Behavioural Research UK

Official Sensitive

Changes in social context since and because of Covid-19 that may affect public responses to H5N1

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Executive Summary

This briefing paper aims to address the following question: How has the UK social context changed since and because of Covid-19, and what effects might this have on public responses to H5N1?

This could not be answered by a systematic review of peer-reviewed studies given the country specific context and the need to identify very recent changes. These are unlikely to be reflected in the academic literature given the gap between when research is conducted and publication. Instead, it involved a rapid search of the literature and relevant data and analysis, including unpublished findings from recent government commissioned surveys. Several key themes were identified, and the findings are summarised here.

Willingness to follow public health advice

Understanding the extent to which people in the UK would be willing or able to follow public health advice is important in terms of planning for health threats, including H5N1. Evidence from the Covid-19 pandemic suggests that presented with a threat to human health, there were high levels of adherence with public health and social measures as well as uptake of vaccines. This is supported by findings from self-reported surveys and observation and data on vaccine uptake. This persisted for an extended time and during periods of viral resurgence, but behaviour changed based on shifts in government guidance and regulations. Following the pandemic, surveys suggest the public are still willing to engage with measures to protect themselves and others from infectious diseases. However, they may have less tolerance for and be more likely to question any reintroduction of measures that were used during the pandemic. In terms of vaccination, there were high levels of uptake of the Covid-19 vaccine among eligible groups. This declined over time for the whole population, but there were inequalities in the uptake of these vaccines among some groups. Since the pandemic, there is evidence of declining trust in routine vaccination and more concern about adverse events arising from vaccination that need to be addressed.

Current risk perceptions of avian influenza

Public awareness of risk and concern about avian influenza is currently low. However, wider evidence suggests that risk perceptions and compliance with public health guidance across all groups would increase if there were an immediate threat and accompanying messaging regarding this, as was the case for both swine flu in 2009 and Covid-19 in 2020.

Trust in government and relevant sources of public health advice

The importance of who or what conveys advice and whether the source is trusted is a well-established factor in health and risk communication. Trust in the UK government and politicians declined during the Covid-19 pandemic and has further declined since – in the more recent period likely due to other factors. There is inconsistent evidence to suggest that trust in government directly affected levels of compliance with public health guidelines during the pandemic. Trust in scientists/academics and in particular health

care workers has historically been high and remained so (for the most part) during the pandemic. Ensuring that evidence and advice in any future health emergency is communicated by scientists and health professionals is a key recommendation.

Wider changes in the social context

We identified at least four important changes in the UK social context during and since the Covid-19 pandemic that may be relevant to how the public responds to H5N1 or other pathogens. There may be other changes that we have not addressed due to the limited time for this review. These are summarised below.

NHS waiting times

Waiting lists for hospital treatment across the UK already exceeded capacity prior to the pandemic. They increased during it and continue to rise. Future health threats are likely to place additional demands on an already strained health service (including primary care) - posing substantial challenges for health protection. The public may also be less willing to access care for non-H5N1 related issues in such a context, compounding the existing impact of delays in obtaining care. Despite high levels of continuing trust in the NHS, ensuring accurate messaging regarding risk and emphasising that other conditions can still be diagnosed and treated will be important.

Cost of living

In 2021/22 there was a sharp increase in the proportion of households who reported that they were managing less well financially due to sharp rises in energy and food prices. This has exacerbated already existing levels of poverty and inequality and means we have a less resilient population should substantial new risks to human health emerge in the immediate future. This may mean that groups with fewer resources would be less able to comply with public health guidelines if they posed threats to household income. Targeting support (including but not limited to financial support) in these circumstances will be important.

Adaptive purchasing

We should anticipate over-purchasing or stock piling of essential items when the public perceives disruption to supplies. The increased use of online purchasing in recent years could be a facilitator to compliance with public health and social measures if stay at home or distancing guidelines were re-introduced, although inequalities still exist in access to and use of this type of purchasing.

Working from home and use of digital technology

Increased use of digital technology among many (but not all) groups has facilitated working from home for those who have adequate access to resources and suitable housing. This has been supported by employers and is a substantial shift observed in recent years, accelerated during the Covid-19 pandemic. Telephone or online health care appointments are also increasingly available. These changes could be facilitators to compliance with public health advice or regulations in future.

Background

H5N1 is one of many influenza viruses that cause a highly infectious respiratory disease in birds, called avian influenza (or 'bird flu') (World Health Organisation [WHO], 2024). Avian influenza has been spreading in wild birds and is causing outbreaks in poultry and dairy cows in the United States (US) (Centers for Disease Control and Prevention [CDC], 2024). The infection of the virus in humans has been documented, with several cases among US dairy workers.

While the current public health risk of H5N1 is low (CDC, 2024), the developing situation on the spread of the virus in the US could potentially result in virus spillover to humans across populations locally and globally. How the public would respond to measures to prevent and control the spread of H5N1 in humans is not well understood, particularly if these measures need to be applied beyond agricultural settings.

Adherence to public health advice during health emergency situations requires behaviour change or adapting to circumstances for many individuals, groups, and organisations. Behaviour is shaped by context, and how people respond to requests or requirements to change behaviour varies across time and settings. An important question, therefore, is how the Covid-19 pandemic could influence how people in the UK respond to a new health emergency. A limited time has passed since the Covid-19 pandemic. It is likely that how people experienced the pandemic and their views on public health measures taken to address it could influence their willingness or ability to change behaviour should other similar threats occur. Levels of trust in government and adherence to public health guidelines changed during the pandemic (Newton, 2020; Nielsen et al., 2020), and the legacy of these changes may be relevant in the current context.

Other developments since the pandemic could also influence behaviour. For example, concerns about accessing healthcare in the context of long waiting times in the NHS (Nehme et al., 2022; Rathnayake et al., 2021) or the cost of living crisis that has further exacerbated inequalities (Blundell et al., 2022).

Identifying how changes in the UK social context may affect public responses to a health emergency related to H5N1 (or another pathogen) is not something that is easy to assess from the peer-reviewed academic literature. Instead, evidence from a range of types of data and publications is required.

Aim

To synthesise evidence from a range of recent datasets, studies, and reports to describe changes in the social context in the UK since the Covid-19 pandemic, and how those changes may affect public responses to a potential health emergency related to H5N1.

Methods

This review employed a rapid search of the literature and relevant data and analysis.

Literature and data search

Between the 30 May and 21 June 2024, we identified a set of documents for inclusion in this briefing paper through systematic online searches and consultation with colleagues, including in the UK and Scottish Governments.

The primary focus was on data and findings relating to knowledge, attitudes, beliefs, and behaviours among people in the UK, and how these may have changed during and since the Covid-19 pandemic. We were particularly interested in trust in government and public health advice; willingness to engage with public health measures; and any relevant data on risk perceptions relating to avian influenza.

Surveys with a representative sample of the UK adult population commissioned by the UK and Scottish governments from market research companies were identified and relevant findings were summarised. As reports from these recent surveys are not in the public domain, we include in Appendix 1 a description of the methods used for each.

We also searched for and reviewed publicly available data or reports on behaviour and significant developments during and since the Covid-19 pandemic that could affect responses to public health measures. Information regarding the methods used for each of these is in the relevant publications cited in our reference list.

Given the diversity of sources required to respond to this request and the time constraints required, we have not conducted a formal systematic review. Other relevant sources may exist that we are not aware of.

Analysis

Findings from relevant datasets and reports were thematically analysed and synthesised using a priori categories (i.e., analytical themes). These themes were further categorised into overarching or descriptive themes. The study team met regularly throughout this process and discussed the briefing paper as it developed, refining the structure and interpretation of the data and reports.

Findings

The following sections present a synthesis of findings organised around the following themes.

- Willingness to follow public health advice
    - Public health and social measures
    - Vaccination
- Current risk perceptions of avian influenza
- Trust in government and relevant sources of public health advice
- Wider changes in the social context that could affect public responses to health emergencies
    - NHS waiting times
    - Cost of living crisis
    - Adaptive purchasing

- Working from home and use of digital technology

Willingness to follow public health advice

This section reflects on what we know from data and studies conducted during and after the Covid-19 pandemic regarding the UK public's willingness to follow public health advice. This is organised into two categories: public health and social measures; and vaccination.

Public health and social measures

Many public health measures were introduced during the COVID-19 pandemic. These include non-pharmaceutical interventions (NPIs) - those that do not rely on vaccines or medicines. These include, for example, physical distancing, self-isolation, stay-at-home measures, mask-wearing, and respiratory and hand hygiene. An alternative term to NPIs is 'public health and social measures' (Department of Health & Social Care 2023), which is the term we use here.

During the pandemic, governments and agencies asked the public to engage with a range of measures (as legally enforceable regulations or guidelines) at different stages between 2020 and 2022. These measures were intended to promote 'protective behaviours' that would reduce transmission and disease. A wide range of studies have examined the extent to which people reported engaging in these protective behaviours (Potts, 2021; Simpson et al., 2020). Two of the most regular and comprehensive were CORSAIR study (Smith, Potts, et al., 2020) and the Covid Social Study (Fancourt et al., 2022). The former was commissioned by the Department of Health and Social Care, with analyses conducted by researchers at King's College London, University College London, and UKHSA (then Public Health England). Data were collected between January 2020 and April 2022 with 73 waves of data collection and approximately 149,000 responses. The latter was conducted by researchers at University College London between March 2020 and April 2022, involving over 70,000 adults from across the UK.

Both CORSAIR and the Covid Social Study found that there were high levels of self-reported compliance with rules or guidelines to address Covid-19 during the pandemic. This was particularly the case in the early months of the pandemic, but it remained high throughout the periods that these measures were in place (see, for example, Figure 1, overleaf). During periods when urgency was communicated (at the start of the pandemic or when measures were re-introduced due to the threat posed by a new variant, for example), levels of compliance increased.

Some groups reported higher levels of compliance, but this varied at different stages in the pandemic. Initially, higher socio-economic groups were more likely to report complete or majority compliance – likely reflecting circumstances of privilege (ability to work from home, access to technology, social support networks and other factors). But these more affluent groups became less compliant over time (Fancourt et al., 2022). People living with children or those living in cities or crowded conditions were less likely to comply. Women reported slightly higher levels of compliance throughout the period than men, but there was little difference by ethnicity.

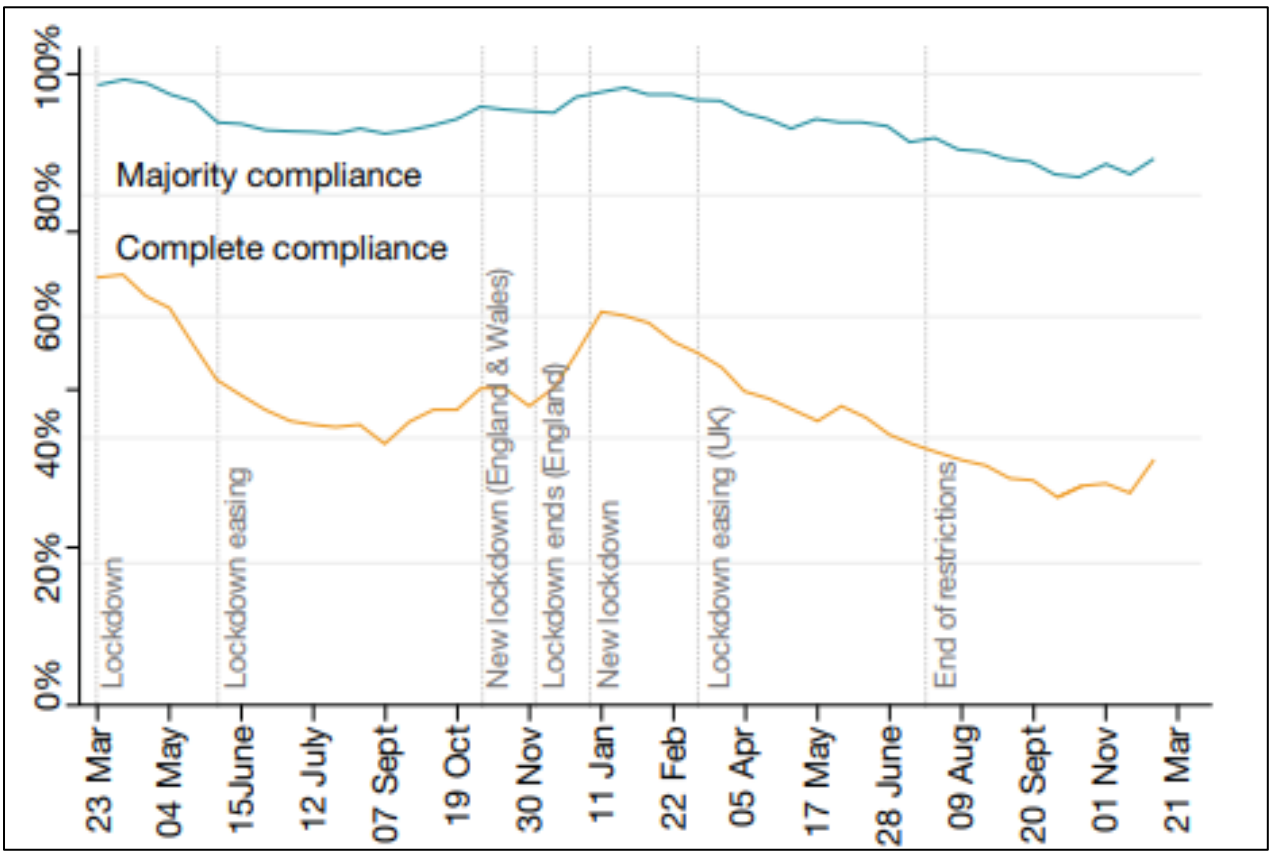


Figure 1. Compliance with guidelines during the Covid-19 pandemic (Source: Fancourt et al., 2022)

Although the Covid Social Study relied on self-report from a broadly self-selected sample, other studies with different methods found broadly similar results. For example, Savanta's Covid-19 daily tracker during 2020 (n=2000) found that 80% adhered to pandemic-related government guidelines and were supportive of public health and social measures (Dailly, 2020b). During the first and second Covid-19 pandemic lockdowns, adherence to wearing masks was high (82-95%, n=2992) compared to other protective behaviours (e.g. regular hand washing, social distancing, and carrying own disinfectant) (Kale et al., 2022). Studies that asked people why they were motivated to follow guidelines identified common features in relation to helping reduce mortality, keep vulnerable people safe, and to reduce demand on the NHS (Dailly, 2020b).

Changes in guidance during the pandemic had a measurable effect on behaviour, including in studies that relied not on self-report but on more objective approaches such as observation. For example, the CORSAIR team (Davies et al., 2023) examined the impact of "freedom day", when the UK government removed the legal requirement for the public to wear face coverings in enclosed spaces, public transport and shops on the 19th of July 2021. Observations (n=6605 people) in supermarkets and public transport settings found that protective behaviours reduced from pre-19th July to afterwards in

terms of: face covering behaviour (70.2% to 56%); physical distancing (40.9% to 29.5%); and hand-hygiene (4.4% to 3.9%).

While studies such as CORSAIR and the Covid Social Study have not continued to date, other sources of data shed light on the period following the pandemic and public willingness to follow public health advice at the current time. The Scottish Government regularly commissions YouGov (https://yougov.co.uk/) to conduct polling among a representative sample of the public; this work began during the pandemic and continues (Public Insight Monitor, see Appendix 1). In mid-January 2023 a question was included about action people were willing to take to help the spread of viruses over the winter period (any viruses - between January and March 2023). As Figure 2 below shows, there was majority support for respiratory hygiene practices (covering mouth when coughing/sneezing, hand washing), staying at home when unwell and keeping up with Covid-19 vaccinations, but lower levels of reported intentions with other actions, i.e., mask wearing and meeting outdoors.

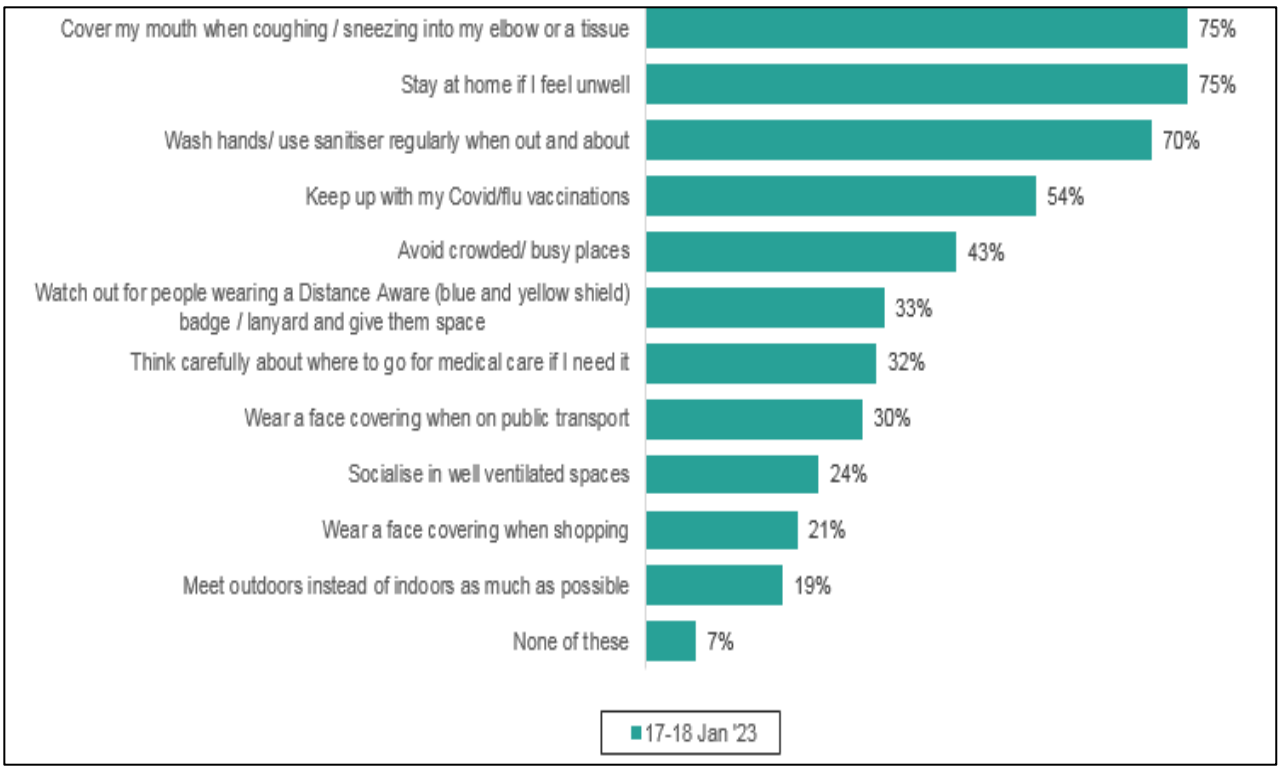


Figure 2. Actions that people in Scotland are likely to do, or do more, to help stop the spread of viruses (Source: Scottish Government, 2023)

A further question added in February and March 2023 to Scottish Government-commissioned polling to ask to what extent people agreed that they would 'take precautions to protect myself and others from COVID-19 and other viruses. Figure 3 overleaf illustrates that just over half agreed, but one in five disagreed, with some differences between groups.

The UKHSA also commissions regular polling through their Public Perceptions Tracker (August 2022 to present), surveying a representative sample of English adults (see Appendix 1 for methods).

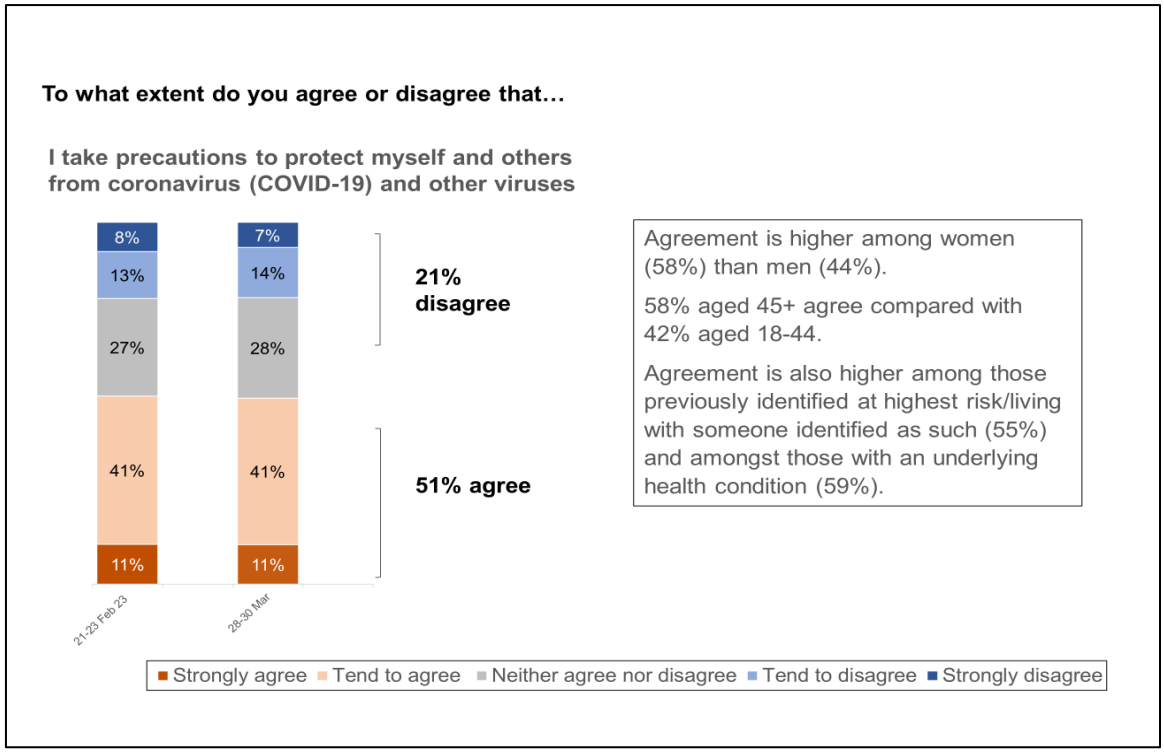


Figure 3. Agreement /disagreement that precautions are taken to protect oneself or others from coronavirus or other viruses, February and March 2023 (Source: Scottish Government, 2023)

During a similar period (March 2023), UKHSA asked questions assessing public willingness to follow advice or guidelines if measures introduced during the pandemic were needed again (UKHSA, 2024). Two scenarios were provided.

- Scenario 1: A new, more severe variant of Covid-19 emerges, leading to a significant increase in hospitalisation and deaths
- Scenario 2: Cases rise significantly for the current Covid-19 variant

For Scenario 1, around half of the respondents supported the reintroduction of public health measures such as ‘lockdown’; free lateral flow testing; and mask wearing in clinical settings, and on public transport (Figure 4, next page). Around 40% supported mandatory isolation for Covid-19 cases. What is perhaps most notable, however, is that a similar proportion of respondents (38.5%) chose the option ‘should not introduce any measures to control spread’ if a new or more severe variant of Covid-19 emerged.

For Scenario 2, - cases rising significantly from the current Covid variant - around 40% supported mask wearing in clinical, public transportation, and hospitality settings; free lateral flow testing for all; and mandatory isolation for cases. Only 10% supported the reintroduction of ‘lockdown’.

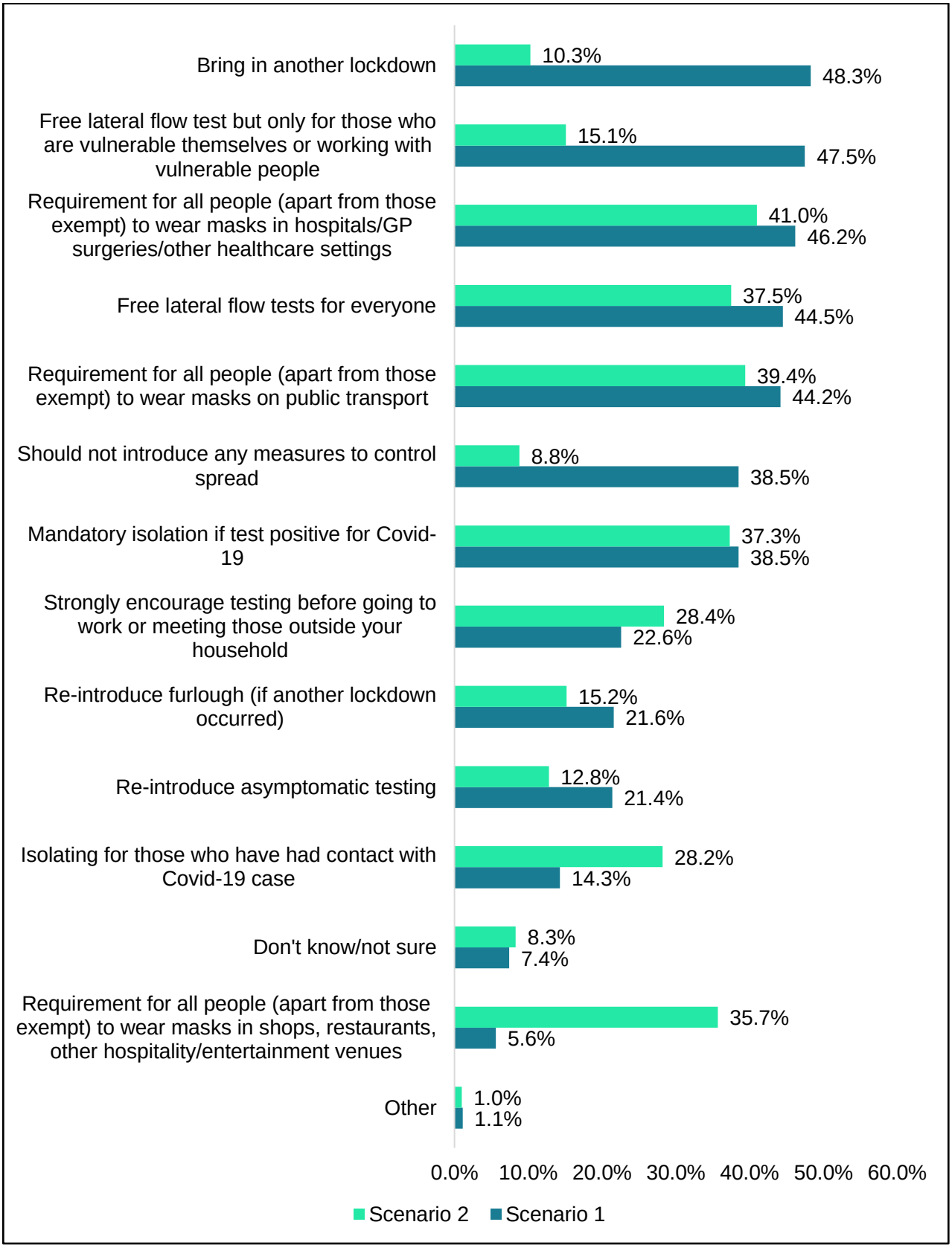


Figure 4. Public support for the reintroduction of measures to address Covid-19, February and March 2023 (Source: UKHSA, 2024)

Using the same scenarios, the respondents were also asked about their willingness to follow public health and social measures such as wearing of face masks, re/installation of Covid-19 app, testing, self-isolation, and lockdown (Figure 5).

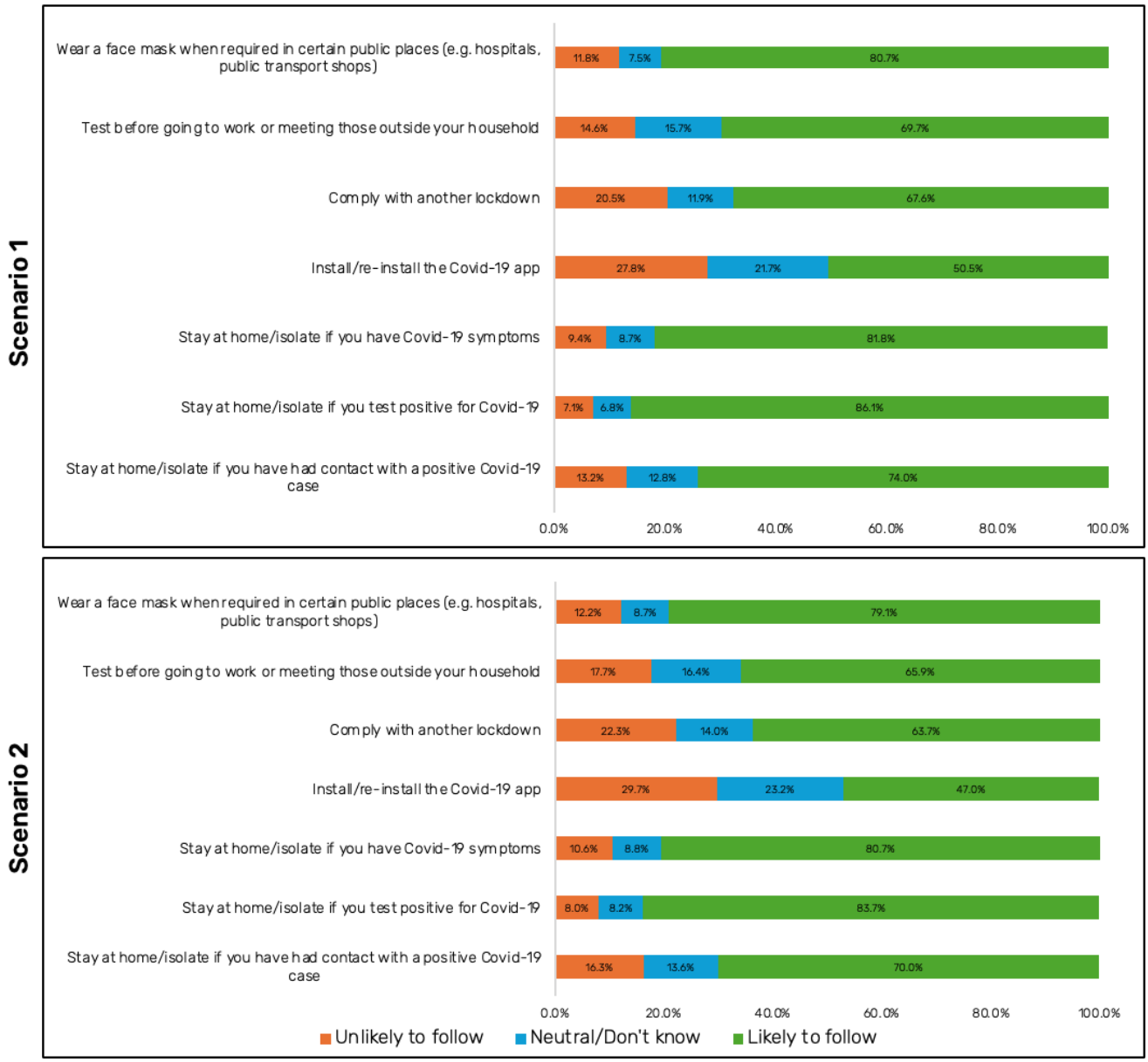


Figure 5. Public's willingness to follow most common public health measures for Covid-19. Percentages reported are net scores for 'unlikely to follow' and 'likely to follow' (Source: UKHSA, 2024)

For Scenario 1 between 50-86% of the respondents reported that they are likely to follow public health guidelines (68% would comply with another lockdown). Similar level of willingness was seen for Scenario 2, with 47-84% of respondents suggest that they are likely to follow the proposed measures (64% comply with another lockdown).

By way of comparison, Government polling in 28 to 30 March 2020 identified 93% support for a full 'lockdown' in the initial stages of the Covid-19 pandemic (UK Government Cabinet Office, 2023) with a similar level of support identified in other

surveys (IPSOS, 2020). There are likely to be multiple reasons for the difference in March 2020 support for 'lockdown' versus the lower support for the less stringent measures proposed in UKHSA polling should there be a significant increase in hospitalisations and deaths. These included increases in the perceived levels of immunity in the community and lower alarm at an escalation in an existing disease compared to the emergence of a novel threat (Rubin et al., 2024; Smith, Mottershaw, et al., 2020). Caution is also required in interpreting polling data on intended responses to hypothetical events. However, a change in attitude regarding the acceptability of stringent measures is also a plausible possibility and consistent with the data.

Vaccination

The pandemic also involved the development and large-scale delivery of Covid-19 vaccines. Public willingness to be vaccinated and uptake of the vaccines increased over the period. Regular polling of a representative sample of the UK adult population conducted YouGov (2021) found that between November 2020 and June 2022, the proportion of people who were willing or reported that they had already had at least one dose of a Covid-19 vaccine increased from 61% to 92%; with a steep increase between November 2020 and February 2021 during the initial introduction of Covid-19 vaccines (Figure 6).

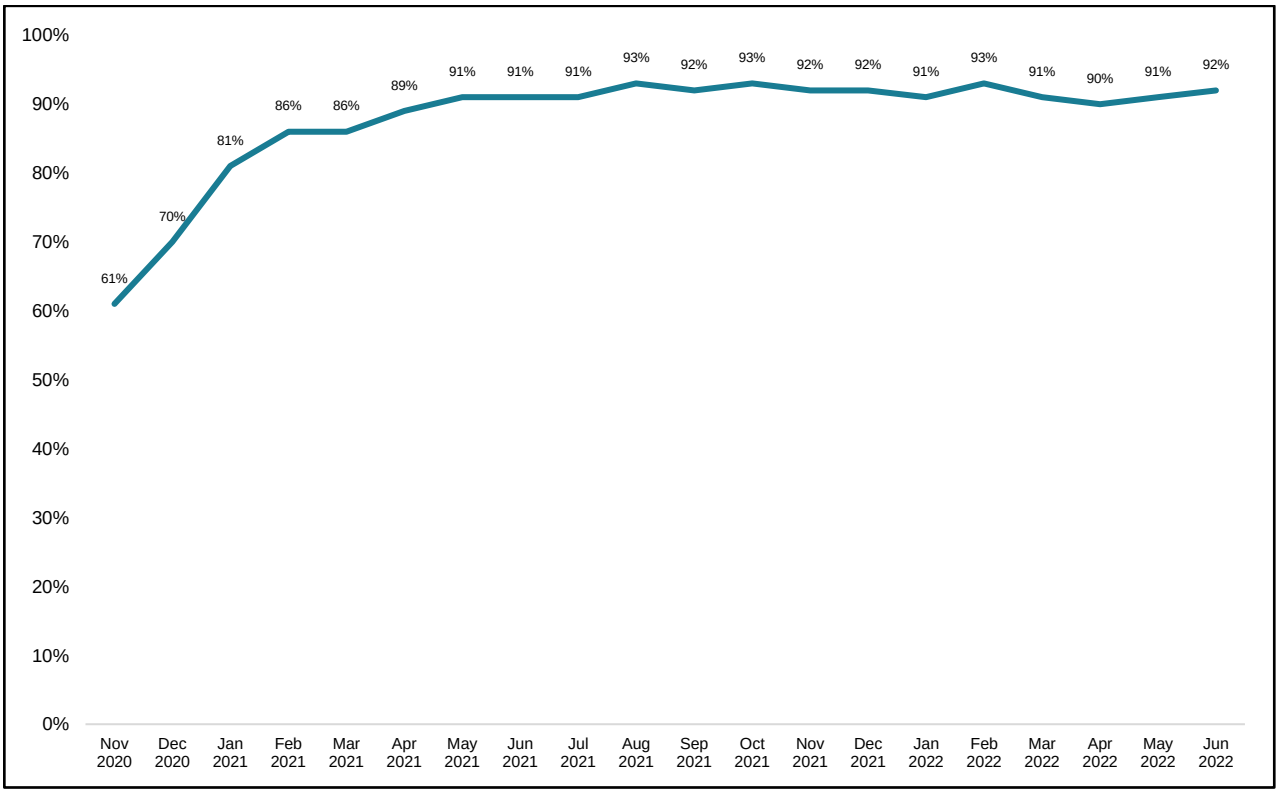


Figure 6. Proportion of people who say they will take the vaccine, or have already done so

However, there were well documented inequalities in vaccine uptake during the pandemic by age, ethnicity and deprivation (Nafilyan et al., 2021). For example, during the initial vaccine roll out, by early April 2021 in England, vaccine uptake ranged from 61.6% in Black Caribbean over-50s to 93.8% in White British over-50s (Race Disparity Unit, 2021).

These inequalities narrowed but were not completely resolved as the vaccine programme continued. These differences were not unique to Covid-19 although they were greater during the pandemic than for some other vaccination programmes.

Willingness to be vaccinated against Covid-19 has declined in some eligible groups as the booster programme has been rolled out. Table 1 includes results from Scottish Government polling between March 2022 and March 2023. This examines whether individuals have already had a fourth or fifth dose of a Covid-19 vaccine or are likely to take a further dose if offered. While the proportions remained fairly consistent over time among those aged 50+ (and 65+), there was a decline among some eligible groups, namely those aged 18-49 with an underlying health conditions and NHS or other frontline workers (although the small base sizes of these groups should be noted).

Had 4 (or 5) doses or haven't but likely to have a further dose (score of 8-10 out of 10:)	2022				2023		
	15-16 Mar	28-29 June	23-24 Aug	6-7 Dec	17-18 Jan	21–22 Feb	28–29 Mar
Among all	71%	70%	69%	70%	67%	66%	63%
Among those aged 65+	89%	87%	91%	91%	89%	89%	89%
Among those aged 50+	83%	81%	83%	83%	83%	80%	79%
Among those age 50-64	n/a	n/a	n/a	73%	71%	72%	69%
Among those aged 18-49 with an underlying health condition*	73%	84%	69%	70%	81%	65%	67%
Among NHS or other frontline workers*	68%	68%	62%	71%	67%	59%	54%

Table 1: Proportions who have already had 4 or 5 doses of a Covid-19 vaccine OR are highly likely to have a further dose if offered, Scotland March 2022-March 2023 (Source: Scottish Government, 2023)

The wider literature indicates that the pandemic may have had an adverse effect on public trust in vaccines and willingness to participate in vaccine programmes in general. Lazarus et al. (2024) argue that vaccine hesitancy, 'pandemic fatigue', and 'vaccine fatigue' had presented challenges in vaccine uptake in 2023. These factors have affected confidence in booster vaccines and other routine immunisation for vaccine-preventable diseases among children and adults in a range of countries (Grills & Wagner, 2023; Limbu & Gautam, 2023; United Nations Children's Fund [UNICEF], 2023).

One feature of concerns about vaccines that grew during the pandemic was fear of adverse events. A publicly available survey of a representative sample of the UK population conducted by YouGov comparing the period before, during and after the pandemic (between August 2019 and January 2024) suggested an increase in the proportion of people who believed that vaccines have undisclosed harmful effects (Figure 7). Although much lower than the proportion of people who believed that vaccines have no undisclosed harmful effects (45 to 49%), the proportion of individuals who believed they did have undisclosed harmful effects still increased between 2019 and 2024, from 19 to 29% (YouGov, 2024a).

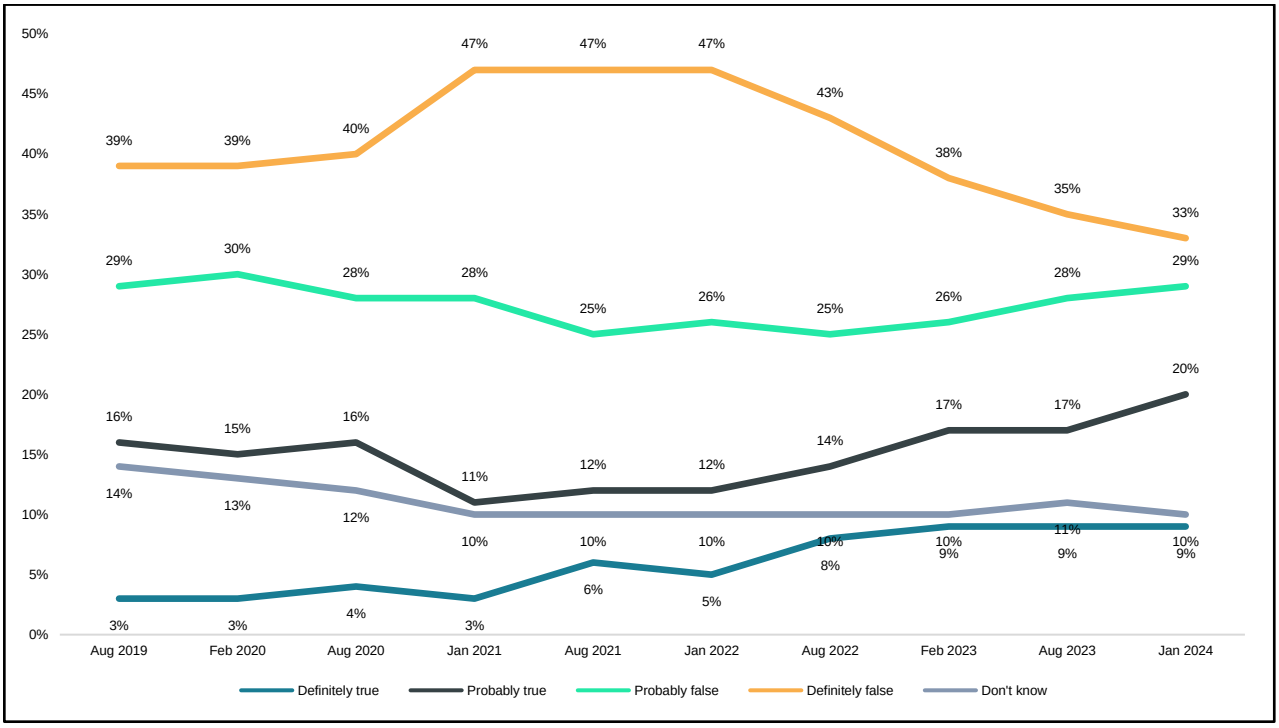


Figure 7. The proportion of people who believe or do not believe that vaccines have undisclosed harmful effects, between 2019 and 2024, adapted from YouGov (2024)

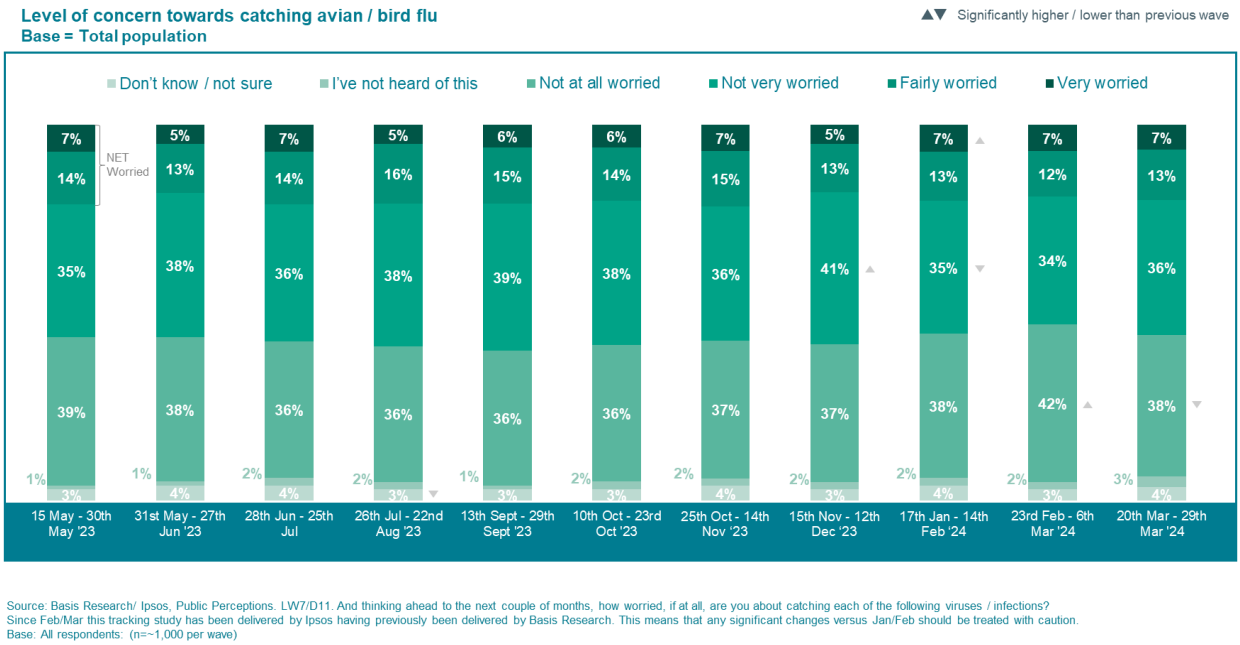
Similar results were identified by very recent unpublished research commissioned by the Scottish Government to inform vaccine strategy development from the research consortium JRS (see Appendix 1). Their qualitative study found that the pandemic had had 'a major impact on attitudes toward vaccines', eroding trust in the system pre-pandemic. Findings suggested that vaccination was now subject to a more conscious decision-making process than the pre-pandemic general acceptance. There was a greater need for information and reassurance around vaccines, particularly in relation to understanding the risks to them or family members and how the benefits outweighed any risks. The JRS research team identified a need for a tailored communication approach with pregnant women and parents, minority ethnic communities, and health and social care workers. In their subsequent polling of a representative sample of the Scottish population (n=1011) they found that only a small proportion of the public (6%) would completely reject the offer of any vaccine, but there was a larger proportion who were hesitant - 26% who ranked how they felt about vaccines in general from 4-7 on a scale of 10, with 10 being 'extremely positive' (JRS for Scottish Government, 2024). Among the hesitant, their recommendations about key groups to target for tailored communication campaigns are likely to be relevant across the UK.

Current risk perceptions of avian influenza

In addition to data on willingness to follow public health advice during and since the pandemic, we also obtained unpublished findings from the UK Health Security Agency regarding current perceptions of avian influenza as a source of public concern and how this differed between groups in the population (see Appendix 1 for methods). Findings on

risk perceptions regarding avian influenza are available from May 2023 with the latest data collected in March 2024. As a caveat, in each wave, around 1 in 100 respondents (1%) report having had ‘bird flu’ in the last two months, although this is not an unusual proportion in terms of poor public understanding of an issue or lack of attention to a survey question.

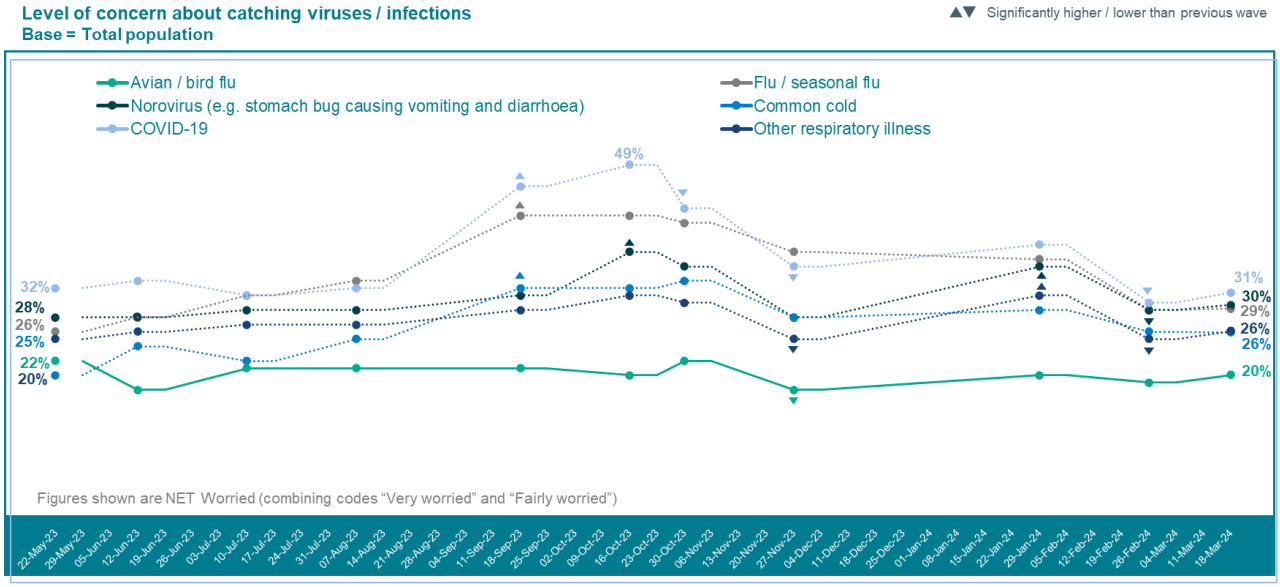
In the latest wave of data collection, 7% were very worried, and 14% were fairly worried about ‘catching bird flu’ as shown in Figure 8 below – reflecting a very low level of public concern.



Source: Basis Research/ Ipsos, Public Perceptions. LW7/D11. And thinking ahead to the next couple of months, how worried, if at all, are you about catching each of the following viruses / infections?
Since Feb/Mar this tracking study has been delivered by Ipsos having previously been delivered by Basis Research. This means that any significant changes versus Jan/Feb should be treated with caution.
Base: All respondents: (n=~1,000 per wave)

Figure 8: Levels of concern about catching avian influenza, May 2023 to March 2024 (Source: UKHSA, 2024)

Over the past year, the level of those very or fairly worried about avian influenza has been consistent. Concern about catching bird flu is continuously lower than for other illnesses and viruses (e.g. Covid-19, common cold, and norovirus). In the latest wave of data, 31% of respondents were either ”very” or “fairly” worried about catching Covid-19, versus 20% of respondents who were ”very” or “fairly” worried about catching ‘bird flu’ (Figure 9).



Source: Basis Research/ Ipsos, Public Perceptions. LW7/D11. And thinking ahead to the next couple of months, how worried, if at all, are you about catching each of the following viruses / infections?
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Base: All respondents: (n=~1,000 per wave)

Figure 9. Public concern for catching bird flu and other viruses, infections, and illnesses, between May 2023 and March 2024 (Source: UKHSA, 2024)

Younger populations (18–34-year-olds) were more concerned about catching bird flu than all older age groups, which is consistent with concern for other viruses and illnesses. In addition, those with a long-term health condition (LTC) express significantly more concern (very worried) than those who do not have an LTC (11% versus 5% in March 2024). This concern is again consistent with the concern about catching other illnesses and viruses in respondents with LTCs. Concerns about bird flu also reflect concerns about other viruses and illnesses in terms of deprivation (people living in more affluent areas - IMD 8-10) have lower concern about catching bird flu than those in areas of highest deprivation (IMD 1-7). This is also mirrored among household income and occupational groups, with lower income and occupational groups less concerned. In terms of gender, around 22% of female respondents were either "fairly" or "very worried" about catching bird flu versus 19% of males. Regarding region, 23% of respondents from the North of England were either "fairly" or "very worried" about catching bird flu, versus 20% in the Midlands and 18% in the South of England.

However, we can be confident that public concern across all groups would increase if there were an immediate threat and accompanying public messaging regarding this (Rubin et al., 2010; Rubin et al., 2024). This was observed during both the 2009 and 2020 pandemics, so the recent findings regarding avian influenza should be interpreted with that caveat.

Trust in government and relevant sources of public health advice

Who conveys advice and whether they are trusted is a well-established principle in health and risk communication (Schiavo et al., 2022). In this section we describe levels of trust in government and in professions who provide or convey public health advice during the Covid-19 pandemic and more recently. These findings may be relevant when considering communication strategies in future outbreaks.

Some studies conducted during the pandemic from a range of countries, including the UK, suggest that there was a relationship between trust and confidence in government and compliance with COVID-19 public health and social measures (Gotanda et al., 2021; PsyCorona Collaboration, 2023; Shanka & Menebo, 2022; Wright et al., 2021). These findings were consistent with earlier studies of previous infectious disease outbreaks (i.e., H1N1, Ebola), which found that trust in government was related to whether people followed public health advice (Gilles et al., 2011; Vinck et al., 2019).

However, trust in the UK government was relatively low going into the pandemic, declined during it and has worsened since (Curtice et al., 2024). This was also the case with members of parliament. Despite this lack of trust, as noted earlier in this briefing paper, most of the UK public complied with measures to address Covid-19 during the pandemic. It is also interesting that higher levels of trust in the Scottish and Welsh governments during the pandemic compared with the UK government do not appear to have resulted in substantially different reported levels of compliance with public health advice and guidelines on Covid-19 (Fancourt et al., 2022).

Recent further declines in trust in the UK government and politicians may have been affected by perceptions of how the pandemic was handled, although it is likely to be equally due to other factors. Figure 10 illustrates the change in trust (in regular tracking of public opinion by YouGov) towards relevant professionals and leaders in the UK between March 2020 to January 2024.

The well-established Ipsos Veracity Index (running since the 1970s) also provides some relevant findings, illustrating that there were higher levels of trust in government and politicians during the early days of the pandemic (Dailly, 2020a), but these trust ratings fluctuated and decreased between 2020 and 2024 (Figure 11).

The Veracity Index found that in November 2023, trust in Government Ministers was 10%, with a -6% change in trust rating between 2022 and 2023 (Clemence & King, 2023). Amongst the low (i.e. less than £25K income bracket) and higher (i.e. more than £50K income bracket) income groups, government ministers also received low trust ratings of 13% and 7%, respectively.

As Figure 10 illustrates, trust in doctors and academics is substantially higher than in government or politicians. This is also the case for nurses and other health professionals, including trust to provide advice during health emergencies (Clemence & King, 2023). Trust in academics has declined slightly in recent years (for example, a drop of 9% for ‘professors’ and 4% for ‘scientists’ in the Ipsos Veracity Index between 2022 and 2023) but trust in health professionals has been fairly consistent (Clemence & King, 2023).

Recent surveys have asked about future pandemic preparedness. Polling (n=3001) conducted by YouGov in November 2023 reported that 66% believed that the government was not prepared for a future pandemic (YouGov, 2024b). Only 23% thought otherwise (Figure 12).

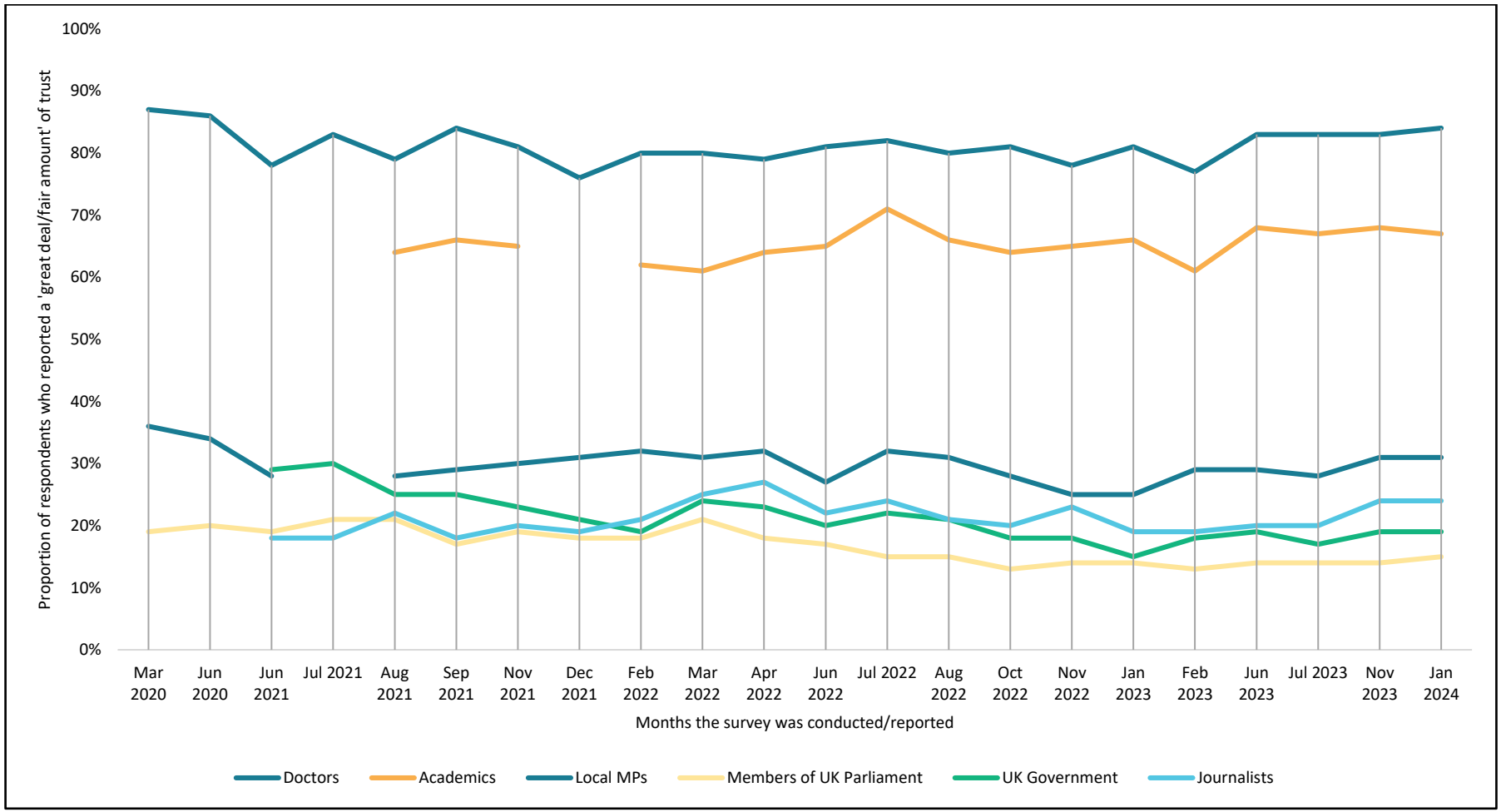

Figure 10. Change in trust towards relevant professionals and leaders from the onset of COVID-19 pandemic related lockdown in the UK, adapted from YouGov survey of representative sample of adults in the UK (n≈2000).

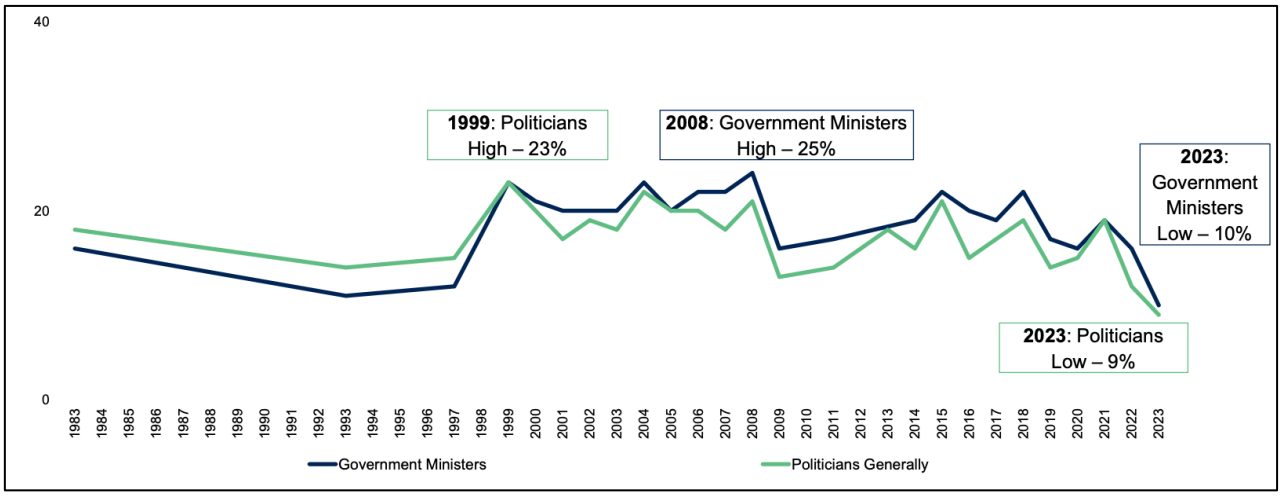

Figure 11. Trust in government ministers and politicians, adapted from the Ipsos Veracity Index 2023

These results were similar to those of a follow-up survey (n=4,527) conducted by YouGov in April 2024 (YouGov, 2024b). In a further survey (n=2,078) between 13 and 14 March 2023, 59% believed that UK politicians were not taking the threat of future pandemics seriously, and only 23% thought otherwise (YouGov, 2023).

Overall, the data suggest a continued decline in trust for key groups likely to be involved in communicating about a future emerging infectious disease outbreak.

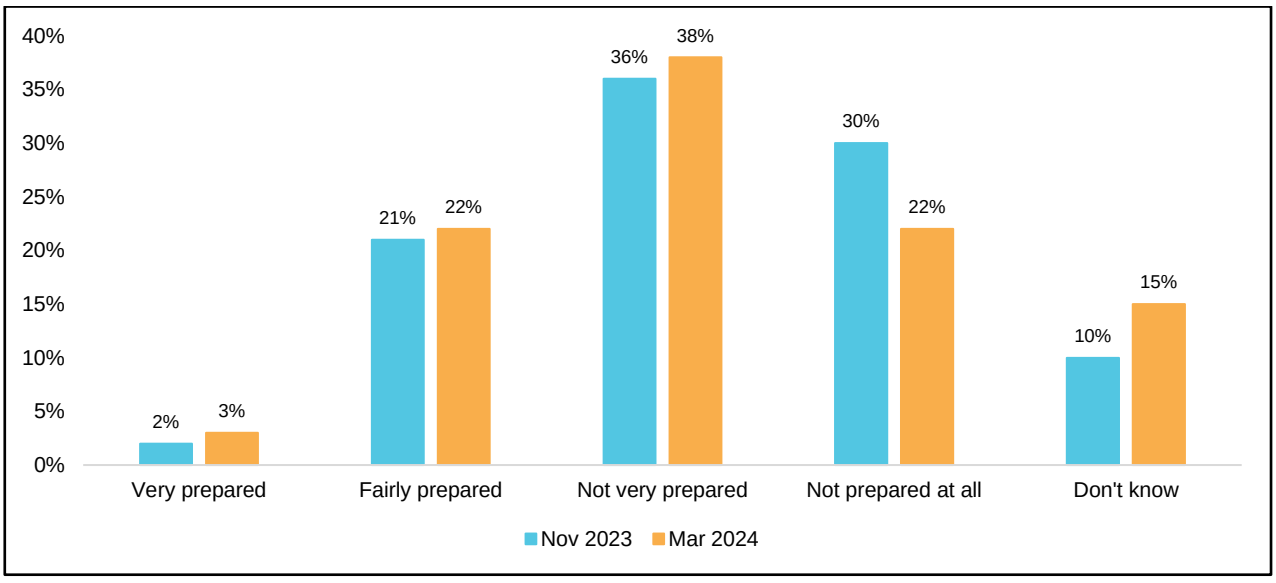

Figure 12. Public perception on government's preparedness for future pandemics, November 2023 and April 2024 (Source: YouGov, 2024b)

However, trust in scientists and healthcare professionals remains high. Ensuring that essential messages are communicated by members of these professions remains a key recommendation. The slow decline in trust also needs to be addressed. While the focus of government action in any future outbreak or pandemic will inevitably be on halting the spread of infection and saving lives, it is essential that this is not done at the cost of trust in our key messengers, degrading our ability to communicate with the public in future

health emergencies. It is possible that trust can be actively built during any future incident. The academic literature on trust suggests that it is not a unitary concept. Instead, it is made up of several components. Actively working on these and demonstrating to the public that messengers can be trusted during a major health emergency may be beneficial. While there is some disagreement in the literature on what the components of trust are, they probably include perceptions about whether someone is being open and honest; whether they are caring; committed and competent; and whether they are acting in our best interests (Devine et al., 2021; Freimuth et al., 2014; MacKay et al., 2022).

Wider changes in the social context that could affect public responses to health emergencies

There have been wider changes during and since the Covid-19 pandemic that may affect how people respond to another health emergency. Identifying which are most relevant is challenging, but we include here at least four key developments that may be important to consider: NHS waiting times and capacity, and how this may affect both the impact of a future health emergency and people's behaviour; the cost of living crisis; adaptive purchasing both in terms of 'panic buying' during emergencies but also the shift to shopping online; and changes in working from home and the use of technology.

NHS waiting times

Waiting lists for hospital treatment across the UK exceeded capacity before the pandemic (Mahase, 2021). However, they increased sharply during it and continue to rise and are now described as a 'crisis' (Salisbury et al., 2023). This is a consequence of spending on the NHS (but also social care and other public services) not meeting demand and workforce shortages. This situation was worsened by delays in diagnosis (reflecting also substantial challenges for primary care) and treatment for non-Covid conditions during the pandemic.

Figures from the British Medical Association (BMA) highlight these challenges in each nation of the UK. In England, there is a median waiting time of 13.9 weeks for treatment - double that recorded in April 2019 (7.2 weeks) (BMA, 2024a). In December 2019, 27% of outpatients in Scotland waited for care for more than 12 weeks. This has since risen to 60% as of December 2023 (BMA, 2024c). People are also waiting considerably longer for treatment in Wales - over 36 weeks, which is eight times higher than in March 2020 (BMA, 2024d). In Northern Ireland, there has been an 81% increase in people waiting to see a consultant between one and two years, from 117,000 in March 2020 to 212,000 in September 2023 (BMA, 2024b). There are also inequalities in how these waiting times are experienced by different groups. For example, people living in the most deprived areas are nearly twice as likely to experience waiting lists of over one year compared to those in more affluent areas (Mahase, 2021).

During 2020, there were well documented declines in the use of healthcare due to some services being paused (i.e., routine cancer screening) but also because of changes in behaviour as a result of social and public health measures. This included a reluctance

amongst the public to access care in order to contribute to efforts to 'protect the NHS'. Visits to Accident and Emergency (A&E) declined by 48% in April 2020 compared to the same month the year before (Thorlby et al., 2020). This decrease in service use was caused by reduced road traffic and other accidents (as people were staying home) as well as reluctance to visit A&E departments when infection rates were high. This observed decline in attendance at A&E and other healthcare settings resulted in campaigns to encourage the public to still present for diagnosis or treatment when required to avoid future backlogs (Thorlby et al., 2020). This phenomenon has been observed in previous infectious disease outbreaks (Rubin & Dickmann, 2010) and it is likely that future health threats will have a similar effect on the public's attitudes to using health services.

One positive element is that despite these very substantial current challenges, the public continues to trust the NHS (Dorussen et al., 2024). Data from 13 waves of YouGov surveys (n = 7414, aged 18-98 years) between July 2022 and July 2023 presented trust in different institutions. Using a 7-point scale from 1 (no trust at all) to 7 (trust completely), the NHS was consistently more trusted (M = 4.97) than other institutions, with the lowest trust seen in news shared on social media (M = 2.45) and the government (M = 2.74) (Dorussen et al., 2024). The same analysis found that waiting times for A&E treatment or time waiting for cancer referrals did not affect trust in the NHS. However, there were some differences by sex and ethnicity, with women and ethnic minorities reporting lower levels of trust compared with other groups.

Cost of living crisis

An additional change in the social context relates to the cost of living, which, also easing, has exacerbated inequalities and means that groups most likely to be affected by measures that may be needed during a future health crisis are now even more vulnerable. From late 2021/ early 2022, economic conditions deteriorated at a global and domestic level. The war in Ukraine interrupted the gradual recovery from the pandemic, causing a sharp rise in energy and commodity prices and was a key initial driver of the resulting inflationary shock and subsequent rise in interest rates (Broadbent et al., 2023; ONS, 2022). This led to a fall in real disposable incomes - adjusted for inflation and after taxes and benefits. The annual rate of inflation reached a peak of 11.1% in October 2022, a 41-year high and annual food price inflation reached 19.1% in March 2023, the highest rate of increase in food prices since 1977 (ONS, 2023b). This presented economic and social challenges for the UK and has had a detrimental effect on businesses, communities, households, public sector budgets and the delivery of key public services. While rises in the cost of living affected almost everyone, some households, services and sectors of the economy were much more exposed to rising prices.

ONS data shows that the annual inflation rate was 2.3% in April 2024, which is the lowest since July 2021 but remains slightly above the Bank of England's 2% target rate (ONS, 2024). However, lower inflation does not mean prices are falling – just that they are rising less quickly. Despite the improving economic picture for many people, it doesn't feel like things are getting better, and there is evidence of longer-term harmful effects of rising prices that disproportionately affect particular groups (Citizens Advice, 2024).

The cost of living crisis has required concerted and targeted action to support those people and sectors most negatively affected. Major interventions introduced by the UK Government include the Cost of living Support package (HM Treasury, 2022), the Energy Price Guarantee (Department for Energy Security & Net Zero, 2023) and packages of energy price support for businesses (Department for Energy Security and Net Zero and Department for Business, 2022).

In this section, we draw on the work of the Scottish Government's cost of living analytical group, which has synthesised a range of relevant data, including the Public Insight Monitor run by YouGov on behalf of the Scottish Government (see Appendix 1).

In late 2021/ early 2022, there was a sharp increase in the proportion of households reporting that they were managing less well financially[1]. The first time this was measured on the Public Insight Monitor was at the start of November 2021 (2-4 Nov), when this proportion stood at 13%. This rose to 18% in January 2022 (18-20 Jan) and increased to 24% by March (15-17) 2022. Since then, the proportion of households managing less well financially has remained broadly unchanged between a fifth and a quarter of all Scottish households, as seen in Figure 13.

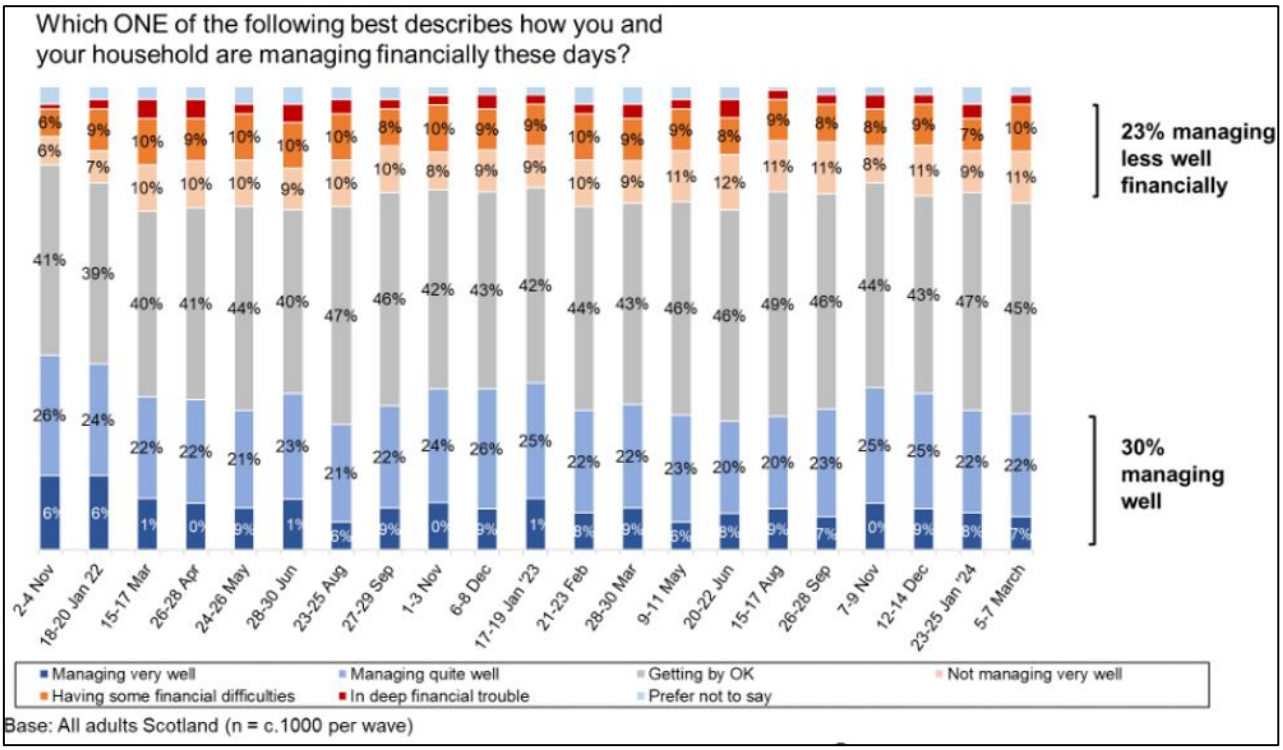

Figure 13. Description of how well households in Scotland are managing financially (source: Scottish Government, 2024).

The survey also asked how the cost of living affected mental and physical health. Across survey waves (from September 2022 to March 2024), around half of respondents have said that the cost of living has negatively affected their mental health, and around a third

[1] Households saying that they were 'not managing very well', 'having some financial difficulties' or 'in deep financial trouble'

of respondents said it negatively affected their physical health. These figures are considerably higher for people who are managing less well financially. At points between May 2023 and March 2024 (May, August, December and March), survey data shows that around 40% of people agreed that food prices are limiting their ability to buy healthy food, and one in seven sometimes have to skip meals.

In terms of responding to the impact of rising costs of living, around two-fifths of people have consistently reported that they have borrowed money (that they have still to pay back) in the past three months since this question was first asked in January 2023. A fifth have cut back on essentials such as food (Figure 14) – having fluctuated around this level over the last year (consistent from August 2022 to March 2024). Among those managing less well financially, this has been much higher, at 46% in March 2024.

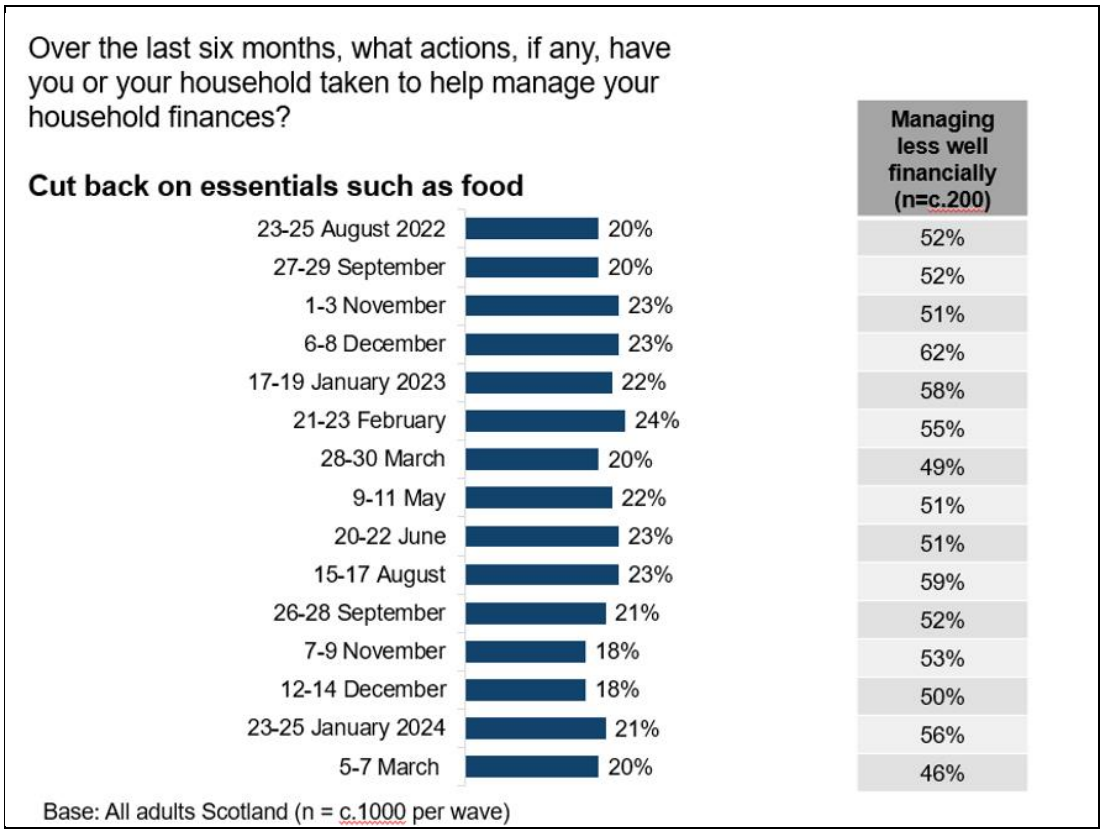

Figure 14. Actions taken by Scottish adults in response to the rising cost of living: Proportion who have cut back on essentials such as food.

In March 2024, just over half of households reported taking steps to reduce energy use to help manage household finances. This proportion increased from 58% in August 2022 during the latter half of 2022 and early 2023 to a peak of just under two-thirds of households.

The cost of living crisis has affected certain groups much more adversely than others. Evidence collected from a range of sources has shown that the cost of living has disproportionately affected the following groups: lone parents, ethnic minorities, women,

renters, people narrowly ineligible for benefits, younger people, families with three or more children and disabled people.

There is a strong cross over with the groups identified above and those groups most negatively affected by Covid-19 (and interventions introduced in response to the pandemic). This is likely to be relevant to future health threats, such as avian influenza, should measures be required to address it.

Adaptive purchasing

Adaptive purchasing is a term that encompasses changes in people's buying behaviour, such as an increase in purchasing goods due to perceived or real threats (e.g. a pandemic or natural disaster) or anticipated shortages of a particular item (Cooper & Gordon, 2021; Ntontis et al., 2022). This is relevant for future health threats in at least two respects. First, risk communication regarding public health measures that may be required could prompt changes in purchasing behaviour ('panic buying' or 'stockpiling'). Secondly, changes in the availability and use of technology now mean that people do not necessarily need to meet others in person to obtain food or other essential supplies.

People's shopping behaviour in the UK and elsewhere changed during the pandemic due to the closure of some shops, limited access to supermarkets, and imposed social distancing in supermarkets. For example, in the run-up to the first lockdown in March 2020, there was a spike in spending on household staples and supplies (O'Connell et al., 2021). This spike was largely driven by consumers adding a few additional items to their usual shops rather than consumers adding large quantities of the same item (Kantar, 2020), despite media coverage at the time around 'panic buying'. The Food Standards Agency (FSA) Consumer Insights Tracker Report (March 2022-March 2023) found that 'over-purchasing' and 'stockpiling' behaviour began to fall around October 2022 and have remained largely stable since (FSA, 2023).

The pandemic also accelerated online purchasing, a trend that had already been growing before 2020. The proportion of UK households ordering groceries online and the demand for delivery services also grew. In July 2020, Savanta reported that 1 out of 10 UK shoppers ordered their groceries online for the first time, and 1 in 20 used Click & Collect service for the first time (Vigne, 2020). There was also a shift to local shopping, with one in ten intending to shop in local greengrocers, butchers, farms or market stalls rather than travelling to supermarkets.

There is more extensive literature on these shifts, which is beyond the scope of the current review. The key points to convey are that in any future outbreak or pandemic we should expect adaptive purchasing behaviours to increase, either to accumulate essential items within a short period and/or a further shift to online or local purchasing behaviours, depending on the social and public health measures required.

Working from home and use of digital technology

The pandemic accelerated the use of digital technology in the UK by a range of companies and sectors. This included employers who rapidly expanded options for staff

to work from home as well as substantial changes in the education sector (schools, colleges, Universities and CLD) to allow remote access to learning and development (GOV.UK, 2024).

These changes are relevant to future outbreaks or health emergencies. The shift from travelling to work to working mainly from home during the pandemic, may have an effect on the readiness and resilience of UK workforces in future pandemics. Between March and June 2020, it was a legal requirement for employees to work from home (WFH) unless it was “not reasonably possible” (Mutebi & Hobbs, 2022). In 2019, around 1 in 10 (12%) of the of the UK workforce 1 in 20 (5%) reported working mainly from home. This increased substantially during the pandemic, to a peak of around half of employees (49%) working at least one day from home in June 2020 (38% WFH entirely). These numbers remain higher than they did pre-pandemic with around 28% reporting flexible working (WFH and travelling to work) between the period of September 2022 and January 2023 (ONS, 2023a). Government and a range of sectors introduced numerous technological advancements to further support protective measures and to assist the workforce and the economy to operate more efficiently. This included contactless payments, enhanced remote working and digital learning networks, and improved Telehealth services (Renu, 2021). It is possible that due to advances in technology and changes in working environments, it may be easier for protective public health measures to be introduced again. However, inequalities in access to and uptake of these technologies will remain an ongoing barrier across communities and in different contexts and environments.

Conclusion

This briefing paper describes changes in the social context in the UK since and because of Covid-19 that may affect public health responses to H5N1. It describes a range of developments as well as barriers and facilitators to compliance with public health advice and guidelines during future infectious disease outbreaks, epidemics or pandemics. Evidence is drawn from a review of relevant reports, data and articles including very recent findings from research commissioned by the UK and Scottish governments. The research question we were asked to address did not easily lend itself to a systematic review of the peer-reviewed literature. Instead, we searched for datasets relating to knowledge, attitudes, beliefs, and behaviours among people in the UK, and how these may have changed during and since the Covid-19 pandemic. Findings were then distilled into a set of key themes. Other relevant sources may exist that we are not aware of or did not have time to include.

In terms of willingness to follow public health advice in future, our findings suggest that this will be dependent on the scale and extent of the threat and how it is communicated. There was high compliance with measures to address Covid-19 amongst the British public, despite inequalities in both exposure to risk and vaccine uptake. Our findings suggest that if the risk to health is substantial enough in future from any pathogen, including H5N1, we could again anticipate high levels of compliance amongst most

groups. However, the communication of risk and measures needed to address it should reflect on who communicates, how trusted they are, and the role of health professionals and academics in doing so rather than politicians.

Public concern about avian influenza as a current threat to human health is low. But if there were an immediate and substantial threat, it is likely that the public would respond to this and adopt protective measures depending on how and when they were introduced. There are concerns, however, from recent data that suggest highly restrictive measures may be rejected by some groups given the recency of experience with Covid-19. It is likely that there would be more questioning and challenge to measures than was the case in 2020.

Wider social changes are relevant. The UK has experienced a sustained period of challenges for public services and has substantial health inequalities that show no signs of improving. Recent rises in the cost of living and record waiting times for NHS treatment mean our population is even more vulnerable to future health threats than it was before the Covid-19 pandemic. On the more positive side, we may also be more adaptable if social and public health measures require people to work from home (in occupations and housing where that is feasible), shop online or access virtual health care appointments. Advances in technology and the uptake of those technologies make that more possible and socially acceptable now than in the past. It remains important to facilitate equitable access to these advances for those who currently have fewer resources to do so.

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Appendix 1

Here we include information on the recent government-commissioned research included in this briefing paper. First from the Scottish Government and then the UK Health Security Agency.

Scottish Government's opinion polling via YouGov (Public Insight Monitor)

This was established originally to track attitudes and behaviours in relation to coronavirus (COVID-19), with the scope widened to include cost of living and Ukraine from August 2022. From May 2023 the focus of the monitor was primarily on cost of living related questions, although some general questions have been tracked from early waves, and some new topic-specific questions have also been included.

Questions are developed by the Scottish Government and run on their behalf on the YouGov online omnibus survey. The sample is demographically and geographically representative of online adults 18+ across Scotland, with c.1000 responses each wave. At the start of the pandemic (from end March 2020), fieldwork was carried out weekly, but moved to fortnightly from June 2021 and to approximately every 4-6 weeks from April 2022. Fieldwork typically takes place Tuesday-Thursday in any given week.

YouGov apply weighting to the data to match the population profile to adjust for any over/under representations and to maximise consistency from wave to wave. Parameters used include age, gender, social class, region and level of education.

Data tables are published here:

- Public attitudes to coronavirus, cost-of-living and Ukraine: tracker - data tables - gov.scot (www.gov.scot)
- https://www.gov.scot/publications/public-attitudes-to-cost-of-living-and-other-topics-tracker-data-tables/

Vaccines research by JRS for the Scottish Government

JRS was commissioned to undertake research to explore broad attitudes to Scotland's vaccine programme across the Scottish population and within this review how, at a holistic level, vaccine communications can be used to optimise uptake across the full Scottish Vaccination and Immunisation Programme.

The qualitative stage consisted of 12 group discussions and seven individual depth interviews conducted online using Zoom in January 2024. This included groups and depths with: pregnant women, women with young children (0 to under 13 months), parents of pre-school, primary school and secondary school age children, 65–80-year-olds, 20–49-year-olds with an underlying health condition and health and social care workers.

The quantitative stage consisted of an online survey with a nationally representative sample of adults aged 18+ across Scotland. Fieldwork was carried out 28 February – 10 March 2024.

UK Health Security Agency Behavioural Science and Insights Unit (BSIU) Public Perceptions Tracker survey

This tracks knowledge, attitudes, beliefs, and behaviours for a range of health threats.

- Data are collected monthly, with n≈1000 respondents per wave. The sample is representative of the following groups in England, for which quotas are set in line with ONS population statistics: gender identity, age, region, social grade and interlocked with ethnicity.
- The dataset is weighted to the known adult population (age, gender, region and social grade).
- Market research companies commissioned: Basis Research (August 2022 to February 2024), Ipsos MORI (February 2024 to present).

Fieldwork dates:

Wave	Start date	End date
Wave 16	15-May-23	30-May-23
Wave 17	31-May-23	27-Jun-23
Wave 18	28-Jun-23	25-Jul-23
Wave 19	26-Jul-23	22-Aug-23
Wave 20	13-Sep-23	29-Sep-23
Wave 21	10-Oct-23	24-Oct-23
Wave 22	25-Oct-23	14-Nov-23
Wave 23	15-Nov-23	12-Dec-23
Wave 24	17-Jan-24	14-Feb-24
Wave 25	23-Feb-24	06-Mar-24
Wave 26	20-Mar-24	29-Mar-24

Waves are represented by their mid-points on graphs unless specified.