Public Health Scotland

COVID-19 Shielding Programme (Scotland) rapid evaluation

Full report

Acknowledgements

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List of technical words used in this report

Epidemiology – the study of the frequency, pattern, risk factors and causes of disease in a population. Epidemiology looks at who gets infected or ill, when and where.

Case rate – the number of confirmed cases (of COVID-19) per 100,000 people in a population.

Death rate – the number of deaths (with COVID-19) per 100,000 people in a population. When we mention COVID-19 deaths in this report, we refer to deaths where COVID-19 was mentioned on the death certificate.

Age-standardised death rates – death rates that have been adjusted to reflect the age profile of a population. Other things being equal, older people are more likely to die than younger people. Different populations have more or less older people. This makes it difficult to compare death rates across different populations. Age-standardising is a method to 'correct' the age profile of different populations, so death rates can be more easily compared.

Death-to-case rate – the number of deaths (with COVID-19) in a certain period divided by the number of cases (of COVID-19) in that same period.

Positive test rate – the number of positive (COVID-19) tests divided by the number of tests.

Test rate – the number of tests divided by the number of people in a population.

Contents

Introduction

About this report

This report is part of a series of three reports, published in January 2021, relating to the evaluation of the Scottish Government shielding programme. The other two reports in the series are a summary version of this report and a separate data report. The data report presents detailed COVID-19 test and mortality data relating to shielding.

The Scottish Government shielding programme

The Scottish Government's shielding programme was introduced in mid-March 2020 in order to protect those people at the highest risk of severe illness or death in the case of COVID-19 infection. The programme aimed to provide people with guidance to help minimise interaction between them and others – and ultimately to reduce the risk of infection, severe illness and death.

An overview of the clinical conditions included in the shielding group can be found in Appendix 1. The initial guidance applied for a 12-week period. This was later extended, with some relaxation of the guidance, until 31 July 2020, when shielding was paused. A timeline of the shielding programme in Scotland can be found in Appendix 2. Key features of the programme included:

- A two-tiered approach to risk – the shielding group consisted of those at the highest risk of negative outcomes; the non-shielding at-risk group was made up of those at higher but not the highest risk of negative outcomes.[1]

- Individual identification – shielding people were individually identified on the basis of their health records and clinician input. They individually received letters from Scotland's Chief Medical Officer, with information about the programme.

- A dedicated shielding support offer – this included a dedicated SMS service, a national opt-in scheme of free food box delivery, home delivery of medication and priority access to supermarket delivery slots. In addition, local authorities

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proactively reached out to all shielding people in their area to assess their support needs. More detail about the support offer can be found in Appendix 3.

Evaluating the Scottish Government shielding programme

Public Health Scotland was asked by the Scottish Government to evaluate the shielding programme. The time period covered by the evaluation was mid-March 2020 until 31 August 2020 – also covering the month following the pause in shielding. The overall aims of the evaluation were:

- to evaluate the effectiveness of the shielding programme

- to inform the advice, information and support offered to people in the shielding group during the COVID-19 outbreak

- to inform the advice, information and support offered to at-risk people more widely during the COVID-19 outbreak

- to identify lessons learnt for future pandemic planning

- to identify lessons learnt for work with at-risk groups.

The evaluation was structured around six key evaluation questions.

1   Who has been advised to shield?

2   What difference did the guidance make to people's behaviour?

3   Has shielding reduced harm?

4   Has the shielding support reached the intended audiences?

5   Has the shielding support been fit for purpose?

6   What have been key process issues?

Figure 1 offers a schematic presentation of the key evaluation aims and questions. There were two distinct components in the shielding programme: the advice to shield and the shielding support offer. Questions one to three of the evaluation questions above relate to the effectiveness of the advice to shield. Questions four to six relate to the added value of the support offer.

Figure 1. Overview evaluation framework

Evaluation aims	Evaluating the effectiveness of the shielding programme	Informing policy and programme development
Two distinct programme aspects	Advice to shield	Shielding support offer	
Top-level evaluation questions	Effectiveness of the advice to shield?	Added value of the support offer?	
Key evaluation questions	Target audience? / Shielding behaviour? / Advice to shield reducing harm?	Reaching the right people? / Support fit for purpose? / Process issues?	

Approach to the evaluation

This evaluation took place against the complex backdrop of the COVID-19 pandemic. This meant that our approach has differed from more traditional policy evaluations:

- First, we took a **two-track approach** to the evaluation: we aimed to support operational delivery of the shielding programme in real time. At the same time, we aimed to maintain a sufficient degree of distance and independence from delivery.

- Second, we took a **collaborative approach** to the evaluation: this report also draws on research undertaken by people in the Scottish Government, NHS Education for Scotland (NES), local authorities, local NHS Boards, third-sector organisations and Scottish and UK universities. Throughout this report, we have highlighted where data or insights were provided by external partners.

- Third, we took a **flexible approach** to the evaluation. The fast-paced policy environment meant that it was not possible to work with an evaluation framework which was fixed in advance. The urgency or relative importance of evaluation questions changed over the course of the evaluation process.

- Fourth and finally, we took a **rapid approach** to the evaluation. Following consultation with key evaluation partners, we felt that early reporting on the lessons from the shielding programme was important. This evaluation report has been published within six months of the pause in shielding. This means that the answers to some of the evaluation questions remain uncertain. As additional evidence emerges, it is anticipated that some – but not all – of this uncertainty will lessen.

Evaluation logic model

Figure 2 presents the evaluation logic model. This logic model sets out what the Scottish Government shielding programme intended to achieve and how.

Figure 2. Evaluation logic model
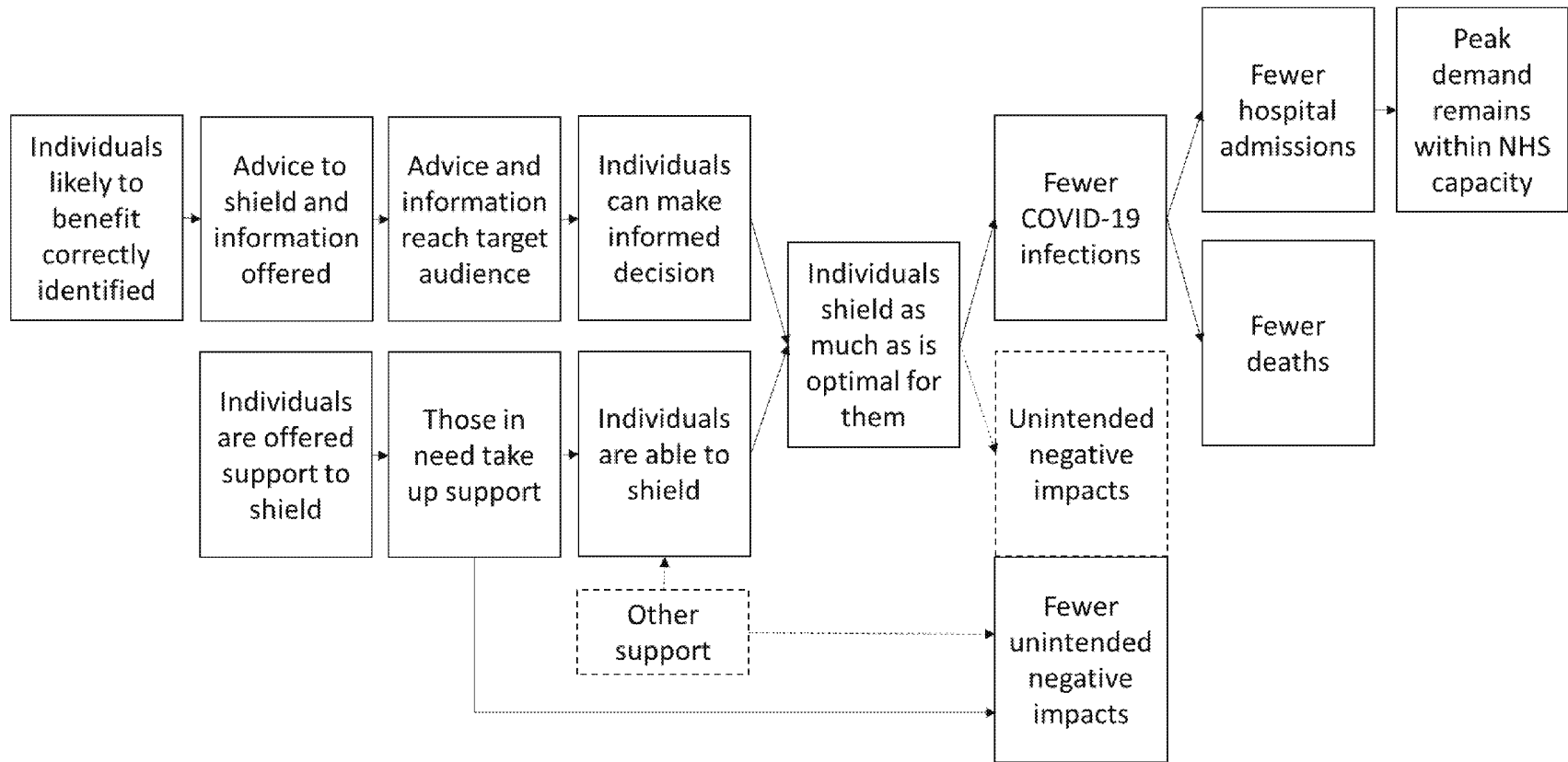
Three changes in emphasis occurred during the evaluation process:

- First, maintaining peak demand within NHS capacity became less important (as an objective of the shielding programme). The aims and objectives of the shielding programme were focused on reducing harm at the level of the individual.

- Second, the shielding programme placed a stronger emphasis over time on enabling people to make an informed choice to shield as much as was optimal for them. In contrast, early shielding materials advised people on the list to stringently follow the guidance.

- Third, early on it was agreed that the question whether the 'right' people were asked to shield fell outside the scope of the evaluation. This was because of time constraints and the need to prioritise evaluation questions. This question has become more important over time, as a result of emerging evidence around COVID-19 risk factors, and is therefore touched upon in this report.

Evaluation methods

The evaluation used a number of different methods:

- Data linkage between the list of shielding people and key socio-demographic and other COVID-19 datasets to monitor the profile of the shielding group, as well as COVID-19 cases and COVID-19 deaths in the shielding group, in line with General Data Protection Regulation. More detail can be found in the separate data report.

- End-user research with shielding people, including a June 2020 online survey with more than 12,000 responses[2] and in-depth interviews with six people with lived experience of shielding or of supporting shielding people. Where quotes from these six people have been included, they have been labelled according to the lived experience interview (LEI1–LEI6) they were part of. The evaluation also had access to 21 written contributions from shielding people and to an analysis of 32 interviews with shielding people undertaken by the Scottish Government.

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- Stakeholder research, including two focus groups with a total of 18 third-sector organisations (facilitated by Voluntary Health Scotland) and 15 interviews or small focus groups with a total of 20 people: seven local authority staff across six different local authorities, 10 health board staff across six different NHS Boards and three Scottish Government officials. To protect confidentiality, it was agreed not to include a list of people or organisations interviewed in this report. Local authorities and NHS Boards were selected by taking into account the following elements: population size, area size, geographical area (north, south, east, west), urban/rural classification and the need to incorporate an island perspective. All interviewees were directly involved in the development, coordination or implementation of the shielding programme. Where quotes from participants have been included, they have been labelled according to the stakeholder interview or focus group (SI1–SI15) they were part of.

- A review of research relating to shielding undertaken by Scottish Government, NES, local authority, health board, third-sector and academic partners (see Appendix 4).

- A review of official statistics relating to COVID-19 published on the Scottish Government and National Records of Scotland websites (see Appendix 5).

- A review of selected peer-reviewed and grey literature publications relating to the Scottish (and UK) shielding programme (see References).

Evaluation governance

The shielding evaluation was governed by a Memorandum of Agreement between the Scottish Government and Public Health Scotland. The Evaluation Advisory Group, which included representation from the Scottish Government, local authorities, local NHS Boards, third-sector organisations, NES and Public Health Scotland, provided expert advice and support. One member of the group had lived experience of shielding. The Evaluation Implementation Group brought together the researchers and analysts across Public Health Scotland, the Scottish Government and NES working on the shielding programme. The membership of the two groups is presented in Appendix 6. A

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panel of eight people with lived experience of shielding or supporting a shielding individual (including unpaid carers) reviewed and advised on the key evaluation questions. The panel's development was supported by the Health and Social Care Alliance Scotland membership. The panel's comments resulted in a stronger focus on the experience of shielding and the mental health impacts of shielding in this evaluation.

Limitations

This **rapid** evaluation faced a number of limitations which need to be considered:

- It has not been possible to undertake a comprehensive review of all relevant literature. The evaluation has reviewed key relevant publications (see Appendix 4 and References), but it has not been possible to undertake in-depth quality appraisal of all studies concerned. Key limitations of the publications have been highlighted.

- It has not been possible to undertake detailed coding of all qualitative data available to the evaluation. The different data sources described above have been reviewed, but the analysis has focused on establishing high-level themes.

- It has not been possible to collect, link and analyse all routine data relevant to shielding because of time and resource constraints. We have highlighted gaps throughout the report. More detail is provided in the separate data report.

- All quantitative data in this report present the result of descriptive analysis only. As part of the evaluation, Public Health Scotland led a case-control study[3] which explored the risk of severe COVID-19 illness among shielding people, using robust statistical methods. Results of this study have not yet been published, but key messages of the study are highlighted in this report.

- The shielding evaluation covers the period between March and August 2020, but datasets in this report refer to different time periods. The evaluation supported programme delivery in real time. Data analyses were undertaken at different points in time, in response to specific data requests and based on the most up-to-date information available at the time of the request. The clinical and

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socio-demographic profile of the shielding group are based on data until the end of August 2020, the formal endpoint of the evaluation. This is also the case for overall positive COVID-19 test and COVID-19 death data. Detailed subgroup analysis of the COVID-19 test and death data (for example by age) covers the period until the end of September 2020. One subset of the data, relating to people with at least one hospital admission, covers the period between March and July 2020.

- This evaluation report draws on the findings of the June 2020 Public Health Scotland online survey of shielding people. Limitations to this survey have previously been described in the stand-alone online survey report.[2] The survey was anonymous; it was therefore not possible to link responses to routine COVID-19 data, such as COVID-19 tests or COVID-19 deaths.

- There are a number of methodological challenges to addressing the question of whether shielding has had a protective effect. These challenges are described and explained in part one of the report.

Report structure

The report is structured as follows:

- Part one explores what can and cannot be concluded regarding the effectiveness of the advice to shield. It also discusses the methodological challenges involved in doing so.

- Part two focuses on the added value of the shielding support programme, with a particular focus on the food support.

- Part three discusses what can be learnt from the shielding programme for future pandemics. It draws to a large extent on the Public Health Scotland interviews with Scottish Government, local authority and health board staff.

- Part four formulates a number of recommendations based on the evaluation.

Part one. Effectiveness of the advice to shield

Introduction

Part one of the report aims to assess the effectiveness of the advice to shield. It focuses on the first three of the evaluation questions:

1   Who has been advised to shield – and were they the 'right' people?

2   What difference did the shielding guidance make to people's behaviour?

3   Did shielding reduce harm? Did it result in fewer COVID-19 infections or deaths? Did it have any negative impacts?

There are important methodological challenges to addressing the effectiveness of the advice to shield:

- First, there is no 'counterfactual': we do not have data on what would have happened to shielding people if the shielding programme had not existed. There is no control group of people who fit the shielding criteria but were not advised to shield.

- Second, early on, shielding coincided with population-wide lockdown restrictions. It is difficult to disentangle the impact of shielding from the impact of other COVID-19 restrictions such as the lockdown.

- Third, **shielding can only have influenced exposure to the virus, not vulnerability to infection or vulnerability to death if infected** (see Figure 3). Moreover, shielding could only influence some aspects of exposure: for example, it could not change where people lived or stop them from needing to access health care. This last point is important: shielding people were clinically vulnerable and likely to require health care.

  It is difficult to separate these different factors that relate to COVID-19 disease progression. Differences in routine COVID-19 data between the shielding group and the population at large can be the result of differences between the two

groups in exposure to the virus, in vulnerability to infection, or in vulnerability to death. Differences can also be the result of differences in the testing regime.

Figure 3. Shielding as one of many influencing factors in COVID-19 disease progression
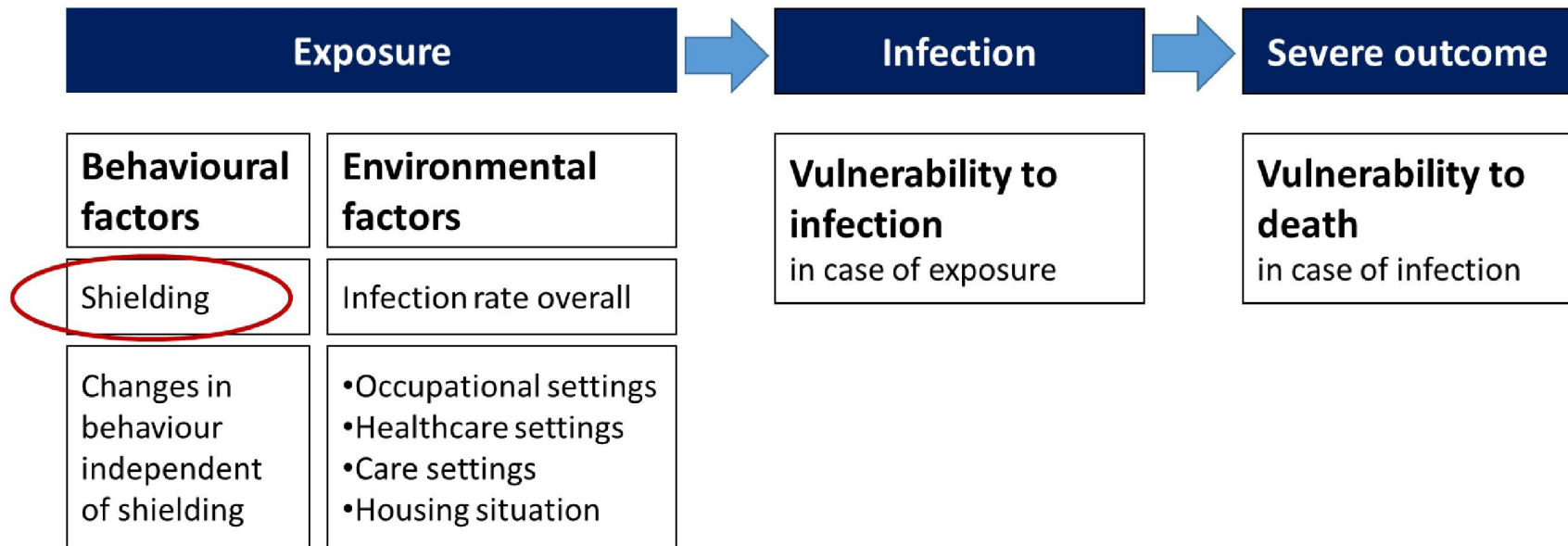

Due to these challenges, part one of the report does not aim to provide a conclusive answer to the effectiveness question. Instead, it aims to **inform** discussions about the **likelihood** that shielding may have been effective.

Who was advised to shield?

COVID-19 was a new disease. When the shielding programme was first set up, there was no pre-existing evidence about who was at the highest risk of severe COVID-19 illness or COVID-19 death. Identifying the shielding conditions was done based on clinical expert opinion. The initial list of clinical shielding conditions was signed off by the Chief Medical Officers of the four nations of the UK on 18 March 2020.[4] Appendix 1 contains the full list of the clinical shielding conditions.

About 180,000 people or 3% of the population were included on the shielding list. Shielding people were more likely to be female, more likely to be older and more likely to live in more deprived areas of Scotland than the population at large.

The largest group were those who were shielding because of a severe respiratory condition (44%), followed by people in the 'other' category who had been identified by their clinician as likely to benefit from shielding (27%) and people who were shielding because of immunosuppression therapy (21%) or cancer (12%) (see Figure 4). There were only 72 pregnant women with significant heart disease on the list. A full breakdown of the clinical and socio-demographic profile of the shielding group can be found in the separate data report (see pages 4 to 8).

Figure 4. Profile of the shielding group (31 August 2020) – by clinical category (n=178,708)
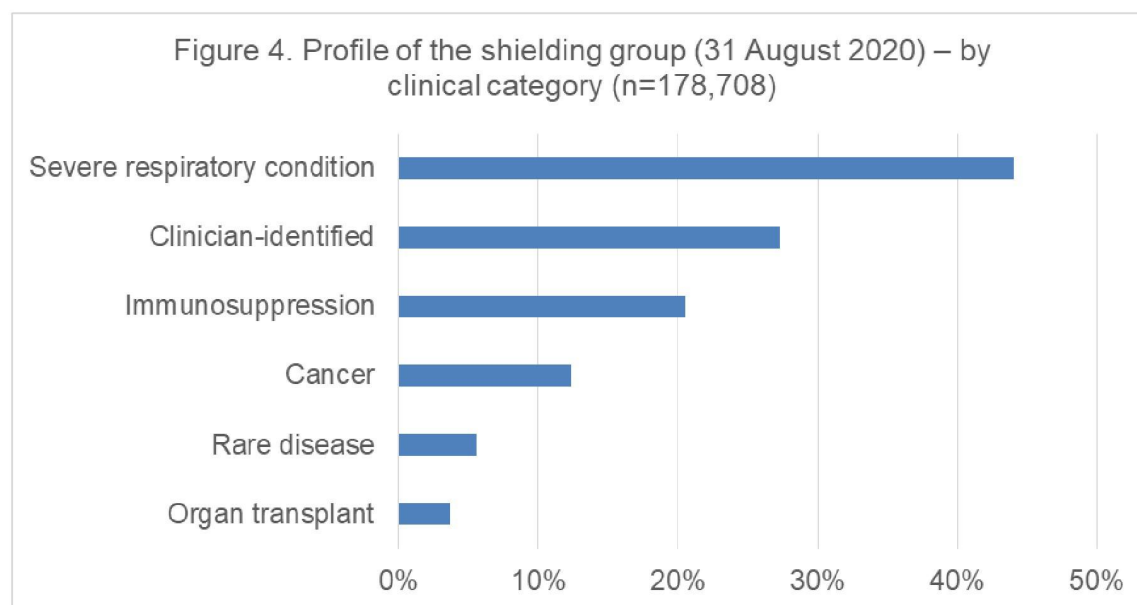
Source: Public Health Scotland (Shielding list).

# Were the 'right' people advised to shield?

> **Key points**:
> - There is evidence to suggest that the shielding group was at higher risk of negative COVID-19 outcomes than the population at large. The risk varied between the different shielding conditions. There is evidence to suggest that the organ transplant group was at the highest risk.
> - There is evidence to suggest that some other groups, not included in the shielding group, were also at higher risk of negative COVID-19 outcomes. For example, the shielding criteria did not include old age and old age has subsequently been identified as an important risk factor.
> - It is not possible to directly compare, like for like, the risk of negative COVID-19 outcomes among those with clinical shielding conditions and those with other clinical conditions. Fewer negative outcomes may be observed in the shielding group **because** people were shielding. Their 'real' risk, in the absence of shielding, is hard to establish.

Were the 'right' people advised to shield? This question has two distinct elements. First, were those included in the shielding group at higher risk of negative COVID-19 outcomes? Second, were others, not included in the shielding group, also at higher risk? The evaluation followed three routes to explore these questions. First, we undertook descriptive analysis of routine COVID-19 death data. Second, we explored how other countries defined COVID-19 at-risk groups. Third, we led a case-control study[3] using robust statistical methods to investigate risk factors for negative COVID-19 outcomes.

Descriptive analysis of routine COVID-19 death data

Detailed routine COVID-19 death data can be found in the separate data report. Descriptive analysis of routine COVID-19 death data suggested that the shielding programme correctly targeted people at higher risk of death than the population at large:

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- The shielding group only represented 3% of the Scottish population, but before 6 April 2020, **one in three** of all COVID-19 deaths in Scotland (n=355) occurred in the shielding group. Before 30 March 2020, this proportion was even higher (44%), but relatively few COVID-19 deaths had occurred at that stage (n=73). The early stage of the pandemic gives an indication of what the risk of death in the shielding group might have been in the absence of COVID-19 measures.

- COVID-19 death-to-case rates are the number of COVID-19 deaths in a given period divided by the number of COVID-19 cases in that period. They give an indication of how vulnerable people are to death if they are infected with COVID-19. Higher death-to-case rates typically mean that people are more vulnerable to death. The evaluation compared death-to-case rates, **like for like**, for a subgroup of people: those people with at least one hospital admission, for any reason, between March and July 2020. Death-to-case rates were higher in the shielding group than in the population at large, across all different age groups and across all different levels of deprivation (see Tables 9 and 10 in the separate data report).

- The shielding group had an older age profile than the population at large, but the age profile of the shielding group alone could not fully explain higher levels of vulnerability. The number of deaths per 100,000 increased with age in the shielding group, but the increase was less steep than in the population at large (see Figure 5). Four in ten (44%) of COVID-19 deaths in the shielding group occurred in the over-80s age group, compared to six in ten (63%) in the population overall.
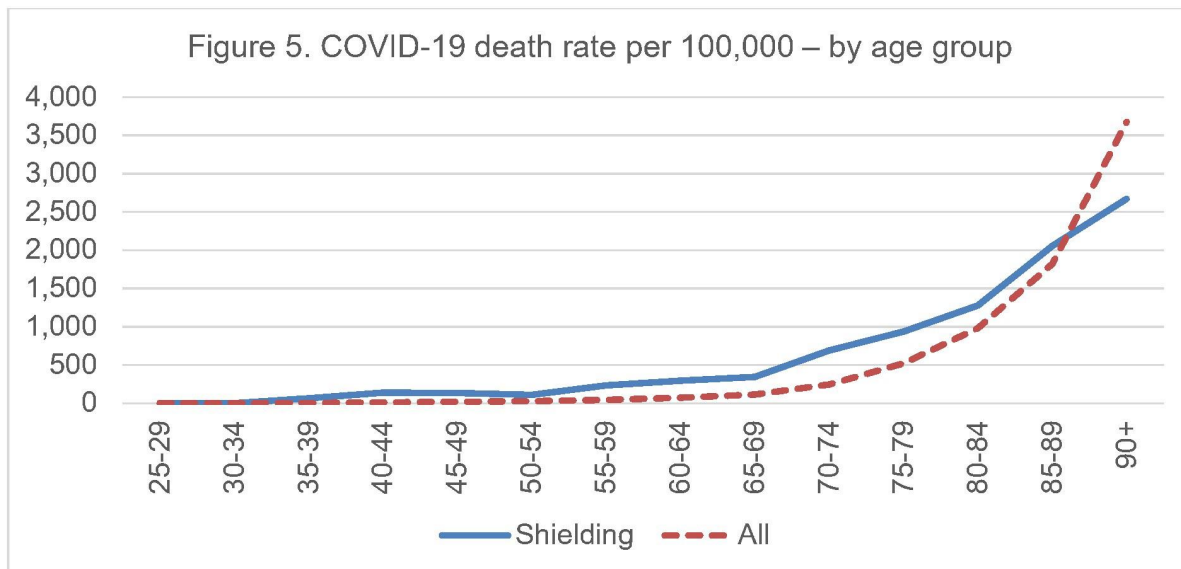
Figure 5. COVID-19 death rate per 100,000 – by age group

Source: Public Health Scotland (Shielding list) and National Records of Scotland (Deaths involving Coronavirus in Scotland).[5]

Definition of at-risk groups in other countries

There was at least partial agreement between the clinical shielding conditions in Scotland (and the rest of the UK) and the definition of at-risk groups in other countries:

- An evidence-based list of at-risk groups maintained by the US Centers for Disease Control and Prevention[6] includes people with solid organ transplants, chronic kidney disease, sickle cell disease, chronic obstructive pulmonary disease (COPD) and cancer. Those receiving immunosuppression therapy are included as possibly at higher risk. Heart conditions, type two diabetes and obesity – which do not count as shielding conditions in Scotland – are also included.

- An Irish rapid review of international practice[7] similarly shows a degree of agreement between the Scottish clinical shielding categories and definitions of at-risk groups in other countries. Most countries identify lung disease as a risk factor, but some specify that the risk is higher for those with **severe** respiratory conditions – as is the case in Scotland. Some countries identify cancer in general as a risk factor, but most specify that the higher risk applies in case of active cancer treatment or blood cancers – as is the case in Scotland. Several countries mention organ transplants as a risk factor. Most refer to immunosuppression

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therapy as a risk factor, but some countries specify that only certain forms of immunosuppression, such as high-dose cortisone, increase risk – as is the case in Scotland. Several countries include people with diabetes, heart disease, obesity, hypertension, and kidney and liver disease in the at-risk groups. In Scotland, several of these conditions were included in the non-shielding at-risk group.[1] The original list of clinical shielding categories was later expanded to also include chronic kidney disease (see Appendix 1).

An area of divergence is age as a risk factor. In Scotland and the UK, older people fell in the higher rather than the highest risk category. Some other countries which also operated a two-tiered approach to risk (Australia and Norway) included old age as a factor to define their highest risk group.[6] The Norwegian approach stratified risk using a combination of age and comorbidities.

The rationale behind the two-tiered approach to risk used in Scotland is explored in more detail in part three of this report.

The REACT-SCOT study[8] and REACT-SCOT follow-up study[3]

Since the pandemic, evidence has started to emerge around the relative vulnerability to negative outcomes of COVID-19 for different clinical and socio-demographic groups. UK-wide, the OpenSAFELY[9] and QCOVID[10] studies are of particular interest. In Scotland, two key studies were available to the evaluation:

- REACT-SCOT[8] is an earlier epidemiological study led by Public Health Scotland. The study explored risk factors for severe COVID-19 illness or COVID-19 death. It did not focus specifically on the shielding conditions.

- As part of the shielding evaluation, Public Health Scotland led a follow-up study[3] to the REACT-SCOT study to explore the risk of severe COVID-19 specifically among shielding people. In the study, severe COVID-19 was defined as confirmed COVID-19 illness which resulted in admission to an intensive care unit or death. The study followed a case-control design. The results of the follow-up study have not yet been published.

The latter, shielding-specific, study demonstrated that the shielding programme correctly identified people at higher risk of severe COVID-19. The risk of severe COVID-19 varied between the different clinical shielding conditions. As Table 1 shows, the organ transplant group was the clinical shielding group at the highest risk of severe illness. Table 1 lists univariate rate ratios, a statistical measure often used in epidemiological studies to explore risk factors. In Table 1, a higher univariate rate ratio means a higher risk of severe COVID-19 illness.

Table 1. Risk of severe COVID-19 illness by clinical shielding condition (rate ratios)

Clinical shielding group	Univariate rate ratio	Confidence interval
Organ transplant	14.5	9.1 – 23.1
Cancer	7.1	5.6 – 9.0
Severe respiratory condition	6.1	5.3 – 6.9
Immunosuppression therapy	5.6	4.2 – 7.3
Clinician-identified	5.5	4.5 – 6.7
Rare diseases	4.7	3.2 – 6.9
All shielding	6.1	5.5 – 6.8

Source: REACT-SCOT follow-up study[3] [to be published].

Note: Based on data covering the period between 1 March 2020 and 21 November 2020 (for COVID-19 deaths) and between 1 March 2020 and 29 November 2020 (for COVID-19 tests).

The former, not shielding-specific, REACT-SCOT[8] study demonstrated that some other clinical conditions, not included on the original shielding list, also increased an individual's risk of severe COVID-19 illness or COVID-19 death. Age was similarly identified as a key risk factor in the study. The OpenSAFELY[9] study and research by the Association of Local Authority Medical Advisors around 'COVID-age'[11] drew similar conclusions.

It is not possible to directly compare, like for like, the risk of negative COVID-19 outcomes among those with clinical shielding conditions and those with other clinical conditions. There is a fundamental challenge: any assessment of negative outcomes for the clinical shielding conditions may **underestimate** the risk posed by these conditions. Fewer negative outcomes may be observed **because people were shielding** – their 'real' risk, in the absence of shielding, is hard to establish. We cannot answer the question whether the 3% of the Scottish population on the shielding list were the 3% of the Scottish population at the highest risk of negative COVID-19 outcomes.

We can only conclude, first, that the shielding programme correctly identified people at higher risk and, second, that other risk factors, including older age and some other clinical conditions, also increased an individual's risk of severe COVID-19 illness.

What difference did the shielding guidance make to people's behaviour?

Key points:

- There is clear evidence that the shielding guidance directly influenced the behaviour of shielding people.
- However, a group of people started to 'shield' before the Scottish Government issued shielding guidance. There is some evidence to suggest that the size of this group may have been substantial.
- The guidance was not followed completely by all – many shielding people appear to have tried to follow the guidance to the best of their ability, but caring responsibilities, practical constraints and quality of life considerations made this difficult. Others chose not to follow the guidance.

Shielding guidance can only have had a protective effect if people changed their behaviour as a result of the guidance. If people would also have 'shielded' (minimised all interaction with others) in the absence of the guidance, any protective effect would not be the result of the guidance. If they were not aware of the guidance, were unable to

follow the guidance or chose not to follow the guidance, there is also less scope for impact.

Would people have 'shielded' in the absence of shielding guidance?

There is qualitative evidence to suggest that some people were already 'shielding' or being 'shielded' before they were advised by the Scottish Government to do so. Several of the 32 shielding people interviewed by the Scottish Government had decided to 'shield' before receiving their shielding letter, based on their own risk assessment or discussion with healthcare professionals. Similarly, some people interviewed by Public Health Scotland had already decided to 'shield' after considering the COVID-19 situation in China or Italy. Extra infection control measures were already in place in some Scottish dialysis units before people receiving dialysis were included on the shielding list.[12]

Some quantitative evidence is available to support this finding:

- A UK-wide online shielding survey organised by the University of Huddersfield[13] asked people when they started to shield. Preliminary analysis by Public Health Scotland of the response to this question demonstrated that just over 1,000 people provided an exact date. About one in three respondents (UK-wide) had already started shielding before 17 March 2020, when shielding was first mentioned in a speech by the Scottish First Minister.[14] More than half had started shielding before 22 March 2020, when the shielding categories were first mentioned during a press conference in Scotland. Only about 60 Scottish respondents provided an exact date when they started to shield, but the Scottish results are broadly similar to those found for the UK-wide data.

- In Scotland, YouGov polling suggests that about 9% of people were 'shielding' in April and May 2020.[a] The shielding group only contained 3% of the Scottish population. This again suggests that taking the decision to 'shield' was possible for some without direct Scottish Government guidance or support to do so.

However, there is also evidence to suggest that the Scottish Government shielding guidance directly influenced behaviour. When asked about their future shielding intentions, more than six in ten (62%) respondents to the Public Health Scotland survey of over 12,000 shielding people (PHS shielding survey) planned to 'continue to follow the government's shielding guidance'. One shielding individual interviewed by Public Health Scotland understood clearly that shielding was not compulsory, but had started shielding because they were 'told to' (LEI3). There were also several examples of people leaving the house for a walk or meeting up with a friend on the day when shielding guidance 'allowed' this and not any earlier.

Were people able to access and understand the shielding guidance?

Shielding guidance was communicated through a number of different channels:

- The different clinical shielding conditions were mentioned during a press conference by the First Minister on 22 March 2020.[15] People with a health condition may have heard this and acted upon it at that time.

- All shielding people received a letter from Scotland's Chief Medical Officer advising them to shield. Identifying all shielding people and sending out letters was a significant undertaking which took place over several weeks. An estimated

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[a] The 'shielding' response was: I am not leaving my home and minimising all non-essential contact with other members of my household. The percentage choosing this response varied between 8% and 11% across different waves of the survey in April and May 2020. The sample was demographically and geographically representative of adults 18+ across Scotland.

two thirds of shielding people had been reached by the first week of April 2020 – one third had not.

- Not all people who received a letter also read it or were able to understand its content, as reported by shielding people or those supporting shielding people when interviewed by Public Health Scotland. There were examples of letters to residents in sheltered housing sitting unread on the mantelpiece until a family member or member of staff opened them. One shielding individual had reportedly received a 'letter from Catherine' (LEI6) they did not understand – a reference to the then Chief Medical Officer. A third-sector organisation working with ethnic minority groups had translated the shielding letter in a number of different languages, because some of the shielding people they supported were unable to understand the letter and translations were initially unavailable. The lack of easy-read versions was also raised in these interviews.

- Shielding people who signed up to the SMS shielding service received SMS updates. Overall, six in ten shielding people signed up with the SMS service – four in ten did not. Interviews with shielding people suggest that the SMS service was seen as valuable, but stakeholders raised digital exclusion concerns. The SMS service is discussed in more detail in part two of the report.

Did people follow the guidance?

More than four in ten (41%) respondents to the PHS shielding survey were following all shielding guidance. Different interpretations of the 41% are possible. From a strict infection control perspective, any deviation from the guidance is potentially problematic. It is not possible to claim that the **entire** shielding group **stringently** followed the guidance – as initial shielding materials advised they should. However, the shielding programme changed its emphasis over time and aimed to enable people to make an informed choice about the level of shielding that was optimal for them. The programme aimed for optimal adherence, not maximal adherence.

Deviations from the guidance were not always the result of informed choice. One in five (21%) respondents to the PHS shielding survey reported that they were **unable** to

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follow the guidance completely. Quantitative data about the reasons for deviation from the guidance have previously been reported.[2] Qualitative evidence provides additional insights (more details can be found in Appendix 7).

- Comments in the PHS shielding survey showed that many people who left their home against shielding guidance, did so to support others. People left their home to look after disabled or elderly relatives, to support children or more generally to help others in the household, for example, when the shielding individual was the only one in the household who could drive. There were more than 100 comments related to looking after pets. There were also examples of people leaving their home because of a crisis situation (e.g. domestic abuse) or for practical reasons, such as going to the bank, posting letters or driving a car to recharge the battery.

- Many comments in the survey suggested that respondents still tried to adhere to the spirit of the guidance when leaving the home or having visitors against shielding guidance. They left their home at a time of day or in places where they were unlikely to meet others or stayed two metres away from others. Several also stressed that their deviation was exceptional or only happened 'once'.

- The May 2020 Scottish Government interviews with 32 shielding people suggested that almost all in shared households were finding it hard to physically distance at home. They might not have a spare bedroom or only one bathroom. Those caring for someone who needed physical support or hands-on therapy reported the obvious difficulties of physical distancing in those situations. Some had decided to shield as a household and did not need to worry about distancing. For others, shielding as a household was not possible, for example if they lived with a key worker.

- The different examples of deviations across the qualitative evidence showed the complexity of the decision-making process. Not all decisions to deviate could be categorised as **either** a choice **or** the result of necessity: some 'choices' were made in crisis situations or in a context where the alternative, for example, staying away from loved ones, was described as very challenging.

The PHS shielding survey suggested that, after adjusting for age, respondents who were socio-economically more vulnerable were **more** likely to follow the guidance completely. There is no clear evidence as to why this may have been the case. It may potentially be linked to lower health literacy or reduced confidence to question the guidance. The survey showed that complete adherence to the guidance was more likely among respondents who strongly agreed with the statement that they understood why they had been advised to shield, but also among those who strongly **dis**agreed with this statement. This suggests that for some, complete adherence to the guidance may have been driven by lack of understanding or fear rather than informed choice.

In conclusion, many shielding people appear to have tried to follow the guidance to the best of their ability, but caring responsibilities, practical constraints and quality of life considerations made this difficult. Some **chose** not to follow the guidance or not to follow it completely, but deviations from the guidance were not always the result of informed choice. Complete adherence to the guidance may also not always have been the result of informed choice.

Did shielding result in fewer COVID-19 infections or deaths?

Key points:
- About 1% of shielding people had a confirmed COVID-19 diagnosis in the period until 31 August 2020 – 0.3% of the shielding group died with COVID-19 in this period.
- Although it is a key question, it is not possible to give a conclusive answer to the question whether shielding had a protective effect.
- COVID-19 infection during a hospital admission may have been a particular risk for the shielding group. Shielding people were clinically vulnerable and, as a result, more likely to require health care and to be admitted to hospital. Future programmes may benefit from considering more fully the risk of hospital-onset infections.

Did shielding result in fewer COVID-19 infections or deaths? This question sits at the heart of the shielding evaluation. There are substantial methodological challenges, as explained above. A number of research studies[16, 17] have tackled this question, but these studies have limitations.

The evaluation followed three routes to exploring the protective effect of shielding. First, we explored the a priori[b] argument that shielding had a protective effect simply because of how it was designed. Second, we undertook descriptive analysis, comparing routine COVID-19 data for the shielding group and the population at large. Finally, as part of the shielding-specific REACT-SCOT follow-up study[3] mentioned above, we investigated the incidence of severe COVID-19 over time, in the shielding group and in the population at large, using robust statistical methods.

A priori discussion of the likelihood of a protective effect of shielding

One response to the question whether shielding had a protective effect is the **a priori** response that, other things being equal, less contact with others will have resulted in less risk of exposure. Early on in the evaluation process, while the logic model for the evaluation was being developed, at least one senior clinical stakeholder argued that it was **a given** that shielding would have a protective effect. A stakeholder interviewed in October–November 2020 similarly referred to the shielding programme 'saving lives' (SI15) as a given. Considering that 41% of respondents in the June 2020 PHS shielding survey were following all shielding guidance, it is not unreasonable to assume that at least some shielding people will have had lower levels of contact with others than they would have done in the absence of shielding – and thus will have lowered their exposure.

However, if the baseline risk of exposure is relatively low, the gains from reducing exposure further may be limited. There is some evidence to suggest that this may have

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b A priori arguments aim to explain things by thinking logically about them, without looking at all available data.

been the case. Cumulative infection rates across Scotland are estimated at around 4.3% in the period up to 21 June 2020.[18] Only a proportion of the 4.3% would have been infectious at any given point in time. Similarly, it is likely that contact with others would have reduced even in the absence of shielding, as a result of population-wide infection control measures: as mentioned above, early on, shielding coincided with a population-wide lockdown. At least some shielding people also appear to have started shielding prior to the shielding guidance being issued. So although it is not unreasonable to assume that shielding has had a protective effect, the extent of any additional protective effect remains very much open to question.

Descriptive analysis of routine COVID-19 data

Detailed routine COVID-19 data, including information about data sources and data limitations, can be found in the separate data report.

COVID-19 cases and COVID-19 deaths in the shielding group

A total of 1,839 shielding people (1% of the shielding group) had a confirmed COVID-19 diagnosis in the period until 31 August 2020. A total of 622 shielding people (0.3% of the shielding group) died with COVID-19 in the period until 31 August 2020. About one in ten (9%) of all deaths in the shielding group in this period were COVID-19 deaths: the shielding group were a clinically vulnerable group and, as such, vulnerable to death from other causes. Details and subgroup analysis of positive COVID-19 tests and COVID-19 deaths can be found in the separate data report.

Comparing COVID-19 case rates

The number of COVID-19 cases per 100,000 people was higher in the shielding group than in the population at large: in the period to 31 August 2020, there were 733 COVID-19 cases per 100,000 shielding people and 375 COVID-19 cases per 100,000 people in the population at large. A higher case rate in the shielding group does **not** suggest that shielding was ineffective. Shielding could only influence exposure to the virus – and only some aspects of exposure (see Figure 3 above).

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Comparing COVID-19 death rates

The age-standardised COVID-19 death rate was higher in the shielding group than in the population at large. The age-standardised COVID-19 death rate for the period between March and September 2020 was 244 per 100,000 people in the shielding group and 140 per 100,000 in the population at large. A higher death rate in the shielding group does **not** suggest that shielding was ineffective. Shielding could only influence exposure to the virus – and only some aspects of exposure (see Figure 3 above). The higher death rate in the shielding group could reflect the higher vulnerability to death, in the shielding group, **in case of infection**.

Comparing COVID-19 deaths over time

The number of COVID-19 deaths in the shielding group peaked in the week commencing 6 April 2020, two weeks earlier than in the population at large (see Figure 6). Early on, one in three of all COVID-19 deaths in Scotland occurred in the shielding group. After 5 April 2020, this dropped to between 10% and 15% (see the red line in Figure 6).
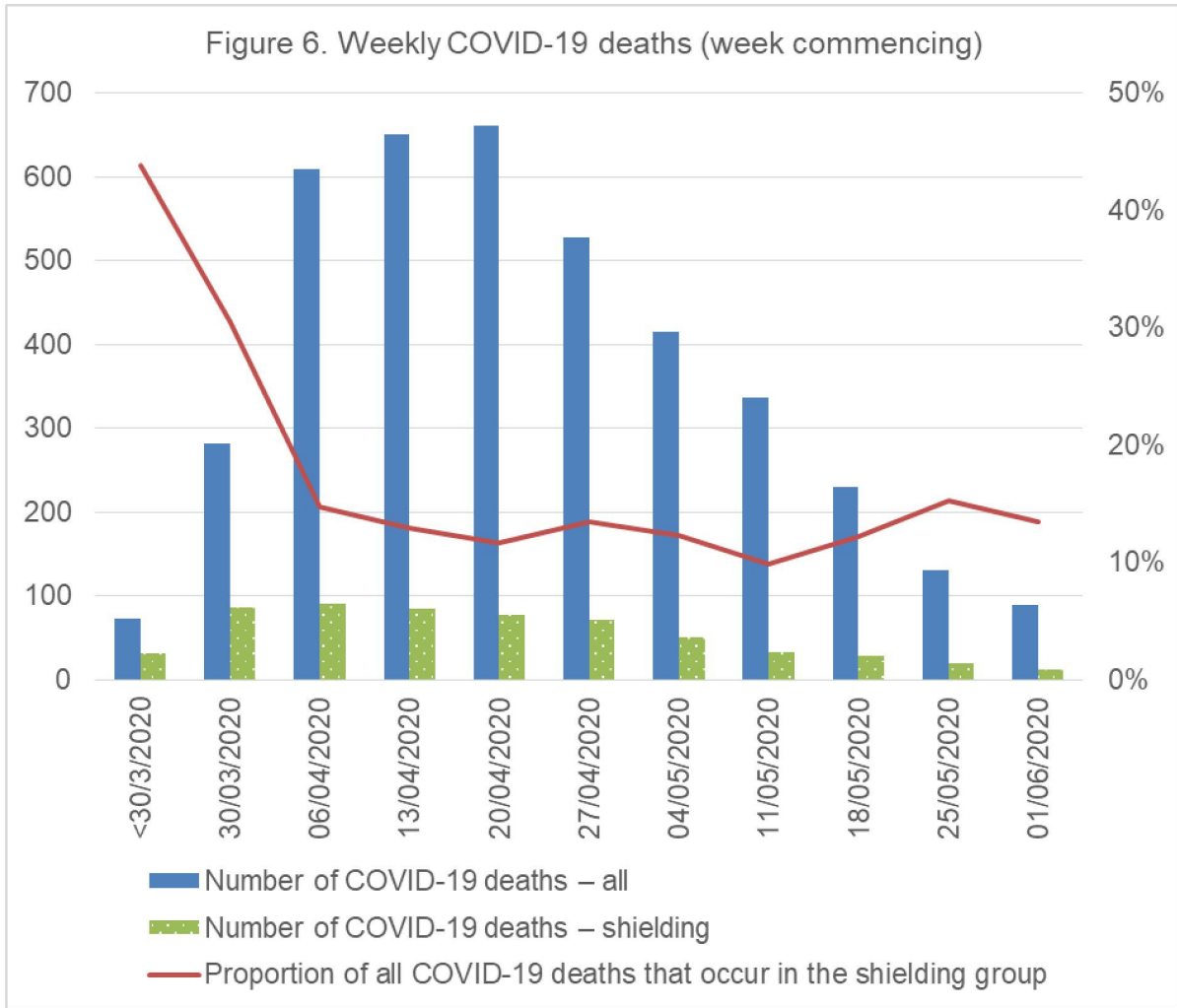
Figure 6. Weekly COVID-19 deaths (week commencing)

Source: Public Health Scotland (Shielding list) and National Records of Scotland (Deaths involving Coronavirus in Scotland).[5]

These data, including the earlier peak in the shielding group, do **not** suggest that shielding was effective. The earlier peak may, for example, be linked to the age profile of shielding people who died with COVID-19. Compared to the population at large, a higher proportion of COVID-19 deaths in the shielding group occurred among those younger than 80 (56% compared to 37%) (see Table 4 in the separate data report). This means that COVID-19 deaths in the shielding group may have been less likely to occur in care homes than COVID-19 deaths in the population at large. **Non-care home** COVID-19 deaths in the population at large peaked in the week commencing 6 April 2020[5] – the same week as the COVID-19 death peak in the shielding group.

Figure 6 also shows that, following the peak, COVID-19 deaths dropped more slowly in the shielding group than in the population at large. The slower drop does **not** suggest that shielding was ineffective. A slower drop in infections in the shielding group may, for example, be linked to hospital-onset COVID-19 infections. People in the shielding group were five times more likely than the population at large to be admitted to hospital, for any reason, in the period between March and July 2020 (see Table 8 in the separate data report). Hospital-onset COVID-19 infections peaked in the weeks commencing 30 March 2020 and 6 April 2020.[19] The slower drop in COVID-19 deaths in the shielding group may reflect higher hospital admission rates in this group and, as a result, higher numbers of hospital-onset infection.

In conclusion, the descriptive analysis of routine COVID-19 data provided an initial confirmation of the complexity of evaluating the protective effect of shielding. It did not allow us to draw conclusions about the effectiveness or otherwise of shielding. The analysis highlighted the fact that care home outbreaks and hospital-onset infections may be useful to inform discussions around the likelihood that shielding had a protective effect. These two issues were explored, using robust statistical methods, in the REACT-SCOT follow-up study.

The REACT-SCOT follow-up study

The REACT-SCOT follow-up study[3] investigated the incidence of severe COVID-19 over time, in the shielding group and in the population at large. The starting point was that a faster drop in severe COVID-19 in the shielding group than in the population at large **could** suggest a protective effect of shielding. Care home residents were excluded from the analysis. This meant that the results would not be affected by COVID-19 care home outbreaks.

The study did **not** find evidence of a faster drop in severe COVID-19 in the shielding group than in the population at large. Overall, the study found no evidence of a protective effect of shielding, over and above other factors influencing COVID-19 infection and disease progression.

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The study explored risk factors for severe COVID-19 among shielding people to explore possible reasons for this. There were two key risk factors associated with severe COVID-19 in the shielding group: first, a higher number of adults in the household, and second, a recent, not COVID-19 related, hospital admission. A recent hospital admission, not COVID-19 related, was the strongest risk factor. This suggests that hospital-onset COVID-19 infections may have been an important risk for the shielding group.

As mentioned before, shielding could only influence some aspects of people's exposure to the virus: it could not stop people from needing to access health care. Shielding people were a clinically vulnerable group and more likely to require health care. Shielding also could not change where people lived or the number of adults in their household. As reported earlier, it was not always possible for shielding individuals to stay away from others in their household or to shield as a household.

In conclusion, although it is a key question, it is not possible to conclusively answer the question whether shielding had a protective effect. The REACT-SCOT follow-up study[3] found no evidence of a protective effect, but there is no 'counterfactual' available to the evaluation: we do not have data on what would have happened to shielding individuals if the shielding programme had not existed. It is not unreasonable to argue that shielding has had a protective effect, but the extent of any possible protective effect remains open to question. Exploring the effectiveness question has highlighted that hospital-onset infections and transmission from other adults in the household may have been important risks for the shielding group. Future programmes may benefit from considering these risks more fully.

What were the negative impacts of shielding?

It has not been possible, as part of this **rapid** evaluation, to explore the impacts of shielding in full across all subgroups of the shielding group. Findings from the June 2020 PHS shielding survey around the negative impacts of shielding have previously been reported.[2] This section provides some additional insights based on other surveys, qualitative evidence and emerging literature.

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Mental health impacts

In the June 2020 PHS shielding survey, seven in ten respondents reported a negative impact on their mental health. Most (57%) reported slightly or moderately negative mental health impacts, with 15% reporting severe negative mental health impacts. Seven in ten agreed or strongly agreed with the statement that they were coping okay with shielding.

In the July 2020 Scottish Government online survey of 3,000 shielding people, fewer than three in ten (29%) felt that their mental health had improved since the shielding guidance had been relaxed.[c] More than one in five (22%) felt that their mental health was worse. Respondents in this group commented that the actions of wider society were making them feel unsafe. They worried about what the easing of measures meant for the future and still felt the impact of limits on visiting friends and family. They also felt a new pressure to 'return to normal', having to explain why they still did not want to attend events.

Scottish Government interviews with 32 shielding people identified a number of key themes relating to the mental health impacts of shielding, including:

- social isolation – isolation from family and friends, but also a sense of being forgotten by services
- feeling guilty for the impact on their family
- feeling a sense of loss – being unable to carry out normal activities
- feeling disempowered
- feeling they are suffering because of their ill health
- a heightened sense of anxiety – even feeling unsafe to go out in the garden.

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c Shielding guidance had been relaxed but not yet paused at the time of the survey.

It is difficult to disentangle the negative impacts of shielding from the negative impacts of the other population-wide COVID-19 restrictions. Two studies have addressed the question of the mental health impacts of shielding, using the longitudinal Understanding Society survey series and the validated 12-item General Health Questionnaire used in this survey series. The first study[20] reported poorer mental health scores in the shielding group than the population at large in April 2020, but did not report on possible differences in mental health scores pre-COVID. The second (non-peer reviewed) study[21] took pre-COVID mental health scores into account and found that the mental health impacts of the pandemic were not worse for those who had received a shielding letter.

PHS interviews with shielding people and third-sector groups provided some insights around how to disentangle the mental health impacts of shielding and other aspects of the pandemic. Some people linked worsening mental health to the closures of mental health services or coffee mornings. They acknowledged that these closures were not directly related to shielding. Some went as far as suggesting that shielding had provided a buffer against the anxiety caused by the pandemic. There were, however, also examples of shielding having a separate and distinct negative impact, for example where shielding meant people had to stop working or when they could not leave the house to get some time away from the challenges of lockdown family life, while non-shielding household members could.

Other impacts of shielding

Some of the other key issues raised by people with lived experience and interviewees working in health boards, local authorities and third-sector partners include:

- Reduced access to health care, social care or therapy, either because of reductions in services or because people decided themselves to cancel care or appointments as a precaution. The July 2020 Scottish Government survey suggested that almost one in five respondents had had a healthcare appointment postponed or cancelled; 2% had decided against attending an appointment because of safety concerns.

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- The impact of shielding on unpaid carers, including as a result of reduced social care services. There were examples of physical and mental exhaustion among family members who had taken over caring duties. There were also comments on anxiety about the support that would be available for the shielding person they cared for, if they or people in their support network became infected. One shielding individual interviewed by PHS reported how their quality of life had been affected by a reduction in their care package. The carer of a shielding individual interviewed by PHS described how they had felt 'utterly alone' as a couple and how the sense of being responsible for safeguarding someone else's life against COVID-19 was 'overwhelming' at times (LEI5).

- The impact of shielding on employed people, in particular stress and anxiety caused when employers did not accept that an individual was at higher risk and expected employees to come to work. This also applied to partners or carers of shielding people. PHS interviews with health boards suggested that those challenges had become more acute in the post-shielding context. Whereas shielding guidance had provided relatively clear-cut guidance to employers that people had to stay at home, there had been more ambiguity around how to manage occupational risk following the pause in shielding.

- The impact of shielding on people's finances, either as a result of not being able to work or because of higher costs, including the additional cost of online food shopping and inflated prices for personal protective equipment.

Irrespective of whether or not shielding had a protective effect, it is clear that shielding people experienced profound impacts on their life. The impacts of reduced access to health and care and, related to this, the impacts on unpaid carers could only be briefly touched upon in this evaluation, but these impacts appear to have been pronounced. It is difficult to disentangle to what extent these impacts were the result of shielding, as opposed to the pandemic or other population-wide restrictions. However, it is clear that shielding at times added extra complications.

Part two. Added value of the support offer

Introduction

Part two of this report aims to evaluate the shielding support offer. It focuses on three of the evaluation questions:

1 Has the shielding support reached the intended audiences?

2 Has the shielding support been fit for purpose?

3 What have been key process issues?

We explore these questions based on summary data provided to Public Health Scotland by NES and a shielding data dashboard set up by the Scottish Government; findings from the June 2020 PHS shielding survey; and qualitative data from interviews by Public Health Scotland and others. We look in turn at the SMS service, the local authority telephone outreach, the food support, and home delivery of medicines. More details about the shielding support programme can be found in Appendix 3.

Shielding SMS service

Reach of the SMS service

By 27 July 2020, more than six in ten (62%) of all shielding people had registered with the SMS shielding service. The percentage of shielding people registered with the service varies across Scottish local authorities from 51% to 73%. Four in ten (44%) shielding people had signed up directly with the SMS service; 8% of shielding people had registered via their local authority; and 10% had registered via both routes.

Reach of the SMS service by age, gender and deprivation

The youngest and oldest[d] shielding people were slightly less likely to have registered with the SMS service. By 27 July 2020, two thirds (67%) of those aged 36 to 70 had registered with the SMS service, compared to six in ten of those aged 26 to 35 (60%) and those aged 71 to 80 (59%). Women were slightly more likely to have registered than men (63% compared to 60%). Those in the 10% most deprived areas were only slightly less likely to have registered with the SMS service than those in the 10% least deprived areas (61% compared to 63%).

Added value of the SMS service

The overall impression from interviews with shielding people and local authority stakeholders was that the SMS service had been useful and appreciated, but that the accessibility of support services could have been considered more clearly early on. Local authorities pointed out that many of the helpline calls they received related to challenges signing up with the SMS service, for example because people did not have mobile phones or mobile phone reception was poor. Early on, the number of the SMS service was accidentally blacklisted by one of the mobile phone networks. Shielding people and those supporting them felt that the shielding support offer assumed that shielding people could easily use a computer and smartphone, which was not always the case.

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d Data governance procedures meant that NHS Education Scotland could not access dates of birth. Proxy age indicators were calculated on the basis of CHI numbers, the unique 10-digit health record identifier which includes an individual's data of birth in the DD/MM/YY format. The proxy age indicator cannot differentiate between people born between 1900 and 1920 and those between 2000 and 2020. These groups are excluded from the subgroup analysis by age.

Local authority telephone support

Reach of the local authority telephone support

By the end of April 2020, local authorities had had direct contact with 50% of shielding people. By the end of July 2020, this had increased to 97% of shielding people. This percentage varied across Scottish local authorities from 84% to 100%. This suggests that, in principle, the vast majority of shielding people had the opportunity to sign up for the SMS service or discuss their support needs via their local authority.

Local authority stakeholders interviewed by Public Health Scotland felt confident that, by and large, they had been able to support shielding residents. Local authorities pointed to proactive telephone outreach, which was often followed up with letters or even home visits if people could not be reached by phone after multiple attempts. Local authorities recognised that it may not have been possible to reach every individual, but reported extensive attempts to do so.

There is some limited qualitative evidence from the PHS shielding survey around why people may have been 'missed'. One shielding individual did not ask their local authority for support because they were afraid that volunteers might harm them. A homeless shielding person, staying in a relative's holiday cottage for free, was unsure about the legality of this arrangement and did not ask for help for fear of drawing attention. One individual, when asking a call handler for help, was told to call back the next day. Another was working on a local authority helpline and did not feel comfortable sharing information with direct colleagues.

Added value and organisation of the telephone calls

PHS interviews with local stakeholders showed relatively little evidence of coordination of calls between local authorities and GPs. There was a recognition among stakeholders that this might have led to a degree of duplication. However, the overall impression from PHS interviews with local authority stakeholders was that shielding people had been grateful to receive the call. There was a sense across some local

authorities that the proactive calls had not unearthed extensive unmet needs – they were more appreciated as a 'checking in' call. Many of those who needed support had already reached out to the council. Local authorities commented that the telephone outreach had at times been emotionally demanding for call handling staff.
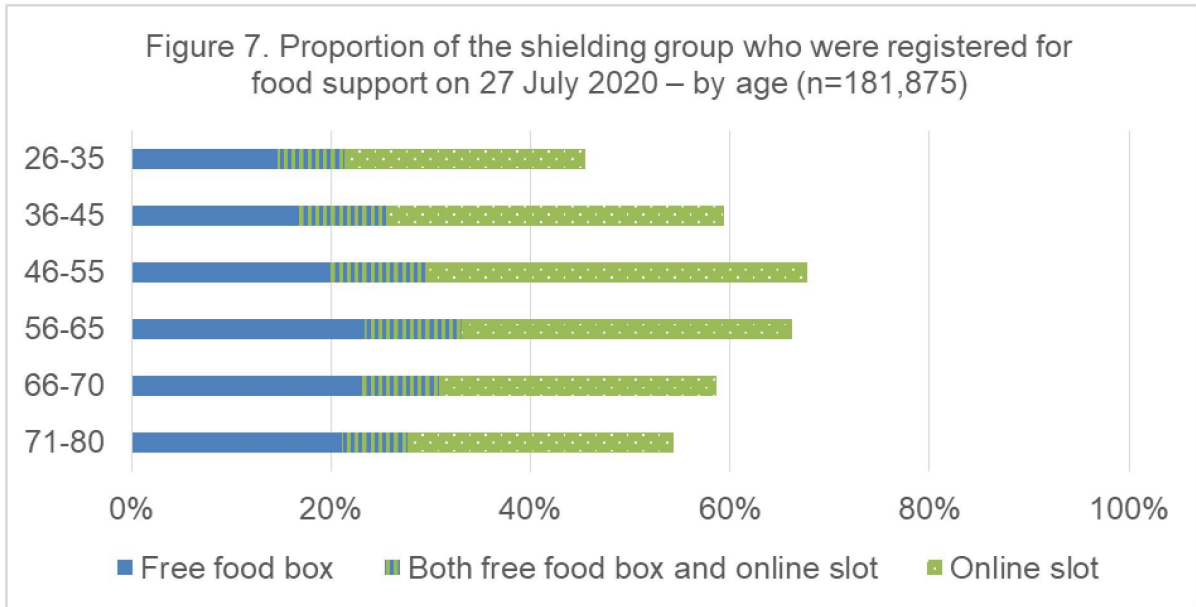
Food support

Reach of the food support by subgroup

On 27 July 2020,[e] more than half of the shielding group (53%) were signed up for food support – one in five had signed up for home delivery of free food boxes, a quarter had signed up for a priority online delivery slot and 7% had signed up for both.

Those aged 46 to 55 were most likely to have registered for an online supermarket slot. Those aged 56 to 70 were most likely to have received free food boxes (see Figure 7).

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e The NES shielding database was set up as a dynamic database: it changed as people registered, cancelled and re-registered for support. It is not possible to interrogate the database retrospectively for a specific date. Snapshots of the database at certain time points are available. The 27 July 2020 snapshot is the last available snapshot before the end of the evaluation period. As Figure 10 demonstrates, the number of people ordering a free food box had dropped below its earlier peak by that point.

Figure 7. Proportion of the shielding group who were registered for food support on 27 July 2020 – by age (n=181,875)

Source: NES shielding database.

Women were more likely to have signed up for food support than men (see Figure 8).

Figure 8. Proportion of the shielding group who were registered for food support on 27 July 2020 – by gender (n=181,875)
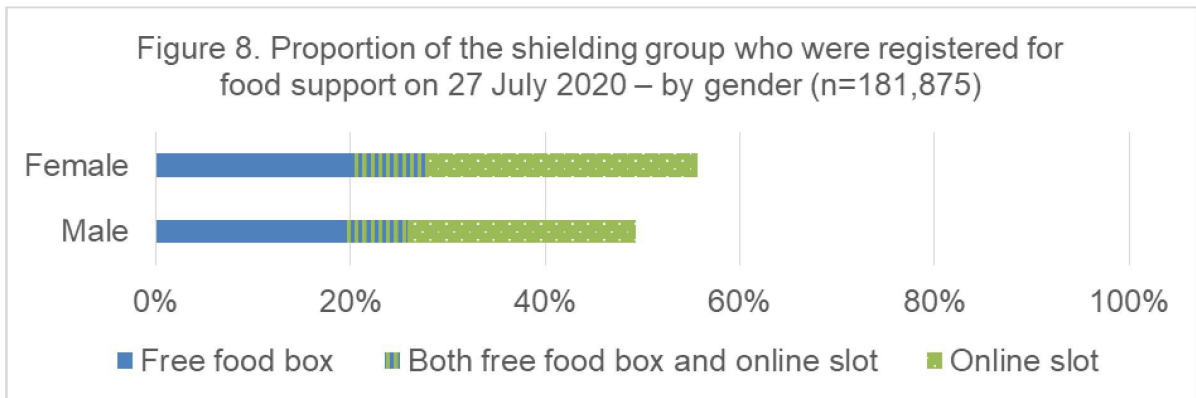
Source: NES shielding database.

Shielding people in more deprived areas were more likely to have registered for food support. This was driven by the fact that people in more deprived areas were more likely to have registered for free food boxes. They were actually less likely to have registered for priority online supermarket slots, but they were more likely to have registered for both (see Figure 9).

Figure 9. Proportion of the shielding group who were registered for food support on 27 July 2020 – by Scottish Index of Multiple Deprivation (SIMD) profile (n=181,875)
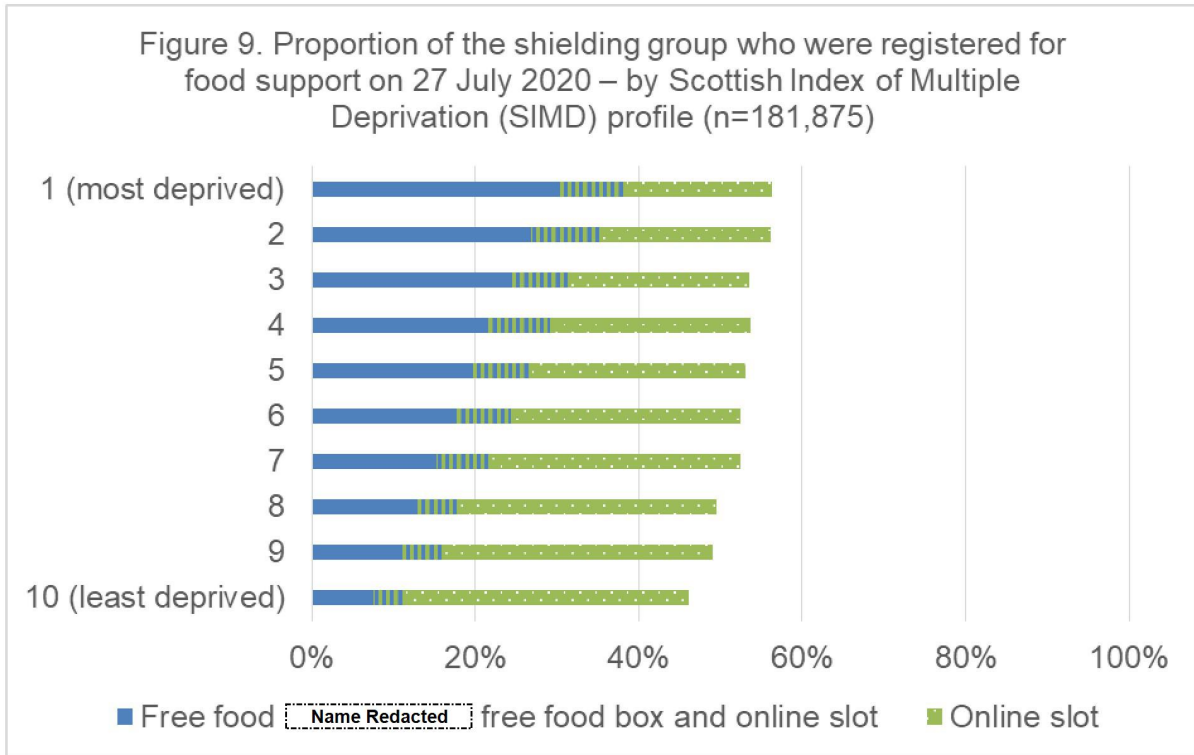
Source: NES shielding database.

Reach of the free food boxes

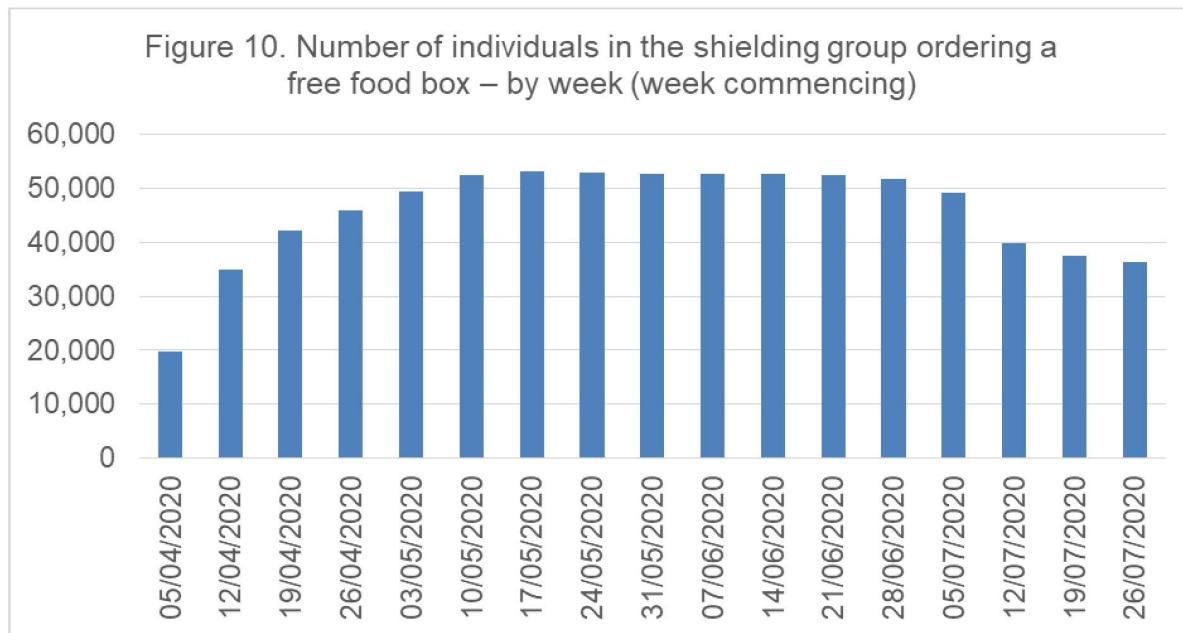Between April and July 2020, one third (34%) of all people on the shielding list ordered and received at least one free food box. More than 900,000 free food boxes were delivered over the course of this period. On average, in any week, about two thirds of free food box recipients received one box and about one third received two boxes. A smaller group – about 2% – received more than two boxes.

Overall, a third of free food boxes (more than 300,000 boxes) delivered between April and July 2020 went to people living in the 20% most deprived areas. Less than 8% (just under 70,000 boxes) went to people living in the 20% least deprived areas.

Reach of the free food boxes over time

At the peak of the programme, more than 50,000 shielding people were ordering free food boxes every week (see Figure 10). The vast majority (81%) of food box recipients ordered food boxes for at least six weeks. About half (54%) of food box recipients

ordered free food boxes for 12 or more weeks. Only 16% of food box recipients ordered free food boxes for the full 16-week duration of the scheme.

Figure 10. Number of individuals in the shielding group ordering a free food box – by week (week commencing)

Source: NES shielding database.

Were any people 'missed'?

The PHS shielding survey asked whether people struggled to access food that met their needs. Among respondents who had not received free food boxes, only 3% were struggling to access food that met their needs. This suggests that, overall, levels of unmet need among those not reached by the food support scheme may have remained low. However, harder to reach groups may have been less likely to participate in the survey, so there may be a level of unmet need not captured in this 3%. Among the most socio-economically vulnerable group, almost one in five (18%) survey respondents who had not received home delivery of free food boxes (n=155), reported that they were struggling to access food that met their needs. This may indicate a higher level of unmet food need in particular groups. It is not clear whether and how many of these respondents were struggling to access food pre-COVID.

Were the free food boxes necessary?

The free food box scheme was set up in a context of food insecurity concerns: the start of shielding coincided with the national lockdown, a degree of panic buying and pressures on online delivery supply chains. With hindsight, there is some evidence to suggest that the free food boxes may not have been an absolute necessity for all recipients:

- The PHS shielding survey suggested that a quarter of respondents who received free food boxes would have struggled to access food without the boxes – the remainder would not have struggled.

- A small proportion of the shielding group (7% on 27 July 2020) were signed up for free food boxes **and** a priority online supermarket slot. This suggests a potential for duplication. The PHS shielding survey suggested that a quarter of respondents who signed up for both, did so 'to play it safe'.

- Although set up as an opt-in scheme, the free food box offer was universal and proactively offered via the SMS service and local authorities. There was a low threshold to entry. Moreover, food boxes continued to arrive until people opted out by sending STOPBOX to the SMS service. This may have led to some people continuing to receive food boxes they did not need. For example, one shielding individual interviewed by Public Health Scotland explained that they had needed the free boxes less after they had secured a priority online slot, but that they had 'just let it come' (LEI4). An early July 2020 SMS message advising shielding people that it would be safe to go shopping from 24 July 2020, may have acted as a prompt to remind people to opt out: there was a spike in the number of people cancelling their free food box deliveries around the same time. There were also several examples of people donating unwanted food box items to food banks or sharing them with neighbours or family.

- Some local authority stakeholders interviewed by Public Health Scotland reported that, based on local knowledge, some of the free food boxes had gone to people who could have paid for supplies. Local authority stakeholders also acknowledged

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that there may have been instances of call handling staff encouraging people to sign up to free food boxes they did not need. This was also hinted at in some of the open text box comments in the PHS shielding survey: some commented that they had been 'told to sign up' or 'talked into taking a box'.

- The monitoring data also shows that a small, but not negligible, proportion (8%) of the free food boxes were delivered to the 20% least deprived areas. However, living in the 20% least deprived areas does not automatically mean that all people or families within those areas were amongst the least deprived. Some people within those areas may still struggle to afford online shopping.

At the same time, there is also clear evidence in the PHS shielding survey that the free food boxes had responded to real need:

- The proportion of survey respondents who would have struggled without the free boxes was twice as high among the socio-economically most vulnerable (50%). Some people also reported that, without the boxes, they would have gone out to get food – risking exposure to the virus.

- The proportion of survey respondents who signed up for the free food boxes **and** registered for a priority online supermarket slot was higher among those living in more deprived areas. Responses to the open text boxes in the survey indicated that the free supply of some items had helped people financially: they did not have to shop in the supermarket as frequently or for as many items.

- The open text box responses highlighted a number of other reasons why the free food boxes had met a need despite people's access to a priority online slot. For several respondents, the box had been necessary at the start, because of delays in securing access to a priority online supermarket slot. Even after securing the online supermarket slot, there were no guarantees that the supermarket could deliver every week or could deliver all items. A number of people struggled with the online process and found the free food box helpful as a back-up. The free food box also helped people manage anxiety relating to food security: it meant one less thing to worry about. A number of people who cancelled their food boxes

after securing their priority online slot felt it was 'reassuring' to know that they could sign up for the free food box again in future if necessary.

Analysis of NES data confirms that the majority of shielding people who were receiving free food boxes first and secured a priority online slot later, continued to receive the free boxes after securing their priority slot – but one in five (19%) free food box recipients cancelled their order and stopped receiving the boxes within three weeks of securing a priority slot.

Was the content of the free food boxes fit for purpose?

Another key challenge was ensuring that the content of the food boxes was fit for purpose – while delivering at scale. The June 2020 PHS shielding survey showed that 13% of respondents were struggling to access food that met their needs, despite receiving the free food boxes. Among those most vulnerable socio-economically, this was almost one in three. This suggests that the free food boxes were not meeting all food needs of all people. Qualitative evidence adds detail to the survey findings. Key issues reported by local authorities, third-sector groups and shielding people include the following:

- The standard boxes could not meet specific dietary requirements (e.g. vegetarian, vegan or halal diets or diets linked to an individual's allergies or medical needs).

- Some essential items (e.g. cleaning products or baby food) were not included.

- There was a lack of variety and choice.

- It was challenging to achieve a nutritionally adequate, balanced diet via the free food boxes alone.

That being said, responses to the open text comment boxes in the PHS shielding survey suggested that the boxes were 'excellent' at covering the basics and gratefully received by many. A letter in the box explained how people could contact their local authority if they needed additional items.

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Logistics of food box delivery

Home delivery of free food boxes, at scale and organised under time pressure, presented challenges. PHS interviews with local authorities, the PHS shielding survey and Scottish Government research on local COVID-19 support provision[22] identified a number of logistical issues:

- A number of survey respondents reported that they had received the boxes without asking for them.

- Some survey comments suggested people were under the impression that they needed to accept the free food boxes in order to receive a priority online supermarket slot.

- There were also reports of difficulties stopping the delivery of the boxes.

- There were comments about delays in receiving the free food boxes, especially early on. Analysis of NES data gives some indication of the scale of this issue (see Figure 11). The number of people receiving their first food box each week closely tracks the number of people who signed up for the boxes one week earlier. The data suggests that a few hundred people waited longer than a week. Slightly more people who signed up in the week commencing 12 April 2020 were affected, and again the weeks commencing 3 and 10 May 2020. A degree of 'catch-up' may be apparent in the number of deliveries in the week commencing 3 May 2020.

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Figure 11. Number of shielding individuals ordering their first food box each week (week commencing) and number receiving their first food box **one week later**
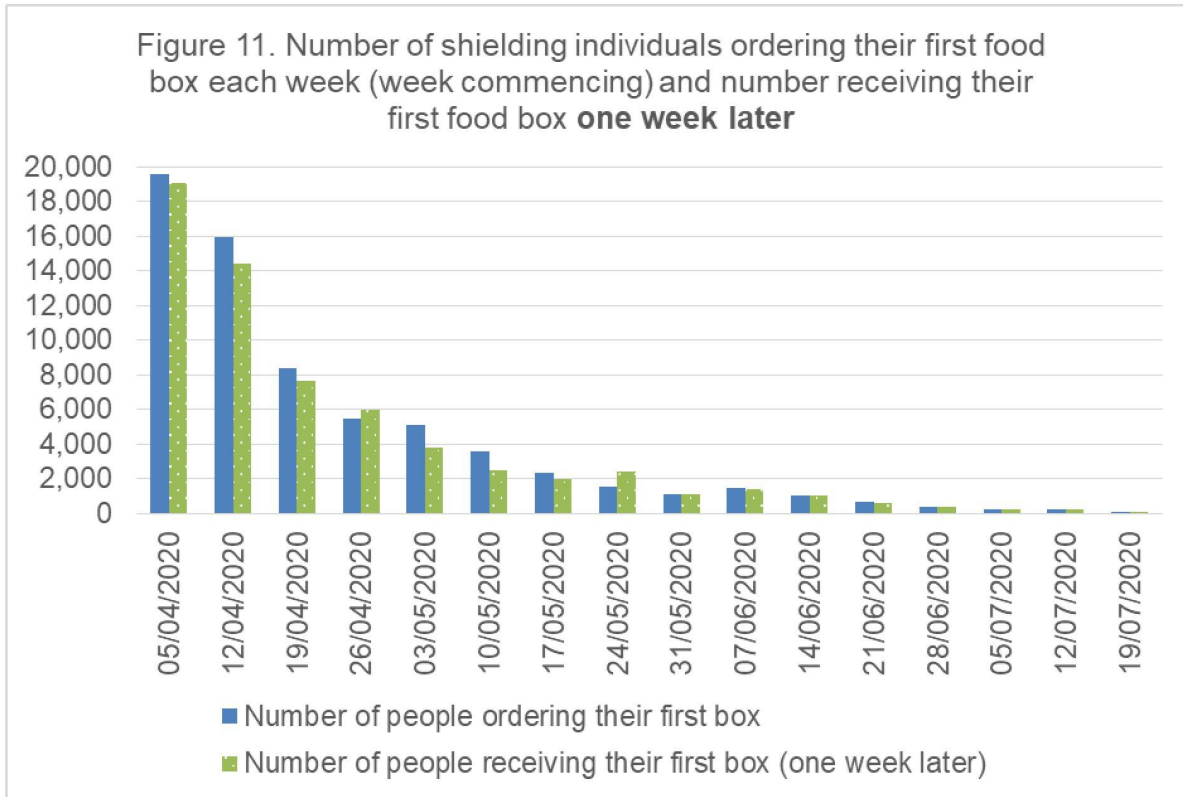
Source: NES shielding database.

Added value of the priority online supermarket slots

The qualitative data suggest that access to the priority online slots added substantial value. The priority slots were identified by one shielding individual interviewed by Public Health Scotland as 'key to our survival through shielding' (LEI4). Shielding people commented in interviews with the Scottish Government and in their responses to the PHS shielding survey that securing the priority online slot had boosted their independence and made them feel 'more in control of [their] life'. Securing the online slot was 'a major thing'.

However, analysis of a subset[f] of the NES data suggested that fewer than half of those who were offered a priority slot with a supermarket also placed an order with this supermarket. It is not possible to explore directly why this is the case. People may have been able to shop online with another supermarket without priority access – as supply chain pressures eased over time and supermarkets were able to adjust to demand for online delivery in the COVID-19 environment.

Logistics of signing up for priority online supermarket slots

The PHS shielding survey highlighted logistical challenges with the supermarket registration process:

- Some people had not received a priority slot in the supermarket where they wanted to shop. In some instances, this had proved financially challenging: people secured a priority slot in a supermarket which was more expensive than the shop they usually went to.

- Many responses hinted at delays, at times long delays, in securing a slot. Some people strongly expressed their frustration at this process. There were examples of how the delays caused anxiety and distress. In some cases, people had not managed to secure an online priority slot at all.

Analysis of NES data can provide some insight about scale. Overall, more than 50,000 shielding people registered for a priority online slot. The majority were matched with a supermarket – just fewer than 10,000 were never matched. Much of the process was managed by supermarkets and there is limited data to help understand possible issues.

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f This information only refers to the subgroup of shielding people who were matched with one or more of **four** supermarkets – and none of the other participating supermarkets. This is because data about orders placed are only available for those four supermarkets. The other participating supermarkets opted not to share this data with NHS Education Scotland.

Home delivery of medicines

Weekly number of requests to local authorities dropped from a few thousand in the early weeks of the pandemic (peaking at 7,940 in the week commencing 16 April 2020) to a few hundred by July 2020 (315 in the week commencing 27 July 2020). People only had to request home delivery of medicines once – deliveries continued in the weeks following the initial request. In total, there were 38,160 requests for home delivery of medicines in the period until (and including) the week commencing 27 July 2020.

The PHS shielding survey showed that only 2% of respondents were struggling to access their medication. Comments in the PHS shielding survey confirm that shielding people frequently used their social networks – family, friends or neighbours – to get access to their medicines.

There were comments in the survey and during interviews with shielding people by Public Health Scotland which described challenges in organising delivery of medicines. People commented that they had been told by the local helpline or their GP to organise the delivery themselves. In some instances, people had to make multiple phone calls before securing home delivery. This had caused anxiety and distress. There were also comments that it was problematic not to extend the support to others in the household: if people decided to shield as a household, this created challenges for other household members to access medicines.

Conclusion

The support offer reached large numbers of shielding people. More than 90% of shielding people were in contact with their local authority. Six in ten of all shielding people signed up to the shielding SMS service. At its peak the home delivery of free food boxes reached more than 50,000 people per week. More than 50,000 registered for a priority online supermarket slot. These support systems were set up at pace in the early stages of the pandemic. There were a number of logistical and other challenges across the support offering and some questions were raised about the content of the food boxes and whether the boxes were 'necessary' for all those who received them.

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However, there was also clear evidence that the support offer had addressed real needs.

Part three. Lessons from stakeholder interviews

Introduction

This third section of the report aims to draw lessons to help inform decision-making in future pandemic situations, drawing on stakeholder interviews with 15 local authorities, local health boards and Scottish Government officials. Where relevant, we also draw on other data sources, including interviews with shielding people.

- This section explicitly does **not** aim to establish whether it was 'right' to launch the shielding programme. It explores the decision-making process and some of the unintended consequences of decisions taken. Shielding was initiated in a unique context of limited evidence to guide policy-making but pressure to act fast.

- This evaluation focused on the Scottish shielding programme. Decision-making around shielding, especially early on, was done at the level of the four UK nations.

This part of the report looks at three distinct questions. First, we highlight stakeholders' views on the distinct **ways of working** as part of the shielding programme. We then explore stakeholders' perspectives on the **rationale** behind the different aspects of the shielding programme before focusing finally on the **implementation** of the programme.

Ways of working

- Interviews testified to the effort and time invested in the shielding programme. Interviewees reported working 12, 14 or more hours per day or working seven days per week. One individual described their routine as 'eating drinking sleeping shielding' (SI11). The first six weeks were described as particularly intense.

- Stakeholders reported extensive collaboration within and across organisations, across levels of government and across sectors. The way in which people had come together was described as 'magical' (SI7) or simply 'unusual' (SI14). Several local stakeholders named individual Scottish Government staff, commenting on how helpful they had been – despite challenging circumstances.

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- Stakeholders stressed the speed with which challenges had been tackled. Issues which otherwise would have taken weeks or months to resolve, had been resolved in days. Data governance arrangements and food support were given as examples.

- The speed of action and collaboration were described as all the more remarkable because they had happened with many working from home, often from a child's bedroom or the kitchen table.

- The big driver behind the amount of effort, collaboration and speed of action appeared to have been a genuine concern to protect and support shielding people. The image of a shielding individual too afraid to leave the house but going hungry or dying because of access issues featured in several interviews.

Programme rationale

A two-tiered approach to risk: shielding and non-shielding at risk

Stakeholder interviews explored a number of advantages and downsides to the two-tiered approach to risk:

- One key advantage of the two-tiered approach was that it enabled a focus of effort and resources on a relatively contained group (180,000 people) as opposed to the much larger group of all those at higher risk (e.g. all over-70s).

- Stakeholders reported that it would have been much more challenging to individually identify the much larger group of all those at risk. Local authority stakeholders commented that it would have been impossible to proactively call this much larger group. Not working with individual identification for the shielding group was not considered a viable option. For those at the highest risk, COVID-19 was considered to have been a matter of life or death. Stakeholders felt that not contacting people directly might have meant that the advice did not reach some people.

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- Focusing on a smaller group was also considered important given the decision to provide people with access to free food boxes. Stakeholders referred to this as part of an ambition to target taxpayers' money at the most vulnerable groups – as opposed to a wider, more expensive support scheme.

- Stakeholders felt that having a separate shielding programme had galvanised efforts. One local authority stakeholder who felt that the approach had been too centralised, acknowledged that having a national programme had positively 'challenged' (SI1) local areas to respond. National prioritisation and leadership were seen as a clear catalyst for local action – by interviewees from local government and health boards. Some stakeholders phrased this in terms of being 'allowed' (SI7) by the Scottish Government to deprioritise existing tasks and redirect resources towards those in the shielding group.

- Another advantage of the two-tiered approach was that it did not unnecessarily impose restrictions on too large a group. There was a reluctance to advise people to adhere to enhanced restrictions if their risk profile was not high enough. Some of the local stakeholder interviews suggested that inclusion on the list was seen as 'a good thing' (SI8) by some clinicians locally. There is also evidence of people actively pursuing inclusion on the list. In terms of the design of the programme, however, there appears to have been a clear desire not to apply the strictest restrictions to too large a group.

- A possible downside of the two-tiered approach was that it created the impression of a clearer difference in risk profile than the evolving evidence base supported. Stakeholders spoke about a potentially 'arbitrary' (SI13) cut-off point between higher and highest risk. Working with a blanket approach of highest risk also meant that it had been difficult to assess relative risk in real-life scenarios of allocation of scarce healthcare resources: health board interviewees explained how allocation of scarce (single) hospital side rooms had been challenging, when there were not enough rooms to cover demand for end-of-life care, infected people, shielding people and, as age emerged as a key risk factor, older people.

One health board stakeholder commented that there would have been value in guidance from Public Health Scotland around this issue.

- The introduction of 'category 7', which enabled clinicians to add people whom they deemed to be at the highest risk of severe illness to the shielding list, aimed to provide a degree of flexibility and counter the risk of 'arbitrary' cut-off. However, stakeholder interviews suggested that there was substantial variation in how individual clinicians used this option. Some health board stakeholders had considered providing clinicians with guidance, but had decided against this.

- Another downside, raised in the stakeholder interviews, was that the existence of a shielding list created a degree of anxiety among those who felt that they should be on the list but struggled to be included. This was not just about the practical benefits that being on the list conferred. As explained by one individual supporting a shielding individual, inclusion on the list also, more subtly, conveyed a recognition of one's need.

It is worth noting that most other countries appear to have identified and issued guidance for at-risk groups, but not all operated a two-tiered approach to risk. Nor was this two-tiered approach necessarily a feature of the Scottish (or UK) approach from the start.[23, 24] The Irish cocooning programme – the closest international parallel to the Scottish (and UK) shielding programme – did not operate a two-tiered approach and included all over-70s alongside a number of clinical conditions which mirror the Scottish shielding categories. The Irish programme did not involve centralised identification of at-risk people or centrally driven, proactive outreach to all cocooning people.

Enhanced restrictions on top of a population-wide lockdown?

- Some stakeholders raised questions about the timing of shielding: they wondered whether shielding, simultaneous with population-wide lockdown measures, had been necessary. They argued that there would have been a stronger rationale for shielding in a context where the population had not been asked to lock down.

- Others, however, pointed to a number of arguments as to why there may still have been value in shielding in a context of lockdown. They suggested that it was impossible to predict that lockdown compliance would be as high as it was. They felt that there had been strong arguments to advise shielding people to avoid shops – which was not part of the population-wide advice. They pointed to the context of panic buying and the lack of infection control in shops early on.

- Arguments for not leaving the home for exercise were seen as less easily available. One clinical stakeholder pointed in this context to the fact that no stringent 'stay at home' advice for the shielding group was being considered at the time of the interview, even in the context of the English lockdown or in Scottish areas with higher prevalence of the virus. In their view, this showed that the thinking had moved on and shielding in its original, most stringent format was no longer considered to be appropriate.

There are other examples of countries which issued 'stay at home' orders for the population at large and separate 'stay at home' orders for at-risk groups[25] – but it is unclear whether the 'stay at home' orders were stricter for the at-risk groups, as was the case in the Scottish (and UK) model.

It is also interesting, in this respect, to consider the timeline of the development of shielding. A February 2020 paper[23] prepared for a meeting of the SAGE committee first hints at the outlines of the future shielding strategy. The paper explores the merits of potential non-pharmaceutical interventions in response to COVID-19. The paper refers to 'more intense measures on those age or risk groups at most risk of experiencing severe disease' as a possible additional strategy. The social distancing suggested in the paper for the population at large falls short of later (March 2020) lockdown guidance to stay at home. 'Household isolation' is only considered for groups at most risk of experiencing severe disease in this paper.

Other countries which had advised at-risk groups to stay at home relaxed guidance about leaving the house for exercise sooner. Ireland, which had similarly advised at-risk groups to stay at home at all times advised that it was safe to go outside for walks as

early as 1 May 2020. England and Wales advised this from 1 June 2020, Northern Ireland from 8 June.[7] In Scotland, people in the shielding group were advised that it was safe to go outside for exercise from 18 June 2020 onwards.

A dedicated support package linked to shielding status?

- Some stakeholders questioned the rationale for linking clinical guidance directly to a programme of practical support. They pointed out that those clinically at risk and those in need of support were not necessarily the same groups. Even stakeholders who argued that linking the two programme elements had been the correct route, acknowledged that this linkage had resulted in programme components being conflated and that it had appeared at times that they were running a 'grocery business' (SI13) rather than a shielding programme. They felt that the significance of being included on the shielding list had moved away from an indication of needing to follow even stricter guidelines – as had been its initial purpose. Instead, inclusion on the list became about exclusive access to some aspects of the national COVID-19 support offer.

- Others, however, believed strongly that linking the clinical advice to a support programme had been a moral imperative. They argued that it would have been wrong for the Scottish Government to ask people to shield without providing them with the support to do so. The generic COVID-19 support offer was not considered sufficient: a dedicated support offer was necessary **because** these people had been asked by the government to stay at home. There was also strong buy-in for the principle of **proactive** outreach by local authorities to **all** shielding people to double-check that their support needs were met. Generic COVID-19 helplines were not considered sufficient. Even local authorities who acknowledged that they were initially not convinced about this because of the resource implications or who disagreed with some aspects of implementation, tended to agree with the overall principle of proactive outreach.

- Some of those who argued that the support programme had been a moral imperative, agreed with the principle of a dedicated shielding support programme

overall, but objected to the national programme of free food boxes. This was mostly, but not exclusively, because of the cost of the national scheme. It has not been possible, as part of this **rapid** evaluation, to assess the cost-effectiveness of the free food box scheme or the shielding programme. Several local authority stakeholders felt that more effort could have been invested by the Scottish Government, earlier, in organising and optimising the scheme of priority online supermarket slots.

- Local authority stakeholders also felt that the national Government had underestimated the degree to which local authorities were able to provide the necessary food support. They pointed to the fact that local authorities had managed to provide food support to the shielding group in the crucial early weeks before the national food box scheme got up and running. They also pointed to the fact that they were supplementing the free food boxes and providing support in case of missing deliveries. There was a sense that there may have been too strong a focus on getting an automated SMS-based scheme up and running and not enough stepping back to discuss what could have been done differently locally.

- Although some stakeholders pointed out that, based on their local knowledge, food boxes had gone to people who could have paid for supplies, there were no suggestions that the Scottish Government should have gone for a means-tested system. This was seen as not feasible to set up given the time delays this would have caused. It was also seen as carrying a greater risk of stigma. There was a hope that shielding people would only apply for the free food box if they needed it. Stakeholders argued that the food box scheme was an opt-in scheme: boxes were not delivered as a matter of course to all.

- Some local authorities acknowledged that there had been value in a nationally **commissioned** food support system. They felt that the Scottish Government had been able to secure economies of scale that would have been hard to achieve locally. There were questions, however, about whether distribution could have been left to the local level – following the approach taken on one of the islands

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where the national free food boxes were delivered to the island but distributed by a local stakeholder. There was a sense that this would have been easier for local authorities than trying to deal with the myriad calls about missing deliveries. There was also a sense that some duplication may have been avoided.

- The decision to work with a national free food box scheme was seen by interviewees as influenced by the launch of a similar English scheme early on. This had the advantage of offering a ready-made option – which in the fast-paced early days of policy-making was important. Second, it maintained a UK-wide approach to the pandemic, which was seen as important. Some stakeholders also thought that it may have been difficult to be seen as offering less to Scottish shielding people than English shielding people were receiving. Although local stakeholders presented much of the decision-making process in the shielding programmes as a genuine example of co-produced policy-making between national policy officers and local experts, the initial decision to work with a scheme of free food boxes was described as **preceding** this process of co-production.

- Although questions about the rationale behind the food box scheme were widespread, there were some local authority stakeholders who felt it had been the correct way to go. One in particular only questioned the delay in getting the programme up and running, not the principle. A number acknowledged that it may have been difficult for some local authorities to run a local scheme – although it is interesting to note that a rural authority suggested that they would have managed but that city-based local authorities might have struggled and vice versa: a city-based local authority believed that rural authorities might have struggled.

- Across the board, there was a recognition that decision-making happened at a fast pace. A number of stakeholders accepted, for all their doubts about the food support, that it would have been difficult to do anything else as quickly. They questioned, however, why the food box scheme continued as long as it did.

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Revisiting the programme rationale

In the earliest stages of the pandemic, there was little time to explore the programme rationale and underlying assumptions in depth. As one stakeholder pointed out, there was a strong sense that they had to do something. The sense that lives were at stake drove the speed of decision-making. Stakeholders acknowledged that, with the benefit of hindsight and as additional evidence has become available, some of the initial assumptions underlying the programme rationale could be questioned. They did, however, express a genuine belief that, even with the benefit of hindsight, it was difficult to imagine how more intense scrutiny of the programme assumptions would have been possible given the time pressure to act. All stakeholders acknowledged the uniquely pressurised environment, and even those who voiced the strongest critique of certain programme elements generally acknowledged that they understood how and why decisions were made as they were.

Moreover, as one stakeholder pointed out, an abrupt or fundamental review of shielding early on in the pandemic may have undermined public trust – at a time when public trust was crucial.

Implementation issues

Implementation issues relating to the shielding support offer have been covered in part two of this report. This section highlights other implementation issues raised in stakeholder interviews.

Identifying people

Shielding people were individually identified on the basis of their health records and clinician input. Interviewees commented that the identification process had created a number of challenges:

- Health board stakeholders reported a lack of clear criteria early on, leading to confusion. Stakeholders described the clinical guidance in the early days as a 'moveable feast' (SI1). They reported multiple modifications, which at times

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appeared to come on a day-by-day basis. Although local health board stakeholders acknowledged the sense of urgency, they felt that it might have been better to wait a couple of days prior to sharing. One stakeholder hinted at the fact that the scale of the identification challenge, which involved a range of different mechanisms and databases, was underestimated by some early on.

- Interviewees from local health boards stressed the significant local resource that went into the identification process: they referenced efforts by local public health data analysts, GPs and secondary care clinicians. In this context, local health boards identified practical benefits of working with a centralised list of shielding people: it had provided a useful starting point for local efforts. Software-based approaches to interrogating health records were taken by some.

- There was a consensus that clinicians had focused decision-making on **clinical** vulnerability, but there was a recognition of the tension created by the exclusive support available to those on the list. There had been some instances where GPs were asked to add people to the shielding list to gain access to the shielding support offer. Interviewees typically tended to be directly aware of only a couple of cases. One health board interviewee felt that the employment protection offered to those included on the shielding list may have been more of a driver for people to ask to be included on the list than the food support.

- There were reports of delays between secondary care clinicians being able to add people to the list and GPs being able to do so as well. This had caused challenges early on. In addition, there was evidence of instances of disagreement between GPs and consultants as to whether an individual should be included on the list. The absence of guidance was felt to be an issue.

- There was a key issue in terms of identification of people related to people living in one health board area but being under the care of a GP practice in another area.

- Finally, interviewees pointed to the time lag between identification by a clinician and appearance on the list. Although they understood the challenges involved,

they pointed out that it had created problems: people could not sign up for the SMS service or any of the shielding-specific support despite having been told by their GP that they had been put forward for shielding.

Communicating advice and guidance

People in the shielding group individually received letters from Scotland's Chief Medical Officer. In addition, they were able to sign up for the shielding SMS service and local authorities reached out to all shielding people proactively by phone to assess their support needs. Stakeholder interviewees made a number of comments regarding the approach to communication:

- The initial shielding letter was described as long and difficult to understand. A range of stakeholders acknowledged that the initial letter had 'scared the hell out of people' (SI11) and that this may have contributed to people's anxiety – and the reluctance of some to stop shielding. There were suggestions that, even with time pressures, a degree of modification to the letter should have been possible. The lack of alternative, accessible formats and other language versions was also raised.

- Stakeholders acknowledged that the initial identification and communication process had not been sufficiently person-centred or centred around informed choice. Interviews with shielding people by the Scottish Government and written contributions from shielding people confirmed that the process had been 'disempowering' for some. Shielding people reported that they were used to undertaking risk assessments, negotiating complex situations and being involved in decision-making about their care. They felt that recognition of their experience had been lacking in the shielding programme, especially early on. One individual explained that they had been passive recipients rather than active participants.

There is some quantitative evidence around people's reluctance to stop shielding. The July 2020 Scottish Government shielding survey with about 3,000 respondents suggests that a quarter (23%) were still choosing to stay at home after the relaxation in

the shielding guidance. It has not been possible, however, to explore whether and how the initial shielding letter influenced the decision-making process of these people.

Collaboration

- Feedback from local authority interviewees about their regular shielding-related meetings with the Scottish Government was mixed. Some reported that the meetings had been useful and well managed. Others reported that issues raised regarding the logistics of free food box deliveries were not fully addressed. There were also comments about a lack of continuity in Scottish Government officials attending meetings – at times they appeared insufficiently briefed.

- Local health board interviewees regretted the lack of regular meetings between shielding coordinators and the Scottish Government. Several commented positively about the one meeting that had been organised, but felt that the meetings could have been organised earlier and more frequently.

- Reporting requirements were considered to have been substantial. Although most local authority stakeholders accepted the need for reporting, they pointed to multiple demands from different government teams.

- Both local authorities and health board stakeholders raised the issue of advance notice of shielding letters and guidance. Early on, local authority call handlers were getting calls about shielding before letters had been shared, which made it hard to advise callers. Some pointed out that advance warning of letters and guidance was something that had improved over time, but others raised continuing issues. A health board stakeholder pointed out, for example, that GPs had not had sight of a more recent letter regarding vitamin D supplementation before its release. A local authority stakeholder pointed out that they only found out about planned changes to their area's 'tiered' status via the media which, given the implications in terms of possible calls from shielding people as a result of a change in tiers, was 'not brilliant' (SI6) in terms of communication.

- Although there were examples and comments about close and strong collaboration between local authorities and local health boards, there was also a

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sense that there was substantial scope to further improve levels of coordination and collaboration. Although some areas had joint shielding task forces between the local authority and the health board, this was not the case elsewhere.

- Stakeholders reported that there had been an unusual degree of genuine co-production between Scottish Government officials and local authority staff. Programme development became a joint effort where the national policy-making skills of government officials combined with the operational and local knowledge of local officials. This was described as a blueprint for future cooperation. The experience of genuine co-production was not, however, universal: not all local authorities had been involved as directly or actively. Some stakeholders still felt that the shielding programme had been developed by the Scottish Government and then passed down to local authorities for implementation.

Challenges for the future

- Stakeholders asked for greater clarity regarding the future of shielding and the shielding 'list'. There was widespread awareness that new evidence has emerged about COVID-19 risk factors that were not considered as part of the shielding criteria and recognition that shielding was first initiated in a context where evidence was limited. However, stakeholders asked for greater openness in the future about the evidence base underpinning ongoing decision-making and how emerging evidence supported or disproved earlier assumptions.

- Stakeholders wondered why people and individual groups were still being added to the list based on their clinical profile alone – if there was a greater awareness that different risk factors **combine** to determine risk profile. Stakeholders also questioned whether it was appropriate to continue using a shielding list to allocate scarce resources when it was no longer clear that those on the list were necessarily those at the highest risk of negative outcomes or those most in need of support. One shielding individual interviewed by Public Health Scotland explained that shielding people no longer need to be told that they may be at

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higher risk, they are well aware and have had time to think through how to adapt their daily activities to help manage the COVID-19 risks.

- Stakeholders raised the issue of the longer-term relevance of maintaining information about clinically vulnerable people to support future pandemic planning. One public health stakeholder recommended work on a 'standardised measure of vulnerability' (SI4) for future use. A local authority stakeholder took the pragmatic approach that maintaining the existing list was worthwhile, considering the work that had gone into establishing it in the first place – several stakeholders echoed that maintaining the list was far less resource-intensive than the initial development of the list. They warned, however, that the list might become less and less accurate if it is not kept up to date.

- Local authorities stressed that one of the key lessons for them was an awareness of an entirely new group of local residents potentially in need of their support. Many of the shielding people had not previously been on the radar of local authorities – because their vulnerability was clinical as opposed to financial or social. A number of local authorities were reported to be planning internal events to discuss the meaning of 'vulnerability' and implications for local authority priorities. In this context, stakeholders felt that there might be value in maintaining a list, in order to be able to quickly ramp up support again if needed.

- Stakeholders raised data governance as a key issue in this context. They pointed out that few shielding people might object to having been included on a list in an emergency situation where the government wanted to advise them about a potential threat to their life. They recommended, however, revisiting data protection prior to any further use of the list or decision to work with a future standardised measure of vulnerability.

Part four. Lessons learnt

Key lessons can only emerge over time through further reflection and through discussion among those involved in or impacted by the programme. Early lessons based on the shielding evaluation are as follows:

- There appears to be an emerging consensus that certain aspects of the shielding programme are unlikely to be helpful in future support programmes for those at risk, in particular any 'blanket' approach of assigning risk. Risk is not a binary concept: it lies on a continuum and has many components. Moreover, different people are willing to accept more or less risk. A repeat of the shielding programme, **in its initial format**, is not recommended for future crisis situations. The principle of protecting those at higher risk remains valid.

- Exploring the effectiveness question has highlighted that COVID-19 infection during a hospital admission may have posed a particular risk for the shielding group. The shielding programme could only influence some aspects of exposure to the virus: it could not stop people from needing to access health care. It is recommended that future programmes consider more fully the risk of hospital-onset infections.

- Transmission within the household has also been identified as a risk for shielding people. Staying away from others in the household was difficult and the shielding support did not always enable the entire household to shield. It is recommended that future programmes consider more fully the support needs at the level of the household.

- The development of the shielding programme has demonstrated that the highly time-pressured environment of the early stages of a pandemic can enable fast-paced decision-making and implementation. A time-pressured environment also makes it difficult to pause, reflect and critically consider programme assumptions and rationale. Thinking through different scenarios, in advance and in detail, around how at-risk groups could be supported in future pandemic situations, is therefore recommended.

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- As part of this type of resilience planning, it is recommended to consider carefully whether at-risk groups would need to be identified and contacted on an **individual** basis. The advantages and disadvantages of this approach would need to be explored. If individual contact were preferred, the systems to enable this to happen efficiently would need to be established.

Conclusions

This report presents the results of a **rapid** evaluation of the Scottish Government's shielding programme. The evaluation encountered some data limitations and important methodological challenges. The synthesis of the findings to date can, however, provide some useful insights on the shielding programme. It can inform discussions about future approaches to protect those at risk in future pandemics.

The key conclusions are as follows:

- A comprehensive programme was set up, at speed, despite the logistical challenges involved. Substantial effort and dedication were invested by those involved in the programme.

- There is evidence that the shielding programme correctly targeted people who (as a group) were at higher risk of negative COVID-19 outcomes. However, other risk factors, including older age and some other clinical conditions, also increased an individual's risk of negative COVID-19 outcomes.

- There is evidence that the shielding guidance resulted in a change in behaviour. It is, however, not the case that the guidance was always necessary or sufficient to change behaviour.

- Shielding was challenging and at times impossible for people. Many shielding individuals appear to have tried to follow the guidance to the best of their ability, but practical constraints, caring duties and quality of life considerations made this difficult at times. This holds lessons around the support offer that is necessary to enable people to shield, but also raises questions around what is and is not feasible in terms of 'shielding' those at the highest risk.

- Conclusive statements about the effectiveness or otherwise of shielding are not possible. Any **additional** protective impact of shielding in the period being evaluated may have remained relatively modest: shielding coincided with other population-wide restrictions. The impact and duration of those population-wide

restrictions could not have been predicted at the time. Possible benefits of shielding need to be set against the negative impacts of the shielding programme.

- The shielding support programme reached a large proportion of the shielding group and there is evidence to suggest that the support, including the national free food box scheme, addressed real needs. Some questions were raised about logistical challenges, the content of the boxes, whether all recipients needed the boxes and whether a national free food box scheme was the best approach. The support offer could not address all needs.

- With the benefit of hindsight, questions can be raised about some aspects of the programme rationale and implementation. Most important, however, are the conclusions that can be drawn from this in terms of lessons for the future. In the short term, the immediate priority is a review of the strengths and limitations of the current shielding list and how it should and should not be used. This should include an open debate about the data protection issues involved, which should involve those with lived experience of shielding.

- In terms of wider lessons learnt for future pandemic planning, a repeat of the shielding programme, **in its initial format**, is not recommended. The principle of protecting those at higher risk remains valid.

- It is recommended that future programmes consider more fully the risk of COVID-19 infection during a hospital admission and the support needs of the wider shielding household.

- There are opportunities to build on co-production approaches to programme development, as used in the shielding programme. There is also scope to explore future approaches to resilience planning that allow for more local flexibility. More generally, there are opportunities to further enhance collaboration between local authorities and the local public health function.

- Finally, some of the wider resilience issues that have been unearthed by shielding and COVID-19 more generally relating to health, care and therapy provision, including the role of unpaid carers, may benefit from further review.

Appendix 1. Clinical shielding conditions

The initial list of shielding conditions was based on clinical expert opinion and signed off by the Chief Medical Officers of the four nations of the UK on 18 March 2020.[4]

- Solid organ transplant recipients who remain on long-term immune suppression therapy.

- People with specific cancers.

- People with severe respiratory conditions including all people with cystic fibrosis, severe asthma and severe chronic obstructive pulmonary disease (COPD).

- People with rare diseases and inborn errors of metabolism that significantly increase the risk of infections (such as severe combined immunodeficiency and homozygous sickle cell).

- People on immunosuppression therapies sufficient to significantly increase risk of infection.

- People who are pregnant with significant heart disease.

The main changes to this initial list have been as follows:[26]

- People on home oxygen were added.

- People with severe bronchiectasis and pulmonary hypertension were added.

- People who have had their spleen removed were added.

- People on renal dialysis were added.

- The criteria for inclusion on the basis of immunosuppression therapy were revised and clarified (following the release of guidance by professional bodies for different clinical specialties including rheumatology and neurology).

- Clinicians were able to add people who did not fall in any of the six pre-defined groups, based on their clinical judgement.

Most recently (outside the scope of the evaluation, which runs until 31 August 2020) people with Down's syndrome and people with chronic kidney disease have been added to the list.

Appendix 2. Timeline of shielding in Scotland

01/03/2020	First confirmed positive case of COVID-19 in Scotland.
13/03/2020	First confirmed death with COVID-19 in Scotland.
15/03/2020	Mass events of 500 people or more cancelled in Scotland.
17/03/2020	First Minister mentions shielding in a speech to parliament.
20/03/2020	Pubs, restaurants, gyms, schools and nurseries close UK-wide.
22/03/2020	First Minister mentions the shielding conditions in a press conference.
24/03/2020	Lockdown commences UK-wide.
03/04/2020	First batch of shielding letters is sent.
05/04/2020	National delivery of free food boxes to shielding people starts.
10/04/2020	The second batch of shielding letters is sent.
14/04/2020	National COVID-19 helpline launched in Scotland.
17/04/2020	Third batch of shielding letters is sent.
20/04/2020	NES sends first requests for priority online delivery slots to participating supermarkets.
24/04/2020	Fourth batch of shielding letters is sent.
11/05/2020	Initial relaxation of lockdown restrictions.
18/05/2020	Everyone with COVID-19 symptoms becomes eligible for testing.
29/05/2020	Scotland moves to stage 1 of the route map out of lockdown.
18/06/2020	Initial relaxation of the shielding guidance.
19/06/2020	Scotland moves to stage 2 of the route map.
10/07/2020	Scotland moves to stage 3 of the route map. Face coverings become mandatory in shops in Scotland.
24/07/2020	Further relaxation of the shielding guidance.
01/08/2020	Shielding is paused.

Appendix 3. The shielding support offer

- Shielding people were directly contacted with advice and guidance. This took the form of a series of letters from the Chief Medical Officer, SMS messages sent to those signed up to the shielding SMS service and proactive telephone calls by local authorities. Calls were also made by GPs, but unlike the local authority calls, there was no national guidance for GPs to call everyone on the shielding list.

- The shielding SMS service was managed nationally by NES. The SMS service was set up as an automated service – it could not be used for bespoke requests. The SMS service has continued to operate after the pause in shielding.

- Shielding people were able to sign up for home delivery of free food boxes and to priority access to supermarket home delivery slots. People could sign up directly via SMS – the local authority could also do this on their behalf.

- Requests for free food boxes received by NES were forwarded to the wholesale UK food providers commissioned by the Scottish Government to deliver the boxes. Each food box was a standard package – it was not based on individual dietary requirements or food preferences. There was no limit on the number of boxes an individual could order per week via their local authority. There was a limit of two boxes per person per week for orders via SMS.

- Priority slots for supermarket home delivery were assigned by participating supermarkets. NES alerted the supermarkets involved to requests. Supermarkets checked whether the individual was already a customer and, if not, whether they were able to offer a priority online slot.

- Local authorities provided additional food support. A ⸢Name Redacted⸥ 2020 Scottish Government survey suggests that local authorities were supplementing the free food boxes with, for example, dairy products, fresh meat, ready meals, fruit and vegetables, household items and items to accommodate religious or dietary requirements. Local authorities also provided emergency food support to shielding people in case of failed deliveries and to cover the time lag between the initial request for a free food box and the first delivery. Shielding people also had

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access to food support initiatives set up by local authorities as part of their wider (not shielding specific) COVID-19 response.

- Home delivery of medicines was organised by a number of different partners, including local authorities, GPs, community pharmacies, supermarket pharmacies and Boots. Home delivery of medicines could not be requested via SMS. Because of capacity constraints, the use of existing social networks was encouraged. Home delivery of medicines only covered shielding people, not others in their household. Others in the household could request home delivery of medicines via the COVID-19 National Assistance Helpline. In contrast to the food box scheme, no national system of home delivery of medicines was set up.

- More details about the shielding support offer can be found in a Scottish Government guidance document on shielding for local authorities.[27]

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Appendix 4. Research by evaluation partners

The evaluation draws on the following research efforts by external partners:

- Scottish Government May 2020 telephone interviews with 31 local authorities about the local response to COVID-19-related food insecurity

- Scottish Government May–June 2020 telephone interviews with 16 local authorities about local COVID-19 support provision

- Scottish Government May 2020 email survey of local authorities (28 responses) about supplementation of the free food boxes

- Scottish Government March–April 2020 desk research exploring references to shielding in online forums, social media or key websites

- Scottish Government telephone interviews with 32 people with lived experience of shielding and six third-sector organisations

- Scottish Government July 2020 follow-up online survey of shielding people. A total of 3,033 respondents completed the survey (72% response rate)

- Scottish Government analysis of NES and local authority data relating to the shielding support offer

- April–May 2020 two-weekly YouGov surveys of the Scottish population's response to the COVID-19 pandemic commissioned by the Scottish Government

- NES analysis of the profile of shielding people registered with the shielding SMS service and signed up for food support

- Lanarkshire Shielding Coordinating Group shielding staff survey – a collaboration between NHS Lanarkshire and North and South Lanarkshire Councils

- University of Aberdeen analysis of healthcare utilisation by shielding people in the NHS Grampian area in 2019

Appendix 5. Official statistics relating to COVID-19 in Scotland

National Records of Scotland, 2020. Deaths involving coronavirus (COVID-19) in Scotland.

National Records of Scotland, 2020. Mid-2019 Population Estimates Scotland.

Scottish Government, 2020. Trends in daily COVID-19 data: 9 October 2020.

Appendix 6. Evaluation governance

Membership of the Evaluation Implementation Group:

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- Maggie Page, Scottish Government

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- Kiren Zubari, Voluntary Health Scotland

Appendix 7. Decision-making about shielding

Decisions around shielding behaviour fall into three broad categories:

1 Decisions about whether or not to leave the house

2 Decisions about whether or not to have visitors

3 Decisions around keeping distance within one's own household

Deciding to leave the home against shielding guidance

Open text box comments in the PHS shielding survey provide some insight in people's decisions to leave the home:

- Many comments suggest that respondents still tried to adhere to the spirit of the guidance when leaving their home. They left their home at a time of day or in places where they were unlikely to meet others or stayed two metres away from others. Several also stressed that their deviation was exceptional or only happened 'once'.

- There were examples of leaving the home for life events (e.g. funerals) or crisis situations (e.g. domestic abuse, or drugs-related). Even in those instances, respondents tried to stick to guidance. One individual attended a cremation but stayed in the car. Another left their home during a crisis situation, but maintained physical distancing.

- Many examples of deviation related to the need to support others, including looking after children or disabled or elderly relatives or helping others in their household. There were also over 100 responses about looking after pets.

- Respondents also reported a series of practical reasons for leaving the home, such as going to the bank, posting letters or driving a car to recharge the battery.

- Several responses explained that people only deviated from the guidance following discussion with a health or care professional.

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- A small number of respondents mentioned that they left their home because they did not consider themselves to be at higher risk.

Deciding to have visitors against shielding guidance

Open text box comments in the PHS shielding survey provide some insight into people's decisions to have visitors. Similar to decision-making around leaving the home:

- Respondents indicate that they still tried to follow the guidance to the best of their ability, even when having visitors. They stressed that they had still followed physical distancing or that a visit had only happened once.

- Respondents had discussed having visitors with their clinician.

- Respondents referred to their carer responsibilities or simply wishing to support family members. This included examples of children having contact with family members who do not live in the same home.

- There were also a series of practical reasons why respondents had to accept visitors in their home, such as home deliveries or home repairs. Life events and crisis situations also featured.

Deciding to deviate from the two-metre rule

The May 2020 Scottish Government interviews with 32 shielding people provided insights around how people decided about shielding within the household:

- Almost all in shared households were finding it hard to physically distance at home. They might not have a spare bedroom or only one bathroom. Those caring for someone who needed physical support or hands-on therapy reported the obvious difficulties of physical distancing in those situations.

- Some had decided to shield as a household and did not need to worry about distancing. Some chose not to physically distance at home because of the

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emotional and mental impact this would have. For many, shielding as a household was not possible, for example if they lived with a key worker.

Decision-making following relaxation in the shielding guidance

From 18 June 2020, the shielding guidance advised that shielding people were able to go outside for physical activity. Shielding was paused completely on 1 August 2020.

The July 2020 Scottish Government shielding survey with about 3,000 respondents suggests that a quarter (23%) were still choosing to stay at home **after** the relaxation in the shielding guidance. A review of comments to explain why they were choosing to remain at home showed feelings of continued anxiety, fear and worry. People were still 'very scared' about getting infected or 'even more anxious' as lockdown was being relaxed. Interviews with shielding people and third-sector focus groups, carried out by Public Health Scotland at a later stage in October and November 2020, paint a mixed picture. There were examples of people leaving the house on the day of the relaxation of the guidance – and their sheer delight at being able to do so. There are also examples of a much more gradual process – an initial first walk to a pharmacy at a quiet time, gradually building up to a visit to a restaurant or supermarket.

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