage, people could fail, reducing overall adherence.[313]

2.165. A prerequisite for effective adherence was public understanding of when to test. This relied on people knowing they had been in contact with someone who had tested positive or correctly recognising they had symptoms of Covid-19.[314] Effective public communication should therefore have provided clear and consistent information about the symptoms that required testing. However, survey data between May and August 2020 indicated that awareness of symptoms remained relatively low, with about half of adults able to identify correctly the three main symptoms.[315] This is explored further in Chapter 6: Communications and data. Through Every Story Matters, the Inquiry heard that some contributors found it difficult to keep up with changes to testing guidance.

308 INQ000587239_0012, 0057-0058 paras 43, 187; 'Adherence to the test, trace, and isolate system in the UK: Results from 37 nationally representative surveys', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, *British Medical Journal* (2021), 372, pp29-30 (https://doi.org/10.1136/bmj.n608; INQ000228154)
309 'Who is engaging with lateral flow testing for COVID-19 in the UK? The COVID-19 Rapid Survey of Adherence to Interventions and Responses (CORSAIR) study', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, *British Medical Journal Open* (2022), 12, e058060 (https://doi.org/10.1136/bmjopen-2021-058060; INQ000196876); INQ000587239_0111 para 369
310 INQ000587239_0037-0038 para 129
311 INQ000587239_0037-0038 para 129
312 INQ000587239_0037-0038, 0043 paras 129, 142
313 INQ000062602_0003
314 INQ000587239_0046 para 151
315 'Adherence to the test, trace, and isolate system in the UK: Results from 37 nationally representative surveys', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, *British Medical Journal* (2021), 372, p4 (https://doi.org/10.1136/bmj.n608; INQ000228154); 'Adherence to the test, trace and isolate system: Results from a time series of 21 nationally representative surveys in the UK (the COVID-19 Rapid Survey of Adherence to Interventions and Responses [CORSAIR] study)', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, medRxiv (2020) (https://doi.org/10.1101/2020.09.15.20191957; INQ000196853)

> "*I just felt really quite confused throughout the whole thing as to when we were supposed to be testing, at what stage you were supposed to test [...] they kept changing the rules on it.*"[316]
>
> **Contributor, Every Story Matters**

2.166. For those who were aware that testing was required, motivation remained an important factor influencing adherence. For some individuals, this was not viewed as a choice but as a moral obligation to protect others.[317] For others, however, the decision was shaped by the potential consequences of receiving a positive result, including contact tracing and the need to self-isolate.[318] These concerns were more pronounced among people who required financial or practical support to self-isolate.[319] Evidence from the Liverpool mass testing pilot (discussed above) suggested that fear of income loss contributed to the reluctance to undergo testing.[320]

> "*I was in quite a moral conflict of whether do I put myself first and not test, or do I actually put everyone else first and test for their benefit.*"[321]
>
> **Zero-hours contract worker, Every Story Matters**

2.167. Even when people understood that they needed to test, and wanted to do so, further barriers to adherence existed in an individual's ability or opportunity to access testing.[322] Professor Madelynne Arden (expert witness on adherence to behaviours associated with test, trace and isolate) explained that focusing solely on increasing motivation to test was insufficient:

> "[P]*olicy should address the range of factors that cause non-adherence in different groups of people ... rather than assuming that 'telling people what to do' is sufficient to promote adherence.*"[323]

2.168. Factors such as the clarity of testing requirements and the ease with which tests can be accessed and completed must be addressed when designing testing strategies for future pandemics. In doing so, governments must draw more consistently on behavioural science expertise.

316 *Every Story Matters: Test, Trace and Isolate*, p6 (INQ000475132)
317 *Every Story Matters: Test, Trace and Isolate*, p23 (INQ000475132)
318 *Every Story Matters: Test, Trace and Isolate*, p66 (INQ000475132)
319 INQ000575999_0025-0026; *The Impact of the Pandemic on Population Health and Health Inequalities*, British Medical Association, 2022, p37 (https://www.bma.org.uk/media/bzxla0fv/bma-covid-review-report-5-september-2024.pdf; INQ000185357)
320 INQ000587241_0008 para 19
321 *Every Story Matters: Test, Trace and Isolate,* p24 (INQ000475132)
322 INQ000587239_0056-0057 para 186
323 INQ000587239_0113 para 382

Accessibility of tests

2.169. In order for testing to support contact tracing, self-isolation and monitoring of prevalence, it needed to be available across the population. Despite this need, accessibility was not addressed as a central design principle in the early development of the testing programme. As described by Kristen McLeod (Senior Responsible Officer for Pillar 2 from March to May 2020):

> "*There was not a great deal of specific consideration given to accessibility for particular categories of vulnerable people during the initial period of getting Pillar 2 up and running; the focus was, and had to be, on getting the basics of the system established in the first place. It could then be tailored to particular groups or cohorts of people after the initial set-up period.*"[324]

However, the UK government and devolved administrations did work to improve the accessibility of the testing programme over the course of the pandemic.

2.170. The rollout of RT-PCR testing through a limited number of testing centres meant that access varied significantly by location. Some members of the public were required to travel long distances outside their local area to obtain a test.[325] This presented particular challenges for people who relied on public transport, including students and those living in Scotland and Wales (given that data from the most recent pre-pandemic census indicated that 30% of households in Scotland and 23% of households in Wales did not have access to a car).[326]

2.171. By contrast, where individuals had access to a car, the testing process was often considerably easier, as described by contributors to Every Story Matters.

> "*I booked a Covid test which was really quick and easy. The test centre was about 20 minutes' drive from me [...] The whole process was really clear and well-planned.*"[327]
>
> **Contributor, Every Story Matters**

324 INQ000587834_0018 para 50
325 INQ000099102; INQ000510087_0003
326 INQ000587451_0004 para 10; *A New Wales Transport Strategy Consultation Draft: Supporting Information – Transport Data and Trends*, Welsh Government, no date, p19 (https://www.gov.wales/sites/default/files/consultations/2020-11/supporting-information-transport-data-and-trends.pdf; INQ000198601); INQ000607521; INQ000240266_0002
327 *Every Story Matters: Test, Trace and Isolate,* p35 (INQ000475132)

> "*They were very, very well-organised. When we went out for the tests, everything was well-signposted, well-directed. We were able to keep our distances; parking was easy. We had our timeslots and they were kept to. It was good.*"[328]
>
> **Clinically vulnerable person, Every Story Matters**

2.172. Disabled people faced persistent barriers to accessing Covid-19 testing. These included physical accessibility issues such as inadequate wheelchair access, a lack of designated parking for disabled people and limited accessible lavatory facilities.[329] While the later introduction of pedestrianised testing centres and mobile testing units improved accessibility, these measures took time to be implemented across the four nations.[330] Access difficulties also persisted in some remote and rural areas, including Scottish island communities, although such areas generally experienced lower numbers of people with Covid-19 and fewer deaths.[331]

2.173. The introduction of at-home postal RT-PCR testing and the widespread availability of lateral flow tests reduced many barriers, particularly those related to geographic access.[332] However, self-administered tests presented different accessibility challenges, as they required a level of mobility, dexterity and motor skills to assemble and complete them.[333]

> "*I found them physically hard to open at times. I have a bit of a tremor, so tipping the tiny little bits of liquid [was difficult], and it was a very intricate process which was quite physically challenging.*"[334]
>
> **Contributor, Every Story Matters**

328 *Every Story Matters: Test, Trace and Isolate,* p38 (INQ000475132)
329 INQ000587451_0008-0009 paras 30-31
330 'Health Secretary calls on country to get tested as access is expanded even further', Department of Health and Social Care, 26 June 2020 (https://www.gov.uk/government/news/health-secretary-calls-on-country-to-get-tested-as-access-is-expanded-even-further; INQ000565916); 'Increasing capacity and accessibility of testing', Scottish Government, 25 August 2020 (https://www.gov.scot/news/increasing-capacity-and-accessibility-of-testing; INQ000571254); 'Written statement: Covid-19 testing infrastructure', Welsh Government, 18 December 2020 (https://www.gov.wales/written-statement-covid-19-testing-infrastructure; INQ000513975); *Update: Covid-19 Response Strategy*, Department of Health (Northern Ireland), April 2021, p11, para 2.11 (https://www.health-ni.gov.uk/sites/default/files/publications/health/doh-covid-emergency-response-april-2021.pdf; INQ000303701)
331 INQ000240266_0002-0003; INQ000565942_0003-0004; *What Explains the Spatial Variation in COVID-19 Mortality Across Scotland?,* Public Health Scotland, 30 September 2020, p16 (https://publichealthscotland.scot/media/2814/spatial-variation-in-covid-19-mortality-in-scotland-english-september2020.pdf; INQ000147584); 'Temporal trends and forecasting of COVID-19 hospitalisations and deaths in Scotland using a national real-time patient-level data platform: A statistical modelling study', CR Simpson, C Robertson, E Vasileiou, E Moore, C McCowan, U Agrawal et al, *The Lancet Digital Health* (2021), 3(8), e517-e525, p522 (https://doi.org/10.1016/s2589-7500(21)00105-9; INQ000147585)
332 *COVID-19 PCR: Home-Testing Experience of Blind and Partially Sighted People*, UK Health Security Agency, 3 November 2022 (https://www.gov.uk/government/case-studies/covid-19-pcr-home-testing-experience-of-blind-and-partially-sighted-people; INQ000496210); INQ000048652; INQ000587347_0047 para 203; INQ000587349_0089 para 321
333 INQ000185176_0001-0002
334 *Every Story Matters: Test, Trace and Isolate,* p61 (INQ000475132)

2.174. Language barriers also created obstacles to accessing testing. People who did not speak English, or for whom English was a second language, reported difficulties understanding instructions and communicating with testing staff.[335]

> "[T]*he person who was doing the test on me would say something, and I wouldn't understand what they said, which just makes it more stressful for me.*"[336]
>
> **Contributor, Every Story Matters**

2.175. Although translation services for booking tests, for instructions for self-testing and for support at testing centres were introduced over time, people who did not speak English were likely to have been disadvantaged in accessing testing during the early stages of the pandemic.[337] Later developments, such as the inclusion of diagrams in lateral flow test kits, helped address some of these challenges.

> "[E]*ven if you didn't read or speak English, looking at the pictures you would instantly know what to do [...] there was even [...] online videos where you can [...] see how people are doing it [...] for you to just copy [...] it wasn't hard whatsoever: very, very straightforward.*"[338]
>
> **Contributor, Every Story Matters**

2.176. Blind and partially sighted people were unable independently to access drive-in testing or complete at-home testing in the early stages of the pandemic. Improvements were delivered, including the introduction of alternative instruction formats and use of the Be My Eyes app, but these changes also took time.[339] Michael Wordingham, Policy Manager at the Royal National Institute of Blind People from June 2022, said: "'[R]*etrofitting' meant that the tests could only be made partially accessible.*"[340]

2.177. Digitally excluded people, including those without access to digital technology or without confidence in completing basic online tasks, were also affected by requirements to book tests and report test results digitally.[341] During the Liverpool pilot, lower test uptake and higher levels of infection were observed in areas with

335 INQ000575989_0084 para 303; *How Important is Symptom Recognition in Leading People to Seek a Test for COVID-19?*, Scientific Pandemic Insights Group on Behaviour, 30 November 2020, pp7-8 (https://assets.publishing.service.gov.uk/media/61e9b2298fa8f50597fb307a/S0944_How_important_is_symptom_recognition_in_leading_people_to_seek_a_test_for_COVID-19.pdf; INQ000197220)
336 *Every Story Matters: Test, Trace and Isolate,* p61 (INQ000475132)
337 INQ000565942
338 *Every Story Matters: Test, Trace and Isolate,* p43 (INQ000475132)
339 INQ000587651_0009-0010 para 43; INQ000241236; INQ000587301_0150 para 377
340 INQ000587651_0011 para 49
341 INQ000563814_0003; INQ000562650_0003 para 7; INQ000587488_0011-0012 para 24

fewer digital resources and lower digital literacy.[342] Phone lines for booking tests were introduced across all four nations of the UK by May 2020.[343] However, issues remained: for example, the helpline was not free in Scotland.[344]

> *"[My relatives] were elderly people and none of them could read or write, they didn't have phones [...] So, I did that: I rang up, made the appointment [...] brought them along [...] and made sure they [the staff] had my email and number [for the results]."*[345]
>
> **Contributor from a Roma ethnic background, Every Story Matters**

2.178. Although the accessibility of the UK's testing programme improved significantly as the pandemic progressed, many of the challenges experienced were predictable, and some changes took months to be delivered. It was understandable that the testing programme was not fully accessible from the outset, due to the speed at which it was created and delivered. Making testing and guidance accessible may have delayed rollout. However, had the UK government and devolved administrations been better prepared for testing during a pandemic, these challenges could have been addressed more quickly.

2.179. Accessibility should be treated as a core design principle in future testing strategies, ensuring that rollout and communications are inclusive from the outset and adapted to meet different needs. Future pandemic planning must ensure that people who are vulnerable are not excluded from access to testing.

A future testing strategy

2.180. Although the testing programme was ultimately successful, its development took time. The delay reflected the absence of a comprehensive and well-developed testing strategy within the UK government and devolved administrations before and during the early stages of the Covid-19 pandemic. As a result, a plan for testing had to be developed during the emergency itself. Had an appropriate plan been in place at the outset of the pandemic, the efforts to control the spread of the virus might have been more effective, and many of the dreadful consequences – if not averted entirely – might have been reduced.

342 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, p193 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642); 'Evaluating social and spatial inequalities of large scale rapid lateral flow SARS-CoV-2 antigen testing in COVID-19 management: An observational study of Liverpool, UK (November 2020 to January 2021)', MA Green, M García-Fiñana, B Barr, G Burnside, CP Cheyne, D Hughes et al, *The Lancet Regional Health – Europe* (2021), 6 (https://doi.org/10.1016/j.lanepe.2021.100107; INQ000488657)
343 INQ000240266; 'Everyone in the United Kingdom with symptoms now eligible for coronavirus tests', Department of Health and Social Care, 18 May 2020 (https://www.gov.uk/government/news/everyone-in-the-united-kingdom-with-symptoms-now-eligible-for-coronavirus-tests; INQ000497453); INQ000227631; INQ000241519
344 INQ000546360
345 *Every Story Matters: Test, Trace and Isolate,* p30 (INQ000475132)

2.181. The UK government and devolved administrations should now prepare a testing strategy for future pandemics. That strategy must be sufficiently flexible to account for the differing characteristics of potential future outbreaks. The four governments should continue to work closely together to ensure that the benefits delivered by the National Testing Programme during the Covid-19 pandemic are preserved for future pandemics. The development of such a strategy, as part of a wider test, trace and isolate system, is considered further in Chapter 7: An effective future test, trace and isolate system.

Chapter 3: Contact tracing

Introduction

3.1. Contact tracing has been used for years to prevent the spread of infectious disease, both in the UK and globally.[1] It identifies people who have been in contact with a person infected with a disease. Action can then be taken to reduce the risk of them transmitting that infection to others.[2] During the Covid-19 pandemic, this typically involved asking or requiring those people to self-isolate.

3.2. Two methods of contact tracing were used during the Covid-19 pandemic. The first was manual contact tracing, in which contact tracers identified and contacted people who had been in contact with an infected person. The second was digital contact tracing, which used mobile phone applications (commonly known as apps) to identify and notify an infected person's contacts.

3.3. This chapter considers the ways in which both forms of contact tracing were used throughout the UK during the Covid-19 pandemic. It analyses the effectiveness of their implementation and makes recommendations to ensure that contact tracing can be used more effectively in future pandemics.

Overview of contact tracing

The benefits of contact tracing

3.4. Contact tracing can be extremely valuable in slowing or even stopping the spread of infectious disease. Combining contact tracing with testing and isolation has been estimated to reduce the reproduction number of the virus (the average number of people to whom an infected person would pass the virus) far more than mass testing or self-isolation alone. Modelling in June 2020 – based on an analysis of 40,162 voluntary UK participants in a BBC Four pandemic simulation experiment conducted in 2017 to 2018 – suggested that self-isolation together with household quarantine (the isolation of an entire household when one person develops symptoms) reduced transmission by 37% on average.[3] However, when manual contact tracing of all contacts was also used, transmission was reduced by 64%.[4]

1 For example, contact tracing has been used to control the spread of HIV in Cuba, the USA, USSR and Senegal in the 1980s, the spread of rabies in the USA in the early 2000s and small outbreaks of Legionnaires' disease, norovirus and salmonella as well as sexually transmitted infections in the UK over a number of years (INQ000587454_0011 para 48).

2 INQ000587346_0004-0005 para 11

3 'Contagion: The BBC Four pandemic', BBC, 22 March 2018 (https://www.bbc.co.uk/programmes/p059y0p1; INQ000562990); 'Effectiveness of isolation, testing, contact tracing, and physical distancing on reducing transmission of SARS-CoV-2 in different settings: A mathematical modelling study', AJ Kucharski, P Klepac, AJK Conlan, SM Kissler, ML Tang, H Fry et al, *The Lancet* (2020), 20(10), 1151-1160, pp1151, 1156 (https://doi.org/10.1016/S1473-3099(20)30457-6; INQ000255418). Statistical models are tools for analysing complex data, identifying patterns and informing evidence-based decision-making where direct measurement is not possible. Figures from modelling are estimates only, and different statistical models will produce different outcomes. These estimates are not based on direct observations. They are therefore limited by the underlying assumptions used in the models and are subject to uncertainty.

4 'Effectiveness of isolation, testing, contact tracing, and physical distancing on reducing transmission of SARS-CoV-2 in different settings: A mathematical modelling study', AJ Kucharski, P Klepac, AJK Conlan, SM Kissler, ML Tang, H Fry et al, *The Lancet* (2020), 20(10), 1151-1160, p1156 (https://doi.org/10.1016/S1473-3099(20)30457-6; INQ000255418)

3.5. During the Covid-19 pandemic, a modelling exercise analysed the effectiveness of the test, trace and isolate system in Wales in a range of different scenarios. Modelling has its limitations, but in one scenario it was estimated that about 10% of the forecast reduction in the infection's reproductive rate was due to contact tracing.[5] In another scenario, it was estimated that contact tracing accounted for about 22% of the reduction in the infection's reproductive rate.[6] Overall, the study concluded that contact tracing "*remained a significant component*" in most of the scenarios.[7]

3.6. Contact tracing has the greatest potential to affect the course of a pandemic when infection rates are low.[8] This does not mean that contact tracing has no use when infection rates are high. During the Covid-19 pandemic, contact tracing combined with isolation was more effective in reducing transmission than mass testing or self-isolation alone.[9] Testing, tracing and isolation as a whole had significant benefit during times of high infection when combined with high levels of physical distancing.[10]

The meaning of a 'contact'

3.7. There is no single definition of a contact – or, specifically, a 'close contact' – that applies across all pandemics, because pathogens differ in how they are transmitted. The definition can only be determined once sufficient information is available regarding the particular characteristics of a pathogen and its mode of transmission.

3.8. The definition of a close contact can vary between countries and change over time as understanding of the pathogen evolves. For example, during the Covid-19 pandemic, on 14 May 2021, the Environmental Modelling Group (a sub-group of the Scientific Advisory Group for Emergencies (SAGE), which advises the UK government in emergencies) discussed changing the definition of a close contact to "*clearly reflect new scientific evidence on transmission*".[11] A 2021 academic review of 101 studies of Covid-19 identified differences in the definition across countries.[12] For example, in relation to airline passengers, some governments defined close

5 *Modelling the Current Welsh TTP (Test, Trace, Protect) System*, Technical Advisory Group, Welsh Government, 23 March 2021, p5 (https://www.gov.wales/sites/default/files/publications/2021-03/technical-advisory-group-modelling-the-current-welsh-ttp-test-trace-protect-system.pdf; INQ000182536)
6 *Modelling the Current Welsh TTP (Test, Trace, Protect) System*, Technical Advisory Group, Welsh Government, 23 March 2021, pp5-6 (https://www.gov.wales/sites/default/files/publications/2021-03/technical-advisory-group-modelling-the-current-welsh-ttp-test-trace-protect-system.pdf; INQ000182536)
7 *Modelling the Current Welsh TTP (Test, Trace, Protect) System*, Technical Advisory Group, Welsh Government, 23 March 2021, p2 (https://www.gov.wales/sites/default/files/publications/2021-03/technical-advisory-group-modelling-the-current-welsh-ttp-test-trace-protect-system.pdf; INQ000182536)
8 INQ000587346_0005 para 12
9 'Effectiveness of contact tracing for viral disease mitigation and suppression: Evidence-based review', KJT Craig, R Rizvi, VC Willis, WJ Kassler, G Purcell Jackson, *JMIR Public Health and Surveillance* (2021), 7(10), e32468, p6 (https://doi.org/10.2196/32468; INQ000573941)
10 INQ000562931_0002
11 INQ000192024_0002-0003
12 'SARS-CoV-2 and the role of close contact in transmission: A systematic review', IJ Onakpoya, CJ Heneghan, EA Spencer, J Brassey, A Plüddemann, DH Evans et al, *F1000Research* (2022), 10, 280, p49 (https://doi.org/10.12688/f1000research.52439.3; INQ000268250)

contacts as all passengers on the flight, some as those seated within two rows of the infected person, and some as those within three rows of the infected person.[13]

3.9. Although there were some differences in the detail of the definitions adopted across the UK, they were broadly consistent in their core elements. Each government defined a close contact by reference to proximity to an infected person, generally within two metres for about 15 minutes, with some governments including additional criteria.[14] For example, Public Health England specified that direct or face-to-face contact for any length of time fell under the definition of close contact.[15] The principal differences related to travel settings, where the criteria varied between governments.[16]

3.10. Professor Matthew Keeling (Professor of Maths and Life Sciences and Director of the Zeeman Institute for Systems Biology and Infectious Disease Epidemiology Research at the University of Warwick) suggested that, in future pandemics, obtaining more detailed information voluntarily from infected people about their contacts could help to shape the most appropriate definition of a close contact.[17] That definition could then be incorporated into, and updated through, a digital contact tracing tool (see below).

Backward and forward contact tracing

3.11. 'Forward contact tracing' looks forward by identifying close contacts of an infected person from the point at which the infected person is likely to have been infectious and so is likely to have infected their close contacts.[18] 'Backward contact tracing' looks back at the activities and interactions of an infected person around the time they were likely to have been infected, in order to determine the original source of their infection.[19]

3.12. Backward contact tracing can be particularly effective for highly infectious diseases such as Covid-19, where a relatively small number of infected people can result in a large number of secondary cases.[20] For example, if a person became infected with Covid-19 at a social gathering, forward contact tracing would identify people with

13 'SARS-CoV-2 and the role of close contact in transmission: A systematic review', IJ Onakpoya, CJ Heneghan, EA Spencer, J Brassey, A Plüddemann, DH Evans et al, *F1000Research* (2022), 10, 280, p49 (https://doi.org/10.12688/f1000research.52439.3; INQ000268250)
14 *The First Few Hundred (FF100)*, Public Health England, January 2020, p10 (INQ000381506); 'Contact tracing: if you are identified as a close contact', Welsh Government, 15 June 2020 (INQ000082553_0002); 'Protect Scotland app launches', Scottish Government, 10 September 2020 (https://www.gov.scot/news/protect-scotland-app-launches; INQ000505905_0001); INQ000203157 (Scotland); INQ000145685_0046 (Northern Ireland)
15 *The First Few Hundred (FF100)*, Public Health England, January 2020, p10 (INQ000381506)
16 *The First Few Hundred (FF100)*, Public Health England, January 2020, p10 (INQ000381506); 'Contact tracing: if you are identified as a close contact', Welsh Government, 15 June 2020 (INQ000082553_0002); 'Protect Scotland app launches', Scottish Government, 10 September 2020 (https://www.gov.scot/news/protect-scotland-app-launches; INQ000505905_0001); INQ000203157 (Scotland); INQ000145685_0046 (Northern Ireland)
17 INQ000475144_0017 para 38(iii)
18 INQ000587346_0005 para 14
19 INQ000587346_0005 para 13
20 INQ000587509_0017 para 42; 'The effectiveness of contact tracing in heterogeneous networks', S Kojaku, L Hébert-Dufresne and Y-Y Ahn, *arXiv* (2020) (https://arxiv.org/abs/2005.02362v1; INQ000563598)

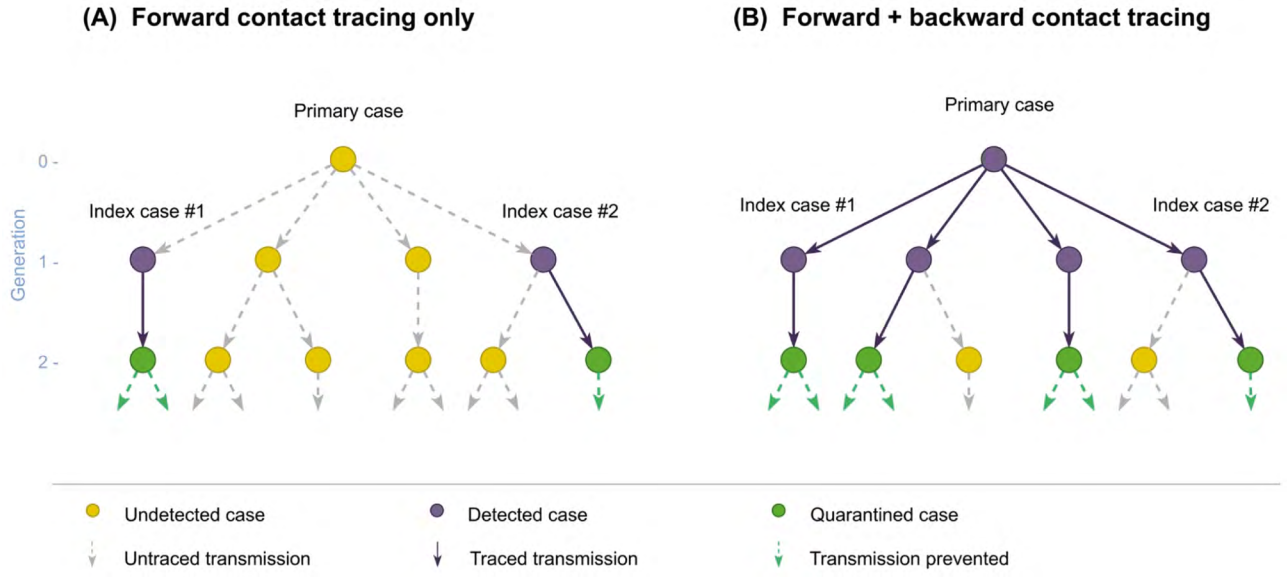
whom they were in contact after becoming infected. By contrast, backward contact tracing would seek to trace others who attended the same event and may have been exposed at the same time, enabling them to be advised to test or self-isolate. It focuses on where people were infected (linking new cases to events or places), allowing links between individuals to be recognised and clusters of infections to be identified.[21] It can help identify 'superspreader' events, where one person infects a disproportionately high number of people.

3.13. Backward contact tracing also plays an important role in identifying people who transmit a pathogen without knowing they are infected.[22] If an asymptomatic person (someone not showing recognised symptoms) infects another person who later becomes unwell, backward contact tracing may help to identify the asymptomatic person as the original source.

3.14. Used together, backward and forward contact tracing have the potential to be significantly more effective than forward contact tracing alone.[23] Figure 4 illustrates the number of contacts reached through forward contact tracing alone (left) and through a combination of backward and forward contact tracing (right). As noted in Chapter 1: The UK's readiness to implement a test, trace and isolate system, countries such as Singapore implemented effective responses to Covid-19. Singapore used backward as well as forward contact tracing.[24] An interim report from the UK government's Department of Health and Social Care dated 11 December 2020 observed that "*(backward tracing) is increasingly used by countries with the most successful test and trace strategies*".[25]

21 INQ000475066_0010-0011 para 26
22 INQ000562988_0012
23 INQ000475066_0010-0011 para 26
24 INQ000562988_0016; INQ000183958_0006
25 *The Government's Approach to Test and Trace in England: Interim Report*, National Audit Office and Department of Health and Social Care, 11 December 2020, p21 (https://www.nao.org.uk/wp-content/uploads/2020/12/The-governments-approach-to-test-and-trace-in-England-interim-report.pdf; INQ000618237)

Figure 4: Comparison of two forms of contact tracing



Source: 'Implication of backward contact tracing in the presence of overdispersed transmission in COVID-19 outbreaks', A Endo, Centre for the Mathematical Modelling of Infectious Diseases COVID-19 Working Group, QJ Leclerc, GM Knight, GF Medley, KE Atkinson et al, Wellcome Open Research (2021), 5, 239, p3 (https://doi.org/10.12688/wellcomeopenres.16344.3; INQ000562975)

3.15. From as early as February 2020, SAGE repeatedly advised the UK government that backward contact tracing was an important part of an effective contact tracing system, particularly in identifying clusters of linked infections and limiting further spread.[26] However, its use was inconsistent and there was no coordinated approach across the four nations of the UK.

3.16. The Inquiry heard that, for at least the first eight months of 2020, the use of backward contact tracing was limited at best. Professor Dame Jenny Harries (Deputy Chief Medical Officer for England from July 2019 to March 2021 and Chief Executive of the UK Health Security Agency from April 2021 to May 2025) told the Inquiry that, in England, local testing and tracing teams sometimes used backward contact tracing in response to particular outbreaks in the early months of 2020.[27] Ben Dyson (Director of Policy for NHS Test and Trace at the Department of Health and Social Care from May 2020 to June 2021) told the Inquiry that it was used to some extent, particularly from the summer of 2020.[28] However, it was unclear when, if at all, it was implemented more widely. Taken together, the evidence suggests that the use of backward contact tracing was partial and delayed, rather than coordinated and comprehensive. Professor Sir Patrick Vallance, Lord Vallance of Balham (Government Chief Scientific Adviser from April 2018 to March 2023), told the Inquiry that "*it was disappointing*" that backward contact tracing "*took quite so long to get started*".[29] Dido Harding, Baroness Harding of Winscombe (Executive Chair of NHS Test and

26 Patrick Vallance 22 May 2025 201/25-202/8
27 Jenny Harries 28 May 2025 116/2-20
28 Ben Dyson 27 May 2025 31/9-11; see also Patrick Vallance 22 May 2025 201/25-202/8
29 Patrick Vallance 22 May 2025 201/25-202/8

Trace from May 2020 to May 2021), agreed that its implementation was "*undoubtedly too slow*".[30]

3.17. In Wales, the benefits of backward contact tracing were recognised, but a comprehensive approach was considered impracticable due to resource constraints. Instead, it was used selectively in areas of higher transmission and in particular situations.[31]

3.18. In Northern Ireland, backward contact tracing was implemented from 16 November 2020.[32] However, it is unclear whether this was widespread or targeted.

3.19. In Scotland, on 4 June 2020, the Scottish Government Covid-19 Advisory Group discussed advice from SAGE about the importance of backward contact tracing.[33] It was implemented by the autumn of 2020, although the precise timing and extent (whether it was widespread or targeted) are also unclear.[34]

3.20. The absence of widespread backward contact tracing likely weakened the UK's pandemic response, given the asymptomatic transmission of Covid-19. As noted in the Inquiry's combined Report relating to Modules 2, 2A, 2B and 2C, there were signs by late January 2020 that suggested asymptomatic transmission was taking place.[35] By the end of April 2020, a Public Health England study of care home residents established that 43.8% of people who tested positive for Covid-19 were asymptomatic.[36]

3.21. The absence of widespread backward contact tracing in England might also have affected public trust. For example, one member of Covid-19 Bereaved Families for Justice UK questioned the value of a system that was unable to link infections to shared settings or events:

> "*We were told that Test and Trace were unable to trace positive cases and link them to one singular event. This made us call into question … what use did it serve if there was an outbreak at a venue?*"[37]

3.22. Backward contact tracing has clear advantages in controlling the spread of infection and should be included in planning for a future test, trace and isolate system. The Inquiry recognises that the availability of resources may have limited

30 Dido Harding 28 May 2025 68/2-14
31 Robin Howe 27 May 2025 121/13-22, 122/13-18
32 INQ000137370_0021 para 1
33 'Scottish Government COVID-19 Advisory Group minutes: 4 June 2020', Scottish Government, 11 March 2022 (https://www.gov.scot/publications/scottish-government-covid-19-advisory-group-minutes-4-june-2020; INQ000208868_0003)
34 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, p226 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)
35 INQ000233747_0002; INQ000282744; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol 1, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report). A study in Italy in February and March 2020 found that 40% of cases were asymptomatic (INQ000359183_0001-0002).
36 INQ000073486_0002 para 9
37 INQ000587244_0013 para 64

the early implementation of backward contact tracing during the Covid-19 pandemic. However, with effective pre-pandemic planning, arrangements could have been made to allocate sufficient resources to it from the outset. As set out in Chapter 1: The UK's readiness to implement a test, trace and isolate system, no such plan was in place. Proper planning for contact tracing must take place well in advance of any future pandemic.

Manual contact tracing during the Covid-19 pandemic

The development of manual contact tracing during the pandemic

3.23. In January and February 2020, contact tracing took place on a relatively small scale in the UK:

- In England, following guidance and protocols for managing infectious diseases, manual contact tracing was implemented using existing public health structures and systems.[38] At this stage, Public Health England led contact tracing but liaised with local directors of public health who engaged with local communities.[39]
- In Wales, Public Health Wales set up a Contact Tracing Cell on 27 February 2020, which reported directly to Public Health Wales.[40]
- In Scotland, existing health protection teams undertook contact tracing in the early months of 2020.[41]
- In Northern Ireland, in the early months of 2020, the Public Health Agency (Northern Ireland) conducted contact tracing for the relatively small numbers of cases it had at that time.[42]

3.24. In February 2020, community transmission increased following the widespread influx of Covid-19 from multiple countries.[43] The UK needed:

- sufficient testing capacity to identify infected people; and
- to scale up its contact tracing systems and infrastructure to cope with the large spike in demand.[44]

38 *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 7: 'Contact tracing and isolation', Department of Health and Social Care, 10 January 2023 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation; INQ000505923_0003-0004)
39 INQ000543900_0001; INQ000512503
40 INQ000587250_0046-0047 para 193
41 INQ000358490_0006
42 INQ000587301_0039 para 85
43 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, p215 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)
44 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, p215 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)

Pausing community contact tracing

3.25. When the UK moved from the 'contain' to the 'delay' stage of the pandemic response in mid-March 2020 (discussed in Chapter 2: Testing), both community testing and widespread contact tracing were paused. This was agreed at a COBR meeting on 12 March 2020, where Professor (later Sir) Christopher Whitty, Chief Medical Officer for England from October 2019, noted that this was consistent with the Department of Health and Social Care's *Coronavirus: Action Plan*.[45]

3.26. The *Coronavirus: Action Plan* (which set out the UK-wide approach to responding to the pandemic) stated that, when transmission became established within the UK population, there would be less emphasis on large-scale preventative measures such as intensive contact tracing.[46] However, it did not expressly say that widespread contact tracing should be stopped altogether. On the contrary, it emphasised the importance of identifying infected people to delay the spread of the disease:

> "*Many of the actions involved in the Contain phase also act to help Delay the onset of an epidemic if it becomes inevitable. These include case finding and isolation of early cases.*"[47]

3.27. The pausing of community testing and widespread contact tracing removed two important ways of identifying infected people across the UK. In the absence of widespread testing and contact tracing, self-isolation depended on members of the public developing recognised symptoms of Covid-19, identifying those symptoms and choosing to isolate.[48]

3.28. Some targeted contact tracing continued. Professor Harries explained to the Inquiry that it continued where "*it was possible to keep going*".[49] Duncan Selbie (Chief Executive of Public Health England from July 2012 to August 2020) stated that "*at no point did PHE* [Public Health England] *'turn off' its contact tracing capacity*" but instead it shifted to a targeted rather than widespread approach.[50] However, the absence of a UK-wide system meant that contact tracing could no longer operate at scale.

3.29. The decision to pause widespread contact tracing likely further weakened the ability of the UK government and devolved administrations to monitor and respond to the spread of infection. There was reduced detection of infected people, a limited ability to interrupt transmission by identifying contacts and diminished understanding of

45 INQ000056221_0007-0008 para 12
46 INQ000056221_0007; *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020, pp19-20, para 4.48 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)
47 *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK,* Department of Health and Social Care, 3 March 2020, p14, para 4.23 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)
48 See, for example, INQ000068605_0016 (England); INQ000275093_0005 (Wales)
49 Jenny Harries 28 May 2025 116/7-20
50 INQ000475007_0012-0014 paras 6.1-6.4

the extent of the spread. In April 2020, a report on contact tracing by the European Centre for Disease Prevention and Control described the importance of contact tracing and noted that it was a key part of pandemic response in several Asian countries that had successfully reduced case numbers.[51] It also commented that data from contact tracing could contribute to a better understanding of the epidemiology of Covid-19.[52] While contact tracing was paused, scientific advisers and decision-makers could not collect those data.

3.30. Matt Hancock (Secretary of State for Health and Social Care from July 2018 to June 2021) told the Inquiry that Public Health England "*of course, infamously turned off the contact tracing system, and that was wrong and a mistake*".[53] Although not all contact tracing was stopped, the Inquiry considers that the UK government and devolved administrations should not have been in a position where they had to pause widespread contact tracing. Contact tracing has great value in controlling the spread of infection and should have been widely available.[54] This decision was taken at a time when deaths from Covid-19 were rising rapidly. On 12 March 2020, the UK government's online 'daily death count' recorded that 10 people in England had died. By 1 April 2020 this had risen to 2,698.[55] At such a time, the UK should have been making full use of all available tools to identify infected people and limit transmission. Had there been better planning, the decision may not have been necessary.

3.31. The Inquiry heard competing evidence about the reason for pausing contact tracing. Public Health England claimed in May 2020 that, once there was evidence of widespread, sustained community transmission, contact tracing "*was unlikely to control the outbreak alone*".[56] This explanation is not persuasive, particularly given the evidence of its continued value, even when levels of transmission are higher.[57] It also does not align with the subsequent reintroduction of contact tracing in May and June 2020 while case numbers remained high.

51 *Contact Tracing for COVID-19: Current Evidence, Options for Scale-Up and an Assessment of Resources Needed*, European Centre for Disease Prevention and Control, April 2020, pp1-2 (https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-Contract-tracing-scale-up.pdf; INQ000353670)

52 *Contact Tracing for COVID-19: Current Evidence, Options for Scale-Up and an Assessment of Resources Needed*, European Centre for Disease Prevention and Control, April 2020, p2 (https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-Contract-tracing-scale-up.pdf; INQ000353670)

53 Matt Hancock 22 May 2025 14/3-5

54 See 'Effectiveness of isolation, testing, contact tracing, and physical distancing on reducing transmission of SARS-CoV-2 in different settings: A mathematical modelling study,' AJ Kucharski, P Klepac, AJK Conlan, SM Kissler, ML Tang, H Fry et al, *The Lancet* (2020) 20(10), 1151-1160, p1156 (https://doi.org/10.1016/S1473-3099(20)30457-6; INQ000255418); 'Effectiveness of contact tracing for viral disease mitigation and suppression: Evidence-based review', KJT Craig, R Rizvi, VC Willis, WJ Kassler, G Purcell Jackson, *JMIR Public Health and Surveillance* (2021), 7(10), e32468, p6 (https://doi.org/10.2196/32468; INQ000573941); *Modelling the Current Welsh TTP (Test, Trace, Protect) System*, Technical Advisory Group, Welsh Government, 23 March 2021, pp5-6 (https://www.gov.wales/sites/default/files/publications/2021-03/technical-advisory-group-modelling-the-current-welsh-ttp-test-trace-protect-system.pdf; INQ000182536); INQ000562931_0002

55 INQ000320820 Tab 11: Death

56 'Public Health England response to *Sunday Telegraph* coverage', Public Health England, 31 May 2020 (https://www.gov.uk/government/news/public-health-england-response-to-sunday-telegraph-coverage; INQ000237640_0002)

57 For example, 'Effectiveness of contact tracing for viral disease mitigation and suppression: Evidence-based review', KJT Craig, R Rizvi, VC Willis, WJ Kassler, G Purcell Jackson, *JMIR Public Health and Surveillance* (2021), 7(10), e32468, p6 (https://doi.org/10.2196/32468; INQ000573941); INQ000562931_0002

3.32. The decision to pause community testing and widespread contact tracing was undoubtedly driven by the lack of testing and tracing capacity (see Chapter 2: Testing).[58] Professor Whitty told the Inquiry that the lack of testing at scale and the relatively limited scaling capacity of the contact tracing system were two heavy constraints on contact tracing in the first few months of 2020.[59] He explained that there was not sufficient capacity "*both to use testing for clinical management* [of sick patients] *and for contact tracing*" and that contact tracing "*was the lower priority given this forced choice*".[60] An article in the *British Medical Journal* in May 2020 also supported this; Professor Harries was quoted as saying that the decision to pause widespread contact tracing was partly driven by lack of testing capacity.[61] Richard Pengelly (Permanent Secretary to the Department of Health (Northern Ireland) from July 2014 to April 2022) confirmed that the decision to pause contact tracing was influenced by the lack of capacity to test at scale and the inability of the contact tracing workforce, resources and systems to handle the increase in demand.[62]

3.33. Even if sufficient capacity for community testing had been available, the UK's contact tracing systems lacked the capacity to undertake widespread contact tracing.[63] The *Technical Report on the Covid-19 Pandemic in the UK* (produced in 2022 by the Chief Medical Officers and Chief Scientific Advisers for the four nations) concluded that "*the existing contact tracing workforce, resources and systems were not able to handle such a large spike in demand*".[64]

3.34. Poor pre-pandemic planning by the Department of Health and Social Care, the Welsh Government, the Scottish Government and the Department of Health (Northern Ireland) (see Chapter 1: The UK's readiness to implement a test, trace and isolate system) meant that, at the start of the pandemic, across the UK, there were no rapidly scalable contact tracing systems. As a result, contact tracing was paused in March 2020 and the UK's pandemic response was weakened at a time when it should have been as strong as possible.

The resumption of community contact tracing (April, May and June 2020)

3.35. As mandatory lockdown measures were eased in the spring of 2020, all four governments of the UK concluded that community contact tracing should again form part of the strategy for the next phase of the pandemic.[65] A presentation from Public

58 See also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol 1, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report); Tracy Cooper 5 March 2024 187/18-20; Matt Hancock 30 November 2023 152/2-3
59 INQ000587340_0185 para 10.26
60 INQ000587340_0185 para 10.27
61 'Covid-19: Lack of capacity led to halting of community testing in March, admits deputy chief medical officer', G Iacobucci, *British Medical Journal* (2020), 369, m1845 (https://doi.org/10.1136/bmj.m1845; INQ000145860)
62 INQ000421703_0027-0028 para 51
63 INQ000587340_0185 para 10.26
64 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, p215 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)
65 INQ000587292_0029 para 119; INQ000130398_0002 para 3; INQ000358637_0003; INQ000226070_0001; INQ000215398_0001

Health England in mid-April 2020 identified several factors supporting the need for widespread contact tracing at that time:

- Behavioural surveys and modelling data suggested that social distancing measures had been effective in reducing the spread of infection.
- There was very limited information on the proportion of the population that had been exposed to the virus, but it was believed that a large proportion remained susceptible.
- There was limited evidence on the duration of immunity following infection and the risk of re-infection.
- There was a high likelihood that transmission would increase again once social distancing measures were lifted, with a consequent risk of increased mortality and increased pressure on health and social care services.
- When the social distancing measures were lifted, there would be a need for robust surveillance to identify people with Covid-19 promptly, alongside sufficient capacity to trace and isolate those who had been in contact with them.
- Finally, the World Health Organization had recently recommended tracing and monitoring of close contacts. It recommended a standardised and simplified process for the rapid identification and monitoring of close contacts as a matter of priority. It considered this an absolute necessity for reducing the intensity of transmission.[66]

3.36. Widespread contact tracing was introduced in Northern Ireland on 18 May 2020, in England and Scotland on 28 May 2020 and in Wales on 1 June 2020.[67] On 1 May 2020, SAGE advised that for a test and trace system to be effective, it would be necessary to reach at least 80% of close contacts of a person who had tested positive for Covid-19.[68] The next phase of the pandemic therefore required contact tracing at an "*unprecedented level and a new delivery model*".[69]

3.37. The introduction of widespread contact tracing across all four nations was an important step in the pandemic response. However, as set out above, this action came after months of increased transmission. Contact tracing systems should have been capable of widespread delivery as soon as transmission rates began to rise, so that increased transmission could be identified and contained at the earliest opportunity.

66 INQ000320599_0002
67 INQ000587292_0029 para 119; INQ000130398_0002 para 3; INQ000117589_0005; INQ000358637_0004; INQ000226070_0001; INQ000215398_0001
68 INQ000587365_0035 para 3.73
69 INQ000587365_0035-0036 para 3.74

Widespread manual contact tracing and the use of local authorities (May 2020)

3.38. Widespread contact tracing not only started at different times across the four nations but there was also no agreed approach on how it should be delivered.

3.39. The Welsh Government and the Northern Ireland Executive adapted existing public health structures, whereas the UK government established a new, England-wide system.[70] The Scottish Government created a large-scale, Scotland-wide contact tracing centre through a partnership between Public Health Scotland and NHS National Services Scotland.[71]

3.40. Most significantly, there were differences in how quickly the four governments made use of local authority expertise and health protection teams. These teams operate within the UK Health Security Agency in England (previously Public Health England), Public Health Scotland, Public Health Wales and the Department of Health (Northern Ireland).[72] They provide specialist public health protection advice and operational support to any organisation within their areas.[73] In usual circumstances, when there is a suspected outbreak of infectious disease, health protection teams lead the investigation and management of the outbreak; this may include contact tracing.[74]

3.41. Professor Madelynne Arden, expert witness on adherence to behaviours associated with test, trace and isolate, told the Inquiry about the benefits of using local health teams for contact tracing: "[L]*ocal public health teams have got a great deal of knowledge about their local communities, how to communicate with -- through trusted leaders, things like that.*"[75] Joanna Killian, Chief Executive of the Local Government Association from March 2024 to July 2026, agreed, noting that local teams have longstanding relationships with their community and a history of handling infectious disease outbreaks via contact tracing.[76]

3.42. Scotland's contact tracing model combined local health boards with a centralised service. Local health protection teams led contact tracing at the local level.[77] The centralised contact tracing service was run through a new organisation

70 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022, pp217-219 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)
71 *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 7: 'Contact tracing and isolation', Department of Health and Social Care, 10 January 2023 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation; INQ000505923_0005)
72 INQ000549191_0001 para 3 (England); *COVID-19: Guidance for Health Protection Teams (HPTs)*, Public Health Scotland, 21 June 2022, pp1-3 (https://publichealthscotland.scot/media/23064/2022-06-21-covid-19-guidance-for-hpt-v23.pdf; INQ000189078); INQ000204014_0006 (Scotland); 'AWARe and notifiable disease', Public Health Wales, no date (https://phw.nhs.wales/topic/aware-and-notifiable-disease; INQ000660301); INQ000204014_0014 (Northern Ireland)
73 INQ000549191_0002 para 5
74 INQ000549191_0002-0003 para 7
75 Madelynne Arden 29 May 2025 172/20-173/9
76 INQ000587454_0011 para 48
77 *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 7: 'Contact tracing and isolation', Department of Health and Social Care, 10 January 2023 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation; INQ000505923_0005); INQ000358112_0002

called the National Contact Centre (initially called the National Contact Tracing Centre). The National Contact Centre commenced operations on 22 June 2020.[78] It was commissioned by Public Health Scotland and jointly delivered by NHS National Services Scotland and Public Health Scotland.[79] By 26 August 2020, 98.9% of the close contacts of a person infected with Covid-19 were reached by Scotland's combined local and national contact tracing system.[80]

3.43. From the outset of population-wide contact tracing in Wales on 1 June 2020, the Welsh Government made use of local partnerships.[81] Its contact tracing system operated through a decentralised, three-tier model, with local teams based in local authorities and regional teams at health board level, and with oversight provided by a national Public Health Wales co-ordinating team.[82] Vaughan Gething (Minister for Health and Social Services in the Welsh Government from May 2016 to May 2021) explained that the Welsh Government made a conscious decision not to adopt the model adopted in England. Instead, it decided to draw on local authority expertise.[83] Mark Drakeford (First Minister of Wales from December 2018 to March 2024) emphasised the importance of ensuring that people who were contacted (and were asked about highly personal matters) could confidently engage with someone who understood the local context and geography and could speak in Welsh, if this was preferred.[84] During the first year of operation, tracing teams in Wales reached 99.7% of people with Covid-19 and almost 95% of their close contacts who were eligible for follow-up.[85]

3.44. In Northern Ireland, a contact tracing service was launched in May 2020. It was established and delivered by the centralised Public Health Agency (Northern Ireland), working closely with the Department of Health (Northern Ireland).[86] Given Northern Ireland's relatively small population of 1.8 million people, the system was able to operate with a comparatively small contact tracing team, with about 78 tracers trained by 25 May 2020, working from a central office.[87] The team adopted a specific strategy that emphasised being personable and convivial in their interactions.[88] By June 2020, 92% of people who had tested positive for Covid-19 and those who had been in close contact with them were reached within 24 hours.[89]

78 INQ000356306_0001
79 INQ000475006_0014 para 36
80 INQ000356931_0003
81 INQ000103006_0008
82 INQ000587349_0100 para 368
83 INQ000575989_0037-0038 paras 141-142
84 INQ000575983_0004, 0059, 0074 paras 16, 202, 257-258
85 INQ000587349_0108 para 398
86 *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 7: 'Contact tracing and isolation', Department of Health and Social Care, 10 January 2023 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation; INQ000505923_0005)
87 'How Northern Ireland relaunched contact tracing for covid-19 a month before the rest of the UK', C Baraniuk, *British Medical Journal* (2020), 369, m2373, p2 (https://doi.org/10.1136/bmj.m2373; INQ000353675)
88 'How Northern Ireland relaunched contact tracing for covid-19 a month before the rest of the UK', C Baraniuk, *British Medical Journal* (2020), 369, m2373, p1 (https://doi.org/10.1136/bmj.m2373; INQ000353675)
89 'How Northern Ireland relaunched contact tracing for covid-19 a month before the rest of the UK', C Baraniuk, *British Medical Journal* (2020), 369, m2373, p1 (https://doi.org/10.1136/bmj.m2373; INQ000353675)

3.45. The UK government chose to rely primarily on a new centralised organisation, NHS Test and Trace, which was set up by the Department of Health and Social Care to deliver mass testing and contact tracing in England.[90] The service began operations on 28 May 2020.[91] NHS Test and Trace contracted commercial providers to operate call centres for contact tracing.[92] Serco Ltd (an outsourcing and professional services company that operates across a range of government sectors including justice, defence, customer services and health) entered into a contract on 18 May 2020 to provide up to 10,500 call centre agents, along with the necessary infrastructure to support manual contact tracing (including buildings, telephones and other resources).[93] At the same time, Sitel Ltd (a company providing call centres, as well as services including customer service and telemarketing) entered into a contract to provide 4,500 full-time equivalent call centre agents.[94] There were relatively few partnerships with local organisations to deliver contact tracing.[95] The centralised system in England had limited effect. One analysis found that, in June 2020, 42% of close contacts of people with Covid-19 were reached, rising to 47% in July 2020 and falling to 44% in August 2020.[96]

3.46. England has a much larger population than the devolved nations and therefore what is suitable for Northern Ireland, Scotland or Wales may not be suitable for England. The centralised system worked in Northern Ireland because its population is relatively small and it has a single, comparatively small healthcare system that enabled flexibility and a more rapid response.[97] The scale of its system meant that it was able to replicate some of the advantages typically associated with local teams.

3.47. Given the size of the population in England, the Inquiry understands the initial choice of a centralised system. However, this system saw a significantly lower success rate in the early months and had to undergo modification.[98] Following feedback from local authorities and the public that the centralised model may have hindered the

90 INQ000468875 Tab 1: Initial data request (the Department of Health and Social Care's role in the formation of Test and Trace); INQ000543900_0001 (the Department of Health and Social Care's responsibility for the Test and Trace programme)
91 INQ000549191_0003-0004 para 11; INQ000532430_0001; *NHS Test and Trace: The Journey So Far*, The Health Foundation, 23 September 2020, p5 (https://www.health.org.uk/reports-and-analysis/briefings/nhs-test-and-trace-the-journey-so-far; INQ000475081)
92 *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 7: 'Contact tracing and isolation', Department of Health and Social Care, 10 January 2023 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation; INQ000505923_0007)
93 INQ000587655_0037 para 98; 'Covid-19: Is local contact tracing the answer?', G Iacobucci, *British Medical Journal* (2020), 370, m3248, p1 (https://doi.org/10.1136/bmj.m3248; INQ000145859)
94 INQ000525512_0004
95 'NHS Test and Trace service to strengthen regional contact tracing', Department of Health and Social Care, 10 August 2020 (https://www.gov.uk/government/news/nhs-test-and-trace-service-to-strengthen-regional-contact-tracing; INQ000576812)
96 'Modelling the potential impact of mask use in schools and society on COVID-19 control in the UK', J Panovska-Griffiths, CC Kerr, W Waites, RM Stuart, D Mistry, D Foster et al, *Scientific Reports* (2021), 11(1), 8747, p8 (https://doi.org/10.1038/s41598-021-88075-0; INQ000647387)
97 'How Northern Ireland relaunched contact tracing for covid-19 a month before the rest of the UK', C Baraniuk, *British Medical Journal* (2020), 369, m2373, p2 (https://doi.org/10.1136/bmj.m2373; INQ000353675)
98 'Modelling the potential impact of mask use in schools and society on COVID-19 control in the UK', J Panovska-Griffiths, CC Kerr, W Waites, RM Stuart, D Mistry, D Foster et al, *Scientific Reports* (2021), 11(1), 8747, p8 (https://doi.org/10.1038/s41598-021-88075-0; INQ000647387)

timely identification and management of local clusters and outbreaks, NHS Test and Trace expanded its use of local teams and partnerships from 10 August 2020.[99]

3.48. Greg Fell (President of the Association of Directors of Public Health from November 2023) told the Inquiry that the initial, single national approach in England "*wasn't optimal in terms of the speed by which cases were completed*".[100] He said that the introduction of local services allowed tracing to be completed more swiftly and in more detail.[101] Between 10 and 16 September 2020, 74.7% of the identified contacts of an infected person were successfully traced by England's contact tracing system, using local authority partnerships.[102] This represented a significant improvement when compared with the figures for June, July and August 2020.[103]

3.49. Baroness Harding told the Inquiry that, "*with the benefit of hindsight, you'd do it* [use local expertise] *earlier*", but added that the UK government exerted considerable effort from May 2020 onwards to "*get this balance right of local and national working together*".[104] The Inquiry agrees that the expertise of local authorities should have been engaged at an earlier stage in England. In a pandemic, the rapid identification of potentially infected people is critical and the tracing expertise of local authorities is a valuable resource.

3.50. The Inquiry was told of different reasons for the delay in using that expertise. James Bethell, Lord Bethell (Parliamentary Under Secretary of State for Technology, Innovation and Life Sciences at the Department of Health and Social Care from March 2020 to September 2021), told the Inquiry that local partnerships were not utilised sooner due to resource constraints faced by local teams. He provided an illustrative example of a local authority lacking the necessary funds to procure a gazebo for conducting tracing operations.[105] Similarly, Boris Johnson, Prime Minister from July 2019 to September 2022, told the Inquiry that the existing capacity of local authorities could not have coped with contact tracing demands during the pandemic.[106]

3.51. Mr Hancock said that the delay in widespread use of local resources arose from the difficulty in integrating NHS Test and Trace with existing local systems.[107] He also told the Inquiry: "[T]*here was one leader of public health per council and they were busy,*

99 *Technical Report on the COVID-19 Pandemic in the UK*, Chapter 7: 'Contact tracing and isolation', Department of Health and Social Care, 10 January 2023 (https://www.gov.uk/government/publications/technical-report-on-the-covid-19-pandemic-in-the-uk/chapter-7-contact-tracing-and-isolation; INQ000505923_0005)
100 Greg Fell 28 May 2025 207/23-208/4
101 Greg Fell 28 May 2025 208/21-209/1
102 'Weekly statistics for NHS Test and Trace (England) and coronavirus testing (UK): 10 September to 16 September', Department of Health and Social Care, updated 25 September 2020 (https://www.gov.uk/government/publications/nhs-test-and-trace-england-and-coronavirus-testing-uk-statistics-10-september-to-16-september-2020/weekly-statistics-for-nhs-test-and-trace-england-and-coronavirus-testing-uk-10-september-to-16-september; INQ000565932_0002)
103 'Modelling the potential impact of mask use in schools and society on COVID-19 control in the UK', J Panovska-Griffiths, CC Kerr, W Waites, RM Stuart, D Mistry, D Foster et al, *Scientific Reports* (2021), 11(1), 8747, p8 (https://doi.org/10.1038/s41598-021-88075-0; INQ000647387)
104 Dido Harding 28 May 2025 16/16-19
105 James Bethell 22 May 2025 135/19-136/10
106 INQ000587378_0049 para 157
107 Matt Hancock 22 May 2025 14/3-19

because they were doing everything else as well."[108] However, Mr Fell suggested that the UK government lacked understanding of the knowledge possessed by local public health teams during the initial stages of the pandemic.[109] He explained that directors of public health operate within teams – his own consisting of 30 or 40 people – and during the pandemic they were fully deployed on managing the response: "*So it's not true to say DsPH* [directors of public health] *were one-man bands or one-woman bands. We have a team.*"[110]

3.52. Had there been a pre-pandemic plan for contact tracing (see Chapter 1: The UK's readiness to implement a test, trace and isolate system), appropriate allocation of resources, including local public health expertise, could have formed part of a pre-planned strategy for widespread contact tracing.

3.53. Despite the clear value of local partnerships, a system based solely on local contact tracing also presents disadvantages, depending on the size and nature of the population. For example, the German government relied entirely on a decentralised system, where contact tracing was delivered through its local authorities. A report in October 2020 indicated that these local authorities had reported becoming overwhelmed and sought to discontinue the work.[111] The German government consequently suspended contact tracing when confronted with escalating rates of infection in the autumn of 2020 and the spring of 2021.[112]

3.54. The optimal model of contact tracing for a pandemic is therefore one that combines national capability with local expertise. As Baroness Harding noted, the scale of a national call centre offers surge capacity and consistency while local authorities contribute relevant knowledge and expertise.[113] Mr Hancock agreed, adding that effective integration relies on data structures to allow national and local systems to work together.[114] Future contact tracing strategies should therefore be based on a combined model, unless – as exemplified in Northern Ireland during the Covid-19 pandemic – the size and structure of the nation mean that a centralised system alone can deliver comparable benefits.

The manual contact tracing workforce

3.55. Manual contact tracing was undertaken by people employed as contact tracers, operating either in call centres or from their homes.[115] By 27 May 2020, 25,000 contact tracers had been recruited in England, establishing a capacity to trace the contacts of up to 10,000 people per day.[116] In Scotland, approximately 2,000

108 Matt Hancock 22 May 2025 14/16-19
109 INQ000587434_0039 para 162
110 Greg Fell 28 May 2025 176/3-19
111 INQ000090099_0012
112 INQ000587322_0035 para 6.11
113 Dido Harding 28 May 2025 15/15-24
114 Matt Hancock 22 May 2025 17/1-6
115 Matt Hancock 22 May 2025 13/14-18, 137/14-18
116 INQ000106458_0004

contact tracers were recruited by 23 June 2020.[117] In Wales, the contact tracing workforce amounted to 700 people by the same date.[118] In Northern Ireland, there were 78 tracers by 25 May 2020.[119] This disparity may be attributable to variations in population size.[120]

3.56. Concerns arose that too many contact tracers had been recruited in England. In July 2020, Theodore Agnew, Lord Agnew of Oulton (Minister of State at the Cabinet Office and the Treasury from February 2020 to January 2022), questioned low utilisation rates of contact tracers.[121] He emphasised the importance of efficient expenditure, rather than simply paying for people to be available.[122] In August 2020, the *British Medical Journal* reported that NHS Test and Trace contact tracers in England were left with no work to do.[123] Media outlets also reported that contact tracers were left idle, with headlines such as 'Coronavirus contact tracer paid to watch Netflix'.[124] The UK government requested a reduction in the number of call centre agents supplied by Serco Ltd.[125] By 11 August 2020, NHS Test and Trace had agreed with both Sitel Ltd and Serco Ltd that the total number of contact tracers would be reduced to 12,000.[126]

3.57. Mr Hancock was unable to explain the reasons for the initial decision regarding the number of contact tracers required:

> "*I don't recall. There will have been -- somebody will have made an estimate based on a piece of advice, but you've got to remember that this was the first time this has happened in living memory so it inevitably was an estimate.*"[127]

3.58. By contrast, the Welsh Government carried out modelling in May 2020 to estimate the size of the workforce required for contact tracing, based on the number of people infected, with options to adjust this in line with the number of available tests.[128] It also enabled the Welsh Government to calculate anticipated fluctuations in workforce requirements on a weekly basis between 1 June and 31 August 2020.[129] This demonstrated the effective use of modelling and analysis to inform decisions about resourcing a manual contact tracing system.

117 INQ000336718_0005 para 19
118 INQ000336718_0002 para 3
119 'How Northern Ireland relaunched contact tracing for covid-19 a month before the rest of the UK', C Baraniuk, *British Medical Journal* (2020), 369, m2373, p2 (https://doi.org/10.1136/bmj.m2373; INQ000353675)
120 'Population estimates', Office for National Statistics, no date (https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates; INQ000660330)
121 INQ000534516
122 INQ000534516
123 'Covid-19: Is local contact tracing the answer?', G Iacobucci, *British Medical Journal* (2020), 370, m3248, p1 (https://doi.org/10.1136/bmj.m3248; INQ000145859)
124 'Covid-19: Is local contact tracing the answer?', G Iacobucci, *British Medical Journal* (2020), 370, m3248, p2 (https://doi.org/10.1136/bmj.m3248; INQ000145859)
125 INQ000587655_0041 para 118
126 INQ000607998_0009
127 Matt Hancock 22 May 2025 16/8-15
128 INQ000291490_0023 para 102
129 INQ000227459

3.59. Detailed modelling exercises should be undertaken in future to estimate the likely contact tracing workforce required in the next pandemic, to avoid inefficiency and the unnecessary use of limited resources.

Maintaining manual contact tracing infrastructure between pandemics

3.60. The systems put in place during the pandemic to enable manual contact tracing – such as call centres or a contact tracing workforce – have not been retained. Mr Hancock told the Inquiry: "*I am concerned that at present our current capacity is being dismantled and we will find it much harder to scale again in the future as a result.*"[130] While it may not be practicable to maintain buildings and equipment on a permanent stand-by basis for a future pandemic, it should be possible to retain the capability to scale up at speed. This could include developing framework agreements with call centre providers and providers of contact tracing staff so that they can be implemented rapidly.

3.61. This is important for three principal reasons. Firstly, there should be an alternative to digital contact tracing (eg through mobile phone apps) during a pandemic for those people who are unable or unwilling to use such tools, including people who are digitally excluded. Secondly, it would be prudent to maintain an alternative to digital contact tracing in the event of unforeseen issues with digital tools (such as technical failures or cyber attacks or incidents). Thirdly, the greatest benefits arise from combining manual and digital contact tracing during a pandemic. Digital contact tracing can operate more quickly than manual methods and can identify contacts that an infected person may be unable to recall.[131] However, manual contact tracing, as a human-fronted process, enables people to receive assurance, guidance and explanation at what may be an anxious time.[132] Each approach, therefore, provides distinct advantages that are not provided by the other.

3.62. The data and expert opinion support the use of a combined manual and digital system. A 2021 study of contact tracing during the Covid-19 pandemic found that infection control was improved when both manual and digital methods were used together, compared to reliance on digital contact tracing alone.[133] Professor Martin McKee, Professor of European Public Health at the London School of Hygiene & Tropical Medicine from 1997 and a member of Independent SAGE (a group of UK

130 INQ000587294_0096 para 274
131 *Exit Through the App Store? A Rapid Evidence Review on the Technical Considerations and Societal Implications of Using Technology to Transition from the COVID-19 Crisis*, Ada Lovelace Institute, 20 April 2020, pp27, 32 (https://www.adalovelaceinstitute.org/wp-content/uploads/2020/04/Ada-Lovelace-Institute-Rapid-Evidence-Review-Exit-through-the-App-Store-April-2020-2.pdf; INQ000592632)
132 *Exit Through the App Store? A Rapid Evidence Review on the Technical Considerations and Societal Implications of Using Technology to Transition from the COVID-19 Crisis*, Ada Lovelace Institute, 20 April 2020, p27 (https://www.adalovelaceinstitute.org/wp-content/uploads/2020/04/Ada-Lovelace-Institute-Rapid-Evidence-Review-Exit-through-the-App-Store-April-2020-2.pdf; INQ000592632)
133 'Modeling the effect of exposure notification and non-pharmaceutical interventions on COVID-19 transmission in Washington State', M Abueg, R Hinch, N Wu, L Liu, W Probert, A Wu et al, *npj Digital Medicine* (2021), 4, 49, pp2, 5 (https://doi.org/10.1038/s41746-021-00422-7; INQ000574825)

scientists, independent of the UK government, set up to monitor and assess UK strategy in relation to the Covid-19 pandemic), told the Inquiry that, despite the use of digital technologies, manual contact tracing remained essential.[134] Professor Wolfgang Emmerich (former Chief Executive Officer of Zühlke Engineering Ltd, which provided services for the NHSX contact tracing app, discussed below) similarly explained that manual and digital contact tracing are complementary and that both have a role in public health interventions.[135] He suggested that there is an opportunity to improve integration between the two. For example, he suggested enabling contact tracing staff to add details of venues that have been visited to the data underpinning venue alerts sent through digital apps.[136]

3.63. Planning for a future manual contact tracing system should include:

- developing a 'combined' model comprising a centralised system alongside locally delivered services led by local authorities, unless the size and structure of the country (such as in the example of Northern Ireland above) mean that a centralised system alone can deliver comparable benefits;
- analysing the number of people likely to use the system, alongside other relevant data, to inform workforce recruitment; and
- developing a framework agreement for contact tracing services and staff to be available and ready to deliver services as quickly as possible at the outset of the next public health emergency.

Recommendation 2: Manual contact tracing during a public health emergency

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should maintain the capability to deliver manual contact tracing using local public health expertise.

Each government should also prepare plans to scale up manual contact tracing during a public health emergency. Plans should include:

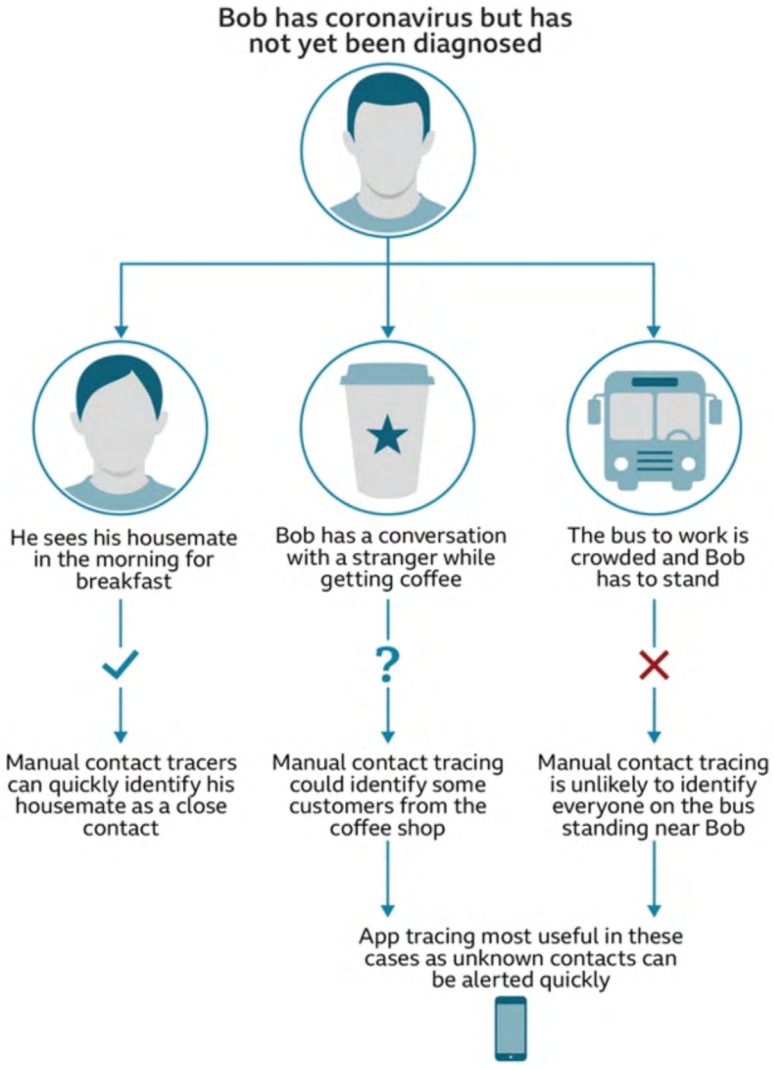
- a contact tracing model that incorporates local public health expertise;
- the recruitment of a trained and appropriately sized workforce; and
- a framework agreement for contact tracing services so that providers and staff can be engaged to deliver those services quickly.

134 INQ000475066_0016 para 45
135 INQ000587743_0029 para 84. NHSX was a unit of NHS England, NHS Improvement and the Department of Health and Social Care, responsible for setting policy and developing best practice for NHS technology, digital and data, including data-sharing and transparency.
136 INQ000587743_0029 para 84

Digital contact tracing during the Covid-19 pandemic

3.64. Digital contact tracing involves the use of a technological tool, such as a mobile phone app, to identify people who may have been exposed to Covid-19. These tools analyse data on a person's location and proximity to detect when people have been close to someone who is infected. Those who may have been exposed to the virus can thereby be identified, informed of the risk and given advice as to how to proceed (see Figure 5, which illustrates the contacts reached through digital contact tracing compared with manual contact tracing).[137]

Figure 5: How contact tracing apps can identify more potentially infected people



Source: 'Coronavirus: More than 100 people told to isolate by tracing app', BBC News, 17 September 2020 (https://www.bbc.co.uk/news/uk-scotland-54185739; INQ000359995_0004)

137 INQ000576046_0007 para 23

The benefits of digital contact tracing

3.65. The use of digital contact tracing can have a significant impact on reducing the spread of infection during a pandemic. With sufficiently high levels of engagement, the spread of an infectious disease like Covid-19 can be significantly reduced or even stopped.

3.66. In April 2020, a team at Oxford University (led, among others, by Professor Christophe Fraser, Professor of Infectious Disease Epidemiology and consultant for the NHS COVID-19 app) modelled the spread of coronavirus in a simulated city of 1 million inhabitants.[138] The results suggested that, if approximately 60% of the population used a contact tracing app, the pandemic could be stopped.[139]

3.67. A 2021 modelling study of contact tracing during the Covid-19 pandemic in three counties in the USA estimated that, where 75% of people downloaded and used a contact tracing app, total infections were reduced by as much as 81% in one county, with a minimum of 56% in another. Even with relatively lower rates of adoption, benefits were observed, with uptake of 15% leading to estimated reductions in total infections as high as 11.8% in one county, with a low estimate of 3.9% in another.[140] A study in England and Wales found that digital contact tracing enabled more contacts to be reached than by manual methods. Between December 2020 and January 2021 in England and Wales, the average number of contacts identified per infected person was 4.2 through digital tracing, compared with 1.8 through manual tracing.[141]

3.68. The experience in other countries supports these findings. Singapore, for example, was the first country to develop a contact tracing app, in March 2020.[142] The app was complemented by a wearable dongle introduced in June 2020 and was used by more than 90% of the population.[143] Singapore is widely regarded as having been successful in suppressing Covid-19.[144] In August 2020, its system was able to reach 100% of close contacts of people infected with Covid-19 through contact tracing.[145]

138 'Digital contact tracing can slow or even stop coronavirus transmission and ease us out of lockdown', University of Oxford, 16 April 2020 (https://www.ox.ac.uk/news/2020-04-16-digital-contact-tracing-can-slow-or-even-stop-coronavirus-transmission-and-ease-us; INQ000660310)
139 INQ000587239_0062-0063 para 206; 'Digital contact tracing can slow or even stop coronavirus transmission and ease us out of lockdown', University of Oxford, 16 April 2020 (https://www.ox.ac.uk/news/2020-04-16-digital-contact-tracing-can-slow-or-even-stop-coronavirus-transmission-and-ease-us; INQ000660310)
140 'Modeling the effect of exposure notification and non-pharmaceutical interventions on COVID-19 transmission in Washington State', M Abueg, R Hinch, N Wu, L Liu, W Probert, A Wu et al, *npj Digital Medicine* (2021), 4, 49, p2 (https://doi.org/10.1038/s41746-021-00422-7; INQ000574825)
141 'The epidemiological impact of the NHS COVID-19 app', C Wymant, L Ferretti, D Tsallis, M Charalambides, L Abeler-Dörner, D Bonsall et al, *Nature* (2021), 594, 408-412, p411 (https://doi.org/10.1038/s41586-021-03606-z; INQ000573970)
142 INQ000566205_0004; INQ000475153_0045 para 122
143 INQ000566205_0004; INQ000475153_0045 para 122
144 INQ000475153_0045 para 122
145 INQ000566205_0001

The development of digital contact tracing

3.69. During the Covid-19 pandemic, three digital tools for contact tracing were launched in the UK, all of which were based on mobile phone apps. The Welsh Government chose to adopt an app developed by the UK government (the NHS COVID-19 app), whereas the Scottish Government and Northern Ireland Executive chose to develop their own apps. Although the UK government began development of a contact tracing app first, its app was the last to be launched.

3.70. All three apps used Bluetooth technology to record, anonymously, proximity between users who had the app installed and activated. When a user tested positive for Covid-19, those who had been in close contact with them – meeting the definition of 'close contact' discussed above – during the period in which they were likely to have been infectious would receive a notification advising them to self-isolate.[146] Over time, the three apps became interoperable, meaning they were able to exchange diagnosis keys, anonymous identifiers associated with confirmed Covid-19 cases. This was achieved through a federated server, which acted as a gateway for sharing information between the different systems.[147]

The STOPCovid NI app: launched on 30 July 2020

3.71. On 21 May 2020, the Northern Ireland Executive announced that it would develop its own contact tracing app rather than adopt the one in development in England.[148] Its app would use the same technology and provider as in the Republic of Ireland.[149] This approach was intended to facilitate interoperability of the apps in the two adjoining nations, which had an open border.[150] The Northern Ireland and Republic of Ireland apps were the first in the world to achieve interoperability.[151]

3.72. Northern Ireland's app was called 'STOPCovid NI' and was the first of all the UK's apps to become operational, launching on 30 July 2020 for those aged 18 or over. This was later extended to 11 to 17 year olds on 1 October 2020, making the Northern Ireland Executive the first government in the UK to provide a contact tracing app to this age group.[152] The app was built to work with an application programming interface developed by Google and Apple, meaning it would work on phones developed by those companies, and it was led by the Department of Health (Northern Ireland).[153] During its operational life, the STOPCovid NI app was

146 'NHS COVID-19 app launches across England and Wales', Department of Health and Social Care, 24 September 2020 (https://www.gov.uk/government/news/nhs-covid-19-app-launches-across-england-and-wales; INQ000517399_0002-0003); 'Protect Scotland app launches', Scottish Government, 10 September 2020 (https://www.gov.scot/news/protect-scotland-app-launches; INQ000505905_0001); 'STOPCovid NI: Use the app. Save lives', Northern Ireland Executive, no date (INQ000370981_0002)
147 INQ000589775_0018 para 64; INQ000546467_0002
148 INQ000566213_0003
149 INQ000566213_0003
150 INQ000566213_0003
151 INQ000566213_0003
152 'Public information campaign will promote newly-launched StopCOVID NI app', Department of Health (Northern Ireland), 31 July 2020 (https://www.health-ni.gov.uk/news/public-information-campaign-will-promote-newly-launched-stopcovid-ni-app; INQ000373403); INQ000587301_0184 paras 483-484
153 INQ000587301_0184, 0187 paras 483, 494

downloaded 679,456 times.[154] With a population of approximately 1.93 million at that time, and assuming that each download reflected one unique user, this represents just over 35% of the population downloading the app.[155] The app generated 97,248 notifications advising people to self-isolate and achieved an average notification ratio of 2.46 close contacts for every index case reported during this time (meaning that, for every person who entered a positive result on the app, an average of 2.46 close contacts were notified).[156]

The Protect Scotland app: launched on 10 September 2020

3.73. The Scottish Government had initially planned to adopt the UK government's NHS COVID-19 app.[157] The NHS COVID-19 app was intended to be launched in August 2020, allowing NHS Test and Trace to assess its performance before a larger-scale launch.[158] However, in the summer of 2020, Jeane Freeman (Cabinet Secretary for Health and Sport in the Scottish Government from June 2018 to May 2021) directed that alternative options be considered.[159] This reflected concerns within the Scottish Government about the direction being taken by the UK government in relation to the NHS COVID-19 app at that time (see below) and continuing uncertainty as to whether the app would operate effectively in Scotland.[160]

3.74. An assessment by the Scottish Government's Digital Health and Care Division raised further concerns. It noted that the range of functions proposed for the NHS COVID-19 app (such as a QR code check-in at venues and a test booking facility) risked making the app overly complex.[161] It identified concerns that the UK government was not providing the devolved administrations with the necessary assurance on certain matters, such as technical details.[162] In addition, it was thought that adopting the NHS COVID-19 app would limit the Scottish Government's ability to make rapid changes to functionality in line with its own policy requirements.[163]

3.75. On 31 July 2020, Ms Freeman informed the Scottish Parliament that the Scottish Government would develop its own contact tracing app.[164] She told the Inquiry that the Scottish Government decided not to adopt the NHS COVID-19 app because "*this was not possible as the app for England had been developed in England to integrate with England's (and Wales) contact tracing system*".[165]

3.76. The Protect Scotland app was launched on 10 September 2020. It was developed using the Google/Apple application programming interface and operated on a

154 INQ000587301_0184-0185 para 486
155 INQ000587301_0184-0185 para 486
156 INQ000587301_0184-0185 para 486
157 INQ000587401_0015 para 6.16
158 INQ000587401_0015 para 6.16
159 INQ000546467_0001
160 INQ000242714_0002
161 INQ000242714_0002, 0009
162 INQ000242714_0009
163 INQ000242714_0009
164 INQ000546467_0001
165 INQ000589775_0018 para 64

decentralised model, meaning that users' data would be stored on their phones rather than on a centralised server.[166] It was initially available to people aged 16 and over, although in December 2020 eligibility was extended to include younger people in secondary education.[167] By 17 September 2020, more than 1 million people had downloaded the app and more than 100 people had been advised to self-isolate as a result of notifications it had issued.[168] By 1 November 2021, downloads had increased to more than 2.3 million, with 102,764 notifications issued.[169] At that time, the population aged 16 years and over was approximately 4,462,000, suggesting that approximately 52% of eligible people downloaded the app, assuming each download reflects one person.[170]

The NHS COVID-19 app: launched on 24 September 2020

3.77. The NHS COVID-19 app underwent two iterations, with the second launched in England and Wales in September 2020.[171] The first iteration, NHS COVID-19 app 1, began development in early March 2020.[172] It was developed by NHSX following meetings in early March 2020.[173]

3.78. The NHS COVID-19 app 1 was based on a centralised system, meaning that data were stored on a central server.[174] Matthew Gould (Chief Executive Officer of NHSX from May 2019 to January 2022, responsible for the development of the NHS COVID-19 app 1) told the Inquiry that this approach was chosen because it was able to produce data that could provide greater insight into patterns of transmission and emerging hotspots. He described the choice between using a centralised or decentralised model as a "*trade-off*" between concerns about privacy and the ability to generate insightful data. The development team acknowledged that the decentralised model presented fewer privacy concerns but considered that privacy concerns in the centralised model could be mitigated through measures such as anonymisation of data.[175]

3.79. However, on 10 April 2020, Google and Apple announced that they were developing an application programming interface that would only operate with apps built on a decentralised model, in which data collected by an app are stored on a person's

166 'UK contact tracing apps: The view from Northern Ireland and Scotland', Ada Lovelace Institute, 24 September 2020 (https://www.adalovelaceinstitute.org/blog/uk-contact-tracing-apps-the-view-from-northern-ireland-and-scotland; INQ000505907_0003)
167 *Interim National Equality Impact Assessment*, Digital Health and Care Scotland, 18 December 2020, p6, para 13 (INQ000414602)
168 'Coronavirus: More than 100 people told to isolate by tracing app', BBC News, 17 September 2020 (https://www.bbc.co.uk/news/uk-scotland-54185739; INQ000359995_0002)
169 *Public Health Scotland COVID-19 Statistical Report: As at 01 November 2021*, Public Health Scotland, 3 November 2021, p25 (https://publichealthscotland.scot/media/9994/21-11-03-covid19-publication_report.pdf; INQ000346176)
170 'LFS: Population aged 16 and over: Scotland: All: Thousands: NSA', Office for National Statistics, 19 May 2026 (https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/ychn/lms; INQ000660282)
171 'NHS COVID-19 app launches across England and Wales', Department of Health and Social Care, 24 September 2020 (https://www.gov.uk/government/news/nhs-covid-19-app-launches-across-england-and-wales; INQ000517399); INQ000497911; INQ000587401_0004 para 2.1(i)
172 INQ000566175_0001 para 1
173 INQ000576046_0001, 0005-0007 paras 3, 19-21
174 INQ000576046_0009 para 29
175 Matthew Gould 15 May 2025 125/3-127/20; INQ000576046_0009 para 29

phone.[176] This approach addressed privacy concerns because, rather than uploading contacts to a centralised server, it stored details on the user's phone.[177]

3.80. On 6 May 2020, a technical team was established to develop a second version of the NHS app.[178] This work was completed by the end of May, resulting in two functioning prototypes: the original 'centralised' NHS COVID-19 app 1 and a 'decentralised' NHS COVID-19 app 2 based on the Google/Apple application programming interface.[179]

3.81. Initial testing of both versions indicated that the NHS COVID-19 app 1 did not integrate effectively with Apple systems.[180] On 15 June 2020, Mr Gould briefed Baroness Harding and Mr Hancock:

> "*Extensive field trials have shown that* … [the NHS COVID-19 app 1] *is picking up only a small proportion of contact events on Apple phones; by contrast, the version using the Google/Apple API* [application programming interface] *is picking up almost every contact event.*"[181]

The issue arose from a technical flaw in the operation of the NHS COVID-19 app 1 on Apple systems, which allowed the phone to transmit data but not receive data from other phones. Attempts to resolve this issue had not been successful by 15 June 2020.[182]

3.82. On 18 June 2020, Mr Hancock decided to prioritise development of the decentralised NHS COVID-19 app 2.[183] The NHS COVID-19 app was launched in England and Wales on 24 September 2020 and was available to people aged 16 and over.[184] By 13 October 2020, it had been downloaded by 17.5 million people, representing 36.4% of the approximately 48 million people aged 16 years and over in England and Wales.[185] A study published in 2022 estimated that, during its first year of operation, the app may have prevented 1 million Covid-19 infections, 44,000 hospital admissions and 9,600 deaths.[186]

176 INQ000576046_0004-0005, 0012-0013 paras 14, 46. An application programming interface is a set of rules or protocols that enables apps to communicate with each other to exchange data, features and functionality: for example, see 'What is an API (application programming interface)?', IBM, 9 April 2024 (https://www.ibm.com/think/topics/api; INQ000661549).
177 INQ000587743_0008 para 23
178 INQ000566175_0002 para 3
179 INQ000576046_0004-0005, 0015 paras 14, 56; INQ000566175
180 INQ000566175_0001
181 INQ000566175_0001; INQ000587294_0057-0058 paras 176-177
182 INQ000566175_0002
183 INQ000587401_0004 para 2.1(e)
184 'NHS COVID-19 app launches across England and Wales', Department of Health and Social Care, 24 September 2020 (https://www.gov.uk/government/news/nhs-covid-19-app-launches-across-england-and-wales; INQ000517399); INQ000497911; INQ000587401_0004 para 2.1(i). For the trials on the Isle of Wight in May 2020 and in Newham in East London in August 2020, see also INQ000576046_0013 para 48; INQ000587743_0010-0011 para 30; 'New NHS Test and Trace app to be rolled out to Newham residents to beat COVID-19', Newham Council, 13 August 2020 (https://www.newham.gov.uk/news/article/488/new-nhs-test-and-trace-app-to-be-rolled-out-to-newham-residents-to-beat-covid-19; INQ000575884).
185 INQ000587401_0004 para 2.1(j); INQ000575876_0007
186 INQ000587743_0015 para 42; 'Epidemiological impacts of the NHS COVID-19 app in England and Wales throughout its first year', M Kendall, D Tsallis, C Wymant, A Di Francia, Y Balogun, X Didelot et al, *Nature Communications* (2023), 14, 858 (https://doi.org/10.1038/s41467-023-36495-z; INQ000574818)

3.83. The value of enlisting major technological companies in the analysis of data, and in the building and distribution of the app, appears to have been recognised at an early stage.[187] In-depth engagement with appropriate third parties (such as major technology providers) should take place at an early stage in development of the next app. This should help to reduce the risk of a digital tool progressing to an advanced stage of development before compatibility issues are identified.

Avoiding delay in digital contact tracing

3.84. It is vital to avoid delay in launching digital contact tracing for use in a public health emergency.

3.85. Although the benefits of digital contact tracing were recognised in the UK as early as March 2020, the tools were not available and implemented until 30 July 2020 in Northern Ireland and September 2020 in England, Wales and Scotland. The many months during which the four nations operated without digital contact tracing – while apps were developed and tested – are likely to have had an impact on transmission of the infection. This is particularly relevant given that, during the early stages of the pandemic, the UK relied solely on manual contact tracing, which was significantly reduced for a period in the spring of 2020.

3.86. The Inquiry recognises that those involved in developing these apps worked under significant pressure to put in place an effective digital tool within challenging timescales. In addition, the Inquiry heard that the UK was one of the first Western democracies to begin developing a digital contact tracing app, which demonstrates strong insight and innovation.[188] However, the time required for design, development and testing prior to launch was significant in the context of a rapidly evolving pandemic. This demonstrates the importance of developing a digital contact tracing tool in advance of the next pandemic, so that it can be deployed at the outset.

Trust in digital contact tracing

3.87. While a digital contact tracing tool has the potential to play an important role in limiting the spread of infection, its effectiveness depends on whether the public chooses to use it. In particular, it relies on people self-reporting that they are infected and providing details of the people they have been in contact with, so that those contacts can be traced.[189]

3.88. The benefits of contact tracing are primarily for society as a whole, rather than for the individual. Motivations to self-report are therefore likely to be influenced by a sense of responsibility to others or compliance with social and community expectations

187 INQ000576046_0007 para 24; INQ000564675_0003 para 13
188 INQ000576046_0007 para 22
189 'Engagement and adherence trade-offs for SARS-CoV-2 contact tracing', TCD Lucas, EL Davis, D Ayabina, A Borlase, T Crellen, L Pi et al, *Philosophical Transactions of the Royal Society B* (2021), 376(1829), 20200270, p2 (https://doi.org/10.1098/rstb.2020.0270; INQ000531033)

(eg where self-reporting is widely practised in a community and it is understood to be the norm).[190]

3.89. Professor Arden told the Inquiry:

> "*Digital applications, no matter how sophisticated their technology, are only as good as the level of engagement that they produce. Relying on digital solutions when trust has not been established is extremely risky and should be considered and mitigated against in a future pandemic response.*"[191]

Without this engagement, contact tracing systems cannot function effectively.

3.90. However, one study estimated that the number of devices with the NHS COVID-19 app downloaded and contact tracing enabled peaked at 13.9 million in June 2021, which represented less than a third of people aged 16 years and over in England and Wales.[192] The same study estimated that, of users who recorded a positive result on the app, between 40% and 55% consented to share their data for contact tracing.[193] Another study in December 2020 reported that more than a third of people in a sample group who were aware of the app either did not intend to download the NHS COVID-19 app or had downloaded it but then deleted it.[194] Three of the most common reasons given for not using the contact tracing app were related to a lack of trust in the tool:

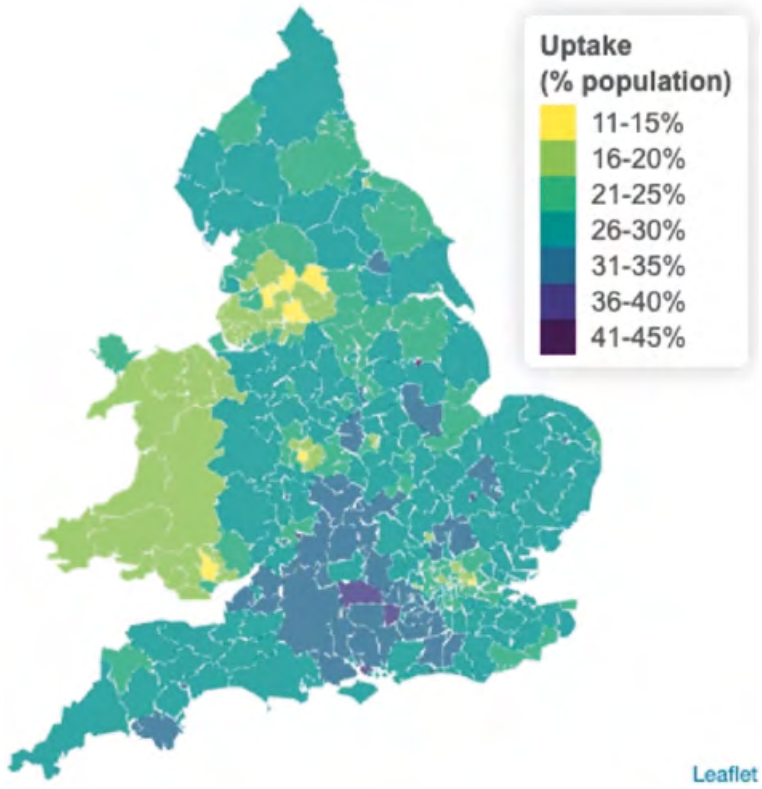
- concerns about privacy, with 36.8% of respondents indicating they did not want to be tracked;
- concerns about effectiveness, with 31.3% stating they did not think the app would be effective; and
- a lack of trust in those responsible for developing the app, with 24.9% expressing mistrust of the authorities.[195]

3.91. The Welsh Government adopted the NHS COVID-19 app, but uptake was significantly lower than in England (see Figure 6).[196] Some witnesses suggested this might have

190 'Engagement and adherence trade-offs for SARS-CoV-2 contact tracing', TCD Lucas, EL Davis, D Ayabina, A Borlase, T Crellen, L Pi et al, *Philosophical Transactions of the Royal Society B* (2021), 376(1829), 20200270, p2 (https://doi.org/10.1098/rstb.2020.0270; INQ000531033)
191 INQ000587239_0114 para 391
192 'Epidemiological impacts of the NHS COVID-19 app in England and Wales throughout its first year', M Kendall, D Tsallis, C Wymant, A Di Francia, Y Balogun, X Didelot et al, *Nature Communications* (2023), 14, 858, p2 (https://doi.org/10.1038/s41467-023-36495-z; INQ000574818). For the contemporaneous population figures of people aged 16 years or over, see INQ000575876_0007.
193 'Epidemiological impacts of the NHS COVID-19 app in England and Wales throughout its first year', M Kendall, D Tsallis, C Wymant, A Di Francia, Y Balogun, X Didelot et al, *Nature Communications* (2023) 14, 858, p4 (https://doi.org/10.1038/s41467-023-36495-z; INQ000574818)
194 INQ000587239_0062 para 205; see 'Public adoption of and trust in the NHS COVID-19 contact tracing app in the United Kingdom: Quantitative online survey study', L Dowthwaite, J Fischer, E Perez Vallejos, V Portillo, E Nichele, M Goulden et al, *Journal of Medical Internet Research* (2021), 23(9), e29085 (https://doi.org/10.2196/29085; INQ000660331)
195 INQ000587239_0062 para 205, Table 7. Percentage calculations were taken by amalgamating the numbers of participants in both relevant sections ('participants who do not intend to download the app' and 'participants who downloaded but deleted the app').
196 'Epidemiological impacts of the NHS COVID-19 app in England and Wales throughout its first year', M Kendall, D Tsallis, C Wymant, A Di Francia, Y Balogun, X Didelot et al, *Nature Communications* (2023), 14, 858, p2 (https://doi.org/10.1038/s41467-023-36495-z; INQ000574818)

been influenced by a higher proportion of individuals who were digitally excluded in Wales or by the comparatively more limited use of the QR code check-in feature (to mark when a person had entered a venue) compared with England.[197]

Figure 6: NHS COVID-19 app uptake per local tier local authority



Source: 'Epidemiological impacts of the NHS COVID-19 app in England and Wales throughout its first year', M Kendall, D Tsallis, C Wymant, A Di Francia, Y Balogun, X Didelot et al, Nature Communications (2023), 14, 858, p2 (https://doi.org/10.1038/s41467-023-36495-z; INQ000574818)
Note: Uptake was estimated as the mean number of active users as a proportion of the total population.

3.92. In Northern Ireland, research in late 2020 indicated that only 37% of people downloaded the STOPCovid NI app and that the most cited reason for not doing so was 'data confidentiality' (24%).[198]

3.93. The Protect Scotland app was designed to be anonymous and the Scottish Government made a deliberate decision "*not to collect much demographic data*" so as not to dissuade people from downloading and using the app.[199] By 1 November 2021, it had been downloaded by approximately 42.6% of the population.[200] It is

197 Jo-Anne Daniels 20 May 2025 93/21-25; Christophe Fraser 13 May 2025 172/9-12
198 INQ000474957_0001
199 INQ000589775_0055-0057 paras 171, 179
200 The *Public Health Scotland COVID-19 Statistical Report* dated 1 November 2021 indicates that the app had been downloaded by approximately 2.3 million people by 1 November 2021. The Office for National Statistics provides Scotland's population as approximately 5.4 million at November 2021. INQ000587251_0078 para 5.6.5; *Public Health Scotland COVID-19 Statistical Report: As at 01 November 2021*, Public Health Scotland, 3 November 2021, p25 (https://publichealthscotland.scot/media/9994/21-11-03-covid19-publication_report.pdf; INQ000346176); 'Scotland population mid-year estimate', Office for National Statistics, 27 November 2025 (https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/timeseries/scpop/pop; INQ000660386)

unclear whether those privacy assurances were a decisive factor in uptake of the app.

Concerns about privacy

3.94. Privacy protection measures for digital contact tracing during the Covid-19 pandemic included:

- the use of a decentralised framework;[201] and
- provisions within an interoperability agreement between the four governments in October 2020, which enabled the three apps to work together while limiting the sharing of personal data.[202]

In accordance with data protection principles, users could delete the apps and associated data.[203] The apps also collected only necessary data.[204]

3.95. However, as set out above, concerns about privacy remained the most significant reason for non-engagement with digital contact tracing.[205] For example, although the press release for a trial of the NHS COVID-19 app 2 in Newham, East London, dated 13 August 2020, emphasised that the app "*tracks the virus, not people*", one of the main reasons for low uptake was a "*lack of belief or awareness in the privacy protections*".[206]

3.96. Addressing low engagement due to concerns about privacy is complex. During the Covid-19 pandemic, concerns arose from a range of factors, including fears that government authorities might use data to monitor them in a 'Big Brother' fashion, worries that apps could make devices vulnerable to hacking and a broader perception that contact tracing apps were an invasion of users' right to private life.[207]

201 INQ000587401_0004, para 2.1(e) (NHS COVID-19 app); 'UK contact tracing apps: The view from Northern Ireland and Scotland', Ada Lovelace Institute, 24 September 2020 (https://www.adalovelaceinstitute.org/blog/uk-contact-tracing-apps-the-view-from-northern-ireland-and-scotland; INQ000505907_0002-0003) (Protect Scotland app); 'UK contact tracing apps: The view from Northern Ireland and Scotland', Ada Lovelace Institute, 24 September 2020 (https://www.adalovelaceinstitute.org/blog/uk-contact-tracing-apps-the-view-from-northern-ireland-and-scotland; INQ000505907_0002) (StopCOVID NI app)
202 INQ000589761_0001-0002, 0004 paras 2, 7, 19
203 INQ000587415_0034 (England and Wales); *The Protect Scotland App Data Protection Impact Assessment (DPIA)*, Scottish Government, 12 March 2021, p40 (INQ000548101); *Data Protection Impact Assessment: COVID-19 Proximity App 'StopCOVID NI'*, Department of Health (Northern Ireland), 30 July 2020, p24 (https://covid-19.hscni.net/wp-content/uploads/2020/07/DPIA-for-StopCOVID-NI-Proximity-App-Final-30.07.2020.pdf; INQ000535714)
204 INQ000587415_0034 (England and Wales); *The Protect Scotland App Data Protection Impact Assessment (DPIA)*, Scottish Government, 12 March 2021, p37 (INQ000548101); *Data Protection Impact Assessment: COVID-19 Proximity App 'StopCOVID NI'*, Department of Health (Northern Ireland), 30 July 2020, p9, para 4.6 (https://covid-19.hscni.net/wp-content/uploads/2020/07/DPIA-for-StopCOVID-NI-Proximity-App-Final-30.07.2020.pdf; INQ000535714). The General Data Protection Regulations, incorporated into the UK from 2018, did require that only the minimum personal data necessary for a specific purpose be collected for a legitimate purpose.
205 INQ000587239_0062 para 205, Table 7
206 'New NHS Test and Trace app to be rolled out to Newham residents to beat COVID-19', Newham Council, 13 August 2020 (https://www.newham.gov.uk/news/article/488/new-nhs-test-and-trace-app-to-be-rolled-out-to-newham-residents-to-beat-covid-19; INQ000575884_0002); INQ000587401_0012 para 6.7(b)
207 'Facilitators and barriers to engagement with contact tracing during infectious disease outbreaks: A rapid review of the evidence', O Megnin-Viggars, P Carter, GJ Melendez-Torres, D Weston, GJ Rubin, *PLoS ONE* (2020), 15(10), e0241473, pp10-11 (https://doi.org/10.1371/journal.pone.0241473; INQ000197101)

3.97. Contributors to the Inquiry's listening exercise, Every Story Matters, echoed some of those concerns.

> "*It is a worry when you think about putting your information there, and with some of the major hacks that have been happening lately with all our information. I think it could be quite vulnerable to that. That's probably why I deleted it, if I remember rightly.*"[208]
>
> **Clinically vulnerable person, Every Story Matters**

> "[M]*y partner, he categorically said, 'I am not giving them anything. If I've got Covid, I will test, I will [self-]isolate, I'll do all that, but I am not giving them any information that they're asking for.'*"[209]
>
> **Contributor, Every Story Matters**

3.98. The UK government and devolved administrations should seek to understand and respond to these underlying concerns. This is likely to require input from behavioural science experts, analysis of available data from the Covid-19 pandemic and direct engagement with the public, including through focus groups.

3.99. Planning for the future use of digital contact tracing should include ensuring that privacy protections are clearly embedded into the design of digital contact tracing systems and, importantly, that these protections are communicated openly and consistently to the public. For individuals who remain unwilling to use digital tools, alternative options, such as manual contact tracing, should be explained. The Inquiry's analysis of communications and data collection during the Covid-19 pandemic, and recommendations for both in a future pandemic, are set out in Chapter 6: Communications and data.

The effectiveness of the app and the 'pingdemic'

3.100. If people do not understand or believe that contact tracing will work, then they may have little incentive to self-report, reducing the effectiveness of the system. Accounts given to Every Story Matters indicate that the effectiveness of contact tracing may not have been clearly communicated to the public during the pandemic.

208 *Every Story Matters: Test, Trace and Isolate*, p50 (INQ000475132)
209 *Every Story Matters: Test, Trace and Isolate*, p50 (INQ000475132)

> "*I just don't see how they could trace everybody or know people's names with who you've come into contact … the whole trace thing, I find it a great idea, but I don't think it would actually work.*"[210]
>
> **Contributor living with Long Covid, Every Story Matters**

> "*I think it* [the contact tracing notification] *said, 'You may have come into contact.' It was so vague … it didn't seem very scientifically measured.*"[211]
>
> **Contributor working in health and social care, Every Story Matters**

> "*I found it* [contact tracing] *a wee bit pointless as well, like if you did go in a restaurant and whatever, you had to socially distance, so all the tables and everything were set out really far, compared to normal […] But, then you would still get, like, an alert from track and trace.*"[212]
>
> **Contributor working in health and social care, Every Story Matters**

3.101. A lack of confidence in the app's effectiveness was a key reason for not downloading or retaining it.[213]

> "*I did sign up to it initially and then, sort of, as perhaps a year went by, it fizzled out because, again, you're relying a lot on compliance with other people, and it just did become a little bit of nonsense.*"[214]
>
> **Contributor, Every Story Matters**

> "*Yes, there were times when your app would have said that [to self-isolate] to you but I ignored it, really, to tell you the truth because it was giving me all negatives, there was never any positives.*"[215]
>
> **Community member who supported people to self-isolate, Every Story Matters**

210 *Every Story Matters: Test, Trace and Isolate*, p49 (INQ000475132)
211 *Every Story Matters: Test, Trace and Isolate*, p21 (INQ000475132)
212 *Every Story Matters: Test, Trace and Isolate*, p49 (INQ000475132)
213 See, for example, the results of the Isle of Wight trial of NHS COVID-19 app 1: *NHS COVID-19 App: Isle of Wight Pilot Evaluation Report: NHS, Test and Trace Programme*, Department of Health and Social Care, 8 April 2021, p17 (https://assets.publishing.service.gov.uk/media/606de293e90e076f54661429/IoW_EA_report_April_2020.pdf; INQ000528837)
214 *Every Story Matters: Test, Trace and Isolate*, p51 (INQ000475132)
215 *Every Story Matters: Test, Trace and Isolate*, p51 (INQ000475132)

> "*I suppose if there are millions of people using it [the contact tracing app], maybe it just didn't have the capacity to, sort of, update it and be more relevant or individualised to the person if they've shown, like I was fully vaccinated [...] so it was saying that I still needed to self-isolate, and when I went on the website it said, 'No, you don't need to self-isolate because you're fully vaccinated.'*"[216]
>
> **Zero-hours contract worker, Every Story Matters**

3.102. The NHS COVID-19 app notified individuals to self-isolate by issuing a notification or a 'ping', alerting them that they had been in close contact with an infected person. In the summer of 2021, concerns about its effectiveness were exacerbated when a large number of people began receiving such notifications. This resulted in high levels of self-isolation, a phenomenon that became commonly known as the 'pingdemic'. At its peak in July 2021, 7% of UK adults – approximately 4.5 million people – were self-isolating within a seven-day period.[217] This had a significant impact on labour supply, as large numbers of people were temporarily unable to attend work.[218]

> "[E]*verybody else on my team was off, and it was just ridiculous. It was like, 'I'm turning this off, this is so stupid.' Like, they didn't even know if they had Covid or not, but regardless they had to stay off work for two weeks. It was just ridiculous.*"[219]
>
> **Zero-hours contract worker, Every Story Matters**

3.103. There was also a direct impact on the economy. A Treasury briefing for the Covid-19 Operations Committee (a Cabinet sub-committee) reported that, in part due to the 'pingdemic', gross domestic product (the total market value of goods and services produced in a country within a specific period) in the UK fell by 0.2% in July 2021.[220] The initial estimate was for 0.1% growth that month, indicating that the economic effects of the 'pingdemic' were greater than initially predicted.[221]

3.104. The impact of the 'pingdemic' attracted media attention and might have affected public trust in digital contact tracing.[222] A 2022 study of the NHS COVID-19 app found a consistent decline in usage after late June 2021. It concluded that this

216 *Every Story Matters: Test, Trace and Isolate*, p21 (INQ000475132)
217 INQ000113779_0002
218 INQ000113773_0006
219 *Every Story Matters: Test, Trace and Isolate*, p51 (INQ000475132)
220 INQ000113779_0001
221 INQ000113773_0001
222 For example, see '"Pingdemic" effect: How different sectors in England have been hit', *The Guardian*, 22 July 2021 (https://www.theguardian.com/world/2021/jul/22/pingdemic-effect-how-different-sectors-england-hit-covid; INQ000662108); 'NHS Covid app "pingdemic" could bring economy to a halt', *The Telegraph*, 18 July 2021 (https://www.telegraph.co.uk/news/2021/07/18/nhs-covid-apppingdemic-could-bring-economy-halt; INQ000662107)

was possibly due to the 'pingdemic' and the unfavourable media attention that it received.[223] Lara Wong (on behalf of Clinically Vulnerable Families) said that media reporting characterised the 'pingdemic' as a crisis of "*excessive and burdensome notifications*".[224] As a result, she said the public regarded the app as a "*nuisance and inconvenience*" rather than focusing on the increase in Covid-19 cases that led to the 'pings'.[225]

3.105. Contributors to Every Story Matters told the Inquiry that their use of contact tracing apps declined after they, or people they knew, received notifications that they did not trust.

> "*I used to get regular alerts saying I'd been in contact with somebody, or possible contact, so I sort of distrusted it on my side because some of the times I hadn't even been out and I was getting pinged and everybody I know who I worked with never got a ping yet I sat with them every day.*"[226]
>
> **Contributor, Every Story Matters**

> "*When I got dinged on the app, I just ignored it, because, again, the number of people who said, again, 'that was inaccurate and didn't work,' and were getting dinged when they hadn't even been anywhere, it was a case of, 'This is just a load of [obscenity], so, you know, I'll carry on with my life.'*"[227]
>
> **Contributor, Every Story Matters**

3.106. When digital contact tracing is functioning as intended, periods of increased infection rates will result in a higher number of alerts. However, for the system to be effective, those alerts must lead to people self-isolating.

3.107. It is fundamentally important that those developing digital tools ensure that they are as accurate as possible. The consequences of large volumes of alerts during the Covid-19 pandemic should be studied and consideration given as to how to mitigate negative consequences. Mitigation measures could include explaining clearly the measures taken to ensure the accuracy of the app, circulating press releases during periods of increased alerts to explain the reasons for them and providing users with information within the app itself.

223 'Epidemiological impacts of the NHS COVID-19 app in England and Wales throughout its first year', M Kendall, D Tsallis, C Wymant, A Di Francia, Y Balogun, X Didelot et al, *Nature Communications* (2023), 14, 858, p2 (https://doi.org/10.1038/s41467-023-36495-z; INQ000574818)
224 INQ000587425_0041 para 113
225 INQ000587425_0041 para 113
226 *Every Story Matters: Test, Trace and Isolate*, p51 (INQ000475132)
227 *Every Story Matters: Test, Trace and Isolate*, p52 (INQ000475132)

3.108. At the same time, the UK government and devolved administrations must recognise the financial and practical challenges associated with frequent self-isolation. If these challenges are not addressed, people may be less likely to adhere to guidance, even where they understand the reasons for it. Practical and financial support for self-isolation – such as assistance with accessing essential supplies and medication and financial support for those facing financial hardship because they are self-isolating – will therefore be critical in supporting compliance. Encouraging adherence with self-isolation is addressed further in Chapter 4: Isolation.

Accessibility of the digital tool

3.109. Even when people are willing to use digital contact tracing tools, they will have limited impact if sections of the population are unable to access them. It is therefore essential to ensure that digital contact tracing is accessible to as many people as possible. As noted in the Inquiry's combined Module 2ABC Report, those most likely to require assistance in accessing information during the Covid-19 pandemic – such as disabled people or older people – were also among those at greatest risk of infection.[228] This creates an added imperative to ensure that digital tools are designed in a way that does not exclude those who may benefit from them the most.

3.110. The public sector equality duty requires public authorities to have regard to equality considerations when exercising their functions.[229] Prior to the launch of the NHS COVID-19 app, an equality assessment was carried out.[230] Simon Thompson, Managing Director of the NHS COVID-19 app from June to October 2020, told the Inquiry that this assessment was intended to ensure that the app could be accessed by as many people as possible.[231] The assessment considered the impact of the app on people with a range of protected characteristics (including disability, race and ethnicity, age and sexual orientation) and set out measures to address potential barriers. For example, it recognised that older people might have lower levels of digital literacy and identified NHS 111 and manual contact tracing as alternative means of engagement.[232] In relation to accessibility for disabled people, it noted that the app would meet the Web Content Accessibility Guidelines Level AA standard and that manual contact tracing would remain available.[233]

3.111. The Web Content Accessibility Guidelines set international standards of accessibility for digital content, with three tiers. As noted above, the NHS COVID-19 app 2 met the middle Level AA standard, which included requirements such as having sufficient colour contrast between text and background and content presented in a logical

228 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 12 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
229 Equality Act 2010, section 149 (https://www.legislation.gov.uk/ukpga/2010/15/contents); 'Public Sector Equality Duty: Guidance for public authorities', Government Equalities Office, 18 December 2023 (https://www.gov.uk/government/publications/public-sector-equality-duty-guidance-for-public-authorities/public-sector-equality-duty-guidance-for-public-authorities#what-is-the-duty; INQ000573867_0006-0009)
230 Simon Thompson 15 May 2025 170/21-25
231 Simon Thompson 15 May 2025 170/21-25
232 INQ000565927_0012
233 INQ000565927_0012

order.[234] The Protect Scotland app was also tested to Level AA.[235] The Inquiry heard that the STOPCovid NI app was also designed to align with accessibility guidelines, although the standard it achieved is unclear.[236] Level AAA represents the highest standard and includes features such as sign language translation and audio descriptions.[237] When asked why the NHS COVID-19 app only reached Level AA, Mr Thompson explained:

> "*We took a judgement call that getting to that standard, which was a really good standard, within the timeline that we had, would mean that we would accommodate the vast majority of needs that would be out there.*"[238]

3.112. It may not have been possible to achieve the highest level of accessibility within the time pressures of the Covid-19 pandemic. However, this experience highlights the importance of developing digital tools in advance of a future pandemic. With more time available, there should be an expectation that such tools are made as accessible as possible. This would help to ensure that everyone, including those with disabilities and other accessibility needs, is able to engage fully with public health interventions and receive the support they require.

Access for disabled people

3.113. Disability accessibility testing for the NHS COVID-19 app was sub-contracted to the research agency Open Inclusion, which worked with charities to recruit focus groups of people with a range of disabilities to test early versions of the app.[239] Videos with audio descriptions were also shared on social media to explain how the app worked for those with visual impairments and for users of British Sign Language.[240] In Scotland, supporting documentation for various services was made available in formats such as Braille and British Sign Language, although it is unclear whether this extended specifically to the Protect Scotland app.[241] In Northern Ireland, digital products were subject to accessibility testing and online resources included features such as audio descriptions to assist with accessibility.[242]

3.114. These measures represented positive steps to improve accessibility for disabled people. NHSX's use of test groups comprising people with different disabilities was a particular example of good practice. This approach should be adopted in the development of future digital tools for contact tracing. Engagement with people with a range of disabilities at the conceptual and design stages should be considered and implemented, wherever practicable.

234 INQ000587401_0011 para 6.4
235 *Interim National Equality Impact Assessment*, Digital Health and Care Scotland, 18 December 2020, p10, para 18 (INQ000414602)
236 INQ000444231_0003
237 'WCAG 101: Understanding the Web Content Accessibility Guidelines', WCAG.com, 9 October 2024 (https://www.wcag.com/resource/what-is-wcag; INQ000575883_0001, 0004)
238 Simon Thompson 15 May 2025 170/17-21
239 INQ000587743_0023 para 70
240 INQ000587401_0012 paras 6.9-6.10; see also INQ000662128; INQ000662129
241 INQ000587342_0270 para 778
242 INQ000587301_0189 para 501

Accessibility for those unable to use digital contact tracing

3.115. Some people were unable to use contact tracing apps due to 'digital exclusion' (ie they lacked sufficient financial resources to own a phone capable of supporting the app or lacked the ability to use the internet in the ways the app required).[243]

3.116. Digital exclusion affected different groups in different ways. A 2022 study found that some people were affected because they lived in rural areas with limited or unreliable internet access.[244] Others, particularly older people, preferred to communicate by telephone rather than online.[245] A letter to Mr Hancock from Sadiq Khan (later Sir Sadiq Khan), Mayor of London from May 2016, in May 2020 said that one in eight London residents did not own a smartphone and many did not keep their devices switched on at all times, for example due to limits on data use.[246]

3.117. Digital exclusion had a direct impact on engagement with contact tracing apps during the Covid-19 pandemic. Common reasons for not downloading NHS COVID-19 app 1 during a trial on the Isle of Wight in May 2020 included not having the appropriate equipment, insufficient storage space on mobile devices and a perception that the app would provide limited benefit because individuals did not regularly use their mobile phones.[247] Contributors to Every Story Matters provided similar accounts.

> "[T]*he main reason I didn't have the app is because I had a very old phone … and I wasn't going to buy a new phone just to get the app.*"[248]
>
> **Contributor, Every Story Matters**

> "*[The] test and trace system was not applicable to me as I do not operate a mobile phone.*"[249]
>
> **Contributor, Every Story Matters**

243 *Digital Inclusion and Exclusion in the Arts and Cultural Sector*, Good Things Foundation, July 2021, pp10-11 (https://www.artscouncil.org.uk/sites/default/files/download-file/Good_Things_Foundation_Arts_Council_Report.pdf; INQ000653942)
244 'Widening or narrowing inequalities? The equity implications of digital tools to support COVID-19 contact tracing: A qualitative study', CA O'Donnell, S Macdonald, S Browne, A Albanese, D Blane, T Ibbotson et al, *Health Expectations* (2022), 25(6), 2851-2861, p2856 (https://doi.org/10.1111/hex.13593; INQ000587242)
245 'Widening or narrowing inequalities? The equity implications of digital tools to support COVID-19 contact tracing: A qualitative study', CA O'Donnell, S Macdonald, S Browne, A Albanese, D Blane, T Ibbotson et al, *Health Expectations* (2022), 25(6), 2851-2861, p2856 (https://doi.org/10.1111/hex.13593; INQ000587242)
246 INQ000118923_0002
247 *NHS COVID-19 App: Isle of Wight Pilot Evaluation Report: NHS, Test and Trace Programme*, Department of Health and Social Care, 8 April 2021, p16 (https://assets.publishing.service.gov.uk/media/606de293e90e076f54661429/IoW_EA_report_April_2020.pdf; INQ000528837)
248 *Every Story Matters: Test, Trace and Isolate*, p63 (INQ000475132)
249 *Every Story Matters: Test, Trace and Isolate*, p63 (INQ000475132)

3.118. The 2022 study (see above) found that financial poverty was another barrier to engagement with digital contact tracing, affecting people across all age groups.[250] Participants in the study indicated that the cost of maintaining sufficient mobile data was prohibitive for those experiencing severe social and economic deprivation.[251] Many people relied on pay-as-you-go contracts and could experience periods without connectivity, when they could not afford to pay for mobile phone top-ups.[252] Some people shared mobile phones with others.[253] One participant said:

> "*I think in terms of the various tracing and symptom apps that are around, my impression is that they are not really on the radar of a lot of folk in lower socioeconomic groups. They are more of a phenomenon amongst a mobilised middle-class.*"[254]

3.119. Digital contact tracing, by its nature, depends on access to and familiarity with smartphone technology. As Mr Gould told the Inquiry: "[I]*t's a sort of unavoidable feature of digital contact tracing that if you're digitally excluded you're not part of it.*"[255] However, this limitation raises important considerations for equity and inclusion. Access to the benefits of contact tracing should not be determined by an individual's access to technology or their financial means. It is important that the design of contact tracing systems does not exclude sections of the population from participation or benefit.

3.120. This issue is particularly significant given the evidence that people who were digitally excluded or experiencing financial poverty were more likely to become infected with Covid-19.[256] It is concerning that these groups experienced reduced ability to engage with an important preventative tool and underscores the importance of ensuring that alternative systems are available and accessible.

3.121. Manual contact tracing provides a critical complement or alternative to digital tools. It offers a means of reaching individuals who cannot, or do not, use smartphone apps. It is therefore essential that manual contact tracing is maintained but also clearly communicated to the public as a viable and effective alternative.

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250 'Widening or narrowing inequalities? The equity implications of digital tools to support COVID-19 contact tracing: A qualitative study', CA O'Donnell, S Macdonald, S Browne, A Albanese, D Blane, T Ibbotson et al, *Health Expectations* (2022), 25(6), 2851-2861, p2856 (https://doi.org/10.1111/hex.13593; INQ000587242)
251 'Widening or narrowing inequalities? The equity implications of digital tools to support COVID-19 contact tracing: A qualitative study', CA O'Donnell, S Macdonald, S Browne, A Albanese, D Blane, T Ibbotson et al, *Health Expectations* (2022), 25(6), 2851-2861, p2856 (https://doi.org/10.1111/hex.13593; INQ000587242)
252 'Widening or narrowing inequalities? The equity implications of digital tools to support COVID-19 contact tracing: A qualitative study', CA O'Donnell, S Macdonald, S Browne, A Albanese, D Blane, T Ibbotson et al, *Health Expectations* (2022), 25(6), 2851-2861, p2856 (https://doi.org/10.1111/hex.13593; INQ000587242)
253 'Widening or narrowing inequalities? The equity implications of digital tools to support COVID-19 contact tracing: A qualitative study', CA O'Donnell, S Macdonald, S Browne, A Albanese, D Blane, T Ibbotson et al, *Health Expectations* (2022), 25(6), 2851-2861, p2856 (https://doi.org/10.1111/hex.13593; INQ000587242)
254 'Widening or narrowing inequalities? The equity implications of digital tools to support COVID-19 contact tracing: A qualitative study', CA O'Donnell, S Macdonald, S Browne, A Albanese, D Blane, T Ibbotson et al, *Health Expectations* (2022), 25(6), 2851-2861, p2856 (https://doi.org/10.1111/hex.13593; INQ000587242)
255 Matthew Gould 15 May 2025 149/9-12
256 Iain Buchan 14 May 2025 13/20-14/1

Use of digital contact tracing by minority community groups

3.122. During the Covid-19 pandemic, minority communities faced particular barriers to engaging with digital contact tracing, including reduced levels of trust arising from historical misuse of data, as well as language barriers that affected accessibility. Some people also faced challenges due to lower literacy levels.

3.123. Data from trials of the NHS COVID-19 app indicate that individuals from ethnic minority groups were less likely to use digital contact tracing. During the Isle of Wight trial of the NHS COVID-19 app 1, 87% of participants with a White ethnic background downloaded the app, compared to 77% of non-White participants.[257] Concerns about privacy were identified as a primary reason for non-engagement.[258] Similarly, two of the key barriers to engagement in the trial of the NHS COVID-19 app 2 in Newham (one of the most diverse boroughs in the UK) were lack of awareness and lack of trust in government.[259]

3.124. Professor Fraser told the Inquiry that trust must be earned through trustworthiness, noting that some communities had experienced inappropriate use of their data in the past and have legitimate reasons for distrust.[260] Ade Adeyemi (Joint Secretary of the Federation of Ethnic Minority Healthcare Organisations) also explained to the Inquiry that many ethnic minority groups believed there had been instances of data misuse by the government.[261] He said:

> "*Mistrust about breaches of privacy and data misuse runs deep within Black, Asian and Minority Ethnic community* [sic]. *It was not uncommon to hear rumours and conspiracy theories about the government's real motivation for collection of data and contact tracing.*"[262]

3.125. Mr Hancock acknowledged the importance of recognising diversity within communities to ensure that people from all communities acted upon public health advice.[263] However, Mr Adeyemi said that not enough was done to combat conspiracy theories and that the introduction of contact tracing created a lot of uncertainty among some ethnic minority communities.[264] His view was that the opportunity to rebuild trust within ethnic minority communities was missed by policy-makers.[265] Professor Arden told the Inquiry that "*more could have been*

257 *NHS COVID-19 App: Isle of Wight Pilot Evaluation Report: NHS, Test and Trace Programme*, Department of Health and Social Care, 8 April 2021, p16 (https://assets.publishing.service.gov.uk/media/606de293e90e076f54661429/IoW_EA_report_April_2020.pdf; INQ000528837)
258 *NHS COVID-19 App: Isle of Wight Pilot Evaluation Report: NHS, Test and Trace Programme*, Department of Health and Social Care, 8 April 2021, p16 (https://assets.publishing.service.gov.uk/media/606de293e90e076f54661429/IoW_EA_report_April_2020.pdf; INQ000528837)
259 INQ000587401_0012 paras 6.6-6.7; 'New NHS Test and Trace app to be rolled out to Newham residents to beat COVID-19', Newham Council, 13 August 2020 (https://www.newham.gov.uk/news/article/488/new-nhs-test-and-trace-app-to-be-rolled-out-to-newham-residents-to-beat-covid-19; INQ000575884)
260 Christophe Fraser 13 May 2025 194/15-22
261 INQ000587648_0017 para 51
262 INQ000587648_0017 para 50
263 Matt Hancock 22 May 2025 17/20-25
264 INQ000587648_0017 para 50
265 INQ000587648_0017 para 51

done" by way of targeted interventions to address low trust among ethnic minority communities in the NHS COVID-19 app.[266] She said that there was a focus on creating a functional app "*and not enough focus on how people would engage with it*".[267]

3.126. The Inquiry also heard about barriers relating to language.

> "*At that time, my English language was very bad. I couldn't follow the rules in the application [contact tracing app], I didn't know anything about it.*"[268]
>
> **Contributor whose first language is not English, Every Story Matters**

3.127. Some individuals identifying as being from an ethnic minority group told the Inquiry that their limited literacy skills were barriers to engagement.

> "*We're isolated, and none of us are literate, we can't read or write, no one actually came out and explained to us … We didn't understand.*"[269]
>
> **Contributor from a Roma ethnic background, Every Story Matters**

> "*There was an awful lot of the community that couldn't read and write, and they depended on family members a lot to do a lot of it for them.*"[270]
>
> **Contributor from a Roma ethnic background, Every Story Matters**

3.128. There were some positive efforts during the Covid-19 pandemic to ensure uptake of the digital tool across different communities:

- In England and Wales, the NHS COVID-19 app was initially released with 12 different languages.[271] User feedback led to the addition of a further two languages, Polish and Somali, on 12 October 2020.[272]
- The test and trace system was promoted on ethnic minority community radio stations in England.[273]

266 Madelynne Arden 29 May 2025 186/23-187/2
267 Madelynne Arden 29 May 2025 186/23-187/2
268 *Every Story Matters: Test, Trace and Isolate*, p38 (INQ000475132)
269 *Every Story Matters: Test, Trace and Isolate*, p89 (INQ000475132)
270 *Every Story Matters: Test, Trace and Isolate*, p8 (INQ000475132)
271 Christophe Fraser 13 May 2025 167/8-13
272 INQ000587401_0012 para 6.8
273 INQ000587367_0016-0017 para 35

- A Public Health Agency (Northern Ireland) briefing, 'Vulnerable Groups – Ethnic Minorities – COVID-19 Contact Tracing Action Plan Update', in August 2020, advised provision of appropriate Covid-19 messages targeting vulnerable groups and ethnic minority communities.[274]

3.129. Although some positive steps were taken to reach minority groups, they were not always successful. For example, the NHS COVID-19 app was available in a number of languages, including Bengali.[275] Yet a contributor from the Bangladeshi community told Every Story Matters that there were low levels of engagement in their community due to language barriers and low levels of digital literacy. Instead, the community tracked infections in their local area by alerting community members to infections in their neighbourhood.[276] This suggests the community was unaware that the NHS COVID-19 app was available in Bengali.

3.130. Professor Sir Michael McBride (Chief Medical Officer for Northern Ireland from September 2006) told the Inquiry that he understood the Department of Health (Northern Ireland)'s digital products were subjected to accessibility testing and that online resources enabled Google Translate.[277] However, the Inquiry has seen no evidence that the STOPCovid NI app was ever made available in different languages.

3.131. The Protect Scotland app was initially released in English.[278] An equality impact assessment dated 14 September 2020 (convened by the Scottish Government and conducted by representatives of vulnerable groups, the human rights sector, NHS National Services Scotland and the Digital Health and Care Division in the Scottish Government) attributed the lack of additional languages to the timescales for release of the app.[279] At the point of release, the Scottish Government indicated in its *Interim National Equality Impact Assessment* that it would consider adding additional languages for later versions.[280] However, by 12 March 2021, the Scottish Government's *Data Protection Impact Assessment* indicated that it was still only at the stage of "*considering the future development of versions of the app, to address accessibility, e.g. in terms of languages other than English*".[281] Explanatory videos about the app were available in multiple languages from 15 September 2020.[282] Yet the Inquiry has seen no evidence that the Protect Scotland app itself was ever expanded to include languages other than English.

3.132. If engagement does not take into account the needs of different communities (such as communicating in a language with which people feel most comfortable), individuals are less likely to feel able to use digital tools. This will directly impact

274 INQ000375903_0002
275 INQ000575876_0016
276 *Every Story Matters: Test, Trace and Isolate*, p63 (INQ000475132)
277 INQ000587301_0189 para 501
278 INQ000548103_0024
279 INQ000548103_0024
280 INQ000548103_0024
281 *The Protect Scotland App Data Protection Impact Assessment (DPIA)*, Scottish Government, 12 March 2021, p6 (INQ000548101)
282 'Test & Protect – Protect Scotland app launch', Scottish Care, 17 September 2020 (https://scottishcare.org/news/test-protect-protect-scotland-app-launch; INQ000660332); INQ000662122

the effectiveness of those digital tools. In a future pandemic, there should be greater focus on encouraging digital contact tracing within different communities. Measures may include:

- involving people from a diverse range of backgrounds in the design of digital tools;[283]
- undertaking early piloting with different community groups;[284] and
- working with community leaders to ensure that accurate information about the digital tool is effectively disseminated throughout their communities.[285]

Developing a new digital tool for contact tracing

3.133. None of the digital contact tracing tools developed during the Covid-19 pandemic remain in operation. The NHS COVID-19 app was closed down on 27 April 2023.[286] The Protect Scotland app was decommissioned on 29 April 2022 and the STOPCovid NI app in June 2022.[287] Professor Timothy Spector (Professor of Genetic Epidemiology at King's College London and co-founder of ZOE Ltd, which develops nutrition apps and products) told the Inquiry that it is "*frightening*" that there is no digital tool "*ready to go for the next pandemic*".[288] The Inquiry agrees. Drawing on the evidence set out in this chapter, a key lesson is that digital contact tracing should form part of pandemic preparedness. Without advance development, time is likely to be lost in designing, testing and implementing such tools during a public health emergency, thereby delaying their potential contribution to controlling transmission.

A single digital tool for all four nations

3.134. The UK government committed in March 2026 to developing digital capability for a surge response service to support contact tracing and other features (such as ordering tests) in England.[289] However, there would be even greater benefit in developing a single digital contact tracing tool for use in all four nations. The use of different apps across the four nations introduced the potential for confusion. For example, Ms Freeman noted that changes to the app in England in the summer of 2021 (to reduce the volume of self-isolation notifications by changing the criteria for how recently a person had to be in close contact with an infected person before

283 Madelynne Arden 29 May 2025 187/12-18
284 Timothy Spector 19 May 2025 48/5-21. The London borough of Newham was chosen for the August 2020 trial of the NHS COVID-19 app because of its diversity, so this recommendation was carried out to some extent during the Covid-19 pandemic (INQ000587401_0012 para 6.6).
285 *Every Story Matters: Test, Trace and Isolate*, p89 (INQ000475132)
286 Christophe Fraser 13 May 2025 183/15-16
287 'Transparency – evidence, ethics and impact', Protect Scotland, no date (INQ000571334); 'Blog: Protecting privacy during a pandemic: Our work on the UK's Covid apps', Information Commissioner's Office, 25 April 2023 (INQ000595301_0001)
288 Timothy Spector 19 May 2025 42/2-5
289 *Pandemic Preparedness Strategy: Building Our Capabilities*, Department of Health and Social Care, 25 March 2026, pp36-37 (https://assets.publishing.service.gov.uk/media/69c3c48b93cc6e8b87a6f614/dhsc-pandemic-preparedness-strategy.pdf; INQ000660230)

they were contacted by the app) "*created confusion in Scotland, despite no changes being made to the Protect Scotland app*".[290]

3.135. The use of different apps could also complicate infection control in relation to individuals who travel between different parts of the UK. Mr Thompson gave the example of a person living in England who travels to Scotland, returns to England and then tests positive.[291] In such circumstances, individuals who have been in close contact with the person in both England and Scotland would need to be identified and notified promptly that they are at risk of infection.[292]

> "*I had to travel to Scotland for a few days for work (our head office is in Edinburgh) and I found the NHS app/government Covid app QR codes were different up there. I find it wild that there was not a standardised system for the UK.*"[293]
>
> **Contributor, Every Story Matters**

3.136. Mr Gould told the Inquiry that he had hoped that all four governments would adopt the NHS COVID-19 app, which would have simplified cross-border contact tracing and avoided duplication of effort in developing separate systems.[294] Mr Thompson told the Inquiry that, while interoperability of different apps during the Covid-19 pandemic was very important, "*even more preferable is not needing the interoperability, actually having one app as part of the response I think would have been a much better approach*".[295]

3.137. The Inquiry therefore recommends that a single digital contact tracing tool should be developed, taking into consideration the particular needs and infrastructure in each of the four nations. While it is positive that the UK government has indicated that it will develop a digital tool, it should work with the devolved administrations to design one tool that is applicable across all four nations.[296] Engagement with those responsible for developing digital tools in the Republic of Ireland would help to ensure interoperability between systems.

3.138. To ensure that digital contact tracing can be deployed at the outset of a public health emergency, a suitable digital tool must be developed in advance. This tool should incorporate robust privacy protections and achieve the highest possible standards of accessibility. It should also be subject to regular review and updating in order to

290 INQ000589775_0015 para 51; 'NHS COVID-19 app updated to notify fewer contacts to isolate', Department of Health and Social Care, 2 August 2021 (https://www.gov.uk/government/news/nhs-covid-19-app-updated-to-notify-fewer-contacts-to-isolate; INQ000593205_0002)
291 Simon Thompson 15 May 2025 169/10-17
292 Simon Thompson 15 May 2025 169/10-17
293 *Every Story Matters: Test, Trace and Isolate*, p20 (INQ000475132)
294 Matthew Gould 15 May 2025 128/6-10
295 Simon Thompson 15 May 2025 169/18-22
296 *Pandemic Preparedness Strategy: Building Our Capabilities*, Department of Health and Social Care, 25 March 2026 (https://assets.publishing.service.gov.uk/media/69c3c48b93cc6e8b87a6f614/dhsc-pandemic-preparedness-strategy.pdf; INQ000660230)

maintain pace with technological advancements, including advances in areas such as artificial intelligence which have occurred in the years since the Covid-19 pandemic.

Secondary functions of a digital tool for contact tracing

3.139. A digital contact tracing tool may include additional features to support the wider pandemic response.

3.140. As well as contact tracing, the NHS COVID-19 app provided locally relevant public health information on Covid-19 prevention, the ability to 'check in' to venues using QR codes and symptom checking linked to test bookings.[297] The Protect Scotland app did not include functions beyond contact tracing.[298] The Scottish Government's press release about the app explained that symptom checking was not included as it was available through the NHS COVID-19 app.[299] Similarly, the StopCOVID NI app focused on contact tracing, with symptom tracking delivered through a separate app called COVIDCare NI.[300]

3.141. The Inquiry heard that digital symptom tracking can provide valuable support during a pandemic. A symptom tracking programme asks users to submit details of their symptoms and uses those data to increase understanding of the disease, support research and understand its spread.[301]

3.142. Professor Spector told the Inquiry about the ZOE symptom tracking app, launched on 23 March 2020 – many months before any of the contact tracing apps.[302] It produced regional maps of likely spread of Covid-19 based on user-reported symptoms.[303] As well as being useful for tracking the progression of Covid-19, Professor Spector suggested that it could be a useful predictor of whether or not someone had the disease.[304] He said that its predictive value may have been comparable to much of the testing performed in the UK at the time, and that it was much faster.[305]

3.143. Professor Spector told the Inquiry that he attempted to provide the ZOE app to NHSX to use it across the UK, but his attempts were not well received.[306] Mr Gould indicated that adoption of the ZOE app, as suggested by Professor Spector, would

297 'The epidemiological impact of the NHS COVID-19 app', C Wymant, L Ferretti, D Tsallis, M Charalambides, L Abeler-Dörner, D Bonsall et al, *Nature* (2021), 594, 408-412, p408 (https://doi.org/10.1038/s41586-021-03606-z; INQ000562944)
298 'Protect Scotland app launches', Scottish Government, 10 September 2020 (https://www.gov.scot/news/protect-scotland-app-launches; INQ000505905_0002)
299 'Protect Scotland app launches', Scottish Government, 10 September 2020 (https://www.gov.scot/news/protect-scotland-app-launches; INQ000505905_0002)
300 INQ000184771_0014-0015
301 *Exit Through the App Store? A Rapid Evidence Review on the Technical Considerations and Societal Implications of Using Technology to Transition from the COVID-19 Crisis*, Ada Lovelace Institute, 20 April 2020, p16 (https://www.adalovelaceinstitute.org/wp-content/uploads/2020/04/Ada-Lovelace-Institute-Rapid-Evidence-Review-Exit-through-the-App-Store-April-2020-2.pdf; INQ000592632)
302 INQ000575990_0002-0003 paras 4, 6-7
303 INQ000575990_0004 para 9
304 INQ000575990_0005 para 10(c)
305 INQ000575990_0005 para 10(c)
306 INQ000575990_0007-0008 para 16; see also Timothy Spector 19 May 2025 41/19-42/1

not have negated the need for a separate contact tracing app.[307] He said that repurposing the ZOE symptom tracking app to become a contact tracing app "*would have been rather more work and complication*".[308] However, Professor Sir Jonathan Van-Tam (Deputy Chief Medical Officer for England from October 2017 to March 2022) said that the UK government did welcome and consider data from the ZOE app.[309]

3.144. Incorporating symptom tracking functions into a digital contact tracing tool would provide useful data to track the spread of the virus, as well as help users predict whether they have a disease, even before widespread testing is available. If the symptom tracking function were part of a contact tracing tool, users would only need to download and engage with one digital tool rather than having to deal with various different ones. This would likely decrease confusion and increase successful engagement. One contributor to Every Story Matters told the Inquiry about the different apps launched for different reasons during the pandemic.

> "*I would just say there seemed to be a lot of apps, all at the one time. And unless you knew what you were doing it was easy to get a little bit lost and to be using the wrong one as I obviously did a few times.*"[310]
>
> **Contributor who accessed mental health support, Every Story Matters**

Recommendation 3: Develop a digital contact tracing tool

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should develop a single digital tool to support forward and backward contact tracing across the UK in a public health emergency.

The tool should include:

- mechanisms to record contacts;
- mechanisms to receive automatic contact tracing notifications; and
- wider test, trace and isolate system features such as a symptom tracking feature.

The tool should be developed in consultation with regional, local, community and voluntary bodies to ensure that it is accessible. It should be regularly tested and updated.

307 Matthew Gould 15 May 2025 134/9-135/1
308 Matthew Gould 15 May 2025 133/12-16; see also Matthew Gould 15 May 2025 134/9-135/1
309 INQ000659955_0008 paras 2.14-2.15
310 *Every Story Matters: Test, Trace and Isolate*, p20 (INQ000475132)

Chapter 4: Isolation

Introduction

4.1. During the Covid-19 pandemic, what became known as 'self-isolation' was introduced across the UK as a central public health measure to reduce the spread of the virus, limit mortality rates and ease pressure on healthcare systems. People who showed symptoms, had tested positive for the virus or whose close contacts had tested positive were expected to stay away from other people for a specific period of time while they were considered infectious. By separating those who were infected – or potentially exposed – from the wider population, self-isolation formed a crucial part of the wider test, trace and isolate systems adopted across the UK.

4.2. The importance of self-isolation as a measure to control the spread of infection was internationally recognised from the early stages of the pandemic. On 16 March 2020, the World Health Organization, while urging adoption of a number of measures, noted: "[T]*he most effective way to prevent infections and save lives is breaking the chains of transmission. And to do that, you must test and isolate.*"[1]

4.3. However, adherence to self-isolation requirements demanded significant personal and economic sacrifice. Many people were unable to work and faced loss of income. Others were prevented from caring for relatives or carrying out essential tasks such as obtaining medicines. The social and psychological impact on people who were forced to self-isolate was considerable for some – for example, for disabled people or older people living alone. The Inquiry's listening exercise, Every Story Matters, heard people's experience of self-isolation.

> "*[I] couldn't get outside, couldn't go for a walk; it [self-isolation] affected my mental health, my health. I thought things would get better, but it didn't; it took a long time.*"[2]
>
> **Contributor, Every Story Matters**

4.4. Ensuring that people adhered to self-isolation measures posed a significant challenge for the UK government and devolved administrations. This chapter examines the decision-making processes underpinning self-isolation policies and considers the adequacy of financial and practical support provided to people to encourage their compliance.

1 'WHO Director-General's opening remarks at the media briefing on COVID-19 – 16 March 2020', World Health Organization, 16 March 2020 (https://www.who.int/news-room/speeches/item/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---16-march-2020; INQ000512530)
2 *Every Story Matters: Test, Trace and Isolate,* p73 (INQ000475132)

Development of self-isolation policies

4.5. The UK's emergency response strategy for dealing with a pandemic was set out in the *UK Influenza Pandemic Preparedness Strategy 2011* (the 2011 Strategy).[3] However, as noted in the Inquiry's Module 1 Report, it focused on only one type of pandemic and was predicated on the assumption that it would not be possible to contain or eradicate a new virus.[4] Professor Graham Medley (Professor of Infectious Disease Modelling at the London School of Hygiene & Tropical Medicine and Co-Chair of the Scientific Pandemic Influenza Group on Modelling, Operational sub-group (SPI-M-O) from January 2020 to February 2022) told the Inquiry that test, trace and isolate was not "*part of the discussion of preparedness plans*".[5]

4.6. In late January 2020, the UK's Chief Medical Officers, the UK government and the devolved administrations had to confront the fact that Covid-19 was a "*real potential threat to the UK*".[6] The UK government focused on cases of Covid-19 entering the UK by giving advice to returning travellers from Wuhan (see Chapter 5: Border control measures) to self-isolate. On 27 January 2020, Matt Hancock (Secretary of State for Health and Social Care from July 2018 to June 2021) published a statement asking anyone in the UK who had returned from Wuhan in the last 14 days to self-isolate by staying at home and to call NHS 111.[7]

4.7. On 30 January 2020, the World Health Organization declared a public health emergency of international concern.[8] As understanding of the key features of the virus was developing, including the possibility of community transmission outside China, the Scientific Advisory Group for Emergencies (SAGE) advised the UK government to update its advice and expand the list of countries and territories from mainland China to include Thailand, Japan, South Korea, Hong Kong, Taiwan, Singapore, Malaysia and Macau.[9] On 6 February 2020, travellers from these countries and territories who developed symptoms within 14 days of returning to the UK were also asked to self-isolate and contact their GP or 111 services.[10]

3 *UK Influenza Pandemic Preparedness Strategy 2011*, Department of Health, 10 November 2011 (https://assets.publishing.service.gov.uk/media/5a7c4767e5274a2041cf2ee3/dh_131040.pdf; INQ000022708)
4 INQ000194054_0040 para 157; Clara Swinson 19 June 2023 161/17-162/4; *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Executive Summary, Chapter 4 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
5 INQ000587486_0006 para 2.1; INQ000023027_0020-0022; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
6 INQ000391115_0011 para 41; INQ000371209_0023 para 72
7 'Wuhan coronavirus: Health Secretary's statement to Parliament', Department of Health and Social Care and Matt Hancock, 27 January 2020 (https://www.gov.uk/government/speeches/wuhan-coronavirus-health-secretarys-statement-to-parliament; INQ000237587)
8 'Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV)', World Health Organization, 30 January 2020 (https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov); INQ000237623)
9 'SAGE 5 minutes: Coronavirus (COVID-19) response, 6 February 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-6-february-2020; INQ000061513); 'Statement from the Chief Medical Officer for Wales about Coronavirus (2019-nCoV)', Welsh Government, 31 January 2020 (https://www.gov.wales/statement-chief-medical-officer-wales-about-coronavirus-2019-ncov; INQ000048722)
10 INQ000454103; INQ000254430_0002 para 12

As Mr Hancock had told COBR at its meeting the previous day, "*there were no legal powers in place to force nationals into isolation*".[11]

4.8. By mid-February 2020, it was known that the virus was spreading across the world and had reached Europe and the UK.[12] However, the UK government and devolved administrations had no detailed plans in place for test, trace and isolate measures that could be scaled up in the event of a pandemic.[13] SAGE turned its attention to non-pharmaceutical interventions to delay transmission within the UK, including household isolation, social distancing, shielding for the clinically vulnerable and isolation within prisons.[14] Although SAGE had supported the principle of self-isolation during its first full meeting on 28 January 2020, it highlighted the fact that further input was required from behavioural scientists, including SPI-M-O.[15]

4.9. By the end of February 2020, modelling work was under way to better understand measures to contain and delay transmission – such as self-isolation and whole-household isolation – and to develop illustrative scenarios "*showing the plausible impacts of combinations of interventions in the UK*".[16]

4.10. The increasing urgency of the situation meant that there was limited time for SAGE and SPI-M-O to evaluate fully their operational feasibility and wider implications for different population groups.[17] By the start of March 2020, it was clear to the UK government and devolved administrations that the crisis was escalating.[18]

4.11. Further work was commissioned from SAGE and its sub-groups, together with various government bodies including Public Health England, the Department of Health and Social Care, and the Cabinet Secretariat, to compare timings and triggers for interventions such as widespread self-isolation and to consider how to measure the public's engagement and compliance.[19]

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11 INQ000056215_0005 para 5; see also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
12 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
13 Duncan Selbie 27 June 2023 136/15-137/5, 139/11-140/12; Jeane Freeman 28 June 2023 137/15-138/12; Frank Atherton 3 July 2023 26/2-11, 32/13-33/1, 65/4-67/3; Denis McMahon 6 July 2023 66/1-20; see also *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
14 'SAGE 7 minutes: Coronavirus (COVID-19) response, 13 February 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-13-february-2020; INQ000052045)
15 'SAGE 2 minutes: Coronavirus (COVID-19) response, 28 January 2020', Scientific Advisory Group for Emergencies, 29 May 2020, para 22 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-28-january-2020; INQ000061510)
16 'SAGE 11 minutes: Coronavirus (COVID-19) response, 27 February 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-27-february-2020; INQ000106129); 'SAGE 10 minutes: Coronavirus (COVID-19) response, 25 February 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-25-february-2020; INQ000061518)
17 'SAGE 13 minutes: Coronavirus (COVID-19) response, 5 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-5-march-2020; INQ000174684); 'SAGE 14 minutes: Coronavirus (COVID-19) response, 10 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-10-march-2020; INQ000109125)
18 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
19 'SAGE 13 minutes: Coronavirus (COVID-19) response, 5 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-5-march-2020; INQ000174684); 'SAGE 14 minutes: Coronavirus (COVID-19) response, 10 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-10-march-2020; INQ000109125)

Preparing the public for self-isolation

4.12. On 3 March 2020, the *Coronavirus: Action Plan* was published.[20] As noted in the Inquiry's combined Report relating to Modules 2, 2A, 2B and 2C, it was commissioned by Mr Hancock as a public-facing "*coronavirus version*" of the 2011 Strategy. Although its development was primarily driven by the UK government, the *Coronavirus: Action Plan* was a four-nations publication and outlined the governments' initial response to the virus through four phases: 'contain', 'delay', 'research' and 'mitigate'.[21] (Further details about the phases of the *Coronavirus: Action Plan* are outlined in Chapter 2: Testing.)

4.13. The *Coronavirus: Action Plan* identified self-isolation as the "*primary means*" to contain the spread of the disease.[22] It advised that the majority of people would manage Covid-19 through "*self isolation at home and simple over the counter medicines*".[23]

4.14. However, the publication of the *Coronavirus: Action Plan* took place before the UK government and devolved administrations had fully formed internal plans for a comprehensive policy for self-isolation and other non-pharmaceutical interventions, such as testing and contact tracing.[24] As the 2011 Strategy did not set out the steps that could be taken to either mitigate or suppress the outbreak of a novel infectious disease, detailed planning and coordination of the first self-isolation measures were urgently needed.

4.15. On 4 March 2020, COBR (the UK government's national crisis management centre for responding to whole-system civil emergencies) met to discuss proposals. The meeting was chaired by Mr Hancock and attended by health ministers from the devolved administrations.[25] Those attending were sent a copy of a SAGE paper – 'Potential impact of behavioural and social interventions on an epidemic of Covid-19 in the UK' – which set out the "*illustrative impact of behavioural and social interventions*" in high-level terms and some general conclusions about impact.[26]

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20 *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)

21 INQ000106107; Matt Hancock 30 November 2023 111/17-18; INQ000056217; *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020, p10, para 3.7 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380); see also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report)

22 INQ000587294_0033 para 111; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report); *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020, p6, para 2.9 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)

23 *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020, p16, para 4.34 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)

24 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report)

25 INQ000056218_0001-0003

26 INQ000056158

Although SAGE noted that a survey conducted in February 2020 found that 84% of people in the UK supported a form of mandatory self-isolation, it highlighted that there was still "*a lot of uncertainty*" about the measures and, in particular, the biggest variable was adherence.[27] Only brief details were provided of the potential barriers to self-isolation, including loss of income and inability to pay for food, heating, lighting and access to the internet. The paper also highlighted different forms of support, practical and financial, that may be required to encourage compliance with the measures.[28] In its response to the paper, the Government Office for Science acknowledged that more work was needed to understand the social impacts of the measures, as existing analyses to date had focused primarily on the economic impacts.[29]

4.16. The same day, the Civil Contingencies Secretariat (the coordinating body for whole-system civil emergency planning, based in the Cabinet Office) commissioned the Department of Health and Social Care and other government departments (including the Home Office, the Treasury, and the Department for Business, Energy and Industrial Strategy) to assess the societal and operational impacts of implementing self-isolation measures.[30]

4.17. The next day, 5 March 2020, the Department of Health and Social Care's findings included an overview of assumptions provided by SAGE, the Scientific Pandemic Influenza Group on Modelling (SPI-M, a sub-group of SAGE that provided expert advice to the UK government based on infectious disease modelling and epidemiology) and the Scientific Pandemic Insights Group on Behaviours (SPI-B, an expert group that provides independent, expert, social and behavioural science advice to SAGE).[31] It noted that the measures might have a financial impact "*on those who work in healthcare on zero-hours contracts*" as well as those who could not go to work due to staying at home for childcare purposes. Ben Dyson (Director of Policy for NHS Test and Trace at the Department of Health and Social Care from May 2020 to June 2021) told the Inquiry that the paper highlighted a range of issues relating to the measures, including financial impact, compliance and the "*stigma placed on certain groups in society*".[32] Although financial support for the proposed measures was being discussed within SAGE, the Inquiry has seen no evidence that there was a plan for a support package to mitigate the impact of the interventions.[33]

4.18. By 9 March 2020, SAGE considered that containment of the virus – to avoid it becoming an epidemic – was "*unlikely to be achievable*".[34] As Professor Sir Patrick Vallance (later Lord Vallance of Balham), Government Chief Scientific Adviser from April 2018 to March 2023, told the Inquiry, Covid-19 was more prevalent in the

27 INQ000056158_0005; INQ000056218_0008
28 INQ000056158_0005
29 INQ000056218_0008-0009 para 18
30 INQ000587346_0047 para 187; INQ000212693
31 INQ000593016; INQ000587346_0047 para 187
32 INQ000587346_0047 para 187; INQ000593016_0004
33 INQ000593016_0004; INQ000129014
34 INQ000056179_0002; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report)

UK than was realised at the time.[35] However, the UK government and devolved administrations were not yet in a position to provide members of the public with sufficient detail about how self-isolation would be combined with other necessary public health measures and what forms of support would be available to help them comply (see Chapter 6: Communications and data).

The introduction of widespread self-isolation measures in March 2020

4.19. On 9 March 2020, COBR met to discuss transitioning from the 'contain' phase to the 'delay' phase of the *Coronavirus: Action Plan*. The meeting was chaired by Boris Johnson (Prime Minister from July 2019 to September 2022) and attended by health ministers and Chief Medical Officers from the devolved administrations.[36] It considered planned interventions in three stages, including self-isolation of symptomatic people, full household isolation where one person is symptomatic, and measures to safeguard older people and clinically vulnerable people.[37] Professor Vallance explained that the measures had two aims: to reduce the peak of the virus to enable the NHS to cope with demand and to reduce the mortality rate.[38] SAGE recommended that symptomatic people should self-isolate for 7 days and whole households should isolate for 14 days where one person is symptomatic.[39] Social distancing for people over 70 and other at-risk groups was recommended as a third measure, to be implemented over the following two to three weeks.[40]

4.20. COBR discussions about the implementation of these measures were understandably shaped by the aims of reducing loss of life and preventing healthcare services from becoming overwhelmed, as case numbers increased and modelling estimated severe pressure on hospitals.[41] However, the proposed self-isolation measures carried considerable social and economic costs for individuals and households. These challenges were acknowledged by SAGE, but "*further urgent work*" was still required across the UK government and the devolved administrations to "*test impacts and develop robust plans for mitigations and reassurance to the public*".[42]

4.21. During its meeting the next day, 10 March 2020, SAGE acknowledged again the potential challenges that members of the public would likely face when trying to comply with self-isolation measures, providing examples of those from poorer households and those reliant on relatives for childcare.[43] Professor Vallance

35 INQ000238826_0066 para 207
36 INQ000056219
37 INQ000056219_0005 para 5
38 INQ000056219_0005 para 5
39 INQ000056179_0005-0006
40 INQ000056179_0007, 0020
41 INQ000056219_0005 para 5
42 INQ000056179_0017
43 'SAGE 14 minutes: Coronavirus (COVID-19) response, 10 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020, para 34 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-10-march-2020; INQ000109125)

told the Inquiry that such measures "*would result in social, health and economic consequences, which politicians would need to take into consideration*".[44]

4.22. SAGE estimated that unconfirmed cases could number between 5,000 and 10,000.[45] Given the rise in case numbers, on 12 March 2020, the UK's Chief Medical Officers raised the UK risk level to 'high' in response to increased transmission. That same day, the UK government and devolved administrations agreed to move from the 'contain' phase to 'delay'.[46]

4.23. A COBR meeting was convened on the afternoon of 12 March 2020, during which SAGE recommended that the UK government and devolved administrations advise symptomatic people to stay at home and self-isolate for seven days. It was noted that this measure should be implemented "*almost immediately*", with the other options to be kept under active review. COBR agreed to issue advice to the public on the new self-isolation measures later that day.[47]

4.24. Mr Johnson announced the first widespread self-isolation measures later that day, asking people experiencing mild symptoms of Covid-19 to stay at home for "*at least seven days*" to protect others and help slow the spread of the disease. People were urged not to call NHS 111 but to "*use the internet for information if they can*".[48] These measures applied to all four nations of the UK, in line with the *Coronavirus: Action Plan*.[49] The announcement also notified the public that the UK government would likely impose whole-household isolation "*at some point in the next few weeks*".[50]

4.25. When Mr Johnson made this announcement, there were no robust plans for how people would be supported through the practical, financial and emotional challenges they were likely to face in complying with the new measures. This had been recommended by SAGE on 9 March 2020.[51]

4.26. During its meeting on 13 March 2020, SAGE acknowledged the delay in obtaining an accurate picture of the extent of community transmission. Notwithstanding the lag in data, SAGE considered that the UK might be "*further ahead on the epidemic curve*" and recommended that further measures – household isolation and social distancing

44 INQ000238826_0070 para 223
45 INQ000587340_0139 para 7.93
46 'COVID-19: Government announces moving out of contain phase and into delay', Department of Health and Social Care, 12 March 2020 (https://www.gov.uk/government/news/covid-19-government-announces-moving-out-of-contain-phase-and-into-delay; INQ000052485); *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
47 INQ000056221_0005-0006
48 'Prime Minister's statement on coronavirus (COVID-19): 12 March 2020', Prime Minister's Office and Boris Johnson, 12 March 2020 (https://www.gov.uk/government/speeches/pm-statement-on-coronavirus-12-march-2020; INQ000086751)
49 *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)
50 'Prime Minister's statement on coronavirus (COVID-19): 12 March 2020', Prime Minister's Office and Boris Johnson, 12 March 2020 (https://www.gov.uk/government/speeches/pm-statement-on-coronavirus-12-march-2020; INQ000086751)
51 INQ000056179_0017; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report)

of older people and clinically vulnerable people – should be implemented "*as soon as practically possible*".[52]

4.27. On 16 March 2020, the Department of Health and Social Care's Situation Report stated that the total number of cases in the UK had reached 1,544.[53] Mr Dyson told the Inquiry that the scientific advice suggested that the UK was "*at the cusp of a fast swing up the infection curve*".[54] Following a COBR meeting that same day, it was agreed that household isolation, social distancing and shielding measures should be implemented to delay and reduce the peak of the virus.[55] Modelling suggested that household isolation would delay the peak by two to three weeks and reduce the peak by approximately 25%.[56] Mr Johnson announced this new advice at the 10 Downing Street evening press conference on 16 March.[57] According to Professor Sir Christopher Whitty, Chief Medical Officer for England from October 2019, this change to the isolation guidance represented a "*very major policy shift*" and was "*very important in terms of its impact on COVID-19*".[58]

4.28. The Inquiry recognises that the Department of Health and Social Care's initial planning for the implementation of self-isolation measures was undertaken in conditions of limited information and uncertainty, including lags in real-time health data on the registration of new cases.[59] However, had there been better planning, their task would not have been so difficult and it may have been possible to introduce the first self-isolation measures with a framework to support their delivery in place. The absence of such a framework created a clear risk that some individuals and households would face difficulties in complying with the requirements of self-isolation.

Adherence to self-isolation measures

4.29. Although self-isolation is a well-established public health measure to control the spread of infectious disease outbreaks, the scale of the self-isolation measures introduced in response to Covid-19 was unprecedented and placed significant restrictions on people's lives and freedoms.

52 'SAGE 15 minutes: Coronavirus (COVID-19) response, 13 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020, paras 1, 16 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-13-march-2020; INQ000109142)
53 INQ000049641_0002; INQ000587340_0141 para 7.99
54 INQ000587346_0050 para 196
55 INQ000056210
56 INQ000056184_0006; INQ000587294_0039-0040 para 128. Statistical models are tools for analysing complex data, identifying patterns and informing evidence-based decision-making where direct measurement is not possible. Figures from modelling are estimates only, and different statistical models will produce different outcomes. These estimates are not based on direct observations. They are therefore limited by the underlying assumptions used in the models and are subject to uncertainty.
57 'Prime Minister's statement on coronavirus (COVID-19): 16 March 2020', Prime Minister's Office, 16 March 2020 (https://www.gov.uk/government/speeches/pm-statement-on-coronavirus-16-march-2020; INQ000052566_0002-0003)
58 INQ000587340_0141-0142 para 7.100
59 See *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 4 (https://covid19.public-inquiry.uk/documents/module-2-full-report)

4.30. As Professor James Rubin (Chair of SPI-B from February 2020 to June 2021) explained, test, trace and isolate systems require people to "*engage in a complex set of unfamiliar behaviours*. *Adherence to TTI* [test, trace, isolate] *guidance cannot be assumed.*"[60] It was therefore crucial that mechanisms were in place to monitor adherence to the measures from the point at which they were implemented, so as to ascertain whether they were having the desired effect.

An incomplete picture

4.31. Despite the importance of ensuring widespread adherence to the restrictions, the UK government and devolved administrations lacked any form of precedent for measuring adherence. As the 2011 Strategy did not include a detailed analysis of the use of measures to slow the spread of an influenza virus, it also lacked any basic assumptions about levels of compliance with restrictive measures over a sustained period of time.[61]

4.32. In the days leading up to the implementation of the first widespread self-isolation measures, SAGE and its sub-groups worked on the assumption that compliance with individual self-isolation at home would be about 70%. SAGE caveated this assumption by stating that there was considerable uncertainty about this figure and that modelling suggested that the effects of the measures "*vary in proportion to the compliance rate*".[62]

4.33. On 13 March 2020, a day after the first self-isolation measures were implemented across the UK, SAGE acknowledged that there was "*no strong evidence for public compliance rates changing during a major emergency*".[63] SAGE recommended that the impact of the measures should be evaluated and stressed that measuring the impact of all interventions depended on sufficient, relevant data delivered on time.[64]

4.34. However, the Inquiry heard that there were no formal mechanisms established by the UK government at the start of the pandemic to gather data on levels of adherence in a sustained and systematic way.[65] Some small-scale surveys and polling were carried out in the initial weeks and months of the pandemic, but these relied primarily on self-reported data, where people either chose to sign up or were paid for their responses.[66] Dr Rob Orford (Chief Scientific Adviser (Health) for Wales from January 2017 to April 2024) told the Inquiry that the "*self-report nature of most data*"

60 INQ000474964_0009 para 4.4
61 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 4 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
62 INQ000056179_0005
63 'SAGE 15 minutes: Coronavirus (COVID-19) response, 13 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020, para 29 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-13-march-2020; INQ000109142)
64 'SAGE 15 minutes: Coronavirus (COVID-19) response, 13 March 2020', Scientific Advisory Group for Emergencies, 29 May 2020, para 5 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-13-march-2020; INQ000109142)
65 INQ000196925_0001
66 INQ000074912_0007

collected during the pandemic added to the uncertainty when it came to assessing adherence.[67] Inevitably, the data collected did not accurately reflect reality.[68]

4.35. SPI-B noted that, while there were numerous "*initiatives underway*", including surveys carried out across the UK and analysis of Google Maps and transport data, there was an overall lack of coordination of the data, which limited their use for modellers.[69] It also concluded that there remained gaps in its understanding of levels of adherence among children and for household isolation.[70]

4.36. Ministers in the UK government considered adherence levels across England to be low. The Department of Health and Social Care's tracker surveys, conducted across England between 30 March and 1 April 2020, revealed that only 30% of symptomatic people reported staying at home for seven days. In addition, surveys indicated that people's intended compliance with self-isolation rules following the onset of symptoms was also low, at 48%.[71]

4.37. Professor Sir Michael McBride (Chief Medical Officer for Northern Ireland from September 2006) told the Inquiry that adherence was considered to be "*reasonably good on the part of most of the public*" in Northern Ireland but varied across different groups.[72] Survey data suggested that younger people, people from financially disadvantaged backgrounds and men were less likely to adhere to the guidance.[73]

4.38. The results of surveys conducted in Scotland concluded that compliance with self-isolation was "*generally high*".[74] However, Caroline Lamb (Director General for Health and Social Care in the Scottish Government and Chief Executive of NHS Scotland from January 2021 to August 2026) explained that levels of compliance did not "*appear to be significantly different across existing studies that have looked at compliance in England*".[75]

4.39. In Wales, the first systematic approach to collating data on adherence to self-isolation guidance, including potential barriers, was carried out by Public Health Wales in September and October 2020. The study found that "*the majority of contacts*" reported that they did not leave their house during the self-isolation period, but 12.3% of people did leave home once or more.[76]

67 INQ000587247_0084 para 259
68 INQ000587239_0043 para 142
69 INQ000074912_0007
70 INQ000074912_0001
71 *Self-reported Adherence to Social Distancing Measures*, NIHR Health Protection Research Unit in Emergency Preparedness and Response at King's College London, 7 April 2020, p1 (https://assets.publishing.service.gov.uk/media/611f8aebd3bf7f63b226905d/s0713-self-reported-adherence-self-isolation.pdf; INQ000196808)
72 INQ000587301_0224 para 599
73 INQ000587301_0224 para 600
74 INQ000587342_0209 para 649
75 INQ000587342_0209 para 649
76 INQ000056338_0001

4.40. The four nations commissioned further studies on adherence to self-isolation towards the end of 2020 and into 2021.[77] However, Professor Dame Theresa Marteau (a member of SPI-B from March 2020 to February 2022) told the Inquiry that, despite NHS Test and Trace having a budget of £37 billion over two years, and its effectiveness depending critically upon self-isolation of those infected with the virus and their contacts, there was no valid measure of self-isolation at any time during the pandemic.[78]

4.41. As the pandemic progressed, there remained difficulties in obtaining a complete or fully reliable picture of self-isolation adherence levels.[79] A study published in July 2024 in the journal *Public Health* found there were significant flaws in how self-isolation was defined, operationalised and measured during the pandemic and, overall, there was no consensus for how adherence to self-isolation should be monitored.[80] In Professor Rubin's view, gathering data on levels of adherence to measures such as self-isolation is a "*key component*" of any effective test, trace and isolate system.[81] The Inquiry agrees.

4.42. Notwithstanding the limitations in the available data on adherence – including inconsistencies and weaknesses in methodology – by the summer of 2020, there was a growing consensus within the UK government that levels of adherence with the self-isolation requirements were too low.[82] In response, in September 2020, the UK government passed legislation making self-isolation a legal requirement; the Welsh Government adopted the same policy in November 2020.[83]

Introduction of a legal duty to self-isolate

4.43. Ministers in the Department of Health and Social Care first considered voluntary and mandatory options for self-isolation for positive cases and their contacts in May 2020.[84] In a paper requested by Mr Johnson, the option of mandating self-isolation was considered to carry significant risks, including the likelihood that an enforced approach would likely undermine public cooperation with "*the previous steps in the 'test and trace' journey*".[85] It highlighted that people would be less likely

77 *Compliance with Self-isolation of Those Who Tested Positive for SARS-CoV-2 and Their Confirmed Contacts: A Summary of the Evidence from August 2020 to February 2022*, UK Health Security Agency, 15 May 2023 (https://assets.publishing.service.gov.uk/media/65f092919812270011f61405/self-isolation-compliance-of-cases-and-contacts.pdf; INQ000496203); INQ000546374; INQ000068125; INQ000128873
78 INQ000474943_0012 para 6.2
79 INQ000188002; 'Adherence to the test, trace, and isolate system in the UK: Results from 37 nationally representative surveys', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, *British Medical Journal* (2021), 372 (https://doi.org/10.1136/bmj.n608; INQ000228154); INQ000056337; *Coronavirus (COVID-19) Support Study: Experiences of and Compliance with Self-isolation*, Scottish Government, 19 August 2021 (https://www.gov.scot/publications/covid-19-support-study-experiences-compliance-self-isolation-main-report; INQ000147424)
80 INQ000474943_0007-0010 para 4.3
81 INQ000474964_0009 para 4.4
82 INQ000575988_0031-0032 para 85; INQ000474964_0014 para 4.17; INQ000587294_0081-0082 para 249
83 The Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) Regulations 2020 (https://www.legislation.gov.uk/uksi/2020/1045/made); INQ000198589; see also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 13 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
84 INQ000587346_0052 para 208; INQ000593034
85 INQ000593034_0002 para 12

to report symptoms and take tests, to download and use the NHS COVID-19 app and to provide information on their recent contacts if they thought that they, or their contacts, would then be penalised for subsequent failure to self-isolate.[86] On this basis, the paper concluded that there were "*strong arguments*" for building on the voluntary approach.[87]

4.44. Despite this assessment, the question as to whether self-isolation should become a legal requirement was revisited later that summer. In a Covid-19 Operations Committee (Covid-O) meeting in June 2020 regarding NHS Test and Trace, Dido Harding, Baroness Harding of Winscombe (Executive Chair of NHS Test and Trace from May 2020 to May 2021), reiterated her view that test and trace should not be subject to police enforcement and further expressed her concerns that the enforceability of measures would be limited without a significant surveillance and digital infrastructure.[88]

4.45. Mr Hancock told the Inquiry that, in August 2020, the Department of Health and Social Care:

> "*recommended continuing for the time being with developing the communication and engagement strategy, but working on increased enforcement measures and looking at options for introducing legal requirements*".[89]

4.46. On 18 September 2020, the Cabinet Office provided Mr Hancock with a set of proposals to improve compliance with self-isolation by way of enforcement. In particular, the proposals suggested introducing a payment of £500 to those required to self-isolate and implementing a legal requirement to self-isolate following a positive test or being identified as a close contact of someone infected with Covid-19.[90]

4.47. That same day, the Covid-19 Taskforce consolidated these proposals in a paper that recommended taking a "*carrot and stick*" approach to self-isolation, combining financial support with mandatory requirements and enforcement measures.[91] At a COBR meeting on 22 September 2020, attended by Mr Hancock, the committee was asked to agree:

> "*a strong UK-wide message on the need for behavioural change, increased compliance and stronger enforcement, and a package of measures to bring about the same*".[92]

86 INQ000593034_0002-0003 para 12
87 INQ000593034_0003 para 13
88 INQ000053548_0002
89 INQ000587294_0081 para 248
90 INQ000587294_0082 para 250; INQ000565542; INQ000062633
91 INQ000575390
92 INQ000587294_0082 para 251; INQ000234010; INQ000422304

Mandatory requirements

4.48. On 28 September 2020, the Department of Health and Social Care introduced The Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) Regulations 2020, which required people in England to self-isolate when they tested positive for Covid-19 or came into contact with someone who tested positive. They set out financial penalties for individuals who failed to self-isolate after being notified to do so by NHS Test and Trace, including fines ranging from £1,000 to £10,000. The Regulations also prohibited employers or agencies from allowing workers who are required to self-isolate to work in any place except the place where they are self-isolating.[93] Wales adopted the same approach, with The Health Protection (Coronavirus Restrictions) (No. 4) (Wales) Regulations 2020 coming into force on 9 November 2020.[94]

4.49. Scottish ministers decided not to implement new legislation, on the basis that it was not in line with the Scottish Government's "*broader strategy of achieving public compliance through encouragement, persuasion and support*".[95] Northern Ireland also relied on a voluntary compliance model, which sought to achieve adherence through strong public health guidance and the public's willingness to "*do the right thing*".[96]

4.50. This was in accordance with the 2011 Strategy, which emphasised that making public health restrictions legal obligations should be a "*last resort*".[97] It stated:

> "[T]*he Government will encourage those who are well to carry on with their normal daily lives for as long and as far as possible, whilst taking basic precautions to protect themselves from infection and lessen the risk of spreading influenza to others.*"[98]

It also noted that "*the presumption is that the Government will rely on voluntary compliance with national advice*".[99]

4.51. Mr Johnson told the Inquiry that the UK government initially thought that "*advice alone would be enough*", but by September 2020, as the second wave of cases increased, the data were showing that people were not isolating "*to the extent required*".[100] Mr Hancock also considered the decision to impose a legal duty to

93 The Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) Regulations 2020 (https://www.legislation.gov.uk/uksi/2020/1045/contents)
94 The Health Protection (Coronavirus Restrictions) (No. 4) (Wales) Regulations 2020 (https://www.legislation.gov.uk/wsi/2020/1219/contents)
95 INQ000587342_0209 para 648
96 INQ000103997_0006
97 *UK Influenza Pandemic Preparedness Strategy 2011*, Department of Health, 10 November 2011, p64, para 7.29 (https://assets.publishing.service.gov.uk/media/5a7c4767e5274a2041cf2ee3/dh_131040.pdf; INQ000022708)
98 *UK Influenza Pandemic Preparedness Strategy 2011*, Department of Health, 10 November 2011, p58, para 7.4 (https://assets.publishing.service.gov.uk/media/5a7c4767e5274a2041cf2ee3/dh_131040.pdf; INQ000022708)
99 *UK Influenza Pandemic Preparedness Strategy 2011*, Department of Health, 10 November 2011, p63, para 7.25 (https://assets.publishing.service.gov.uk/media/5a7c4767e5274a2041cf2ee3/dh_131040.pdf; INQ000022708)
100 INQ000587378_0053-0054 paras 169-171

comply with self-isolation to be a "*necessary and proportionate*" step in the fight against the virus.[101]

4.52. The Inquiry accepts that there was a need to address low levels of adherence to the self-isolation measures. However, as noted in the Inquiry's combined Module 2ABC Report, the complexity and frequency of changes to the legislative response to the pandemic, including new laws on self-isolation, caused confusion among members of the public.[102] In a 2022 lessons learned report produced by NHS Test and Trace in England, it was noted that the aim of the legal duty to provide clarity about the public's obligations under the self-isolation regulations in England and Wales "*may have been undermined at times*" by their complexity and that better planning might have helped simplify the regulations.[103]

Enforcing the law on self-isolation

4.53. Police forces were relied upon to ensure compliance with the self-isolation regulations in England and Wales. The police promoted voluntary compliance with self-isolation requirements before moving to enforcement through their four-step escalation policy – engage, explain, encourage and enforce (known as the 'four Es'). However, problems with the enforcement stage of this approach soon emerged after the legal duty to self-isolate came into force.[104]

4.54. Underlying this was a structural difficulty. Data-sharing between the police and the Department of Health and Social Care was inadequate, restricting the flow of information that effective enforcement required. In England, NHS Test and Trace shared with the police the name, address, telephone number, period of self-isolation and the date a notification to self-isolate was received by an individual.[105] However, in November 2020, the Crown Prosecution Service advised the Department of Health and Social Care that the information provided regarding the identity of people required to self-isolate did not meet the evidential standards to enable the police to issue fixed penalty notices (fines issued for certain offences, allowing the recipient to avoid prosecution by paying a set amount) or to prosecute people for failing to pay fines in court.

4.55. Martin Hewitt, Chair of the National Police Chiefs' Council from March 2019 to April 2023, told the Inquiry that, despite frequent engagement with the Department of Health and Social Care, the system "*never got itself into a place*" where police could verify the identity of a person alleged to have breached the regulations.[106]

101 INQ000587294_0083 para 252
102 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 13 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
103 INQ000609999_0002
104 The Health Protection (Coronavirus, Restrictions) (Self-Isolation) (England) Regulations 2020 (https://www.legislation.gov.uk/uksi/2020/1045/made); The Health Protection (Coronavirus Restrictions) (No. 5) (Wales) Regulations 2020 (https://www.legislation.gov.uk/wsi/2020/1609/contents); Martin Hewitt 14 May 2025 122/16-123/23
105 *Hansard*, HC, Deb 28 January 2021, vol. 688, cols 14WS, 15WS (https://hansard.parliament.uk/commons/2021-01-28/debates/21012813000012/Covid-19HousePartyFinesAndDomesticEnforcementMeasures; INQ000508586)
106 Martin Hewitt 14 May 2025 137/4-25

As such, in "*the vast majority*" of cases, no enforcement action was taken.[107] Further challenges included ensuring that people were notified correctly of the legal requirement to self-isolate.[108]

4.56. Mr Hancock was aware by November 2020 that "*the data systems used by NHS Test and Trace were not designed with enforcement and robust identity-checking in mind*".[109] Despite this, the Department of Health and Social Care planned to rely on data derived from NHS Test and Trace to support enforcement action. It is concerning that the enforcement framework was being developed by the Department of Health and Social Care on the basis of data infrastructure known to be ill-suited for that purpose.

4.57. A subsequent UK Health Security Agency lessons learned report (dated April 2022) suggested that the introduction of new laws requiring self-isolation may not have been the only way to increase understanding and compliance – noting that, in future, "*non-legislative options could be explored again*".[110]

4.58. The challenge of enforcing the self-isolation regulations highlights a critical need for improved planning and coordination between governments, police forces and enforcement bodies, specifically regarding the way data are used and shared.

The effectiveness of enforcement

4.59. As early as May 2020, the Department of Health and Social Care was made aware that evidence showed that people are more likely to comply with something "*they choose to do, rather than something they are instructed to do*".[111] Indeed, Mr Hewitt emphasised that collaboration and encouragement with members of the public resulted in a higher chance of compliance.[112]

4.60. Professor Susan Michie (Director of the Centre for Behaviour Change at University College London and member of SPI-B from March 2020 to February 2022) believes that enforcement measures, particularly financial penalties, were "*counterproductive*".[113] She explained that the decision to issue substantial fines showed a lack of understanding of "*how communities were thinking and behaving*".[114] People who lacked the financial means to self-isolate were less likely to seek testing, given their concerns about being unable to comply with isolation requirements – particularly where this risked income loss or conflicted with caring responsibilities. Professor Michie further observed: "*SPI-B were not consulted on the consequences of issuing fines and how that would impact on adherence.*"[115]

107 Martin Hewitt 14 May 2025 124/7-21
108 INQ000203762
109 INQ000566253_0004 para 9
110 INQ000609999_0002
111 INQ000593034_0002-0003 para 12
112 Martin Hewitt 9 November 2023 29/10-18, 31/12-18
113 INQ000587487_0011-0012 para 3.12
114 INQ000587487_0012 para 3.13
115 INQ000587487_0012 para 3.13

4.61. The Inquiry understands the reasoning underpinning the introduction of mandatory requirements. However, introducing self-isolation requirements as "*guidance only*" may have resulted in similar compliance levels and would have given ministers the flexibility needed to consider changes in the fast-moving context of the pandemic.[116]

Support to self-isolate

4.62. The importance of providing support to people required to stay at home was recognised at an early stage of the pandemic. During March 2020, a series of cross-government meetings took place to consider how those most at risk from Covid-19 could be supported through self-isolation at home.[117]

4.63. On 22 March 2020, the UK government advised clinically extremely vulnerable people (those identified by the UK government as having medical conditions that meant they were particularly likely to develop severe illness or to die from Covid-19) to stay at home and 'shield' for a period of time to reduce their risk of infection. The UK-wide shielding programme was launched the same day.[118] A press release issued by the UK government announced measures including a helpline, local authority hubs for those without a support network of friends and family, and partnerships with the food industry to deliver basic food parcels and other essential items.[119]

4.64. This early focus on the provision of support for people required to remain at home for prolonged periods indicated that it was reasonably foreseeable that larger numbers of people asked to self-isolate would encounter similar challenges. These included reduced access to essential services, difficulties in obtaining food, medication and other basic necessities, and increased social isolation.[120]

4.65. Professor Madelynne Arden, expert witness on adherence to behaviours associated with test, trace and isolate, described how the feasibility of self-isolation differed between demographic groups:

> "[F]*or some people, self-isolation merely means working from home, in a nice house with a garden. For other people, self-isolating is incredibly hard, they haven't got the support, they haven't got the housing to self-isolate, they haven't got the finances to enable them to do that if they're in precarious employment. So we have a kind of huge difference in terms of how difficult self-isolation is.*"[121]

116 INQ000609999_0007
117 INQ000587423_0009-0010 para 40; *Module 3: The impact of the Covid-19 pandemic on the healthcare systems of the United Kingdom*, UK Covid-19 Inquiry, March 2026, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-3-full-report)
118 The impact of the shielding programme was examined in the Inquiry's Module 3 Report: *Module 3: The impact of the Covid-19 pandemic on the healthcare systems of the United Kingdom*, UK Covid-19 Inquiry, March 2026 (https://covid19.public-inquiry.uk/documents/module-3-full-report).
119 'Major new measures to protect people at highest risk from coronavirus', Ministry of Housing, Communities and Local Government (2018 to 2021), Department of Health and Social Care, Public Health England, Matt Hancock and Robert Jenrick, 21 March 2020 (https://www.gov.uk/government/news/major-new-measures-to-protect-people-at-highest-risk-from-coronavirus; INQ000086747)
120 INQ000587542_0038 paras 11.6-11.7; Jenny Harries 28 May 2025 153/8-13; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 10 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
121 Madelynne Arden 29 May 2025 152/17-153/5

4.66. Self-isolation was especially difficult for many people living with a disability. Being required to stay at home significantly affects the ability to access care from others, both inside and outside the home. Kamran Mallick, who gave evidence on behalf of Disability Rights UK and Disability Action Northern Ireland, told the Inquiry that the negative impacts of self-isolation are felt much more acutely by disabled people.[122]

4.67. Two months after the introduction of the first self-isolation measures, the impact of self-isolating was becoming increasingly apparent. Caroline Abrahams, who gave evidence on behalf of Age UK, told the Inquiry that many older people living on their own were unable to access food and essential care. In May 2020, Age UK and the Malnutrition Task Force published an announcement on the Age UK website warning that self-isolation and loneliness, together with restricted access to shopping and support, would leave many older people at risk of malnutrition.[123]

4.68. Although SPI-B provided information to SAGE on the need for both financial and practical support as early as March 2020, no detailed policy or delivery plan for providing widespread practical and financial support across the UK was in place at that time.[124] While initiatives across the four nations sought to address specific challenges as they arose by drawing on existing support mechanisms and by new sources of funding, the Inquiry heard from a number of witnesses who considered that the provision of financial and practical support was delayed and inadequate.[125] Lara Wong, founder and leader of Clinically Vulnerable Families, told the Inquiry that workers often felt "*compelled to continue working*", despite requirements to self-isolate, due to the inadequacy and insufficiency of financial support during the pandemic.[126]

Practical support

4.69. At the outset of the pandemic, the UK government lacked detailed arrangements for supporting the needs of people required to self-isolate at home. Isolation policy during the earliest weeks of the pandemic focused on isolation within dedicated quarantine facilities, rather than self-isolation at home.[127] Key operational elements – such as systems for identifying needs and funding arrangements – emerged progressively over time.

4.70. While a support programme for clinically extremely vulnerable people was implemented before the announcement of the first national lockdown on 23 March 2020, no equivalent programme existed for the wider population following the announcement of the requirement to self-isolate. In England, the NHS Volunteer Responders programme, launched in March 2020, was designed to support the

122 INQ000587451_0010 para 37; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 10 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
123 INQ000587488_0017-0018 para 38
124 INQ000129014
125 INQ000587533_0003. The Statutory Sick Pay Rebate Scheme is considered in Module 9: Economic response.
126 INQ000587425_0047 para 131
127 INQ000587346_0042 para 163

NHS and people who were shielding or self-isolating by collecting prescriptions, delivering shopping and making welfare calls. However, the programme relied on volunteers coming forward to provide this support.[128]

4.71. Mr Hancock told the Inquiry that the nature of support measures for those self-isolating required "*a major coordination effort across national and local government*".[129] However, a study carried out by the London School of Economics and Political Science on the test, trace and isolate strategies in England found that "*it took many months of quite fierce lobbying to get any meaningful contact and especially resourcing*" for local authorities to supplement the NHS Test and Trace effort at a local level.[130]

4.72. By the summer of 2020, the UK government had allocated £300 million to local authorities in England to develop plans to implement measures to identify and contain outbreaks.[131] However, it took a further month for the Department of Health and Social Care to establish a policy framework for how it would work in partnership with local authorities to support them with local outbreak response, known as the 'COVID-19 Contain Framework'.[132]

4.73. The COVID-19 Contain Framework provided detail on the funding available to local authorities to enable them to provide the non-financial support and resources needed for people required to self-isolate.[133] In its guidance paper to local authorities, the UK government described the framework as a means of ensuring that local authorities could provide the most appropriate forms of practical, social and emotional support to those who have no other means of getting that support.[134]

4.74. In practice, the UK government's approach to funding and guidance for local authority-led practical support was developed incrementally. For example, certain initiatives, such as the Medicines Delivery Service, were not rolled out until early 2021.[135]

4.75. On 19 January 2021, the Department of Health and Social Care identified that only 17% of people with symptoms were coming forward for testing and that avoiding

128 INQ000144792_0056 para 169
129 INQ000587294_0036 para 119; INQ000106161_0005 para 21
130 *COVID-19 Testing, Tracing and Isolating Strategies in the UK (England)*, London School of Economics and Political Science, March 2023, p14 (https://www.lse.ac.uk/social-policy/Assets/Documents/PDF/working-paper-series/WPS-01-23-Anne-West.pdf; INQ000510830)
131 *COVID-19 Testing, Tracing and Isolating Strategies in the UK (England)*, London School of Economics and Political Science, March 2023, p14 (https://www.lse.ac.uk/social-policy/Assets/Documents/PDF/working-paper-series/WPS-01-23-Anne-West.pdf; INQ000510830)
132 INQ000587346_0027 para 97; see also INQ000587780_0002-0004, 0016 paras 8-15, 60; INQ000593862
133 INQ000587423_0053 para 208; *Self-isolation Practical Support: Guidance for Local Authorities and the Voluntary and Community Sector*, UK Health Security Agency, 8 August 2021 (https://www.gov.uk/government/publications/providing-practical-support-for-people-self-isolating/self-isolation-practical-support-guidance-for-local-authorities-and-the-voluntary-and-community-sector; INQ000565605)
134 *COVID-19 Contain Framework: A Guide for Local Decision-makers*, UK Health Security Agency, 7 October 2021 (https://www.gov.uk/government/publications/containing-and-managing-local-coronavirus-covid-19-outbreaks/covid-19-contain-framework-a-guide-for-local-decision-makers; INQ000593082_0015)
135 INQ000587840_0009-0010 para 41(c)

self-isolation was the "*single biggest reported barrier to requesting a test*".[136] The Department of Health and Social Care acknowledged that the main barriers to self-isolation related to the need to access essential supplies, caring responsibilities or other practical tasks such as dog walking. Consequently, the Department of Health and Social Care suggested working with local authorities to provide:

> "*a more consistent, visible and accessible framework of practical, social and emotional support for people self-isolating, modelled on the Shielding support framework*".[137]

4.76. In Wales, coordinated engagement between the Welsh Government and local government regarding support for self-isolation took place much earlier in the pandemic. The Covid-19 Core Group, established by the Welsh Government in March 2020, included ministers (such as the Minister for Health and Social Services and the Minister for Housing and Local Government) in the development of the pandemic response. By 25 March 2020, the Core Group membership was widened to include the Leader of the Welsh Local Government Association.[138]

4.77. Welsh Government ministerial advice submitted on 29 June 2020 to the Minister for Housing and Local Government and the Minister for Health and Social Services set out the "*core support and the more complex areas of support that we would expect each local authority to be able to provide*".[139] Suggestions included picking up shopping and prescriptions and help understanding advice and mental health services.[140] There were also more involved forms of support such as provision of temporary accommodation for those who could not self-isolate safely with others (eg if a person with whom they lived was clinically extremely vulnerable) and substance misuse support.[141]

4.78. Vaughan Gething (Minister for Health and Social Services in the Welsh Government from May 2016 to May 2021) thought that local authorities were best placed to deal with the provision of support and had the infrastructure to provide that support.[142] Jo-Anne Daniels (Interim Director General, Education, Social Justice and Welsh Language in the Welsh Government from April 2022 to April 2024) told the Inquiry that the provision of practical support "*evolved throughout the pandemic*" to support and encourage people to self-isolate.[143] She said that support was adapted to respond to feedback from local authorities and third-sector organisations.[144]

136 INQ000091662_0003 para 6
137 INQ000091662_0005 Recommendations
138 INQ000575989_0017 para 75
139 INQ000136795_0002 para 6
140 INQ000136795_0002-0003 paras 5, 7
141 INQ000136795_0003-0004 para 7
142 INQ000575989_0045-0046 para 165
143 INQ000587349_0009-0010 para 29
144 INQ000587349_0009-0010 para 29; INQ000575983_0081 para 282

4.79. The Scottish Government also reacted quickly, establishing schemes to provide forms of practical support.[145] Ms Lamb recalled that the Scottish Government's approach from the outset "*recognised that key to compliance*" was "*creating the conditions*" for people to follow self-isolation requirements.[146] The National Assistance Helpline was in operation from 14 April 2020 and provided a single point of contact for requests for support relating to self-isolation, such as food and essential medication.[147] The Local Self-Isolation Assistance Service also provided people with access to a range of practical support, including a local government hardship fund, food fund and business support schemes.[148]

4.80. In Northern Ireland, the *Covid-19 Test, Trace and Protect Strategy* was published on 27 May 2020 and was intended to "*better reflect the need to provide people who had been asked to isolate with access to appropriate support mechanisms to protect others in the community*".[149]

4.81. The Department for Communities (Northern Ireland) played a lead role in the provision of practical support and established a number of initiatives to help those self-isolating. Professor McBride told the Inquiry that the programmes "*relied upon and utilised the wide network of relations, including with community and voluntary groups*", established and maintained by the Department for Communities (Northern Ireland).[150]

4.82. Working alongside the Department of Health (Northern Ireland), the Department for Communities (Northern Ireland) put arrangements in place early on in the pandemic to ensure food deliveries to those who were unable to access food through online shopping, family, friends or local support networks.[151] For example, the Department for Communities (Northern Ireland) established the Covid-19 Community Help Line, a freephone helpline operated by Advice NI, which began operation on 27 March 2020. The helpline was available seven days a week.[152]

4.83. The Northern Ireland Executive also ensured that communications about Test, Trace and Protect indicated the availability of forms of support for self-isolation. In the Department of Health (Northern Ireland)'s strategy document dated 27 May 2020, the public was informed of the importance of "*early, effective and supported isolation*" to prevent onward transmission of infection.[153] Recognising the need for support for those self-isolating was a central part of Northern Ireland's Test, Trace and Protect strategy.

145 INQ000587342_0208-209 paras 646-647
146 INQ000587342_0208 para 644
147 INQ000546470_0002 para 6
148 INQ000546470
149 INQ000587301_0163-0164 paras 420, 424; *Covid-19 Test, Trace and Protect Strategy*, Department of Health (Northern Ireland), 27 May 2020 (https://www.health-ni.gov.uk/sites/default/files/publications/health/Test-Trace-Protect-Support-Strategy.pdf; INQ000120704)
150 INQ000587301_0043 para 97(ii)
151 INQ000587301_0043 para 97(ii)
152 INQ000587291_0027 para 111
153 *Covid-19 Test, Trace and Protect Strategy*, Department of Health (Northern Ireland), 27 May 2020, p5 (https://www.health-ni.gov.uk/sites/default/files/publications/health/Test-Trace-Protect-Support-Strategy.pdf; INQ000120704)

Coordinating practical support to self-isolate

4.84. Structures and mechanisms for coordinated working and collaboration between national and local governments were already in place before the Covid-19 pandemic. The Civil Contingencies Act 2004 provides a structure for local response planning and multi-agency collaboration. In England and Wales, local resilience forums (composed of representatives from local public services, including local authorities, emergency services, the NHS and others) are responsible for coordinating local emergency preparedness and response and recovery activities.[154] This role is carried out by regional resilience partnerships in Scotland and emergency preparedness groups in Northern Ireland.[155] These bodies supported the implementation of the shielding programmes for clinically extremely vulnerable people across the UK as early as March 2020, providing a key coordination and oversight role. However, there was considerable variation in the use of these local forums when it came to implementing wider practical support for self-isolation.[156]

4.85. Local authorities are often best placed to coordinate and deliver support given their existing relationships with communities, links with voluntary and community organisations, and knowledge of vulnerable population groups. The importance of coordinated collaboration between central governments and local authorities during a public health emergency should not be underestimated.

> "*In March 2020 religious leaders, parish councillors, local GPs and business owners met to discuss how our isolated rural community could support the residents in the village and outlying farms and homes. Over 100 volunteers came forward and each was given 20 homes within a specific postcode to support. They delivered postcards with their names and contact details to each of those 20 homes and delivered medication and shopping, took dogs for walks, chatted from a safe distance and in some cases befriended those living alone who would otherwise have had no contact with anyone for months.*"[157]
>
> **Contributor, Every Story Matters**

154 INQ000055993_0002
155 INQ000147705_0008-0009 paras 4.1-4.4; INQ000213476_0003
156 INQ000090777; INQ000587539_0013 para 4.8
157 *Every Story Matters: Test, Trace and Isolate*, p32 (INQ000475132)

> "*My church … they were actually supporting a lot of our congregations that maybe their children are sick, and they are not allowed to work or be in a certain space. They were actually delivering food items that they need weekly. So, it was a very good help for some of my church members. Although, if they didn't have enough budget to support a lot of individuals that need that help, they [could] just only do the little that they can.*"[158]
>
> **Contributor, Every Story Matters**

4.86. Will Garton (Director General for Local Government, Growth and Communities at the Ministry of Housing, Communities and Local Government from March 2022) did not disagree and told the Inquiry that the department had a "*pre-established*" engagement framework to communicate with local government and that insight from local authorities was critical in developing the local support offer to those shielding.[159] However, when it came to practical support for self-isolation, England took longer than the devolved administrations to coordinate with its local partners in rolling out timely and dedicated support.

4.87. Joanna Killian (Chief Executive of the Local Government Association from March 2024 to July 2026) told the Inquiry that there was a "*regrettable delay*" in the UK government's engagement with local government on key issues and decisions, which affected the design of the test and trace measures.[160] Greg Fell (President from November 2023 of the Association of Directors of Public Health, the representative body for directors of public health across the UK) told the Inquiry that the early phase of NHS Test and Trace had been designed using a "*one size fits all*" approach.[161] He explained that directors of public health bring extensive knowledge of their local communities and of local health and social care systems. As a result, local teams had to:

> "*fill the gaps. For example by providing a wrap-around service, directing people to local self-isolation payment systems and other support, such as food bank provision and voluntary sector support.*"[162]

4.88. Mr Dyson acknowledged that local authorities worked with a range of voluntary and community organisations to provide practical support to people self-isolating. However, there was "*considerable local variation in the extent, visibility, and timeliness of support available*" across local communities.[163] It took until January 2021 for the Department of Health and Social Care to develop proposals for working with local authorities to provide a "*more consistent, visible and accessible*

158 *Every Story Matters: Test, Trace and Isolate*, p32 (INQ000475132)
159 INQ000587423_0007, 0009-0010, 0013 paras 28, 40, 51; INQ000090777
160 INQ000587454_0035-0036 paras 164-165
161 INQ000587434_0023, 0049 paras 97, 203; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 14 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
162 INQ000587434_0049 para 204
163 INQ000587346_0077 para 314

framework" of practical, social and emotional support for people required to self-isolate.[164]

4.89. Mr Dyson accepted, with the benefit of hindsight, that directors of public health had not been engaged at an early enough stage by the Department of Health and Social Care. He explained:

> "*It may seem a very obvious point but having local authority Directors of Public Health and their team, able to work with those voluntary organisations, faith groups, Community Champions and so forth, is probably the most important thing when it comes to cutting through and making sure that people not only have got the support they need, but also that they understand the importance of engaging with testing and self-isolation.*"[165]

4.90. Professor Carolyn Wilkins (Divisional Director of Contain at NHS Test and Trace from July 2020 to May 2021) told the Inquiry that there was a lack of understanding in the UK government of the role, capacity and capabilities of local authorities and other local bodies in relation to health protection. Pre-existing reductions in local authority funding had had a significant impact on their ability to respond. While local resilience forums had pandemic influenza plans in place, Professor Wilkins described there being "*significant challenges*" in implementing effective responses to Covid-19 on the ground.[166] James Bethell, Lord Bethell (Parliamentary Under Secretary of State for Technology, Innovation and Life Sciences at the Department of Health and Social Care from March 2020 to September 2021), told the Inquiry that local resilience forums may have been "*better placed*" to tailor support for individuals and their contacts, but "*lacked the power and resources to coordinate any targeted local response*".[167]

4.91. The delay in collaborative working across national and local government in England contrasted with Wales, where existing public sector structures were used from the start of the pandemic. In Wales, there was a focus on "*joint local-regional-national working*" across the Welsh Government, local authorities, Public Health Wales, health boards and the NHS Wales Informatics Service.[168] At the start of the pandemic, the Welsh Government, Public Health Wales and four local resilience forums agreed to establish a Public Health Strategic Coordination Support Group to ensure regular communication between strategic partner organisations. This group met for the first time on 23 March 2020.[169]

164 INQ000587346_0077-0078 para 315
165 Ben Dyson 27 May 2025 54/8-16
166 INQ000587780_0011, 0013 paras 42, 49
167 INQ000587383_0057-0058 para 152; INQ000608010_0001-0007
168 INQ000587454_0037 para 172
169 INQ000587250_0026 paras 97-98

4.92. The Convention of Scottish Local Authorities played a key role in liaising with local government and regional resilience partnerships on test, trace and isolate, ensuring that regional resilience partnerships facilitated links to relevant local partners.[170]

4.93. In Northern Ireland, the Civil Contingencies Group (Northern Ireland) was the principal strategic civil contingencies preparedness body, together with a number of sub-groups, including emergency preparedness groups, divided into regions.[171] All local councils are members of their local emergency preparedness groups.[172] A report for the Northern Ireland Emergency Preparedness Group for the period 2020 to 2025, which included a review of the response to the pandemic by emergency preparedness groups, stated that the resilience team was "*utilised to its fullest capacity during all stages of the response*", including working with local government and other organisations to co-design a model to ensure the effective distribution of food and medicines during Covid-19.[173]

4.94. A debrief exercise, conducted in January 2023 by the Department for Levelling Up, Housing and Communities (which was named the Ministry of Housing, Communities and Local Government from January 2018 to September 2021 and from July 2024), identified the need to improve understanding in the UK government of the role of local resilience forums. It also highlighted the importance of closer collaboration between the Department of Health and Social Care, the Department for Levelling Up, Housing and Communities, and local resilience forums in the development of a new pandemic preparedness strategy, to ensure that the local resilience forum perspective is "*adequately reflected*".[174]

4.95. Mr Dyson told the Inquiry that having protocols in place to work with local communities at the earliest stages of a pandemic response is a "*critical part*" of future preparedness for a pandemic.[175] The Inquiry agrees and notes the Department of Health and Social Care's proposals within its 2026 *Pandemic Preparedness Strategy*, which sets out that the UK government will define clearer expectations and guidance for local responders and determine the appropriate support for local planning.[176]

4.96. Local resilience forums, regional resilience partnerships and emergency preparedness groups should be involved in the development of self-isolation policy – as part of a wider test, trace and isolate strategy – well in advance of the next pandemic. For this to happen, there must be clear responsibilities for local resilience forums, regional resilience partnerships and emergency preparedness groups to plan for and respond to pandemics – and they must be supported by the UK government and devolved administrations. The UK government said that

170 INQ000587539_0010 para 3.11
171 INQ000587507_0034, 0039 paras 158, 182
172 INQ000587761_0005-0006 para 22
173 INQ000259108_0004, 0014
174 INQ000587423_0110-0111 Annex B
175 Ben Dyson 27 May 2025 54/17-24
176 *Pandemic Preparedness Strategy: Building Our Capabilities*, Department of Health and Social Care, 25 March 2026 (https://assets.publishing.service.gov.uk/media/69c3c48b93cc6e8b87a6f614/dhsc-pandemic-preparedness-strategy.pdf; INQ000660230)

it will review its support of local resilience forums and define clear expectations. The Inquiry recognises this and urges the devolved administrations to conduct similar reviews.[177]

4.97. The Inquiry therefore recommends that local resilience forums, regional resilience partnerships and emergency preparedness groups should prepare plans now for practical support for people asked or directed to self-isolate during a pandemic. This support should be tailored to the needs of their communities and plans should take account of the full range of practical support that may be required, including emotional and psychological support.

Recommendation 4: Local support for self-isolation

Local resilience forums, regional resilience partnerships and emergency preparedness groups should, as part of the planning required by the Civil Contingencies Act 2004, prepare plans now for the scale-up of practical support for their community if self-isolation is required during a future pandemic.

Plans should be tailored to the needs of local communities, including groups that may face challenges in adhering to self-isolation measures.

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should review and monitor progress of the development of these local support plans, as well as monitor their delivery in a future pandemic.

Financial support

4.98. The packages of economic support for adult social care workers were considered in the Inquiry's Module 6 Report.[178] Other forms of financial support provided during the pandemic for people, including those receiving benefits, and for businesses are being considered in Module 9: Economic response. For the purposes of this Module 7 Report, the Inquiry is focusing solely on financial support for those self-isolating.

4.99. Early advice from SAGE and SPI-B provided to the Department of Health and Social Care in March 2020, commissioned by the Civil Contingencies Secretariat, highlighted that self-isolation measures may have implications for people who are unable to work or who are on zero-hours contracts.[179] However, the response was not uniform across all four governments. Ms Killian told the Inquiry that it was "*not immediately recognised*" by the UK government how many households would be

177 *Pandemic Preparedness Strategy: Building Our Capabilities*, Department of Health and Social Care, 25 March 2026 (https://assets.publishing.service.gov.uk/media/69c3c48b93cc6e8b87a6f614/dhsc-pandemic-preparedness-strategy.pdf; INQ000660230)
178 *Module 6: Care sector*, UK Covid-19 Inquiry, October 2026, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-6-full-report)
179 INQ000129014; INQ000587346_0047 para 187; INQ000593016_0004

unprepared to cope with the financial implications of staying at home due to being unable to work.[180]

Existing financial support

4.100. Throughout March 2020, the Department for Work and Pensions made a number of temporary changes to Statutory Sick Pay.[181] Statutory Sick Pay is a payment made by employers to employees if they are too ill to work, or are incapable of work, due to a specific disease or disability. These amendments applied to England, Wales and Scotland to ensure that eligible people could access financial support to comply with self-isolation measures.[182]

4.101. The amendments came into force on 28 March 2020 and temporarily expanded the circumstances in which Statutory Sick Pay could be paid to include people who were self-isolating due to Covid-19. Statutory Sick Pay was widened again, in May 2020 and in July 2020, to reflect changes to public health advice at the time.[183]

4.102. The changes to Statutory Sick Pay in Northern Ireland were largely aligned with those in England, Wales and Scotland, although they were implemented via separate legislation, under the Statutory Sick Pay (General) (Coronavirus Amendment) Regulations (Northern Ireland).[184] As discussed below, in contrast to England, Scotland and Wales, Northern Ireland introduced a self-isolation payment via its existing Discretionary Support scheme – alongside the amendments to Statutory Sick Pay – as early as March 2020.[185]

4.103. In Wales, in May 2020, Mr Gething attended a Shadow Social Partnership Council meeting to highlight work being done with Test, Trace, Protect in Wales and heard from trade union representatives that greater clarity was needed on pay support for employees during the pandemic. Mr Gething told the Inquiry that these concerns were fed back to the UK government.[186]

4.104. By June 2020, it had become clear to Mr Johnson and decision-makers in the Cabinet Office, including Rishi Sunak MP (Chancellor of the Exchequer from February 2020 to July 2022), that further policy options for financial support for people self-

180 INQ000587454_0018 para 77
181 The Statutory Sick Pay (General) (Coronavirus Amendment) Regulations 2020 (https://www.legislation.gov.uk/uksi/2020/287/contents); The Statutory Sick Pay (General) (Coronavirus Amendment) (No. 2) Regulations 2020 (https://www.legislation.gov.uk/uksi/2020/304); Coronavirus Act 2020 (https://www.legislation.gov.uk/ukpga/2020/7/contents); The Statutory Sick Pay (Coronavirus) (Suspension of Waiting Days and General Amendment) Regulations 2020 (https://www.legislation.gov.uk/uksi/2020/374/introduction); The Statutory Sick Pay (General) (Coronavirus Amendment) (No. 3) Regulations 2020 (https://www.legislation.gov.uk/uksi/2020/427/regulation/2/made); The Statutory Sick Pay (General) (Coronavirus Amendment) Regulations (Northern Ireland) 2020 (https://www.legislation.gov.uk/nisr/2020/32/introduction/made); The Statutory Sick Pay (General) (Coronavirus Amendment) (No. 2) Regulations (Northern Ireland) 2020 (https://www.legislation.gov.uk/nisr/2020/37); The Statutory Sick Pay (Coronavirus) (Suspension of Waiting Days and General Amendment) Regulations (Northern Ireland) 2020 (https://www.legislation.gov.uk/nisr/2020/54/made)
182 INQ000655668_0030 paras 6.23-6.25; INQ000587592_0008, 0014-0015 paras 3.4, 4.13-4.19; INQ000575998_0007 paras 16-18
183 INQ000655668_0034 para 6.38
184 INQ000587291_0028-0029 para 117
185 INQ000475204_0026 para 4.5.2; INQ000560740_0001; INQ000587291_0029 para 118
186 INQ000575989_0041 para 152

isolating were required.[187] On 19 June 2020, the Cabinet Office commissioned the Treasury to provide options to assist people required to self-isolate on a regular basis due to compliance with NHS Test and Trace, people classed as clinically extremely vulnerable who were unable to work in a 'safe workplace', and population groups impacted by local lockdowns.[188]

4.105. In May and early June 2020, research carried out by NHS Test and Trace in England revealed that levels of compliance with the programme were considered low among people from deprived postcodes, specific ethnic minority communities, people with low literacy rates and asylum seekers. The research showed that one of the major factors that prevented compliance with NHS Test and Trace was the financial cost to individuals and their families of complying with self-isolation measures.[189]

4.106. As a consequence, Baroness Harding requested financial support for those required to self-isolate to boost overall compliance with the programme, funded by the existing NHS Test and Trace budget. However, Baroness Harding identified a lack of willingness to address this proactively in the UK government.[190] She said there was:

> "*money in the budget, you know, we didn't spend all of our budget, and I also think that spending more on self-isolation would have reduced the need for testing. But I wasn't the decision maker. The decision maker in this was the Chancellor and, at every opportunity from June onwards, the Chancellor rejected the proposals.*"[191]

4.107. Baroness Harding told the Inquiry that a system that made it materially easier for the most disengaged and vulnerable communities to self-isolate was "*fundamental*" and would likely have achieved better results.[192]

4.108. Analysis carried out by the Covid-O Covid-19 Taskforce in September 2020 corroborated the growing consensus in the Cabinet Office that further financial assistance for self-isolation was needed. The taskforce found that many workers faced significant financial pressures, resulting in a "*substantial reduction in income with an administrative delay before money reaches the claimant*".[193]

187 INQ000593597
188 INQ000587305_0032 para 120; INQ000585931
189 Dido Harding 28 May 2025 8/16-9/3
190 Dido Harding 28 May 2025 72/18-25
191 Dido Harding 28 May 2025 70/17-24; Patrick Vallance 22 May 2025 204/17-19
192 INQ000587322_0044-0045 para 9.3
193 INQ000119892_0004-0005 para 15

Dedicated self-isolation payment schemes

4.109. SAGE highlighted the likely impact on poorer people and those on zero-hours contracts in early March 2020, SPI-B having noted:

> "*For single parents, adherence may become impossible. For poorer families, loss of income and increased household bills (heating, electricity, food delivery, etc.) will occur concurrently with loss of social services provided through schools (free school meals, after school clubs, etc).*"[194]

4.110. In June 2020, NHS Test and Trace suggested different forms of support mechanisms – including options to isolate outside the home in a hotel, financial compensation for lost earnings and the option of making self-isolation mandatory.[195]

4.111. However, it took until September 2020 for England, Scotland and Wales to introduce dedicated self-isolation support payment schemes. By the time they were established, Northern Ireland's Discretionary Support Self-Isolation Grant had already been in place for six months.[196]

4.112. Given that there were already a range of new and existing financial support packages available to people during the pandemic (which are being considered in Module 9: Economic response), the growing demand for a more clearly defined and targeted self-isolation support payment generated "*significant debate*" within the UK government.[197] Dan York-Smith (Director General for Tax and Welfare at the Treasury from March 2023 to August 2025) told the Inquiry that Mr Sunak recognised the importance of the test, trace and isolate system, but raised concerns about additional support payments creating an incentive not to work. In addition, Mr Sunak was concerned about the risk of fraudulent claims for self-isolation support.[198]

4.113. By July 2020, various options for dedicated financial support for self-isolation were being considered by the Treasury, including ring-fenced grant funding to all local authorities in England.[199] A month later, Mr Sunak shared the proposals with Mr Johnson. Although Mr Sunak reiterated his concerns regarding the introduction of further financial support, he suggested that, if implemented, the payment scheme must be targeted to minimise the risk of the scheme becoming an unaffordable national programme.[200] A pilot payment scheme was subsequently introduced in Blackburn, Pendle and Oldham on 23 August 2020, which offered a payment of £13 per day for eligible people.[201]

194 INQ000196744_0001-0002 para 10; INQ000575988_0029 para 78
195 INQ000088756_0008-0009
196 INQ000475204_0026 para 4.5.2; INQ000560740_0001
197 INQ000587340_0034 para 9.64
198 Dan York-Smith 20 May 2025 24/1-18
199 INQ000576767; INQ000587305_0033 para 124
200 INQ000232097_0003
201 INQ000587305_0034 paras 126-128; INQ000585078

4.114. Work continued on an England-wide scheme involving a flat payment of £500 for the required number of days of self-isolation.[202] The Department of Health and Social Care led on the development of the scheme, with input from the Treasury regarding funding, and the Ministry of Housing, Communities and Local Government regarding its operational delivery.[203] The Test and Trace Support Payment scheme was subsequently announced on 20 September 2020 and was in operation from 28 September 2020.[204]

4.115. Discussions between the UK government and devolved administrations on further financial support for self-isolation were ongoing during the summer of 2020.[205] Shirley-Anne Somerville MSP (Cabinet Secretary for Social Security and Older People from June 2018 to May 2021) recalled receiving information from the UK government on the pilot scheme, which informed early discussions on a similar scheme in Scotland.[206]

4.116. Once the UK government confirmed its intention to develop a dedicated self-isolation support payment scheme, the Welsh Government also began work implementing a similar scheme.[207] The Self-Isolation Support Scheme was introduced on 16 November 2020 and provided a £500 payment (to align with the payment scheme in England) for people who were employed or self-employed, had been told to self-isolate and were in receipt of Universal Credit or another benefit. Payments were backdated to 23 October 2020, where appropriate.[208] As in England, the scheme also included discretionary payments, funded from a local government hardship fund, to provide support to people who did not meet the criteria for the self-isolation payment but who would suffer financial hardship as a result of being asked to self-isolate.[209] This included people with no recourse to public funds, people with a total income below £500 a week (net) and people in receipt of Statutory Sick Pay.[210]

4.117. The Scottish Government adopted the same approach.[211] The Scottish Government utilised its existing Scottish Welfare Fund to deliver the Self-Isolation Support Grant, so that the payment could be administered by local authorities at speed.[212] The Self-Isolation Support Grant was launched on 12 October 2020, with eligibility backdated to 28 September 2020. Eligibility and payment value of £500 were matched with England's scheme, to ensure equality of treatment for low-income workers required to self-isolate.[213]

202 INQ000587305_0034-0035 para 130
203 INQ000576808; INQ000576773
204 INQ000587305_0035 paras 131-132
205 INQ000587592_0025-0028 paras 6.1-6.17; INQ000589788_0017 para 71; INQ000572443
206 INQ000589788_0006-0007 paras 29-30
207 INQ000587570_0032-0033 para 101
208 INQ000587570_0034 para 106
209 INQ000587570_0033-0035 paras 103, 109
210 INQ000587570_0034-0035 para 109
211 INQ000589788_0006 para 28
212 INQ000589788_0013 para 55
213 INQ000589788_0020-0023 para 80

4.118. Northern Ireland utilised its existing Discretionary Support scheme to deliver support payments to eligible people self-isolating, calculated on an individual basis. Unique to Northern Ireland, the Department for Communities (Northern Ireland) had sole responsibility for developing the policy, legislation and guidance relating to the Discretionary Support Self-Isolation Grant, which had been introduced on 25 March 2020.[214]

4.119. Professor Richard Machin, who provided expert evidence to the Inquiry on the impact of financial support on test, trace and isolate, concluded that common issues emerged across all payment schemes, relating to eligibility and adequacy of payments, accessibility and awareness of the schemes, and challenging decisions.[215]

Eligibility for financial support

4.120. The Inquiry heard evidence that the Test and Trace Support Payment in England was criticised for the "*highly varied eligibility criteria between councils*" operating the discretionary element of the scheme.[216] A briefing produced by the Nuffield Trust and Resolution Foundation found that nearly two-thirds of applications were rejected in England due to difficult application requirements (such as proving financial hardship) together with lack of funding for discretionary payments.[217]

4.121. In the months following the rollout of the scheme, the Department of Health and Social Care and NHS Test and Trace put forward proposals for self-isolation pilots to better understand the needs of disproportionately impacted communities and the factors that may improve adherence to self-isolation measures.[218] Up to this point, the eligibility criteria for the Test and Trace Support Payment excluded many people on low incomes from claiming under the scheme.[219] However, the Treasury considered that there was limited evidence regarding the impact of financial support and did not agree to sign off on the funding for the pilots until April 2021.[220]

4.122. The schemes in Northern Ireland and Wales were broader in scope.[221] Professor Machin observed that Welsh authorities were able to deliver "*more 'generous' discretionary self-isolation support*" thanks to higher levels of resource.[222] Refused applications were primarily due to claimants being unable to demonstrate that they met the eligibility criteria.[223]

214 INQ000475204_0017-0020 paras 3.2.1-3.2.10
215 INQ000575999
216 INQ000116424_0005 para 14(d)
217 *Tackling Covid-19: A Case for Better Financial Support to Self-isolate*, Nuffield Trust, May 2021, p5 (https://www.nuffieldtrust.org.uk/sites/default/files/2021-05/tackling-covid-19-6.pdf; INQ000211977)
218 INQ000587346_0079-0083 paras 321-334; INQ000593081; INQ000203692
219 INQ000203692_0002
220 INQ000263374_0100, 0103 paras 362-363, 370; INQ000593085_0003
221 INQ000575999_0051-0052 paras 196, 206
222 INQ000575999_0051 para 196
223 INQ000575999_0051 para 197

Awareness of financial support for self-isolation

4.123. Professor Machin noted that, in England and Wales, a Trades Union Congress survey of more than 2,000 workers in May 2021 found that, overall, only 21% of workers were aware of the financial support schemes for self-isolation. Further, that awareness dropped to 18% for people in less secure work and to only 16% for both low-paid workers and those not eligible for sick pay.[224]

4.124. In Wales, regular monitoring of the Self-Isolation Support Scheme included data on the number of applications, rejection rates and overall awareness of the scheme. However, by February 2021, ministers in the Welsh Government identified that more work was required with local authorities and across the voluntary sector to improve awareness of the payment scheme and to clarify eligibility criteria. Professor Machin found that it was common for people to become aware of the Self-Isolation Support Scheme only after they had begun self-isolating.[225] It is clear that those who might need financial support for self-isolation the most – such as low-income groups – were also the most likely to be unaware that there was a financial support scheme to help them.[226]

4.125. Similar issues arose in Scotland. The number of awards being made was low during the first few months of the scheme, "*believed to be connected to low public awareness*".[227] In its review of the Scottish Welfare Fund, which administered the Self-Isolation Support Grant, the Scottish Government found that there was "*considerable variation*" in the promotion of the scheme, and a degree of "*reticence*" among some local authorities about how much promotion of the scheme was appropriate, given it had a fixed eligibility criteria and limited resources.[228]

4.126. Northern Ireland's Discretionary Support scheme was distinct from schemes in other parts of the UK. Introducing a new payment within the existing Discretionary Support scheme proved beneficial because it enabled immediate support to be delivered to people self-isolating, using established systems.[229]

4.127. Professor Machin observed that particular consideration should be given to groups of people who have no previous experience of claiming financial support from government schemes.[230] It should be a fundamental principle that those requiring assistance are not prevented from accessing it due to complex application processes or inadequate telephone support.

224 INQ000575999_0054 para 214
225 INQ000575999_0054 para 217
226 INQ000575999_0054 para 217
227 INQ000575999_0038 para 147
228 *Review of the Scottish Welfare Fund: Main Report*, Scottish Government, March 2023, p53 (https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2023/03/review-scottish-welfare-fund-final-report/documents/review-scottish-welfare-fund-main-report/review-scottish-welfare-fund-main-report/govscot%3Adocument/review-scottish-welfare-fund-main-report.pdf; INQ000652138)
229 INQ000475204_0029, 0032 paras 8.1.2, 8.3.3
230 INQ000575999_0055-0056 para 224

4.128. Measures to improve awareness of financial support for self-isolation by improved communications are considered in Chapter 6: Communications and data.

Challenging decisions

4.129. Not all of the payment schemes included a mechanism for review of decisions. As the Self-Isolation Support Grant in Scotland was administered through the existing Scottish Welfare Fund, it was subject to existing appeal processes. Applicants who were unhappy with a decision could appeal to the Scottish Public Services Ombudsman.[231] In Northern Ireland, the administrative process for the Discretionary Support Self-Isolation Grant scheme meant that a review could be requested within 28 days of a decision.[232] Neither of the schemes in England or Wales included a mechanism for review of decisions.

4.130. Future self-isolation payment schemes should include clear guidance on eligibility criteria, how to make a claim and the process for requesting a review of claim decisions.

Financial support for self-isolation in the future

4.131. The Inquiry acknowledges that government decision-making about the provision of financial support to those needing to self-isolate involves a complex interplay of central and local authority powers, budgetary considerations and the need to minimise the risk of misuse or fraud.

4.132. However, it should have been foreseen that adherence to self-isolation guidance – and the subsequent legal requirements in England and Wales – would be linked to the degree of financial impact a person experienced as a result of lost income. Those in financially secure situations were more likely to be able to afford to self-isolate and thereby protect their health and the health of those around them, whereas those in financial poverty and without prior experience of claiming financial support would be more likely to become infected with, and potentially spread, Covid-19 because they could not afford to give up work. These issues should have been factored into pandemic planning (see Chapter 1: The UK's readiness to implement a test, trace and isolate system).

4.133. The Inquiry has already recommended, in its Module 6 Report, that financial support should be provided to protect adult social care staff from financial loss as a result of compliance with mandatory self-isolation regulations.[233] This issue was not unique to

231 *Review of the Scottish Welfare Fund: Main Report*, Scottish Government, March 2023, p13 (https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2023/03/review-scottish-welfare-fund-final-report/documents/review-scottish-welfare-fund-main-report/review-scottish-welfare-fund-main-report/govscot%3Adocument/review-scottish-welfare-fund-main-report.pdf; INQ000652138)
232 INQ000575999_0052 para 204
233 *Module 6: Care sector*, UK Covid-19 Inquiry, October 2026, Chapter 3 (https://covid19.public-inquiry.uk/documents/module-6-full-report)

the adult social care sector; therefore, protection must also be offered to the public more broadly.

4.134. Given the scale of the sacrifices that were asked of the public, this lack of forward planning and preparedness to support people to self-isolate is unacceptable. As Baroness Harding explained, isolation support must be at the "*forefront*" of a test, trace and isolate system.[234] The Inquiry recommends that future governments should ensure that a strategy for effective self-isolation includes the provision of financial support from the outset. This financial support should be available to the public in circumstances where a novel pathogen poses such a danger that the government asks people to self-isolate. In those instances, whether a test is available and indicates a positive case, or a test is unavailable but close contact has occurred, adequate support to offset the burden of time away from work should be provided. Clear, accessible guidance on available support should be issued and this should be accompanied by targeted and effective communications that ensure that the public is aware of the financial support schemes and how to access them. There should be mechanisms in place to monitor the effectiveness of those schemes, so that changes can be made as needed.

Recommendation 5: Financial support to self-isolate

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should put in place financial support schemes for individuals complying with self-isolation rules during a pandemic.

The following principles should apply:

- There should be clear and straightforward guidance on eligibility criteria, application processes and payment arrangements for the support schemes.
- Information about the introduction of support schemes and how to access them should be communicated clearly and made available in accessible formats.
- Mechanisms should be in place to monitor the effectiveness of support schemes.

Plans should also be developed and maintained to enable these financial support schemes to be scaled up rapidly during a pandemic.

234 Dido Harding 28 May 2025 10/6-15

Chapter 5: Border control measures

Introduction

5.1. Border control measures have a different purpose from other non-pharmaceutical interventions. Rather than limiting the spread of an infection within a country, they are primarily designed to prevent or at least reduce the risk of infection (or a new variant of the infection) entering a country.[1] Possible border control measures include screening travellers for symptoms, requiring or advising a person to self-isolate on arrival, requiring medical proof that a person does not have the virus, and part or full closure of the borders to all travellers.[2] The impact on the spread of infection can be particularly significant when restrictions are applied to travellers from a jurisdiction with a higher incidence of the infection than the country to which they are travelling.[3]

5.2. International border control therefore has an important and distinct role in pandemic response. Yet deciding how to exercise that control is not a simple matter. The closure or restriction of borders is immensely complex in a world increasingly reliant on international trade and travel, as the Inquiry noted in its combined Report relating to Modules 2, 2A, 2B and 2C.[4]

5.3. As with testing, tracing and isolation, there was no pre-pandemic UK-wide strategy for international border control measures. Implementation of international border control on the scale seen during the Covid-19 pandemic was unprecedented in recent times. Prior to 2020, the most recent UK border control measures were implemented during the 2013 to 2016 Ebola virus disease outbreak, when approximately 11,400 incoming travellers at four airports and one international train station were screened on entry to the UK for symptoms.[5] By contrast, the Covid-19 response saw 1,260,400 air travellers subjected to controls in July 2020 alone (widespread border control measures having been imposed for the first time on 8 June 2020).[6]

5.4. Border control measures may also serve as an important tool to reassure the public and increase confidence in the response to a pandemic.[7] The perception that a virus is allowed to cross the UK's borders could impact public confidence in government decision-making more generally. For example, during the Covid-19 pandemic, a large proportion of the population believed that full border closure was required to protect the public.[8] While the scientific advice did not support full border closure and the general public may not have fully appreciated the complications of complete closure,

1 *COVID-19: Examining the Effectiveness of Non-Pharmaceutical Interventions*, The Royal Society, August 2023, p36 (https://royalsociety.org/-/media/policy/projects/impact-non-pharmaceutical-interventions-on-covid-19-transmission/the-royal-society-covid-19-examining-the-effectiveness-of-non-pharmaceutical-interventions-report.pdf; INQ000250983); INQ000234375_0001-0002 para 7; INQ000247081_0007
2 INQ000049314_0005; INQ000068877_0002-0004
3 INQ000234375_0002 para 13
4 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
5 INQ000147708_0033-0034 paras 116, 120
6 INQ000587366_0067
7 INQ000234375_0002 para 12
8 INQ000094698

effective communication was key in ensuring that the public understood this and recognised the value of complying with the restrictions that were in place.

5.5. This chapter examines the use of different border control measures during the Covid-19 pandemic and considers what improvements might be made in advance of the next public health emergency.

International good practice during the Covid-19 pandemic

5.6. During the Covid-19 pandemic, the World Health Organization listed management of the risk of exporting and importing cases from communities with high risks of transmission as one of six criteria for controlling the spread of infection.[9]

5.7. As noted earlier in this Report, Singapore, South Korea, Germany, Hong Kong and Taiwan were internationally recognised for their effective responses to Covid-19. They implemented early measures to control their borders. Some of these measures included testing, tracing or isolating at the border. Other countries and territories also implemented border control measures (see Table 1).

9 INQ000247081_0001 para 3

Table 1: Examples of international border measures, December 2019 to April 2020

Country or territory	Border measures implemented
Taiwan	• December 2019: checking travellers from Wuhan, China[(a)] • March 2020: closed borders to all incoming travellers except for legal residents and imposed home quarantine on those residents returning to Taiwan[(b)]
Hong Kong	• 3 January 2020: implemented non-contact temperature screening at border checkpoints for travellers arriving from Wuhan, China, by rail or air[(c)] • 25 March 2020: banned entry of all non-residents from overseas countries or territories except Taiwan and Macau[(c)]
Singapore	• End of January 2020: banned entry from Hubei province of China[(d)] • April 2020: 14 days mandated self-isolation for all travellers in place[(e)]
South Korea	• 4 February 2020: banned entry of foreigners with travel history to Hubei province of China[(f)] • 19 March 2020: extended 'special entry procedure' for all travellers, including testing, treatment and quarantine[(g)]
Spain	• 10 March 2020: stopped direct flights from Italy[(h)] • 16 March 2020: closed all borders[(h)]
Germany	• 16 March 2020: closure of borders with neighbouring countries (France, Switzerland, Austria, Denmark and Luxembourg)
New Zealand	• 20 March 2020: full border closure[(j)]

Sources: (a) INQ000144794_0004 para 9; (b) 'The resilience of Taiwan's health system to address the COVID-19 pandemic', E Han, S-T Chiou, M McKee, H Legido-Quigley, EClinicalMedicine (2020), 25, 100437, p1 (https://doi.org/10.1016/j.eclinm.2020.100437; INQ000535935); (c) 'What can countries learn from Hong Kong's response to the Covid-19 pandemic', S Wong, K Kwok, F Chan, Canadian Medical Association Journal (2020), 192(19), E511-E515, pE511 (https://doi.org/10.1503/cmaj.200563; INQ000050423); (d) Supplementary appendix to 'How an outbreak became a pandemic: A chronological analysis of crucial junctures and international obligations in the early months of the COVID-19 pandemic', S Singh, C McNab, R McKeon, N Bristol, C Nolan, E Bergstrom et al, The Lancet (2021), 398, 10316, 2109-2124, p27 of the supplementary appendix (https://doi.org/10.1016/S0140-6736(21)01897-3; INQ000262597); (e) INQ000576032_0095 para 343; (f) INQ000216323_0002; (g) INQ000216323_0002, 0014; (h) INQ000050164_0010-0011; (i) INQ000050164_0004; (j) INQ000055040_0007

5.8. By April 2020, 93% of countries and territories had put measures in place – such as flight suspensions, border closures and travel restrictions – to control their international borders.[10] By contrast, the UK government only requested (rather than directed) travellers from Wuhan, China, to self-isolate in January 2020 and travellers from some other high-risk areas to self-isolate in February 2020. This did not prevent a coachload of tourists from Wuhan entering the UK and travelling from England to Scotland and then to Northern Ireland and the Republic of Ireland in February 2020.[11] The UK government implemented no further border control measures until June 2020.[12]

10 INQ000576032_0095 para 343
11 INQ000398416_0001; Michael McBride 10 May 2024 55/11-22
12 INQ000527804_0001

5.9. In April 2020, the International Comparators Joint Unit was established by the Foreign and Commonwealth Office and the Cabinet Office's Joint Intelligence Organisation.[13] Its purpose was to "*provide timely, relevant and objective analysis of different countries' responses to the crisis*".[14] The unit produced briefings on specific Covid-19-related issues at the request of UK government departments, which were used to inform advice to ministers and for discussion at meetings of the Covid-19 Operations Committee (Covid-O, a Cabinet sub-committee that drove the policy and operational aspects of the Covid-19 response).[15]

5.10. From 23 April to 9 October 2020, the International Comparators Joint Unit produced 49 analyses.[16] For example, on 4 May 2020, it produced a presentation entitled 'Borders' that compared border controls in different countries around the world.[17] In a letter dated 16 June 2020, 10 Downing Street said that the unit was critical in providing an improved basis of information for decision-making on everything related to Covid-19 and was valued by "*everyone involved from the Prime Minister down*".[18] On 29 September 2020, Simon Case (later Lord Case), Cabinet Secretary from September 2020 to December 2024, said that he had never seen examples of international assessment that had as much impact as the unit's work – it was part of almost every decision.[19]

5.11. The establishment of the International Comparators Joint Unit in April 2020 was a positive step, providing a structured means of analysing international responses and informing decision-making.

5.12. The Inquiry considers that there would have been value in having the kind of formal, detailed international comparative analysis conducted by the International Comparators Joint Unit from the earliest stages of the pandemic, particularly given the speed with which many countries had implemented border control measures by the spring of 2020. James Bethell, Lord Bethell (Parliamentary Under Secretary of State for Technology, Innovation and Life Sciences at the Department of Health and Social Care from March 2020 to September 2021), told the Inquiry about the importance of early international comparative analysis:

> "*A key element of Taiwan's successful strategy was the early closing of their borders which meant that even in the early days, by the time we were live to the potency of their contact tracing, it may have already been too late to replicate it – it is almost impossible to have an effective track-and-trace system with open borders.*"[20]

13 INQ000273549_0009 para 29
14 INQ000587366_0026 para 88
15 INQ000130416_0031-0032 paras 117-118; INQ000588218_0106 paras 444-445; INQ000587561_0037 para 153
16 INQ000273549_0009-0010 para 32
17 INQ000050338_0003
18 INQ000196546; INQ000273549_0009-0010 para 32
19 INQ000625734
20 INQ000587383_0020 para 45

5.13. Each country, territory or region may have unique geographical, societal and legal characteristics, but meaningful comparisons can be made. There is clear value in studying international border control measures and analysing whether there are lessons that can be applied in the UK. A future pandemic strategy should include evaluation of previous international good practice and a plan for ongoing analysis of international border control measures during a pandemic in order to inform the UK's approach.

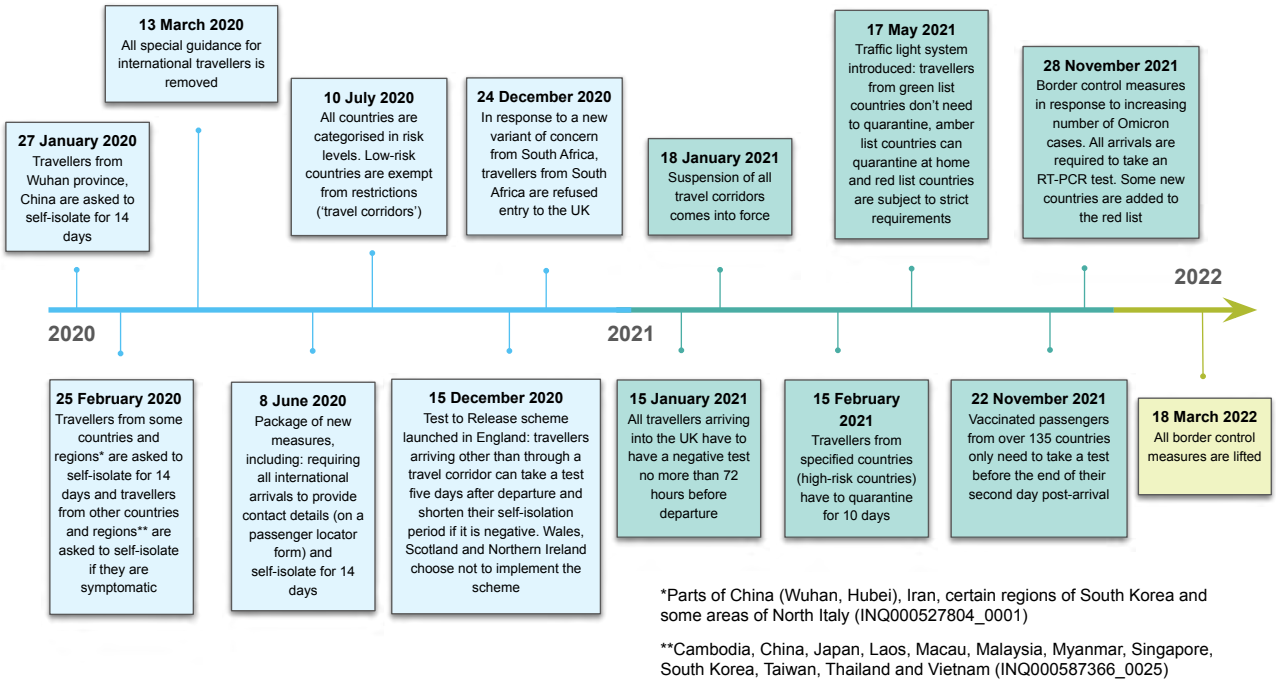
Border control in the UK during the Covid-19 pandemic

5.14. In its Module 1 Report, having considered previous health emergencies and pandemic exercises in relation to border control measures, the Inquiry concluded that there was no framework in place as at January 2020 to allow the UK government or the devolved administrations to weigh up the relative costs and benefits of the many different border interventions open to them.[21] As noted in the Inquiry's combined Module 2ABC Report, in order to be effective, border restrictions must be stringent and accompanied by a system of quarantine.[22]

5.15. In January and February 2020, travellers from specified countries and regions were asked to self-isolate for 14 days.[23] From June 2020, the UK introduced a series of progressively more stringent border controls, including self-isolation requirements, passenger information collection, risk-based 'travel corridors',[24] and pre-departure and post-arrival testing regimes.[25] These were subsequently broadened in response to variants of the virus – most notably through the suspension of travel corridors and the introduction of a 'traffic light' system and hotel quarantine for high-risk countries – before being eased for vaccinated passengers and ultimately lifted in March 2022 (see Figure 7).[26]

21 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
22 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
23 INQ000527804_0001
24 Travel corridors allowed passengers arriving in England, Scotland, Wales or Northern Ireland from certain countries and territories to be exempt from the requirement to self-isolate.
25 INQ000587366_0018-0037 paras 60-131
26 INQ000587366_0037-0041 paras 132-146

Figure 7: Timeline of border measures implemented in the UK



Sources: INQ000587366; INQ000527804

Challenges in maintaining an aligned four-nations approach

5.16. Management of the UK border is a reserved matter and therefore remains the responsibility of the UK government.[27] Responsibility during the pandemic was split across multiple departments. The Home Office is the lead department for border security, but its role was primarily to implement and enforce policy decisions made by other departments. The Cabinet Office acted as the central coordinator for decision-making, hosting and facilitating the Covid-O meetings. The Department of Health and Social Care was responsible for health measures, including quarantine and testing rules. The Department for Transport led the Global Travel Taskforce, which developed the traffic light policy, while the Foreign and Commonwealth Office (the Foreign, Commonwealth and Development Office from September 2020) provided guidance to British nationals.[28] The Home Affairs Committee in August 2020 found that there was a "*lack of clarity over which Government department or agency* [was] *ultimately responsible for coordinating Covid-19 border policy*".[29]

27 INQ000587366_0016 para 55
28 INQ000587366_0005-0006, 0017-0018 paras 17-19, 58
29 'Failures on border measures in March increased scale and pace of Covid-19 pandemic – Committee finds', UK Parliament, 5 August 2020 (https://committees.parliament.uk/work/184/home-office-preparedness-for-covid19-coronavirus/news/114861/failures-on-border-measures-in-march-increased-scale-and-pace-of-covid19-pandemic-committee-finds; INQ000660324_0003); *Home Office Preparedness for COVID-19 (Coronavirus): Management of the Borders, Fifth Report of Session 2019–21*, House of Commons Home Affairs Committee, 30 July 2020, p35, para 107 (https://committees.parliament.uk/publications/2250/standard/pdf; INQ000075365)

5.17. This position was further complicated because health is a devolved matter (or a 'transferred' matter in Northern Ireland) and so falls within the purview of the devolved administrations. Each government is responsible for measures at its borders to prevent danger to public health and the spread of infection.[30]

5.18. A report in 2013 about the response to the outbreak of Ebola that year (jointly produced by the Department of Health and Social Care, NHS England and Public Health England) noted the different disease management controls and powers in relation to ports of entry and raised the possibility of a review to align those powers.[31] There is no evidence that a review was carried out.

5.19. The desirability of alignment between the four nations of the UK was apparent during the Covid-19 pandemic.[32] Boris Johnson (Prime Minister from July 2019 to September 2022) told the Inquiry:

> "*Because of our shared island status, I always felt it was critical to have agreement on border-related issues with the DAs* [devolved administrations] *and that encompassed the ensuing TTI* [test, trace and isolate] *policies.*"[33]

Ministers from the devolved administrations were also committed to alignment. For example, Nicola Sturgeon (First Minister of Scotland from November 2014 to March 2023) told the Inquiry that the Scottish Government supported four-nations alignment on international border control requirements, where possible.[34] Similarly, a briefing from the Welsh Government's Covid-19 Recovery and Restart Directorate in January 2021 noted that Wales had long been in favour of a four-nations approach.[35]

5.20. Mr Johnson told the Inquiry that the "*valuable perspectives*" of the devolved administrations were "*always sought out when a UK-wide approach was needed, including on border measures*".[36] He said that representatives from the devolved administrations were invited to relevant Covid-O meetings, such as those relating to managed quarantine.[37] The Four Nations Health Protection Oversight Group (originally called the UK Health Protection Oversight Group) was also set up from 28 April 2021 as a mechanism for coordination and collaboration between the four governments about broader health protection matters, though not specifically focused on border control measures.[38] The UK Health Protection Committee was established at the same time, with terms of reference similar to those of the Four Nations Health Protection Oversight Group.[39] The oversight group was intended for

30 INQ000587366_0016 paras 55-56
31 INQ000022723_0008, 0014; see also *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
32 INQ000083546_0005 paras 15-16; INQ000471208_0004; INQ000587561_0012-0013 para 39
33 INQ000587378_0067-0068 para 199
34 INQ000475142_0076-0077 para 199
35 INQ000198549_0002 para 12
36 INQ000587378_0068 para 200
37 INQ000587378_0068 para 200
38 INQ000279839
39 INQ000279839_0003 para 7

information-sharing between the four nations, with joint decision-making powers, whereas the committee would consist of more senior representatives (at director level) for more strategic discussion and associated decision-making.[40]

5.21. Public Health Scotland told the Inquiry that, in the main, collaboration arrangements between the four nations worked well. However, there were occasions when changes to border measures were communicated to Public Health Scotland through the media rather than via established intergovernmental channels (although the Home Office began to communicate changes on a weekly basis as processes improved).[41] A Scottish Government review of international travel dated 20 May 2021 also noted that the UK government made decisions without consulting devolved administrations.[42] However, as set out below, the Scottish Government itself imposed border controls for travellers from England without consultation with the UK government.

5.22. The review also stated that the UK government had suspended the four-nations decision-making process (which by that stage appears to have largely consisted of Covid-O meetings) and that ministers from the devolved administrations had not attended Covid-O meetings about international travel decisions since 12 March 2021.[43]

5.23. In a letter dated 26 May 2021, Robin Swann (Minister of Health for Northern Ireland from January 2020 to October 2022 and from February to May 2024) noted that there had been a lack of devolved administration involvement in the Covid-O meetings about international travel requirements since April 2021. Instead, UK government decision-making took place at closed Covid-O meetings, with decisions being communicated to devolved administrations through updates at officials' meetings.[44]

5.24. The Inquiry is not in a position to determine whether the UK government consistently sought the views of the devolved administrations when a UK-wide approach was required.[45] However, while arrangements for collaboration generally functioned well, relations between the UK government and devolved administrations also broke down at times. This is concerning given the critical importance of effective cooperation between all four governments during the pandemic. The devolved administrations should have been fully involved in the decision-making process and not left with the perception that they had unequal – and at times unsatisfactory – influence in decisions about the pandemic response that affected the whole of

40 INQ000279839_0003 para 7
41 INQ000587251_0081-0082 para 5.8.5
42 INQ000245976_0001
43 INQ000245976_0001. Covid-O, established in May 2020, was attended only by UK government ministers and officials – representatives from the devolved administrations were invited to attend by exception (INQ000146703_0001 para 3; INQ000259848_0009-0012 paras 16f(ii), 19d). See also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapters 11, 14 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
44 INQ000411483_0001
45 INQ000587378_0068 para 200

the UK.[46] The Inquiry, in its combined Module 2ABC Report, noted similar concerns about effective collaboration.[47]

5.25. The Inquiry recognises, however, that, even when the input of all four nations was sought, alignment could not be assumed. Professor Sir Christopher Whitty (Chief Medical Officer for England from October 2019) told the Inquiry:

> "*Debates between the four nations of the UK on border measures were one of the few areas which proved quite difficult even at a technical level. The starting point for political leaders in the four nations on border issues was different, perhaps unsurprisingly as attitudes to borders are essentially a political issue.*"[48]

5.26. Consequently, there were times during the Covid-19 pandemic when the four nations' approaches differed. Professor Sir Gregor Smith (Chief Medical Officer for Scotland from December 2020) told the Inquiry that Scotland had a lower risk appetite than the UK government about border control measures: "*This occasionally led to some disagreement about the timing and extent to which additional border controls were implemented for some countries.*"[49]

5.27. One such disagreement arose in July 2020, when the four governments were considering which countries to put on a list allowing travellers from that country to enter the UK without having to self-isolate. The Scottish Government initially disagreed with the other three on whether Spain should be included on the list. However, the risk from Spain increased within days and all the nations of the UK removed Spain from the list.[50] This particular divergence was therefore relatively short-lived. Had it lasted longer, however, it could have caused significant problems in enforcing international border controls in the UK.

5.28. The approach to the Delta variant of Covid-19 provides another example of the risks caused by different approaches across the UK's international border. The Delta variant was first identified in India and cases emerged in the UK in early April 2021.[51] All direct international arrivals into Scotland at that time had to enter managed quarantine. By contrast, direct international arrivals into England only had to quarantine if travelling from a specific list of countries (called a 'red list', as further described below). India was not added to England's red list until the end of April 2021, in part due to operational challenges because a substantial number of British nationals were in India for a festival at that time.[52] A Scottish Government review of

46 See, for example, a letter from the devolved administrations to Professor (later Dame) Jenny Harries (Deputy Chief Medical Officer for England from July 2019 to March 2021, Chief Executive of the UK Health Security Agency from April 2021 to May 2025) in relation to the creation of the UK Health Security Agency (INQ000202923_0001).
47 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 14 (https://covid19.public-inquiry.uk/documents/module-2-full-report); see also INQ000256827; INQ000062953; INQ000234018; INQ000258434; INQ000441534; INQ000273747_0007 para 19
48 INQ000587340_0190 para 9.3
49 INQ000576032_0007-0008 para 29
50 INQ000475142_0078 para 203
51 INQ000199119_0006; *International Horizon Scanning and Learning to Inform Wales' COVID-19 Public Health Response and Recovery: Report 29*, Public Health Wales, 10 June 2021, p3 (INQ000068211)
52 INQ000247074_0007 para 36

international travel restrictions dated 20 May 2021 linked the Delta variant's entry into Scotland with the differences in approach between England and Scotland: "*The* [Delta] *variant entered Scotland while our restrictions were at their highest level because* [the] *UK Government would not engage with our concerns*."[53]

5.29. Difficulty in collaboration and cooperation could also, at times, be exacerbated by measures to stop movement across internal borders within the UK, as illustrated by the following examples:

- In May 2021, Ms Sturgeon imposed restrictions on travel into Scotland from Bolton for public health concerns, based on Covid-19 levels.[54]
- A ban on non-essential travel into Scotland from Manchester and Salford was announced for the same reasons on 21 June 2021.[55] This was publicly opposed by Andy Burnham (Mayor of Greater Manchester from May 2017 to June 2026).[56] He was concerned about the lack of prior warning from the Scottish Government, the lack of clarity about the criteria being used to determine that Manchester and Salford posed a risk (given that they had similar Covid-19 rates to Dundee), and the financial impact on individuals because they had to cancel holidays to Scotland.[57] The ban was lifted just over a week later.[58] This was following a review of data in relation to the spread of Covid-19 variants of concern.[59]
- Similarly, in November 2020, the Welsh Government banned travel outside Wales without a reasonable excuse, because England was imposing a national lockdown.[60]

5.30. Alignment between all four nations should always be sought. Where there are differing approaches that cannot be reconciled, serious consideration should be given to ways in which the risks of travellers crossing internal borders once they have entered the UK can be mitigated.

5.31. Northern Ireland had an additional issue to consider: its border with the Republic of Ireland. During the pandemic, restrictions on international travel did not apply between Northern Ireland and the Republic of Ireland.[61] This represented a challenge in terms of controlling transmission when in-country restrictions were different.[62]

53 INQ000245976_0001; see also INQ000587342_0250 para 734; INQ000247074_0007 para 36
54 'Covid in Scotland: Nicola Sturgeon defends Manchester travel ban', BBC News, 21 June 2021 (https://www.bbc.co.uk/news/uk-scotland-57551236; INQ000357609_0003)
55 'Covid in Scotland: Nicola Sturgeon defends Manchester travel ban', BBC News, 21 June 2021 (https://www.bbc.co.uk/news/uk-scotland-57551236; INQ000357609_0002); 'Scottish government lifts Manchester travel ban', BBC News, 29 June 2021 (https://www.bbc.co.uk/news/uk-scotland-57652436; INQ000360357_0002)
56 'Covid in Scotland: Nicola Sturgeon defends Manchester travel ban', BBC News, 21 June 2021 (https://www.bbc.co.uk/news/uk-scotland-57551236; INQ000357609)
57 INQ000184694
58 'Scottish government lifts Manchester travel ban', BBC News, 29 June 2021 (https://www.bbc.co.uk/news/uk-scotland-57652436; INQ000360357_0002)
59 'Scottish government lifts Manchester travel ban', BBC News, 29 June 2021 (https://www.bbc.co.uk/news/uk-scotland-57652436; INQ000360357_0002)
60 INQ000023267_0002
61 See, for example, INQ000055920_0015
62 INQ000425435_0007 para 27

Northern Ireland chose formally to align its international border control measures with the UK rather than with the Republic of Ireland.[63] However, there was close liaison between the UK government, the devolved administrations and the Irish government in relation to border health measures.[64] The Northern Ireland Executive entered into a Memorandum of Understanding with the Irish government on 7 April 2020 to allow regular data-sharing and the sharing of information on international travel policies.[65] This included weekly meetings between the two governments' health departments and the sharing of data in relation to the trajectory of the pandemic and information about international travel policy, as well as working closely together in order to inform policies about border control.[66] Professor Sir Michael McBride (Chief Medical Officer for Northern Ireland from September 2006) told the Inquiry that this close joint working was "*key in managing the pandemic response across many areas*".[67]

5.32. The complexity of relations between the four nations, together with the additional complexity arising from the land border between Northern Ireland and the Republic of Ireland, must be carefully examined and addressed in the development of any future border control approach.

5.33. The UK government's March 2026 *Pandemic Preparedness Strategy: Building Our Capabilities* included the development and maintenance of a four-nations approach to pandemic response, including in relation to ports and borders.[68] This is a positive step. Cooperation and coordination between the four nations and the Republic of Ireland should be pursued wherever possible to ensure that border control measures are effective and operable in practice.

Delay in implementing border control measures: January to May 2020

5.34. At its first meeting about Covid-19 on 22 January 2020, the Scientific Advisory Group for Emergencies (SAGE) supported the position of the Department of Health and Social Care's New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG), which advised that the benefits of port-of-entry screening were likely to be low.[69] SAGE said that it would review its position on screening travellers at ports of entry only if a simple, specific and rapid test was available and deployable at scale across the UK. Temperature checking and other forms of screening were unlikely to be of value and were likely to have high false positive and false negative rates.

63 INQ000425435_0005, 0007 paras 23, 27
64 INQ000587301_0135-0136 paras 342-343
65 INQ000587301_0135-0136 paras 342-343
66 INQ000587301_0136 para 343
67 INQ000587301_0136 para 343
68 *Pandemic Preparedness Strategy: Building Our Capabilities*, Department of Health and Social Care, 25 March 2026 (https://assets.publishing.service.gov.uk/media/69c3c48b93cc6e8b87a6f614/dhsc-pandemic-preparedness-strategy.pdf; INQ000660230)
69 'Precautionary SAGE 1 minutes: Coronavirus (COVID-19) response, 22 January 2020', Scientific Advisory Group for Emergencies, 4 March 2022, paras 16-20 (https://www.gov.uk/government/publications/precautionary-sage-minutes-coronavirus-covid-19-response-22-january-2020; INQ000051718); see also minutes of NERVTAG meetings at INQ000023107_0007-0008 para 5.6 (13 January 2020) and INQ000023119_0005 para 4.8 (21 January 2020)

5.35. As the Inquiry noted in its combined Module 2ABC Report, temperature screening was not always effective because not everyone with Covid-19 would have a temperature.[70] SAGE considered and discounted the utility of temperature screening at its meeting on 22 January 2020.[71] Requiring a certificate of medical health with test results also had its limitations, because it would require the country of departure to have tests available that could confirm that a person did not have the virus.[72] Therefore, people without ready access to those tests prior to travel could be adversely affected, including British nationals seeking repatriation.[73] However, testing at the border was not viable due to the UK's lack of mass testing capability in early 2020 (see Chapter 2: Testing). Testing at the border was therefore another casualty of the UK's lack of readiness to test at scale in early 2020.

5.36. A further possible border control measure was isolation on arrival in the UK, and this was the first border control measure to be introduced on 27 January 2020, albeit only for certain travellers. Travellers arriving into the UK from Wuhan province in China were asked (not required) to self-isolate for 14 days.[74] Three days later, the UK risk level was raised from low to moderate.[75] By the end of January 2020, the first case of Covid-19 had been confirmed in the UK.[76]

5.37. A paper by the Scientific Pandemic Influenza Group on Modelling (SPI-M), dated 3 February 2020, stated that restricting travel from countries with outbreaks and quarantining all travellers from China could potentially delay the spread of Covid-19 in the UK. However, it concluded that the impact of any intervention or combination of interventions was hard to determine because the transmissibility of Covid-19 was poorly understood.[77]

5.38. At its meeting that same day, SAGE discussed its modelling of the impact of travel restrictions. SAGE estimated, albeit with limited data, that, if the UK reduced imported infections by 50%, that might delay the onset of an epidemic in the UK by about five days.[78] If imported infections were reduced by 75%, that might produce a delay of 10 days, and 90% might result in a delay of 15 days. SAGE concluded that a reduction in imported infections of 95% or more "*maybe buys a month*".[79] While

70 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report); INQ000146564_0002
71 'Precautionary SAGE 1 minutes: Coronavirus (COVID-19) response, 22 January 2020', Scientific Advisory Group for Emergencies, 4 March 2022, paras 16-20 (https://www.gov.uk/government/publications/precautionary-sage-minutes-coronavirus-covid-19-response-22-january-2020; INQ000051718)
72 INQ000068877_0002
73 INQ000068877_0002
74 INQ000527804_0001
75 'Statement from the 4 UK Chief Medical Officers on novel coronavirus', Department of Health and Social Care, 30 January 2020 (https://www.gov.uk/government/news/statement-from-the-four-uk-chief-medical-officers-on-novel-coronavirus; INQ000203938_0002)
76 INQ000223324_0018; see also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
77 INQ00051882_0001
78 INQ000051883_0002 paras 1, 4. Statistical models are tools for analysing complex data, identifying patterns and informing evidence-based decision-making where direct measurement is not possible. Figures from modelling are estimates only, and different statistical models will produce different outcomes. These estimates are not based on direct observations. They are therefore limited by the underlying assumptions used in the models and are subject to uncertainty.
79 INQ000051883_0002 para 1

noting that a month of additional preparation time for the healthcare system would offer a significant advantage, SAGE also warned:

> "*To prevent imported infections along these lines would require draconian and coordinated measures, because direct flights from China are not the only route for infected individuals to enter the UK.*"[80]

5.39. No specific border control measures were agreed at that meeting. The Department for Transport and the Home Office were given the task of producing more wide-ranging estimates about the number of people entering the UK from China for the next SAGE meeting the following day.[81] At that meeting, on 4 February 2020, SAGE confirmed that it remained content with its conclusions the previous day about the impact of international travel restrictions. Other measures to limit spread were discussed, such as wearing face masks, shutting down public transport and regional closing of schools.[82] At its meeting on 5 February 2020, COBR decided not to close the borders for arrivals from China.[83]

5.40. On 14 February 2020, the Cabinet discussed whether all flights from China to the UK should be suspended. Professor Whitty repeated the advice from SAGE that suspending flights from China would only slow the spread by a maximum of five days.[84] Matt Hancock (Secretary of State for Health and Social Care from July 2018 to June 2021) said that it would be challenging to convince people that flights from China should continue.[85] Flights from China were not suspended.

5.41. There were only nine confirmed cases of Covid-19 in the UK by 18 February 2020.[86] This would have been an ideal time to implement at least some travel restrictions. The *Technical Report on the COVID-19 Pandemic in the UK* (published on 1 December 2022) concluded that measures to prevent importation of cases generally mattered most when there were very low levels of domestic infection but higher rates elsewhere. Measures could then delay establishment of the infection at the outset of the pandemic, allowing time to assess other potential measures.[87]

5.42. Some border control measures were implemented on 25 February 2020. However, these only amounted to the UK government telling travellers from certain specified countries or regions – such as China, Iran and Italian cities under containment

80 INQ000051883_0002 para 3
81 INQ000051883_0003
82 INQ000051925_0004 paras 38-42
83 INQ000056215_0005 para 5; see also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
84 INQ000051883_0002 paras 1, 4; INQ000056138_0008
85 INQ000056138_0008
86 'SAGE 8 minutes: Coronavirus (Covid-19) response, 18 February 2020', Scientific Advisory Group for Emergencies, 29 May 2020 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-18-february-2020; INQ000660326)
87 *Technical Report on the COVID-19 Pandemic in the UK*, Department of Health and Social Care, 1 December 2022 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)

measures – that they should self-isolate on arrival, or if they developed symptoms, depending on the country or region from which they had travelled.[88]

5.43. International travel continued throughout the pandemic, although, following a sharp decline from the spring of 2020, rates of travel remained below pre-pandemic levels. UK government statistics record that approximately 6.8 million people arrived in the UK by air in February 2020 and approximately 3.8 million people in March 2020.[89] UK government figures indicate that the recorded daily death count from Covid-19 in England began to increase rapidly from March, rising from one death by 5 March 2020 to 2,698 deaths by 1 April 2020.[90] In April 2020, 112,300 people arrived in the UK by air, representing a 99% reduction compared with April 2019.[91]

5.44. However, border control measures were eased in March 2020, at a time when international arrivals continued and the number of daily deaths was increasing. On 13 March 2020, guidance for international travellers from specific countries was superseded by guidance about staying at home, linked to the move from the 'contain' phase to the 'delay' phase of the pandemic response (see Chapter 2: Testing and Chapter 3: Contact tracing).[92] However, that 'stay at home' guidance was significantly less stringent than the guidance it replaced for travellers from certain high-risk areas.[93] It required people to stay at home for at least seven days only if they had a new continuous cough or a high temperature, rather than because they had travelled from a high-risk area (like the measures implemented on 25 February 2020).[94]

5.45. This decision was taken one day after the decision to stop community testing and contact tracing in the UK (see Chapter 2: Testing and Chapter 3: Contact tracing).[95] Accordingly, if an infected traveller without a cough or high temperature arrived in the UK at this time, they would have been able to pass through the border and to avoid any testing or tracing once in the country. There was nothing to stop them infecting others.

5.46. Professor Naomi Fulop (on behalf of Covid-19 Bereaved Families for Justice UK) told the Inquiry about the experience of Kathryn de Prudhoe. Ms de Prudhoe and her mother were in the UK on 13 March 2020, when her father arrived from her parents' home in France. Ms de Prudhoe talked about the lack of border controls at that time:

88 INQ000587366_0025 para 85; *Guidance for Social or Community Care and Residential Settings on COVID-19*, Public Health England, 25 February 2020 (https://www.gov.uk/government/publications/guidance-for-social-or-community-care-and-residential-settings-on-covid-19/guidance-for-social-or-community-care-and-residential-settings-on-covid-19; INQ000499433); INQ000527804_0001
89 INQ000508574_0007-0008
90 INQ000320820_0012
91 INQ000587366_0015 paras 48-49
92 INQ000251645_0187-0188 para 9.37; 'COVID-19: Government announces moving out of contain phase and into delay', Department of Health and Social Care, 12 March 2020 (https://www.gov.uk/government/news/covid-19-government-announces-moving-out-of-contain-phase-and-into-delay; INQ000052485_0002); INQ000070284_0001-0002
93 'Stay at home: Guidance for people with confirmed or possible coronavirus (COVID-19) infection', Public Health England, 12 March 2020 (INQ000542915)
94 'Stay at home: Guidance for people with confirmed or possible coronavirus (COVID-19) infection', Public Health England, 12 March 2020 (INQ000542915)
95 INQ000056221_0007-0008 para 12

> *"At no point did he say there was anyone tracking his movements, and there was no testing in airports at this time. He was free to go about his business, continuing life as normal for 10 days before the Government put us into a national lockdown."*[96]

Shortly afterwards, Ms de Prudhoe and her parents began experiencing Covid-19 symptoms. Her father died from Covid-19 on 14 April 2020, just over one month after his arrival into the UK.

5.47. On 23 March 2020, Dominic Raab (Secretary of State for Foreign and Commonwealth Affairs and First Secretary of State from July 2019 to September 2021) and Grant Shapps (Secretary of State for Transport from July 2019 to September 2022) advised all British tourists and short-stay travellers to return to the UK if commercial flights were still available.[97] There was still no requirement for incoming travellers to self-isolate on arrival, aside from the general 'stay at home' guidance for symptomatic people across the UK.

5.48. Professor Whitty told the Inquiry that the economic, trade, diplomatic, consular and legal implications of full border closure are "*profound*".[98] The scientific advice in early 2020 was that the benefits of full border closure would be relatively minimal.[99] There would also be negative consequences for the economy and for public health from interruptions of food and medicine supplies.[100]

5.49. However, the complexities of full border closure did not mean that other options could not have been effective in the first six months of the pandemic. Each may have had its limitations (as set out above) but they could have included:

- restricting flights from certain countries (as discussed by the UK government and SAGE in February 2020);[101]
- imposing mandatory isolation on travellers from 'hotspot' countries;
- taking the temperature of arriving travellers;[102]
- requiring travellers to provide a certificate of medical health obtained before they started their journey;[103]

96 INQ000587244_0009 para 43
97 INQ000587366_0028 para 94
98 INQ000587340_0190 para 9.2
99 INQ000587366_0024-0025 para 83; see also INQ000251645_0181-0182 para 9.20
100 INQ000587366_0024-0025 para 83; see also INQ000251645_0181-0182 para 9.20
101 INQ000056138_0008
102 'Effectiveness of airport screening at detecting travellers infected with novel coronavirus (2019-nCoV)', B Quilty, S Clifford, CMMID nCov working group2, S Flasche, RM Eggo, *Eurosurveillance* (2020), 25(5), 2000080, p4 (https://doi.org/10.2807/1560-7917.ES.2020.25.5.2000080; INQ000255395)
103 INQ000068877_0002

- testing passengers arriving into the UK;[104] and
- a requirement for all passengers arriving into the UK to self-isolate for 14 days.[105]

5.50. Even if the suspension of all flights from China to the UK in February 2020 might have only led to a brief delay in the spread of Covid-19 – as was advised by SAGE and Professor Whitty at the time – such a delay might nonetheless have provided valuable additional time to prepare healthcare systems for the impact of the pandemic. As noted by the Inquiry in its Module 3 Report, there was a significant lack of critical care capacity in hospitals across the UK by March 2020. The UK government and devolved administrations had to work urgently to increase their critical care capacity and maximise the size of the healthcare workforce.[106] Any additional time would likely have assisted those efforts.

5.51. A 14-day self-isolation requirement for all incoming travellers could have had a significant impact. In its November 2020 analysis of border control measures, the Animal and Plant Health Agency concluded that, from a public health perspective, this measure was the most effective of the border control scenarios considered.[107] Its modelling suggested that this could have reduced the number of infected travellers entering the UK in June 2020 from 377 people per week to about 83 people per week.[108] The agency found a similar estimated impact from its modelling relating to August 2020.[109]

5.52. An August 2020 Home Affairs Committee report concluded that the lack of a requirement to quarantine (ie isolate) in March 2020 worsened the UK's experience of Covid-19.[110] It was particularly critical of the decision to remove guidance to self-isolate from 13 March 2020, at a time when other countries were strengthening their border measures and when hundreds of new Covid-19 cases were arriving in the UK every day. It described this as an "*inexplicable*" decision and said that the failure to have any special border measures in place in mid-March was a serious error.[111] Professor Whitty also told the Inquiry about border control measures:

> "*This is one area however where we should not allow hindsight to give a favourable gloss. Were we running things again earlier intervention would have in my view been prudent and I would have advised measures more rapidly.*"[112]

104 INQ000068961_0004
105 INQ000083546_0001 para 3
106 *Module 3: The impact of the Covid-19 pandemic on the healthcare systems of the United Kingdom*, UK Covid-19 Inquiry, March 2026, Chapter 5 (https://covid19.public-inquiry.uk/documents/module-3-full-report)
107 INQ000090888_0004 para 12
108 INQ000090888_0004 para 12
109 INQ000090888_0004 para 13
110 *Home Office Preparedness for COVID-19 (Coronavirus): Management of the Borders, Fifth Report of Session 2019–21*, House of Commons Home Affairs Committee, 30 July 2020, p76, para 235 (https://committees.parliament.uk/publications/2250/standard/pdf; INQ000075365)
111 *Home Office Preparedness for COVID-19 (Coronavirus): Management of the Borders, Fifth Report of Session 2019–21*, House of Commons Home Affairs Committee, 30 July 2020, p38, paras 100-103 (https://committees.parliament.uk/publications/2250/standard/pdf; INQ000075365)
112 INQ000251645_0182 para 9.22

5.53. The decision not to implement widespread border control measures from the outset of the Covid-19 pandemic represented a missed opportunity by the UK government to try to slow the spread of infection by reducing the risk of imported cases.

5.54. As noted in the Inquiry's combined Module 2ABC Report, there were no detailed plans in place, let alone developed procedures, for border control measures early in the pandemic.[113] Advance planning (as discussed in Chapter 1: The UK's readiness to implement a test, trace and isolate system) places governments in a far better position to evaluate pandemic responses.

5.55. The decision to allow virtually unrestricted international travel in the first six months of 2020 came at a time when the UK had no mass testing or widespread contact tracing and its healthcare resources were stretched thin.[114] Overall, the UK was left in an extremely weak position from which to face the rapidly rising rates of infection.

Travel corridors with exempt countries: June to November 2020

5.56. Dame Priti Patel (Secretary of State for the Home Department from July 2019 to September 2022) told the Inquiry that, by 22 May 2020, air passenger arrivals into the UK were reduced by 99% compared with the previous year.[115] This was as a consequence of the Covid-19 outbreak itself, rather than because of concerted action on the part of the UK government or devolved administrations.[116] In May 2020, the Cabinet considered proposals for new border control measures and ways in which those might be enforced.[117]

5.57. A package of new measures came into force across the UK on 8 June 2020.[118] These included:

- a "*ramping up*" of communications in the UK and overseas about the new measures;[119]
- requiring all passengers arriving in the UK to provide their contact details digitally through a 'passenger locator form';
- advising all passengers to download and use the NHS COVID-19 app (although the app was in advanced development by May 2020, it was not actually launched until September 2020 – see Chapter 3: Contact tracing); and

113 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
114 See *Module 3: The impact of the Covid-19 pandemic on the healthcare systems of the United Kingdom*, UK Covid-19 Inquiry, March 2026, Chapter 5 (https://covid19.public-inquiry.uk/reports/module-3-full-report); INQ000409251_0081 paras 332-334
115 INQ000279975_0012 para 46
116 INQ000053259_0008; INQ000279975_0012 para 46
117 INQ000587366_0031 paras 107-108
118 INQ000587366_0032 para 111
119 INQ000053259_0002

- requiring all individuals (except those importing goods or travelling within the Common Travel Area – the UK, the Republic of Ireland, the Isle of Man, the Bailiwick of Guernsey and the Bailiwick of Jersey), including British citizens, to self-isolate for 14 days on arrival either in their own accommodation or in a government facility at their own expense.[120]

5.58. The new package of measures was introduced because Covid-19 transmission rates had reduced in the UK, and international travel presented a higher risk of importing cases or strains and triggering a new wave of the pandemic.[121]

5.59. On 10 July 2020, all countries were categorised in accordance with the level of risk that a traveller from that country would import Covid-19. Those considered sufficiently low risk would fall into the 'exempt' category. Any traveller from one of those countries would no longer be required to self-isolate on arrival in England, Scotland, Wales or Northern Ireland unless they had visited or transited through a non-exempt country or territory in the preceding 14 days.[122] Travelling from any of the exempt countries was often referred to as using a 'travel corridor'. The list of countries in the exempt category was reviewed regularly throughout the summer of 2020.[123] The categorisation system was a risk-based alternative to blanket self-isolation requirements.[124]

5.60. On 7 October 2020, the UK government launched the Global Travel Taskforce, which was to be led by the Department for Transport.[125] It was to work with representatives from the aviation, travel, healthcare and testing sectors, as well as the devolved administrations, "*to support the recovery of the travel sector*".[126] That included considering the feasibility of passengers taking a Covid-19 test in order to reduce the length of their self-isolation.[127] Just over two months later, that particular possibility was realised in England through the Test to Release scheme, discussed below.

120 INQ000053259_0002, 0010
121 INQ000279975_0012 para 46
122 'Self-isolation lifted for lower risk countries in time for holidays this summer', Department for Transport, 3 July 2020 (https://www.gov.uk/government/news/self-isolation-lifted-for-lower-risk-countries-in-time-for-holidays-this-summer; INQ000660325); 'Coronavirus: Scotland retains quarantine measures for Spanish travel', BBC News, 8 July 2020 (https://www.bbc.co.uk/news/uk-scotland-53336489; INQ000357456); *The Health Protection (Coronavirus, International Travel) (Wales) (Amendment) Regulations 2020 Explanatory Note*, Senedd Wales, no date (https://senedd.wales/media/clspmdus/sub-ld13323-e.pdf; INQ000087085); 'Coronavirus: Executive agrees changes to travel quarantine regulations', BBC News, 9 July 2020 (https://www.bbc.co.uk/news/uk-northern-ireland-53354822; INQ000660328)
123 INQ000053761_0002
124 INQ000090888_0003 para 10
125 'Global Travel Taskforce', UK Government, no date (https://www.gov.uk/government/groups/global-travel-taskforce; INQ000049235); 'Taskforce for safe return to global travel launched', Department for Transport, 7 October 2020 (https://www.gov.uk/government/news/taskforce-for-safe-return-to-global-travel-launched; INQ000215597)
126 'Taskforce for safe return to global travel launched', Department for Transport, 7 October 2020 (https://www.gov.uk/government/news/taskforce-for-safe-return-to-global-travel-launched; INQ000215597_0003)
127 'Taskforce for safe return to global travel launched', Department for Transport, 7 October 2020 (https://www.gov.uk/government/news/taskforce-for-safe-return-to-global-travel-launched; INQ000215597_0002)

The Test to Release scheme and pre-departure testing: December 2020

5.61. As set out in Chapter 2: Testing, it was not until November and December 2020 that lateral flow testing was trialled throughout all four nations, with certain groups and settings prioritised.

5.62. Border control measures subsequently changed to take account of the new availability of tests. On 15 December 2020, the Test to Release scheme was launched across England. This meant that travellers arriving in England other than by a travel corridor (ie those arriving from a country that was not on the exempt list) could shorten their period of self-isolation by paying for a private test five full days after leaving the country of departure. If the result was negative, they could end self-isolation.[128] The five-day period was based on modelling by SAGE, SPI-M and Public Health England that suggested that a test taken on day five had an 88% success rate in identifying cases, rising to 94% by day eight.[129] In other words, a person receiving a negative test result after the five-day period could be reasonably confident that they did not have the infection when leaving the country of departure.

5.63. The devolved administrations indicated in November 2020 that they would follow a different timetable, subject to scrutiny of the clinical and behavioural science underpinning the scheme.[130] However, the scheme was not subsequently adopted in Scotland, Wales or Northern Ireland.[131] The Scottish Government publicly indicated in December 2020 that it was not satisfied that moving from isolation to testing would provide enough protection.[132] The Welsh Government considered that there was an inherent risk with the scheme in that advice from Public Health Wales indicated that it would fail to identify approximately 30% of individuals who would develop Covid-19.[133] In December 2020, the Department of Health (Northern Ireland) also chose not to adopt the Test to Release scheme.[134] The research for the scheme had suggested that about 30% of passengers would use the scheme.[135] That research was based on a less expensive test (which was not available in Northern Ireland), so it could be reasonably assumed that uptake in Northern Ireland would be even lower. In addition, there would have been significant resourcing pressures for public sector bodies and on the testing capacity of the healthcare system as a whole.[136]

5.64. At this time, a new variant of concern began to emerge in South Africa. On 24 December 2020, new travel restrictions were implemented that meant

128 'Test to Release for international travel goes live', Department for Transport and Department of Health and Social Care, 15 December 2020 (https://www.gov.uk/government/news/test-to-release-for-international-travel-goes-live; INQ000054325_0002)
129 INQ000089468_0002
130 INQ000091200_0002
131 INQ000361820_0007 para 23; INQ000355428_0003
132 'Covid in Scotland: Scottish airports "urgently need testing regime"', BBC News, 15 December 2020 (https://www.bbc.co.uk/news/uk-scotland-scotland-business-55316590; INQ00660327)
133 INQ000361820_0007 para 23
134 INQ000276610_0005-0006; INQ000355428_0003
135 INQ000276610_0005 para 13
136 INQ000276610_0005-0006 paras 12-18

visitors from South Africa, or who had transited through South Africa in the previous 10 days, were not permitted entry into England.[137] Travellers from South Africa to Scotland, Wales and Northern Ireland were required to self-isolate for 10 days (and in Wales and Northern Ireland this extended to members of the traveller's household).[138]

5.65. This development was followed by the introduction of pre-departure testing on 15 January 2021 in England, Scotland and Wales and on 21 January in Northern Ireland.[139] This required all travellers arriving into the UK (including those arriving through a travel corridor) to have taken a Covid-19 test no more than 72 hours before departure. Only if the test was negative would they be allowed entry. For those passengers travelling from a country not in the exempt category (ie not through a travel corridor), self-isolation for 10 days was required in addition to taking a test.[140] This was a more stringent package of measures than those previously implemented, in response to the introduction of new strains of Covid-19 from other countries.[141]

5.66. However, from 18 January 2021, travel corridors were suspended to prevent the spread of new variants of Covid-19 into the UK.[142] This meant that all international arrivals, regardless of country of departure, would be required both to take a pre-departure test and to self-isolate for 10 days on arrival into the UK.[143]

Managed quarantine: February 2021

5.67. On 21 January 2021, Covid-O discussed the variation of border measures, in response to new variants of concern.[144] At a Covid-O meeting on 26 January 2021, the committee agreed in principle to implement managed quarantine services (ie requiring incoming travellers to self-isolate at approved government facilities).[145]

137 INQ000587366_0036 para 127
138 'Ban on entry introduced for visitors from South Africa', Scottish Government, 23 December 2020 (https://www.gov.scot/news/ban-on-entry-introduced-for-visitors-from-south-africa; INQ000369667); INQ000361673_0005; INQ000410352
139 'Mandatory COVID-19 testing introduced to bolster border measures', Department for Transport, 8 January 2021 (https://www.gov.uk/government/news/mandatory-covid-19-testing-introduced-to-bolster-border-measures; INQ000054434); INQ000246017_0002; INQ000082685; 'Pre-departure testing for all international arrivals to Northern Ireland', Department of Health (Northern Ireland), 17 January 2021 (https://www.health-ni.gov.uk/news/pre-departure-testing-all-international-arrivals-northern-ireland; INQ000381435). The Department of Health (Northern Ireland) announced the measure on 17 January 2021, but it did not come into force until 21 January 2021 because the Northern Ireland Executive could not implement the changes in time, due to various regulatory changes proposed for the same week. However, it sought to impose the requirement as soon as possible in order to achieve four-nations alignment (INQ000410361_0005 para 11).
140 'Mandatory COVID-19 testing introduced to bolster border measures', Department for Transport, 8 January 2021 (https://www.gov.uk/government/news/mandatory-covid-19-testing-introduced-to-bolster-border-measures; INQ000054434_0002)
141 'Mandatory Covid-19 testing introduced to bolster border measures', Department for Transport, 8 January 2021 (https://www.gov.uk/government/news/mandatory-covid-19-testing-introduced-to-bolster-border-measures; INQ000054434_0002)
142 'All UK travel corridors temporarily suspended to protect against new international variants', Department for Transport, 15 January 2021 (https://www.gov.uk/government/news/all-uk-travel-corridors-temporarily-suspended-to-protect-against-new-international-variants; INQ000054496_0002)
143 'All UK travel corridors temporarily suspended to protect against new international variants', Department for Transport, 15 January 2021 (https://www.gov.uk/government/news/all-uk-travel-corridors-temporarily-suspended-to-protect-against-new-international-variants; INQ000054496_0002)
144 INQ000091818
145 INQ000087161_0002

5.68. Mandatory managed quarantine was implemented in the UK from 15 February 2021. This meant that anyone travelling to the UK from specific countries (those considered to be the most high risk, also referred to as 'red list' countries) would be required to quarantine in a government-approved facility for 10 days.[146] Travellers who fell under the new managed quarantine provisions were required to purchase a 'quarantine package', which covered accommodation and testing.[147]

5.69. In total, more than 247,000 people arriving from red list countries stayed in managed quarantine hotels.[148] Of those, more than 3,000 were identified as having Covid-19; the quarantine may well have prevented them from transmitting the infection further.[149]

5.70. Managed quarantine placed an economic burden on travellers, costing £1,750 for an adult, although there was the option to defer payments for those receiving income-related benefits.[150] People with legitimate reasons to travel, such as to attend a funeral or visit a seriously ill family member, may therefore have been prevented from doing so due to the cost.[151] In June 2021, a SAGE report raised a further concern that some travellers with complex psychological needs were being refused medical exemption from the requirement to quarantine in a hotel.[152] In addition, there was a significant cost to the UK government; in total, the managed quarantine service cost £757 million, with the taxpayer subsidising £329 million, despite the scheme being intended to be self-funding.[153] On top of that, as at 1 March 2022, the Department of Health and Social Care was owed £74 million by people who had not paid for their stay in the managed quarantine system or had not paid for their polymerase chain reaction (PCR) tests (see Chapter 2: Testing).[154]

5.71. The managed quarantine service also placed burdens on those responsible for ensuring that people were using it. Border Force was responsible for processing inbound travellers required to enter managed quarantine and for implementing fixed penalty notices (a fine allowing the recipient to avoid prosecution by paying a set amount) for those who did not comply with the international travel requirements.[155] Yet, as Dame Priti Patel told the Inquiry, it did not have legal powers or the capacity to escort people to the managed quarantine hotels after they had been admitted

146 'Government confirms mandatory hotel quarantine to be introduced from 15 February', Department of Health and Social Care, 5 February 2021 (https://www.gov.uk/government/news/government-confirms-mandatory-hotel-quarantine-to-be-introduced-from-15-february; INQ000592895)
147 INQ000587346_0097 para 398; 'Government confirms mandatory hotel quarantine to be introduced from 15 February', Department of Health and Social Care, 5 February 2021 (https://www.gov.uk/government/news/government-confirms-mandatory-hotel-quarantine-to-be-introduced-from-15-february; INQ000592895_0003-0004)
148 INQ000587346_0098 para 403; 'Managed quarantine: What to expect', Department of Health and Social Care, 3 October 2021 (https://www.gov.uk/government/publications/managed-quarantine-what-to-expect/managed-quarantine-what-to-expect; INQ000575409)
149 INQ000587346_0099 para 407
150 INQ000535913_0002-0003
151 INQ000535913_0004
152 INQ000535913_0004
153 *Managing Cross-Border Travel During the COVID-19 Pandemic: Sixteenth Report of Session 2022–23*, House of Commons Committee of Public Accounts, 26 July 2022, p5 (https://committees.parliament.uk/publications/23256/standard/pdf; INQ000087213)
154 *Managing Cross-Border Travel During the COVID-19 Pandemic: Sixteenth Report of Session 2022–23*, House of Commons Committee of Public Accounts, 26 July 2022, p16 (https://committees.parliament.uk/publications/23256/standard/pdf; INQ000087213)
155 INQ000587366_0012-0013 para 43

to the UK.[156] She was advised in February 2021 that an additional 3,050 Border Force officers would be required to handle the operational impact.[157] However, the only evidence of additional recruitment that the Inquiry has seen related to efforts to increase staffing levels by about 500 additional staff in May 2021.[158] In theory, a requirement to self-isolate at home or in a hotel organised by the traveller, which is less expensive and does not put operational pressures on Border Force in the same way, should achieve the same goal as managed quarantine (although this has its own challenges – see Chapter 4: Isolation).

5.72. In addition, the evidence suggests that managed quarantine requirements were not always implemented when international arrivals were transiting from one UK nation to another. Caroline Lamb (Director General for Health and Social Care in the Scottish Government and Chief Executive of NHS Scotland from January 2021 to August 2026) told the Inquiry:

> "*Managed isolation applied at the point of entry into the UK regardless of final destination. Border Force should have stopped such passengers on their arrival at an English airport and sent them to the nearest quarantine hotel, but this did not always happen in practice where individuals had onward connections within the UK.*"[159]

In other words, some passengers who were potentially highly infectious were allowed to enter the UK and travel freely to their destination without quarantining if, for example, they had arrived in England but were then travelling to Scotland.

5.73. Managed quarantine is likely to be a proportionate solution during periods of high risk, when immediate and readily enforceable measures are needed to stem a high influx of infection. However, to ensure adherence, it requires those charged with enforcement to be properly resourced and for the complications of internal borders to be given greater consideration.

The traffic light system: From the spring of 2021

5.74. On 9 April 2021, the Global Travel Taskforce published a framework designed to enable the safe return of international travel based on the level of risk of importation of infection posed by travellers coming from a specific country. It was a traffic light system, categorising countries as 'red' (the most high risk), 'amber' and 'green' (the lowest risk).[160] It was introduced across all four nations on 17 May 2021.[161] This

156 INQ000279975_0015 para 59; see also INQ000054606_0002-0003
157 INQ000279975_0015 para 59
158 INQ000055061_0002 para 3b
159 INQ000587342_0250-0251 para 735. Managed isolation is the same as managed quarantine in this context.
160 'Global Travel Taskforce sets out framework to safely reopen international travel', Department for Transport, 9 April 2021 (https://www.gov.uk/government/news/global-travel-taskforce-sets-out-framework-to-safely-reopen-international-travel; INQ000223605_0001-0002)
161 INQ000587366_0060; see also 'Government confirms traffic light list ahead of cautious return to international travel', Department for Transport, 7 May 2021 (https://www.gov.uk/government/news/government-confirms-traffic-light-list-ahead-of-cautious-return-to-international-travel; INQ000114438); INQ000116720_0002 para 7; INQ000245976_0001

sustainable reopening of international travel was described by Mr Shapps as "*vital*" to the UK economy and in connecting families who had been kept apart.[162]

5.75. As set out above, this was not the first time a risk-based approach had been used for border control during the pandemic. In July 2020, all countries were categorised in accordance with the risk they posed in terms of importation of infection, and the lowest-risk countries were placed on an exempt list (a travel corridor).

5.76. However, the traffic light system was more complex. The 2020 categorisation was a binary approach: either a country was on the travel corridor list – allowing travellers passage into the UK without self-isolating – or it was not. The traffic light system created three different categories of travellers and restrictions:

- Travellers from a country on the green list would need to take a test before they left that country and a further test (a PCR test) on or before the second day after their arrival.[163]
- Travellers from a country on the amber list needed to self-isolate on arrival for a period of 10 days. They also had to take a test before they left the amber country and a test on the second and eighth day after their arrival. They could take a test to release them from self-isolation.[164] The tests after arrival needed to be PCR tests.[165]
- Travellers from a country on the red list were subject to strict requirements, including a 10-day quarantine in a managed quarantine hotel, testing before they left the red country, and further tests on the second and eighth day after their arrival. They were also required to be either a British or Irish citizen, or to have residence rights in the UK.[166] The tests after arrival had to be PCR tests.[167]

5.77. Changes were made as the pandemic response progressed – in particular, as vaccinations became a central part of the pandemic response. By the end of October 2021, 85% of adults in England had received two doses of the vaccine.[168]

162 'Global Travel Taskforce sets out framework to safely reopen international travel', Department for Transport, 9 April 2021 (https://www.gov.uk/government/news/global-travel-taskforce-sets-out-framework-to-safely-reopen-international-travel; INQ000223605_0003)
163 INQ000587366_0039 para 138; 'Global Travel Taskforce sets out framework to safely reopen international travel', Department for Transport, 9 April 2021 (https://www.gov.uk/government/news/global-travel-taskforce-sets-out-framework-to-safely-reopen-international-travel; INQ000223605_0002)
164 INQ000587366_0039 para 138; 'Global Travel Taskforce sets out framework to safely reopen international travel', Department for Transport, 9 April 2021 (https://www.gov.uk/government/news/global-travel-taskforce-sets-out-framework-to-safely-reopen-international-travel; INQ000223605_0002)
165 'Written statement to Parliament: Summary of updates to international travel October 2021', Department for Transport, 18 October 2021 (https://www.gov.uk/government/speeches/summary-of-updates-to-international-travel-october-2021; INQ000657107_0002)
166 'Data for the managed quarantine service', Department of Health and Social Care, 7 May 2021 (https://www.gov.uk/government/publications/data-for-the-managed-quarantine-service-for-7-may-2021/data-for-the-managed-quarantine-service; INQ000054683_0001); 'Global Travel Taskforce sets out framework to safely reopen international travel', Department for Transport, 9 April 2021 (https://www.gov.uk/government/news/global-travel-taskforce-sets-out-framework-to-safely-reopen-international-travel; INQ000223605_0003)
167 'Written statement to Parliament: Summary of updates to international travel October 2021', Department for Transport, 18 October 2021 (https://www.gov.uk/government/speeches/summary-of-updates-to-international-travel-october-2021; INQ000657107_0002)
168 'COVID-19 Vaccination Statistics: Week ending Sunday 31st October 2021', NHS England, p4 (https://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2021/11/COVID-19-weekly-announced-vaccinations-04-November-2021.pdf; INQ000330423)

5.78. On 4 October 2021, across all four nations, a new, simplified system was launched as a result of the success of the UK's domestic vaccine rollout.[169] The original traffic light system was replaced by a red list and non-red list system.[170] This more closely resembled the July 2020 binary categorisation system. Fully vaccinated travellers from a non-red list country no longer needed to take a pre-departure test, and, in terms of testing on the second day after arrival, fully vaccinated travellers from a select group of non-red list countries could substitute the cheaper lateral flow test for the PCR test previously required.[171] Those provisions applied across all four nations.[172]

5.79. On 22 November 2021, measures were changed again so that, in respect of more than 135 approved countries, travellers who were fully vaccinated were only required to take a lateral flow test before the end of their second day after arrival. All previous testing and isolation requirements were removed for those passengers.[173]

5.80. However, within six days, new border control measures were agreed at a Covid-O meeting in response to an increasing number of Omicron variant cases across the world.[174] There were changes to testing and isolation regimes for both vaccinated and unvaccinated arrivals.[175] For example, some countries were added to the UK's red list. Ministers also agreed to require all arrivals into the UK to take a reverse transcription polymerase chain reaction (RT-PCR) test (see Chapter 2: Testing).[176]

5.81. The swift change in approach between 22 and 28 November 2021 indicates that the UK had by this point developed a system that was able to monitor and rapidly respond to emerging new threats. That was a positive development. In a future pandemic, however, the UK should be prepared and able to implement new border measures at speed from the outset.

5.82. On 15 December 2021, the UK government and devolved administrations removed all countries from the red list.[177] From 11 February 2022, fully vaccinated international arrivals into any of the four nations were no longer required to take tests on arrival or self-isolate.[178] On 18 March 2022, all Covid-19 travel restrictions were lifted, including for passengers who did not qualify as fully vaccinated.[179] This marked the end of border control measures.

169 'New system for international travel', Department for Transport, 17 September 2021 (https://www.gov.uk/government/news/new-system-for-international-travel; INQ000086842_0002)
170 INQ000341467_0001; INQ000116752_0001-0002; INQ000427664
171 'New system for international travel', Department for Transport, 17 September 2021 (https://www.gov.uk/government/news/new-system-for-international-travel; INQ000086842_0002); 'Written statement to Parliament: Summary of updates to international travel October 2021', Department for Transport, 18 October 2021 (https://www.gov.uk/government/speeches/summary-of-updates-to-international-travel-october-2021; INQ000657107_0002)
172 'Written statement to Parliament: Summary of updates to international travel October 2021', Department for Transport, 18 October 2021 (https://www.gov.uk/government/speeches/summary-of-updates-to-international-travel-october-2021; INQ000657107_0002)
173 INQ000587366_0060
174 INQ000119764_0001
175 INQ000587366_0060
176 INQ000119764
177 INQ000380009_0006 para 10
178 'UK's new travel rules take flight', Department for Transport, 11 February 2022 (https://www.gov.uk/government/news/uks-new-travel-rules-take-flight; INQ000657108); INQ000338828_0001-0002; INQ000413091_0003-0004 para 15
179 INQ000587366_0060

5.83. The National Audit Office estimated that the UK government spent £486 million on the traffic light system in 2021/22.[180] Although significant resources were dedicated to the system, the rules for travellers changed frequently and these changes were not sufficiently communicated to the public, which may have affected compliance. A survey by the Office for National Statistics in July 2021 found that about two in five respondents misunderstood, or were unsure about, quarantine requirements.[181] The Inquiry recognises that frequent changes to rules may be required in the context of a rapidly evolving pandemic, but rules are of little use if people do not understand them. It is therefore imperative that changes are communicated clearly and promptly to the general public if compliance is to be assured. The communications strategies during the pandemic, and the Inquiry's recommendations for future strategies, are considered in detail in Chapter 6: Communications and data.

Enforcement of and adherence to border control measures

5.84. The four nations imposed rules about international travel during the pandemic through health protection regulations.[182] Border Force was then responsible for monitoring and enforcing the rules at the international borders. To assist with this, 'interim operational instructions' (documents explaining the new rules and their rationale) were issued to Border Force by the Home Office.[183]

5.85. Border Force's duties included conducting passenger spot checks to ensure that passengers had complied with pre-departure testing requirements, processing travellers required to enter managed quarantine facilities and implementing a fixed penalty notice regime.[184] Fixed penalty notices could be issued to people who did not comply with the travel requirements. There were 1,114 fixed penalty notices issued in connection with travel restrictions in 2020; in 2021 there were 5,894 fixed penalty notices and in 2022 there were 4,698.[185]

Public trust in border control decisions

5.86. There was a disconnect between public perceptions of the most effective measures to control the influx of the virus and the UK government's decisions. For example, a survey by Ipsos MORI (an established market research and polling company) from October 2020 indicated that 61% of the public supported banning all travel into

180 *Managing Cross-Border Travel During the COVID-19 Pandemic: Sixteenth Report of Session 2022–23*, House of Commons Committee of Public Accounts, 26 July 2022, p6 (https://committees.parliament.uk/publications/23256/standard/pdf; INQ000087213)
181 INQ000585143_0002
182 Public Health (Control of Disease) Act 1984 (https://www.legislation.gov.uk/ukpga/1984/22/contents); Public Health etc. (Scotland) Act 2008 (https://www.legislation.gov.uk/asp/2008/5/contents); Public Health Act (Northern Ireland) 1967, section 23 (https://www.legislation.gov.uk/apni/1967/36/section/23); and see *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 13 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
183 INQ000587366_0013-0014 para 45. For an example of an interim operational instruction from the Home Office, see INQ000508575.
184 INQ000587366_0006, 0012-0013 paras 19, 43
185 INQ000587366_0070-0071 para 2

and out of the country.[186] As noted in the Inquiry's combined Module 2ABC Report, Mr Johnson told the Inquiry that the public believed the borders had to be closed.[187]

5.87. However, the Ipsos MORI results suggest that the rationale for not imposing full border closure (eg the interruption in the flow of food and vital materials into the UK) was not effectively communicated to the public. If members of the public do not trust that measures being taken are in their best interest, then adherence is likely to be low. It is imperative that those responsible for making decisions effectively communicate their reasoning to the public (as discussed in Chapter 6: Communications and data).

Awareness of border control measures

5.88. Passenger locator forms were introduced on 8 June 2020.[188] The form collected a passenger's contact information so that they could easily be traced if it transpired that they had come into contact with an infected person.[189] It was therefore a relatively simple, yet important, part of infection control.

5.89. In August 2020, Border Force estimated that approximately one-third of passengers arriving in the UK had not completed a passenger locator form.[190] Of those who had not, 90% reported that they were unaware of the requirement.[191] On 17 August 2020, a weekly meeting of the Visitor Economy Working Group (which included bodies such as Airlines UK, the official body and association for UK-registered airlines, and UKinbound, the trade association dedicated to the UK's inbound tourism sector) noted increasing levels of abuse towards Border Force officers from returning British nationals who did not seem to understand that they needed to complete the form regardless of the country from which they had arrived, rather than to complete it only if they were arriving from a country subject to quarantine.[192]

5.90. Dame Priti Patel was in favour of introducing legislation to compel carriers to check whether a passenger locator form had been completed and to deny boarding to passengers who had not completed one.[193] Work was undertaken to implement this over the following few months.[194] Dame Priti Patel also advised that communications from various UK government departments and the devolved administrations should be improved to ensure that all travellers were aware of the requirement to complete a passenger locator form.[195] In August 2020, for example, the Department for Digital, Culture, Media and Sport undertook to "*push out*" the requirement to comply

186 INQ000094698
187 INQ000255836_0083-0084 para 315; *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
188 INQ000660451_0003 para 9
189 INQ000055857_0025
190 INQ000587366_0046 para 162; INQ000053695_0001 para 3
191 INQ000053695_0001 para 4
192 INQ000660451_0002-0004 paras 5, 8, 13; INQ000660457_0003
193 INQ000587366_0046 para 164
194 INQ000587366_0046-0047 paras 164-167
195 INQ000279975_0013 para 52; INQ000053677_0002

through the Tourism Industry Emergency Response Group (a group convened by the British Tourist Authority, comprising key tourism industry organisations and government bodies that developed plans for crisis scenarios and managed the industry's response to specific emergencies) and the Visitor Economy Working Group once again.[196]

5.91. Non-compliant arrivals continued, and, on 20 October 2020, Border Force was advised by the Home Office to begin issuing fixed penalty notices to those who had failed to complete a passenger locator form on arrival, even if they subsequently did complete one.[197] A meeting of the Tourism Industry Emergency Response Group on 10 December 2020 noted that, although millions of people had completed passenger locator forms, traveller awareness of the forms remained low and completion was still inconsistent.[198] Accordingly, UK government departments developed a pack of the key messages around health measures at the border for industry representatives to give to inbound travellers, in order to obtain help from the travel industry to ensure compliance.[199]

5.92. Given that the purpose of the passenger locator form was to trace potentially infected people, it is concerning that a large number of people did not comply. Mr Johnson told the Inquiry that "*the public did not find* [it] *easy to understand*" the public messaging on border policy.[200] This, along with the continued number of arrivals not complying with the form's requirements, indicates that communications about border control measures may not have consistently achieved sufficient levels of awareness and clarity among travellers.[201] The World Health Organization, in an article dated 16 May 2020, advised that decisions should be communicated to the public:

> "*using simple, clear and precise messages. For example, 'Based on A, B and C, we will do X, Y and Z. We will reassess the measures after N number of weeks.' This communication strategy aims to provide accurate information while also encouraging behaviours that will reduce the spread of infection.*"[202]

5.93. As discussed further in Chapter 6: Communications and data, communication is key to compliance. In advance of a future pandemic, strategies should be developed to ensure that border control measures are communicated effectively to the public. This should include people situated outside the UK who are planning to travel into the UK, who should be made aware of requirements before they arrive at a UK port of entry.

196 INQ000660457_0003; INQ000660451_0002, 0004 paras 7, 13
197 INQ000587366_0047 para 168; INQ000053946_0002
198 INQ000660458_0006
199 INQ000660458_0005
200 INQ000587378_0068-0069 para 201
201 INQ000053677_0002
202 *Calibrating Long-Term Non-Pharmaceutical Interventions for Covid-19, Principles and Facilitation Tools*, World Health Organization, 16 May 2020, p11 (https://www.who.int/publications/i/item/WPR-DSE-2020-018; INQ000302506)

Rapid changes in border control measures

5.94. Border Force officers were often not aware of changes to border control measures until an extremely late stage. Paul Lincoln (Director General of Border Force from September 2017 to September 2021) told the Inquiry of one example where revised operational instructions were issued by the Home Secretary at 02:21 on 7 November 2020, to refuse entry from 04:00 that same day.[203]

5.95. Dame Priti Patel told the Inquiry that she had been:

> "*concerned that decisions on health measures at the borders were not being taken with sufficient regard of the operational impacts for Border Force officers and the travelling public*".[204]

She also said that the "*frequency and timing of changes to the public health regulations was unhelpful for policing*" and that, in order to build public confidence in the regulations, it was "*essential that our officers understood the regulations*".[205] She told the Inquiry that she sought to advocate on behalf of enforcement officers at meetings with the Prime Minister, and at Cabinet and Covid-O meetings.[206] However, in Dame Priti Patel's evidence to the Inquiry she did not specifically address the provision of operational instructions to Border Force within tight timeframes, the impact that had on Border Force officers or any specific measures she took to mitigate that impact.

5.96. Issuing updated instructions about regulation changes to officers close to the time of their implementation may on occasion be necessary. However, it risks misinterpretation and a lack of understanding by those responsible for ensuring adherence. If – as Dame Priti Patel told the Inquiry – maintaining public confidence required police officers to understand the regulations they were enforcing, then the same must be true in relation to Border Force officers' understanding of border control measures.[207] Those responsible for enforcement of border control measures should be involved in the development of new regulations at the earliest stages as far as possible.

A future border control strategy

5.97. Appropriate international border control measures should be in place at the earliest stages of a pandemic to attempt to control the spread of infection into the country

203 INQ000587366_0034-0035 para 122
204 INQ000279975_0013 para 52
205 INQ000279975_0026 para 95
206 INQ000279975_0026 para 95
207 INQ000279975_0026 para 95

and to provide time to implement plans. They should, therefore, be a part of the UK's pandemic preparedness.[208]

5.98. In its March 2026 *Pandemic Preparedness Strategy: Building Our Capabilities*, the UK government committed the UK Health Security Agency, the Home Office and the Department for Transport to work together to strengthen their capabilities for implementing and operationalising public health measures at points of entry to the UK.[209] The UK government and devolved administrations should also, in consultation with Border Force, produce a strategy for international border control in a future public health emergency. This should include:

- a plan for rapid, coordinated action across all four nations;
- analysis of international good practice (from previous pandemics, but also to include a plan to analyse international good practice in real time as the relevant pandemic progresses); and
- measures to encourage trust, awareness and adherence, including strong communications strategies.

Recommendation 6: A strategy for international border control measures during a pandemic

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should, in consultation with Border Force, produce a UK-wide strategy for the use of international border control measures during a future pandemic. This strategy should be informed by the experience of the Covid-19 pandemic, including international examples of good practice.

The strategy should include:

- an analysis of different border control measures and the scenarios in which they will be effective and proportionate;
- mechanisms to support early decision-making (including cooperation between the four nations of the UK) when border control measures may be required;
- mechanisms to support the early implementation of border control measures when they are required;

208 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapter 2 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
209 *Pandemic Preparedness Strategy: Building Our Capabilities*, Department of Health and Social Care, 25 March 2026, p18 (https://assets.publishing.service.gov.uk/media/69c3c48b93cc6e8b87a6f614/dhsc-pandemic-preparedness-strategy.pdf; INQ000660230)

- plans for the enforcement of border control measures, including methods to support Border Force with enforcement; and
- plans for the effective communication of border control measures to the UK public and international travellers.

The strategy should ensure that the four nations are aligned on decisions about the measures that will be considered for deployment in different circumstances.

Chapter 6: Communications and data

Introduction

6.1. Testing, tracing and isolation were key pillars of the UK government and devolved administrations' response to the pandemic. It was therefore vital that members of the public understood both the purpose of the measures and what was required of them.

6.2. Governments also required reliable data to assess whether test, trace and isolate measures were working as intended, including the extent of public compliance. Although a range of data was collected by all four governments in the UK, problems with the quality of data – particularly on levels of adherence to test, trace and isolate measures – persisted throughout the Covid-19 pandemic.[1]

6.3. The Inquiry has already considered public health communications in its combined Report relating to Modules 2, 2A, 2B and 2C.[2] This chapter considers the approach of the UK government and devolved administrations to communications about testing, tracing and isolation. Given the breadth of public communications activity across the four nations of the UK and the duration of the pandemic, this chapter focuses on illustrative examples to highlight key themes and issues that emerged in relation to communications about test, trace and isolate measures. It also addresses the use of data and monitoring to evaluate test, trace and isolate policy.

Test, trace and isolate communications across the four nations

6.4. The UK-wide *Coronavirus: Action Plan*, published at the start of March 2020, explained to the public that testing, tracing and isolation were likely to be introduced to slow the transmission of the virus and to protect public health services.[3]

6.5. Two months later, in May 2020, the UK government and devolved administrations announced their own test, trace and isolate systems. They were:

- in England: Test, Trace, Isolate, and later NHS Test and Trace;[4]
- in Northern Ireland: Test, Trace and Protect;[5]

1 INQ000587239_0006, 0037-0038, 0046 paras 2, 128-130, 148; 'SAGE 83 minutes: Coronavirus (COVID-19) response, 11 March 2021', Scientific Advisory Group for Emergencies, 26 March 2021, paras 7, 11 (https://www.gov.uk/government/publications/sage-83-minutes-coronavirus-covid-19-response-11-march-2021; INQ000075794)

2 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 12 (https://covid19.public-inquiry.uk/documents/module-2-full-report)

3 *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)

4 'Government launches NHS Test and Trace service', Department of Health and Social Care, 27 May 2020 (https://www.gov.uk/government/news/government-launches-nhs-test-and-trace-service; INQ000107094)

5 *Covid-19 Test, Trace and Protect Strategy*, Department of Health Northern Ireland, 27 May 2020 (https://www.health-ni.gov.uk/sites/default/files/publications/health/Test-Trace-Protect-Support-Strategy.pdf; INQ000120704)

- in Scotland: Test and Protect;[6] and
- in Wales: Test, Trace, Protect.[7]

Different terminology across the UK causes confusion for members of the public and should be avoided where possible. Greater consideration should be given in the future to the use of consistent terminology in a UK-wide emergency.

6.6. The introduction of different test, trace and isolate schemes across the UK marked the start of further targeted public health communications, designed to encourage widespread compliance with the measures across the UK. It was essential that these communications explained the importance of the test, trace and isolate measures, but also set out in clear terms how to follow them in practice.

6.7. By the time the test, trace and isolate schemes were announced, the public had been exposed to a large volume of information about Covid-19, including daily press conferences, published guidance and targeted communications campaigns.[8] In contrast to the first lockdown restrictions – which could be communicated through simple, straightforward messaging, such as 'stay at home' – test, trace and isolate measures required people to take more complex actions.

6.8. As early as January 2020, scientific advisers to the UK government and devolved administrations recognised the need to consult with behavioural science experts on how to communicate self-isolation measures to the public.[9] By March 2020, the Scientific Advisory Group for Emergencies (SAGE), supported by advice from the Scientific Pandemic Insights Group on Behaviours (SPI-B), advised the UK government and devolved administrations that public health messaging must communicate the rationale for introducing self-isolation measures, along with practical advice on how to comply.[10] Professor Lucy Yardley, Professor of Health Psychology at the University of Bristol and the University of Southampton and Co-Chair of SPI-B from April 2020, told the Inquiry that SPI-B emphasised that communications should be based on the assumption that people wanted to work collectively to manage the pandemic, but that they needed to be given clear, consistent and detailed guidance for how to do so.[11]

6.9. Public health communications played a central role in ensuring that guidance on testing, tracing and isolation was clear and accessible. However, this role was made significantly more challenging by the scale and pace at which information about these measures developed. These challenges were particularly pronounced

6 INQ000475071_0035 para 127; 'Coronavirus (COVID-19) update: First Minister's speech 26 May 2020', Scottish Government, 26 May 2020 (https://www.gov.scot/publications/coronavirus-covid-19-update-first-ministers-speech-26-2020; INQ000354232)
7 *Test Trace Protect*, Welsh Government, May 2020 (https://www.gov.wales/sites/default/files/pdf-versions/2021/1/3/1610564728/test-trace-protect.pdf; INQ000147253)
8 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 12 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
9 'SAGE 2 minutes: Coronavirus (Covid-19) response, 28 January 2020', Scientific Advisory Group for Emergencies, 29 May 2020, para 22 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-28-january-2020; INQ000061510)
10 INQ000056179_0018
11 INQ000587607_0015-0016 para 7.2

during the early months of the pandemic, when testing capacity and contact tracing arrangements were being scaled up (see Chapter 3: Contact tracing).[12]

6.10. Later, in September 2020, when both the UK government and Welsh Government introduced a legal duty to self-isolate, further complexity was added to the existing requirements. In England, the self-isolation regulations were subsequently amended nine times, with some amendments implementing multiple changes to the rules.[13]

6.11. However, the complexities do not explain why the content of some public health communications regarding test, trace and isolate did not include key information, such as the main symptoms of Covid-19, when people should seek a test, how digital contact tracing safeguarded personal data, and how practical and financial support could be accessed during periods of self-isolation. Effective communication of this information was critical to enabling public understanding and to building confidence in a system intended to protect individuals and reduce transmission.

6.12. As the volume of public health guidance increased over the course of the pandemic, the UK government and devolved administrations recognised that unclear or incomplete messaging was an important factor in the reduced uptake of test, trace and isolate measures and likely contributed to the erosion of public trust during the pandemic.[14] Some contributors told the Inquiry's listening exercise, Every Story Matters, that they found the information about contact tracing unclear.

> "*The self-isolation, everyone understands. Testing, everyone understands. The tracing bit, whether it was maybe not explained why it's important or how it works, or how the technology works, or what are the very clear one, two, three steps you need to take. I think that bit for me, there was a confusion.*"[15]
>
> **Contributor, Every Story Matters**

Symptom recognition

6.13. Symptom recognition as a key trigger for taking a test was being considered by SAGE as early as May 2020.[16] By November 2020, SPI-B published a detailed paper on the importance of symptom recognition in leading people to seek a test for Covid-19, in which it found that the interpretation of symptoms:

12 *Coronavirus (COVID-19): Scaling Up our Testing Programmes*, Department of Health and Social Care, 6 April 2020 (https://www.gov.uk/government/publications/coronavirus-covid-19-scaling-up-testing-programmes/coronavirus-covid-19-scaling-up-our-testing-programmes; INQ000106460)
13 INQ000609999_0002-0004
14 INQ000587239_0006 paras 9-12; INQ000475185_0017 para 71
15 *Every Story Matters: Test, Trace and Isolate*, p18 (INQ000475132)
16 'SAGE 32 minutes: Coronavirus (COVID-19) response, 1 May 2020', Scientific Advisory Group for Emergencies, 29 May 2020, para 12 (https://www.gov.uk/government/publications/sage-minutes-coronavirus-covid-19-response-1-may-2020--2; INQ000460414)

> "*is likely hampered by low levels of knowledge among the UK population that the symptoms to be aware of are cough, fever, loss of sense of taste and loss of smell*".[17]

6.14. A number of studies carried out in 2020 and 2021 confirmed that knowledge of symptoms plateaued rather than improved over time. For example, the COVID-19 Rapid Survey of Adherence to Interventions and Responses (CORSAIR) study, discussed in Chapter 2: Testing, indicated that, between May and August 2020, only 48.9% of respondents living in the UK could identify the three main symptoms of Covid-19.[18] According to the study:

> "*There were initial increases at the start of data collection and when loss of sense of smell or taste was introduced into the guidance, but some decline since April/ early May.*"[19]

6.15. The percentage of people surveyed between March and August 2020 who could name two of the three main symptoms did not exceed 70%.[20] Based on polling over the same period, SPI-B described recognition of the symptoms of Covid-19 across the UK as "*sub-optimal*".[21]

6.16. A further study, published by the *British Medical Journal*, concluded that only 51.5% of participants surveyed between May 2020 and January 2021 could identify cough, high temperature or fever and loss of sense of smell or taste as symptoms of Covid-19.[22] It proposed that policies providing financial and practical support, together with improvements in communication about the testing system, would be "*key to increasing uptake both in the UK and internationally*".[23]

6.17. However, some communications campaigns promoting testing did not include any reference to the three key symptoms of the virus. For example, the 'Let's get back' campaign (see Figure 8; launched by the Department of Health and Social Care and NHS Test and Trace on 30 July 2020) was designed to increase public understanding of the role of NHS Test and Trace in England and to encourage

17 *How Important is Symptom Recognition in Leading People to Seek a Test for COVID-19?*, Scientific Pandemic Insights Group on Behaviour, 30 November 2020, p1 (https://assets.publishing.service.gov.uk/media/61e9b2298fa8f50597fb307a/S0944_How_important_is_symptom_recognition_in_leading_people_to_seek_a_test_for_COVID-19.pdf; INQ000197220)
18 'Adherence to the test, trace and isolate system: Results from a time series of 21 nationally representative surveys in the UK (the COVID-19 Rapid Survey of Adherence to Interventions and Responses [CORSAIR] study)', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, *MedRxiv* (2020), p12 (https://doi.org/10.1101/2020.09.15.20191957; INQ000196853)
19 'Adherence to the test, trace and isolate system: Results from a time series of 21 nationally representative surveys in the UK (the COVID-19 Rapid Survey of Adherence to Interventions and Responses [CORSAIR] study)', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, *MedRxiv* (2020), p12 (https://doi.org/10.1101/2020.09.15.20191957; INQ000196853)
20 INQ000575988_0009-0010 para 23
21 *How Important is Symptom Recognition in Leading People to Seek a Test for COVID-19?*, Scientific Pandemic Insights Group on Behaviour, 30 November 2020, p4 (https://assets.publishing.service.gov.uk/media/61e9b2298fa8f50597fb307a/S0944_How_important_is_symptom_recognition_in_leading_people_to_seek_a_test_for_COVID-19.pdf; INQ000197220)
22 'Adherence to the test, trace, and isolate system in the UK: Results from 37 nationally representative surveys', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, *British Medical Journal* (2021), 372, p4 (https://doi.org/10.1136/bmj.n608; INQ000180920)
23 'Adherence to the test, trace, and isolate system in the UK: Results from 37 nationally representative surveys', LE Smith, HWW Potts, R Amlôt, NT Fear, S Michie, GJ Rubin, *British Medical Journal* (2021), 372, p13 (https://doi.org/10.1136/bmj.n608; INQ000180920)

people to take a test if they suspected they might have Covid-19.[24] The campaign also included a video which emphasised that increased testing would help members of the public "*get back to the things we love*".[25] Although its "*Let's get tested*" message was simple, clear and visually striking, the campaign simply asked "*Feeling unwell?*" and directed people to obtain a free test by calling NHS 119, a dedicated telephone service established during the pandemic.[26] The campaign did not specify the key symptoms of Covid-19.[27]

Figure 8: Messages from the 'Let's get back' campaign (Department of Health and Social Care and NHS Test and Trace, July 2020)



Source: INQ000587239_0091

6.18. Similarly, the 'We're not giving in' campaign (see Figure 9), launched by the Scottish Government as part of Scotland's Test and Protect in April 2021, did not include any reference to the key symptoms that would prompt someone to take a test.[28]

24 'NHS Test and Trace launches campaign to encourage everyone with symptoms to get a free test', Department of Health and Social Care, 30 July 2020 (https://www.gov.uk/government/news/nhs-test-and-trace-launches-campaign-to-encourage-everyone-with-symptoms-to-get-a-free-test; INQ000527962)
25 INQ000587239_0091 para 290
26 INQ000587239_0091 paras 290-291
27 INQ000587239_0092 para 295
28 INQ000587239_0096-0097 paras 308, 313

Figure 9: 'We're not giving in' (Scottish Government, April 2021)



Source: INQ000587239_0097

6.19. The absence of information about the specific symptoms of Covid-19 in public-facing communications also extended to the UK government's press conferences. A study published by the Royal Society of Medicine in February 2022, which examined the public's understanding of the symptoms of Covid-19, concluded that the UK government's press conferences, delivered from the early stages of the pandemic in March 2020 through to February 2022, "*rarely described specific symptoms that the public needed to be aware of to seek a test or isolate*".[29]

6.20. Professor James Rubin, Professor of Psychology and Emerging Health Risks at King's College London and Chair of SPI-B from February 2020 to June 2021, told the Inquiry that public communications related to Covid-19 "*often assumed that people knew*" what symptoms to look out for.[30]

6.21. Symptom recognition for much of the pandemic was an integral first step to enabling people to adhere to the test, trace and isolate system. Professor Madelynne Arden (expert witness on adherence to behaviours associated with test, trace and isolate) analysed the range of test, trace and isolate communications throughout the pandemic and agreed that campaigns should ensure "*widespread knowledge and understanding about what symptoms to look out for*".[31]

Contact tracing apps and the protection of privacy

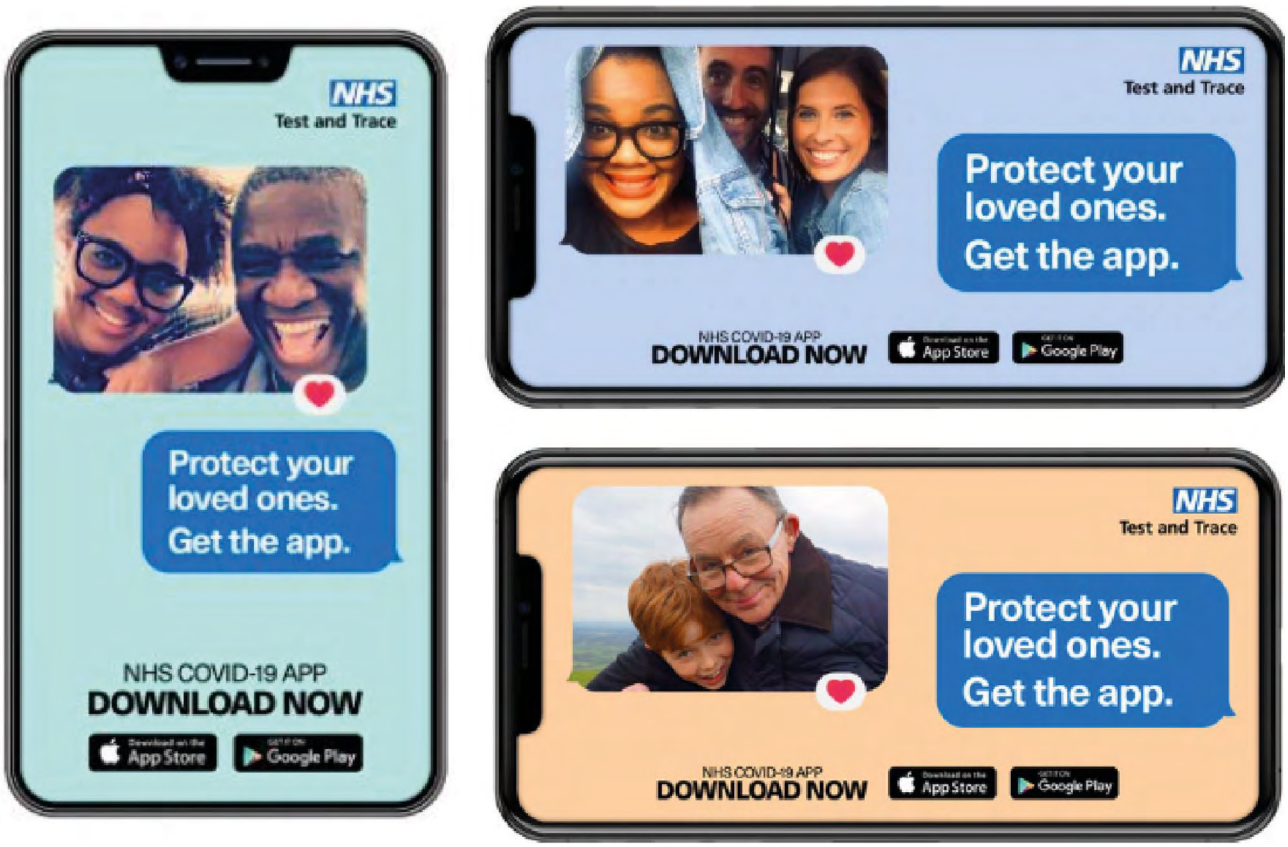
6.22. In the early stages of a potential outbreak of a novel disease, contact tracing has significant potential to reduce transmission, particularly when used alongside other public health measures such as mass testing.[32] During the first year of the pandemic, three digital contact tracing apps were launched in the UK.

29 'Why did the UK public not adequately understand the symptoms of COVID-19? An analysis of UK Government statements from 3rd March 2020 to 21st February 2022', E Riley, LE Smith, GJ Rubin, L Woodland, *Journal of the Royal Society of Medicine* (2024), 15(3), 1-3, p2 (https://doi.org/10.1177/20542704241232818; INQ000553412)
30 INQ000474964_0017 para 4.24
31 INQ000587239_0091-0092, 0115-0116 paras 292-295, 397
32 INQ000587346_0005 para 12

6.23. Communications plans for the launch of the NHS COVID-19 app in England and Wales were focused on ensuring the highest levels of adoption of the app.[33] The communications strategy was described as a "'*big bang' launch, which is based on international evidence, and guidance from Google and Apple, on the best ways to maximise adoption*".[34]

6.24. The 'Protect your loved ones. Get the app' campaign (see Figure 10) was launched on 24 September 2020 at the same time as the NHS COVID-19 app in England and Wales. It largely consisted of messages shared via social media featuring images of friends and family members.[35] The campaign also included a video showing people talking about their loved ones, ending with a message: "*Everyone you love is on your phone. Now, so is the app that helps protect them from Coronavirus. Protect your loved ones. Get the app.*"[36]

Figure 10: 'Protect your loved ones. Get the app' (NHS Test and Trace, England and Wales, September 2020)



Source: INQ000587239_0092

33 INQ000565926_0007 para 24
34 INQ000565926_0007 para 24
35 INQ000587239_0092 para 297
36 INQ000587239_0093 para 298

6.25. In Scotland, the communications campaign for the Protect Scotland app sought to address users' concerns about data security and the provision of personal information by using language such as 'private' and 'anonymous'. It also emphasised that the app was 'easy' to use.[37] A televised campaign told users how to use the app and confirmed that it was "*private and anonymous*".[38]

6.26. In Northern Ireland, an announcement by the Department of Health (Northern Ireland) about the launch of the StopCOVID NI app said that the app used anonymised information to safeguard privacy.[39] The announcement also emphasised the app's ease of use ("*It will only take a few short minutes to download and activate*") and its utility in fighting Covid-19 ("*This could be the most important thing you do all year*").[40]

6.27. As discussed in Chapter 3: Contact tracing, privacy concerns were considered during the design and development stage of all three apps. However, this did not in itself guarantee public confidence in the security of personal data or in how that data would be used. A number of people across the UK expressed mistrust about the privacy protection offered by the apps, did not understand how they operated and doubted their effectiveness.[41]

> "[A] *lot of people I know either didn't download it or removed it from their smart phones because they thought the government was monitoring their movements and there was some issue with the app development.*"[42]
>
> **Contributor, Every Story Matters**

The NHS COVID-19 app campaign did not explain to members of the public how the app would protect their loved ones or how it would safeguard users' privacy. While the campaigns in Scotland and Northern Ireland did refer to the use of anonymised data to protect privacy, they did not provide detailed explanations of how users' privacy was protected in practice.

6.28. These issues were recognised by the Northern Ireland Human Rights Commission, which stated that privacy issues relating to the app should be "*set out in a clear, accessible and succinct way for those individuals who download the app*".[43]

37 INQ000241517_0002 para 8
38 INQ000241517_0006
39 'Health Minister urges public to "activate the app" and help curb Covid', Department of Health (Northern Ireland), 30 July 2020 (https://www.health-ni.gov.uk/news/health-minister-urges-public-activate-app-and-help-curb-covid; INQ000373401_0002)
40 'Health Minister urges public to "activate the app" and help curb Covid', Department of Health (Northern Ireland), 30 July 2020 (https://www.health-ni.gov.uk/news/health-minister-urges-public-activate-app-and-help-curb-covid; INQ000373401_0002)
41 INQ000587239_0062 para 205, Table 7; INQ000587401_0012 para 6.7(b); 'Facilitators and barriers to engagement with contact tracing during infectious disease outbreaks: A rapid review of the evidence', O Megnin-Viggars, P Carter, GJ Melendez-Torres, D Weston, GJ Rubin, *PLOS ONE* (2020), 15(10), 10-11 (https://doi.org/10.1371/journal.pone.0241473; INQ000197101); *Every Story Matters: Test, Trace and Isolate*, p50 (INQ000475132)
42 *Every Story Matters: Test, Trace and Isolate,* p88 (INQ000475132)
43 INQ000184774_0001

The Scottish Government's *Equality and Fairer Scotland Duty Impact Assessment*, published on 17 March 2021, also found that public health messaging and guidance must be accessible for people who have lower levels of digital literacy.[44]

6.29. Public communications about any digital tool should include a full explanation about how privacy and confidentiality concerns are addressed. Low levels of uptake of the apps suggest that more could have been done by the Department of Health and Social Care (NHS Test and Trace), the Scottish Government (health and social care directorates) and the Department of Health (Northern Ireland) to build trust through communications.

6.30. Launch campaigns can provide an important opportunity to engage the public and explain the purpose and safeguards of a new digital tool. However, a single campaign may not be sufficient to establish or sustain public confidence, particularly where concerns about data and privacy are likely to evolve over time. Decision-makers must continue to monitor privacy concerns and develop measures to build and sustain public trust and confidence in the ongoing use of personal data.[45] The public needs clear information about what personal data are collected, how they are used, who has access to them and for what purpose.

Financial support for self-isolation

6.31. While significant support was developed to assist people with self-isolation, as discussed in Chapter 4: Isolation, there were missed opportunities in how this support was communicated to the public.

> "*I didn't know how to look for it, or anything [...] The information for that [financial help] wasn't spread widely very well, because I don't recall anything about the £500.*"[46]
>
> **Contributor, Every Story Matters**

6.32. The NHS COVID-19 app that launched in England and Wales on 24 September 2020 did not initially include any information regarding the existence of dedicated financial support for self-isolation or signposting to the Test and Trace Support Payment scheme, which was launched the same month.[47] The app began referring users to the Test and Trace Support Payment scheme on 10 December 2020 – almost three

44 INQ000587342_0280-0281 para 810; see also *Equality and Fairer Scotland Duty Impact Assessment: Evidence Gathered for Test and Protect – Scotland's Approach to Preventing the Spread of Coronavirus in the Community*, Scottish Government, 17 March 2021 (https://www.gov.scot/publications/equality-fairer-scotland-duty-impact-assessment-test-protect/documents)
45 INQ000587365_0111 para 7.37
46 *Every Story Matters: Test, Trace and Isolate,* p5 (INQ000475132)
47 'NHS COVID-19 app launches across England and Wales', Department of Health and Social Care, 24 September 2020 (https://www.gov.uk/government/news/nhs-covid-19-app-launches-across-england-and-wales; INQ000517399); INQ000575999_0010, 0054 paras 23, 213

months after the payment scheme was launched.[48] As noted by Professor Richard Machin (expert witness to the Inquiry on the impact of financial support on test, trace and isolate), the app should have had clear signposting to available financial support schemes.[49]

6.33. Northern Ireland was the first of the four nations in which a dedicated self-isolation support payment to assist people to self-isolate was introduced.[50] However, the Public Health Agency (Northern Ireland)'s 'Test, Trace, Protect: A Step-by-Step Guide' did not include any reference to financial support for self-isolation (see Figure 11).[51]

Figure 11: 'Test, Trace, Protect: A Step-by-Step Guide' (Public Health Agency, Northern Ireland, July 2020)



Source: 'Test, trace, protect' campaign to support fight against coronavirus, Public Health Agency (Northern Ireland), 6 July 2020 (https://mailchi.mp/2d33e1356048/pha-update-june-4791110; INQ000660496_0002)

6.34. In future, public health measures should be coordinated and communicated in a way that makes it clear how individuals can access practical and financial support to enable them to comply. Integrating information about available support directly into public health communications would have helped ensure that individuals understood what was being asked of them, and what assistance was available to help them meet those requirements.

48 'New NHS Test and Trace plan to support return to more normal way of life', Department of Health and Social Care, 10 December 2020 (https://www.gov.uk/government/news/new-nhs-test-and-trace-plan-to-support-return-to-more-normal-way-of-life; INQ000059235)
49 Richard Machin 30 May 2025 18/9-23; INQ000575999_0009 para 16
50 INQ000575999_0010-0011 paras 23-26; INQ000475204_0029 para 8.1.2
51 INQ000587239_0096 para 307; INQ000535694

Inclusive approaches to test, trace and isolate messages

6.35. Where governments seek to implement widespread restrictions on behaviour as a means of reducing the transmission of a virus and protecting the health of the population, they need to ensure that their instructions for how to comply with those restrictions are received, understood and trusted by all sections of the population.[52]

6.36. At a SAGE meeting on 23 July 2020, SPI-B recommended that communication about risk that was "*culturally appropriate*" might promote increased uptake of test, trace and isolate measures.[53]

6.37. Despite this advice, there were blind spots. As described by James Bethell, Lord Bethell (Parliamentary Under Secretary of State for Technology, Innovation and Life Sciences at the Department of Health and Social Care from March 2020 to September 2021), there were:

> "*communities, ethnic groups, geographies and certain areas of poverty – where, really, government on the whole, and particularly the health service, has very, very little trust or reach*".[54]

6.38. Lord Bethell also explained that feedback from roundtables with communities consistently indicated that people who were most likely to be adversely affected by the pandemic did not trust the NHS and that they "*weren't really hearing the message*".[55]

6.39. Feedback from a series of 'discovery exercises' carried out by the NHS Test and Trace Strategy Unit in June 2020, with members of different population groups, also identified distrust in the UK government, the need to use trusted sources to communicate guidance on test, trace and isolate, and the need for greater diversity when delivering communications.[56] In response, the UK government sought to improve its public health communications to increase engagement with test, trace and isolate within ethnic minority communities – including through the development of a cross-government communications strategy intended to reach the whole population.[57]

6.40. By July 2020, the cross-government Covid-19 communications and engagement activity (which was concerned with communicating Covid-19 messaging and guidance to different communities) had directed a number of resources towards

52 INQ000587239_0113-0114 paras 384-388
53 *Public Health Messaging for Communities from Different Cultural Backgrounds*, Scientific Pandemic Insights Group on Behaviour, 22 July 2020, p1 (https://assets.publishing.service.gov.uk/media/5f5223a7e90e071ec25d3724/s0649-public-health-messaging-bame-communities.pdf; INQ000214050); 'SAGE 48 minutes: Coronavirus (COVID-19) response, 23 July 2020', Scientific Advisory Group for Emergencies, 25 September 2020 (https://www.gov.uk/government/publications/sage-48-minutes-coronavirus-covid-19-response-23-july-2020; INQ000119954)
54 James Bethell 22 May 2025 97/1-11
55 James Bethell 22 May 2025 148/6-18
56 INQ000587365_0094 para 6.11; INQ000563790_0009
57 INQ000565911_0018-0019 para 73

key population groups, including young people (18 to 24 years old), young workers, older people, single mothers with young children and people from Black, Asian and other ethnic minority groups. The strategy also focused on 'at risk' regions, including the north-east, the Midlands and the north-west. Communications approaches included press, radio, digital and social media messaging, and tailored messaging delivered in multiple languages.[58]

6.41. Despite these efforts, some witnesses felt that the Department of Health and Social Care's communications on test, trace and isolate were not always appropriately tailored to, or accessible for, all population groups.[59]

6.42. Ade Adeyemi (on behalf of the Federation of Ethnic Minority Healthcare Organisations) said that there was a "*lack of culturally competent approaches and trust-building measures*" in the UK government's test, trace and isolate messaging.[60] Mr Adeyemi explained that members of the federation relied on their professional skills and personal resources to assist in the reach of messaging across ethnic minority groups.[61] Online discussions and webinars were arranged to bridge the gap in understanding, despite limited resources and the personal and financial cost.[62] According to Mr Adeyemi, the absence of meaningful engagement and culturally appropriate messaging "*significantly hampered participation*" in testing, tracing and isolation.[63]

6.43. Professor Kevin Fenton (President of the UK Faculty of Public Health from July 2022) expressed a similar view. As the pandemic had a disproportionate impact on Black, Asian and ethnic minority groups, community-centred approaches were required to build trust and deeper engagement.[64] According to Professor Fenton, local authorities and voluntary and community sector partners were best placed to manage these concerns.[65]

6.44. However, during the early months of the pandemic, the Department of Health and Social Care's approach to test, trace and isolate did not adequately take into account the role of local authorities and directors of public health in supporting the communication of the NHS Test and Trace system.

6.45. Greg Fell (President from November 2023 of the Association of Directors of Public Health, the representative body for directors of public health across the UK) told the Inquiry that the lack of early engagement with local authorities during the design and implementation of the test, trace and isolate programme in England resulted in avoidable delays in protecting communities. Mr Fell emphasised that these issues

58 INQ000565921_0004 para 6
59 INQ000090183_0007
60 INQ000587648_0012 para 35
61 INQ000587648_0012 para 35
62 INQ000587648_0012-0013 paras 36, 38
63 INQ000587648_0012 para 35
64 INQ000148405_0010 para 34
65 INQ000148405_0009-0010 paras 33-34

could have been mitigated if local knowledge and expertise had been integrated into the planning process earlier.[66]

6.46. The devolved administrations engaged with local authorities and local communities at an earlier stage in the pandemic, in order to build trust in communications. For example, in June 2020, the Welsh Government developed a communications strategy for its Test, Trace, Protect system, which included targeted communications for Black, Asian and ethnic minority communities that were identified as needing additional support.[67] The Scottish Government also worked with local partners to develop communications on test, trace and isolate measures, including a 'self-isolation fact sheet', which was translated into 26 languages.[68] During the development of its contact tracing model, the Public Health Agency (Northern Ireland) carried out a wide-ranging programme of engagement with representatives from population groups, including the Northern Ireland Commissioner for Children and Young People, the Commissioner for Older People for Northern Ireland and representatives from the homeless population and the Roma community. This identified the need to assist further with adherence to the test, trace and isolate guidance and the importance of effective communications targeted to specific vulnerable groups.[69]

6.47. In any future pandemic, it will be essential that public health messaging is inclusive, culturally sensitive and tailored to the diverse needs of different population groups.[70]

Inconsistent messages

6.48. The UK government and devolved administrations received regular advice on the importance of monitoring and gathering feedback on test, trace and isolate interventions.[71] Some mechanisms for monitoring the effectiveness of test, trace and isolate communications were set up. For example, the Scottish Government established a Covid-19 campaign tracker in April 2020, designed to evaluate the performance of marketing campaigns.[72] Public Health Wales also attempted to monitor and evaluate the effect of its communications, but noted that the rapidly changing policy context meant that measuring the impact of its communications was difficult.[73] Overall, there was a lack of reliable, high-quality data on levels of adherence to the test, trace and isolate systems across the UK. This made it difficult for governments to assess how effectively communications were driving behaviour.[74]

66 INQ000587434_0036 paras 149-150
67 INQ000587349_0147 para 544
68 INQ000587342 _0275-0276 paras 794-801; INQ000475071_0106-0108 para 314; Caroline Lamb 29 May 2025 128/7-129/23; see also INQ000475142_0090-0091 para 249; INQ000587297_0086 para 271
69 INQ000587297_0092-0093 para 289
70 INQ000587239_0107 para 349
71 INQ000474964_0009-0010 paras 4.5-4.6
72 INQ000589775_0096-0097 para 261
73 INQ000587250_0117 para 539
74 INQ000474964_0023 para 7.1(a)

6.49. Differences between the test, trace and isolate communications campaigns across the UK contributed to public confusion.[75] This was particularly the case for people who were exposed to UK-wide media or social media and for people who moved between nations of the UK.[76]

> "*I think you have to have a standard over the UK. You can't have something different in [each UK country]. When you live so close to a border, you could be working in England and living in Wales, or vice versa, and you've got two different guidelines.*"[77]
>
> **Contributor, Every Story Matters**

6.50. Concerns that inconsistencies in public health messaging had the capacity to confuse the public were also raised by the devolved administrations. Michelle O'Neill MLA (First Minister of Northern Ireland from February 2024 and deputy First Minister of Northern Ireland from January 2020 to February 2022) told the Inquiry that different approaches across different administrations "*hampered the Executive's ability to provide clear and consistent messages to the public*".[78] The Welsh Local Government Association told the Inquiry that the public in Wales had the tendency to be "*confused by separate communications on test, trace and protect/isolate programmes from UK and Welsh Governments*" as the announcements and communications from the UK government had "*far greater profile and traction*" across the media.[79] According to Dr Chris Llewelyn (Chief Executive of the Welsh Local Government Association from January 2019), the conflicting messages for Wales and England also impacted on public confidence in the wider Test, Trace, Protect system in Wales.[80]

6.51. Public health communications play a critical role as tools for encouraging behaviour change, which in turn influence overall levels of compliance with public health measures.[81] The extent to which people engaged with the various test, trace and isolate measures across the UK therefore depended significantly on how clearly, consistently and persuasively the measures were communicated.[82]

6.52. The Inquiry is therefore recommending the alignment of test, trace and isolate communications in any future pandemic, based on shared principles. While decision-making, funding and delivery will rightly remain distinct under the devolution

75 INQ000048399_0026; INQ000587291_0035 para 134; INQ000338988; INQ000259984
76 See also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 12 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
77 *Every Story Matters: Test, Trace and Isolate*, p88 (INQ000475132)
78 INQ000587291_0035 para 134
79 INQ000587538_0032 para 87
80 INQ000587538_0032 para 88
81 INQ000587239_0007 para 14
82 INQ000474964_0018 paras 4.25-4.26; 'Effectiveness of communications in enhancing adherence to public health behavioural interventions: A COVID-19 evidence review', SN Williams, K Dienes, J Jaheed, JK Wardman, J Petts, *Philosophical Transactions of the Royal Society A* (2023), 381(2257), p20 (https://doi.org/10.1098/rsta.2023.0129; INQ000553413)

arrangements, this should not prevent collaboration between the UK government and devolved administrations or a more coordinated approach to how policies are presented to the public.[83]

6.53. Communications campaigns should explain that test, trace and isolate operates as an interconnected system. They should set out the rationale for these measures as critical interventions in responding to a pandemic, explain how compliance benefits the public and clearly signpost to the support available.[84] The campaigns should be developed with appropriate input from behavioural scientists and public health experts, taking into account public understanding of what is required in a global emergency as well as a person's capacity, opportunity and motivation to comply.[85] In essence, test, trace and isolate communications should not assume that "'*telling people what to do' is sufficient*".[86]

6.54. Once developed, communications related to test, trace and isolate should be tested through UK-wide pandemic response exercises. Mechanisms should also be established to monitor and evaluate their effectiveness and impact. Where such measures form a central component of the response to a future pandemic, it will be critical that communications are as clear and effective as possible.

Recommendation 7: Aligned test, trace and isolate communications

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should develop aligned communications to support adherence to test, trace and isolate measures to control disease spread in a public health emergency.

The four nations of the UK should coordinate as far as possible while considering any region-specific challenges or differences in approach to test, trace and isolate.

Communications should be informed by behavioural science principles and tested as part of UK-wide pandemic response exercises (as recommended in the Inquiry's Module 1 Report). The effectiveness of communications during a public health emergency should be monitored.

Data and evaluation

6.55. The Covid-19 pandemic highlighted the critical role of data and modelling in informing the policy and delivery of test, trace and isolate. A novel pathogen is, by its nature, unfamiliar. The collection and analysis of data – including infection rates and levels of adherence to measures such as test, trace and isolate – are therefore essential.

83 INQ000327735_0056 para 205
84 INQ000587239_0043 para 144
85 INQ000587239_0112 para 380
86 INQ000587239_0113 para 382

6.56. From the earliest stages of the response to Covid-19, SAGE and its sub-groups relied on epidemiological models, surveillance data and forecasting tools to understand transmission dynamics, assess the risks posed by the virus and guide public health interventions.[87] As the pandemic progressed, the devolved administrations also established dedicated teams to provide a localised focus on the modelling and epidemiology of the virus.[88]

6.57. However, this work was constrained by the quality and timeliness of the underlying data. In the early phases of the pandemic, limited testing capacity, inconsistent reporting practices, data lags and gaps in population-level information introduced further significant uncertainty into inherently uncertain model outputs.[89]

6.58. Boris Johnson (Prime Minister from July 2019 to September 2022) agreed that collection and use of data should be improved:

> "*We need to have much better data and more of it, as well as a better understanding of that data – about our healthcare system and about the vulnerabilities of the population. We need to be much better at sharing the available data across government.*"[90]

Paul Givan MLA (First Minister of Northern Ireland from June 2021 to February 2022) also told the Inquiry that he had concerns that there were insufficient data and modelling informing the impact of measures being introduced to contain the spread of the virus, particularly on the economy, education and the consequential effects on people's health and wellbeing.[91]

6.59. There were clearly specific limitations in the data available in relation to adherence to the test, trace and isolate measures. On 20 March 2020, SAGE commissioned SPI-B to review levels of adherence to behavioural and social interventions and the options to increase adherence.[92] In that review, SPI-B concluded that it did not know the levels of adherence among children, adherence to household isolation or adherence to shielding. It noted that the data reviewed "*were not ideal*".[93] These limitations arose for three reasons. Firstly, the data were derived from participants who had signed up to take part in surveys and were paid for doing so. Secondly, the response

87 INQ000587340_0083-0084, 0139-0140 paras 4.7-4.11, 7.95; INQ000576032_0024 para 96
88 The Technical Advisory Cell was established in Wales in February 2020 (INQ000575984_0018 para 52); the Covid-19 Advisory Group was established in Scotland in March 2020 (INQ000475142_0010-0011 para 19); and the Covid-19 Strategic Intelligence Group was established in Northern Ireland in April 2020 (INQ000474955_0006 para 28).
89 Statistical models are tools for analysing complex data, identifying patterns and informing evidence-based decision-making where direct measurement is not possible. Figures from modelling are estimates only, and different statistical models will produce different outcomes. These estimates are not based on direct observations. They are therefore limited by the underlying assumptions used in the models and are subject to uncertainty.
90 INQ000587378_0030 para 84
91 INQ000474955_0011-0012 para 48
92 *Current Adherence to Behavioural and Social Interventions in the UK: Comments from SPI-B [22 March 2020]*, Scientific Advisory Group for Emergencies, 5 June 2020, p1 (https://assets.publishing.service.gov.uk/media/5ed8f0a5e90e0754cef0040a/s0074-current-adherence-to-behavioural-social-interventions-uk-spi-b-redacted-220320-sage18.pdf; INQ000074912)
93 *Current Adherence to Behavioural and Social Interventions in the UK: Comments from SPI-B [22 March 2020]*, Scientific Advisory Group for Emergencies, 5 June 2020, p1 (https://assets.publishing.service.gov.uk/media/5ed8f0a5e90e0754cef0040a/s0074-current-adherence-to-behavioural-social-interventions-uk-spi-b-redacted-220320-sage18.pdf; INQ000074912)

options did not reflect changes to household isolation policy.[94] Thirdly, self-reported behaviour may not accurately reflect actual behaviour, as people may seek to present themselves as acting responsibly during a crisis.[95]

6.60. By the summer of 2020, the Scientific Pandemic Influenza Group on Modelling, Operational sub-group (SPI-M-O) had identified that the evaluation of the impact of test, trace and isolate had not been fully considered at its "*design stage*".[96] Professor Graham Medley (Co-Chair of SPI-M-O from January 2020 to February 2022) told the Inquiry that this "*will have hampered the improvement of the system*".[97] The quality of adherence data remained inadequate towards the end of 2020. On 4 November 2020, SPI-B noted at the beginning of its analysis of self-isolation adherence: "[C]*urrently we do not have good quality data re: rates of adherence to isolation.*"[98]

6.61. Problems with a lack of quality data persisted into 2021. On 11 March 2021, just over a year after the pandemic hit the UK, SAGE noted that there were no published data which would allow the Scientific Pandemic Influenza Group on Modelling (SPI-M) or other relevant sub-groups to assess the impact of test, trace and isolate systems on wider transmission.[99]

6.62. High-quality data are essential to understanding why people comply with public health guidance or fail to comply with it, and how adherence can be improved. The Inquiry heard evidence from a number of witnesses about the lack of high-quality data, fragmented data systems and the lack of monitoring and evaluation of test, trace and isolate.

6.63. The British Medical Association told the Inquiry that the NHS Test and Trace system was not well integrated within the NHS and local public health infrastructure due to the UK government's reliance on private contracts.[100] This fragmentation led to delays in delivering test results and significant amounts of testing data going missing, further compromising the system's effectiveness.[101]

6.64. Professor David Halpern, Chief Executive Officer of the Cabinet Office Behavioural Insights Team from 2014, said that test, trace and isolate was a "*glaring example*" of a recurring failure by government to develop systems designed to "*test, learn and adapt*" or to incorporate basic impact evaluation into the design

94 *Current Adherence to Behavioural and Social Interventions in the UK: Comments from SPI-B [22 March 2020]*, Scientific Advisory Group for Emergencies, 5 June 2020, pp6-7 (https://assets.publishing.service.gov.uk/media/5ed8f0a5e90e0754cef0040a/s0074-current-adherence-to-behavioural-social-interventions-uk-spi-b-redacted-220320-sage18.pdf; INQ000074912)
95 *Current Adherence to Behavioural and Social Interventions in the UK: Comments from SPI-B [22 March 2020]*, Scientific Advisory Group for Emergencies, 5 June 2020, p8 (https://assets.publishing.service.gov.uk/media/5ed8f0a5e90e0754cef0040a/s0074-current-adherence-to-behavioural-social-interventions-uk-spi-b-redacted-220320-sage18.pdf; INQ000074912)
96 INQ000587486_0016 para 4.3
97 INQ000587486_0016 para 4.3
98 INQ000350075_0001
99 'SAGE 83 minutes: Coronavirus (COVID-19) response, 11 March 2021', Scientific Advisory Group for Emergencies, 26 March 2021, para 11 (https://www.gov.uk/government/publications/sage-83-minutes-coronavirus-covid-19-response-11-march-2021; INQ000075794)
100 INQ000582706_0002 para 2.2
101 INQ000582706_0003 para 2.4

of operational and delivery systems and in policy.[102] As a result, the monitoring and evaluation of test, trace and isolate measures were constrained by inadequate data. Andrew Garrett, President of the Royal Statistical Society, told the Inquiry:

> "[T]*here was a missed opportunity for statistical methods and data to have been used in the TTI* [test, trace and isolate] *programme to gain information about the virus and to inform the policy response.*"[103]

He added that the test, trace and isolate system "*failed the most basic requirements of any infection control operation*" – such as learning about who was infected, how early they became positive and the symptoms they exhibited.[104]

6.65. The proper collection and analysis of high-quality data should therefore be central to any future pandemic response involving testing, tracing and isolation. The Inquiry agrees that systems for monitoring and evaluating the impact and effectiveness of NHS Test and Trace should have been considered by the Department of Health and Social Care at the outset. Without these systems, there were limited ways in which the UK government could analyse and understand the impact of its test, trace and isolate policies on different population groups and to make the changes needed to improve adherence and uptake.

6.66. Since the Covid-19 pandemic, the devolved administrations in Wales and Scotland have taken important steps to improve the use of data during a pandemic, as well as pandemic preparedness generally. Dr Rob Orford (Chief Scientific Adviser (Health) for Wales from January 2017 to April 2024) told the Inquiry that Wales is undertaking work to improve access to reliable data for civil emergencies, including pandemics. This includes improving how data are collected, analysed and shared in response to both operational and pandemic emergencies.[105] In Scotland, the Standing Committee on Pandemic Preparedness has been established to advise the Scottish Government on future pandemic risks.[106] Its remit includes providing advice on the strategic approach to identifying, accessing and using data to understand future pandemics.[107] It has been meeting regularly since 19 August 2021.[108]

6.67. In March 2026, the UK government said that it would review the data, analysis and modelling capabilities needed across health and other areas of government to support decision-making and evaluate the impact of measures. This work will include workstreams on public health and social measures, which will use "*new approaches*

102 INQ000188738_0036, 0062 paras 150(3), 240
103 INQ000475156_0010 para 3.1.1
104 INQ000475156_0045 para 7.2.30
105 INQ000587247_0046 para 131
106 INQ000479660_0001 para 1
107 INQ000479660_0001-0002 para 7
108 'Standing Committee on Pandemic Preparedness', Scottish Government, no date (https://www.gov.scot/groups/standing-committee-on-pandemic-preparedness; INQ000549361); see also the minutes of the Committee meetings at https://www.gov.scot/groups/standing-committee-on-pandemic-preparedness

to digital data collection to monitor and evaluate community protection measures as they take effect".[109]

6.68. These initiatives represent positive steps. All four governments of the UK should improve data collection and analysis in relation to testing, tracing and isolation. As health is a devolved (or, in Northern Ireland, 'transferred') matter in the UK, alignment on data and technology requirements between the four nations is also essential.[110] The Inquiry's combined Module 2ABC Report recommended that the four nations develop a digital data presentation dashboard to support government decision-makers from the outset of a future pandemic.[111] Such a dashboard should incorporate regularly updated data about test, trace and isolate measures.

6.69. There should be improved systems for the collection of both qualitative and quantitative data on public awareness of test, trace and isolate measures, levels of adherence and their ongoing impact.[112] Improved tracking of adherence would support the development of more-targeted interventions and communications.[113]

6.70. Data collection and analysis should form an integral part of any future test, trace and isolate system from the earliest stages of implementation and throughout its operation. Existing data from the Covid-19 pandemic, alongside examples of international good practice as examined in Chapter 1: The UK's readiness to implement a test, trace and isolate system, should also inform the development of a future test, trace and isolate system.

Recommendation 8: Improved data collection and evaluation of test, trace and isolate measures

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should collect robust data to monitor and evaluate test, trace and isolate measures introduced during a future pandemic.

Qualitative and quantitative data relating to test, trace and isolate measures should be collected on public awareness, adherence and the impact of those measures on the public.

The data collected should allow governments to assess differing impacts across groups to improve test, trace and isolate measures.

Data collection should be aligned as far as possible across the four nations of the UK and should be shared within and across governments.

109 *UK Government Approach to Implementing the Strategy (England only)*, Department of Health and Social Care, 25 March 2026 (https://www.gov.uk/government/publications/pandemic-preparedness-strategy-building-our-capabilities/uk-government-approach-to-implementing-the-strategy-england-only; INQ000660258_0042)
110 INQ000587248_0057-0058 para 222(ii)
111 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 11 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
112 INQ000587520_0073 para 229(d)
113 INQ000587239_0007 para 17

Chapter 7: An effective future test, trace and isolate system

Introduction

7.1. At the start of the Covid-19 pandemic, the World Health Organization stated that "*isolating, testing and treating every suspected case, and tracing every contact, must be the backbone of the response in every country. This is the best hope of preventing community transmission.*"[1] As the Director General of the World Health Organization explained: "*You can't fight a virus if you don't know where it is. Find, isolate, test and treat every case to break the chains of transmission.*"[2]

7.2. When cases of Covid-19 reached the UK, testing to identify infected individuals and isolating positive cases to break the chain of transmission quickly became the UK's primary defence against the spread of the virus. However, as cases began to rise sharply from February 2020 and the urgency of responding to the threat of Covid-19 intensified, the UK's test, trace and isolate capabilities could not be scaled up at the point when they were most needed.[3] The governments of the UK could not monitor effectively the spread of the disease or ensure that those infected – or their close contacts – self-isolated. Consequently, early attempts to contain the virus were doomed to fail, and the virus spread to an unknown extent.

7.3. This chapter examines the overall effectiveness of the UK's test, trace and isolate system. It considers both its strengths and its failures, highlighting where the system proved resilient and where significant weaknesses emerged. It recommends a UK-wide accessible and adaptable test, trace and isolate system in order to avoid, as Professor Sir Christopher Whitty (Chief Medical Officer for England from October 2019) described, the inability to scale up this system being "*a weakness for future pandemics and other health emergencies on this scale*".[4]

The lessons from Covid-19 for test, trace and isolate

7.4. The costs of developing and delivering functioning and scalable test, trace and isolate systems across the UK were unprecedented. Such systems had to be constructed from the ground up, at speed, and under conditions that no plan had fully anticipated. This was always going to come at a significant cost, but the amount spent was, by any measure, extraordinary. For example, in England, the UK government spent in excess of £25 billion on NHS Test and Trace during the pandemic.[5] The cost must have been significantly greater than it would have been had there been better planning.

1 'WHO Director-General's opening remarks at the media briefing on COVID-19 – 18 March 2020', World Health Organization, 18 March 2020 (https://www.who.int/news-room/speeches/item/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---18-march-2020; INQ000587312)
2 'World Health Organisation COVID-19 Update', World Health Organization, 13 March 2020, p2 (https://www.who.int/docs/default-source/coronaviruse/transcripts/who-transcript-emergencies-coronavirus-press-conference-full-13mar2020848c48d2065143bd8d07a1647c863d6b.pdf?sfvrsn=23dd0b04_2; INQ000408657)
3 INQ000587340_0078 para 3.2
4 INQ000587340_0078 para 3.2
5 INQ000521972_0031 para 4.50. The UK government allocated a budget of about £37 billion for NHS Test and Trace for 2020/21 and 2021/22 (INQ000587405_0012 para 47).

7.5. The Inquiry has identified a number of weaknesses and some strengths in the test, trace and isolate systems developed during the Covid-19 pandemic.

Lack of planning

7.6. Pandemics, like other major emergencies, rarely unfold in a single predictable way. Pandemic planning is more than just considering the science of how a virus spreads and what measures are needed to fight it.

7.7. As the Inquiry concluded in its Module 1 Report, the UK prepared for the wrong pandemic. The UK government's sole pandemic strategy prior to the onset of Covid-19, the *UK Influenza Pandemic Preparedness Strategy 2011*, did not address adequately how the spread of a novel virus could be disrupted or prevented in the absence of clinical measures such as therapeutics and vaccines. Non-pharmaceutical measures such as testing and contact tracing were not considered relevant for a pandemic influenza.[6]

7.8. The March 2020 *Coronavirus: Action Plan* – intended to be "*a coronavirus version*" of the *UK Influenza Pandemic Preparedness Strategy 2011* – was commissioned as a public-facing document setting out what the UK government and devolved administrations planned to do in response to the virus.[7] Although it sought to reassure the public that there were "*tried and tested procedures for rapid tracing, monitoring and isolation of close contacts*" used by public health specialists across the UK, there was no plan for a test, trace and isolate system at the scale necessary in a pandemic.[8] The lack of planning had several consequences, as noted in earlier chapters of this Report.

7.9. Existing private and academic laboratories were a valuable but under-utilised resource in the early months of the pandemic. Their services could have been better used to fill critical gaps in testing capacity while a larger, centralised system was being developed.

7.10. There was no strategy for international border control measures – a first and obvious line of defence during the early stages of a novel pandemic. Some countries and territories such as Singapore and Taiwan (later independently assessed as having responded well to the pandemic) put in place border controls far earlier than the UK and had far greater success in controlling the virus. Widespread border control measures were not in place in the UK until June 2020. Border control measures short of full border closure should have been implemented at an earlier stage of the pandemic.

6 *Module 1: The resilience and preparedness of the United Kingdom*, UK Covid-19 Inquiry, July 2024, Chapter 4 (https://covid19.public-inquiry.uk/documents/module-1-full-report)
7 INQ000106107; INQ000279883_0002; see also *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol I, Chapters 2 and 3 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
8 *Coronavirus: Action Plan: A Guide to What You Can Expect Across the UK*, Department of Health and Social Care, 3 March 2020, p13, para 4.13 (https://assets.publishing.service.gov.uk/media/5e5e2e91e90e071110454391/Coronavirus_action_plan_-_a_guide_to_what_you_can_expect_across_the_UK.pdf; INQ000182380)

7.11. Systems had to be developed in the middle of a crisis. While some aspects of the test, trace and isolate systems proved effective, particularly where there was strong coordination across the four nations of the UK, other elements were affected by delays or were hampered by an ongoing lack of capacity and infrastructure. Policy-makers and organisations were also operating with limited information and under significant pressure.[9]

7.12. The need for urgent action meant that there was insufficient time to consider fully how each test, trace and isolate measure would interact with other public health measures, such as social distancing and national lockdowns. Ministers had not given themselves adequate opportunity to assess the complexity of balancing public health benefits with societal and economic costs.

Pausing community testing and tracing

7.13. Most importantly, the lack of planning resulted in the decision by the UK government and the devolved administrations to pause community testing and contact tracing in March 2020. They did not have sufficient diagnostic capacity just when numbers of infections were rising exponentially (see Chapter 2: Testing).

7.14. This weakened the ability of the UK government and devolved administrations to monitor the spread of the virus.[10] Without widespread community testing and contact tracing, the UK lacked essential information needed to manage the response to Covid-19, including data on the number of cases, routes of transmission and the range of symptoms.[11] This likely limited the effectiveness of the overall response.

Support for isolation

7.15. Although the UK government and devolved administrations acted quickly to introduce financial support measures at the start of the pandemic (being considered in Module 9: Economic response), it should have been foreseen that not everyone required to self-isolate would be eligible for this support. This recognition came too late. It took several months before England, Scotland and Wales introduced dedicated payment schemes to help people comply with self-isolation. Only Northern Ireland established a support payment shortly after the first widespread self-isolation measures were announced.

Inadequate data

7.16. The inadequacy of available data across the UK – from infection rates to levels of adherence to self-isolation – is a recurring theme in this Inquiry.

9 INQ000587294_0003 para 7; INQ000576032_0044 para 172
10 INQ000056221_0005 para 1
11 INQ000587245_0005-0006 para 11

7.17. Several data gaps were also identified in the test, trace and isolate system in England that raised concerns about the effectiveness of the system and the justification for the substantial public spending allocated to it. The lack of good-quality, reliable data on various aspects of the test, trace and isolate system inevitably created the conditions for poor decision-making (see Chapter 6: Communications and data).

Inconsistent messaging

7.18. The UK's test, trace and isolate response did not speak with one voice. Divergence between the four governments of the UK generated a large volume of communications, and consequently public messaging and campaigns about the importance of testing and tracing were inconsistent. Even when their approaches were aligned, the terminology for the system in each country was different. It was the right of each government to choose its own terminology but it caused confusion across the UK and undermined compliance with the guidance and regulations.

Lack of accessibility

7.19. Contributors told the Inquiry's listening exercise, Every Story Matters, about problems with the accessibility of the test, trace and isolate system for people with physical disabilities and those who were digitally excluded.

> "*[The test centre] had loads of stairs and really narrow cubicles. [A wheelchair user] wouldn't even be able to sit in there. And then the next one available to me was up near the airport, and that was a drive-through, but that's an hour-and-a-half journey [away].*"[12]
>
> **Contributor, Every Story Matters**

> "*Older people [...] really struggled with the technical side of [...] booking their PCR* [polymerase chain reaction] *test [...] we often had older patients phoning in asking us questions about booking [...] nobody took that into consideration that a lot of elderly people, they don't have mobile phones.*"[13]
>
> **Contributor, Every Story Matters**

7.20. The UK government initially prioritised the rapid establishment of a basic testing system, only considering at a later stage how certain groups would be able to access it (see Chapter 2: Testing).[14]

12 *Every Story Matters: Test, Trace and Isolate*, p59 (INQ000475132)
13 *Every Story Matters: Test, Trace and Isolate*, p59 (INQ000475132)
14 INQ000587834_0018 para 50

7.21. The Inquiry also heard evidence about the accessibility of the contact tracing app used in England and Wales (see Chapter 3: Contact tracing). Although the app was available in multiple languages, there was evidence that language remained a barrier for some users.[15] Those who were unable or unwilling to use mobile phone apps were unable to benefit from digital contact tracing.

Lack of trust

7.22. People will not comply with test, trace and isolate measures if they do not trust the government or the government department trying to encourage them to do so. Contributors to Every Story Matters described a lack of trust in what were fundamental components of the UK's test, trace and isolate systems.

> "*The initial ones* [tests] *were really uncomfortable … but I think it was more a total distrust of the system [… and] of the NHS generally, this element of people who just thought, 'No, I don't trust this. I'm not going to [test].'*"[16]
>
> **Community member who supported people to self-isolate, Every Story Matters**

> "*False positive[s] were used to create the thousands of so-called 'cases' and produce the associated hysteria […] I did not have any test (as a matter of principle).*"[17]
>
> **Contributor, Every Story Matters**

7.23. Public trust in the UK's Covid-19 response was also affected by its lack of preparedness. One study found that the UK's lack of readiness for mass testing contributed to a perception of government incompetence.[18]

7.24. While the UK's test, trace and isolate response included commendable efforts to address privacy concerns and engage diverse communities – such as targeted initiatives in Wales, Scotland and Northern Ireland – significant mistrust and perceptions of government incompetence persisted.[19] This will require considerable work with the communities themselves to change minds.

15 *Every Story Matters: Test, Trace and Isolate*, p63 (INQ000475132)
16 *Every Story Matters: Test, Trace and Isolate*, p52 (INQ000475132)
17 *Every Story Matters: Test, Trace and Isolate*, p47 (INQ000475132)
18 'COVID-19: Effective policymaking depends on trust in experts, politicians, and the public', P Cairney, A Wellstead, *Policy Design and Practice* (2021), 4(1), 1-14, p9 (https://doi.org/10.1080/25741292.2020.1837466; INQ000361823)
19 INQ000587349_0147 para 545; INQ000475142_0090-0091 para 249; INQ000587297_0092-0093 para 289

An aligned approach

7.25. Announced in April 2020, the National Testing Programme operated throughout the pandemic and involved all four governments working together to deliver Covid-19 testing.[20] This included efforts to expand laboratory capacity and sampling infrastructure, develop novel testing technologies and procure tests.[21] As set out in Chapter 2: Testing, it included the creation of the Lighthouse laboratories, a network of dedicated Covid-19 diagnostic facilities established across the UK to process Covid-19 tests at scale.[22] Within six months, they were processing more than 1 million tests per week.[23] Professor Dame Anna Dominiczak (Director of Laboratories at the Department of Health and Social Care from August 2020 to June 2022) characterised this collective effort as "*absolutely incredible*".[24] This achievement was the result of extensive collaboration between the four governments, volunteers and private sector organisations.

7.26. Robin Swann (Minister of Health for Northern Ireland from January 2020 to October 2022 and from February to May 2024) told the Inquiry that Northern Ireland's membership of the National Testing Programme "*was key to our being able to expand the testing capacity the way in which we did and I do not consider that we could have done so as quickly on our own*".[25]

7.27. Against a backdrop of several significant weaknesses, the National Testing Programme demonstrated what was achievable when the four governments worked together towards a common goal.

Developing a UK-wide system for the future

7.28. Despite initial challenges, by the summer of 2020, the test, trace and isolate systems were producing and delivering testing and tracing at the scale required.

7.29. According to modelling estimates produced by NHS Test and Trace (the Canna model), the NHS Test and Trace system may have prevented between 1.2 and 2 million secondary Covid-19 infections in England between June 2020 and April 2021.[26] While these figures are subject to the inherent uncertainties associated with statistical modelling and were set against a hypothetical scenario in which it was assumed that individuals with Covid-19-like symptoms would self-isolate together with their household contacts, the Canna model suggests the extent of the impact

20 INQ000587365_0031 para 3.57; INQ000242691_0049
21 INQ000116621; INQ000251906_0038-0039 para 150
22 *NHS Test and Trace: How We Test Your Samples*, UK Health Security Agency, 28 October 2020 (INQ000562678)
23 *NHS Test and Trace: How We Test Your Samples*, UK Health Security Agency, 28 October 2020 (INQ000562678)
24 INQ000511372_0003
25 INQ000587297_0031 para 93
26 INQ000566413_0005

that an effective test, trace and isolate system may have during a pandemic response.[27]

7.30. However, James Bethell, Lord Bethell (Parliamentary Under Secretary of State for Technology, Innovation and Life Sciences at the Department of Health and Social Care from March 2020 to September 2021) told the Inquiry that "*we have gone backwards*" since Covid-19, with diagnostic and public health infrastructure dismantled and "*weaker than ever*".[28] If correct, this puts lives at risk.

7.31. The lessons from Module 7 are clear: many of the flaws in the UK's test, trace and isolate system stemmed from a lack of pre-planning and preparedness. Weaknesses in these systems ultimately came at a high cost, with many individuals unable to access or comply with the very measures designed to protect them.

7.32. There are also valuable lessons to be learned from countries and territories such as Taiwan, Singapore, Australia and Germany, which had plans in place at the start of the pandemic and were widely praised for their effectiveness in controlling the spread of Covid-19 when it first struck. The Inquiry recognises that a response that is appropriate for one country or territory may not be appropriate for another and that an overall appraisal of the response of a country or territory may not be as positive. However, as set out in Chapter 1: The UK's readiness to implement a test, trace and isolate system, they drew on lessons from previous public health emergencies to implement proactive and comprehensive test, trace and isolate systems from an early stage. For example, Taiwan took significant action following the severe acute respiratory syndrome (SARS) outbreak in 2003, such as conducting regular audits of hospitals to ensure that all necessary infection control measures were in place.[29] By April 2021, it had among the lowest per capita incidence and mortality rates of Covid-19 in the world.[30] Understanding why – what they did differently, what structures they had in place and what decisions they made – should form part of the UK's plans for implementing a test, trace and isolate system for a future pandemic.

Expert advice

7.33. Future plans should also better harness expert advice and expertise. For example, behavioural science can help governments understand practical and financial barriers to adherence to self-isolation requirements and inform measures to address them (see Chapter 4: Isolation).[31] It might also help to commission qualitative and

27 INQ000566413. Statistical models are tools for analysing complex data, identifying patterns and informing evidence-based decision-making where direct measurement is not possible. Figures from modelling are estimates only, and different statistical models will produce different outcomes. These estimates are not based on direct observations. They are therefore limited by the underlying assumptions used in the models and are subject to uncertainty.
28 INQ000587383_0003-0004 para 5
29 'Taiwan's experience in pandemic control: Drawing the right lessons from SARS outbreak', W-C Lee, *Journal of the Chinese Medical Association* (2020), 83(7), 622-623, p622 (https://doi.org/10.1097/JCMA.0000000000000350; INQ000050422)
30 'Comparison of estimated effectiveness of case-based and population-based interventions on Covid-19 containment in Taiwan', T-C Ng, H-Y Cheng, H-H Chang, C-C Liu, C-C Yang, S-W Jian et al, *JAMA Internal Medicine* (2021), 181(7), 913-921, p914 (https://doi.org/10.1001/jamainternmed.2021.1644; INQ000249699)
31 INQ000587239; INQ000196744_0001-0002 para 10

comparative studies to understand challenges in implementation, to establish support mechanisms and to prepare for multiple scenarios. While the March 2026 *Pandemic Preparedness Strategy: Building Our Capabilities* suggests that governments will capitalise on existing scientific advisory structures and industry expertise, governments must consult a diverse range of disciplines and effectively integrate this advice into decision-making.[32]

Adaptability

7.34. The Inquiry's combined Report relating to Modules 2, 2A, 2B and 2C identified the flaws in the UK's 'ready for flu, ready for anything' approach to pandemic preparedness. The next pandemic may well present a different scenario from Covid-19.[33] Planning for a future test, trace and isolate system must take into account the unpredictable nature of pandemic pathogens.

7.35. Strategies must first account for potential delays in test development and what support may be required for periods of self-isolation while a suitable test is being developed. When testing is available, its deployment will need to adapt to the type of pathogen and the extent of infection spread. During the early stages of an outbreak, there may be a need for focused testing of symptomatic people to contain and prevent widespread transmission. Where infection does not always result in symptoms, mass testing of the population may be required to identify both symptomatic and asymptomatic infections. If individuals – for example, care home residents – are particularly vulnerable to a novel pathogen, regular testing of staff and residents will be necessary to reduce transmission to people most at risk of severe outcomes.[34]

7.36. The UK must also be adaptable in its approach to contact tracing. A 2021 study of contact tracing during the Covid-19 pandemic found that infection control was improved when both manual and digital methods were used together, as compared to digital tracing alone.[35] A future test, trace and isolate system should integrate manual and digital methods, utilising both backward and forward contact tracing, and take account of technological developments (see Chapter 3: Contact tracing). Future digital contact tracing tools, potentially used alongside wearable devices, may be able to detect early symptoms and indicate infection, providing an alternative to testing to confirm infection.[36]

32 *Pandemic Preparedness Strategy: Building Our Capabilities*, Department of Health and Social Care, 25 March 2026 (https://www.gov.uk/government/publications/pandemic-preparedness-strategy-building-our-capabilities; INQ000660240)
33 *Modules 2, 2A, 2B, 2C: Core decision-making and political governance*, UK Covid-19 Inquiry, November 2025, Vol II, Chapter 15 (https://covid19.public-inquiry.uk/documents/module-2-full-report)
34 'Effectiveness of testing, contact tracing and isolation interventions among the general population on reducing transmission of SARS-CoV-2: A systematic review', H Littlecott, C Herd, J O'Rourke, L Toncon Chaparro, M Keeling, GJ Rubin et al, *Philosophical Transactions of the Royal Society A* (2023), 381 (2257), pp2-3 (https://doi.org/10.1098/rsta.2023.0131; INQ000564294)
35 'Modeling the effect of exposure notification and non-pharmaceutical interventions on COVID-19 transmission in Washington state', M Abueg, R Hinch, N Wu, L Liu, W Probert, A Wu et al, *npj Digital Medicine* (2021), 4, 49, p5 (https://www.doi.org/10.1038/s41746-021-00422-7; INQ000574825)
36 INQ000575990_0005 para 10c

7.37. For the system to work as it should, the UK government and devolved administrations must put in place mechanisms to monitor and evaluate the effectiveness and impact of any future test, trace and isolate system, and ensure that there is better integration between statistical and policy functions.[37] This will enable decision-makers to better understand virus transmission or levels of adherence to measures such as self-isolation, and adapt accordingly.[38]

7.38. As Sir Matthew Rycroft (Permanent Secretary to the Home Office from March 2020 to March 2025) emphasised, agility in policy, legislation and digital solutions is vital:

> "*There should be greater resilience and agility in our structures, policy, legislation, digital solutions, and public communications to respond to future threats and support the needs of everyone in society when implementing test, trace, and isolate strategies.*"[39]

Embedding flexibility into preparedness frameworks for a UK-wide test, trace and isolate system will be essential to ensuring that responses remain effective in dynamic and uncertain situations.

Accessibility

7.39. Test, trace and isolate systems must be informed by the realities of the lives of the people they are designed to protect.

7.40. Future test, trace and isolate systems must prioritise accessibility by embedding sustained engagement with vulnerable groups into the planning phase. The Scottish Government's proactive work with the Expert Reference Group on COVID-19 and Ethnicity serves as a model for identifying barriers to compliance within migrant and ethnic minority communities.[40]

7.41. The UK government and devolved administrations must apply these lessons to ensure that future pandemic responses account for shifting vulnerabilities across different populations.

Building trust

7.42. Test, trace and isolate measures are essential pandemic tools – particularly when vaccines are unavailable or when public concerns about vaccines lead

37 INQ000475156_0013 para 3.2.6
38 INQ000475156_0013 para 3.2.6
39 INQ000587248_0058 para 223
40 INQ000475071_0106-0108, 0124-0125 paras 314, 370-373

to reduced uptake – yet their success depends heavily on clear communication and public trust.[41]

7.43. Studies have repeatedly identified trust as a key factor in public compliance during a pandemic.[42] As one study concluded: "*In a crisis, almost-instant choices about who to trust or distrust could make a difference between life and death.*"[43]

7.44. To ensure compliance in future pandemics, the UK government and devolved administrations must prioritise building trust from the outset. This requires developing comprehensive pre-pandemic plans, addressing specific privacy concerns regarding contact tracing apps, and delivering accessible, culturally tailored communications through trusted sources.

7.45. To protect public health in a future pandemic, the four governments of the UK must act decisively and plan for a robust, adaptable, accessible and – most importantly – scalable test, trace and isolate system. The Inquiry is therefore recommending the development of a UK-wide test, trace and isolate system in advance of the next pandemic. It will be fundamental to protecting public health and saving lives. One system would ensure greater clarity and consistency for the public, inspire confidence and ensure greater compliance. As the National Testing Programme showed, when the four governments work successfully together, the people they serve – the UK public – benefit.

Recommendation 9: A new UK-wide test, trace and isolate system

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should work together to develop one system to find, test, trace, isolate and support cases of infection during a public health emergency.

The system should be accessible to all population groups and adaptable to account for a range of pathogen types and the different stages of response to a public health emergency. It should be developed in consultation with local authorities, health boards and trusts, as well as experts in modelling, behavioural science and public health.

This should form part of the civil emergency strategy recommended in the Inquiry's Module 1 Report and the system should be tested during UK-wide pandemic response exercises.

41 'COVID-19: Effective policymaking depends on trust in experts, politicians, and the public', P Cairney, A Wellstead, *Policy Design and Practice* (2021), 4(1), 1-14, p8 (https://doi.org/10.1080/25741292.2020.1837466; INQ000361823); 'The role of public trust during pandemics: Implications for crisis communication', M Siegrist, A Zingg, *European Psychologist* (2014), 19(1), 23-32, p27 (https://doi.org/10.1027/1016-9040/a000169; INQ000300279); see also *Module 4: Vaccines and therapeutics*, UK Covid-19 Inquiry, April 2026, Chapter 6 (https://covid19.public-inquiry.uk/documents/module-4-full-report)

42 'The role of public trust during pandemics: Implications for crisis communication', M Siegrist, A Zingg, *European Psychologist* (2014), 19(1), 23-32, pp23-24, 28 (https://doi.org/10.1027/1016-9040/a000169; INQ000300279); 'COVID-19: Effective policymaking depends on trust in experts, politicians, and the public', P Cairney, A Wellstead, *Policy Design and Practice* (2021), 4(1), 1-14, p1 (https://doi.org/10.1080/25741292.2020.1837466; INQ000361823)

43 'COVID-19: Effective policymaking depends on trust in experts, politicians, and the public', P Cairney, A Wellstead, *Policy Design and Practice* (2021), 4(1), 1-14, p1 (https://doi.org/10.1080/25741292.2020.1837466; INQ000361823)

Appendix 1: The background to this module and the Inquiry's methodology

Background

A1.1. The Right Honourable Boris Johnson MP, Prime Minister from July 2019 to September 2022, formally established the UK Covid-19 Inquiry in June 2022 to examine the preparations for and response to the Covid-19 pandemic in the UK and to learn lessons for the future. In December 2021, he appointed The Right Honourable the Baroness Hallett DBE, a retired judge of the Court of Appeal, as its Chair.

A1.2. On 28 June 2022, the Prime Minister issued the final Terms of Reference for the Inquiry, establishing it under the Inquiries Act 2005.[1] The Inquiry formally opened on 21 July 2022 to:

> "*examine, consider and report on preparations and the response to the pandemic in England, Wales, Scotland and Northern Ireland, up to and including the Inquiry's formal setting-up date, 28 June 2022*".[2]

A1.3. To ensure a full and focused examination of the wide range of issues covered in the Terms of Reference and to produce regular reports, the Inquiry's investigation has been divided into sections or 'modules'. Each module gathers evidence, designates Core Participants and has both preliminary hearings (at which decisions about the procedure for the conduct of its investigations and public hearings are made) and full public hearings where evidence is heard. Details of public hearings are published by the Inquiry.[3]

A1.4. The Inquiry's public hearings concluded on 5 March 2026. Six investigation reports have already been published (see Table 2).

1 See 'Covid-19 Inquiry Terms of Reference', UK Covid-19 Inquiry, 20 July 2022 (https://covid19.public-inquiry.uk/documents/terms-of-reference), which includes translations of the Inquiry's Terms of Reference; for the Inquiries Act 2005, see https://www.legislation.gov.uk/ukpga/2005/12/contents. A separate inquiry is taking place in Scotland, which will evaluate areas where policy was devolved to the Scottish Government, as set out in its Terms of Reference. The UK Covid-19 Inquiry works with the Scottish Covid-19 Inquiry to avoid duplication of work where possible.

2 'Covid-19 Inquiry Terms of Reference', UK Covid-19 Inquiry, 20 July 2022, p1 (https://covid19.public-inquiry.uk/documents/terms-of-reference)

3 For further information, see 'Structure of the Inquiry', UK Covid-19 Inquiry, no date (https://covid19.public-inquiry.uk/structure-of-the-inquiry).

Table 2: Module reports published by the Inquiry

Module	Publication date
Module 1: The resilience and preparedness of the United Kingdom (https://covid19.public-inquiry.uk/documents/module-1-full-report)	18 July 2024
Modules 2, 2A, 2B, 2C: Core decision-making and political governance (https://covid19.public-inquiry.uk/documents/module-2-full-report) Note: This report brought together the work of four distinct modules – Modules 2 (UK), 2A (Scotland), 2B (Wales) and 2C (Northern Ireland).	20 November 2025
Module 3: The impact of the Covid-19 pandemic on the healthcare systems of the United Kingdom (https://covid19.public-inquiry.uk/documents/module-3-full-report)	19 March 2026
Module 4: Vaccines and therapeutics (https://covid19.public-inquiry.uk/documents/module-4-full-report)	16 April 2026
Module 5: Procurement (https://covid19.public-inquiry.uk/documents/module-5-full-report)	14 July 2026
Module 6: Care sector (https://covid19.public-inquiry.uk/documents/module-6-full-report)	20 October 2026

A1.5. The modules that are yet to publish reports are as follows:

- Module 8: Children and young people[4]
- Module 9: Economic response[5]
- Module 10: Impact on society[6]

A1.6. A public inquiry is established to examine the facts and to find out exactly what happened. It is an inquisitorial, not an adversarial, process. The conclusions and recommendations in each report are based on an objective assessment of the totality of the evidence received by the Inquiry.

Module 7

A1.7. This Report concerns the approach to testing, tracing and isolation adopted during the Covid-19 pandemic. Different models of testing, tracing and isolation were adopted across the four nations of the UK: Test and Protect in Scotland; Test and Trace in England; Test, Trace, Protect in Wales; and Test, Trace and Protect in

4 'Children and young people (Module 8)', UK Covid-19 Inquiry, no date (https://covid19.public-inquiry.uk/modules/children-and-young-people-module-8)
5 'Economic response (Module 9)', UK Covid-19 Inquiry, no date (https://covid19.public-inquiry.uk/modules/economic-response-module-9)
6 'Impact on society (Module 10)', UK Covid-19 Inquiry, no date (https://covid19.public-inquiry.uk/modules/impact-on-society-module-10)

Northern Ireland.[7] The Inquiry uses the phrase 'test, trace and isolate' to refer to all four models.

Outline of Scope

A1.8. In order to reflect the unique issues arising within each jurisdiction as a result of the pandemic, each module adopted its own Outline of Scope.[8] In particular, the matters examined in Module 7 encompassed:

- the test, trace and isolate policies and strategies developed and deployed, including modelling, system capacity, rationale for decisions and wider border policy considerations;
- the availability, use and effectiveness of different test, trace and isolate technologies and policies, such as lateral flow tests, polymerase chain reaction (PCR) tests, testing for variants and digital contact tracing;
- the structure of the test, trace and isolate system, the key decision-making bodies, the effectiveness and impact of adopted models, the use of the private sector and the associated costs;
- enforcement of procedures and factors influencing public compliance, including the adequacy of messaging, trust, financial and practical support for isolation, and the use of data in decision-making; and
- the preservation of infrastructure, capacity and research to improve and develop test, trace and isolate schemes for future pandemics.

A1.9. Module 7 prepared a List of Issues to supplement the Provisional Outline of Scope, intended to provide greater detail about the matters which might warrant investigation. The List of Issues was intended as a guide and not to be prescriptive about the issues which would be addressed.

Core Participants

A1.10. In accordance with rule 5 of the Inquiry Rules 2006 and the Inquiry's Core Participant Protocol, the Chair designates a number of Core Participants – individuals, organisations or institutions with a specific interest – in each module.[9] Core Participants have enhanced rights in the Inquiry process, including receiving disclosure of documents, being represented, making legal submissions and suggesting lines of enquiry. They are also able to apply to the Inquiry for funding to cover legal and other costs.

7 See https://covid19.public-inquiry.uk/documents/ruling-following-the-first-module-7-preliminary-hearing-on-27-june-2024, paras 5 to 7

8 'Module 7: Provisional Outline of Scope', UK Covid-19 Inquiry, 19 March 2024 (https://covid19.public-inquiry.uk/documents/module-7-provisional-outline-of-scope)

9 The Inquiry Rules 2006, rule 5 (https://www.legislation.gov.uk/uksi/2006/1838/contents/made); 'Core Participant Protocol', UK Covid-19 Inquiry, 21 July 2022 (https://covid19.public-inquiry.uk/documents/uk-covid-19-inquiry-core-participant-protocol)

A1.11. In Module 7, the Inquiry received 33 applications for Core Participant status and the Chair designated 24 Core Participants.[10]

Table 3: Module 7 Core Participants

Name of organisation/individual	Date of designation
Chancellor of the Duchy of Lancaster	17 May 2024
Covid-19 Bereaved Families for Justice Cymru	17 May 2024
Covid-19 Bereaved Families for Justice UK	17 May 2024
Department for Education	17 May 2024
Department for Transport	17 May 2024
Department of Health and Social Care	17 May 2024
Department of Health (Northern Ireland)	17 May 2024
Federation of Ethnic Minority Healthcare Organisations	31 May 2024
Arlene Foster, The Rt Hon the Baroness Foster of Aghadrumsee DBE and Paul Givan MLA	17 May 2024
HM Treasury	17 May 2024
Local Government Association and Welsh Local Government Association	31 May 2024 31 May 2024
NHS England	31 May 2024
Northern Ireland Covid-19 Bereaved Families for Justice	17 May 2024
Michelle O'Neill MLA	31 January 2025
Public Health Agency (Northern Ireland)	31 May 2024
Public Health Scotland and NHS National Services Scotland	17 May 2024
Public Health Wales	17 May 2024
Scottish Covid Bereaved	17 May 2024
Scottish Health Boards	17 May 2024
Scottish Ministers	17 May 2024
Secretary of State for the Home Department	17 May 2024
Trades Union Congress	17 May 2024
UK Health Security Agency	17 May 2024
Welsh Government	31 May 2024

Public access to Inquiry proceedings

A1.12. In keeping with its public nature and the Chair's commitment to conduct the Inquiry in as open and transparent a manner as possible, arrangements were made for the

10 'List of Module 7 Core Participants', UK Covid-19 Inquiry, 27 June 2024 (https://covid19.public-inquiry.uk/documents/list-of-module-7-core-participants)

hearings to be accessible to all who wished to follow them. These hearings were broadcast via livestream on the Inquiry's website or its YouTube channel (where they remain accessible) and members of the public were able to watch the hearings in person.[11]

Evidence-gathering

A1.13. In Module 7, the Inquiry issued 233 requests for evidence, pursuant to rule 9 of the Inquiry Rules 2006, to organisations and individuals. It received and considered 200 witness statements, which included 37 impact statements. In addition, in Module 7 the Inquiry received and reviewed more than 23,000 documents, comprising exhibits, statements and documents forming part of general disclosure. These amounted to 159,497 pages. A total of more than 210,000 pages (which included documents provided to earlier modules and considered relevant to Module 7's scope) were disclosed to Core Participants.

A1.14. In Module 7, the Inquiry sent requests to a number of individuals from Core Participant groups who were particularly affected by the Covid-19 pandemic for evidence about the impact it had on them. Those contacted included bereaved families, the Trades Union Congress and the Federation of Ethnic Minority Healthcare Organisations. A total of six witness statements were received from these groups and disclosed to Core Participants. Additional evidence regarding the impact of the pandemic on particular groups was obtained from Clinically Vulnerable Families, the Long Covid Groups and two disabled people's organisations: Disability Rights UK and Disability Action Northern Ireland.

Every Story Matters

A1.15. As set out in the Terms of Reference, the Inquiry regards it as critical to its work to listen to and consider carefully the experiences of bereaved families and others who have suffered hardship or loss as a result of the pandemic. The Inquiry has done this in a number of different ways, including through its listening exercise, Every Story Matters, the largest public engagement exercise by a UK public inquiry. It heard from thousands of people about their experiences of the pandemic.

A1.16. Stories were shared with the Inquiry through a webform (including accessible versions), a series of events across the UK and interviews with under-represented groups.[12] Those aged 18 or older were invited to share as much or as little of their pandemic experience as they felt able, without the formality of giving evidence or attending a public hearing. More than 58,000 stories were shared with the Inquiry. The sharing of these experiences has helped the Inquiry to understand events and their impact and has aided the development of recommendations that could reduce suffering in the future. Experiences shared with the Inquiry were analysed

11 'UK Covid-19 Inquiry', YouTube, no date (https://www.youtube.com/@UKCovid-19Inquiry)
12 'Every Story Matters', UK Covid-19 Inquiry, no date (https://covid19.public-inquiry.uk/every-story-matters)

and reports – called records – have been produced highlighting the themes that emerge. A summary of a record of Every Story Matters for Module 7, detailing people's experiences of the test, trace and isolate system during the pandemic, was published in May 2025.[13]

Disclosure to Core Participants and publication of materials

A1.17. The Inquiry's approach to documents is set out in its Protocol on Documents, which explains key principles for the delivery of documents to the Inquiry, including requests for documents or witness statements pursuant to rule 9 of the Inquiry Rules 2006.[14] This should be read with the Inquiry's Protocol on the Redaction of Documents, which details the approach to the redaction of documents for the purposes of both disclosure to Core Participants and publication.[15]

A1.18. The Inquiry discloses all witness statements and documents it considers relevant to Core Participants in full, subject to any redactions applied in accordance with the Inquiry's Protocol on the Redaction of Documents.[16] To comply with section 18 of the Inquiries Act 2005, the Chair is taking reasonable steps to ensure that members of the public are able to view documents provided to the Inquiry and attend Inquiry hearings.[17] All documents shown on screen during the course of the hearings appear in the YouTube recording of the evidence and are published on the Inquiry's website at the end of each day. The witness statements of those who give evidence each day are also published in full. Since the conclusion of the hearings, the Chair has granted permission for the publication of further materials, including those referenced within this Report, where she has been satisfied it is necessary to do so.[18]

A1.19. In the event of an objection to the disclosure or publication of relevant material, an application must be made to the Chair for a restriction order in accordance with section 19 of the Inquiries Act 2005, following the Inquiry's Protocol on Applications for Restriction Orders.[19] In Module 7, the Chair issued a restriction order dated 15 May 2025 concerning the publication of sensitive and redacted material and a general restriction order dated 13 March 2026.[20]

13 'Every Story Matters: Test, Trace and Isolate', UK Covid-19 Inquiry, 12 May 2025 (https://covid19.public-inquiry.uk/documents/every-story-matters-test-trace-and-isolate-full-record)
14 'Protocol on Documents', UK Covid-19 Inquiry, 29 July 2022 (https://covid19.public-inquiry.uk/documents/protocol-on-documents); The Inquiry Rules 2006 (https://www.legislation.gov.uk/uksi/2006/1838/article/9/made)
15 'Inquiry Protocol on the Redaction of Documents', UK Covid-19 Inquiry, 18 October 2022 (https://covid19.public-inquiry.uk/documents/inquiry-protocol-on-the-redaction-of-documents)
16 'Inquiry Protocol on the Redaction of Documents', UK Covid-19 Inquiry, 18 October 2022 (https://covid19.public-inquiry.uk/documents/inquiry-protocol-on-the-redaction-of-documents)
17 Inquiries Act 2005, section 18 (https://www.legislation.gov.uk/ukpga/2005/12/contents)
18 'Documents', UK Covid-19 Inquiry, no date (https://covid19.public-inquiry.uk/documents)
19 Inquiries Act 2005, section 19 (https://www.legislation.gov.uk/ukpga/2005/12/contents); 'Inquiry Protocol on Applications for Restriction Orders', UK Covid-19 Inquiry, 18 October 2022 (https://covid19.public-inquiry.uk/documents/inquiry-protocol-on-applications-for-restriction-orders)
20 'Restriction Order: Restriction on the publication of material pursuant to section 19 of the Inquiries Act 2005', UK Covid-19 Inquiry, 15 May 2025 (https://covid19.public-inquiry.uk/documents/restriction-order-restriction-on-the-publication-of-material-pursuant-to-section-19-of-the-inquiries-act-2005); 'Restriction Order: Restriction on the publication of material pursuant to section 19 of the Inquiries Act 2005', UK Covid-19 Inquiry, 13 March 2026 (https://covid19.public-inquiry.uk/documents/module-7-general-restriction-order-dated-13-03-2026)

The instruction of expert witnesses

A1.20. To assist the Inquiry, experts were appointed by the Inquiry in relation to a number of topics, including adherence to test, trace and isolate measures and the impact of financial support on adherence.

Table 4: Expert witnesses

Topic	Expert(s) appointed	Expert report
Adherence to behaviours associated with test, trace and isolate	Professor Madelynne Arden, Professor of Health Psychology and Head of the Centre for Behavioural Science and Applied Psychology at Sheffield Hallam University With author contributions from: • Professor Vivien Swanson, Professor of Health Psychology based at the University of Stirling; • Dr Rhiannon Phillips, Reader in Health Psychology and Deputy Associate Dean for Research in the Cardiff School of Sport and Health Sciences; and • Dr Gillian Shorter, Reader in Clinical Psychology in the School of Psychology at Queen's University Belfast.	INQ000587239
Impact of financial support on test, trace and isolate	Professor Richard Machin, Associate Professor in Social Policy in the Social Work, Care and Community Department at Nottingham Trent University	INQ000575999 INQ000587683

Witnesses at public hearings

A1.21. Witnesses are invited by the Inquiry to provide a statement if they have evidence relevant to a particular module. They give evidence under oath or affirmation and are questioned by Counsel to the Inquiry. Counsel to Core Participants can also ask questions with the Chair's permission, pursuant to rule 10 of the Inquiry Rules 2006.[21]

A1.22. The Module 7 hearings took place between 12 and 30 May 2025. In these hearings, the Inquiry heard evidence from 41 witnesses, including representatives of bereaved groups, scientific advisers, government ministers, government officials and expert witnesses.

21 The Inquiry Rules 2006, rule 10 (https://www.legislation.gov.uk/uksi/2006/1838/contents/made)

Table 5: Module 7 witnesses from whom the Inquiry heard evidence

Witness (organisation)	Date of evidence
Professor Naomi Fulop (Covid-19 Bereaved Families for Justice UK)	12 May 2025
Anna-Louise Marsh-Rees (Co-leader of Covid-19 Bereaved Families for Justice Cymru)	12 May 2025
Hazel Gray (Northern Ireland Covid-19 Bereaved Families for Justice)	13 May 2025
Nicola Boyle (Scottish Covid Bereaved)	13 May 2025
Professor Martin McKee (Professor of European Public Health at the London School of Hygiene & Tropical Medicine from 1997)	13 May 2025
Professor Christophe Fraser (Professor of Infectious Disease Epidemiology at the University of Oxford)	13 May 2025
Professor Iain Buchan (Duncan Chair in Public Health Systems and Associate Pro Vice Chancellor for Innovation at the University of Liverpool)	14 May 2025
Will Garton (Director General for Local Government, Growth and Communities at the Ministry of Housing, Communities and Local Government from March 2022)	14 May 2025
Martin Hewitt CBE QPM (Chair of the National Police Chiefs' Council from March 2019 to April 2023)	14 May 2025
Dr Emran Mian (Senior Responsible Officer for Disproportionately Impacted Groups from August 2020 to December 2021)	14 May 2025
Sir Paul Nurse OM (Director and Chief Executive of the Francis Crick Institute from 2010 to 2025)	15 May 2025
Professor Alan McNally (Head of the School of Infection, Inflammation and Immunology at the University of Birmingham from August 2024 and former Director of the Institute of Microbiology and Infection at the University of Birmingham)	15 May 2025
Matthew Gould (Chief Executive Officer of NHSX from May 2019 to January 2022)	15 May 2025
Simon Thompson (Managing Director of the NHS COVID-19 app from June to October 2020)	15 May 2025
Professor Timothy Spector (Professor of Genetic Epidemiology at King's College London and co-founder of ZOE Ltd)	19 May 2025
Professor Christopher Molloy (Chief Executive Officer of Medicines Discovery Catapult from November 2016 to January 2026)	19 May 2025
Dominic Cook (Partner in the Major Programmes team at Deloitte LLP from November 2017)	19 May 2025
Dan York-Smith (Director General for Tax and Welfare at the Treasury from March 2023 to August 2025)	20 May 2025

Witness (organisation)	Date of evidence
Jo-Anne Daniels (Interim Director General, Education, Social Justice and Welsh Language in the Welsh Government from April 2022 to April 2024)	20 May 2025
The Rt Hon Vaughan Gething (Minister for Health and Social Services in the Welsh Government from May 2016 to May 2021)	20 May 2025
The Rt Hon Mark Drakeford (First Minister for Wales from December 2018 to March 2024)	20 May 2025
Arlene Foster, The Rt Hon the Baroness Foster of Aghadrumsee DBE (First Minister of Northern Ireland from January 2016 to January 2017 and from January 2020 to June 2021)	21 May 2025
Michelle O'Neill MLA (deputy First Minister of Northern Ireland from January 2020 to February 2022, First Minister of Northern Ireland from February 2024)	21 May 2025
Professor Sir Michael McBride (Chief Medical Officer for Northern Ireland from September 2006)	21 May 2025
Robin Swann (Minister of Health for Northern Ireland from January 2020 to October 2022 and from February to May 2024)	21 May 2025
The Rt Hon Matt Hancock (Secretary of State for Health and Social Care from July 2018 to June 2021)	22 May 2025
James Bethell, The Rt Hon the Lord Bethell (Parliamentary Under Secretary of State for Technology, Innovation and Life Sciences at the Department of Health and Social Care from March 2020 to September 2021)	22 May 2025
Professor Sir Patrick Vallance, Lord Vallance of Balham KCB (Government Chief Scientific Adviser from April 2018 to March 2023)	22 May 2025
Ben Dyson (Director of Policy for NHS Test and Trace at the Department of Health and Social Care from May 2020 to June 2021)	27 May 2025
Dame June Raine DBE (Chief Executive Officer of the Medicines and Healthcare products Regulatory Agency from September 2019 to March 2025)	27 May 2025
Dr Robin Howe (Director of Infection Services at Public Health Wales NHS Trust from 2022)	27 May 2025
Oliver Munn (Director of Testing and Tracing Delivery in the Cabinet Office Covid-19 Taskforce from April 2020 to February 2022)	27 May 2025
Dido Harding, Baroness Harding of Winscombe (Executive Chair of NHS Test and Trace from May 2020 to May 2021)	28 May 2025
Professor Dame Jenny Harries DBE (Deputy Chief Medical Officer for England from July 2019 to March 2021, Chief Executive of the UK Health Security Agency from April 2021 to May 2025)	28 May 2025
Greg Fell (President of the Association of Directors of Public Health from November 2023)	28 May 2025

Witness (organisation)	Date of evidence
Dr Jim McMenamin (Strategic Incident Director for Covid-19 from January 2020 and Head of Health Protection (Infection Services) from October 2021, Public Health Scotland)	29 May 2025
Mary Morgan (Chief Executive of NHS National Services Scotland (known from 1 April 2026 as Public Services Delivery Scotland) from April 2021)	29 May 2025
Caroline Lamb (Director General for Health and Social Care in the Scottish Government and Chief Executive of NHS Scotland from January 2021 to August 2026)	29 May 2025
Professor Madelynne Arden (Professor of Health Psychology, Sheffield Hallam University)	29 May 2025
Professor Richard Machin (Associate Professor in Social Policy, Nottingham Trent University)	30 May 2025
Professor Deenan Pillay (Emeritus Professor of Virology at University College London and Consultant Medical Virologist at University College London Hospital from about 2007 to October 2022)	30 May 2025

A1.23. The honours and titles accorded to individuals above are those that had been awarded by the time they gave evidence to the Inquiry.

Criticisms

A1.24. Rule 13(3) of the Inquiry Rules 2006 prevents the inclusion of any "*explicit or significant criticism of a person*" in this Report unless a warning letter has been sent and the relevant person has been given a reasonable opportunity to respond.[22] Warning letters were issued to persons identified in accordance with rule 13 and also with the Inquiry's Protocol on Warning Letters.[23] The Chair considered the responses to those letters before finalising this Report.

The Inquiry team

A1.25. The Chair was greatly assisted in Module 7 by the Inquiry team of counsel, solicitors, paralegals and other members of the secretariat.

22 The Inquiry Rules 2006, rule 13(3) (https://www.legislation.gov.uk/uksi/2006/1838/article/13/made)
23 'Inquiry Protocol on Warning Letters', UK Covid-19 Inquiry, 21 February 2025 (https://covid19.public-inquiry.uk/documents/inquiry-protocol-on-warning-letters)

Table 6: Module 7 Counsel team

Role	Name
Lead Counsel	Sophie Cartwright KC
Junior Counsel	Ramya Nagesh Amelia Nice Priya Malhotra Yasmin Omotosho Zeenat Islam

Terminology and references

A1.26. The nature of the subject matter means that the evidence considered by the Inquiry contains technical and specialist language, which the Inquiry has tried to minimise in this Report. A number of witnesses and documents also used a range of abbreviations and acronyms. To avoid any confusion and to assist the reader, the Inquiry has set out names and other key phrases in full in this Report. A detailed glossary is also included at Appendix 2.

A1.27. Some terminology that is particularly key to understanding this Report is listed below for ease of reference.

Key terminology

A1.28. The virus that causes the coronavirus disease known as Covid-19 is SARS-CoV-2. However, where this specificity is not necessary, in accordance with the practice of the World Health Organization, the Inquiry uses 'Covid-19' to refer to both the virus and the disease.

A1.29. Although the first Covid-19 patients in the UK were announced on 31 January 2020 and the outbreak was not characterised by the World Health Organization as a pandemic until 11 March 2020, for clarity this Report refers to the time period beginning with the arrival of Covid-19 in the UK as the 'Covid-19 pandemic'.

A1.30. The Covid-19 pandemic required action by both the UK government and the devolved administrations. Wales, Scotland and Northern Ireland each have a legislature and executive elected by their own electorates (referred to in this Report as the 'devolved administrations'). Although each devolution settlement is different, each administration is responsible for a range of matters, including health, education and transport. England has no legislature of its own – instead, the UK Parliament legislates on both UK-wide, 'reserved' (ie not devolved) issues such as defence and foreign affairs and legislates for England on issues devolved to other nations. The UK Parliament also, at times, legislates for other groupings – for example, in England and Wales on issues of justice.

A1.31. The UK government is responsible for all aspects of government policy in England. At the time of the pandemic, the Department of Health and Social Care was responsible for policy on health and adult social care matters in England (and on a UK-wide basis for a few issues that are not otherwise devolved). Prior to January 2018, the Department of Health and Social Care was known as the Department of Health – for clarity, the department is referred to throughout this Report using its current name.

A1.32. 'The NHS' is the term used to refer collectively to the publicly funded healthcare systems in England, Scotland and Wales, comprising NHS England, NHS Scotland and the NHS in Wales (also known as NHS Wales). In Northern Ireland, the publicly funded healthcare system is Health and Social Care (Northern Ireland), with health and social care integrated under a single framework.

A1.33. Prior to the pandemic, responsibility for responding to public health challenges in Scotland was divided between a number of different bodies. As part of the Public Health Reform programme, Public Health Scotland was launched on 1 April 2020. It brought together three legacy bodies: NHS Health Scotland, Health Protection Scotland (formerly part of NHS National Services Scotland) and the Information Services Division (also formerly part of NHS National Services Scotland). As a result, at an early stage of the pandemic, all staff and functions of those legacy bodies transferred to Public Health Scotland, with limited exceptions (the Antimicrobial Resistance and Healthcare Associated Infection function and a number of corporate services staff from NHS Health Scotland which remained within NHS National Services Scotland). Accordingly, questions relating to the public health response in Scotland were directed to both Public Health Scotland and NHS National Services Scotland.

References

A1.34. References such as 'Alan McNally 15 May 2025 111/6-17' or 'INQ000587251_0077 para 5.5.4' in the footnotes of this Report relate to material that is available on the Inquiry's website.

A1.35. The transcripts of the Inquiry's hearings are referenced by person, hearing date and internal page and line numbers. For example, 'Alan McNally 15 May 2025 111/6-17' refers to the evidence of Professor Alan McNally on 15 May 2025, page 111, lines 6 to 17.

A1.36. Documentary evidence is referenced by the document's number and, where relevant, page and paragraph numbers. For example, 'INQ000587251_0077 para 5.5.4' refers to document INQ000587251, page 77, paragraph 5.5.4.

A1.37. Publicly available documents are listed in the footnotes with both their wider internet and Inquiry website links. For example:

Technical Report on the COVID-19 Pandemic in the UK, Department of Health and Social Care, 1 December 2022, p49 (https://assets.publishing.service.gov.uk/media/63bd35b78fa8f55e3ac750c4/Technical-report-on-the-COVID-19-pandemic-in-the-UK-PRINT.pdf; INQ000101642)

Appendix 2: Glossary

Term	Description
Advisory Committee on Dangerous Pathogens	A scientific advisory committee of the Department of Health and Social Care. Its work includes providing the UK government with independent scientific advice on the risks of exposure to pathogens.
Airborne transmission	Transmission of a pathogen occurring across short or long distances through the air from very small virus-containing particles produced by an infected individual.
Antibody	A component of the immune system that is produced after infection or vaccination with a pathogen and which identifies and helps to neutralise future infections from the same pathogen.
Antibody (or serology) test	Detects antibodies to SARS-CoV-2 virus from a current or previous infection by means of a blood test.
Antigen	A foreign substance which induces an immune response in the body, especially the production of antibodies. Antigens are unique to each pathogen. In this case, the foreign object is the spike protein found on the surface of the SARS-CoV-2 virus.
Antigen test	Detects viral material indicating a current infection. Tests for Covid-19 detect whether viral antigens found on the surface of SARS-CoV-2 are present in a sample.
Application programming interface (API)	A set of rules or protocols that enable software applications to communicate with each other to exchange data, features and functionality.
Assay	The analytical procedure used to qualitatively assess or quantitatively measure the presence or amount of the target entity.
Asymptomatic	Having an infection but not showing any symptoms.
Asymptomatic community testing	Mass testing of individuals within a community with no symptoms or those not showing or producing recognised symptoms.
Asymptomatic testing	The testing of individuals with no symptoms or those not showing or producing recognised symptoms.
Behavioural science	The scientific study of human and animal behaviour, including disciplines such as psychology, anthropology and sociology.
Cabinet	A team of the most senior government ministers who are chosen to lead on specific policy areas.
Cabinet Office	A ministerial UK government department, supported by 29 agencies and public bodies. Its role is to support the Prime Minister, ensure the effective running of government and take the lead in certain critical policy areas.
Centralised model	A system where contact data collected by an app are stored on a central server.

Term	Description
Chief Medical Officer	A qualified medical practitioner, the most senior government adviser on health matters, and the professional head of all directors of public health in local government and the medical profession in government. There is a separate Chief Medical Officer for England, Wales, Scotland and Northern Ireland. The Chief Medical Officer for England is the UK government's chief medical adviser.
Chief Scientific Advisers	Senior science advisers, working in most government departments, who provide oversight and assurance of science capability and activities.
Clinically extremely vulnerable	People identified by the UK government in March 2020 as having medical conditions that meant they were particularly likely to develop severe illness or to die from Covid-19 infection.
Clinically vulnerable	People identified by the UK government in March 2020 as having medical conditions that might make them likely to develop severe illness from Covid-19 infection, although not with the same predictability or to the same extent as the clinically extremely vulnerable.
Close contact	A person who was within two metres of an infected person for at least 15 minutes, or within one metre for a shorter period of time, within a specified window of time.
COBR	The UK government's national crisis management centre for responding to whole-system civil emergencies. It provides the coordination mechanism through which the UK government responds to emergencies that require urgent decision-making. Its name was originally derived from its location in the Cabinet Office Briefing Rooms.
Community transmission	When a disease is spreading in the community and the specific source is unknown (for instance, where it cannot be linked to a traveller from abroad).
Contact (see also close contact)	A person who has been within a specified distance of someone who has tested positive for an infection and so is at increased risk of having contracted that infection. The particular distance is dependent on the type of infection.

Term	Description
Contact tracing	Identifying the source and contacts linked to a confirmed case of an infectious disease. A public health measure to contain the spread of an infection. This includes: • manual contact tracing – the use of trained human contact tracers to speak with infected people to identify their contacts; • digital contact tracing – the use of a digital tool, such as a mobile phone application (app), to trace contacts; • backward contact tracing – seeking to identify the original source of an infection by identifying the activities and interactions of an infected person around the time they are likely to have been infected; and • forward contact tracing – identifying the contacts of an infected person whom they are likely to have infected.
Containment level	Biological agents are categorised based on how hazardous they are to people and the environment. Laboratories which handle biological agents must meet minimum safety requirements to work with them. Different containment levels require different levels of safety and control.
Coronaviruses	A family of viruses that cause respiratory illnesses in people.
Covid-19	The disease caused by the coronavirus SARS-CoV-2.
Covid-19 Advisory Group	A group of experts that provided the Scottish Government with scientific and technical advice on the Covid-19 response.
Covid-19 Bereaved Families for Justice Cymru	A group dedicated to campaigning for and giving a voice to those bereaved by Covid-19 in Wales.
Covid-19 Bereaved Families for Justice UK	A UK-wide campaign group representing the interests of bereaved family members of individuals who died from Covid-19.
Covid-19 Operations Committee (Covid-O)	A Cabinet sub-committee that met from May 2020 to drive the policy and operational aspects of the Covid-19 response.
COVID-19 Rapid Survey of Adherence to Interventions and Responses (CORSAIR)	A study carried out to investigate rates of adherence to the UK's test, trace and isolate system between 2 March 2020 and 5 August 2020.
Dashboard	A visual display of data.
Decentralised model	A system where data collected by an app are stored on the individual users' devices rather than on a central server.

Term	Description
Department of Health and Social Care	A ministerial UK government department with overall responsibility for health and care services. It sets strategy, funds and oversees the health and care system in England, with equivalent counterparts in the devolved nations. Known prior to January 2018 as the Department of Health – for clarity, the department is referred to throughout this Report using its current name.
Department of Health (Northern Ireland)	A devolved government department in the Northern Ireland Executive with a statutory responsibility to promote the physical and mental health and social wellbeing of people in Northern Ireland. Also responsible for the prevention, diagnosis and treatment of illness.
Devolved administrations	The governments of Scotland, Wales and Northern Ireland.
Devolved nations	Scotland, Wales and Northern Ireland.
Diagnostic test	A test that can confirm if someone has a disease.
Directors of public health	In England, specialists employed by every local authority with public health responsibilities. They have primary responsibility for the health of their communities and are accountable for the delivery of their authority's public health duties. In Scotland and Wales, they are employed by NHS health boards. In Northern Ireland, there is one Director of Public Health who is accountable to the Chief Medical Officer.
Disability	A physical or mental impairment which has a substantial and long-term adverse effect on a person's ability to carry out normal day-to-day activities.
DNA (deoxyribonucleic acid)	A molecule that carries genetic instructions for the growth and functioning of all known organisms and many viruses.
Ebola	Can refer to the Ebola virus or the disease it causes. The virus is transmitted from animals (such as bats or non-human primates) to people, and can spread from person to person through bodily fluids. It causes a severe and often fatal haemorrhagic fever.
Effectiveness	When discussing public health interventions such as test, trace and isolate measures, effectiveness refers to how well the intervention achieves the intended effect of reduced viral transmission and controlling outbreaks. It takes into account factors such as public compliance, test availability and accuracy, and communication barriers.
Emergency preparedness groups	Multi-agency groups in Northern Ireland set up to ensure appropriate preparedness to enable an effective response to emergencies.
Epidemic	A sudden increase in incidence of a disease that is higher than expected in a geographical region.

Term	Description
Epidemiology	The study of the distribution, patterns and determinants of health and disease conditions in a defined population.
Ethnic minorities	All ethnic groups except the White British group (ethnic minorities include White minorities, such as Gypsy, Roma and Traveller groups).
The Executive Office Northern Ireland	A devolved Northern Ireland government department in the Northern Ireland Executive with principal policy responsibility for civil contingencies matters. The ministers with overall responsibility for the department are the First Minister and deputy First Minister.
Exercise Alice	A February 2016 exercise to assess the challenges of a large-scale outbreak of Middle East respiratory syndrome coronavirus (MERS-CoV) in England.
Exercise Cygnus	An October 2016 exercise assessing the UK's preparedness and response to a pandemic influenza outbreak.
Federated server	A server that acts as a central coordinator for multiple different sources (such as websites or mobile phone applications) without storing the data centrally. It was used by the contact tracing apps of the different UK nations to ensure interoperability.
First Minister, Northern Ireland Executive	Joint chair (with the deputy First Minister) of the Northern Ireland Executive. All statutory functions assigned to the First Minister (and deputy First Minister) by the Northern Ireland Act 1998 must be exercised jointly.
First Minister of Scotland	Head of the Scottish Government, responsible for the overall development, implementation and presentation of the administration's policies and for promoting and representing Scotland at home and overseas.
First Minister of Wales	Head of the Welsh Government, responsible for the overall development and coordination of Welsh Government policy.
Fixed penalty notice	A fine issued for certain offences, allowing the recipient to avoid prosecution by paying a set amount. Also known colloquially as an 'on the spot' fine.
Four governments	The four governments of the UK: the UK government, Scottish Government, Welsh Government and Northern Ireland Executive.
Four nations	The four nations of the UK: England, Scotland, Wales and Northern Ireland.
Government Chief Scientific Adviser	The Government Chief Scientific Adviser is responsible for providing scientific advice to the Prime Minister and members of the Cabinet, advising the government on aspects of policy on science and technology, and ensuring and improving the quality and use of scientific evidence and advice in government.

Term	Description
Health and Social Care (Northern Ireland)	The publicly funded healthcare system in Northern Ireland, with health and social care integrated under a single framework.
Healthcare systems	The system of healthcare in each of the four nations of the UK, comprising the NHS in England, the NHS in Wales (NHS Wales), NHS Scotland, and Health and Social Care (Northern Ireland).
Health protection teams	A part of the UK Health Security Agency. They consist of professionally qualified consultants in health protection who provide specialist public health advice and operational support to the NHS, local authorities and other agencies.
HM Treasury	A ministerial UK government department that acts as the economic and finance ministry, maintaining control over public spending and setting the direction of UK economic policy.
Home Office	A UK government department, supported by 30 agencies and public bodies. The lead government department for immigration and passports, drugs policy, crime, counter-terrorism and police.
Immunity	The ability to defend the body from a pathogen's infection. Acquired immunity describes how the body builds immunological memory – so that if the person is exposed to the same infection again, the body's response is enhanced. This is the basis for immunisation with vaccines.
Impact assessment (eg equality, children's rights)	A process of assessment designed to ensure that the most significant risks are identified and taken into account when making decisions.
Incidence	The number of new cases of a disease in a population during a particular time period. Calculating incidence rates can indicate how quickly an infectious disease is occurring in a population.
Influenza (flu)	A viral respiratory infection that infects humans globally and several other host species. Causes both seasonal endemic waves of infection and, when new strains emerge against which the population has less immunity, causes more severe epidemics or pandemics.
Interventions	Any activity undertaken with the objective of improving human health by preventing disease, by curing or reducing the severity or duration of an existing disease, or by restoring function lost through disease or injury.
Key worker	Someone whose work was critical to the Covid-19 response. This was relevant to testing eligibility and the ability of the children of such workers to attend early years and education settings during school closures.
Lateral flow test (LFT)	A type of molecular test to detect an active infection. These tests do not require processing in a laboratory and results are available within minutes.

Term	Description
Lighthouse laboratories	A nationwide network of laboratories set up by the UK government that specifically focused on Covid-19 testing for NHS Test and Trace.
Local authority	An administrative body in local government that provides public services in a local area.
Local Government Association	A national membership body for local authorities in England and Wales.
Lockdown	A mandatory stay-at-home order, a legal prohibition placing blanket restrictions on the whole population (apart from specified activities) for the purpose of limiting the spread of a disease.
Loop-mediated isothermal amplification (LAMP) testing	A scientific technique to detect and increase the amount of viral genetic material – DNA. Equipment using LAMP technology can be sited near to the person being tested and can give results in minutes instead of having to send samples for laboratory processing.
Mass testing	Using tests in a large number of asymptomatic people to detect those who are infected.
Medicines and Healthcare products Regulatory Agency (MHRA)	An executive agency of the Department of Health and Social Care. It regulates medicines, medical devices, including Covid-19 testing kits, and blood components used in transfusions in the UK. It decides whether to approve new medicines such as vaccines.
Middle East respiratory syndrome (MERS)	A serious illness caused by the Middle East respiratory virus (MERS-CoV), a coronavirus first identified in 2012 in Saudi Arabia. Largely zoological (camel to human transmission), limited human-to-human transmission has been noted.
Mitigation	A strategy aiming to use limited but effective interventions to delay and minimise the peak of waves of infections and to reduce their size. The goal is primarily to spread pressure on the healthcare system over a longer time period, while accepting that a similar number of people will become infected eventually.
Modelling	Statistical models are tools for analysing complex data, identifying patterns, and informing evidence-based decision-making where direct measurement is not possible. Figures from modelling are estimates only, and different statistical models will produce different outcomes. These estimates are not based on direct observations. They are therefore limited by the underlying assumptions used in the models and are subject to uncertainty.
Molecular test	A test that detects viral genetic material through PCR or RT-PCR or newer laboratory techniques.
Mortality rate	An expression of the number of deaths for a given cause divided by the whole population.

Term	Description
National Police Chiefs' Council	A national body made up of police leaders from around the UK. Its work includes developing national policing policy and linking police forces' operational responses to nationwide issues.
NHS	The term used to refer collectively to the publicly funded healthcare systems in England, Scotland and Wales, comprising the NHS in England, NHS Scotland and the NHS in Wales (also known as 'NHS Wales'). The publicly funded healthcare system in Northern Ireland is Health and Social Care (Northern Ireland).
NHS England	An executive non-departmental public body, sponsored by the Department of Health and Social Care, that currently leads and oversees the NHS in England. It is expected to be abolished as part of the Health Bill 2026.
NHS in Wales (NHS Wales)	The NHS in Wales is made up of local health boards, trusts (including Public Health Wales) and special health authorities (Health Education and Improvement Wales and Digital Health and Care Wales). The local health boards are responsible for planning, securing and delivering all healthcare services for the benefit of their resident population in a specific geographical area. The term 'NHS Wales' is commonly used to refer collectively to local health boards, trusts and special health authorities in Wales, although there is no central legal entity with this name.
NHS National Services Scotland	NHS Scotland's former national procurement service. From 1 April 2026, NHS National Services Scotland was merged with NHS Education for Scotland to form a new national organisation, Public Services Delivery Scotland.
NHS Scotland	The publicly funded healthcare system in Scotland, made up of geographical health boards and non-geographical special boards, and supported by NHS National Services Scotland (known from 1 April 2026 as Public Services Delivery Scotland) and Healthcare Improvement Scotland.
NHS Test and Trace	A service established on 28 May 2020, as part of the Department of Health and Social Care, to provide Covid-19 testing and contact tracing in England. Working with local authorities, it contacted people who had tested positive and their recent contacts to advise them to self-isolate, as well as provided telephone monitoring and support. It was dissolved on 22 February 2022.
NHSX	A unit of NHS England, NHS Improvement and the Department of Health and Social Care from early 2019 to early 2022, with responsibility for setting national policy and developing best practice for NHS technology, digital and data, including data-sharing and transparency.

Term	Description
Non-pharmaceutical interventions	Non-drug measures to limit the transmission of an infectious disease. These can be measures at the individual level, such as physical distancing, the use of face masks and coverings, and improved hygiene measures. They can also be measures to constrain activities, such as the closure of various premises, including sporting venues, pubs or shops.
Northern Ireland Covid-19 Bereaved Families for Justice	A branch of Covid-19 Bereaved Families for Justice UK. Represents bereaved relatives of individuals who died from Covid-19 in Northern Ireland.
Northern Ireland Executive	The Northern Ireland Executive is the administrative branch of the Northern Ireland Assembly, the devolved legislature for Northern Ireland. It is responsible for transferred matters, including enterprise, trade and investment, agriculture and rural development, education, health, policing and justice, environment and regional development.
Office for National Statistics	The UK's largest independent producer of official statistics and the recognised national statistical institute of the UK.
Outbreak	The occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area or season.
Pandemic	An epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people.
Pathogens	Infectious organisms, such as viruses, bacteria or parasites, that can produce a disease.
Polymerase chain reaction (PCR) test	A specialised laboratory method used to increase the amount of DNA (deoxyribonucleic acid) or RNA (ribonucleic acid) in a sample so that there is enough to test it. PCR tests are used to detect RNA in samples from people to see if the samples contain SARS-CoV-2 virus.
Prevalence	A measurement that expresses the proportion of people who have a disease at or during a given time period. Prevalence rates for disease are calculated by dividing the number of cases by the total number of people in the sample.
Prime Minister of the UK	The leader of the UK government, ultimately responsible for the policy and decisions of the UK government.
Public health	The science and art of preventing disease, prolonging life and promoting health through organised efforts of society.
Public Health Agency (Northern Ireland)	Established under the Health and Social Care (Reform) Act (Northern Ireland) 2009. Responsible for the improvement of health and social wellbeing, reducing health inequalities in Northern Ireland, health protection and service development.

Term	Description
Public Health England	An executive agency of the Department of Health and Social Care responsible for all aspects of public health, replaced by the UK Health Security Agency and Office for Health Improvement and Disparities in October 2021. It was responsible for all aspects of public health.
Public Health Scotland	Scotland's national public health body, working to prevent disease, prolong healthy life and promote health and wellbeing. Preceded prior to 1 April 2020 by Health Protection Scotland.
Public Health Wales	An NHS trust which aims to protect and improve health and wellbeing and reduce health inequalities in Wales.
Reproduction number, 'R number', 'R'	A measure of the reproductive rate of the virus: the average number of people that a single infected person passes a virus on to. Generally refers to R_t (RT): the average number of people that a single infected person passes the virus on to at a particular point in time, taking into account current levels of immunity and the extent of social mixing. May alternatively refer to R_0 (R0): the average number of people that one infected person would pass the virus to in a population with normal mixing behaviour and no prior immunity.
Reverse transcription loop-mediated isothermal amplification (RT-LAMP) testing	Similar to loop-mediated isothermal amplification (LAMP) testing. RT-LAMP is a scientific technique used to detect and increase the amount of viral genetic material – RNA – for testing.
Reverse transcription polymerase chain reaction (RT-PCR) test	Similar to polymerase chain reaction (PCR), RT-PCR is a molecular test. It detects RNA (ribonucleic acid) with high accuracy and detects infection.
RNA (ribonucleic acid)	A molecule with many biological functions, including carrying a genetic template encoded by DNA so that it can be used to make proteins. It is also used to encode genetic information itself in many viruses, including SARS-CoV-2.
Scientific Advisory Group for Emergencies (SAGE)	An advisory group convened to provide independent scientific advice to support decision-making in COBR in the event of a national emergency.
Scientific Pandemic Influenza Group on Modelling (SPI-M)	A sub-group of SAGE that provided expert advice to the UK government based on infectious disease modelling and epidemiology. (In 2022, it became the Scientific Pandemic Infections Group on Modelling.)
Scientific Pandemic Influenza Group on Modelling, Operational sub-group (SPI-M-O)	An operational sub-group of SAGE, set up during the 2009 to 2010 H1N1 influenza pandemic ('swine flu'), which was stood up again during the Covid-19 pandemic.

Term	Description
Scientific Pandemic Insights Group on Behaviours (SPI-B)	An expert group that provides independent, expert social and behavioural science advice to SAGE.
Scottish Covid Bereaved	A group representing bereaved relatives of individuals who died from Covid-19 in Scotland.
Scottish Government	The devolved administration for Scotland.
Secretary of State	A Cabinet Minister in charge of a UK government department.
Self-isolation	Staying at home and reducing contact with others because of a suspected or confirmed infection.
Sensitivity	The probability that a diagnostic test will show a positive result for a person with a disease.
Serology (or antibody) test	Detects antibodies to SARS-CoV-2 virus from a current or previous infection by means of a blood test.
Severe acute respiratory syndrome (SARS)	A serious disease caused by the coronavirus SARS-CoV-1.
Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)	The coronavirus that causes the disease known as Covid-19.
Shielding	An intervention introduced to support those who are clinically extremely vulnerable and therefore considered to be most at risk of serious illness from, for example, Covid-19.
Social distancing	Measures to reduce the contact people have with each other, which may include temporary restrictions on socialising in public places such as entertainment or sports events, reducing use of non-essential public transport, or recommending more home working.
Specificity	The probability that a diagnostic test will show a negative result for a person who does not have a disease.
Surge capacity	The ability of a healthcare system to manage and respond to unpredictable and sudden increases in demand for healthcare services.
Symptomatic	Experiencing symptoms as a result of an infection.
Test and Protect	Scotland's Covid-19 strategy for testing, tracing and isolation. Launched on 28 May 2020 and led by the Scottish Government in partnership with NHS Scotland health boards, Public Health Scotland and NHS Scotland. The scheme ended in April 2022.

Term	Description
Test, trace and isolate	Test, trace and isolate programmes identify infected people and their contacts so that they can be advised to self-isolate. Different models and names were adopted across the four nations: Test and Protect (Scotland); NHS Test and Trace (England); Test, Trace, Protect (Wales); and Test, Trace and Protect (Northern Ireland). The Inquiry has adopted 'test, trace and isolate' as shorthand for all of the models across the four nations.
Test, Trace and Protect	Northern Ireland's programme for testing, tracing and isolation during the Covid-19 pandemic. Led by the Department of Health (Northern Ireland) and the Public Health Agency (Northern Ireland). It was operational from 18 May 2020 and the programme was scaled back from late April 2022.
Test, Trace, Protect	The Welsh Government's strategy for testing, tracing and isolation during the Covid-19 pandemic. Launched by the Welsh Government on 1 June 2020 and delivered by partners including Public Health Wales. Operations were scaled back from February 2022 and routine contact tracing stopped at the end of June 2022.
Transmission	The process by which a pathogen, such as a virus, spreads from one infected person to another.
UK government	The central government for the UK, headed by the Prime Minister. The UK government is responsible for reserved and excepted policy matters across the UK.
UK Health Security Agency (UKHSA)	An executive agency, established in April 2021 and sponsored by the Department of Health and Social Care, responsible for public health protection and infectious disease capability.
Vaccination	Protecting individuals from a disease by treating them with a vaccine.
Vaccine	Vaccines train the immune system to recognise a pathogen and to produce antibodies to defend the body from it at the next encounter.
Variant	As a virus replicates, it can accumulate mutations. A version of the virus with these mutations is called a 'variant'. Mutations may facilitate transmission or impact the effectiveness of vaccines, treatments or immunity resulting from previous infection. Notable Covid-19 variants during the pandemic included Alpha, Delta and Omicron.
Virus	A parasitic infectious agent that replicates only inside the cells of an organism.

Term	Description
Vulnerable groups	Groups within the population who were particularly susceptible to Covid-19 or to decisions made by the UK government and devolved administrations to reduce transmission. They were categorised by the UK government as 'clinically vulnerable' or 'clinically extremely vulnerable'.
Welsh Government	The devolved administration for Wales.
Whole-system civil emergencies	The most complex civil emergencies, which require a cross-departmental approach by government to preparedness and response.
World Health Organization	A specialised agency of the United Nations responsible for international public health.

Appendix 3: List of recommendations

Chapter 2: Testing

Recommendation 1: Monitor testing capabilities and prepare plans for rapid scale-up of test processing

The UK government, Scottish Government, Welsh Government and the Northern Ireland Executive should compile information about the testing capabilities of academic, clinical and research laboratories, including the types of diagnostics they process and the equipment they use.

This information should be updated regularly and shared between the four governments of the UK.

Each government should also develop a plan, as part of their wider planning for pandemics, to enable the test processing capacity in these laboratories to be increased quickly in a public health emergency.

Chapter 3: Contact tracing

Recommendation 2: Manual contact tracing during a public health emergency

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should maintain the capability to deliver manual contact tracing using local public health expertise.

Each government should also prepare plans to scale up manual contact tracing during a public health emergency. Plans should include:

- a contact tracing model that incorporates local public health expertise;
- the recruitment of a trained and appropriately sized workforce; and
- a framework agreement for contact tracing services so that providers and staff can be engaged to deliver those services quickly.

Recommendation 3: Develop a digital contact tracing tool

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should develop a single digital tool to support forward and backward contact tracing across the UK in a public health emergency.

The tool should include:

- mechanisms to record contacts;
- mechanisms to receive automatic contact tracing notifications; and
- wider test, trace and isolate system features such as a symptom tracking feature.

The tool should be developed in consultation with regional, local, community and voluntary bodies to ensure that it is accessible. It should be regularly tested and updated.

Chapter 4: Isolation

Recommendation 4: Local support for self-isolation

Local resilience forums, regional resilience partnerships and emergency preparedness groups should, as part of the planning required by the Civil Contingencies Act 2004, prepare plans now for the scale-up of practical support for their community if self-isolation is required during a future pandemic.

Plans should be tailored to the needs of local communities, including groups that may face challenges in adhering to self-isolation measures.

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should review and monitor progress of the development of these local support plans, as well as monitor their delivery in a future pandemic.

Recommendation 5: Financial support to self-isolate

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should put in place financial support schemes for individuals complying with self-isolation rules during a pandemic.

The following principles should apply:

- There should be clear and straightforward guidance on eligibility criteria, application processes and payment arrangements for the support schemes.
- Information about the introduction of support schemes and how to access them should be communicated clearly and made available in accessible formats.
- Mechanisms should be in place to monitor the effectiveness of support schemes.

Plans should also be developed and maintained to enable these financial support schemes to be scaled up rapidly during a pandemic.

Chapter 5: Border control measures

Recommendation 6: A strategy for international border control measures during a pandemic

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should, in consultation with Border Force, produce a UK-wide strategy for the use of international border control measures during a future pandemic. This strategy should be informed by the experience of the Covid-19 pandemic, including international examples of good practice.

The strategy should include:

- an analysis of different border control measures and the scenarios in which they will be effective and proportionate;
- mechanisms to support early decision-making (including cooperation between the four nations of the UK) when border control measures may be required;
- mechanisms to support the early implementation of border control measures when they are required;
- plans for the enforcement of border control measures, including methods to support Border Force with enforcement; and
- plans for the effective communication of border control measures to the UK public and international travellers.

The strategy should ensure that the four nations are aligned on decisions about the measures that will be considered for deployment in different circumstances.

Chapter 6: Communications and data

Recommendation 7: Aligned test, trace and isolate communications

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should develop aligned communications to support adherence to test, trace and isolate measures to control disease spread in a public health emergency.

The four nations of the UK should coordinate as far as possible while considering any region-specific challenges or differences in approach to test, trace and isolate.

Communications should be informed by behavioural science principles and tested as part of UK-wide pandemic response exercises (as recommended in the Inquiry's Module 1 Report). The effectiveness of communications during a public health emergency should be monitored.

Recommendation 8: Improved data collection and evaluation of test, trace and isolate measures

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should collect robust data to monitor and evaluate test, trace and isolate measures introduced during a future pandemic.

Qualitative and quantitative data relating to test, trace and isolate measures should be collected on public awareness, adherence and the impact of those measures on the public.

The data collected should allow governments to assess differing impacts across groups to improve test, trace and isolate measures.

Data collection should be aligned as far as possible across the four nations of the UK and should be shared within and across governments.

Chapter 7: An effective future test, trace and isolate system

Recommendation 9: A new UK-wide test, trace and isolate system

The UK government, Scottish Government, Welsh Government and Northern Ireland Executive should work together to develop one system to find, test, trace, isolate and support cases of infection during a public health emergency.

The system should be accessible to all population groups and adaptable to account for a range of pathogen types and the different stages of response to a public health emergency. It should be developed in consultation with local authorities, health boards and trusts, as well as experts in modelling, behavioural science and public health.

This should form part of the civil emergency strategy recommended in the Inquiry's Module 1 Report and the system should be tested during UK-wide pandemic response exercises.

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