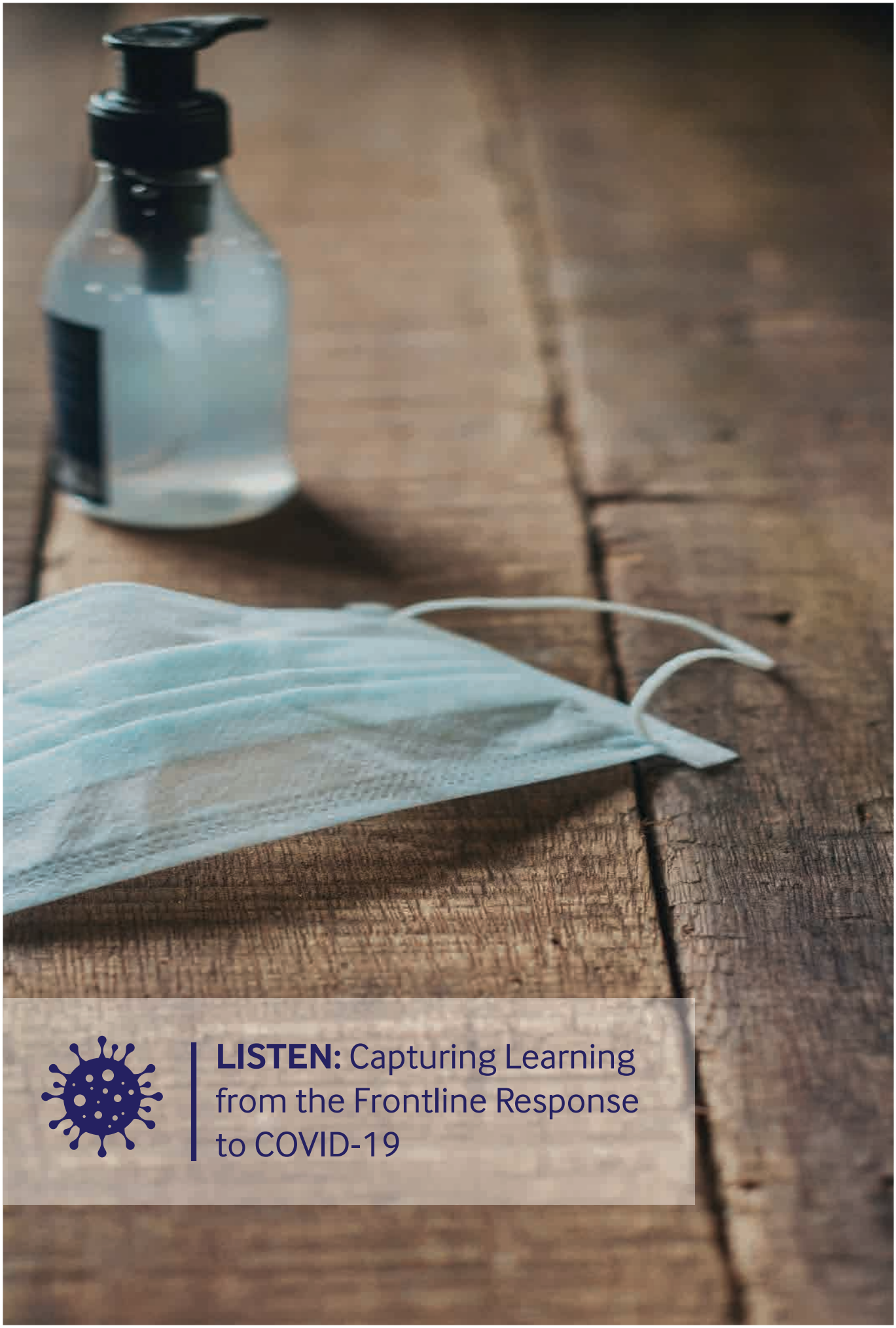
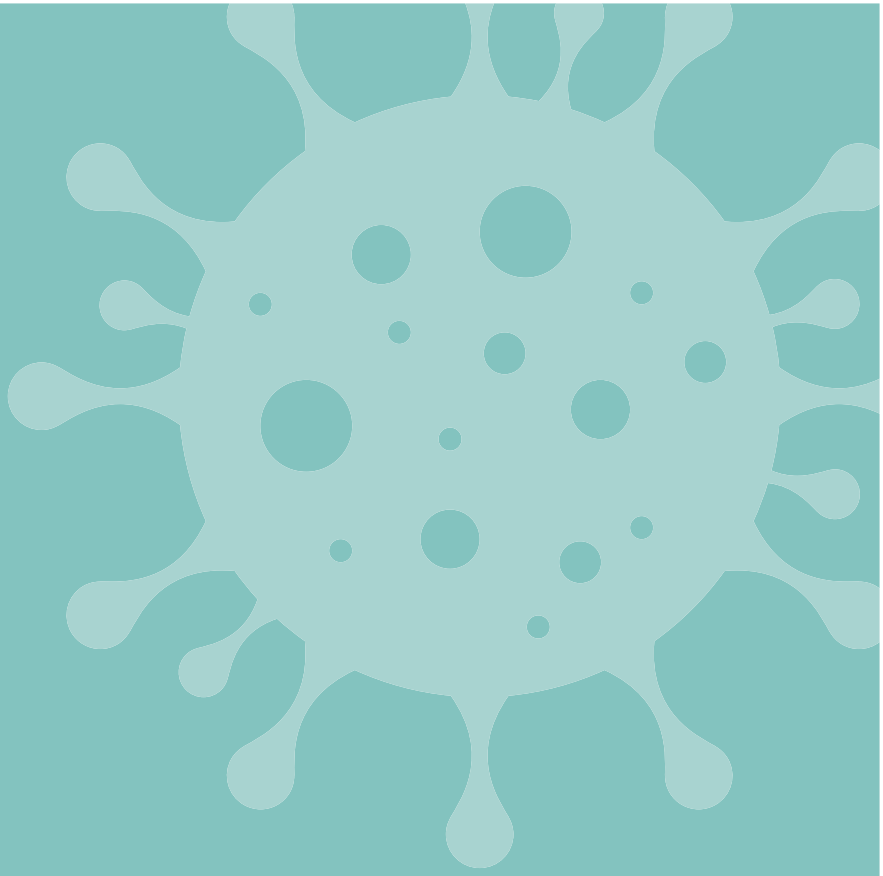


LISTEN: Capturing Learning from the Frontline Response to COVID-19



DCU
Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

DCU BUSINESS SCHOOL

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Authors: **Professor Caroline McMullan, Dr Ann Largey, Gavin D. Brown, Grainne O'Shea, DCU Business School**

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Contents

Project Overview

This project LISTENs to the first responders who must complete testing, medical assessment, triage, and initial treatment of suspected COVID-19 cases in a range of settings from individuals' homes, nursing homes, to clinical settings. The challenges and good practice observed by those closest to the patients should be documented, collated, and analysed. This research captures learning opportunities which can inform the current response to COVID-19, risk management in the medium term, and help build longer-term national resilience.

This project will involve three critical elements:

I. A review of the challenges faced by medical first responders during the COVID-19 pandemic.
II. The identification of good practice in the response to the COVID-19 pandemic.
III. The capturing of opportunities for learning which can inform future risk management and help build national resilience.

Figure 1: Word frequencies used by respondents discussing their worries

Theoretical Foundation

Overview of the Structured Literature Review (SLR)

The SLR identified lessons learned from the early response to COVID-19 and as a result of the previous SARS pandemic in 2003. Blanco et al. (1996, p.5) emphasised that to "reduce the frequency and severity of errors" continuous improvement and learning must be captured during an emergency. However, capturing lessons to learn during an emergency is challenging (Comfort et al. 2009).

As a first step in the process of capturing challenges and lessons identified during SARS (2003) and COVID-19, a systematic literature review was conducted in mid-May 2020 using Google Scholar to identify relevant peer-reviewed papers. Using the PRISMA methodology (Moher et al., 2009; PRISMA, 2015) papers were identified that matched the following keyword string: allintitle: ("SARS" OR "COVID-19" OR "Coronavirus" OR "Corona virus") AND ("frontline" OR "First responders" OR "healthcare workers" OR "lessons learned"). SARS was included within the SLR because of its similarities to the COVID-19 pandemic. This keyword string search identified 135 papers for screening. Due to the evolving nature of this topic, a Google Scholar alert query was kept in place for a further four weeks; this resulted in three additional papers being included. During the screening, eligibility checks were undertaken by applying the criteria summarised in Figure 2. While no time restriction was used, the keywords resulted in PRJ papers published between 2003 and 2020.

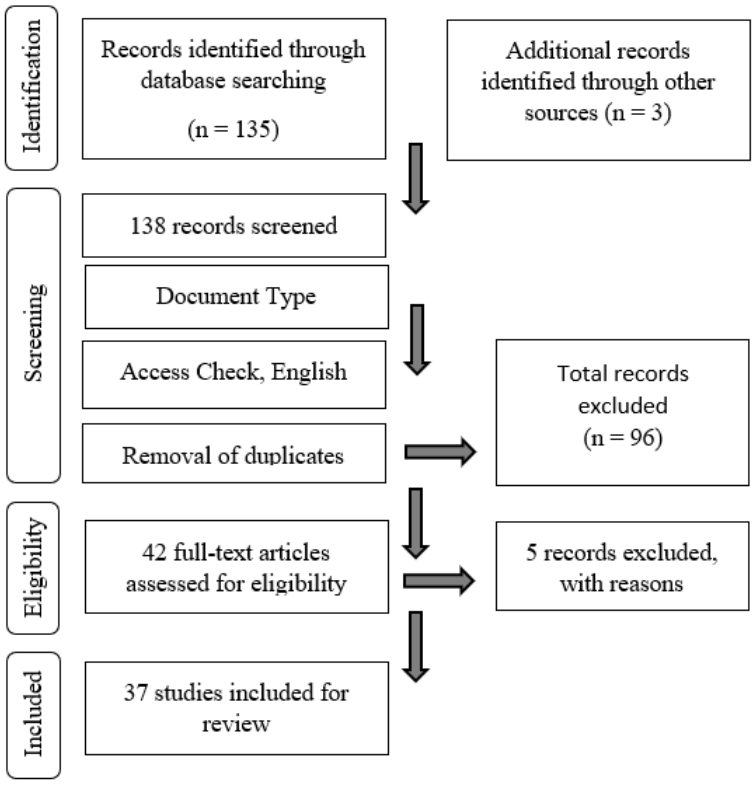


Figure 2: SLR Flow Diagram

Adapted from PRISMA (Moher et al., 2009; PRISMA, 2015)

Following the screening and eligibility processes, 37 papers were selected for inclusion in the SLR. Most papers (n29) were published in 2020, had primary data, and were focused on COVID-19. The remaining eight papers, focused on SARS, were published between 2004 to 2016 and were reviews which brought together the findings of a large number of SARS related research projects. Most of the 29 studies with primary data were based in China, USA, and UK and none used Irish data. The geographical regions covered by the studies are outlined in Figure 3. The remaining eight papers were literature reviews.

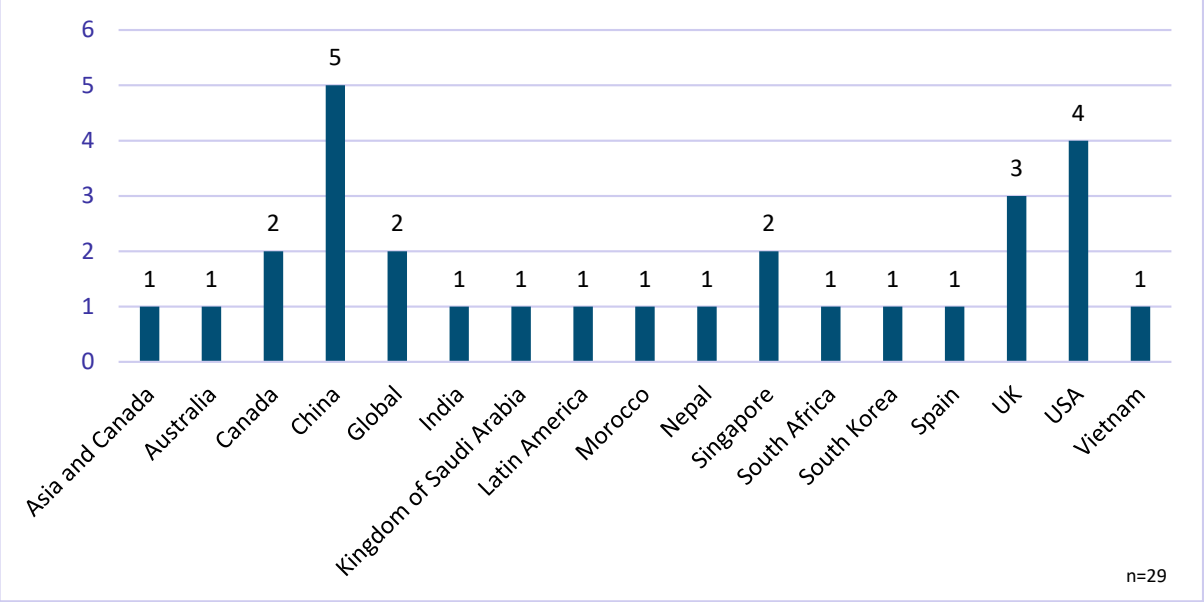


Figure 3: Study Regions of Origin.

SLR Findings and Discussion

As noted above, this SLR sought to identify the challenges faced by medical first responders during the COVID-19 and SARS pandemic in order to capture learning opportunities and inform the recommendations of this research. The SLR is divided into themes. Three of these themes emerged as commonly recurring topics from the 37 papers reviewed: sources of information, mental health, PPE (infection control). The fourth provides a tabulated overview of other challenges (framed as lessons identified) that were less commonly referenced, although no less important. The studies reviewed were mostly focused on healthcare workers (such as nurses and doctors), and only one of the 37 studies made a direct reference to prehospital first responders. This points to a gap in the literature which our study seeks to fill.

Sources of information

Several authors mention the importance of knowledge sources for healthcare workers so they can acquire the relevant and reliable information required to respond safely during a pandemic (Delgado et al., 2020; Key et al., 2020; Sim 2020; Bhagavathula et al. 2020; Hasnain 2020). Delgado et al., (2020) found that 24.5% (n229) of healthcare workers noted that they had no access to safety policies and procedures in the workplace, and a further 38.9% (n364) had no access to telemedicine. However, Key et al. (2020) found that over 80% of their frontline sample were aware of PPE guidelines relating to health boards, government public health, and knowledge of COVID-19. A central concern was that during a pandemic, information, guidance and standards of practice generally evolve and as such must be communicated clearly to staff (Walton et al. 2020; Semaan et al. 2020). This communication should take place in real-time, on an ongoing basis, and between groups such as government, health workers, researchers (Hasnain et al. 2020).

To ensure that pay-walls do not restrict information during a pandemic, Sim (2020) recommended an open-access database containing COVID-19 research papers and encouraged "the global occupational health research community to submit papers on worker health risks from the COVID-19 pandemic" (p.281). Bhagavathula et al. (2020, p.8), who surveyed healthcare workers

globally during the first week in March 2020 to gain a snapshot of the challenges emerging, recommended: "HCWs should carefully evaluate COVID-19 related information and should use scientific and authentic content as information sources". They also stressed the need for "greater encouragement from health authorities to assimilate COVID-19 related knowledge among HCWs and doctors". However, making information openly available is only one aspect of the challenge; management teams, workplace culture, and the influence of colleagues were found to impact how healthcare workers interacted with guidelines (Cooper et al. 2020).

Mental Health and Well-Being

Numerous studies within the SLR focused on mental health and identified the importance of monitoring staff's levels of stress, anxiety and fear (Tam et al. 2004; Maunder 2004; Alsahafi and Cheng 2016; Aghili and Arbabi 2020; Cai et al. 2020; Angelos 2020; Sasangohar et al. 2020; Pappa et al. 2020; Santarone et al. 2020; Hu et al. 2020; Chersich et al. 2020; Hasnain 2020; Zhu et al. 2020; Jin et al. 2020; Pothiawala 2020; Chung et al. 2020; Aksoy and Kocak 2020). Lai et al. (2020) who examined the mental health of healthcare workers in Wuhan in February 2020, found that 50.4% experienced depression, 44.6% anxiety symptoms, 34% insomnia, and 71.5% symptoms of stress. They also discovered that these symptoms were higher in nurses, women, and frontline medical staff. Similarly, Lusher et al. (2020) highlighted that a quarter of Ambulance staff suffered from PTSD, while one-third experienced mental health issues, stressing that psychological well-being supports must be ensured during COVID-19.

The key factors linked to mental health included the risk of infection (personal and family safety), ability to care (patient mortality), lack of infection control guidance, working outside of normal practice, and a lack of PPE and beds (Angelos 2020; Cai et al. 2020). One of the major stressors identified within the SLR was the lack of appropriate PPE, and/or a lack of knowledge of how to use the PPE safely (Chan-Yeung 2004; Collado-Boira et al. 2020; Santarone et al. 2020; Aghili and Arbabi 2020; Jin et al. 2020; Walton et al. 2020). Aside from a lack of PPE, Gan et al. (2020, p.243) noted the act of repeatedly donning and doffing PPE not only added to physical fatigue but also contributed to psychological stress.

Factors such as marital status and parental status did not have a statistically significant relationship with healthcare workers' risk perception (Koh et al. 2005). However, concerns that a healthcare worker may infect their family and friends were commonly raised within the literature reviewed (Aghili and Arbabi 2020; Collado-Boira et al. 2020; Huynh et al. 2020; Misra et al. 2020; Semaan et al. 2020). Collado-Boira et al. (2020), in a study involving final-year Spanish nursing and medical students, found that "more than 45% of the students reported a fear of the possibility of infecting relatives" (p.e104504). Similarly, Aghili and Arbabi (2020) remarked that in several instances' healthcare workers would choose to "isolate and quarantine themselves alleviating their worries despite their social responsibility and altruism as a member of the medical society" (p.2). Souadka et al. (2020) found that social stigma and childcare problems also added to the stressors that healthcare workers faced. Aghili and Arbabi (2020) remarked that healthcare workers were not only providing treatment for patients infected by COVID-19 but were also "shouldering the burden of taking care of their beloved ones; their children, spouse and parents as a family member, despite the likelihood of contamination or transmission of the coronavirus" (p.1).

The importance of protecting the mental health of HCWs was prominent within the literature. Apart from the moral and legal obligation to do so, such problems generally lead to higher levels of absenteeism and sick leave. This, in turn, limits the number of staff available to provide specialist healthcare (Key et al. 2020). "Supporting the mental well-being and resilience of healthcare workers is imperative to ensure global recovery from the COVID-19 pandemic" (Santarone et al. 2020, p.1531). To achieve this, Key et al. (2020) and Walton et al. (2020) recommended the implementation of drop-in psychological support sessions that could help to alleviate staff anxiety and stress, while Santarone et al. (2020) and Walton et al. (2020) highlighted a need for more comprehensive mental health education.

Infection Control Measures

Another challenge faced by healthcare workers included infection control preparedness in emergency departments, triage areas and wards (Cheng et al. 2013). Following SARS, Cheng et al. (2013, p.415) stressed a need to "adopt proactive infection control measures [...] with provision of personal protective equipment and [early] isolation of patients". In addition to regular handwashing and appropriate coughing and sneezing etiquette (Gudi and Tiwari 2020), Jin et al. (2020) found that the most

effective protective measure was using PPE correctly when in close contact with an infected individual. They suggested "Protective equipment should be upgraded in hospital at the onset of a new disease especially for staff conducting procedures involving close contact and caring for high-risk patients" (Jin et al. 2020, p.12). The challenge, however, is that some infection control activities (including PPE) require significant investments along with dedicated resources (Cooper et al. 2020).

Personal Protective Equipment (PPE)

It has been acknowledged widely in national and international media that the acquisition of PPE has presented a significant challenge during the COVID-19 response (The Guardian, 2020; RTE, 2020). Among the papers presented within this SLR, Key et al. (2020, p.136) suggested that "PPE arguably represents one of the most significant challenges that has faced healthcare systems during the COVID-19 pandemic".

COVID-19 has presented challenges both with supply and the implementation of the PPE measures required to protect the health of staff caring for COVID-19 patients. However, the issues pertaining to PPE were not unique to COVID-19. Gan and Wah (2020) highlighted that, during the SARS pandemic in 2003, authorities in Singapore recognised this challenge as a lesson to be learned and as a result "established a purpose-built National Centre for Infectious Diseases to stockpile personal protective equipment ... seeking to limit the mortality and morbidity from the next communicable disease outbreak ... Safeguarding the occupational health of its frontline healthcare workers" (p.241). Similarly, Yassi et al. (2005, p.48) suggested that a priority following SARS must be "risk reduction through engineering controls and personal protective equipment".

To tackle PPE concerns more generally, Key et al. (2020) suggested the nomination of PPE champions, anonymised reporting for PPE concerns, and PPE education sessions. Those working in emergency departments also suggested "improvising the department set-up, ensuring triaging for every patient and providing PPE and infection prevention and control training" (Acharya et al. 2020a, p.46). Hu et al. (2020) added that training on PPE must extend to skin lesion prevention, noting that 94.8% of the frontline nurses who worked in Wuhan during COVID-19 reported skin lesions.

Following SARS, Suwantarat and Apisarnthanarak (2015, p.356) noted that a "dedicated person at the exit is very important for guiding the HCPs and observing the exposure during PPE doffing". Such measures are imperative as the correct donning and doffing of PPE remains a primary protective measure which requires infection prevention training and supervision (Chersich et al. 2020; Suwantarat and Apisarnthanarak 2015; Hasnain et al. 2020). In 2003, training in PPE usage in the context of SARS was also found to boost the confidence of healthcare workers (Koh et al. 2005). The quality of PPE is also of paramount importance. Chersich et al. 2020 noted that not only is the acquisition of PPE important, it must be of a suitable quality that is fit for purpose. Yassi et al. (2005) noted that, along with insufficient time, healthcare workers attributed lack of adherence to use of PPE if it was uncomfortable to wear and not suitable for the task.

Additional lessons identified

Within the SLR, other challenges and opportunities for learning emerged in addition to those previously mentioned. These have been grouped into themes and are set out in Table 1.

Table 1: Challenges & Learning Opportunities

Lessons Identified	Recommendation - Action	Source
Enhanced support systems -organisational supports	Long term resources to help frontline healthcare workers recover from COVID-19. Consider the impact of interpersonal isolation along with attention being given to annual leave and short breaks. Promote reflective and adaptive practices - provide staff with time to reflect. Consider motivational factors – e.g. family supports; quarantine support of staff; flexible scheduling (reduce working hours); financial support – may include food and daily living supplies or risk allowances. Enhanced provision of food, drink and rest facilities. Note, flexible scheduling should consider the minimisation of staff rotation between teams to lessen exposures across groups. Integration of wearable technology to support staff safety and well-being - may support reporting and monitoring of hours. Proactive resolution of housing or transport issues for staff to reduce anxiety of infecting family members and safe travelling to and from work.	Santarone et al. 2020; Maunder 2004; Cai et al. 2020; Chersich et al. 2020; Walton et al. 2020, p.244; Hasnain et al. 2020; Sasangohar et al. 2020; Walton et al. 2020.
Real-time knowledge management technology - knowledge is not fixed or static	Application of a statistical tool to generalise findings from across COVID-19 research - online technology recommended. As well as a framework to safely implement/monitor recommendations that are appropriate for rapid, continual learning and the changing standards of practice.	Acharya et al. 2020; Hasnain et al. 2020; Delgado et al. 2020; Aksoy and Kocak 2020; Walton et al. 2020.
A focus on enhanced (early) compliance regarding safety practices	Identification of factors that influence compliance with infection control policies. Checklists and staff selected to monitor (observe - support) and correct infection control errors.	Cooper et al. 2020; Chersich et al. 2020.
Preparedness	Training on large-scale disaster management and response.	Sasangohar et al. 2020, p.109

Methodology & Participants

Overview of the research design

This study used a mixed-methods approach, a survey strategy, that collected and analysed both quantitative and qualitative data. Using a convergent parallel design as set out by Creswell and Planon Clark (2011) quantitative and qualitative data were collected using a single questionnaire, with the analysis carried out in parallel and both sets of results mixed to formulate the overall findings and recommendations. This approach allowed for "both sets of results [to be] interpreted together provid[ing] a richer and more comprehensive response to the research" (Saunders, Lewis, and Thornhill 2012, p.167).

The data is cross-sectional and focused on the early response phase to COVID-19; data was collected during the Irish "lockdown" between April 30th and May 17th, 2020 (midnight). Closing the questionnaire before May 18th was significant as on this date the Irish Government eased COVID-19 restrictions – entering into phase 1 of reopening society and business.

Questionnaire design

The questionnaire contained a total of 58 questions, including 15 open-ended questions, designed to capture the experiences, successes, and challenges faced by front-line pre-hospital responders during the Covid-19 response. In addition to the open questions, a mixture of Likert scales, sliders, multiple-choice (including yes/no) questions were used.

The questionnaire was designed within the Qualtrics platform, using both display and skip logic to customise the questionnaire to each respondent. To ensure the validity (face validity and discriminant validity) and reliability (internal consistency) of the data collected, the questionnaire was pilot tested with both pre-hospital first responders and emergency management researchers in Ireland.

The questions were divided into five broad sections (although not always provided together within the questionnaire):

- Socio-demographic factors.
- Levels of risk, impact and worry (perceived and actual) in relation to COVID-19.
- Perception of Preparedness and response.
- Pandemic experiences.
- Experience regarding staff safety, health and wellbeing.

Target population & sample size

At the time of data collection, the Pre-Hospital Emergency Care Council (PHECC) confirmed there were 5,398 emergency medical service first responders on their live register. Following the guidance published by Teddlie and Yu (2007) to achieve a representative sample, the study used probability sampling of front-line pre-hospital responders. PHECC agreed to distribute the questionnaire to a random sample of approximately 40% of their members (delivery was confirmed to a total of 2092 first responders) - some of whom also shared the link to the questionnaire via social media. A total of 815 responses were received and coded, which significantly exceeded the initial target of 359 responses as calculated using a confidence level calculator (Qualtrics, 2019).

Qualitative data analysis

When analysing the data generated from questions with an open format, responses were not grouped according to pre-defined categories, rather salient categories of meaning and relationships between categories were derived from the data itself through a process of inductive reasoning known as coding units (Stemler, 2001). This process involved breaking the data into discrete units (Lincoln and Guba, 1985) and coding them as categories. Categories arising from this method generally took two forms:

- Resulting from the participants' customs and language - the purpose of which "is to reconstruct the categories used by subjects to conceptualise their own experiences and world view (Lincoln and Guba, 1985, p.334).
- Those that the researcher identifies as significant to the studies focus-of-inquiry – allowing the researcher to gain insights into the social processes and develop both descriptive and explanatory categories (Lincoln and Guba, 1985).

This approach resulted in cycles of coding as understandings develop, and the relationships between categories are developed and refined throughout the analytical process. As Taylor and Bogdan (1984) summarised: "the researcher simultaneously codes and analyses data to develop concepts; by continually comparing specific incidents in the data, the researcher refines these concepts, identifies their properties, explores their relationships to one another, and integrates them into a coherent explanatory model" (p126).

The software NVivo R1 (2020) was used to support the qualitative analysis by organising the data. The software was used only as a tool to support the analysis of the data, thus leaving the researchers with full control over its interpretation (Fielding and Lee 1998). The content analysis was adapted from Krippendorff (2004), with eight discrete phases of analysis:

- Phase 1 – Downloading qualitative responses and demographic information into a table for import into NVivo.
- Phase 2 – Open coding involved broad participant-driven initial coding of the first responders' submissions to deconstruct the data from its original chronology into initial non-hierarchical general codes. These codes were assigned clear labels and contained the units of meaning (text segments), which were coded from the content (Maykut & Morehouse 1994).
- Phase 3 – Categorisation of codes involved reordering codes identified and coded in phase 2 into categories of codes by grouping related codes under these categories and organising them into a framework that made sense to further the analysis of this particular data set and research question. This phase also included distilling, re-labelling, and merging of categories to ensure that labels and 'rules for inclusion' accurately reflected coded content.
- Phase 4 – Breaking down the now restructured categories into sub-categories to offer a more in-depth understanding of the data.
- Phase 5 –Data reduction involved consolidating and refining codes into a more abstract and conceptual framework of codes
- Phase 6 – Involved writing analytical memos against the higher-level codes to accurately summarise the content of each category and its codes and propose empirical findings against such categories. These memos considered four key areas:
    1. The content of the themes and categories of codes on which it was reporting
    2. The patterns where relevant (for example levels of coding)
    3. Background information recorded against participants and any patterns that may exist in relation to participant profiles and demographics
    4. Considering the relatedness of codes to each other, describing inferences, and their importance to addressing the research question.
- Phase 7 – Validation involved testing, validating and revising analytical memos to self-audit proposed findings by seeking evidence in the data beyond textual quotes to support the stated findings. This process also involved drawing on relationships across and between categories and cross-tabulation with demographics.
- Phase 8 – Synthesising analytical memos into clear findings.

Appendix One sets out the relationship between the data analysis processes deployed in this study and the philosophical underpinnings that support Krippendorff's (2004) content analysis methodology.

Quantitative Data Analysis

Before analysing, the data was checked and cleaned to prevent errors in the dataset impacting results (Van den Broeck et al., 2005). The data were screened to identify anomalies such as missing values, outliers determined to be impossible values, and inconsistencies in data. In the case of missing values, imputation for variables such as respondents' organisation or rank was carried out where possible, based on the individuals' responses to other questions. This imputation was only completed when inferences could be made with certainty. Impossible, obviously erroneous values for variables were recoded as missing values.

The quantitative analysis was carried out using the statistical software package STATA (StataCorp; Release 16.1/SE). Descriptive statistics (frequencies and measures of central tendency) were presented to provide an overview of all responses. Breakdowns of responses by respondents' organisations, roles, ranks and regions/bases were provided for items of interest. Basic statistical tests were performed to check whether observed differences in results are statistically significant. These included paired t-tests for differences in mean, Kruskal Wallis tests which checked whether responses for different groups are drawn from the same distribution, and Chi-square tests of independence between variables.

Participants: Professional Profile

Table 2 presents a frequency table for the organisations to which respondents belong. The largest representation is from the National Ambulance service, accounting for just over 45% of respondents, followed in order by the Fire Service, Voluntary Ambulance Service, Civil Defence and Private Ambulance Services. Almost 7% of respondents are categorised as 'Other'. These are organisations that could not be classified into the groupings above, and with fewer than 20 respondents. Included in 'Other' are respondents from organisations such as Mountain Rescue Ireland, the Irish Coast Guard, the Royal National Lifeboat Institution (RNLI) and An Garda Síochána.

Table 2: Organisations in which Respondents Work

Organisation	Freq Starting	Percent Starting	Freq Completed	Percent Completed
Civil Defence	81	9.94	56	9.79
Fire Service	142	17.42	102	17.83
National Ambulance Service	367	45.03	266	46.50
Private Ambulance Service	77	9.45	51	8.92
Voluntary Ambulance Service	91	11.17	58	10.14
Other	57	6.99	39	6.82
Total	**815**	**100**	**572**	**100**

While there was an attrition rate of almost 30% over the course of the survey, attrition distribution was fairly uniform across organisations (i.e. the percentages who completed the survey by organisation are close to those who started).

Table 3: Participants' Role

Role	Freq Starting	Percent Starting	Freq Completed	Percent Completed
Advanced Paramedic	175	21.47	127	22.20
Paramedic	314	38.53	230	40.21
Emergency Medical Technician	194	23.8	137	23.95
Emergency First Responder	60	7.36	37	6.47
Other	72	8.83	41	7.17
Total	**815**	**100**	**572**	**100**

As evident in Table 3 above, the predominant role of respondents was Paramedic, accounting for approximately 40% of the sample. This was followed by Emergency Medical Technician (approximately 24%) Advanced Paramedic (approximately 22%) and a relatively small proportion of Emergency First Responders and 'Other'. Again, attrition over the course of the survey was relatively uniform across respondent roles.

Table 4: Participants' Rank

Rank	Freq. Starting	Percent Starting	Freq Completed	Percentage Completed
General Operational level	592	73	417	73.29
Officer/Managerial Level	111	13.69	84	14.76
Supervisor level	102	12.58	64	11.25
Other/Unspecified	6	0.74	4	0.70
Total	**811**	**100**	**569**	**100**

The majority of survey participants, over 73%, were working at a General Operational Level, with a relatively small group of Officer/Managerial (almost 15%) and Supervisors accounting for approximately 11%. Only four respondents, 0.7% of those who completed the full survey, were unspecified by rank and given the small number, the responses from these individuals are not included in the breakdowns by rank produced for statistics in the remainder of the report.

Table 5: Length of Service

Length of Service (years)	Freq.	Percent	Cum.
up to 1	42	5.32	5.32
from 1 to 5	213	26.96	32.28
6 to 10	188	23.8	56.08
11 to 15	116	14.68	70.76
16 to 20	136	17.22	87.97
more than 20	95	12.03	100

The number of years of service for respondents ranged from less than one year to 44 years, with an average of 11.25 years. Table 5 shows that over half the respondents, 56.08%, had less than ten years of experience with almost a third, 32.28%, having up to five years. The boxplot below (Figure 4) shows the distribution of years worked, with the median at 10.

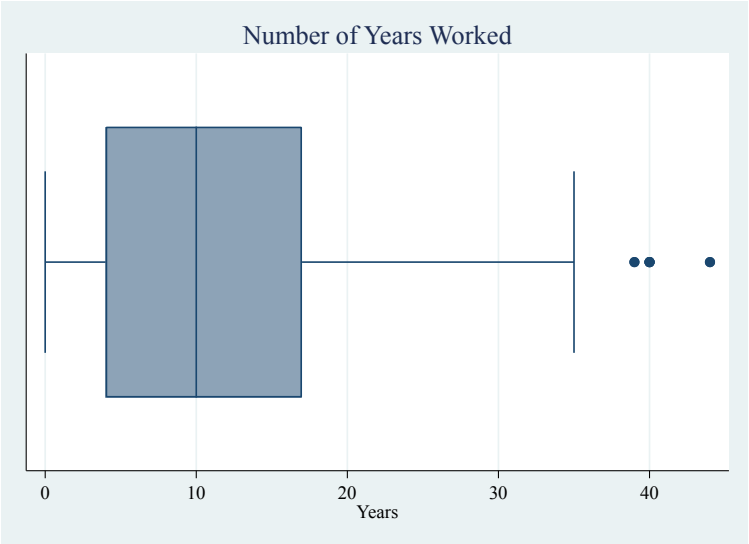


Figure 4: Years Worked

The sample drawn covered all the regional bases in Ireland (see Table 6). The largest proportion of responses, around 30%, were workers whose regional base was the East. The lowest proportion was from the North-West, only slightly lower than Mid-west, Midlands and North East, more rural locations. A small fraction of respondents reported working over multiple regions.

Table 6: Regional Base

Region	Freq.	Percent	Cum.
North West	29	5.02	5.02
North East	51	8.82	13.84
West	69	11.94	25.78
Midlands	41	7.09	32.87
East	178	30.8	63.67
Mid West	37	6.4	70.07
South East	77	13.32	83.39
South	80	13.84	97.23
Multiple	16	2.77	100

Table 7: Distance to Work

Commuting Distance	Freq.	Percent	Cum.
<5km	101	17.57	17.57
5 - 10km	110	19.13	36.7
10 - 20km	121	21.04	57.74
20 - 30km	77	13.39	71.13
30 - 40km	55	9.57	80.7
> 40km	111	19.3	100
Total	**575**	**100**	

Over half the respondents reported travelling less than 20km to work, with almost 18% stating they travel less than 5km. A substantial proportion, almost one fifth, travel more than 40km.

Table 8: Mode of Transport to Work

Mode of Transport	Freq.	Percent	Cum.
Walk	15	2.62	2.62
Cycle	23	4.01	6.63
Motorbike	8	1.4	8.03
Car / Car pool	502	87.61	95.64
Public Transport	10	1.75	97.38
Other	15	2.62	100
Total	**573**	**100**	

Overwhelmingly, respondents travel to work by car - 87.61%. Of the remaining approximately 12% who do not travel by car, about one-third cycle, and the others either walk, go by motorbike or public transport or have mode unidentified. A very small proportion of respondents, only 1.75%, rely on Public Transport to travel to work.

Participant: Demographics

More than three-quarters of respondents were male. The average age for the sample overall was 41.5. Females were on average slightly younger than males, with an average age for females of 39.4 years old, compared to 42.12 for males. Similarly, the boxplots in Figure 5 depicting age by gender, indicates a slightly higher age distribution for males compared to females.

Table 9: Gender Profile

Gender	Freq.	Percent	Cum.
Male	456	77.95	77.95
Female	129	22.05	100
Total	**585**	**100**	

Table 10: Age Profile

Age Range	Freq	Percent	Cum
18-20	6	1.03	1.03
21-30	90	15.52	16.55
31-40	158	27.24	43.79
41-50	216	37.24	81.03
51-60	95	16.38	97.41
61+	15	2.59	100.00
Total	**580**	**100**	

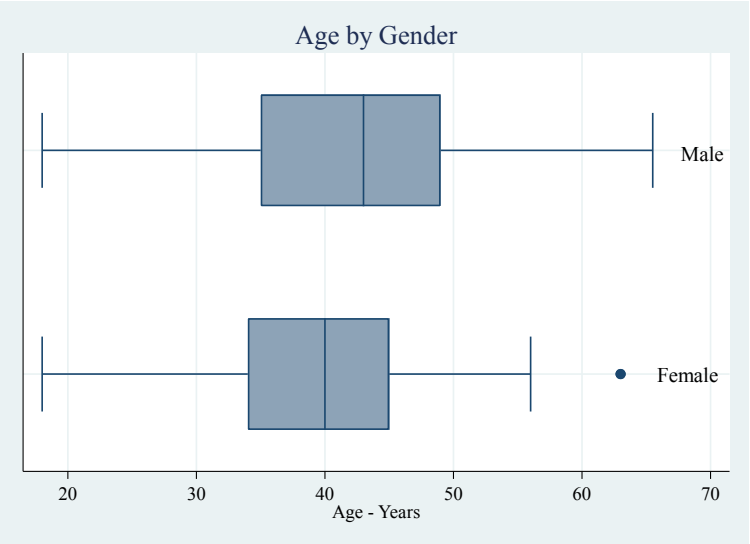


Figure 5: Age by Gender

Household Composition

Table 11: Home Ownership

Homeownership	Freq	Percent	Cum
Own	408	69.98	69.98
Rent	100	17.15	87.14
Live with relatives	65	11.15	98.28
Other	10	1.72	100
Total	**583**	**100**	

Table 12: Type of Housing

Housing Type	Freq.	Percent	Cum.
House	543	93.62	93.62
Apartment	32	5.52	99.14
Other	5	0.86	100
Total	**580**	**100**	

Table 13: Location of Household - Urban/Rural

Location	Freq.	Percent	Cum.
A city	67	11.53	11.53
The suburbs or outskirts of a city	125	21.51	33.05
A town	157	27.02	60.07
A village	80	13.77	73.84
A rural area	150	25.82	99.66
Other	2	0.34	100
Total	581	100	

Table 14: Household Income

Household Annual Income	Freq.	Percent	Cum.
Less than €30,000	67	11.82	11.82
€30,000 - €70,000	316	55.73	67.55
Over €70,000	184	32.45	100
Total	567	100	

Number of Adults

Respondents' average household size is 3.97 individuals, with on average 2.68 adults. 8.91% of households are single adult, 49.49 have two adults, 18.7% have three adults, and the remainder have four or more.

Total Number of Children

54% of respondents report having at least one child.

Pre-School and Primary School Children

26% of respondents have at least one pre-school child, with approximately 60% of these having more than one. 23.12% of respondents have children of primary school age. Of those with children at primary school, 55.1% have one, 33.6% have two, 9.3% have three and the remainder have either four or five children in this category.

Secondary School Children

25% of respondents have children at secondary school. Of those, 72% have one and 21.2% have two children at this stage of their education, with the remainder having three or more.

Number of Pets

The frequency distribution for pet ownership is tabulated below.

Table 15: Pet Ownership

Number of Pets	Frequency	Percent
0	307	39.66
1	254	32.82
2	128	16.54
3 or more	85	10.98

RESULTS

COVID-19 RISK RATING

Respondents assessed the impact COVID-19 has had on their own home and the country overall, using a five-point scale from very low impact to very high impact. The severity of the impact is assessed as being much higher for the country overall than for individuals' homes (see Figure 6 and Figure 7). 41.69% of respondents rated the impact on their home as high or very high, while 86.81% rated the impact on the country as high or very high.

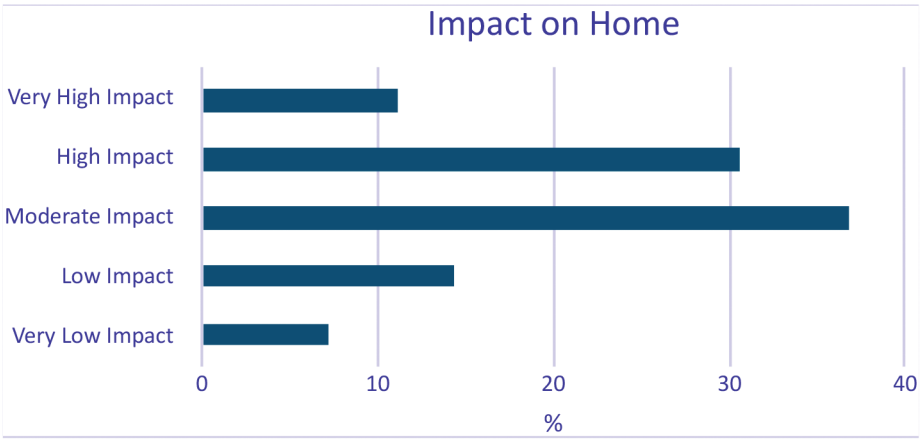


Figure 6: Impact of COVID-19 on Home

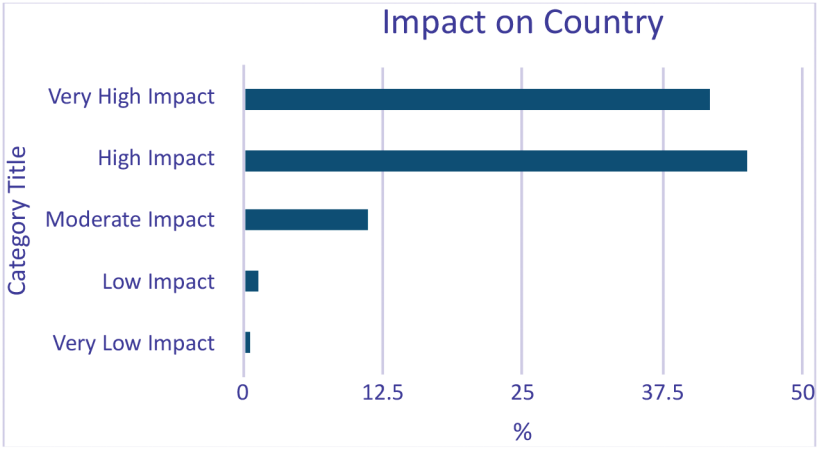


Figure 7: Impact of COVID-19 on Country

The same pattern is observed when comparing the rating of impact on home and country by each organisation. Consistently, the impact of COVID-19 on the home is rated as lower by members of each organisation than the impact on the country as a whole.

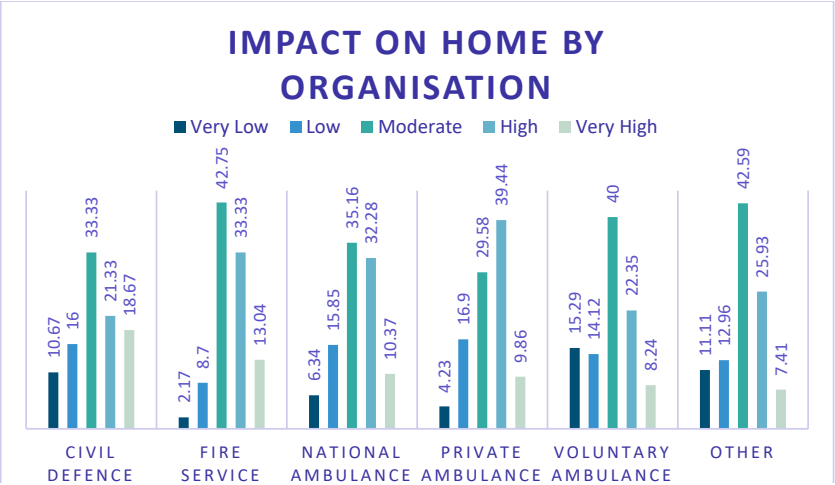


Figure 8: Impact on Home by Organisation

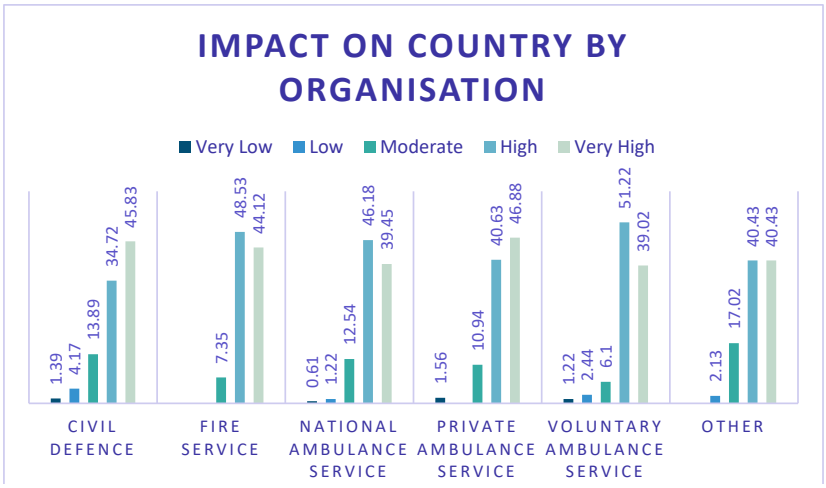


Figure 9: Impact on Country by Organisation

In relation to rating the impact of COVID-19 on respondents' homes, Kruskal Wallis tests provide evidence to reject the hypothesis that the rankings reported by each organisation are drawn from the same distribution. Similarly, the chi-square test for independence between organisation and ranking of impact on the home is rejected. There is, therefore, evidence of statistically significant differences in the ranking of impact on the home between organisations. Almost 30% of Voluntary Ambulance Service respondents reported the impact on home as low or very low, whereas only approximately 13% of Fire Service workers did so.

In the case of impact on the country, there is no evidence of statistically significant differences in the ranking distributions between organisations, and the hypothesis of independence between ranking and organisation is accepted. While there are differences in the figures reported, these differences are not of the same magnitude as those reported for impact on the home.

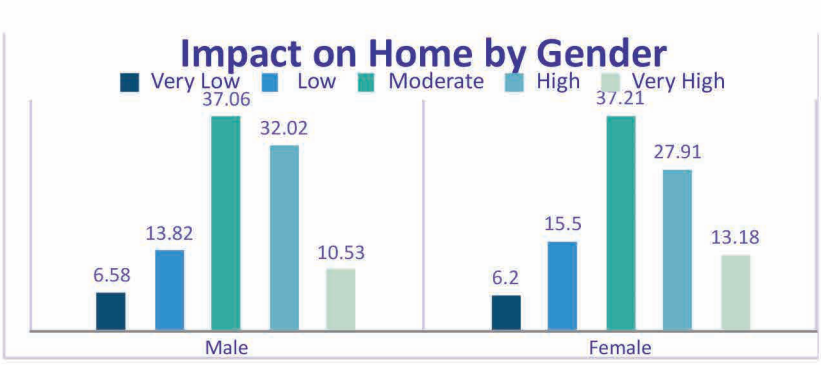


Figure 10: Impact on Home by Gender

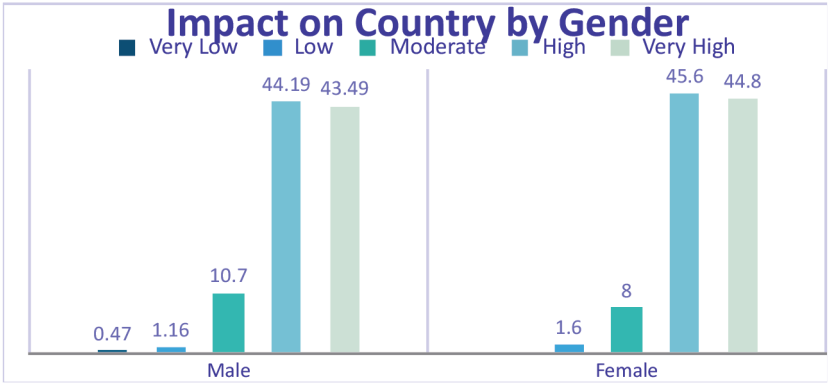


Figure 11: Impact on Country by Gender

The patterns of ranking for males and females are very similar to the overall sample. There is no evidence of a statistically significant difference between male and female rankings for either impact on home or impact on the country.

Worry & COVID-19

Survey participants rated their level of worry about COVID-19 when cases were reported in China, Italy and Ireland. This worry was recorded on a five-point scale from 'not at all' to 'a great deal'. The results overall are summarised in Figure 12 below.

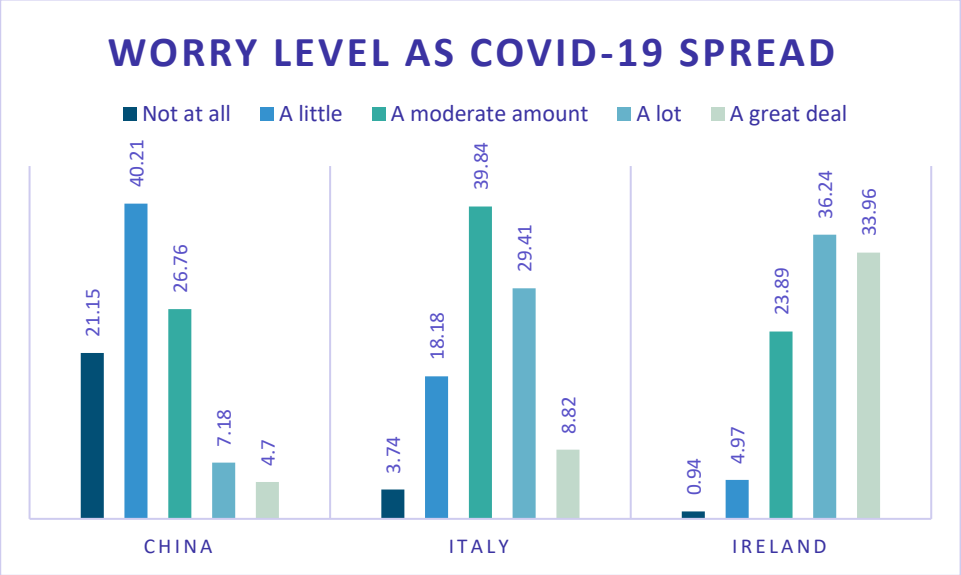


Figure 12: Level of Worry as COVID-19 Spread

It is evident from Figure 12 that worry levels for respondents increased between when COVID-19 cases were reported first in China, and when cases were reported in Italy. Overall worry increased still further when cases were reported in Ireland. When cases were first reported in China, less than 40% were moderately or more than moderately worried, with 21.15% not at all worried. When cases were reported in Italy, only 3.74% were not worried at all, with just over 78% at least moderately worried. Almost 95% of respondents were at least moderately worried when cases were reported in Ireland, with over one-third of respondents reporting they worried 'a great deal'.

Respondents from all organisations exhibited increasing worry levels as cases reported moved from China to Italy to Ireland (i.e. comparing Figure 13, Figure 14 and Figure 15 vertically below). For each point in time reported rankings of worry differed between organisations, with Civil Defence reporting the highest combined proportions of "a lot" or "a great deal" of worry and the Fire Service reporting lowest. However, for the case of first reports in Italy, the differences between organisations are not statistically significant.

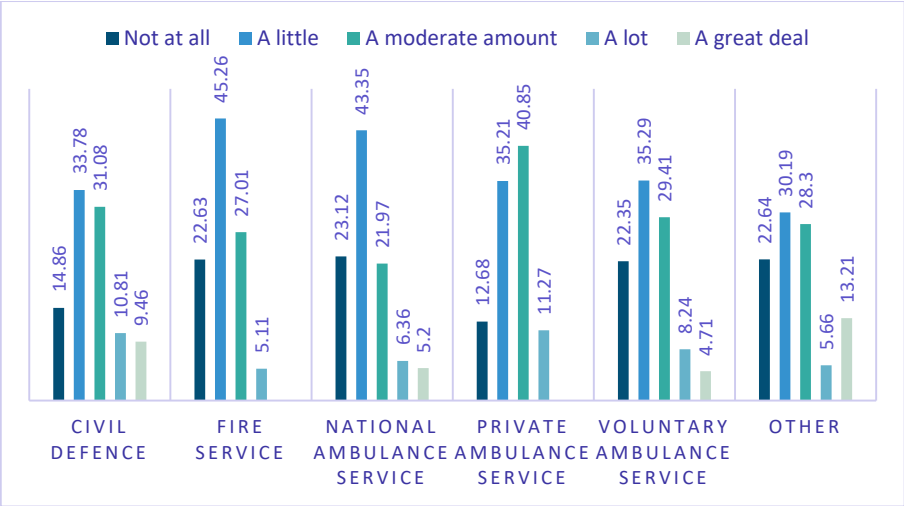


Figure 13: Worry Levels when Cases Reported in China by Organisation

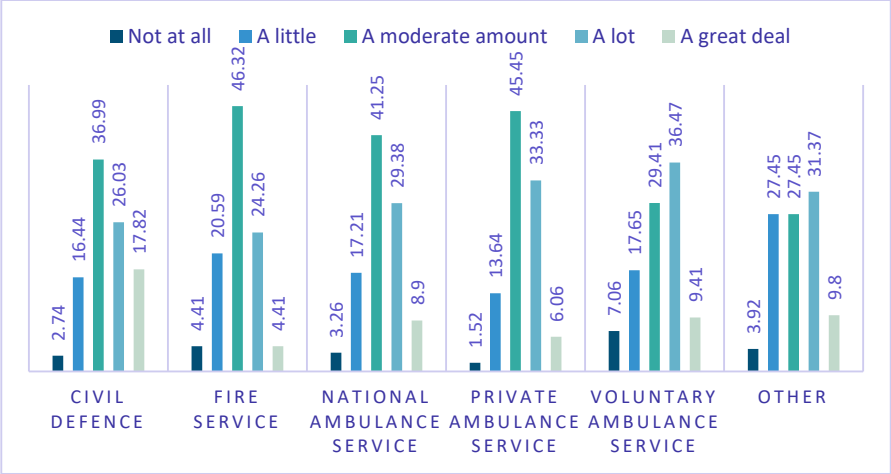


Figure 14: Worry Levels when Cases Reported in Italy by Organisation

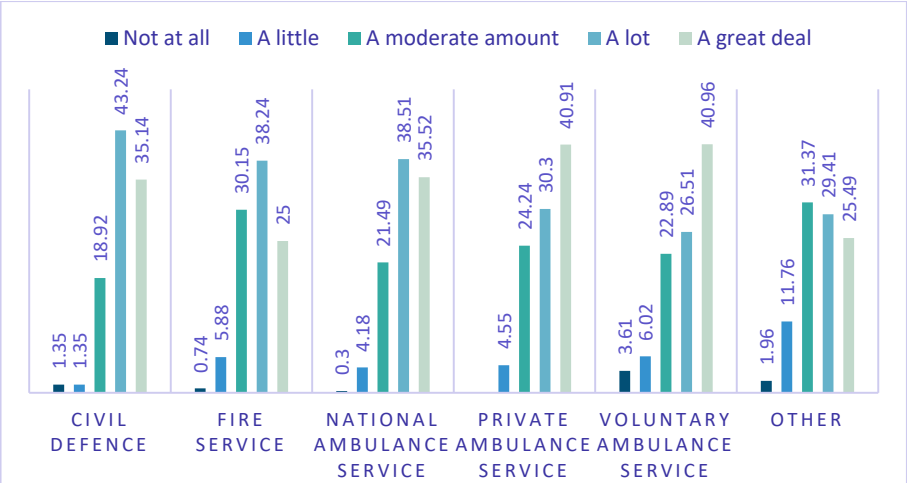


Figure 15: Worry Levels when Cases Reported in Ireland by Organisation

Worry & Gender

The pattern of worry for males and females maps that for the sample overall. While worry levels for both genders increased as virus cases spread towards Ireland, there were no statistically significant differences in the worry rankings reported by males and females at each point in time.

Trajectory of Worry

Respondents were asked "How did your level of worry change during the response to COVID-19 in Ireland? Responses are outlined in Figure 16 below. For less than 20% of respondents worry levels decreased, while it increased for almost 40%.

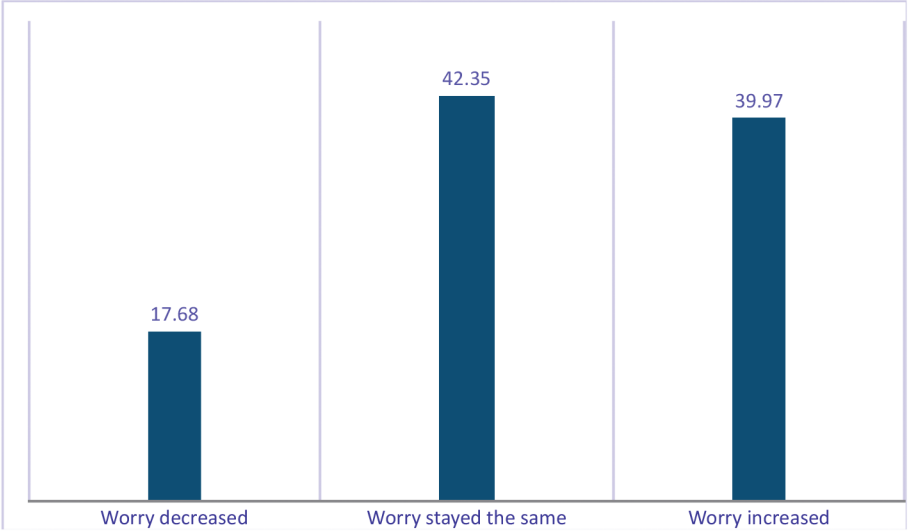


Figure 16: Trajectory of Worry

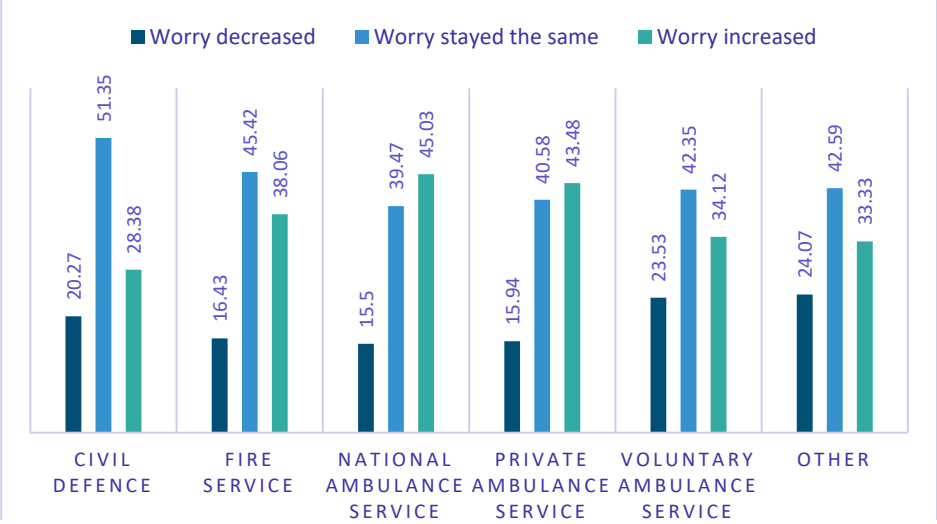


Figure 17: Trajectory of Worry by Organisation

The organisation showing the highest increase in worry is the National Ambulance Service, while, excluding the "Other" category, the Voluntary Ambulance Services have the largest proportion reporting their worry level decreased (see Figure 17). However, there is no statistically significant difference in the trajectory of worry between organisations.

Figure 18: Trajectory of Worry by Gender

There is a statistically significant difference in the trajectory of worry between males and females (see Figure 18). A higher proportion of females reported their worry levels increased, 50.39% compared with 35.53% of males. Therefore, while there was no statistically significant difference in the levels of worry when cases were first reported in Ireland (as outlined above), the pattern of worry during the response within Ireland varied significantly between males and females.

Causes of Increased Worry

Respondents were asked to explain why their level of worry increased or decreased as the pandemic progressed. 290 participants reported increased levels of worry during the pandemic, often citing multiple sources of stress and worry. Table 16 below shows the many sources of worry in column 1 and the number of comments coded to each in column 2.

Table 16: Causes of Increased Worry

Causes of Increased Worry	Units of Meaning Coded
Passing Virus to Family or Friends or Colleagues	**82**
Contracting Covid-19	**75**
Transmission Rates	**63**
Family with Underlying Conditions or Vulnerability	**35**
Lack of Adherence by Public	**22**
Uncertainty	**21**
Information and Awareness	**20**
Number of Deaths	**20**
Lack of PPE	**19**
Impact of Crisis on Individuals and Society	**14**
Slowness of Government Response	**14**
Lack of Planning	**11**
Mixed Messages from Authorities	**11**
Economic & Financial Damage	**10**
Lack of Childcare	**9**
The Expected Surge	**9**
Complacency	**8**
First-hand Experience	**5**
Media Reports	**5**
Slow Implementation of Measures	**5**
Lack of Testing	**4**
Open Borders	**4**
Organisational Response	**4**
Extra Work-Related Responsibilities	**3**
Job Security	**3**
The New Normal	**3**
Lack of Resources	**2**
Lack of Training	**2**
Number of HP Infected	**2**
Being Traced as a Contact of Infected Patient	**1**
Lack of Trust in Contact Tracing System	**1**

Table 16 shows that 487 comments were coded from 290 participants. Text segments, or units of meaning, were coded against more than one code if the text segment contained more than one embedded meaning.

The recurring theme amongst causes of worry was contracting COVID-19 and then passing it to family, friends, or colleagues. There was a clear overlap between these elements of worry (catching Covid-19 and passing it on). Respondent 523 describes the many reasons why worry intensified: "Front line exposure, risk of cross infection to family members, feeling of constant risk, feeling of loneliness by friend's family due to their opinion of my high-risk job" (R523). Similarly, Respondent 566 commented on their fear of the "bringing the virus home and passing it to the people I love".

Fear of contracting and infecting loved ones was often underpinned by an awareness of the high transmission rates in the community. Respondent 233 summarised how: "An understanding of disease progression and vulnerability of the health system" caused worry to rise.

35 participants highlighted having vulnerable family members and how this compounded fears of contracting and passing on COVID-19. The profoundly severe potential consequences and high transmission rates caused a great deal of concern. "My father would be in ill health, respiratory cardiac and cancer. My fear at bringing the virus home increased as the amount of potential and positive Covid-19 cases increased" (R189).

Lack of adherence to public health guidelines by the public, general levels of uncertainty, information and awareness of the consequences of the pandemic due to their roles as front line first responders, the number of deaths occurring, and a lack of personal protective equipment (PPE) also recurred to varying degrees as stressors and causes of worry for respondents.

Table 17 below shows the distribution of sources of worry across the organisational rank of participants. The numbers indicate comments coded by respondents. Row 1 shows that cumulatively, levels of worry distributed across operational and managerial participants in proportion to the study population (3/1). Notwithstanding this, some stressors impacted disproportionality on operational level respondents. "Contracting COVID-19 (row 4), "Family with Underlying Conditions or Vulnerability" (row 26), "Transmission Rates" (row 31) as well as fears concerning "Lack of Adherence by the public", Lack of Childcare", Lack of Planning", and "Lack of PPE" all impacted operational level participants disproportionately when compared against the study population.

Table 17: Causes of Worry by Level in Organisation

Causes of Worry	General Operational level	Supervisor level	Officer/Managerial Level
Causes of Increased Worry	219	32	35
Being Traced as a Contact of Infected Patient	1	0	0
Complacency	6	1	1
Contracting Covid-19	61	7	7
Economic & Financial Damage	5	2	3
Extra Work-Related Responsibilities	2	0	1
Family with Underlying Conditions or Vulnerability	26	5	3
First-hand Experience	4	0	1
Impact of Crisis on Individuals and Society	12	1	1
Information and Awareness	17	1	2
Job Security	2	1	0
Lack of Adherence by Public	18	2	2
Lack of Childcare	8	1	0
Lack of Planning	10	0	1
Lack of PPE	16	2	1
Lack of Resources	1	1	0
Lack of Testing	3	0	0
Lack of Training	2	0	0
Lack of Trust in Contact Tracing System	1	0	0
Media Reports	3	1	1
Mixed Messages from Authorities	7	1	3
Number of Deaths	13	3	4
Number of HP Infected	2	0	0
Open Borders	3	1	0
Organisational Response	4	0	0
Passing Virus to Family or Friends or Colleagues	63	12	5
Slow Implementation of Measures	5	0	0
Slowness of Government Response	11	2	0
The Expected Surge	6	1	2
The New Normal	2	0	1
Transmission Rates	49	5	9
Uncertainty	9	5	7

Figure 19 below shows the overlap in coding between respondents. Items connected in the dendrogram mean that participants who talked about one item, also talked about the other; showing connectedness in thinking across multiple themes. Figure 19 shows, for example, that participants who were worried about a lack of planning, were also worried by a lack of PPE. Participants who were concerned about contracting the virus were also worried about the economic and financial damage.

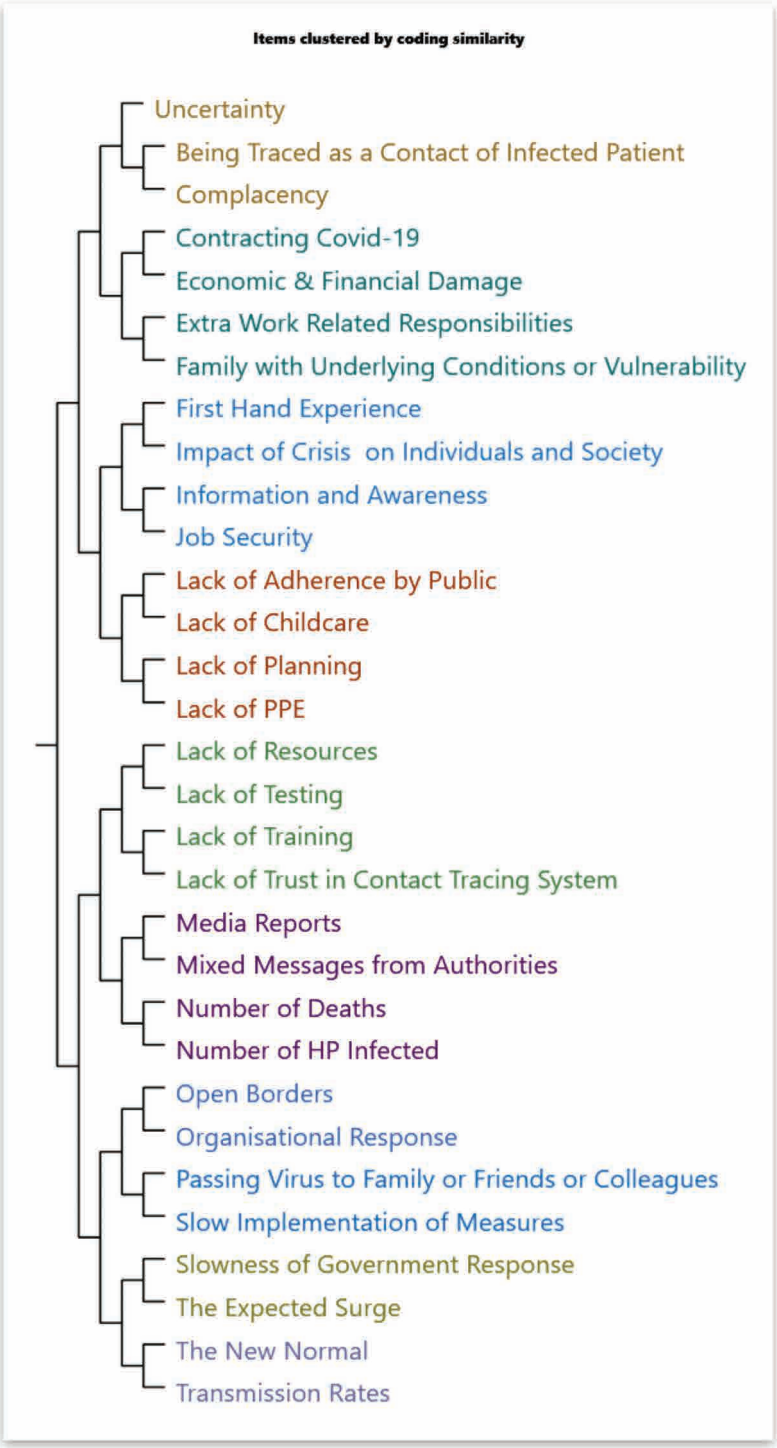


Figure 19: Items Clustered by Coding Similarity

Causes of Decreased Worry

Respondents were also asked to discuss elements of the pandemic or its management that served to reduce their level of worry. Fewer participants identified such elements, but for the 128 who did, their coding is set out in Table 18.

Table 18: Causes of Decreased Worry

Causes of Decreased Worry	Units of Meaning Coded
Government Response	56
Becoming Informed	25
Taking Effective Action	23
Organisational Level Response	18
Adherence by Public to Requisite Measures	17
Availability of PPE	15
Seeing Results	12
Societal and HP Taking Pandemic Threat Seriously	12
Government and HSE Communications	11
The New Norm	9
Surge Plans not having to be Realised	6
Drawing on Personal Experience	5
Societal willingness to Socially Distance	4
The Passing of Time	4
Levels of Preparedness	2
Use of Common Sense	2
Being Involved in Decision Making	1
Child Care	1
Collegial Solidarity	1
Comparing Other Countries	1
Family not Infected	1
Low death numbers	1
Minimal Changes to Work Routines	1
Policing of Measures	1
Specific Training	1
The Number of Volunteers willing to Help	1

The most recurring responses included satisfaction with the governmental response to the pandemic, becoming informed about the management of the pandemic, and taking effective action to combat the crisis.

Participants cited governmental responses, but this was sometimes interchanged with governmental advisors and state agencies such as the Chief Medical Officer or the Head of the HSE who featured in daily media briefings and on whom the government were reliant for advice.

> *Fast and effective measures to dampen the rate of transmission from the Government and HSE/DOH. (R97)*

> *I think the government acted early and had a lot of measures in place prior to any major number of cases, good information and daily updates from gov.ie (R387)*

Self-education concerning pandemics generally and particularly COVID-19 also featured as a catalyst for reducing worry. It was notable that comments about being informed were often immediately followed by a call for action. Participants seemed to take comfort from first understanding and then applying that knowledge and these combined elements were cathartic in reducing the worry felt by first responders who answered this question.

> *Knowing more about the virus and dealing with the virus (R363)*

> *Information and practise in dealing with it (R783)*

Taking effective action sometimes related to themselves and sometimes to leaders in their organisations, the health service and/or government also served to reduce worry.

> *Strong leadership, seeing things working. Research. (R240)*

> *Cases slowed down, measures worked, we were not overwhelmed. (R763)*

Satisfaction with their own organisation's response, seeing the public adhering to public health measures and the availability of PPE all contributed to lower levels of worry amongst those that responded to this question.

> *Continuing availability of PPE, operational practice, increasing knowledge, and involvement in contingency discussions. (R333)*

Pandemic Preparedness

Respondents were asked to rate their level of Preparedness for the COVID-19 pandemic on a scale from 0 = not at all prepared up to 100 = fully prepared. The questions asked "On reflection, do you feel you were professionally prepared for COVID-19?", "On reflection, do you feel your home/family was prepared for COVID-19?" and "On reflection, do you feel the country was prepared for COVID-19?". The mean results for respondents overall are given in Table 19 and the breakdowns by organisation, region, gender and urbanicity are given in Table 20, Table 21, Table 22, and Table 23.

Table 19: Overall Results for Professional, Household & National Preparedness

Preparedness	Professional	Household	National
Mean	52.02	49.82	40.38
Standard Dev	26.09	27.42	24.25

The pattern shown in the overall results is repeated for most subgroups, where individuals report on average a higher level of Preparedness professionally than in their household and much higher, on average over 10%, than the level of Preparedness for the country. The relatively low rating of Preparedness for the country as a whole may be viewed as a corollary to the finding that the country was seen to be impacted more than households. For the full sample, paired t-tests for differences in rating revealed the differences reported between all three are statistically significant.

Table 20: Professional, Household & National Preparedness by Organisation*

Organisation	N	Professional	Household	National
Civil Defence	73	**57.40**	51.57	42.43
Fire Service	131	57.33	51.65	39.92
National Ambulance Service	324	**47.41**	**47.07**	**37.89**
Private Ambulance Service	65	53.54	53.17	**50.00**
Voluntary Ambulance Service	78	56.28	**56.75**	45.53
Other	51	51.57	45.31	34.8

*Mean Preparedness (0= not at all prepared, 100 = Fully Prepared)

In Table 20, the lowest average for each column is marked in light blue bold and the highest in red. The National Ambulance Service reports the lowest mean value for their assessment of each level of Preparedness - Professional, Household and National. There is strong statistical evidence (significance of K-Wallis test at a 5% significance level) that the rating between organisations differ for Professional and National Preparedness, and weaker evidence (significance at a 10% level) that they differ for Household preparedness.

Comparing Professional and Household preparedness for each organisation, there is a statistically significant difference in mean Preparedness only in the cases of Civil Defence and Fire Service, where Professional Preparedness is rated significantly higher than Household preparedness. The mean level of Household Preparedness is significantly higher than Preparedness of the country for all organisations except the Voluntary Ambulance Services.

*Table 21: Professional, Household & National Preparedness by Region**

Region	N	Professional	Household	National
North West	29	52.76	50	40.71
North East	49	45.31	47.29	32.34
West	68	54.41	48.82	40.14
Midland	41	52.93	51.75	45.38
East	173	57.05	52.87	41.55
Mid West	37	46.49	44.32	38.06
South East	73	48.22	48.29	40.39
South	77	48.31	49.74	39.05
Multiple	16	58.75	45.63	45

(*Mean Preparedness)

Comparing preparedness ratings across regions, there is no evidence that ratings for Household or National Preparedness differ statistically significantly across regions. However, a statistically significant difference does exist for ratings of Professional Preparedness, where workers in the North East report the lowest average rating of Professional Preparedness, at 45.31, compared to 57.05 for the East and 58.75 for those who work across multiple regions.

In the West and East regions, the rating of Professional Preparedness is statistically significantly higher than that for Household. For all regions, the rating of National Preparedness is significantly lower than Professional or Household preparedness.

Table 22: Professional, Household & National Preparedness by Gender*

Gender	N	Professional	Household	National
Male	445	53.08	49.84	40.81
Female	126	49.05	49.36	38.47

(*Mean Preparedness)

Males' mean rating of their Professional Preparedness is significantly higher than that of females, whereas the mean assessments for Household and National Preparedness are not statistically different between genders. Males rated their level of Professional Preparedness higher than that of their household, while for females there was no statistically significant difference. Mean National Preparedness is significantly lower than both mean Professional and Household preparedness for both genders.

Table 23: Professional, Household & National Preparedness by Urban/Rural location

Residence	N	Professional	Household	National
A city	63	**57.46**	**52.46**	**46.42**
Suburbs or outskirts of a city	122	52.13	50.78	**38.07**
A town	153	**49.74**	50	39.19
A village	79	54.56	49.24	43.77
A rural area	147	51.22	**48.86**	38.85

While city dwellers rate the level of Professional, Household and National Preparedness as higher than those living in any other areas, there is no statistically significant difference in ratings between the groups. Professional Preparedness is rated statistically significantly higher than Household preparedness for those in cities or villages only, and all groups rate National Preparedness as significantly lower than Professional or Household preparedness.

Preparedness Guidance

The vast majority of respondents sought guidance to prepare for COVID-19 in a personal and professional capacity. 80.74% reported seeking personal preparedness guidance, and 94.10% sought professional preparedness guidance. The numbers reporting use of various information sources are summarised in the chart below. The most frequently used source of guidance was work-based, i.e., organisational email (n455), followed by the World Health Organisation (n404). The least cited source was research papers (n54).

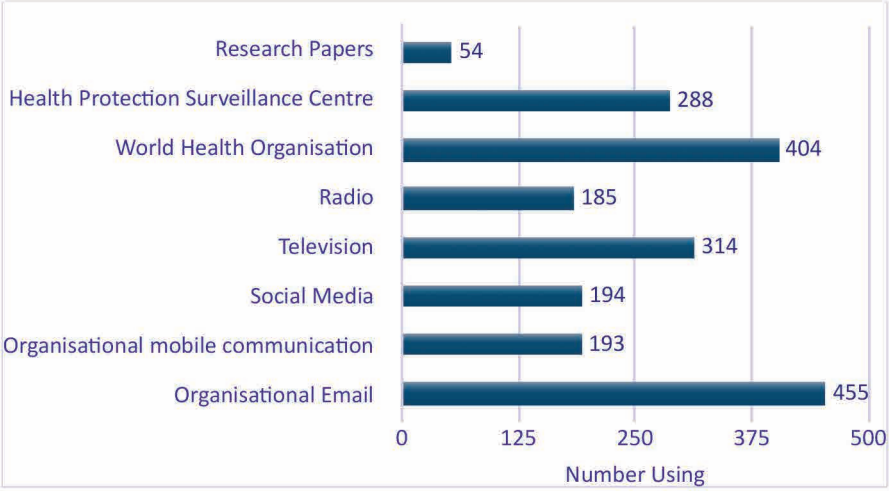


Figure 20: Sources of Information

Impact on Family Interactions

Participants were asked the extent to which the pandemic crisis impacted on participants' interactions with their families. Over 80% of respondents confirmed that the pandemic had changed how they interact with their family (see Table 24).

Table 24: Changed Interaction with Family

	Freq.	Percent	Cum.
Yes	519	82.64	100
No	109	17.36	17.36
Total	628	100	

387 first responders offered accounts of how COVID-19 impacted on their family life, and their codified responses are set out in Table 25.

Table 25: Impact on Family Interaction

Impact on Family	Units of Meaning Coded
Practice Social Distancing in the Home	158
Social Isolation from Extended Family	83
Sanitising before and after Contact	79
Social Isolation from Immediate Family	74
Decontaminate Clothes	62
Showering on entry	42
Left Home to Protect Family	18
Family Anxieties about Me	14
Social Distancing with Extended Family	14
Extended Hours away from Home	11
Self-Isolated due to Contraction	4
Spending more time with Family	3

Table 24 shows the most significant single impact on family interactions was having to practice social distancing in the home, and the undue burden this placed on first responders.

> *Having to keep a distance, not able to fully relax at home, worry about infecting family, they worry about me at work. Mealtimes are affected as we now eat apart. (R109)*

> *I minimise my time spent in their company. All my clothing is washed separately. All my ware (as in cup, cutlery, plates, and bowls) are washed and stored separately. The main bathroom has now become my bathroom only due to work for showering. (R189)*

I no longer hug my family when I get home. (R198)

For some, social distancing in the home included complete separation from partners:

Sleeping alone in spare room... keeping away from vulnerable family members. Total social distancing and more awareness of hand hygiene and general disinfection use at home. (R607)

The emotional impact of socially distancing from family was evident in responses, with 41% of the almost 400 participants who responded to this element of the question describing this as the element of the pandemic which had the most impact on their lives:

My family are all frontline. Daughter a respiratory nurse son a firefighter, husband a critical factory worker also a daughter resident in London. We have not physically been with any of our children, normally we that would happen 3 times a week and once a month for London one. That is very difficult. 2 family members have asthma, so we are been ultra-careful. All my family are staying at home and garden since the start, except for work. (R283)

The emotional impact was even greater for those who were practising social isolation, as opposed to social distancing, from extended family:

Yes, have not seen my mother since before St. Patrick's day. She is in a nursing home and I didn't/can't visit. (R28)

Initially slept in separate room to wife until happy with hospital/ambulance colleagues' practice. Complete avoidance of parents-in-law, both elderly, one with specifically vulnerable comorbidities (luckily house is large enough with duplicate facilities to permit), all now relaxed but appropriate distancing and frequent hand hygiene persisting. (R333)

Sanitising has now become a time consuming and stressful daily activity for respondents; one that has impacted all interactions with family. Respondents describe rigid and exhausting routines that frequently commence with showering after a shift, often outside the home, followed by strictly adhered to protocols for washing clothes every time they enter the home.

I am more aware of the risk and cross contamination on the Cov-19. Even when PPE is worn, making sure all measure when returning home. Like shoes outside, change out of my uniform, straight into the machine and shower. My children and husband are aware until this is done, they are not allowed to come near me. This is hard but they understand it to keep them safe. (R50)

Some participants left their home entirely to protect their families:

I work in a hospital but had to move out of my family home because I was working in the hospital and am at risk to giving it to my family. (R99)

Some had to send their children away:

> *Sent my two sons to stay somewhere else, one of them is a severe asthmatic and I would not take the chance of me bringing the virus home to him. BREAKING MY HEART! (R534)*

> *Until the 29th April I showered as soon as I got home from work and would keep physical distance from my children. Have not hugged them since it started. As of the 29th I have had to send my children to live elsewhere until this is over. Also have not had contact with my parents, brothers or friends. (R782)*

It is reasonable to conclude that the Covid-19 pandemic has had a profound impact on family interactions for first-line responders and has been a source of anxiety in this context. Given the operating context, it is perhaps not surprising that there was a disproportionate impact on operational participants as set out in Table 26.

Table 26: Impact on Family Interactions by Rank in Organisation

Impact on Family by Rank in Organisation	General Operational level	Managerial Level	Supervisor level
Impact on Family Interactions	299	46	38
Decontaminate Clothes	51	3	5
Extended Hours away from Home	8	2	1
Family Anxieties about Me	12	2	0
Left Home to Protect Family	17	0	1
Practice Social Distancing in the Home	125	19	12
Sanitising before and after Contact	59	11	7
Self-Isolated due to Contraction	4	0	0
Showering on entry	28	4	7
Social Distancing with Extended Family	13	1	0
Social Isolation from Extended Family	65	9	9
Social Isolation from Immediate Family	58	9	7
Spending more time with Family	2	1	0

Figure 21 illustrates the overlap in discourse by respondents across and between elements of impact on family interactions.

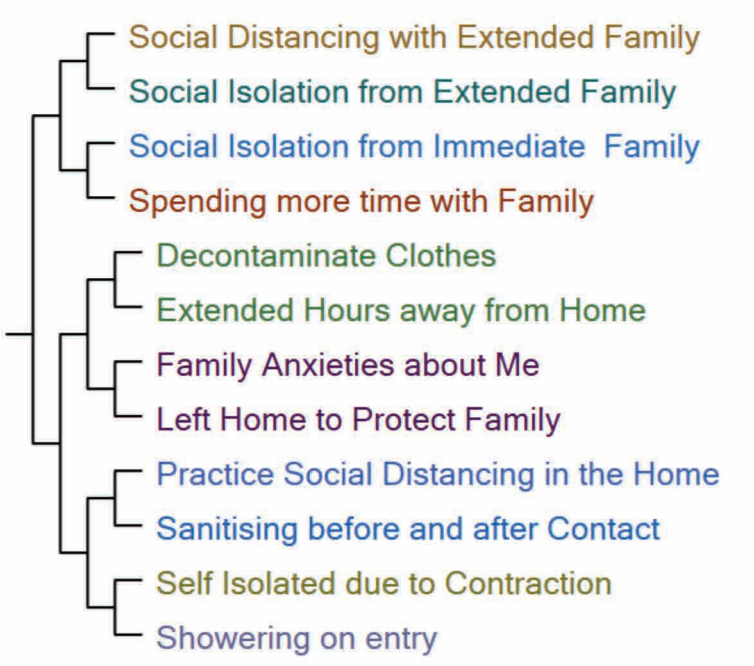


Figure 21: Overlap in Discourse on Family Interaction

Social distancing and social isolation from extended family overlapped, as did decontaminating clothes and extended time away from home. Family anxiety concerning the respondent overlapped with having to leave home. Finally, practising social distancing in the home was, unsurprisingly, linked to those who had to shower on entry to the home.

Exposure to Pandemic

Only 31% of respondents reported having experienced an influenza outbreak before the COVID-19 pandemic. In comparison, approximately half of respondents had some personal experience related to COVID-19. Approximately 3% contracted it themselves, 45% reported a family member or friend had contracted it, and almost 8% had a family member or friend die as a result (see Figure 22).

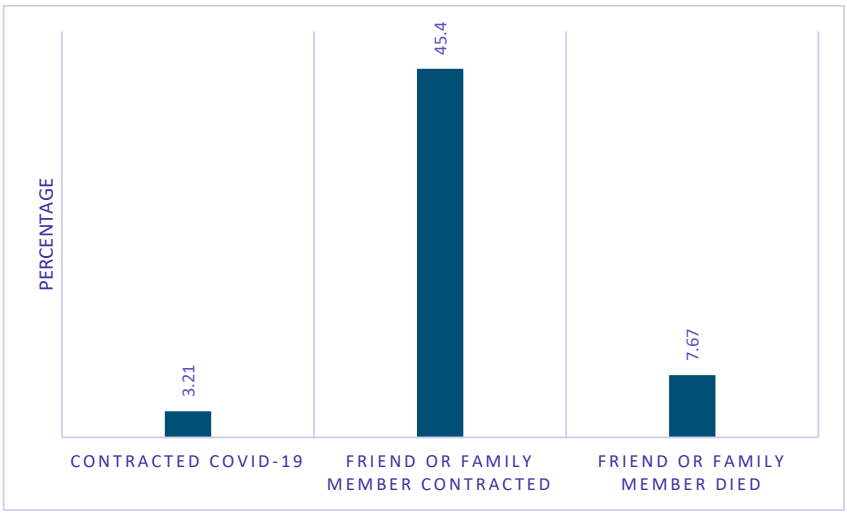


Figure 22: Personal Experience of COVID-19

Organisational Support

To assess views on organisational support during the COVID-19 response, respondents recorded their level of agreement with the following statements on a seven-point scale (1= Strongly Disagree up to 7 = Strongly Agree): "I feel adequately trained by my organisation to respond"; "I feel my role in my agency's response is valued"; My organisation has provided me with adequate Personal Protective Equipment" and "My organisation is looking after my basic needs (e.g. rest and shelter)". The overall frequencies are reported in Table 27, with breakdowns by organisation given in Table 28, Table 29, Table 30, and Table 31 respectively.

Table 27: Organisational Support - Overall Data

	I feel adequately trained by my organisation to respond (%)	I feel my role in my agency's response is valued (%)	My organisation has provided me with adequate PPE	My organisation is looking after my basic needs
Strongly disagree	4.27	6.46	5.44	8.5
Disagree	8.25	8.9	6.88	10.56
Somewhat disagree	8.25	6.17	8.02	8.65
Neither disagree or agree	6.83	8.32	5.3	12.61
Somewhat agree	24.89	18.51	17.77	15.69
Agree	32.15	31.42	32.38	29.03
Strongly agree	15.36	20.23	24.21	14.96
Mean Value	4.98	4.99	5.17	4.63

Based on paired t-tests, there is no significant difference in the agreement rankings for the first two items, adequacy of training and value of role in the agency's response. For each of these, approximately 26% and 30% respectively do not agree, even somewhat, with the statements.

The level of agreement with the statement that the provision of PPE was adequate ranks significantly higher than each of the first two statements. But even for this, the highest-scoring item, there is a substantial lack of agreement as approximately 25% of responses fall in the strongly disagree to neither agree nor disagree classifications.

The average agreement level for the final item, 'My organisation is looking after my basic needs', is significantly lower than for all other statements. For this lowest scoring item, 40% of respondents do not agree, even somewhat with the statement.

Table 30, and Table 31 show the level of agreement with each of the statements broken down by organisation. Highlighted are the highest levels of agreement (in red) and the highest levels of disagreement (in light blue) between organisations. Where there is only a small difference in proportions between organisations falling in extreme categories, more than one is highlighted.

Table 28: Adequately Trained by Organisation to Respond

	Civil Defence	Fire Service	National Ambulance Service	Private Ambulance Service	Voluntary Ambulanc e Service	Other
Strongly disagree	4.17	1.57	5.06	6.35	4.05	3.92
Disagree	1.39	3.94	12.97	6.35	5.41	5.88
Somewhat disagree	4.17	5.51	11.39	4.76	6.76	7.84
Neither disagree nor agree	4.17	6.30	6.65	6.35	9.46	9.80
Somewhat agree	20.83	25.98	24.68	26.98	25.68	25.49
Agree	36.11	22.86	30.70	30.16	37.84	25.49
Strongly agree	29.17	22.83	8.54	19.05	10.81	21.57

Almost 30% of National Ambulance Service respondents disagree at least somewhat with the statement that they are adequately trained to respond to COVID-19, with 64% in the agreement range. At the other extreme, 86% of Civil Defence respondents at least agree somewhat with the statement, with almost 30% agreeing strongly.

Table 29: The Organisation values my Role in the Response

	Civil Defence	Fire Service	National Ambulance Service	Private Ambulance Service	Voluntary Ambulance Service	Other
Strongly disagree	5.56	2.40	9.55	0.00	8.11	3.92
Disagree	5.56	5.60	11.15	14.75	4.05	7.84
Somewhat disagree	2.78	4.00	8.28	3.28	6.76	5.88
Neither disagree nor agree	2.78	4.80	10.19	8.20	10.81	9.80
Somewhat agree	16.67	19.20	17.20	14.75	27.03	19.61
Agree	37.50	38.40	29.30	31.15	25.68	27.45
Strongly agree	29.17	25.60	14.33	27.87	17.57	25.49

Almost 30% of National Ambulance Service respondents report disagreement with the statement that their role in their agency's response is valued, with almost 61% agreeing at least somewhat. For both Civil Defence and the Fire Service, approximately 83% of respondents feel their role is valued.

Table 30: Provided with Adequate Personal Protective Equipment

	Civil Defence	Fire Service	National Ambulance Service	Private Ambulance Service	Voluntary Ambulance Service	Other
Strongly disagree	2.82	2.36	6.35	3.33	8.00	10.00
Disagree	1.41	3.15	8.25	11.67	6.67	10.00
Somewhat disagree	5.63	3.15	9.21	6.67	9.33	16.00
Neither disagree nor agree	5.63	0.00	4.44	3.33	20.00	4.00
Somewhat agree	7.04	12.60	23.17	21.67	17.33	8.00
Agree	33.80	44.09	33.33	23.33	18.67	26.00
Strongly agree	43.66	34.65	15.24	30.00	20.00	26.00

In relation to the provision of PPE, 22%-24% of each of the Ambulance Service workers report disagreement with the statement that their organisation provided adequate PPE. At the other extreme, over 90% of Fire Service respondents agree that their organisation did provide adequate PPE.

Table 31: Organisation Looking After Basic Needs

	Civil Defence	Fire Service	National Ambulance Service	Private Ambulance Service	Voluntary Ambulance Service	Other
Strongly disagree	1.49	1.60	13.18	8.33	8.22	6.52
Disagree	1.49	4.00	17.04	10.00	5.48	6.52
Somewhat disagree	2.99	3.20	12.22	10.00	8.22	6.52
Neither disagree nor agree	11.94	5.60	14.47	8.33	21.92	10.87
Somewhat agree	8.96	18.40	18.01	13.33	10.96	13.04
Agree	40.30	45.60	18.97	28.33	27.40	39.13
Strongly agree	32.84	21.60	6.11	21.67	17.81	17.39

Approximately 42% of National Ambulance Service workers disagree with the statement that their organisation is looking after their basic needs. In relation to the Fire Service and Civil Defence, approximately 86% and 82% respectively agree with the statement.

The information by organisation is summarised further in Figure 23 below, showing the average levels of agreement with statements for each organisation, where the average is computed based on the scale 1= strongly disagree up to 7 = strongly agree. The average values, therefore, are themselves bounded by 1 and 7, with a higher mean value indicating a higher average level of agreement.

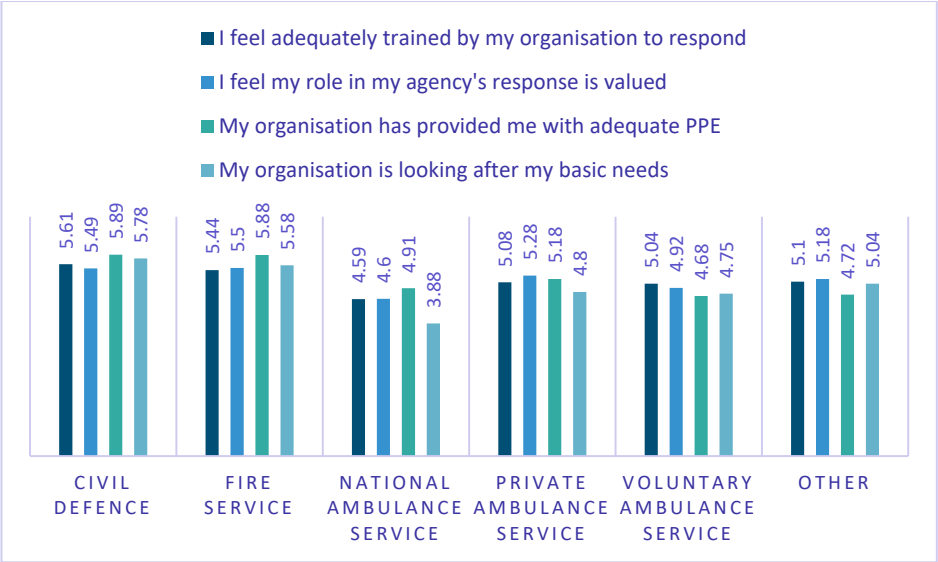


Figure 23: Organisational Support

Based on mean values by organisation: 1 = Strongly disagree, 7 = Strongly agree

The main highlights of the information around organisational breakdown are that National Ambulance Service workers appear most dissatisfied with the elements of organisational support studied. The Civil Defence and Fire Service tend to agree that their organisation is supportive. Concerning PPE, all Ambulance Services have similar levels of disagreement with the statement that provision by their organisations was adequate. Tests show the differences reported across organisations in relation to each aspect illustrated are statistically significant.

Breakdown by Role

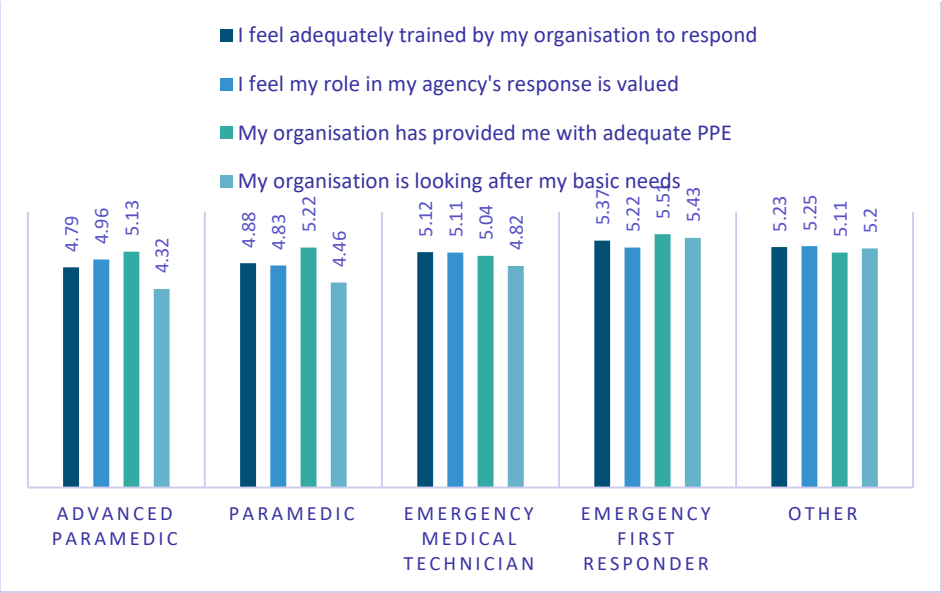


Figure 24: Organisational Support by Role

Based on Kruskal Wallis tests, there is evidence of differences in the distribution of responses by role (see Figure 24) for the statements "I feel adequately trained by my organisation to respond" and "My organisation is looking after my basic needs". For these statements, the mean responses for Paramedic and Advanced Paramedic are significantly lower than for other roles.

Breakdown by Rank

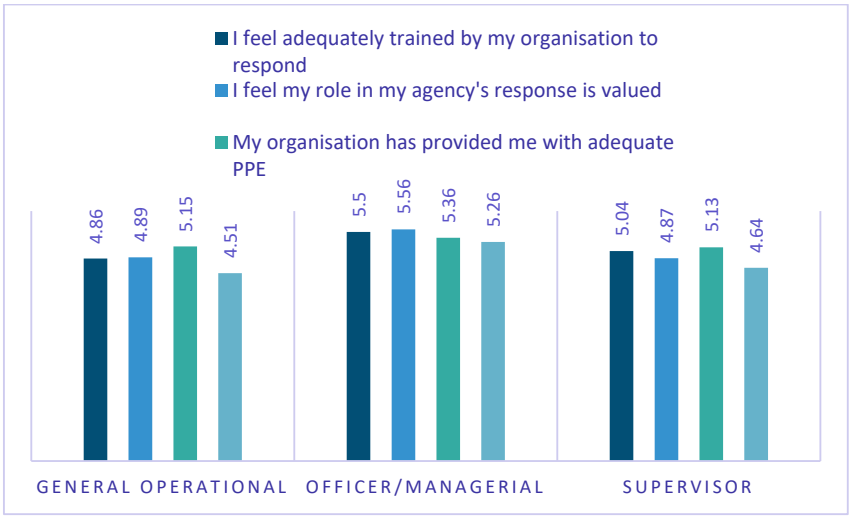


Figure 25: Organisation Support by Rank

Comparisons of the measures charted by rank reveal that those of Officer/Managerial rank agree more strongly with all the statements than either General Operational or Supervisory staff (see Figure 25). The distributions of agreement differ significantly across ranks, except for the statement regarding the adequacy of PPE.

Satisfaction with Provision of Facilities, Measures & Guidance

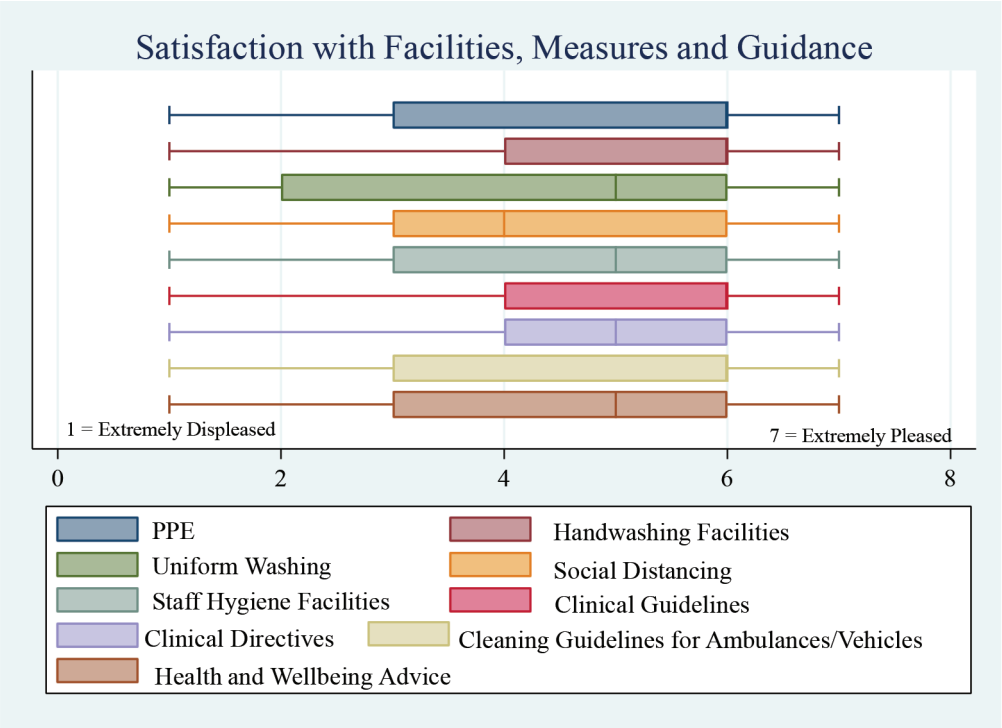
Respondents were asked to rate their organisation's provision of PPE, Handwashing Facilities, Uniform Washing Facilities, Social Distancing Measures, Staff Hygiene Facilities, Clinical Guidelines, Clinical Directives, Cleaning Guidance for Ambulances/ Vehicles and Health & Well-being Advice. Ratings were made on a seven-point scale from extremely displeased to extremely pleased. The overall findings are summarised in Table 32.

Table 32: (a) Overall Satisfaction with Provision of Facilities, Measures & Guidance

	PPE	Handwashing Facilities	Uniform Washing Facilities	Social Distancing Measures	Staff Hygiene Facilities
Extremely Displeased (%)	6.61	4.93	16.61	11.4	10.63
Moderately Displeased (%)	9.31	5.70	11.51	8.36	9.86
Slightly Displeased (%)	9.31	6.93	7.89	13.22	10.48
Neither Pleased nor Displeased (%)	7.51	11.71	12.66	17.63	12.17
Slightly Pleased (%)	12.61	14.48	11.51	10.64	13.25
Moderately Pleased (%)	34.23	32.2	24.34	24.01	28.04
Extremely Pleased (%)	20.42	24.04	15.46	14.74	15.56

Table 32: (b) Overall Satisfaction with Provision of Facilities, Measures & Guidance

	PPE	Handwashing Facilities	Uniform Washing Facilities	Social Distancing Measures	Staff Hygiene Facilities
Extremely Displeased (%)	6.61	4.93	16.61	11.4	10.63
Moderately Displeased (%)	9.31	5.70	11.51	8.36	9.86
Slightly Displeased (%)	9.31	6.93	7.89	13.22	10.48
Neither Pleased nor Displeased (%)	7.51	11.71	12.66	17.63	12.17
Slightly Pleased (%)	12.61	14.48	11.51	10.64	13.25
Moderately Pleased (%)	34.23	32.2	24.34	24.01	28.04
Extremely Pleased (%)	20.42	24.04	15.46	14.74	15.56



To examine the level of satisfaction with the provision of facilities and guidance by organisation, average satisfaction levels for each item by each organisation are presented in Table 33. These averages are based on a coding of 1= Extremely Displeased up to 7 = Extremely Pleased. The average values, therefore, are bounded by 1 and 7, with a higher value indicating a higher average level of satisfaction. For ease of identification, the highest satisfaction level for each item (i.e. within each column) is highlighted in red, while the lowest average satisfaction is highlighted in light blue.

Table 33: (a) Average Satisfaction by Organisation

Organisation	PPE	Handwashing Facilities	Uniform Washing Facilities	Social Distancing Measures	Staff hygiene Facilities
Civil Defence	**6.02**	**5.98**	4.55	**5.98**	**5.66**
Fire Service	5.84	5.92	**5.40**	5.08	5.52
National Ambulance Service	**4.52**	4.92	4.35	**3.55**	**4.02**
Private Ambulance Service	4.54	**4.76**	**2.58**	4.76	4.33
Voluntary Ambulance Service	4.63	4.90	3.15	4.93	4.30
Other	4.85	4.70	3.16	4.61	4.47
Overall Mean	**4.95**	**5.18**	**4.26**	**4.39**	**4.54**

(b) Average Satisfaction by Organisation

Organisation	Clinical Guidelines	Clinical Directives	Cleaning Guidance for Ambulances/ Vehicles	Health and Wellbeing Advice
Civil Defence	**6.29**	**6.2**	**6.06**	**6.09**
Fire Service	5.52	5.6	5.26	5.33
National Ambulance Service	**4.36**	**4.35**	**4.19**	**3.47**
Private Ambulance Service	5.33	5.33	5.49	4.70
Voluntary Ambulance Service	5.51	5.4	5.37	4.79
Other	4.60	4.36	4.89	4.59
Overall Mean	**4.98**	**4.96**	**4.85**	**4.38**

Examining the results by organisation, the most noticeable message from Table 33 is that Civil Defence workers are relatively highly satisfied with each item. The National Ambulance Service respondents have the lowest average satisfaction for all items examined except Handwashing Facilities and Uniform Washing Facilities, for which the Private Ambulance Service has the lowest average satisfaction.

To check whether statistically significant differences exist in the rankings between organisations, a Kruskal Wallis test was conducted for each item tabulated. In each case, the test rejected the hypothesis that rankings for each organisation were drawn from the same population distribution. Similarly using a chi-squared test on each item, the hypothesis of independence between stated satisfaction and organisation was strongly rejected. These results indicate that the differences in results by organisation outlined in Table 33 are significant, and very unlikely to be due simply to random sampling.

Table 34: (a) Average Satisfaction by Role

Role	PPE	Handwashing Facilities	Uniform Washing Facilities	Social Distancing Measures	Staff hygiene Facilities
Advanced Paramedic	4.93	5.01	**4.59**	**3.89**	**4.41**
Paramedic	4.90	5.29	4.53	4.1	4.49
Emergency Medical Technician	**4.78**	**4.91**	3.46	4.85	4.43
Emergency First Responder	**5.49**	**5.63**	4.32	**5.3**	**5.31**
Other	5.27	5.53	3.59	5.26	4.88

(b) Average Satisfaction by Role

Role	Clinical Guidelines	Clinical Directives	Cleaning Guidance for Ambulances /Vehicles	Health and Wellbeing Advice
Advanced Paramedic	**4.46**	**4.57**	**4.52**	**3.96**
Paramedic	4.83	4.76	4.53	4.03
Emergency Medical Technician	5.39	5.35	5.37	4.81
Emergency First Responder	**5.64**	**5.39**	**5.45**	**5.57**
Other	5.57	5.63	5.71	5.19

Table 34 above reports average levels of satisfaction by respondents' role. Kruskal Wallis tests on each item indicate a statistically significant difference in the distribution of responses between roles. For all items other than uniform washing facilities, emergency first responders report the highest average level of satisfaction of all defined categories. Advanced Paramedics show the lowest average level of satisfaction with six of the nine items: social distancing measures, staff hygiene facilities, clinical guidelines, clinical directives, cleaning guidance for ambulances or vehicles, and health and wellbeing advice.

Table 35: (a) Average Satisfaction by Rank

Rank	PPE	Handwashing Facilities	Uniform Washing Facilities	Social Distancing Measures	Staff hygiene Facilities
General Operational	**4.86**	5.09	4.24	**4.23**	**4.43**
Officer/Managerial	**5.47**	**5.82**	**4.53**	**5.22**	**4.97**
Supervisor	4.99	**5.05**	**4.17**	4.32	4.74
Overall Mean	**4.95**	**5.18**	**4.26**	**4.39**	**4.54**

(b) Average Satisfaction by Rank

Rank	Clinical Guidelines	Clinical Directives	Cleaning Guidance for Ambulances / Vehicles	Health and Wellbeing Advice
General Operational	4.86	4.86	4.73	**4.20**
Officer/Managerial	**5.80**	**5.66**	**5.73**	**5.21**
Supervisor	**4.77**	**4.70**	**4.57**	4.45
Overall Mean	**4.98**	**4.96**	**4.85**	**4.38**

For each of the nine items considered, there is a clear distinction between the responses of Officer/Managerial staff compared to General Operational and Supervisor. Those in positions as Officers/Managerial consistently rate their level of satisfaction higher than the other two groups.

Table 36: (a) Average Satisfaction by Region

Region	PPE	Handwashing Facilities	Uniform Washing Facilities	Social Distancing Measures	Staff hygiene Facilities
North West	5.03	5.52	4.35	4.59	5.00
North East	4.84	5.32	3.74	4.52	4.29
West	4.21	4.47	4.13	4.15	4.14
Midland	5.12	5.2	4.46	4.32	4.78
East	5.36	5.56	4.67	4.85	5.06
Mid West	4.62	4.57	3.73	3.57	4.14
South East	4.64	4.84	3.97	4.03	3.97
South	4.76	4.95	4.35	3.95	4.06
Multiple	4.81	4.93	3.00	3.88	4.31

(b) Average Satisfaction by Region

Region	Clinical Guidelines	Clinical Directives	Cleaning Guidance for Ambulances / Vehicles	Health and Wellbeing Advice
North West	5.24	5.21	4.96	4.64
North East	4.92	4.96	5.02	4.72
West	4.75	4.68	4.57	4.03
Midland	4.73	4.87	5.2	4.61
East	5.25	5.28	5.09	4.71
Mid West	4.65	4.51	4.32	3.89
South East	4.86	4.74	4.54	3.85
South	4.72	4.44	4.19	3.96
Multiple	5.19	5.13	5.13	3.81

The breakdown of average satisfaction by region reported in Table 36 above reveals that respondents based in the East are most satisfied with each of the items (for the last item, the mean value of 4.71 for the East is insignificantly different from the highest value reported, 4.72). For all items except Clinical Guidelines, there is evidence of distributional differences in satisfaction levels across regions.

Level of Support

To assess further the level of organisational support front-line workers received, respondents stated their level of agreement with each of the following statements on a seven-point scale from strongly disagree up to strongly agree.

- My organisation has acted in the best interest of high-risk staff
- My organisation has acted in the best interest of all staff at all times
- I have received appropriate levels of training to enable me to work safely
- My organisation has provided appropriate PPE to enable me to do my work safely
- My organisation has been supportive of my personal commitments
- My employer has been supportive when I required time off work due to suspected or known infection

The distribution of agreement with these statements for all respondents is given in Table 37.

Table 37: Overall Organisation Support

	Acted in the best interests of high-risk staff	Acted in the best interest of all staff at all times	Appropriate levels of training	Provided appropriate PPE	Supportive of personal commitments	Supportive when I required time off
Strongly Disagree	11.07	11.15	5.73	7.68	10.29	3.77
Disagree	11.73	11.97	7.36	7.68	9.48	3.93
Somewhat Disagree	8.47	13.77	11.13	9.15	5.56	3.61
Neither Disagree nor Agree	14.66	10.49	9.49	6.54	25.65	46.72
Somewhat Agree	14.82	19.67	24.39	22.71	13.24	6.07
Agree	22.48	18.2	26.51	28.27	21.57	17.38
Strongly Agree	16.78	14.75	15.38	17.97	14.22	18.52

Substantial proportions of respondents disagree at least somewhat with each of the statements. Almost 37% of respondents at best "somewhat disagree" with the statement "My organisation has acted in the best interest of all staff at all times". Similarly, 31% disagree with the statement "My organisation has acted in the best interest of high-risk staff". The lowest disagreement is with the statement "My employer has been supportive when I required time off work due to suspected or known infection", where the bulk of responses are in the "neither agree nor disagree" category.
The highest levels of agreement are with the statements "My organisation has provided appropriate PPE to enable me to do my work safely" and "I have received appropriate levels of training to enable me to work safely" with approximately 69% and 66% at least somewhat in agreement.

Average scores, for the sample as a whole, based on 1= strongly disagree up to 7 = strongly agree are given in Figure 26 below. Averages are also charted by organisation, role and rank, where the results of Kruskal Wallis tests indicated significant differences across the groups of workers. With these statements, no evidence existed of a difference in distributions between regions.

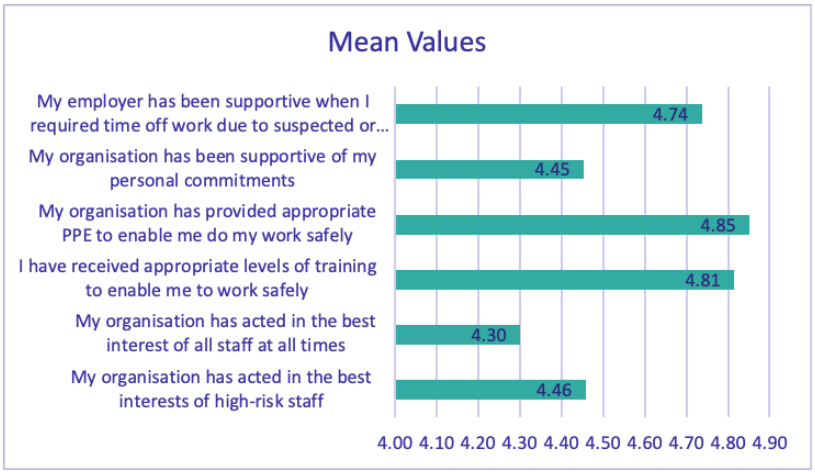


Figure 26: Overall Organisational Support

Table 38: Average Agreement Levels by Organisation

Organisation	Acted in the best interests of high-risk staff	Acted in the best interest of all staff at all times	Appropriate levels of training to enable me to work safely	Appropriate PPE to enable me do my work safely	Supportive of my personal commitments	Supportive when I required time off
Civil Defence	**6.37**	**6.35**	**6.02**	**6.11**	**5.95**	5.23
Fire Service	5.04	5.05	5.37	5.65	4.92	**5.43**
National Ambulance Service	**3.41**	**3.28**	**4.19**	**4.39**	**3.57**	**4.32**
Private Ambulance Service	5.11	4.32	4.83	4.74	4.85	4.61
Voluntary Ambulance Service	5.54	5.33	5.38	4.66	5.54	4.93
Other	4.75	4.69	4.82	4.47	4.74	4.9

The information in Table 38 above and depicted in Figure 27, show the relatively high level of agreement with each of the statements for Civil Defence workers. In comparison, again, National Ambulance Service respondents have the lowest average agreement level with each statement.

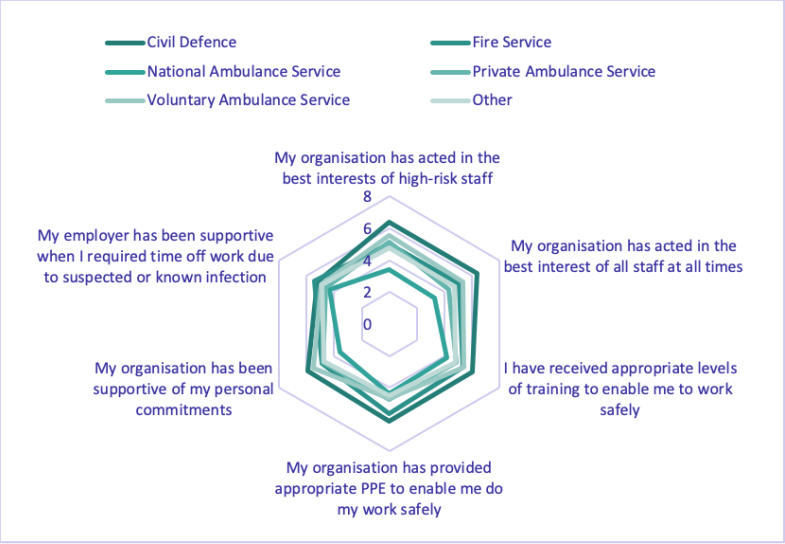


Figure 27: Agreement Levels by Organisation

As with other indicators, there is a distinction among workers of different rank in how they rate the support of their organisation based on these six statements. Consistently Officers/Managerial staff agree more strongly on average with the statements than either General Operational Staff or Supervisors. The ratings for General Operational Staff and Supervisors are very similar.

Average response by Role

Figure 28 below, depicting average response by role, shows that Emergency First Responders report higher agreement on average with the statements related to organisational support. In contrast, for most indicators, the agreement by Advanced Paramedics and Paramedics are on average lower. There is the least dispersion between groups in their responses to the statements around the employer being supportive when the worker needed time off and provision of appropriate PPE.

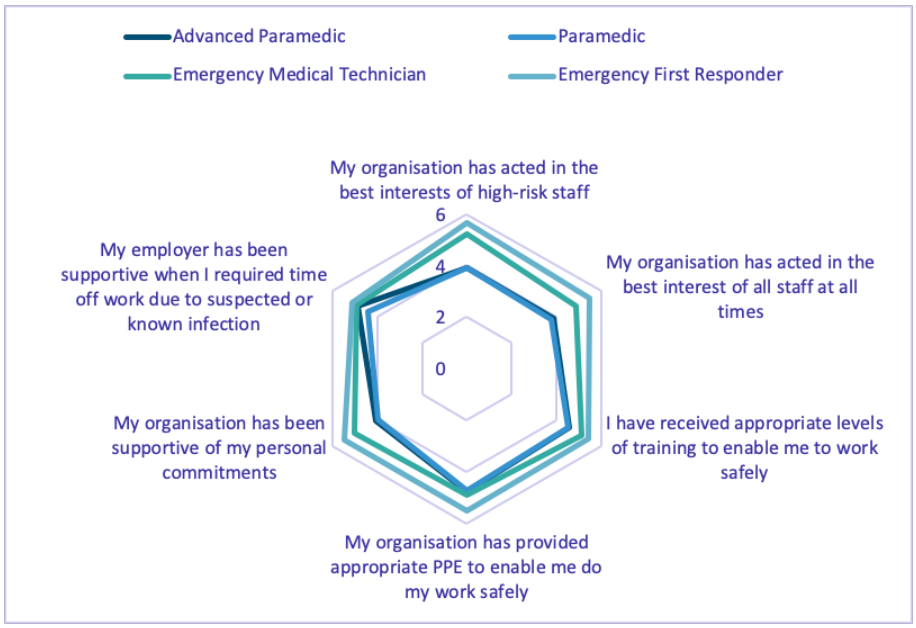


Figure 28: Average Response by Role

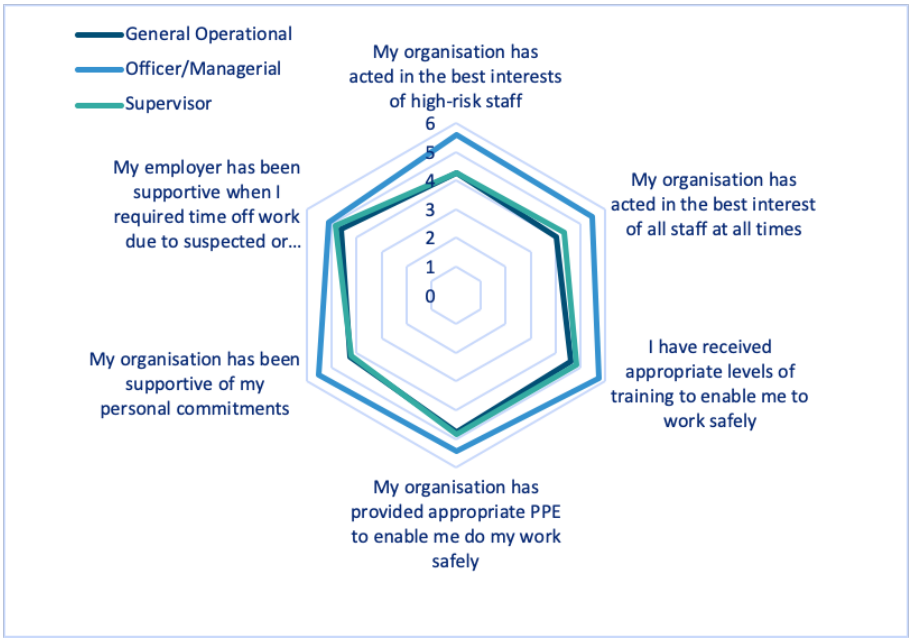


Figure 29: Average Response by Rank

Barriers to Responding: Personal

This section reports the results related to respondents' willingness to work, including extended hours, during the pandemic response and the degree to which certain factors might impact on workers' response to the pandemic. To address the first point, respondents stated their level of agreement with the statements: "I am prepared to work extended hours/days, as required" and "I am not willing to work on the COVID-19 response". The potential barriers to responding which were considered were: family/carer commitments, childcare commitments, pet commitments, and public transport issues.

Table 39: Willingness to Work - Overall Responses

	I am prepared to work extended hours/days, as required	I am not willing to work on the COVID-19 response
Strongly disagree	3.03	57.25
Disagree	3.90	26.23
Somewhat disagree	2.16	1.88
Neither disagree or agree	6.64	4.64
Somewhat agree	11.83	2.46
Agree	36.8	4.49
Strongly agree	35.64	3.04

The results in Table 39 indicate a very large majority of respondents are willing to work on the COVID-19 response, with 83.48% either disagreeing or disagreeing strongly with the statement "I am not willing to work on the COVID-19 response", and over 70% reporting agreement or strong agreement to being prepared to work extended hours/days as required, with the figure rising to over 80% when those who agree somewhat are included.

Table 40: Factors Impacting Willingness to Work – Overall Response

	Family/carer commitments	Childcare commitments	Pet commitments	Public transport issues
Strongly disagree	21.15	34.25	41.37	52.59
Disagree	31.57	28.55	38.58	31.11
Somewhat disagree	4.98	1.47	1.78	0.74
Neither disagree nor agree	13.06	11.42	11.68	10.56
Somewhat agree	13.06	6.63	2.54	1.67
Agree	10.89	9.21	3.05	2.59
Strongly agree	5.29	8.47	1.02	0.74

The factors which impact most on workers' response are family/carer commitments and childcare commitments (see Table 40). Approximately 29% at least somewhat agree with the statement that family/carer commitments impact, with approximately 24% agreeing at least somewhat that childcare commitments are an issue. Approximately 7% state pet commitments impact on their willingness to work, and 5% agree that public transport issues affect them.

Table 41: Willingness to Work by Organisation

	I am prepared to work extended hours/days		I am not willing to work on the Covid-19 response	
Mean response by Organisation	**Mean**	**% [1]**	**Mean**	**% [2]**
Civil Defence	**6.38**	**88.73**	2.09	78.57
Fire Service	5.75	73.60	1.56	94.49
National Ambulance Service	**5.37**	**63.49**	2.02	82.00
Private Ambulance Service	6.10	80.32	2.10	81.67
Voluntary Ambulance Service	6.08	77.77	1.80	83.79
Other	6.12	85.71	2.29	72.92
Overall Mean	5.77		1.83	

1. Percentage who agree or agree strongly 2. Percentage who disagree or disagree strongly

There is no evidence of a statistically significant difference in the distribution of agreement with the statement "I am not willing to work on the COVID-19 response" between organisations. However, concerning agreement with the statement "I am prepared to work extended hours/days, as required" the differences are statistically significant. For that statement, almost 89% of Civil Defence workers, who have reported high levels of satisfaction throughout, agree or agree strongly. In comparison, just over 63% of National Ambulance workers are willing to do so. It would be interesting to know the degree to which each set of workers were already working extended hours/days when questioned.

Table 42: Reasons for Response by Organisation

	Impacts on Individual Response							
	Family/carer commitments		Childcare commitments		Household pet commitments		Public transport issues	
Organisation	Mean	%[a]	Mean	%[a]	Mean	%[a]	Mean	%[a]
Civil Defence	2.97	28.36	2.41	16.07	1.77	2.86	1.92	6.78
Fire Service	2.87	22.03	2.85	23.64	1.84	4.11	1.58	0.03
National Ambulance Service	3.25	30.04	2.97	26.25	2.26	8.65	1.79	2.62
Private Ambulance Service	3.31	31.03	2.92	24.49	1.85	0.00	2.17	8.33
Voluntary Ambulance Service	3.40	32.31	2.63	17.65	2.08	10.26	2.52	18.97
Other	3.51	35.56	3.57	35.14	2.29	7.14	1.95	2.56

a % stating somewhat to strongly agree

Differences in the distribution of agreement between organisations are not statistically significant for any of the statements related to potential barriers to responding.

Table 43: Willingness to Work by Role

	I am prepared to work extended hours/days		I am not willing to work on the Covid-19 response	
Role	Mean	% [1]	Mean	% [2]
Advanced Paramedic	5.42	63.63	1.97	83.00
Paramedic	5.49	66.88	1.89	85.15
Emergency Medical Technician	6.15	80.75	1.92	84.08
Emergency First Responder	6.22	85.71	2.27	77.55
Other	6.19	87.07	1.93	80.00

1. Percentage who agree or agree strongly 2. Percentage who disagree or disagree strongly

Similar to the results above in Table 41 for organisations, there is evidence of a distributional difference between roles in agreement to the first statement, willingness to work, as tabulated in Table 39, but not to the second, willingness to work extended hours. This indicates that willingness to work on the pandemic response is independent of role, but that there is a difference in the willingness to work extended hours/days across roles. The percentage of Paramedics and Advanced Paramedics who agree or strongly agree that they are willing to work extended time is substantially below the levels for other roles.

Table 44: Barriers to Working by Role

	Factors impacting response to this pandemic							
	Family/Carer commitments		Childcare commitments		Pet commitments		Public transport issues	
Role	Mean	%[a]	Mean	%[a]	Mean	%[a]	Mean	%[a]
Advanced Paramedic	3.02	24.65	2.84	23.62	2.01	5.26	1.71	2.4
Paramedic	3.19	28.52	2.98	25.58	2.16	6.49	1.82	3.38
Emergency Medical Technician	3.32	33.55	2.75	20.83	2.01	3.45	2.03	6.56
Emergency First Responder	3.31	35.71	2.32	14.71	1.92	11.54	2.10	10.26
Other	3.18	27.45	3.38	36.17	2.31	15.62	2.04	10.64

a % stating somewhat to strongly agree

While differences exist between roles in their agreement levels related to the impact of potential barriers to their response, these are not statistically significant.

Table 45: Response by Rank

	I am prepared to work extended hours/days		I am not willing to work on the Covid-19 response	
Rank	Mean	% [1]	Mean	% [2]
General/Operational	5.64	70.16	1.93	84.23
Officer/Managerial	6.31	88.78	1.99	82.65
Supervisor	5.63	67.90	2.02	79.52

1.Percentage who agree or agree strongly 2. Percentage who disagree or disagree strongly

Again, distributional differences are not apparent in relation to willingness to work, but do exist between ranks concerning the level of preparedness to work extended days/hours, as required. A larger percentage of Officer/Managerial workers agree or agree strongly that they are prepared to work extended time.

Table 46: Barriers to Working by Rank

	Family/Carer commitments		Childcare commitments		Household pet commitments		Public transport issues	
Rank	Mean	%[a]	Mean	%[a]	Mean	%[a]	Mean	%[a]
General/Operational	3.17	29.16	2.97	26.37	2.15	7.89	1.87	4.45
Officer/Managerial	3.59	37.36	2.94	24.36	1.93	1.69	2.03	8.75
Supervisor	2.88	19.75	2.36	13.51	1.77	3.85	1.75	2.78

a % stating somewhat to strongly agree

There is weak evidence of distributional differences in agreement between ranks for the impact of family/carer commitments and the impact of household pets on response and no statistically significant difference for the other two factors – childcare commitment and public transport issues.

Table 47: Response by Region

	I am prepared to work extended hours/days		I am not willing to work on the Covid-19 response	
Region	**Mean**	**% [1]**	**Mean**	**% [2]**
North West	5.90	82.76	1.46	92.31
North East	5.54	64.00	2.24	76.47
West	5.96	77.94	1.99	79.41
Midland	5.83	75.61	2.34	75.61
East	5.72	72.73	1.73	89.83
Mid West	6.14	75.68	1.69	88.89
South East	5.88	74.67	2.32	74.67
South	5.49	65.82	1.64	91.25
Multiple	5.73	60.00	3.20	60.00

1.Percentage who agree or agree strongly 2. Percentage who disagree or disagree strongly

Table 48: Barriers to Responding by Region

	Family/Carer commitments		Childcare commitments		Household pet commitments		Public transport issues	
Region	**Mean**	**%[a]**	**Mean**	**%[a]**	**Mean**	**%[a]**	**Mean**	**%[a]**
North West	3.00	24.14	2.42	12.50	1.76	0	2.08	8.33
North East	3.65	34.78	3.10	21.95	2.08	4.00	2.13	10.00
West	3.28	30.77	2.64	19.64	2.09	5.71	1.56	0.00
Midland	3.39	34.21	3.22	31.25	2.13	3.33	1.91	3.12
East	2.83	21.78	2.73	21.74	1.88	4.81	1.77	3.65
Mid West	3.18	30.30	2.34	13.79	1.76	0.00	1.89	3.70
South East	3.22	30.56	3.10	31.03	2.08	6.00	1.90	5.08
South	2.86	22.22	2.54	18.64	2.41	9.76	1.84	3.28
Multiple	3.07	35.71	2.31	23.08	2.71	28.57	2.00	16.67

a % stating somewhat to strongly agree

Overall, 27.78% of respondents reported having personal commitments which impact on their ability to respond during COVID-19. The breakdowns by Organisation, Role and Rank are shown in Figure 30, Figure 31, and Figure 32 below. Significant differences exist for each breakdown, i.e. between organisations, between roles and between ranks.

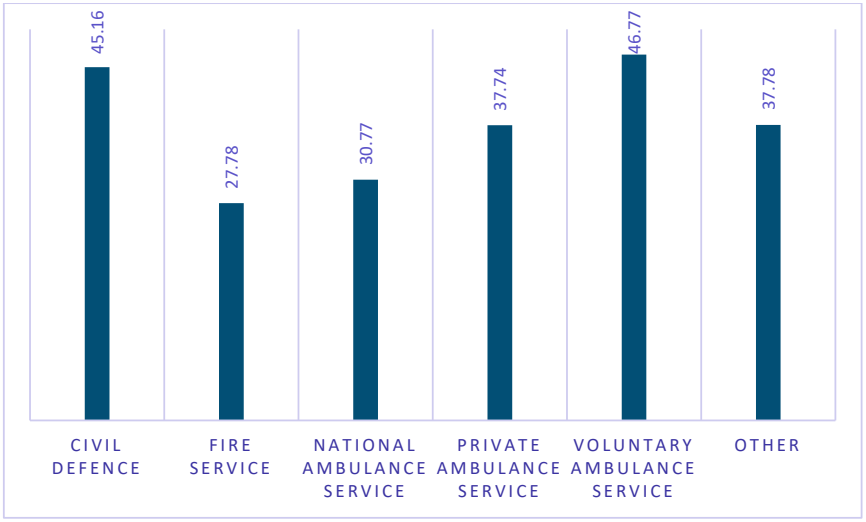


Figure 30: % Stating Personal Circumstances Affecting Ability to Respond by Organisation

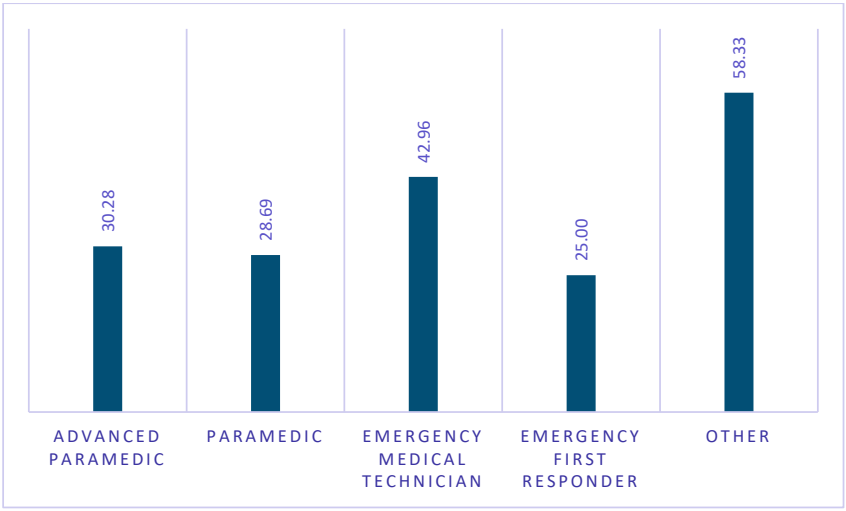


Figure 31: % Stating Personal Circumstances Affecting Ability to Respond by Role

Figure 32: %Stating Personal Circumstances Affecting Ability to Respond by Rank

Respondents were asked, in the first instance, to reveal if they had a personal duty of care that might manifest as commitments or other factors that would impact on their availability to respond to the pandemic. They were then asked to elaborate on their response, stating what those commitments or factors may be. Table 49 below outlines the personal duty of care that would inhibit their ability to respond to the pandemic.

Table 49: Personal Duties of Care

Personal Duties of Care	Units of Meaning Coded
Childcare	62
Responsibility to Protect Family - Colleagues and Myself	61
Underlying Medical Condition or Vulnerability – Family	33
Other Family Commitments	27
Other Work Commitments	24
Underlying Medical Condition or Vulnerability – Myself	9
Reliance on Public Transport	1

Childcare and responsibilities to protect family, colleagues, and themselves were the most cited duties of care that could prevent first responders from being available as normal during the pandemic:

> *I now mind my son 50% of the week. I love doing this, actually; but it obviously lessens my availability for shifts. (R57)*

> *I have 5 kids at home, plus a mum who relies on me to do her weekly shopping and take care of her wounds, so I would not be available as much as I would like. (R78)*
> *I have a personal responsibility to myself and my family and my colleagues to follow good practice guidelines in respect of Covid-19. I need to keep myself safe to keep those people safe. It is my responsibility. (R8)*

Personal and Family Concerns

To assess the level of personal and family concern about workers getting infected through work or bringing the infection home to family, respondents stated their agreement with the following statements on a seven-point scale:

- I have concerns that I will get infected at work
- I have concerns that I will bring home the infection
- My family have concerns about me going to work
- My family have concerns that I will get infected at work
- My family have concerns that I will bring home the infection

Table 50: Overall Concerns Regarding Infection

	I have concerns that I will		My family have concerns		
	Get infected in work	Bring home the infection	About me going to work	That I will get infected in work	That I will bring home the infection
Strongly Disagree	2.29	2.12	2.94	2.3	2.61
Disagree	4.41	3.76	3.43	2.79	4.41
Somewhat Disagree	4.9	3.59	1.79	1.31	1.31
Neither Disagree nor Agree	10.95	8.82	9.46	6.57	9.15
Somewhat Agree	25.33	23.69	21.7	24.79	25
Agree	31.7	28.92	32.79	32.84	31.21
Strongly Agree	20.42	29.08	27.9	29.39	26.31

The results in Table 50 show a high level of agreement with each of the statements. Over 75% of respondents stated that they agree at least somewhat with each one, with over 87% recording agreement with the statement "My family have concerns that I will get infected in work".
Mean scores for the full sample, by organisation, role and rank, based on the scale 1= strongly disagree up to 7 = strongly agree are presented in Figure 33, Figure 34, Figure 35, and Figure 36 below.

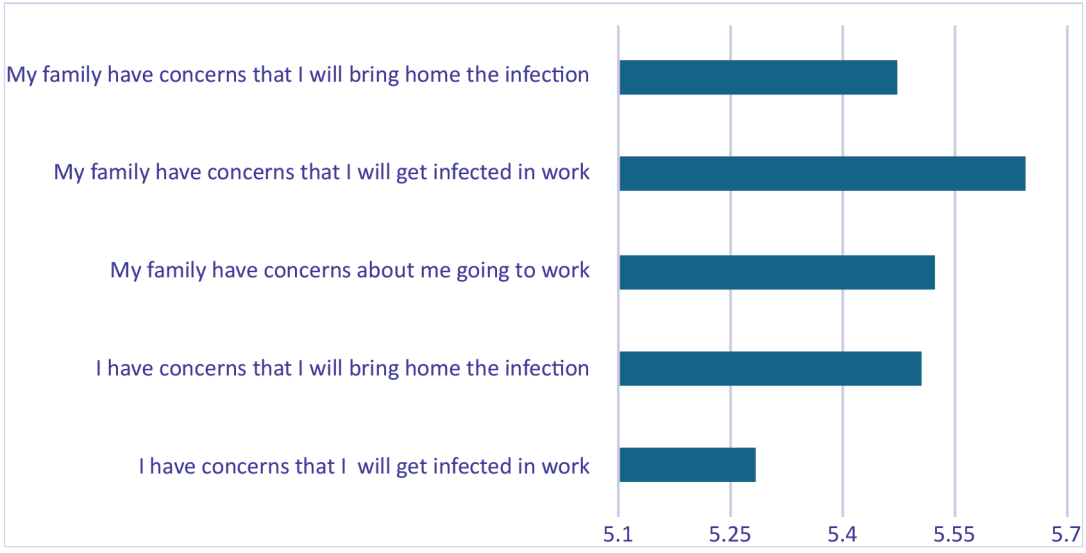


Figure 33: Mean Agreement Overall

There are significant differences in the distributions of agreement between organisations for each of the five statements. For each one, the National Ambulance Service has the highest level of agreement, whereas the Civil Defence consistently has the lowest.

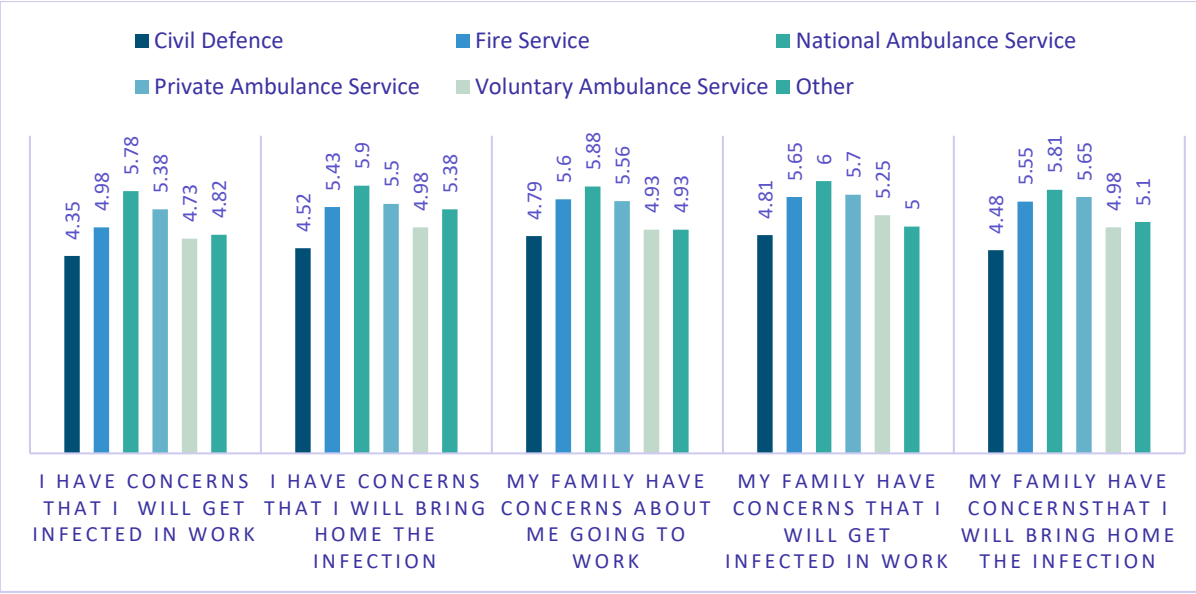


Figure 34: Mean Agreement by Organisation

Distributions of agreement also differ significantly by Role. Paramedics and Advanced Paramedics agree more strongly that they and their families are concerned than the other groups, with Emergency First Responders reporting the lowest average agreement.

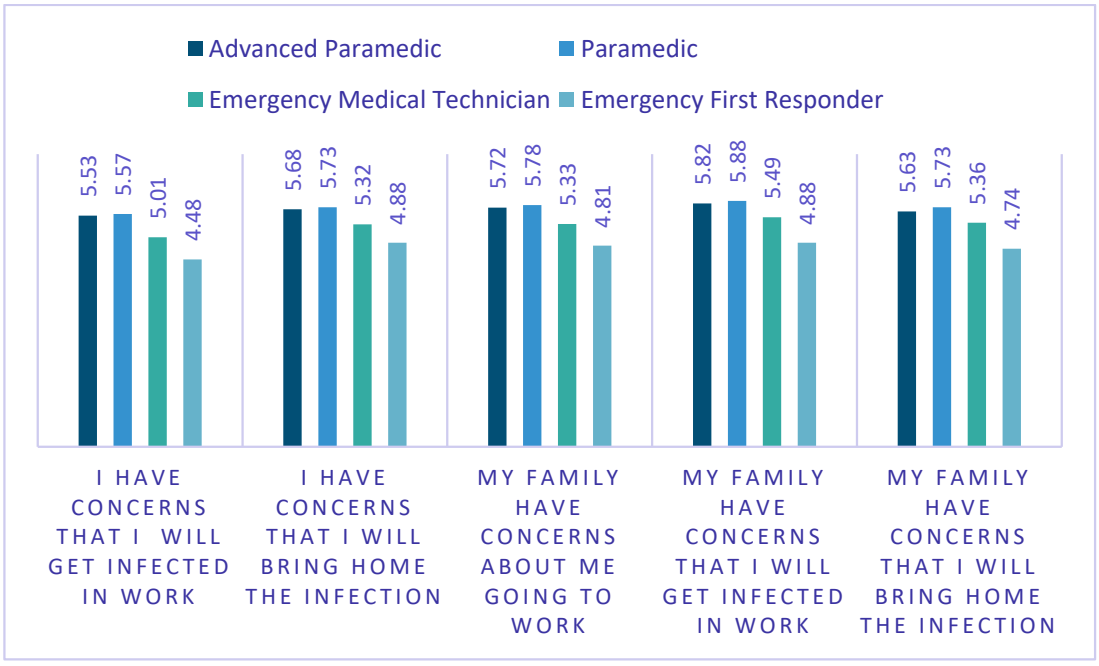


Figure 35: Mean Agreement by Role

Comparing across ranks, there are statistically significant differences in agreement distributions. On average, General Operational respondents agree more strongly that they and their family have concerns, with Officer/Managerial reporting lowest average agreement.

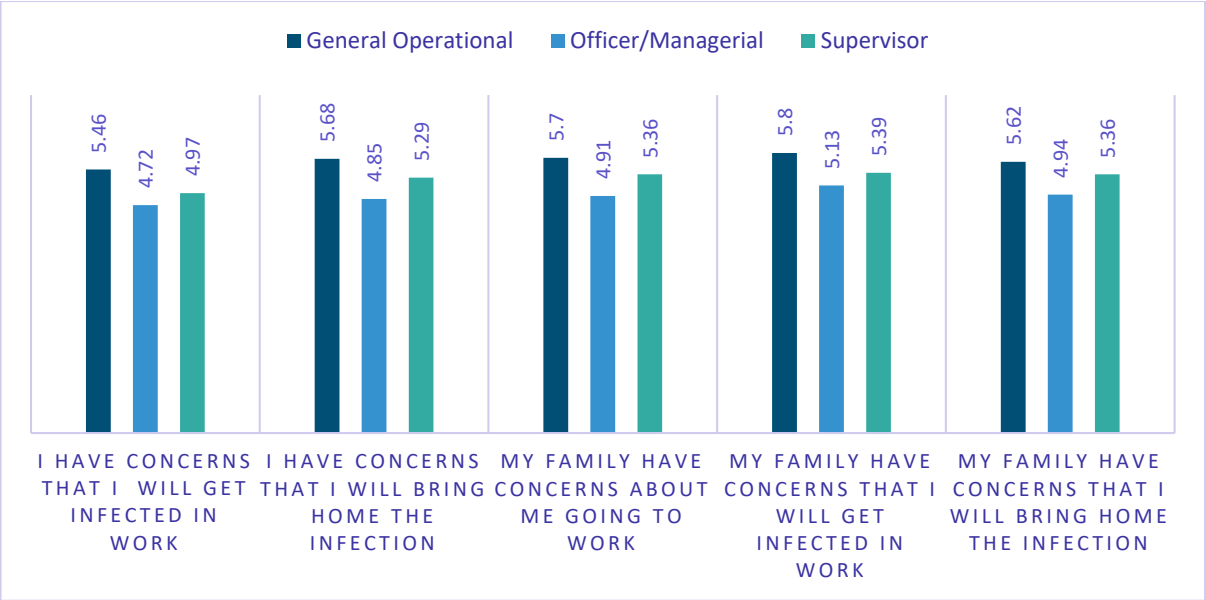


Figure 36: Mean Agreement by Rank

Respondents were asked, "Have you considered leaving your profession during the response phase of this pandemic?" Overall, 80.7% reported they had not, 11.83% reported yes with 7.48% stating "Maybe".

There is weak evidence that the distribution of responses differs significantly between organisations (see Table 51), with a higher proportion of National and Private Ambulance Service workers stating they have considered leaving, 15.33% and 14.29% respectively, and approximately 75% answer definitively that they have not. For the fire service, the equivalent figures are approximately 7% and 91%.

Table 51: Considered Leaving Profession by Organisation

% Stating	Civil Defence	Fire Service	National Ambulance Service	Private Ambulance Service	Voluntary Ambulance Service	Other
No	83.33	91.09	75.55	73.47	88.14	84.21
Maybe	7.41	1.98	9.12	12.24	8.47	2.63
Yes	9.26	6.93	15.33	14.29	3.39	13.16

Have you considered leaving your profession during the response phase of this pandemic?

There is no statistically significant evidence of a difference in the distribution of responses between different Roles or Ranks. Figures for each of these are presented in Table 52 and Table 53.

Table 52: Considered Leaving Profession by Role

	Paramedic	Advanced Paramedic	Emergency Medical Technician	Emergency First Responder	Other
No	80.77	81.03	79.85	81.58	80.49
Maybe	8.46	7.33	7.46	10.53	2.44
Yes	10.77	11.64	12.69	7.89	17.07

Table 53: Considered Leaving Profession by Rank

	General Operational	Officer/Managerial	Supervisor
No	81.52	81.61	76.56
Maybe	6.95	10.34	6.25
Yes	11.51	8.05	17.9

Respondents were invited to provide the rationale behind their response, with many citing several reasons. Table 54 below shows the coding across all three responses:

Table 54: Rationale for Response

Considered Leaving No	Units of Meaning Coded
Fully Committed Professional	125
Desire to Play my Part	51
Duty of Care to Patients	**19**
Confidence in Organisation	**17**
Have not reached that Point	**8**
Financially Dependent	**6**
Team Player	**1**
Considered Leaving Yes	
Personal & Family Risk	20
Inadequate Response from Management to Concerns Raised	19
Poor Safety	10
Lack of or inappropriate PPE	**9**
Stress & Anxiety	**9**
Pay & Conditions	**7**
Burnout	**4**
Poor Facilities	**4**
Low Morale	**3**
Age	**3**
Poor Training	**2**
Lack of Adherence to Expert Advice	**1**
Elderly as Collateral Damage	**1**
Long Hours	**1**
Poor Team Spirit	**1**
Lack of Childcare Support	**1**
Lack of Information	**1**
Job Offer	**1**
Considered Leaving Maybe	
Personal & Family Risk	13
Inadequate Response from Management to Concerns Raised	7
Lack of or inappropriate PPE	**4**
Stress & Anxiety	**3**
Age	**2**
Low Morale	**2**
Poor Training	**2**
Burnout	**1**
Lack of Adherence to Expert Advice	**1**
Lack of Childcare Support	**1**
Long Hours	**1**
Poor Safety	**1**

The nature of the most recurring responses was that participants were fully committed professionals, and this was the work for which they signed up. There was a feeling that no health crisis was going to disavow them of this belief:

> *I didn't take on this profession because it was easy. I knew there would be challenges and this is one of them. (R322)*

> *I believe anybody working as a healthcare professional should always be aware of the potential risks associated with the job. Pandemics were always a threat and will always occur. (R329)*

> *I signed up for the job with the full understanding of what it may entail (R182)*

It is noteworthy that there was a strong emotional nature to responses throughout the code "Fully Committed professional". The two single most recurring words throughout the text were "love" and "job". Job was mentioned in 110 of the 125 comments coded and was directly conjoined with the word "love" in 50 of those mentions. Figure 37 below shows this cluster of language use from the "fully committed professionals" code:

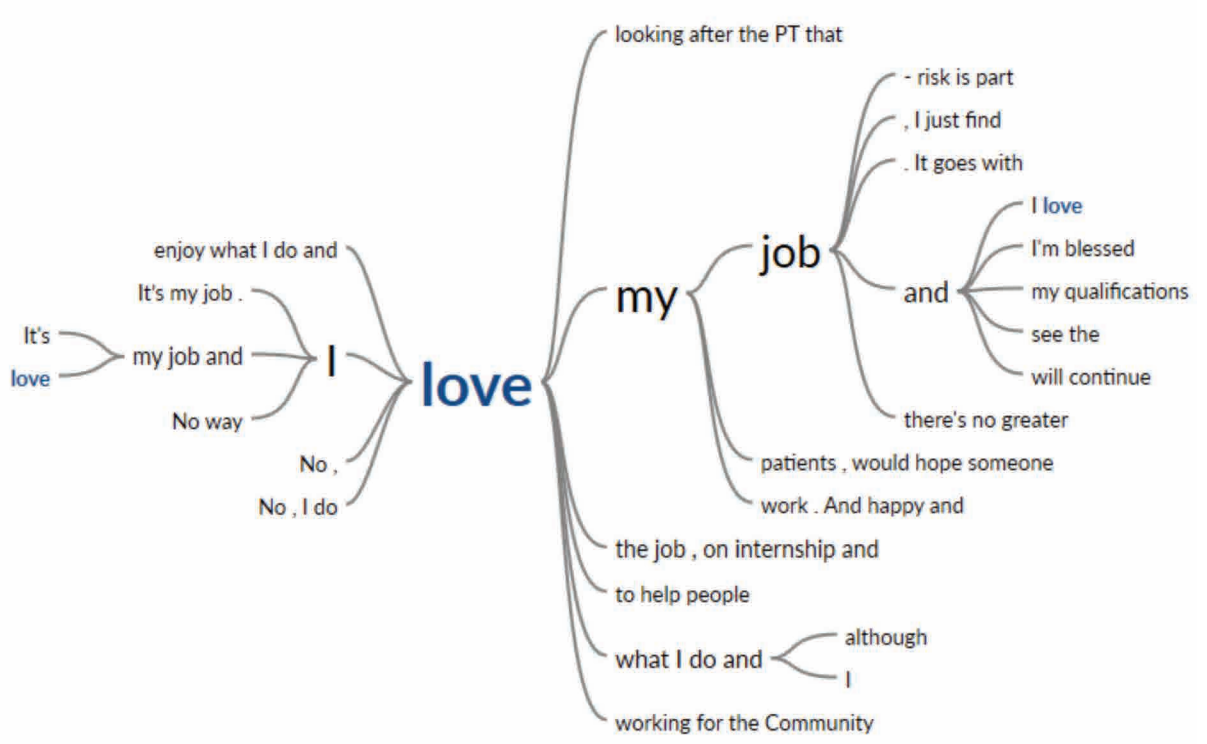


Figure 37: Relationship between love and job in participants' responses

Along with love for the job came a desire to play their part. Fifty-one comments supported this theme:

> *Experience is required at a time like this. When retired friends are returning to work, I am not going to turn my back on the situation. We are all needed to play our part. (R245)*

For the fifty participants who considered leaving, the central theme running through their coded responses was personal and family risk, coupled with stresses and anxieties, and poor or inadequate responses from management:

> *Lack of information, clear guidance, managements lack of leadership from front line but still dictating on how it should be managed from behind a desk, Lack of PPE, fear and anxiety. Fear for family's health. (R206)*

> *Do not want to infect family and potentially causing the death of my wife. (R304)*

Nineteen participants included inadequate responses from management in their comments:

> *Inadequate responses to concerns raised. (R10)*

> *Lack of engagement from management. (R128)*

Stress and anxiety also featured amongst some responses as a reason to leave:

> *To be less at risk. Less stress, easier work life balance. (R784)*

Just twenty-seven respondents commented under the "maybe" option and these responses were closely aligned to those that considered leaving. Personal and family risk, inadequate responses from management, lack of PPE and stress and anxiety were the most recurring themes in participants' responses:

> *I feel this would be a very wrong time to leave my profession. But if the impact became too great on my family or my health, it would be something I would consider. (R624)*

Personal Care & Protection

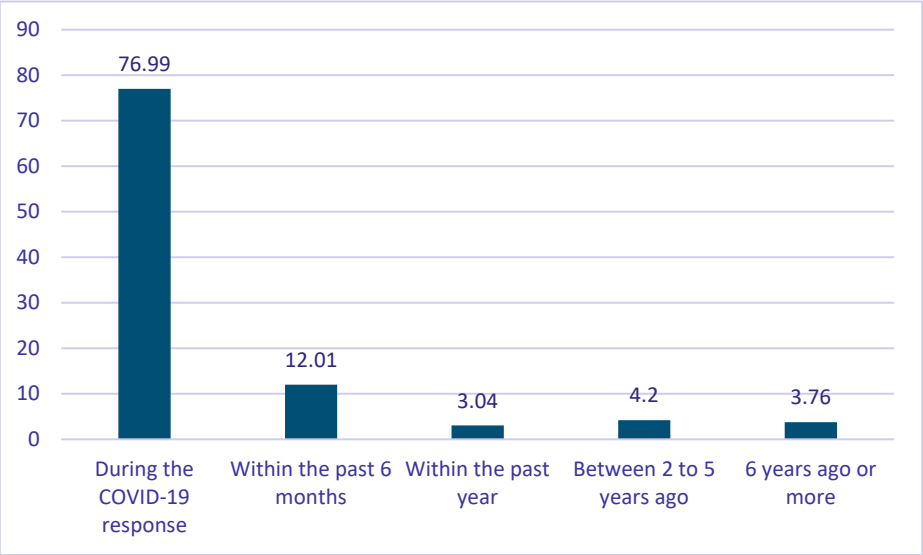


Figure 38: Last Time Trained in Donning & Doffing of PPE

The majority of respondents, almost 77%, had received training in donning and doffing PPE during the COVID-19 response, with a further 12% receiving training within the past six months. Almost 4% of respondents stated their last training was six years ago or more.

Table 55: Training by Organisation

Training by Organisation	Civil Defence	Fire Service	National Ambulance Service	Private Ambulance service	Voluntary Ambulance Service	Other
During the COVID-19 response	73.91	70.40	78.39	75.81	92.00	68.00
Within the past 6 months	11.59	15.20	12.58	12.90	4.00	12.00
Within the past year	7.25	4.00	1.29	6.45	1.33	4.00
Between 2 to 5 years ago	4.35	4.80	5.48	3.23	0.00	2.00
6 years ago or more	2.90	5.60	2.26	1.61	2.67	14.00

92% of the Voluntary Ambulance Services respondents reported having been last trained in donning and doffing of PPE during the COVID-19 response, with a further 4% having received training within the previous six months. For all other services, the percentage trained during the response period was between 70% and 80%, though a further 12%-15% had been trained in the previous six months.

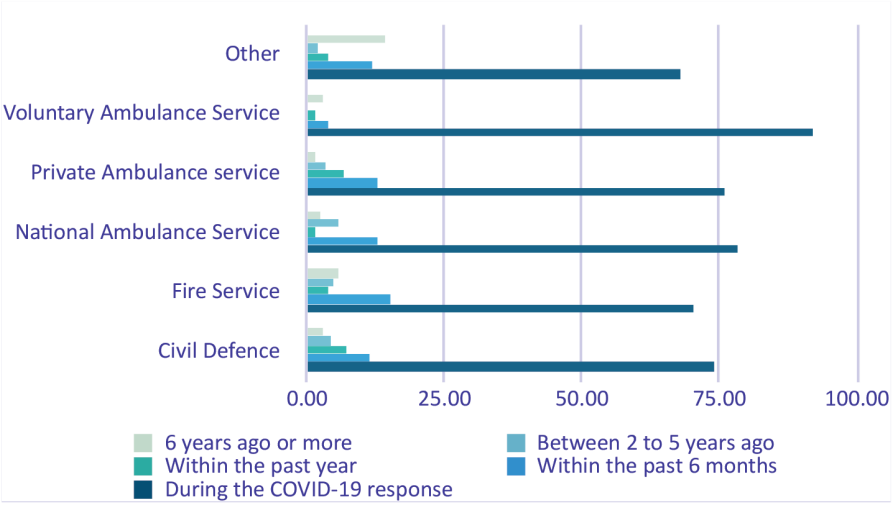


Figure 39: Training by Organisation

There was a wide variation in the levels of satisfaction with the quality of the facilities provided. Overall, the highest level of satisfaction stated was with PPE, while the lowest was with Uniforms. The distributions of satisfaction are set out in Table 56 below.

Table 56: Satisfaction with Facilities - Overall

Rating	Uniform Storage	Uniform	PPE	Uniform Washing /Drying	Shower	Washing	Changing	Dining
Extremely Poor	22.22	**21.09**	6.21	18.45	18.66	15.46	15.6	15.46
Moderately Poor	10.95	**12.09**	7.84	7.61	8.29	9.58	10.76	7.73
Slightly Poor	7.98	**10.23**	8.58	7.44	7.18	6.49	10.61	10.25
Neither Good nor Poor	16.74	14.42	9.02	13.27	10.53	11.44	11.7	15.62
Slightly Good	7.51	6.51	**13.02**	11.81	11.64	12.21	11.23	11.51
Moderately Good	21.28	22.64	**33.43**	23.46	23.29	24.88	22.62	24.92
Extremely Good	13.3	13.02	**21.89**	17.96	20.41	19.94	17.47	14.51

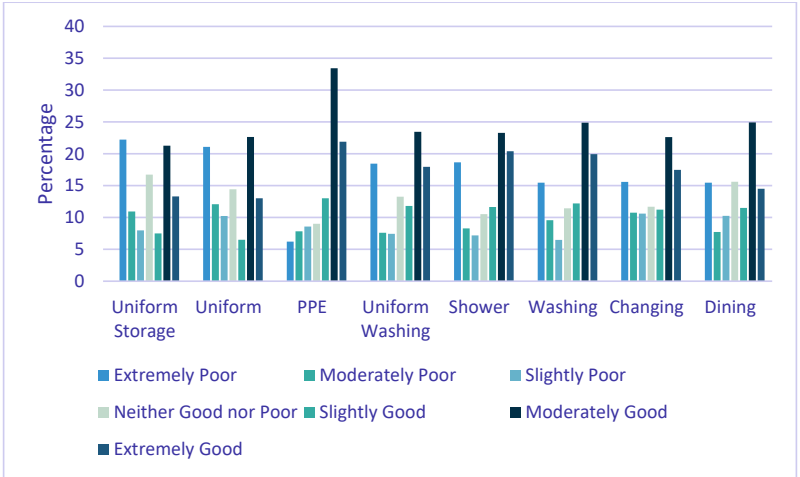


Figure 40: Rating of Facilities - Overall

The average level of satisfaction is generated using the scale 1= Extremely Poor up to 7 = Extremely Good.

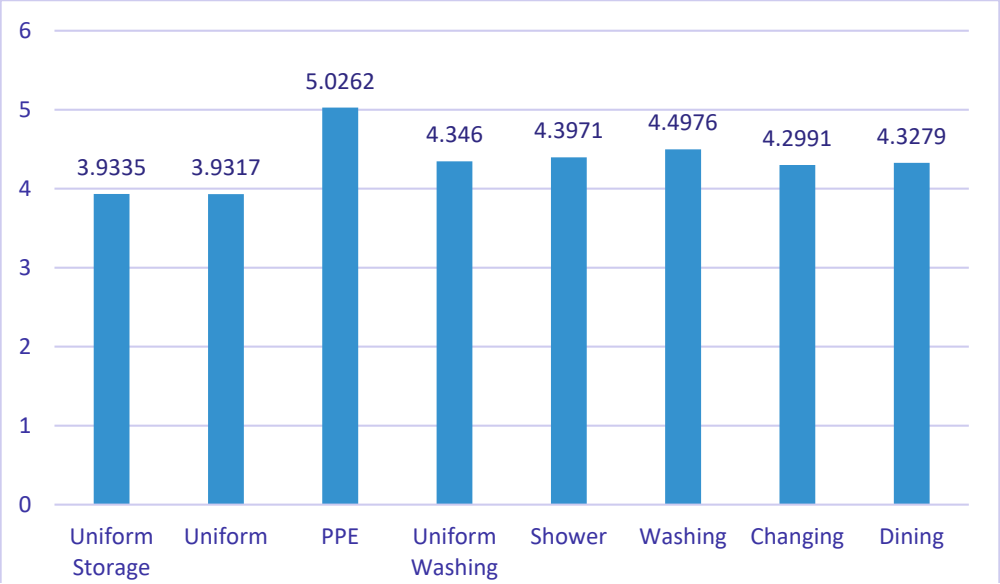


Figure 41: Average Rating of Facilities

Table 57 reports average scores for facilities, by organisation, (where 1= Extremely Poor ... 7 = Extremely good). Also documented in the table are the percentages from each organisation who rated the facility from extremely to slightly poor, i.e., the percentage who expressed dissatisfaction. Highlighted in red are the figures associated with least dissatisfaction (and/or highest average satisfaction score). Light blue values indicate the highest levels of dissatisfaction. For each facility considered, there is statistically significant evidence of differences in ratings among the organisations.

As seen earlier in the report, there is a relatively consistent distinction in satisfaction between organisations, with Civil Defence and the Fire Service tending to rate facilities more highly, while the Ambulance Services rate them lower. Noticeably, at least 30% of National Ambulance Service respondents rate every facility as extremely to slightly poor, with the figure as high as 68% for uniforms. At least 25% of Private Ambulance Services rated all facilities in the poor range, along with at least 20% of Voluntary Ambulance Service.

Table 57: Satisfaction with Personal Protection Facilities by Organisation

	Uniform Storage		Uniforms		PPE		Uniform Washing/Drying	
Organisation	Mean	%[1]	Mean	%[1]	Mean	%[1]	Mean	%[1]
Civil Defence	**5.28**	**10.53**	**5.67**	**11.67**	**6.09**	**7.25**	4.46	28.26
Fire Service	**5.31**	**14.52**	**5.54**	**9.76**	5.62	13.71	**5.54**	**12.20**
National Ambulance Service	**3.24**	**56.82**	**2.75**	**68.23**	**4.58**	**30.29**	4.47	32.57
Private Ambulance Service	3.52	50.00	4.57	31.67	4.95	24.19	**2.76**	**64.00**
Voluntary Ambulance Service	3.81	35.09	3.87	37.70	4.87	20.00	3.16	49.12
Other	3.79	43.59	4.33	35.71	5.14	20.45	3.26	52.63

	Shower		Washing		Changing		Dining	
Organisation	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
Civil Defence	4.45	27.66	5.25	14.04	4.93	18.52	4.94	24.07
Fire Service	**5.57**	**15.32**	**5.59**	**12.2**	**5.4**	**17.74**	**5.65**	**9.76**
National Ambulance Service	4.51	32.9	4.39	35.06	4.11	42.21	3.84	43.46
Private Ambulance Service	**3.1**	**58.00**	**3.47**	**49.06**	**3.35**	**59.26**	**3.57**	**45.28**
Voluntary Ambulance Service	**3.02**	**51.72**	3.68	40.00	3.77	36.07	4.50	25.00
Other	3.49	53.66	3.59	51.22	3.6	52	3.82	41.18

Table 58 presents a similar breakdown of satisfaction with facilities between roles. For all facilities, except dining, there is evidence of statistically significant differences in the rating distributions among roles. For Uniforms, Uniform Storage and PPE, Paramedics and Advanced Paramedics indicated highest levels of satisfaction, while Emergency Medical Technicians do so for the remainder of the facilities. Consistently, Emergency First Responders have the highest ratings for facilities.

Table 58: Satisfaction with Personal Protection Facilities by Role

	Uniform Storage		Uniforms		PPE		Uniform Washing/Drying	
Role	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
Advanced Paramedic	**3.86**	**43.42**	**3.46**	**54.36**	**4.98**	**24.50**	4.78	26.97
Paramedic	**3.82**	**45.76**	**3.69**	**48.30**	**4.84**	**25.93**	4.64	28.68
Emergency Medical Technician	3.80	39.42	4.22	36.05	5.09	19.62	3.32	51.54
Emergency First Responder	**5.05**	**21.05**	**5.12**	**21.43**	**5.73**	**10.20**	4.71	20.59
Other	4.41	26.83	4.90	40.48	5.27	20.83	3.73	43.24

	Shower		Washing		Changing		Dining	
Role	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
Advanced Paramedic	4.74	28.95	4.69	30.92	4.39	35.53	4.19	34.67
Paramedic	4.68	30.26	4.68	28.68	4.39	36.76	4.42	32.22
Emergency Medical Technician	**3.35**	**49.61**	**3.78**	**41.01**	**3.80**	**44.93**	**4.14**	**37.23**
Emergency First Responder	**4.95**	**18.92**	**5.20**	**17.50**	**5.10**	**15.38**	**4.89**	**22.22**
Other	3.95	45.00	4.34	34.09	4.22	37.50	4.34	34.15

In the breakdown by rank, set out in Table 59, there are statistically significant differences in ratings among ranks for the first three facilities only: Uniform Storage, Uniforms and PPE. For these, the pattern found earlier in the report persists, where Officer/Managerial staff rated the facilities higher than General Operational and Supervisors.

Table 59: Satisfaction with Personal Protection Facilities by Rank

	Uniform Storage		Uniforms		PPE		Uniform Washing/Drying	
Rank	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
General Operational	**3.77**	**44.64**	**3.77**	**46.4**	**4.88**	**25.46**	4.32	34.22
Officer/ Managerial	**4.77**	**18.89**	**4.92**	**23.91**	**5.63**	**11.22**	4.43	28.41
Supervisor	**3.91**	**46.15**	**3.71**	**48.68**	**5.25**	**17.5**	4.53	32.89

	Shower		Washing		Changing		Dining	
Rank	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
General Operational	4.39	34.93	4.42	32.77	4.24	39.14	4.24	35.78
Officer/ Managerial	4.36	30.34	4.72	23.91	4.49	30.11	4.78	22.73
Supervisor	4.59	31.58	4.7	31.65	4.49	30.38	4.32	29.87

Statistically significant differences in satisfaction exist among regions. Workers in the East reported the highest average levels of satisfaction and the lowest proportion of dissatisfaction for seven of the eight facilities. Only for Uniform Storage did workers in the North West report higher satisfaction on average. The West and the Mid-West regions show the lowest levels of satisfaction with multiple facilities.

Table 60: Satisfaction with Personal Protection Facilities by Region

	Uniform Storage		Uniforms		PPE		Uniform Washing/ Drying	
Region	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
North West	**4.85**	**18.52**	4.28	36.00	5.04	28.57	4.88	29.17
North East	3.72	45.65	3.50	50.00	4.80	30.00	3.66	44.68
West	3.35	47.62	3.66	46.88	**4.46**	**34.78**	4.07	35.59
Midland	3.97	39.47	3.63	47.50	5.35	7.50	4.54	31.43
East	4.56	29.34	**4.55**	**30.18**	**5.40**	**16.95**	**4.77**	**27.38**
Mid West	**2.89**	**69.44**	**3.30**	**56.76**	4.76	29.73	**3.17**	**62.86**
South East	3.45	53.33	**3.29**	**55.56**	4.79	27.63	3.99	41.10
South	3.50	51.28	3.49	56.41	4.85	25.00	4.46	29.73
Multiple	3.43	42.86	4.36	35.71	4.69	25.00	3.64	42.86

	Shower		Washing		Changing		Dining	
Region	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
North West	4.83	34.78	5.14	25.00	4.62	34.62	4.88	30.77
North East	3.72	43.48	4.08	37.50	3.87	42.55	4.36	29.79
West	**3.52**	**47.62**	3.75	39.06	3.35	52.38	**3.33**	**54.69**
Midland	4.47	34.21	4.74	28.95	4.69	43.59	4.24	37.84
East	**5.09**	**22.02**	**5.08**	**20.81**	**4.95**	**27.49**	**5.10**	**19.77**
Mid West	3.77	42.86	**3.64**	**47.22**	**3.31**	**55.56**	3.60	42.86
South East	4.08	38.26	3.93	42.47	3.86	45.21	3.72	45.83
South	4.21	40.79	4.41	37.18	4.12	42.86	3.99	38.67
Multiple	3.50	57.14	3.93	42.86	4.43	35.71	3.85	46.15

Once they had rated the quality of the key facilities and equipment provided, respondents were invited to provide examples to illustrate why they had given these ratings. A total of 315 comments were included in the responses, and Table 61 shows the nature of these replies.

Table 61: Rationale for Rating of Staff Facilities

Staff Facilities	Units of Meaning Coded
Poor Facilities Generally	52
Poor Locker & Changing Facilities	51
Poor Shower Facilities	45
Poor Laundry Facilities	35
Social Distance Challenging to Apply	28
Unsafe Eating Facilities	23
Satisfied with Provisions & Facilities	20
Shortage of PPE	15
Poor Decontamination Facilities	14
Shortage of Additional Uniforms	12
Poor Privacy	9
Lack of Guidance and Information	6
Shortage of Safety Goggles	2
No Overtime Pay	1
Shortage of Nurses	1
Poor Risk Management	1

Many complaints covered multiple facilities, where participants cited poor facilities across the board in their place of work.

> *My ambulance station has 1 shower for 8 coming on duty/going off duty staff, no relief staff lockers, no sluice, no wash bay, no station cleaner, no sight of any of this changing in the foreseeable future even with current pandemic. (R415)*

> *I do not have a locker nor a PPE locker, so I have nowhere to store my uniform. The boot of my car is my locker! I also don't have enough uniform to be able to wash it and dry it at the base, so it all has to come home with me. The shower in the base I predominantly work out of is in a different room to the changing room which isn't ideal. (R738)*

These generalised complaints went beyond facilities and equipment during COVID-19. Some participants reported that they felt undervalued before the pandemic and that this had not improved. They used poor working conditions and infrastructure to illustrate this lack of care. The comment of Respondent 791 is indicative of these comments:

> *The thing is, what we have currently is what we have always had. My base has no windows. It's a converted warehouse. Inside is essentially cabins that's insulated with loose fibreglass on the roof of them. Inside those cabins within the warehouse there are rooms that include a kitchen and a changing room for females and another for males. There is a single shower for men and another for women. It's basic but at least there is hot water. There is a laundry room. The only thing that has been added by my organisation is PPE and sanitation equipment for the ambulances. Food is currently provided by Feed the heroes charity and is much appreciated. Please be clear that the physical health of crews is secondary to ensuring that bums are on seats as evidenced by the fact that some colleagues have been exposed unknowingly to positive patients without PPE and have been refused testing. Apparently, it's only available if symptoms are present. Slightly insulting. So, to be clear, the organisation never valued staff. Irrespective of covid19. The current pandemic compounds this fact and reiterated that our worth is entirely what we think of ourselves as individuals. (R791)*

Poor locker and changing facilities featured large in complaints regarding the facilities provided. Where specific facilities and conditions were described, locker and changing facilities were almost matched by mentions of shower and laundry facilities:

> *No locker facilities for uniform, no social distancing among colleagues, unable to use washing machine facilities as I am regularly moved from my station without notice. (R412)*

Employer practices concerning staff welfare were also criticised, where participants felt not enough was being done to ensure best practice in the workplace:

> *Totally unacceptable. We had to get health and safety representative to send an email so we could acquire another room as we could not socially distance in our current rest room. (R166)*

20 participants declared they were satisfied with the provision of equipment and facilities in their organisation:

> *We have multiple lockers. One for our bedding, one for personal use and uniform and 2 lockers for our fire gear and spare. We have shower facilities, on site washing machines for uniform and a great service operated PPE washing facility. Cannot fault it at all. (R169)*

RISK EXPOSURE

Respondents were asked whether they believe their occupation placed them at higher risk of contracting COVID-19. Around 92% responded either probably or definitely yes, with over 70% stating definitely yes. Breakdowns by organisation, role and rank show significant differences in the belief distributions. Results overall, by organisation, role, rank and region are given in Table 62, Table 63, Table 64, Table 65, Table 66 and Table 67 respectively.

Table 62: Placed at higher risk due to occupation - Overall

Response	Freq.	Percent	Cum.
Definitely not	4	0.63	0.63
Probably not	16	2.51	3.13
Might or might not	34	5.33	8.46
Probably yes	124	19.44	27.9
Definitely yes	460	72.1	100

As evident in Table 63, the Fire, National and Private Ambulance Services figures indicate that over 90% of their workers believe they probably or definitely were at a higher risk of contraction. For Civil Defence, the figure is approximately 75%.

Table 63: Placed at higher risk due to occupation by Organisation

Response	Civil Defence	Fire Service	National Ambulance Service	Private Ambulance Service	Voluntary Ambulance Service	Other
Definitely not	3.17	0.00	0.34	0.00	1.56	0.00
Probably not	6.35	1.77	1.02	1.72	3.13	8.89
Might or might not	15.87	3.54	2.71	1.72	10.94	8.89
Probably yes	36.51	17.70	12.54	22.41	34.38	20.00
Definitely yes	38.10	76.99	83.39	74.14	50.00	62.22

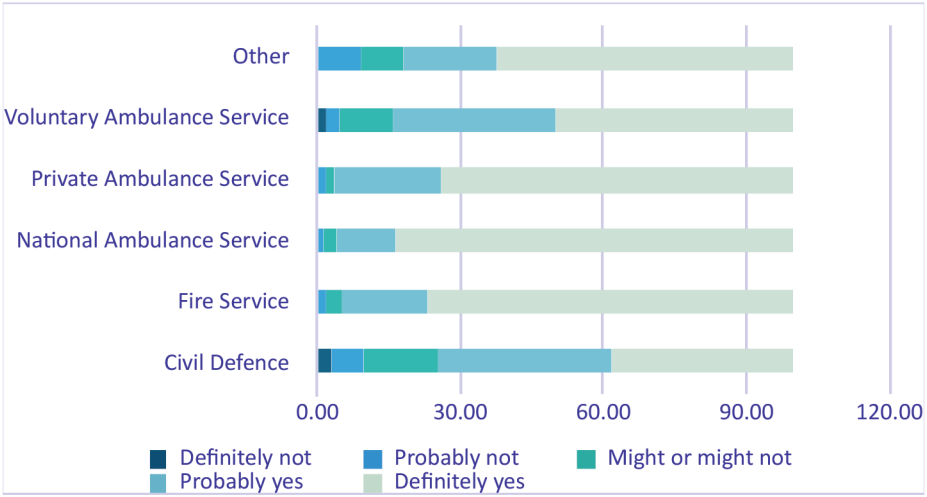


Figure 42: Perceived Relative Likelihood of Contraction by Organisation

Table 64: Placed at higher risk due to occupation by Role

Response	Advanced Paramedic	Paramedic	Emergency Medical Technician	Emergency First Responder	Other
Definitely not	0.70	0	0	4.65	2.13
Probably not	2.10	1.17	2.68	6.98	6.38
Might or might not	2.10	2.73	8.05	18.60	8.51
Probably yes	13.29	14.06	27.52	37.21	25.53
Definitely yes	81.82	82.03	61.74	32.56	57.45

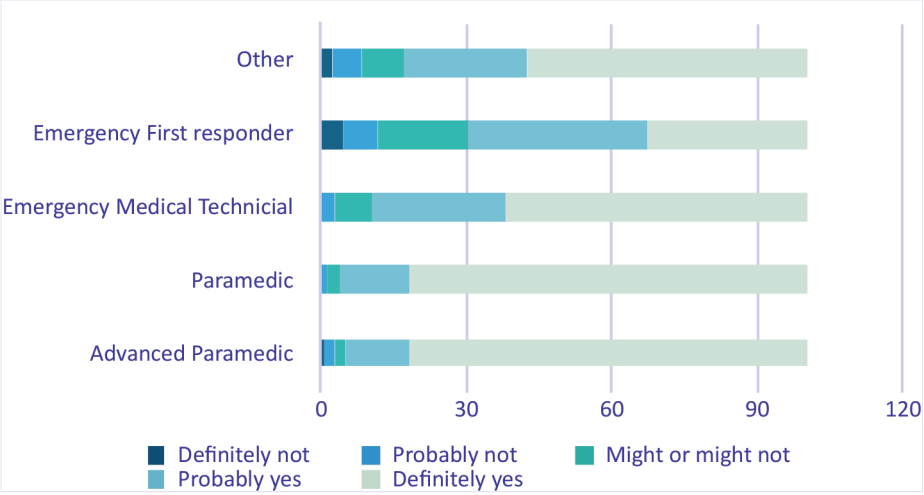


Figure 43: Perceived Relative Likelihood of Contraction by Role

Table 65: Placed at higher risk due to occupation by Rank

Response	General Operational	Officer/ Managerial	Supervisor
Definitely not	0.43	0.00	2.67
Probably not	2.37	4.40	1.33
Might or might not	4.53	10.99	4.00
Probably yes	17.89	26.37	21.33
Definitely yes	74.78	58.24	70.67

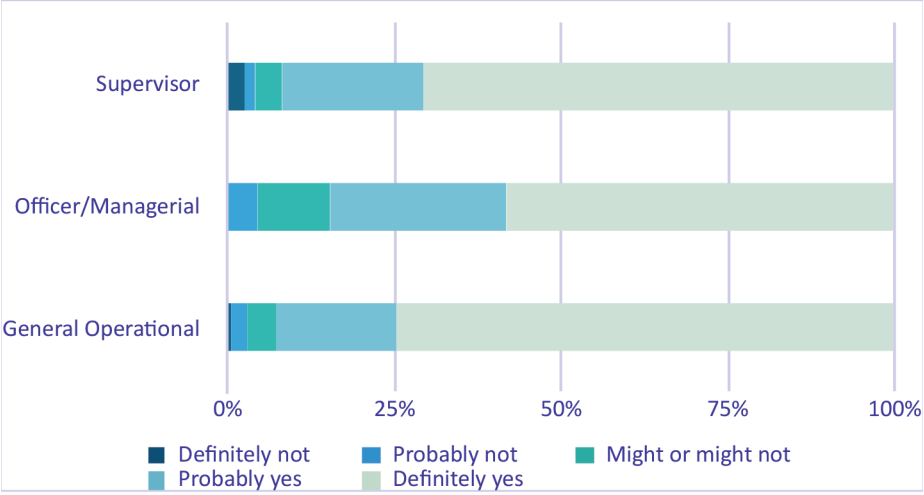


Figure 44: Perceived Relative Likelihood of Contraction by Rank

Comparing across the rank of workers, Supervisors and General Operational staff show a similarly high belief that their work puts them at greater risk of contraction, with a significantly higher proportion responding probably or definitely yes compared to Officer/Managerial workers.

Table 66: (i)Placed at higher risk due to occupation by Region

Response	North West	North East	West	Midland	East
Definitely not	3.45	0.00	0.00	0.00	1.14
Probably not	6.90	0.00	1.45	7.32	2.84
Might or might not	3.45	7.84	5.80	2.44	3.98
Probably yes	**13.79**	23.53	27.54	19.51	**19.89**
Definitely yes	**72.41**	68.63	65.22	70.73	**72.16**

Table 67: (ii)Placed at higher risk due to occupation by Region

Response	Mid West	South East	South	Multiple
Definitely not	0.00	1.30	0.00	0.00
Probably not	5.41	1.30	2.50	0.00
Might or might not	5.41	5.19	6.25	12.50
Probably yes	24.32	11.69	16.25	25.00
Definitely yes	64.86	80.52	75.00	62.50

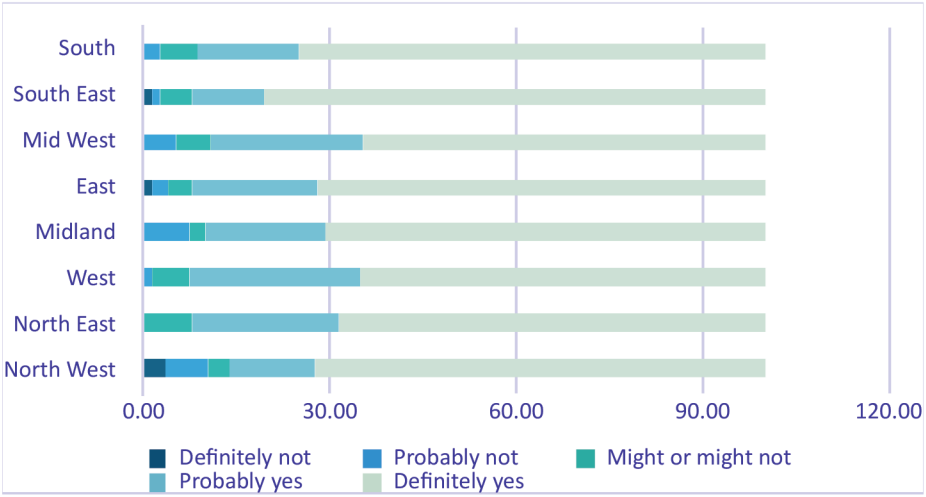


Figure 45: Perceived Relative Likelihood of Contraction by Region

Participants were invited to explain why they feel their occupation places them at a higher risk of contracting COVID-19. 263 participants responded to this question. The distribution of comments to codes for risk of contraction is shown in Table 68 below:

Table 68: Explanation for Rating of Risk of Contracting COVID-19

Rationale	Units of Meaning Coded
Higher Risk	**231**
Regular Contact with Infected or Asymptomatic Patients	187
Lack of or Misinformation Increases Risk	34
Low Awareness - Poor Practices	25
Working in High Risk of Contamination Areas	22
Impossible to Socially Distance in Role	19
Regular and Close Contact with Colleagues	16
Not always time to don PPE	5
Already Contracted Virus	2
Not at Higher Risk	**32**
Follow Safety Guidelines at all Times	22
Not in much Contact with Patients or Infected People	8
Same Risks as Everyone Faces	4

The most cited reason for feeling at a higher risk of contracting COVID-19 was regular contact with infected, and infected but asymptomatic patients, members of the public and colleagues:

> *In our cardiac response roll, we attend a lot of out of hospital fatalities, some of which may be as a result of C-19. This role also places us at a higher rate of contact with the public which increases our chances of coming into contact with infected individuals. (R423)*

> *Risk of exposure from colleagues, the workplace and the public. (R177)*

A lack of information or misinformation was also considered a factor in exposing first responders to risk of infection from the virus:

> *People do not always tell the truth. Control need to be able to go off script and all ask questions that are on the questionnaire script. It's not a survey. Our lives are at risk, not theirs, control manager or supervisor. (R343)*

> *Front line. Information got from dispatch not accurate and leaves crews in risk of walking into contaminated environment. (R200)*

> *Every patient attended is potentially Covid positive. Call details given often say that patient does not meet Covid criteria, but on arrival, we find that the potential for Covid is there. (R416)*

Low awareness and poor practice by colleagues and other health professionals were cited as increasing the risk to respondents:

> *Not by my actions... Through other stupidity there is a decent chance of me getting Covid. (R393)*

Other factors included social distance challenges in the workplace, contamination from equipment, and not always having time to don PPE in an emergency.

32 participants did not see themselves as being at an increased risk of contracting COVID-19. Adherence to recommended guidelines was the most cited reason why these participants did not consider themselves at high risk:

> *If I use my PPE properly and more importantly remove it properly, then afterwards should be no problem (R29)*

> *We are dealing with Covid-19 but we are given plenty of PPE (R81)*

Some participants believed they carried the same level of risk as any member of the public, but the fact they are trained professionals mitigates the risk:

> *Whereas I believe my job brings me into areas where I'm more likely to become infectious but my job also provides me with the training to avoid infection so I feel I'll be more likely to pick it up in a supermarket where my guard may be down as opposed to at work when my guard is heightened. (R297)*

Vaccination

Respondents were asked whether, and how soon, they would avail of a vaccine for COVID-19 if it became available during the response phase. The results are presented in Figure 46.

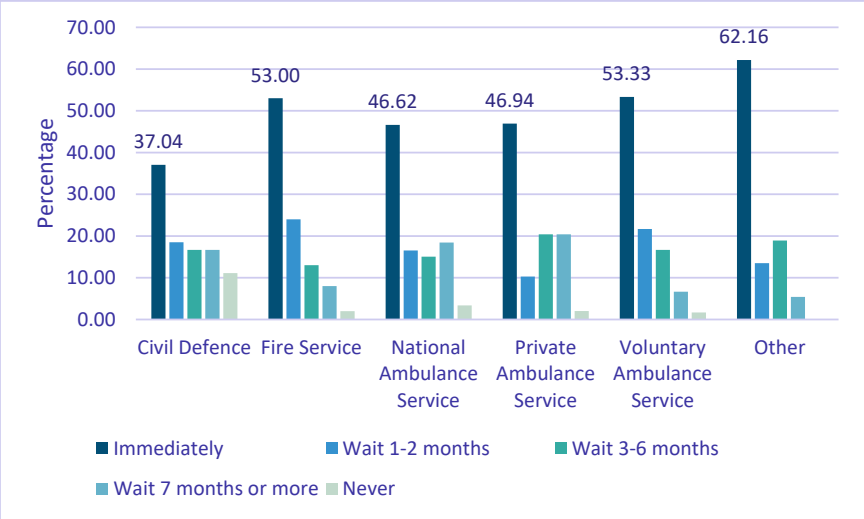


Figure 46: Uptake of COVID-19 Vaccine – Organisation

The group most reticent to avail of a vaccine was Civil Defence, with less than 40% stating they would be vaccinated immediately, and over 10% stating they would never avail of a vaccine. This result tallies with the fact that it is Civil Defence that exhibits the lowest proportion who feel their occupation definitely places them at a higher risk of contracting COVID-19.

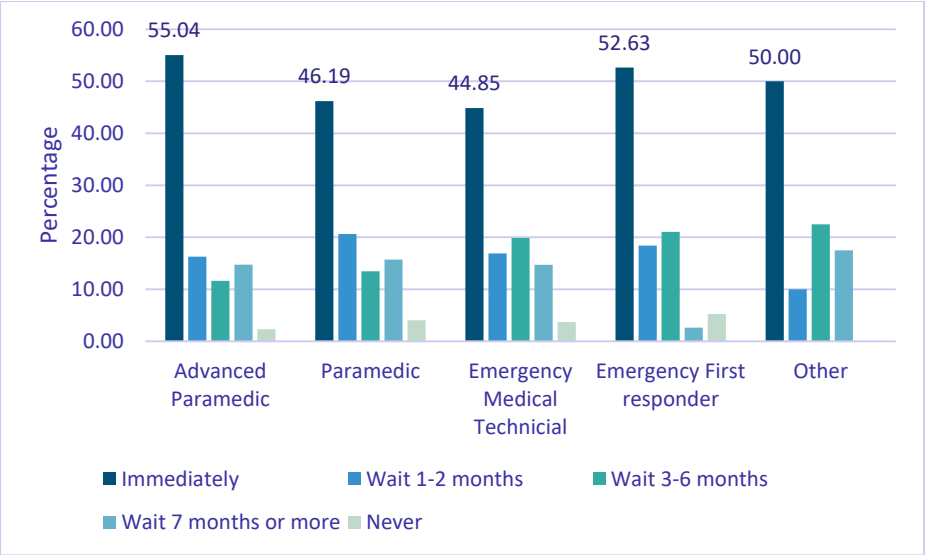


Figure 47: Uptake of COVID-19 Vaccine by Role

Advanced Paramedics are more likely to avail of a vaccine than those in other roles. Almost 10 per cent more Advanced Paramedics stated they would immediately be vaccinated than Paramedics, although both groups had rated the likelihood that their occupation would lead to them contracting COVID-19 equally.

Figure 48: Uptake of COVID-19 Vaccine by Rank

There is no significant difference in the distribution of responses among workers of different ranks. Between 46% and 50% of each rank stated they would avail of a vaccine immediately.

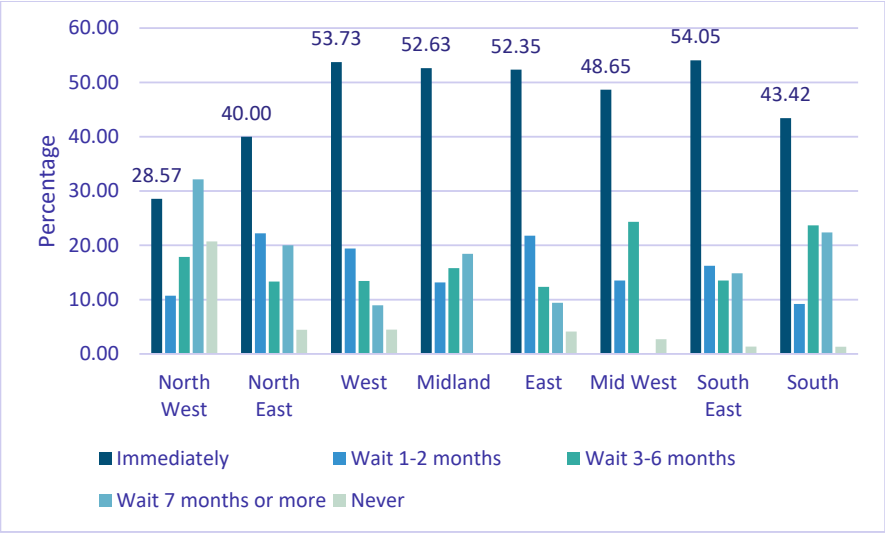


Figure 49: Uptake of COVID-19 Vaccine by Region

There is a statistically significant difference in response distributions among regions. From Figure 49 it is apparent that respondents in the North West are most reticent about taking a vaccine, with less than 30% stating they would take a vaccine immediately and just over 30% stating they never would. By contrast over 50% would avail of a vaccine immediately in each of the West, Midlands, East and South East.

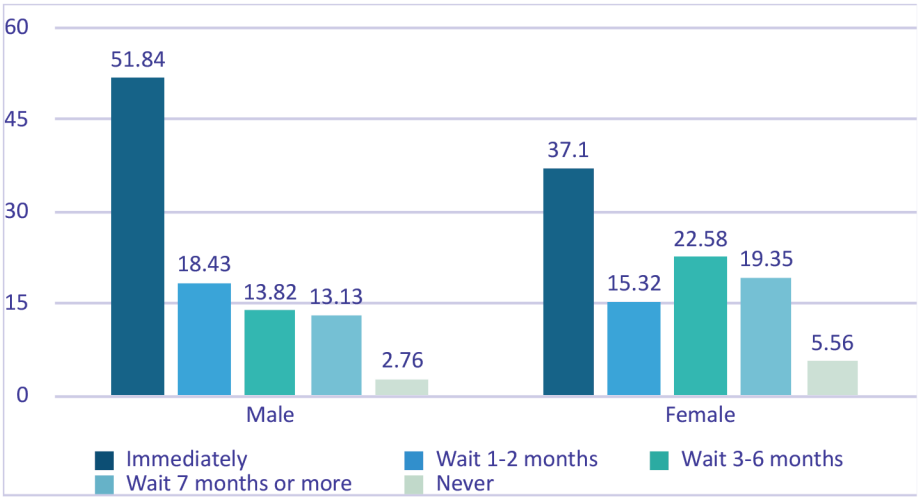


Figure 50: Uptake of COVID-19 Vaccine by Gender

There is a significant difference in the stated speed of vaccine uptake between males and females, with over half of males stating they would avail of it immediately, compared to 37.1% of females. The proportion of females who stated they would never take a vaccine, 5.56%, is twice that of males.

Those who stated they would avail of a vaccine as soon as it became available felt it is vital in the fight against the virus and in getting back to "normal" as soon as possible. Those who said they would wait did so for two key reasons, to determine side-effects and to allow the most vulnerable to get vaccinated first. Finally, those who would never avail of the vaccine reported a lack of trust and confidence in vaccines, especially those "rushed through" due to a pandemic.

Duty of Care

The survey captured information on first responders' perceptions of the duty they felt towards their organisation and colleagues and how well they feel they have been dispensing their duty of care to patients.

Duty of Care – Colleagues & Organisations

86.23% of respondents reported feeling a sense of duty to their colleagues and organisation to make themselves available to work during the COVID-19 response. For every breakdown (organisation, role, rank and region) a large proportion in each classification, over 80%, reported that they do feel this sense of duty. However, variation does exist within the breakdowns, as shown below.

Table 69: Sense of Duty by Organisation

Organisation	% Yes
Civil Defence	93.65
Fire Service	87.39
National Ambulance Service	81.85
Private Ambulance Service	87.50
Voluntary Ambulance Service	90.32
Other	93.75

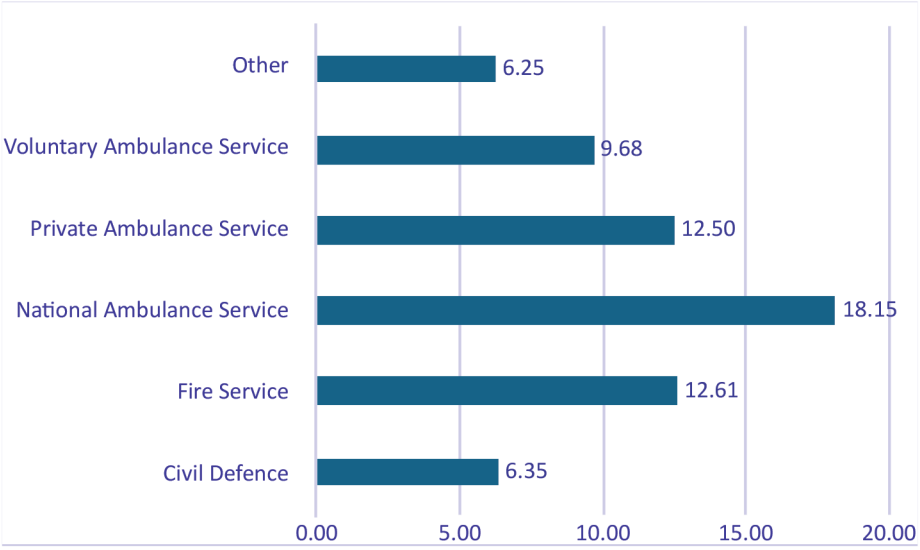


Figure 51: % Stating "No" by Organisation

The percentage of National Ambulance workers who state they do not feel a sense of duty to make themselves available to work is almost triple that of Civil Defence, while the percentages for the Private Ambulance Services and Fire Service are almost twice that of the Civil Defence workers.

Table 70: Sense of duty by Role

Role	% Yes
Advanced Paramedic	85.31
Paramedic	81.82
Emergency Medical Technician	89.66
Emergency First Responder	88.37
Other	100

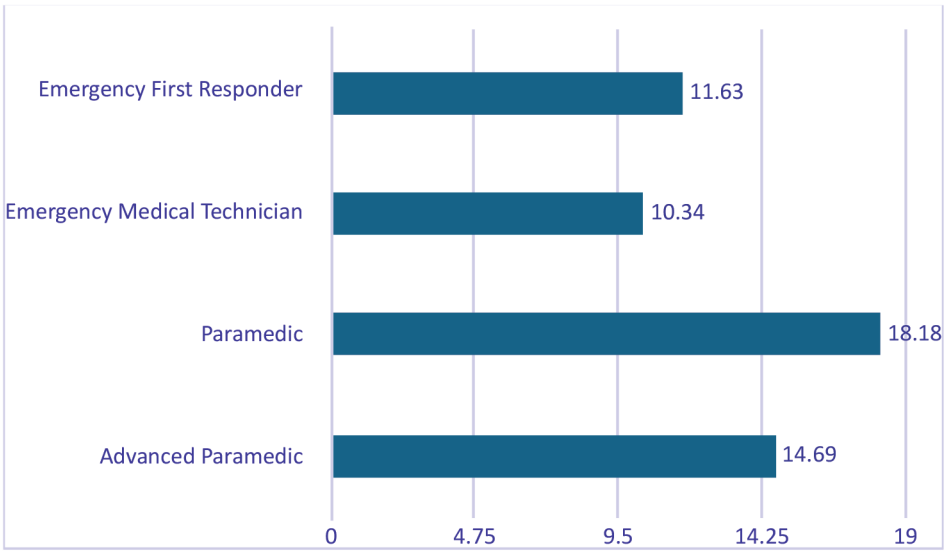


Figure 52: % Stating "No" by Role

Almost one-fifth of Paramedics reported not feeling an obligation to be available for work out of duty to their organisation and colleagues, with around 15% of Advanced Paramedics feeling the same way.

Table 71: Sense of Duty by Rank

Rank	% Yes
General Operational	85.59
Officer/Managerial	92.31
Supervisor	82.43

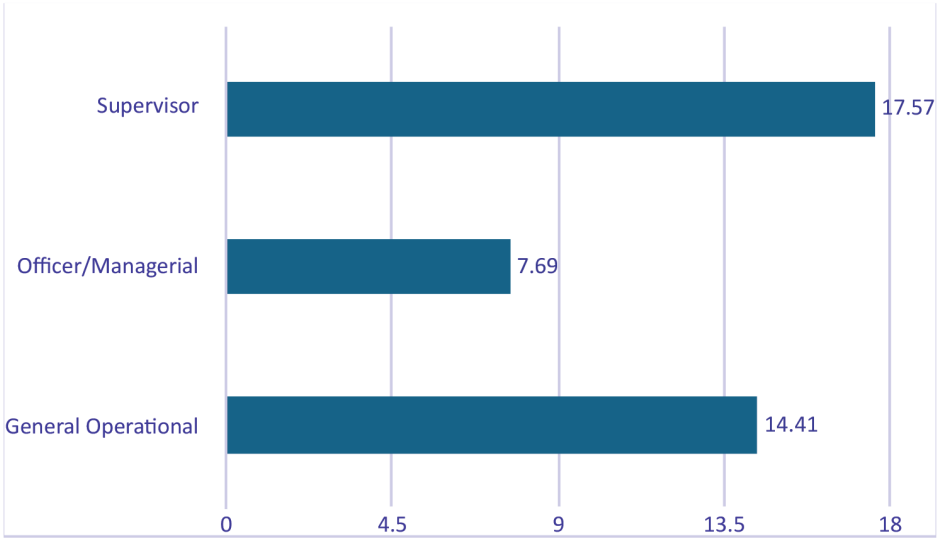


Figure 53: % Stating "No" by Rank

Comparing across ranks, a larger proportion of Officer/Managerial staff felt a duty to colleagues and the organisation to be available for work, with only 7.69% not feeling this obligation.

Table 72: Sense of duty by Region

Region	% Yes
North West	89.66
North East	86.27
West	93.85
Midland	84.62
East	86.63
Mid West	86.11
South East	90.91
South	81.01
Multiple	92.86

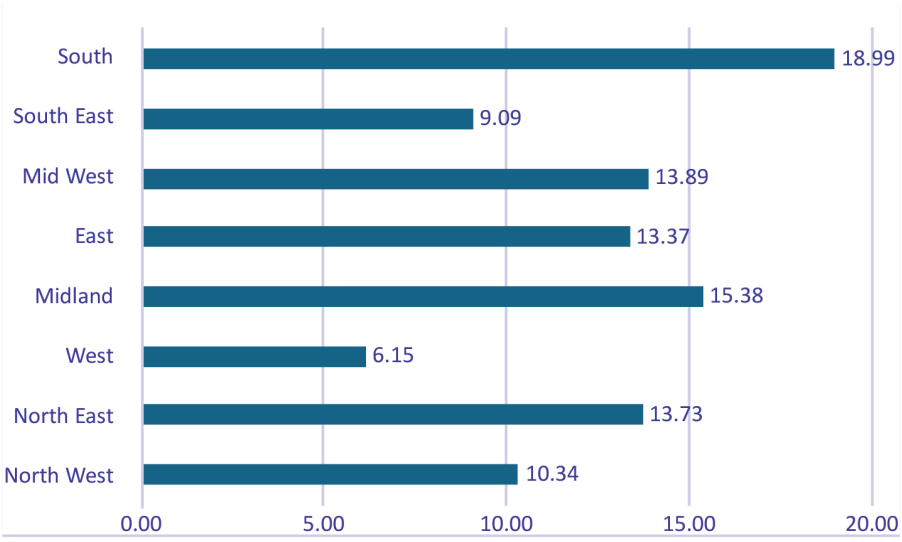


Figure 54: % Stating "No" by Region

There is a considerable variation in responses by region. Only 6.15% of respondents based in the West reported not feeling a duty to be available for work, while this figure is more than tripled for those based in the South.

Participants were asked to discuss the degree to which they felt a duty of care to their colleagues and organisation to make themselves available for work during the Covid-19 response? Respondents could indicate their response under "Yes" or "No" headings. Some cross-coding was required as some participants qualified their answer in a manner that put them in both categories. For example, R179 felt a duty to his colleagues but not his employer. While he responded under the "No" category, the response below was code to "No/Not to my Employer" and "Yes/Duty to Colleagues":

> *I feel a duty to the public which I fulfil to my utmost within my normal working hours. I support colleagues at work as required. I have no sense of duty to my employer (R179)*

When cross-coding was completed, there was clear evidence that most respondents did feel a duty of care to both their employers and their colleagues, as shown in Figure 55.

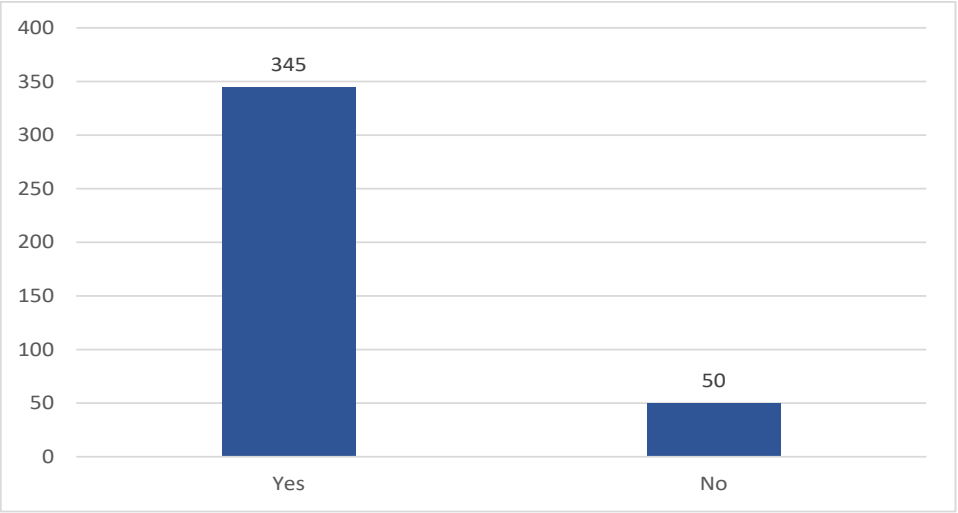


Figure 55: Duty of Care to Colleagues & Organisation

Respondents were invited to provide further details regarding why they feel this duty of care to colleagues and their organisation. The results are set out in Table 73 below:

Table 73: Why Duty of Care to Colleagues & Organisation

Rationale	Units of Meaning Coded
Yes	
All Team Members Needed - we are all in this together	309
Duty to Colleagues	83
Duty of Care to Population	40
Safety First (Myself - Family - Colleagues - Patients),	32
Flexibility Required	29
Empathy for colleagues who cannot attend	25
Leadership Required	20
No	
Not to the Employer	51
Not to my Colleagues	3

There was a strong feeling amongst participants of "all being in this together". 309 participants conveyed this sentiment in their responses:

> *Yes, because we are all in this together and look out for one another. And it's always good to give back where we can. I enjoy what we are doing. (R29)*

> *Shoulders to the wheel, we're in it together and quite literally were the frontline for access to advanced medical care. (R55)*

> *We are all in this together. They are my second family. (R240)*

> *Taking days off are not being available at times does cause issues with rosters and may put other members out slightly so I do feel a duty of care to work when I can. I also believe a good system between work colleagues will help to keep them safe. (R298)*

> *The only way to get through this is by doing it together, and for those of us that can do more, should do more. It's time to be selfless. It's the right thing to do. (R29)*

51 participants declared they did not feel a duty of care to their employers, regardless of how they felt about colleagues:

> *Not to my organisation but certainly to my colleagues. (R791)*
>
> *I do not feel a duty to my organisation to make myself available to work. (R182)*

Just three respondents did not feel a duty of care to colleagues:

> *My organisation does not care about me and I do not care about my organisation, I do not feel a sense of duty to my colleagues. (R344)*

Duty of care to patients

To indicate how well respondents feel they are delivering on their duty of care to patients, respondents answered two questions. Firstly, they were asked if they felt they are providing appropriate care/treatment to patients when responding during the COVID-19 response. Secondly, they were asked if they experienced any ethical dilemmas when responding to patients needs during the pandemic.

Overall, 86.42% of respondents reported "Yes" that they are providing appropriate care/treatment to their patients. There are variations between responses by organisations, role, rank and region. These are highlighted in the Tables below.

Table 74: Providing appropriate care/treatment to patients by organisation

Organisation	% Yes
Civil Defence	90.32
Fire Service	88.18
National Ambulance Service	83.74
Private Ambulance Service	89.47
Voluntary Ambulance Service	87.10
Other	89.13

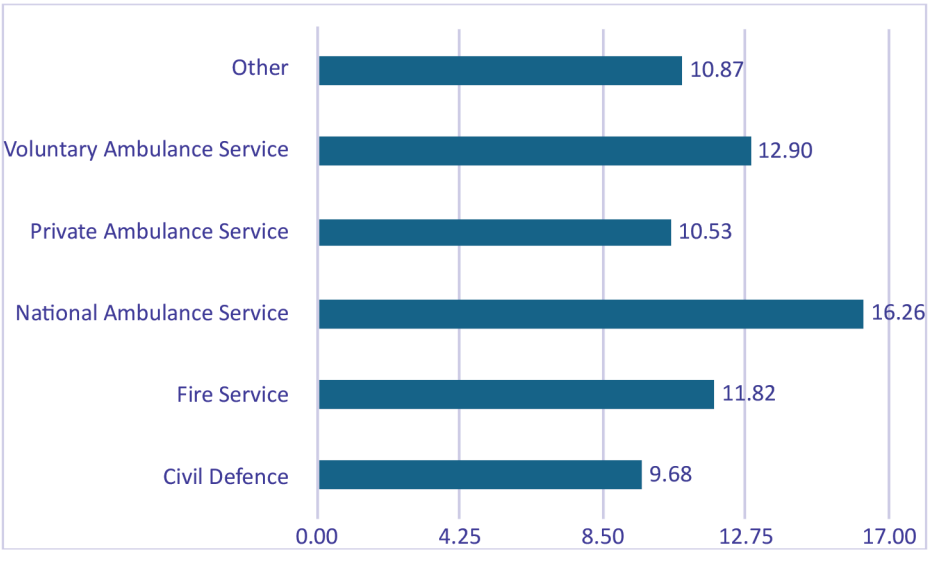


Figure 56: % Stating "No" by Organisation

For all organisations, at least 10% of workers responded that they do not feel they are providing appropriate care/ treatment to patients. In the case of the National Ambulance Service, this figure is over 16%.

Table 75: Providing appropriate care/treatment to patients by role

Role	% Yes
Advanced Paramedic	**80.14**
Paramedic	86.17
Emergency Medical Technician	**90.28**
Emergency First Responder	**90.24**
Other	**91.49**

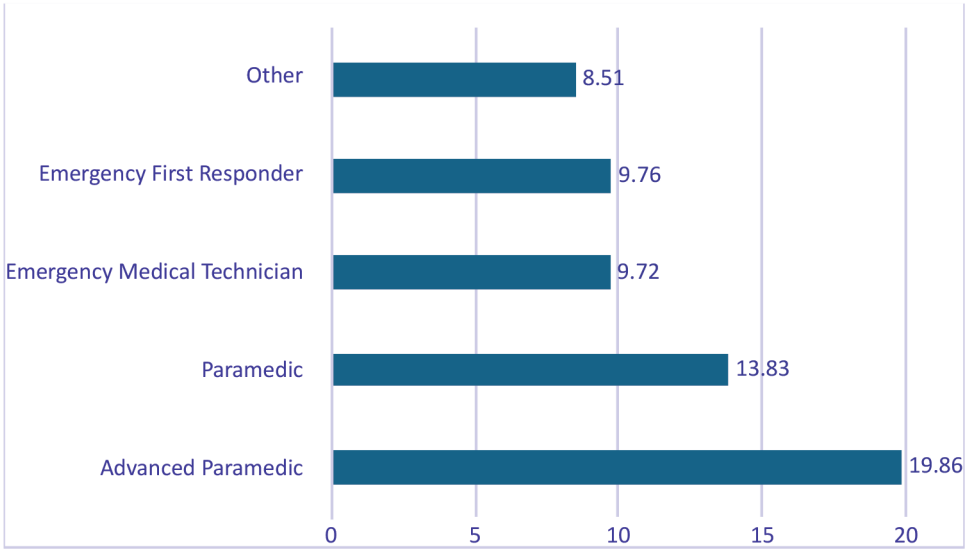


Figure 57: % Stating "No" by Role

Among roles, a substantial proportion, almost a fifth of advanced paramedics do not feel they are providing appropriate care/ treatment to patients when responding to emergencies during the COVID-19 pandemic.

Table 76: Providing appropriate care/treatment to your patients by rank

Rank	% Yes
General Operational	84.68
Officer/Managerial	93.18
Supervisor	89.04

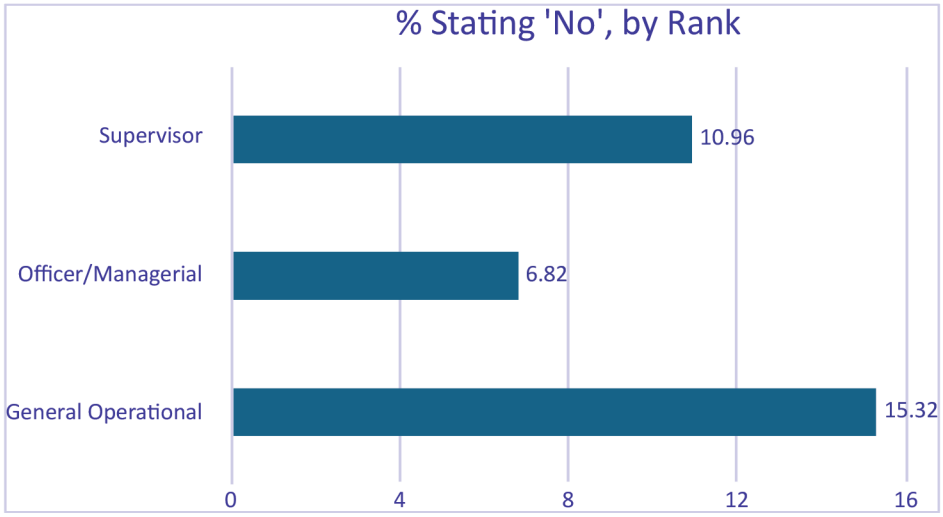


Figure 58: % Stating "No" by Rank

Among ranks, the largest proportion stating "No", indicating they do not feel they are providing appropriate care, is for General Operational. The proportion is lowest for Officer/Managerial staff at just under 7%.

Table 77: Providing appropriate care/treatment to your patients by Region

Region	% Yes
North West	**96.55**
North East	**78.43**
West	86.15
Midland	84.62
East	87.86
Mid West	86.49
South East	84.00
South	82.28
Multiple	92.86

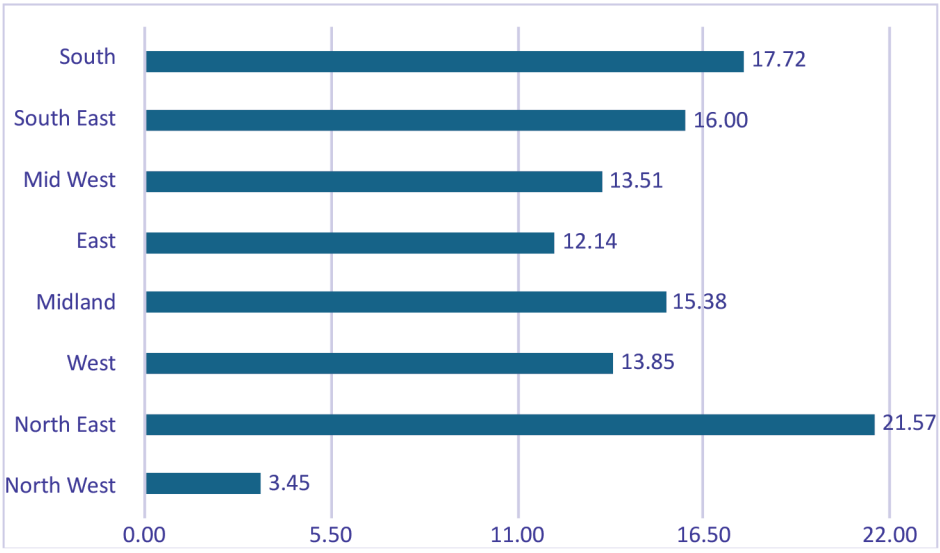


Figure 59: % Stating "No" by Region

The proportions who reported feeling they do not provide adequate care range from a minimum of 3.45% in the North West to a maximum of 21.57% in the North East.

As with other questions, where respondents were invited to enter comments under a "Yes" or "No" option, some comments under "Yes" expressed either a mixed or opposite opinion resulting in the necessity to cross code some responses. Table 78 shows the coding for those participants who believed they were providing appropriate treatment/care to their patients during the pandemic:

Table 78: Duty of Care to Patients - Yes

Duty of Care to Patients: Yes	Units of Meaning Coded
Appropriate Care being given to Patients	155
Following Guidelines	59
Patient Care has always been First Priority	58
Adequate but not Optimum	33
Empathy for Covid-19 Positive Patients	29
Human Touch more challenging with PPE	14
Providing additional Safety Information	8
Diagnosis can be Challenging	3

155 comments were unequivocal and stated a firm belief that appropriate care is always being provided:

Yes, we are. (R46)

Yes, patient care is vital. (R85)

59 responses used the following of guidelines as evidence of that care in the context of the pandemic:

Following HSE guidelines while remaining empathic is vital (R1)

Yes, following protocols I'm happy with treatment provided (R91)

58 comments pointed out that patient care has always been the top priority, and the current pandemic has not altered this duty of care in any way:

I have always treated all patients as I would like members of my family treated and continue to do so. (R307)

33 comments acknowledged that while appropriate levels of care were being provided to patients, the circumstances meant it could not be ideal:

I am providing the best I can, but it has limits due to the PPE restrictions and trying to limit equipment exposure. PPE particularly the goggles fogging up is causing a lot of safety issues when dealing with the busier calls. People cannot clearly see what they are doing. (R109)

Table 79 below shows the nature of comments where participants believed they were not always providing appropriate care/ treatment:

Table 79: Duty of Care to Patients - No

Duty of Care to Patients: NO	Units of Meaning Coded
PPE required for Patient and Staff Safety	69
Service Levels Reduced	34
Poor Communication from Management	13
Lack of PPE	7
Lack of Training	5
Lack of Testing & Tracing impeding Care	5
Mixing COVID & Non-COVID Patients in Hospitals	3
Elderly Patients Treated Differently	2
Ambulance Service Inadequate	2
Lack of GP Services	2
Terminating CPR Earlier than Normal	1
Lack of Trust in Patients	1
Outpatients Services Curtailed	1
No Duty of Care Required	1
Time Constraints	1

While participants agreed PPE was required, as a duty of care to patients and first responders alike, some participants argued that it meant that the best of class care could not be provided:

> *I wish we could do more, but we must protect ourselves. It is very difficult to give the same level of care in the current crisis. PPE/Keeping the vulnerable safe/not overloading hospitals (R240)*

> *To provide the basic care a practitioner can provide yes, although I cannot provide the level I want to provide. The PPE means we cannot provide that smile that makes the patient feel better, even for a second! The PPE makes everything more difficult and sweaty. (R147)*

Donning and doffing of PPE, and sanitising equipment and vehicles have also resulted in slower response times and a reduction in service levels generally. These factors were listed as another reason why appropriate care/treatment is not being delivered at all times during the pandemic:

> *Very difficult to communicate wearing PPE. I find it very distracting to assess patients while considering if it might be Covid all the time, worried I might miss other clinical presentations and not give appropriate treatment. (R391)*

> *Some patients don't receive as good a treatment as they may have before (R52)*

Poor communication from management, lack of PPE and training, and inadequate testing and contact tracing were some other reasons cited by a small number of participants who believed appropriate care was not always being provided during the crisis.

The word cloud below provides an overview of the most frequent words used by participants when discussing duties of care.

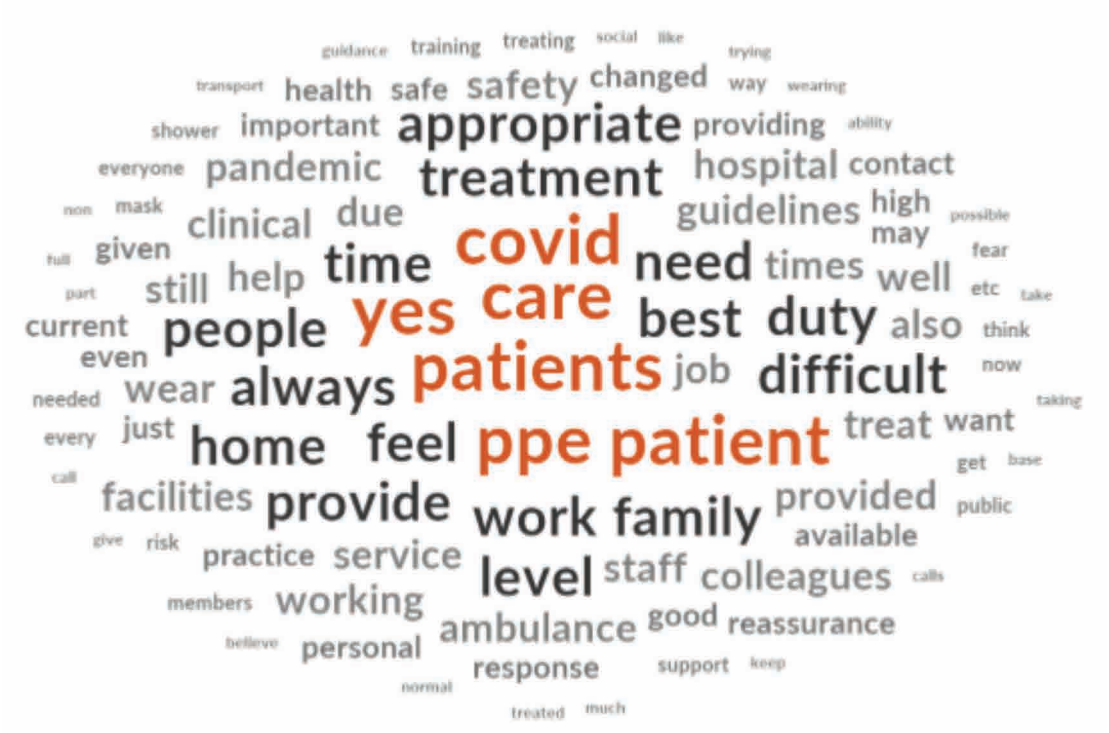


Figure 60: Duty of Care

Ethical Dilemmas Linked to Patient Care

Respondents were asked if they had experienced any ethical dilemmas when responding to patients' needs during the response phase of COVID-19. Overall, 29.2% of respondents said they had experienced ethical dilemmas when responding to patients' needs.

Table 80: Experienced Ethical Dilemmas by Organisation

Organisation	% Yes
Civil Defence	**8.06**
Fire Service	35.78
National Ambulance Service	**36.52**
Private Ambulance Service	25.45
Voluntary Ambulance Service	14.75
Other	20.45

Table 81: Experienced Ethical Dilemmas by Role

Role	% Yes
Advanced Paramedic	**37.59**
Paramedic	34.02
Emergency Medical Technician	18.44
Emergency First Responder	**15.00**
Other	23.40

Table 82: Experienced Ethical Dilemmas by Rank

Rank	% Yes
General Operational	**31.01**
Officer/Managerial	**21.35**
Supervisor	25.35

Table 83: Experienced Ethical Dilemmas by Region

Region	% Yes
North West	3.57
North East	29.17
West	23.81
Midland	32.43
East	32.56
Mid West	35.14
South East	32.89
South	24.05
Multiple	33.33

The North West stands out as an outlier in terms of the proportion of workers reporting having experienced ethical dilemmas, only one out of the 28 respondents in that region had this experience. The proportions in the West and South are also relatively low, below 25%, with all others approximately 30%-35%.

Respondents were asked to provide details regarding the ethical dilemmas they faced when responding to patients needs during the response phase of COVID-19. 144 participants responded to this question. Table 84 outlines the nature of the ethical dilemmas faced:

Table 84: Nature of Ethical Dilemmas

Ethical Dilemmas Reported	Unit of Meaning Coded
Risks associated with advising People to attend Hospital-Care Unit	30
Risks associated with advising Sick Patients to Stay at Home	26
Decisions Concerning Ventilation & Resuscitation	22
Refusing Families from being Present with Loved Ones	21
Dilemmas Created by Social Distancing	20
Having to don PPE in Time-Critical Emergencies	19
Death & Dying Implications	18
Risky Decisions in the Absence of Tests	5
Stigmatising Covid-19 Patients	4
Working with Dementia Patients	3
Inability to Transfer Patients	2
Consent - Taking Swabs in Emergency Situations	2
Not Knowing if the Organisation will back Decisions	2
Risks associated with Discharging Patients	2
Unable to Provide Optimum Care	2
Lack of Direction on Self Isolation	1
GDPR Dilemmas	1

Risks associated with having to advise patients to attend hospital was the most recurring theme in responses.

> *Difficult to decide if patient is more at risk by going to hospital if they are unlikely to have COVID at that point. (R66)*

Participants described the dilemma they faced when advising someone who really needed to attend hospital while knowing that this advice may also lead to the patient contracting COVID-19:

> *Yes, some patients needed hospital but refused to go over anxiety of pandemic in hospital. (R408)*

Respondents felt they faced a dilemma when advising patients to go to hospital while knowing the distress this will cause their families amid understandable fears that they may never see their loved ones again:

> *Family not letting us take a sick member to hospital because they will not see them if they die and would like them to die at home, and people who are sick will not come to hospital because they are afraid of getting covid19 (R328)*

Having to advise patients not to go to the hospital because they may face a greater risk than being treated in the community presented challenges:

> *Yes, before we took everyone to hospital now, we are directing people to stay at home (R52)*

However, responders felt that advising a patient to stay at home as their safest option transferred the risk to the first responder - raising not only ethical but legal concerns:

> Some patients do or don't need hospital, not knowing if my organisation will back my decision is very unnerving

Respondents felt many of these ethical dilemmas are entirely new and run contrary to usual practice:

> *It has never been part of the role of a paramedic to advise sick people to stay at home. i.e. self-isolate if well enough to do so. (R208)*

Participants also raised ethical concerns about practices in hospitals and nursing homes that, while outside of their control, leaves the first responder wondering if they have done the right thing:

> *I sometimes feel that hospitals are sending non Covid patients into Covid sections of A and E. This causes obvious anxiety for patients as I had indicated they had no Covid markers and sometimes obvious other clinical markers and I have questioned triage nurses on their rational for the decision. (R307)*

> *Then of course nursing homes but enough said about that. (R169)*

> *Concerns with nursing homes... whether it's appropriate to transport etc. (R302)*

> *Nursing home patient's family waiting outside at Ambulance to say goodbye for last time knowing their parents will die, I know they'll die, why am I transporting someone to an ED to die. Pt. Died 4 hours later in a busy resus room. (R412)*

Dilemmas created by the need for social distancing, and the time it takes to don PPE in an emergency, raised ethical concerns as they forced difficult decisions in life or death situations:

> *Cardiac arrests - we cannot use normal gold standard techniques and we are unable to respond immediately due to having to put on PPE, both of these are difficult for us as it gives our patients a lesser chance of survival (R211)*

Confidence in Leadership

Respondents were asked to rate the confidence they placed in a range of leaders and organisations during the response phase of COVID-19 pandemic. The individuals and organisations considered were: the Taoiseach (then Dr Leo Varadkar), Minister for Health (then Simon Harris), Chief Medical Officer (then Dr Tony Holohan), Public Health Decision Makers, the Health Service Executive, General Practitioners, their organisation, and their local base. Respondents rated their level of confidence on a scale of 0 for no confidence, up to 100 for full confidence. The boxplot below (Figure 61) shows the distribution of responses overall. A key message from the chart is the high, concentrated level of confidence in the Chief Medical Officer. The highest variation in confidence and the lowest median value is for GPs.

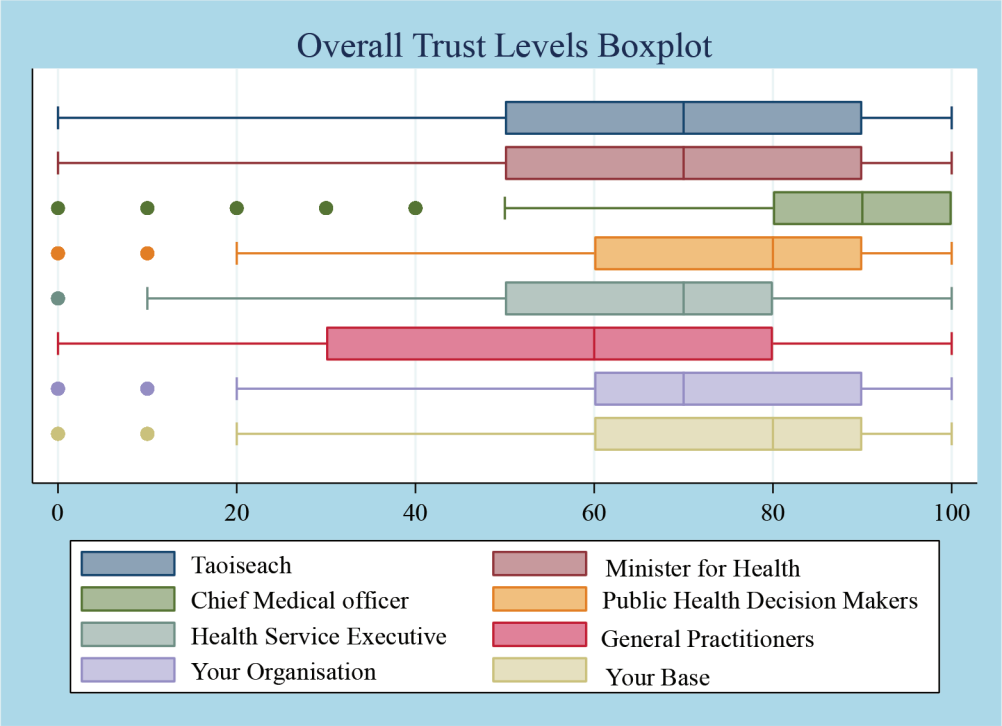


Figure 61: Overall Trust Levels Boxplot

Average confidence levels overall are reported in Figure 62 below, again demonstrating the highest average confidence in the Chief Medical Officer, with the lowest average for GPs.

Figure 62: Average Confidence Levels – Overall

Significant differences in confidence exist among organisations for all individuals and organisations other than Public Health Decision Makers. The lowest average confidence stated overall is that of the National Ambulance Service in GPs, which is markedly different from that expressed by the Civil Defence and Voluntary Ambulance Service. All organisations highest average level of confidence is in the Chief Medical Officer.

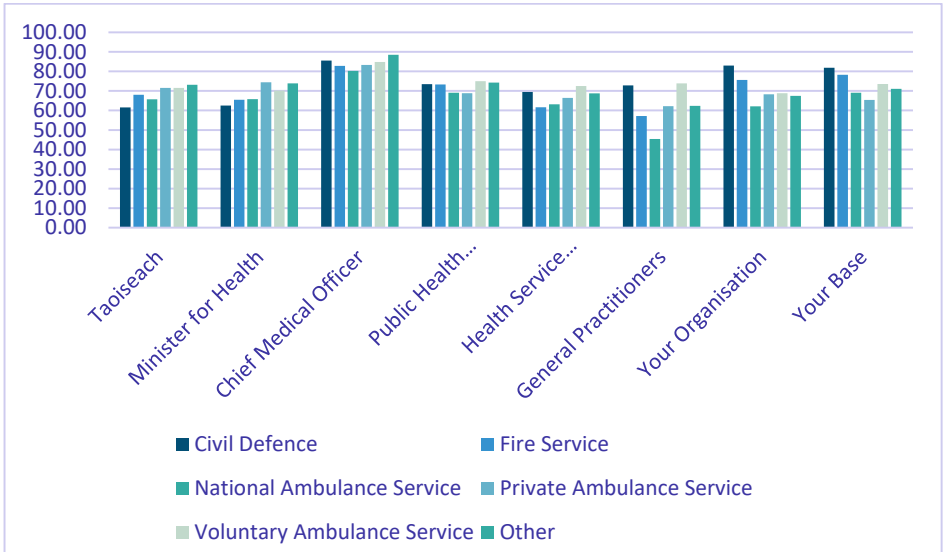


Figure 63: Average Confidence in Leadership by Organisation

Among roles, there are significant differences in confidence for all individuals and organisations except for the respondents' region. The average confidence expressed by Paramedics and Advanced Paramedics in GPs is substantially lower than for other roles.

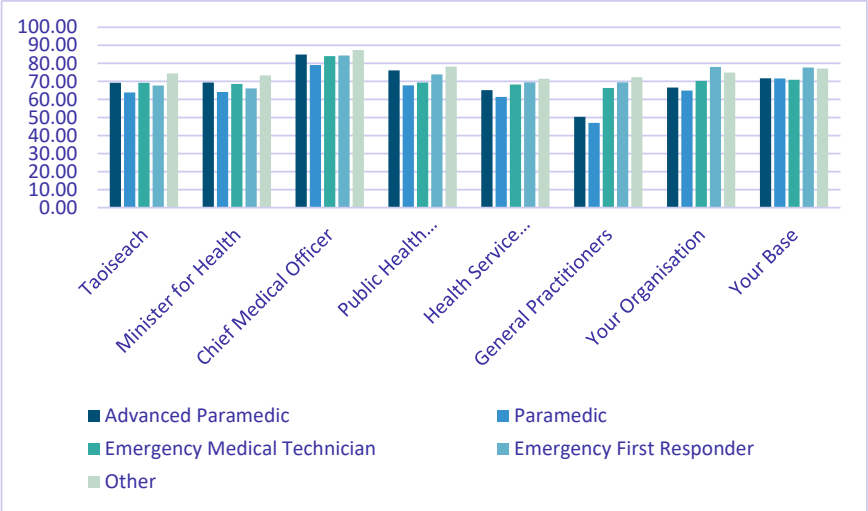


Figure 64: Average Confidence in Leadership by Role

A clear pattern emerges in the confidence levels among different ranks. In each case, Officer/Managerial workers express higher average levels of confidence than either General Operational or Managerial staff. For each rank, their highest average confidence is in the Chief Medical Officer, and their lowest is in GPs.

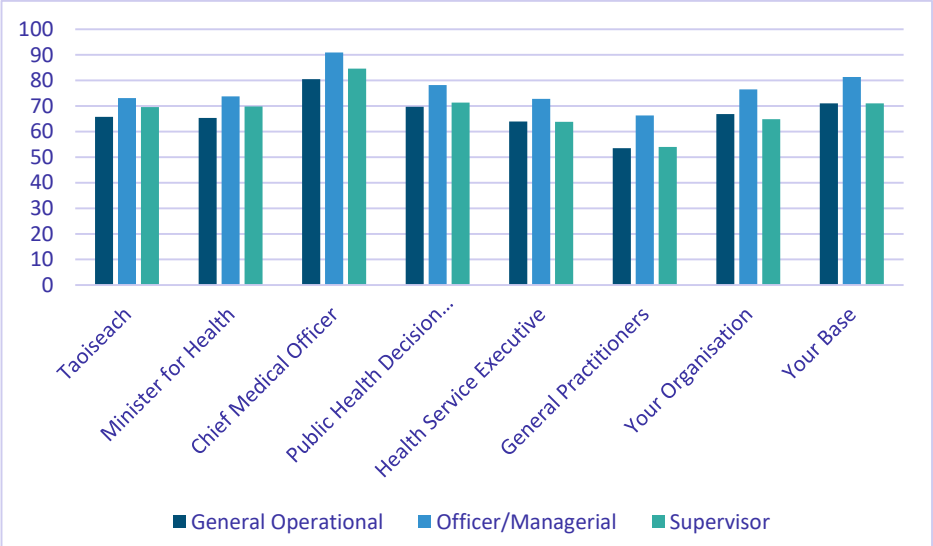


Figure 65: Average Confidence in Leadership by Rank

Between regions, significant differences in confidence ratings exist only for GPs. The average confidence in GPs for each region is documented in Figure 66 below. The highest average confidence reported for GPs is 63.13 in the West, and the lowest levels are 48.46 and 49.17 in the Midlands and Mid West.

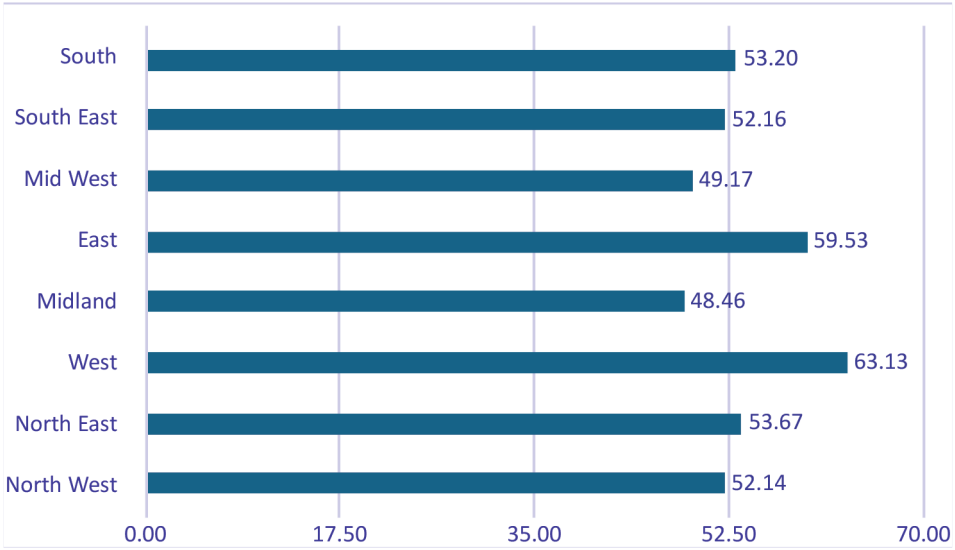


Figure 66: Average Confidence in GPs by Region

Confidence in Self

Respondents were asked, "Given your experience of this pandemic COVID-19, would you feel confident working at your current role in a future pandemic?" Overall, 84.15% answered yes, 9.44% reported no, with the remainder selecting "other" as their response.

Significant differences exist among organisations in relation to the distribution of responses, but not across roles, rank or regions. The percentage stating "no" and "other", by organisation, are set out in the chart below.

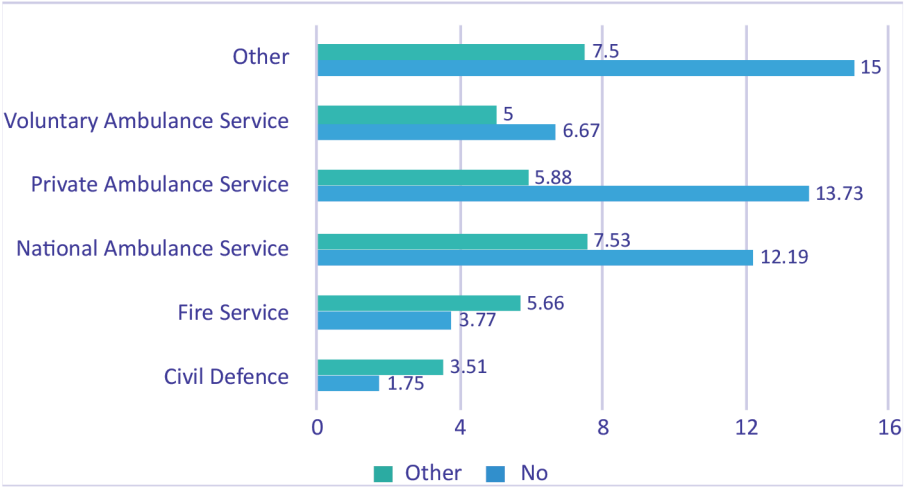


Figure 67: Confidence in Self by Organisation

Community Support

Respondents were asked to report whether they had experienced any acts of community support/kindness during the pandemic and to specify the nature of these actions. 73.86% of respondents stated yes, they had. There is no significant difference in levels of activity experienced between Organisations, Roles, Ranks or Regions. Table 85 shows the type of support experienced by 272 respondents:

Table 85: Community Support During the Pandemic

Table 85 - Community Support During the Pandemic	Units of Meaning Coded
Moral Support – Praise	105
Donating Food to the Front Line	100
Greater inter-community Communications & Support	74
Checking on Elderly or Vulnerable Neighbours	54
Collecting & Delivering Shopping-Medicine	45
Local Volunteerism	35
Free Coffee for Health Workers	19
Providing Meals to Vulnerable Neighbours	8
Child Minding	2

The most prominent type of support articulated by participants was moral support and praise coming from members of the public, the communities in which they lived, and communities in which they served. Respondents referenced the many acts of kindness and gratitude, which often manifested as gifts and donations of food from businesses and individuals alike.

> *Personally, I have been gifted food vouchers to feed myself and colleagues. Professionally, there is always someone knocking on the door of the station with donations of food or gestures of goodwill/thank you cards. (R103)*

> *Lots of community support. Was delivering PPE in a marked vehicle and a person came up to us and gave us lotto tickets and thanked us. Many other examples of people simply saying thankyou. (R131)*

> *Clapping, candles being lit, flags hanging out. (R166)*

> *Lots of strangers thanking colleagues and me for our service. Also, have had a couple of things purchased for us, such as chocolate, buns, etc. (R309)*

Daily. Words of thanks, allowed to skip queues in uniform, Tesco healthcare worker shopping (very thankful), free coffee at Circle K makes a huge difference, Supermacs feeding us, etc. It was an outpour of support. (R359)

Alongside the acts of support and kindness they experienced directly, participants also reported acts of support and kindness they witnessed in their communities and beyond. They reported enhanced inter-community communication – often as simple as asking elderly or vulnerable neighbours if they were okay:

> *Keeping in contact with the elderly neighbours (R131)*

> *People are talking more to each other on walks but include social distancing which is good (R78)*

> *Yes, helping/checking on elderly neighbors (R12)*

Others witnessed more practical acts of kindness and support which involved neighbours helping with activities such as shopping. These are captured in Figure 68 and the quotes below:

Figure 68: Acts of Kindness Around Shopping

I live in the countryside so not too many people close by, but the network has been working checking on elderly, doing shopping / prescription collections and the Red Cross arranged a food bank to support those under pressure (R173)

Local group in village contacted vulnerable neighbours, did shopping and are putting on a bingo night on social media (R296)

There were many other examples of community volunteerism during the pandemic ranging from the provision of meals to donations of funds, childminding, and driving older people for medication and other essential supplies.

Issues of Concern during the Pandemic Response

Participants were asked to describe issue(s) of concern they may have had during the pandemic. 489 participants responded to this probe. Table 86 below lists the issues of concern to first responders.

Table 86: Issues of concern

Issues of Concern During the Pandemic Response	Units of Meaning Coded
Lack of PPE	118
Public Compliance with Measures	91
Misinformation or no Information	79
Poor Support from Management-Government	60
Lack of Cohesive Protocols amongst Colleagues	53
Contracting Covid-19	39
General Safety Concerns	30
Inability to Socially Distance	29
Lack of Testing	26
Lack of Decontamination Facilities	23
Burnout	15
Publics' Mental Health	14
Bringing Covid-19 Home or Passing it on Generally	13
Lack of Training	13
Nursing Homes	12
Testing Results Taking Too Long	10
Patients Staying away from Hospitals	10
Hospital Capacity	10
Recession to Come	10
Slow Response from Government	9
Lack of Staff	8
Open Borders	7
Lack of Enforcement	6
Transmission Rates	6
Limited Access to GPs	5
PPE as a Barrier to Care	5
Death Rates	3
Infecting Colleagues	2
Lack of Contact Tracing	2
Childcare	1

The most recurring concern related to PPE which included inadequate PPE and where PPE was provided but of poor quality or the incorrect PPE for the needs of the person to whom it was issued. One in four of all issues raised were concerns about PPE:

> *Much too slow deciding what gear we should wear dealing with possible Covid calls, much too slow providing training to staff, quality of PPE highly questionable. Management instructing people to use PPE that they are aware is not fit for purpose (R109)*

> *PPE equipment, why do we think droplets from sneezing and coughing won't land on our hair and shoes?? (R254)*

It was not just the provision of appropriate and high-quality PPE, but its application, particularly amongst other health professionals that caused concern:

> *Hospital staff making fun of you for being properly suited up in PPE. It really bugs me that does. (R29)*

> *Initially, I suppose, PPE the supply of it.....now from HCW perspective I hope that we don't become complacent with PPE. (R15)*

Respondents also shared a lot of concern about the public's compliance with the measures introduced by the government:

> *The general public is the biggest risk/issue. Some act appropriately and with common sense, others not. You have no control over the general public and dealing with the general public leads to many different situations. (R47)*

> *The non-compliance of restrictions by members of the public. (R208)*

Both PPE and Public compliance issues were informed by concerns over information which included a lack of consistent information and misinformation. Figure 69 below shows the substantial overlap in occurrences of comments between these three issues of concern codes:

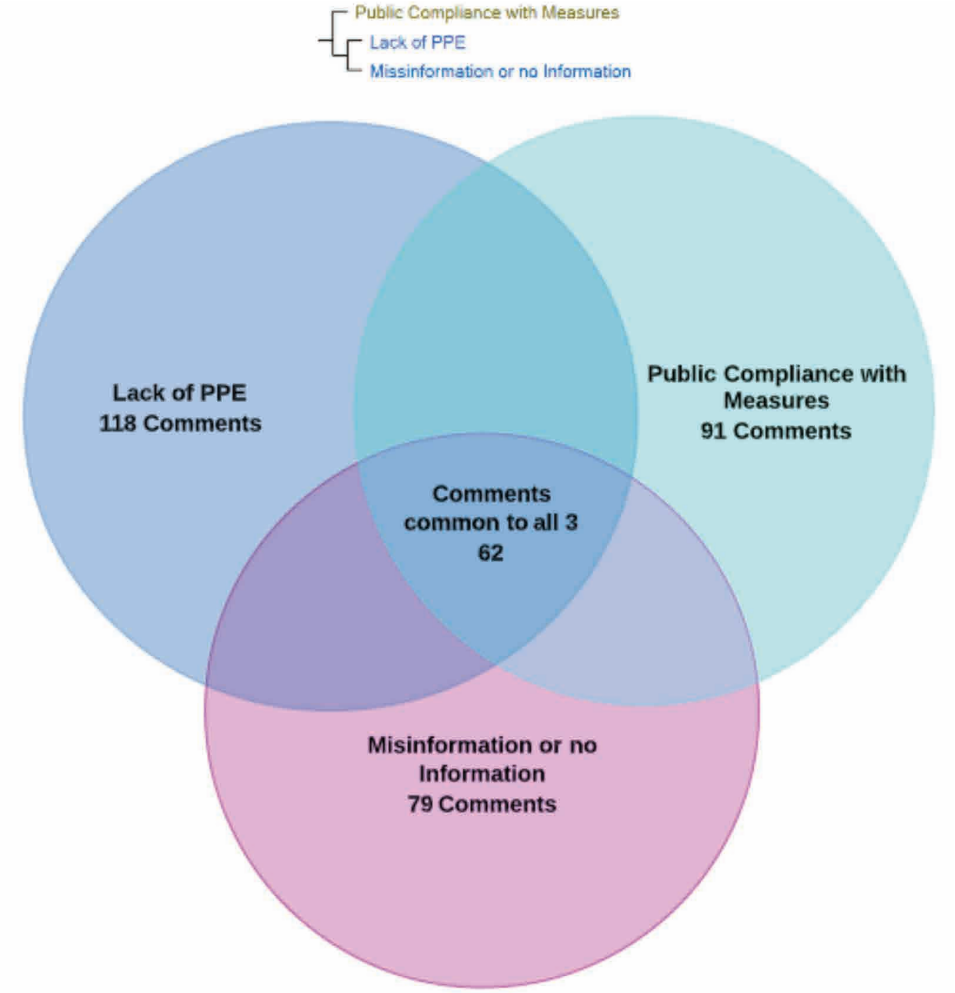


Figure 69: Overlap between Key Issues of Concern

Enough PPE. Public keeping up with required measures. (R494)

Public knowledge, response/adherence and understanding. (R40)

Quality of information on PPE and safe use of same. (R645)

Poor Information from Ambulance Control. Poor quality of PPE. (R751)

60 participants cited inadequate support from management as an issue of concern:

Management lack of leadership around care and wellbeing of staff in regard to working arrangements PPE issues and constructive engagement around IR issues. (R431)

> *Delayed misleading information from employer. (R470)*

Allied to leadership and management issues was a lack of consistent protocols being developed and implemented amongst colleagues and other health professionals:

> *Mismatched PPE protocols in various hospitals. Our crew are required to wear masks for all patients in some hospitals and not in others regardless of patient infectious status. (R46)*

> *Inadequate treat at home protocols, grey areas regarding using practitioner discretion. Some practitioners taking advantage and possibly leaving inappropriate patients at home. (R178)*

Other concerns included contracting COVID-19, inability to socially distance in work, lack of testing, lack of decontamination facilities, burnout, and mental health concerns.

Table 87: Issues of Concern by Rank

Issues of Concern by Level in Organisation	General Operational level	Officer/Managerial Level	Supervisor level
Issues of Concern during this Pandemic Response	358	68	57
Bringing Covid-19 Home or Passing it on Generally	11	0	2
Burnout	10	3	2
Childcare	1	0	0
Contracting Covid-19	26	4	8
Death Rates	2	0	1
General Safety Concerns	19	6	4
Hospital Capacity	8	2	0
Inability to Socially Distance	23	3	3
Infecting Colleagues	2	0	0
Lack of Cohesive Protocols amongst Colleagues	40	8	5
Lack of Contact Tracing	1	1	0
Lack of Decontamination Facilities	18	3	2
Lack of Enforcement	5	0	1
Lack of PPE	89	15	13
Lack of Staff	6	0	1
Lack of Testing	23	2	1
Lack of Training	11	2	0
Limited Access to GPs	4	0	1
Misinformation or no Information	61	5	11
Nursing Homes	11	1	0
Open Borders	7	0	0
Patients Staying away from Hospitals	7	2	1
Poor Support from Management-Government	45	10	4
PPE as a Barrier to Care	4	1	0
Public Compliance with Measures	62	18	10
Publics' Mental Health	13	1	0
Recession to Come	6	3	1
Slow Response from Government	9	0	0
Testing Results Taking Too Long	8	2	0
Transmission Rates	4	0	1

The principal gaps between perspectives arise in risk-related areas such as misinformation or no information, lack of testing, inability to socially distance in work and nursing homes, which were all proportionally overrepresented by operational level participants.

Figure 70 below shows the degree of relatedness and overlap across all issues of concern.

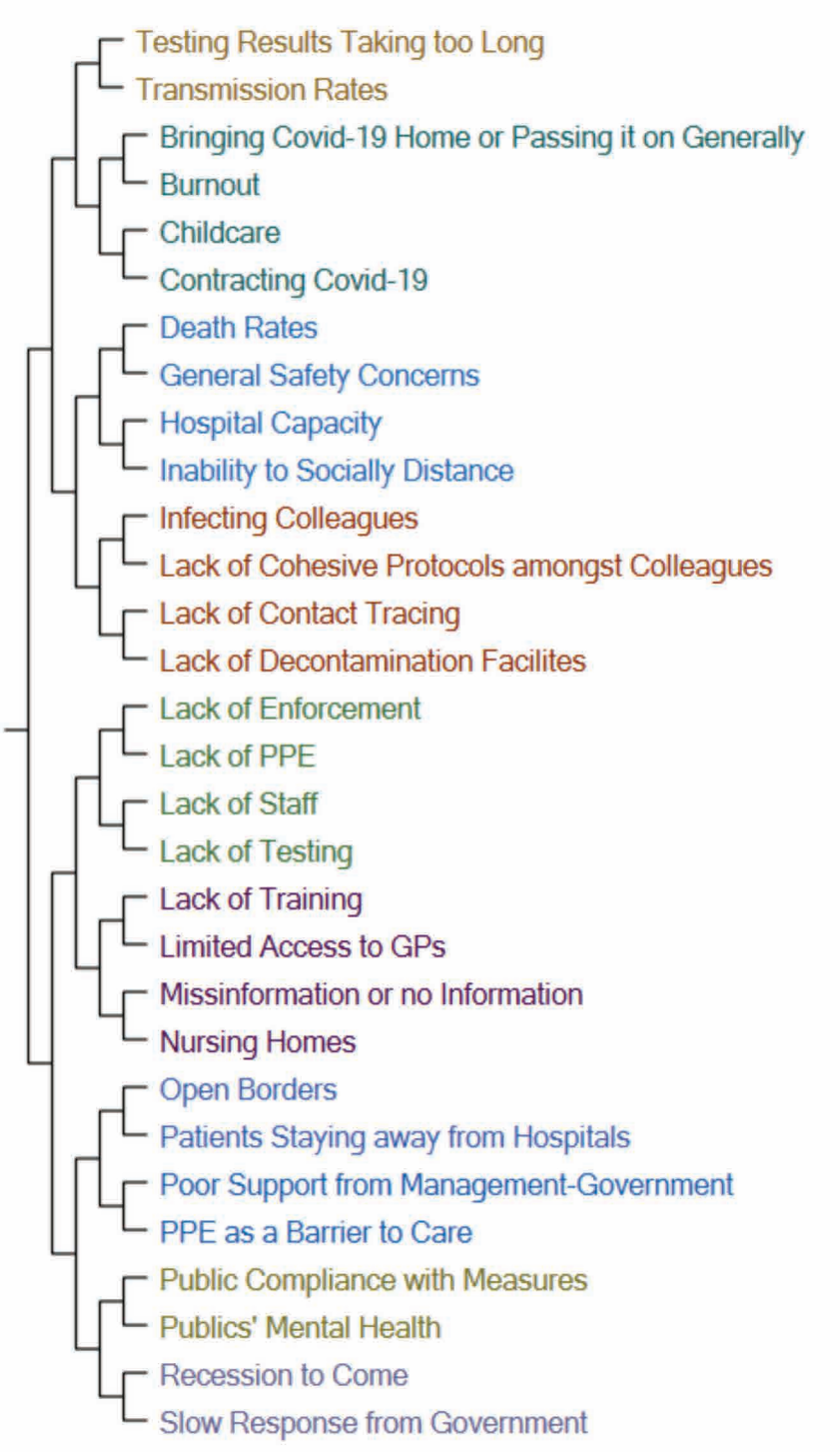


Figure 70: Overlap Between Issues of Concern

Strengths of the Pandemic Response

Respondents were asked to describe strength(s) in the pandemic response. 473 respondents made comments in this regard. Table 88 shows the coding for strengths during the pandemic response:

Table 88: Strengths of the Pandemic Response

Strengths of the pandemic response	815
Collegial Support	98
Public Commitment-Support	94
Community	85
Good Leadership	78
Teamwork	74
Resilient Health Service	69
Professionalism	57
Cross-Agency Collaboration	57
Good Communications	31
Adherence to Protocols	27
Willingness of Health Professionals to take Risks	15
Volunteerism	14
Humour	1

Collegial support was the most cited strength. The word cloud below (Figure 71) shows the most frequently used words when describing this collegiality:

Figure 71: The Strength of Collegiality

It was clear from the responses that the principal source of support and strength for first responders was their colleagues:

> *Camaraderie among staff. We are minding each other and keeping each other going. NAS is improving, this is a great opportunity to show the population what we do and what we are capable of. (R109)*

> *My fellow colleagues, their willingness to do their best to prevent any of us contracting the virus. The support we give each other is overwhelming (R207)*

> *How myself and my colleagues have strengthened our bonds and friendships. The support has increased 10-fold. (R383)*

A close second in importance to collegial support was the willingness of the public to adhere to the measures put in place to prevent the virus from spreading to a point where the health service would become overwhelmed; as had happened in some other countries. Some comments referred to both key strengths, support from colleagues and public adherence to public health guidelines.

> *The support of my colleagues and the huge support from the public. (R189)*

> *Overall civic mindedness of the Irish population. (R57)*

The public support and kindness outlined in the previous section also emerged as a key strength observed during the response to the pandemic:

> *Community spirit and neighbourliness has increased. (R327)*

Leadership, often at a national level, was cited as another strength of the pandemic response. The leadership provided by the government, the HSE, local organisations, and volunteer and community groups were all identified as being noteworthy:

> *Good Leadership from HSE and NAS, the majority of the public taking this seriously. (R243)*

> *So far the State has been unified in its attempts to address the threat, Leadership from the DoH and Govt has been generally quite good and public support for front-line agencies and personnel has given focus to the general public and also a sense of worth within the front-line agencies and staff. (R282)*

The Emergency Services, Government, and all other organisations response to the crisis is excellent. (R54)

Teamwork and the resilience of the emergency response agencies both featured as strengths:

Sense of community and teamwork (R63)

Resilience of our organisation has been impressive (R454)

Other strengths included: professionalism, cross-agency collaboration, good communications, adherence to protocols, volunteerism and the willingness of health professionals to take risks. As displayed in Table 89, different types of respondents emphasised different strengths.

Table 89: Strength in the Pandemic Response by Rank

Strengths and Supports by Level in Organisation	General Operational level	Officer/Managerial Level	Supervisor level
Strengths during the pandemic response	345	70	53
Adherence to Protocols	22	4	1
Collegial Support	79	6	13
Community	53	20	10
Cross Agency Collaboration	39	9	8
Good Communications	19	8	3
Good Leadership	60	12	4
Humour	1	0	0
Professionalism	45	7	5
Public Commitment-Support	67	13	12
Resilient Health Service	51	5	13
Teamwork	47	19	8
Volunteerism	6	4	3
Willingness of Health Professionals to take Risks	12	0	3

The word cloud below (Figure 72) captures the most common words used by participants when describing strengths experienced during the pandemic:

Figure 72: Strength of the Pandemic Response

Lessons to Learn: Changes Required

Participants were asked if could change one thing about the pandemic response, what would they change and why? 450 participants responded to this question, and the coding that emanated from their comments are set out in Table 90:

Table 90: Changes Required to Improve the Response

Proposed Changes	Units of Meaning Coded
Earlier Action – Lockdown	122
Earlier Education-Training – Communication	69
PPE Stockpiles	59
Faster Closing of Borders	57
Consistent Application of Protocols across Agencies	52
Faster and Better Management Inputs & Leadership	50
Earlier and more Enforcement	40
Earlier and More Testing	35
Better Preparation	31
Faster Lockdown of Nursing Homes	21
Better and more realistic Decontamination Practices	16
More use of Masks and Sanitisers	14
Faster Utility of Volunteering Sector	12
Earlier and More Contact Tracing	8
Earlier and Faster Adherence from Public	6
Faster Test Results	5
Isolation from Family	4
Faster and Greater Cooperation with NI	4
Provision of Childcare for Front Line Health Workers	3
Health Service to be more Adaptive	1
Faster and Better Reporting of Cases	1

The need for earlier and faster action was the most commonly proposed change. Respondents were not critical of the actions taken, but of the time which elapsed before these actions were embedded in policy, communicated, and implemented. The word "earlier" was used 212 times, appearing in almost half of all comments. "Sooner" was used 134 times, "quicker" 82 times, and "faster" was included in 36 comments. Therefore, the clear message from respondents was less about what needed to happen: lockdown, education and training, communication, PPE stockpiling, closing borders, testing and tracing, or dealing with nursing homes, and more about the need for earlier implementation. Figure 73 shows the pivotal role of keywords like "earlier" embedded in participants' comments.

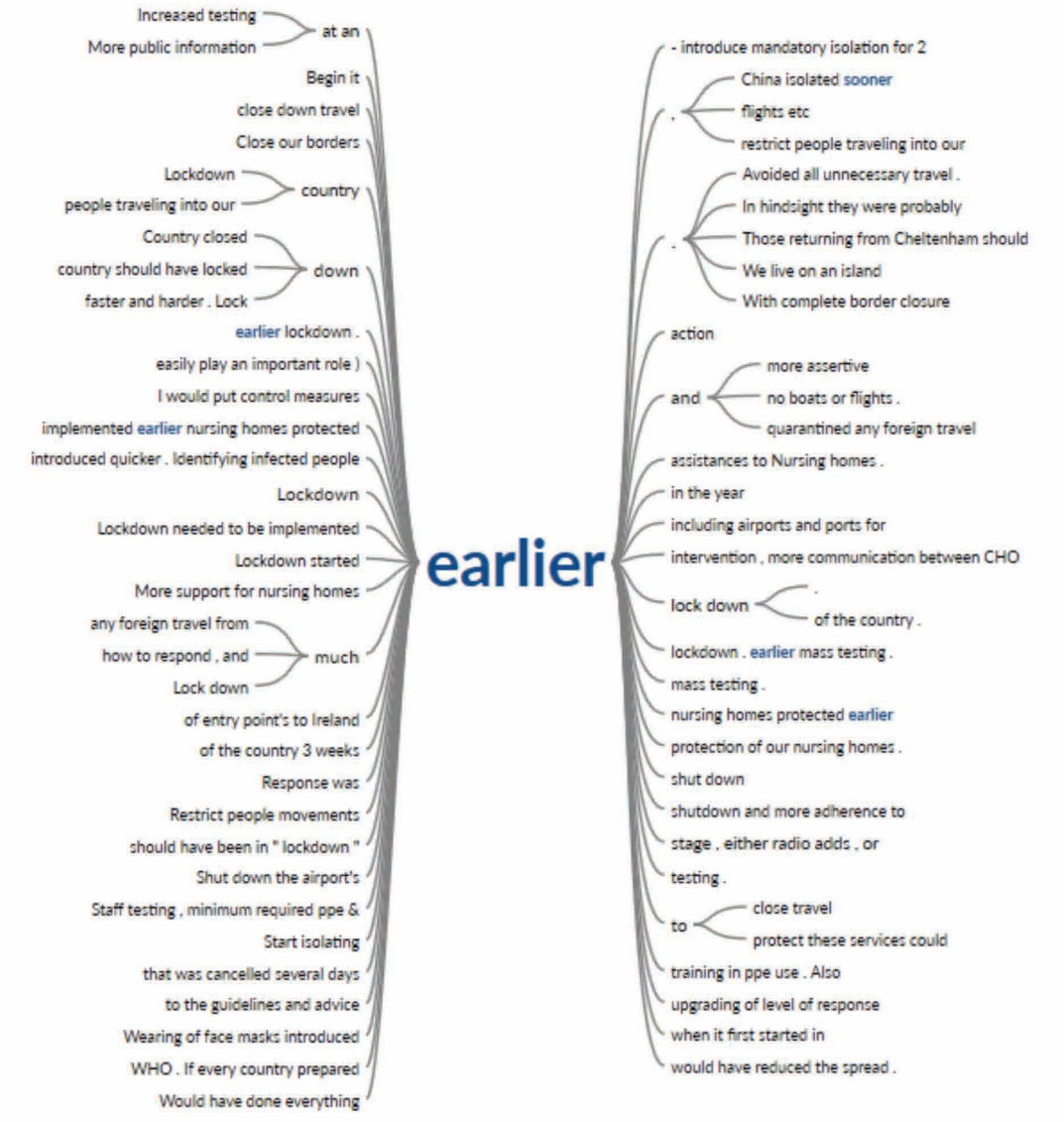


Figure 73: Embedded Keywords in Things to Change

The lockdown was the most cited thing to change. It was mentioned 158 times in 122 comments:

> *A real enforcement of proper lockdown like Italy 3 weeks before it actually happened and shut the boarders! (R35)*

> *Acted faster and harder. Lock down earlier and quarantined any foreign travel from much earlier in the year. (R47)*

> *Earlier lockdown. earlier mass testing. (R140)*

> *Enable the lockdown quicker. And the introduction of full PPE usage with all patients as soon as the first case was confirmed. (R670)*

The need for earlier education, training and communication was cited in 69 comments:

> *Preparedness of the organisation. It appeared to me that there was no consensus on anything in the beginning. When we had the first query COVID19 patients I had to ask for information as it wasn't fully available. At a later stage guidelines for PPE and cleaning were changed regularly (e.g. at one point there was a poster in the ambulance stating that even with a confirmed case no google were required unless aerosol generating procedures were part of care, this was changed 3 weeks later to a case-to-case base). An initial consensus on cleaning, PPE etc would have been nice. Also, I strongly believe that the communication structure within the organisation needs to change. Getting emails sent to a HSE email address which I cannot access from home and may not be able to access prior to being sent off to an emergency is not good enough. Especially not when information and policies change frequently. (R329)*

The need to have PPE stockpiles was highlighted in 59 comments:

> *I feel obtaining PPE stock, hand-gels, masks etc. Should be something the country should have stockpiled. This should be done for future events. Far too many healthcare workers became ill, possibly due to poor or inadequate PPE. Although our PPE has been okay since the start, there were times when I thought certain items would run out and this would have stopped our service being provided. (R13)*

The need for more prompt closing of borders came up in 57 comments. Respondents were particularly animated about Cheltenham and the Italian rugby match, where fans were allowed to travel from a pandemic epicentre to Ireland:

> *Lockdown sooner! Stopped all flights Italy Cheltenham etc (R499)*

> *When it was confirmed that students on a skiing trip contracted the virus the government cancelled the 6 nations rugby game. I feel they should have stopped all the supporters from travelling to Ireland as well. The ports have remained open to foreign travellers, this to me will prolong the life of the virus as some people are asymptomatic and will have no knowledge of having the virus and unwittingly pass it on and on and on. (R528)*

The consistent application of protocols across all agencies, and faster and better management inputs and leadership, featured in 50 and 52 comments respectively:

> *Dedicated team of staff to maintain Covid response in order to build cohesion and reduce training requirements. (R161)*

Respondents also called for earlier and greater enforcement of restrictions, earlier and more testing and tracing, and more effective preparation once it became apparent the virus was coming. They called for better and faster locking down of nursing homes, and no discharging of patients from hospitals to vulnerable nursing homes, despite the fears of the health service being overwhelmed. Table 91 provides a summary of the things which respondents would change by level in the organisation.

Table 91: Things to Change by Rank

Things to Change	General Operational level	Officer/Managerial Level	Supervisor level
Things to Change	334	61	50
Better and more realistic Decontamination Practices	14	0	2
Better Preparation	18	5	8
Consistent Application of Protocols across Agencies	40	8	4
Earlier Action - Lockdown	96	15	8
Earlier and Faster Adherence from Public	4	0	2
Earlier and More Contact Tracing	6	2	0
Earlier and more Enforcement	30	6	4
Earlier and More Testing	28	3	3
Earlier Education-Training - Communication	52	8	7
Faster and Better Management Inputs & Leadership	40	5	5
Faster and Better Reporting of Cases	1	0	0
Faster and Greater Cooperation with NI	3	1	0
Faster Closing of Borders	43	8	6
Faster Lockdown of Nursing Homes	16	2	1
Faster Test Results	4	1	0
Faster Utility of Volunteering Sector	7	3	2
Health Service to be more Adaptive	1	0	0
Isolation from Family	2	1	1
More use of Masks and Sanitisers	9	5	0
PPE Stockpiles	41	11	7
Provision of Childcare for Front Line Health Workers	3	0	0

Conclusion

Respondents were incredibly generous with their time and showed great honesty in replying to the often challenging questions in this study. Contracting COVID-19 and passing it to loved ones was a primary source of worry. A lack of facilities and the equipment needed for protection and sanitisation also caused distress. The government's response, leadership and taking effective action mitigated some of the stress and worry during the pandemic. Participants felt a compelling duty of care to their patients and the public, but less so to their employers. Duty of care to patients created tensions with the duty of care for their families – especially around the increased risk of contracting COVID-19.

First responders faced a range of ethical dilemmas during the pandemic. Such dilemmas included having to advise people to stay at home when they would typically advise they go to the hospital. Or, conversely, bringing people to hospitals while knowing this increased their risk of infection. Decisions concerning ventilation and resuscitation were often challenging. Respondents also felt conflicted by having to stop families from accompanying their loved ones to the hospital; knowing they may never see their relative again.

Balancing the wearing of PPE for protection with the desire to deliver personal reassurance and care was a source of professional unease for respondents. The ever-present risk their work brought in terms of the contraction and passing of COVID-19 to colleagues and loved ones emerged as a fundamental concern. Colleagues and the public outpouring of gratitude and community spirit were the predominant sources of strength and support to participants throughout the pandemic. There were tensions between management and operational level participants in several domains.

Notwithstanding all the worries, duties of care, ethical dilemmas and risks, first responders continued their work as healthcare professionals during the most unprecedented and challenging health emergency in the history of the state. The public's acknowledgement of their work reflects the outstanding debt owed by society to first responders during this pandemic. The LISTEN project captures opportunities for learning from the frontline response and records the voice of an often forgotten, yet critical element of the COVID-19 response.

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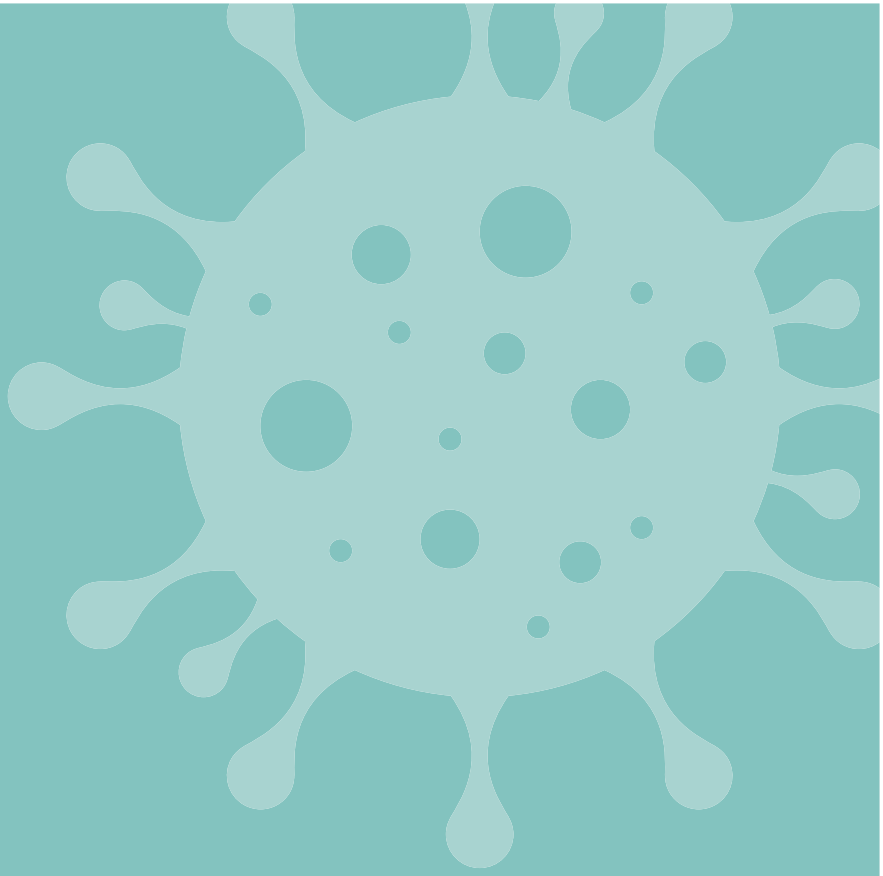
Appendix One

Analytical Process	Application in NVivo	Strategic Objective	The iterative process throughout the analysis
What data are analysed How are they defined What is the population from which they are drawn? (Source)	Phase 1: Downloading submissions and formatting demographic and other profiling information into a single table for import into a computer aided qualitative data analysis system (NVivo)	Data Management (Open and hierarchal coding through NINVO)	Who said what? Why did they say it?
What are the contexts relative to which the data are analysed? (Encoding Process)	Phase 2 – Open Coding Phase 3 – Categorisation of Codes Phase 4 – Coding on Phase 5 – Data Reduction/ Consolidation	Descriptive Accounts (Reordering, 'coding on' and annotating through NVIVO)	How did they say it?
Exploring relationships and patterns across categories (Channel, Message, Recipient)	Phase 6: Generating Analytical Memos		What inferences may be drawn?
Integrating data to write findings (Decoding Process)	Phase 7 – Validating analytical memos Phase 8– Synthesising analytical memos	Explanatory Accounts (Extrapolating deeper meaning, drafting summary statements and analytical memos through NVIVO)	To whom did they say it With what effect?

Stages and processes deployed in qualitative data analysis
Adapted from Krippendorff (2004)

Tables

Table of Figures



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DCU BUSINESS SCHOOL

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Authors: **Professor Caroline McMullan, Dr Ann Largey, Gavin D. Brown, Grainne O'Shea, DCU Business School**

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