

Essential workers' experience of work during the COVID-19 pandemic in Ireland

First findings from the UCD
Working in Ireland Survey, 2021


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September 2023



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**This report examines
the work experiences
of essential workers
during the COVID-19
pandemic**

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This is the fourth in a series of reports detailing preliminary findings from the UCD Working in Ireland Survey, 2021. This report examines the work experiences of essential workers during the COVID-19 pandemic. Specifically, it details their perceived level of risk to contracting COVID-19 at work, the demands placed upon them, their consequent well-being, and how effectively management and trade unions supported them. The report's findings are important because they derive from the only representative survey of essential workers' experiences of work in Ireland during the pandemic.

Our main findings include the following:

1. At least six in ten essential workers in Ireland were subject to a moderate or a high level of risk of contracting COVID-19 in the workplace. Among them, female workers were at a greater risk of contracting the virus than were male workers.
 2. Workers in human health, public administration and defence were particularly high-risk prone.
 3. Essential workers' well-being was substantially impaired during the COVID-19 pandemic. This was manifested in pronounced levels of reported anxiety. Again, this was particularly so for female essential workers.
 4. Almost seven in ten essential workers voiced their worries about contracting the virus to management. However, only half of these essential workers reported that their organisations fully addressed their concerns.
 5. COVID-19 mitigation strategies were much better implemented for high earner essential workers than they were for essential workers on lower wages.
 6. Mitigation strategies were reported to be well-implemented in the agriculture and construction sectors, but less so in public administration and defence.
 7. Essential workers' perceptions of trade union influence during the pandemic are generally positive. There is a modest but significant correlation between a union presence in the workplace and low levels of perceived risk of workers contracting Coronavirus.
 8. A favourable industrial relations environment in the workplace where essential workers expressed trust in their management and believed they were treated fairly is associated with a greater likelihood of staff voicing their concerns of COVID-19 and they being effectively addressed by their employer.
 9. Training and development provision helped to sustain essential workers' well-being and health, particularly in respect of their anxiety levels.
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10. Extensive work effort, measured by whether or not essential workers were working over 40hours/week, was high for those employed in public administration and defence.
11. Intensive or high work effort levels were particularly more pronounced among female essential workers and those working in the human health and manufacturing sectors.
12. There was also a significant correlation between essential workers' levels of intensive work effort and their levels of anxiety; the harder they worked, the higher the level of anxiety they experienced.
13. Essential workers employed in workplaces where they trusted their management and believed they were treated with fairness and respect, and where there was trade union representation, were more likely to report lower levels of work intensification and anxiety.
14. Finally in the conclusion to the report, we reflect on the importance of our main findings and their implications for policy and practice are drawn.



Introduction

A fundamental element of the response to the unprecedented COVID-19 pandemic emergency involved the provision of critical services. While a little over a half of the Irish workforce was required to remain at home and work from home, the remaining workforce was expected to leave the relative safety of their homes to go to the site of their work in order to keep our health services and economy functioning. We came to refer to this latter group of workers as “essential workers” or “frontline workers”, terms which we had little or no concept of prior to the COVID-19 pandemic.

In Ireland, essential workers were specifically defined by those critical activities the government deemed essential during the COVID-19 pandemic. Confronted with a then potentially life-threatening virus, many placed themselves at enormous personal risk of contracting Coronavirus in the workplace on an oftentimes daily basis. This risk was particularly acute for health sector workers who cared for patients in hospitals, clinics and nursing homes. Among them, nurses and doctors were expected to treat patients who had contracted the virus with the very real possibility that they themselves might become infected and in turn come to act as a vector for the further transmission of the disease in their families and communities. These were no idle or exaggerated fears, and health care staff had no firm assurances that the personal protective equipment (PPE) that they were supplied with – certainly in the early months of the pandemic – would be effective in protecting them. Some of course were deprived of these basic protections as the government scrambled to access PPE from international suppliers. Other essential workers were required to continue working in factories and in retail outlets to prepare and to supply food for customers without knowing again if the safety provisions afforded them were sufficient to ensure they would not fall foul of the virus. Members of An Garda Síochána (the police force) were expected to enforce government lockdown regulations and ensure that the population at large would abide by the new regimen. While these were enormously difficult and stressful times for us all, they were particularly so for our “essential workers”.

Although widely and rightly acclaimed for their bravery, dedication and hard work, there has been no comprehensive study to date of essential workers' work experiences, job quality and well-being during the pandemic in Ireland. We provide the first and only such study. Our study, the UCD Working in Ireland Survey 2021, is a major national representative survey on job quality in Ireland during the pandemic. We provide a unique insight into the experiences of essential workers, as reported by them. In this report we focus, in particular, on answering the following questions:

- Which workers were deemed ‘essential workers’ in Ireland?
 - To what extent were essential workers at risk of contracting COVID-19 in the workplace?
 - How did their risk exposure to Coronavirus affect their levels of anxiety?
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- To what extent, if any, did working on the frontlines of an emergency crisis affect essential workers' conduct of work? If it did, in what ways was this evident?
- Were there any mitigating factors that helped reduce the risk of contracting COVID-19 and alleviate essential workers' anxiety?
- And finally, we enquire of the lessons that might be drawn from our findings of essential workers' experiences of working during a pandemic for the future management of our essential services.

Before delving into our detailed account of the quality of work and well-being of essential workers in Ireland during the pandemic, we first define what it is to be an "essential worker". This is necessarily a detailed exercise.



Complexities associated with defining who are essential workers

The task of defining who or what is an essential worker is inordinately complex. There is no ready-made universal definition that can simply be applied to our population of interest. Indeed, it can be fairly claimed that the definition(s) of an essential worker is (are) a product of the pandemic itself. Neither is there an internationally recognised definition as the experience of the pandemic varied across countries. That said, there have been two broad approaches to establishing whether a worker is an “essential worker” – self-reporting by survey respondents themselves and by occupation/sector-based assignment.

In studies to date, the approach to identifying essential workers has often been a function of the data available to researchers. Whether the data was collected during the pandemic or not tends to determine the choice of method. Many long-standing repeat surveys included modules dealing with the pandemic supplementary to their existing fieldwork questions. For instance, in the UK, the Understanding Society longitudinal survey added a COVID-19 module which asked respondents to identify whether they were ‘key workers’ (i.e., essential workers) or not. This approach of self-reporting essential worker status has also been used in a number of other one-off surveys which were put in the field during the pandemic. While such questions can provide a very clear distinction within the sample, any such measures will always be contingent on the subjective judgement of the respondent as well as being determined by the prompts provided to them and/or their understanding of government guidelines.

In circumstances where the analysis is based on data collected before the pandemic, studies have tended to assign essential worker status – post hoc – to respondents in the dataset. This approach seeks to construct a definition of essential workers based on the government regulations that applied to each country during the pandemic. Even in cases where the survey was carried out during the pandemic, the survey instrument may not have contained specific questions about the pandemic. In such cases, too, these studies tended to assign essential worker status post hoc or retrospectively and essential workers are identified by the characteristics of the jobs they perform. In essence these studies are predicting who would be an essential worker based on their job description. While these analyses cannot describe the experiences of essential workers during the pandemic, they can tell us a lot about the makeup of essential workers in terms of factors like age, gender and ethnicity.

**Constructing a definition
of essential workers from
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simple task**

Constructing a definition of essential workers from government regulations is not a simple task either. Firstly, there are different layers of governments in each country and often regulations varied between regional and national governments. Secondly, the definition of essential work did not remain static throughout the pandemic. Indeed, there were significant differences between what was defined as essential at the initial outbreak of the pandemic and in the later stages of 2021. Finally, the method of identification for essential workers in government guidelines was clearly determined by the need to control the movement of people while maintaining the basic functioning of basic services of the economy. This means that in many cases governments did not utilize established classifications of workers which would lend themselves to easy integration with existing survey data. Such an approach is understandable, but it necessarily poses a difficulty in identifying essential workers for analysis.

Further, there is the difficulty of whether government guidelines utilized the sector of activity or a specific occupation to determine essential work. In many instances governments outlined 'essential services' and only specified 'essential occupations' in certain circumstances. Where governments specified essential services, the definitions of essential work risk being overly broad. At the other end, where governments specified particular occupations, in many cases the level of specificity was too detailed to allow analysis in any sample-based datasets. This means that any definition of essential workers requires a level of subjective judgement based on the level of detail provided within both government regulations and the dataset utilised for the analysis.

Matters are yet more complicated and not fully resolved even when we believe that we have established – by either of the two aforementioned approaches – that a worker is “essential”. While many of the sectors and occupations that were deemed essential did indeed require workers to present to workplaces, many did not. This was most apparent where government guidelines were broadly defined, sometimes including whole sectors rather than specific occupations. Whether or not workers were required to attend the workplace or not does not negate the essential nature of the activity they were involved in, but it does impact their experience of work during the pandemic, which is the main area of interest in this analysis.

Therefore, the distinction between those required to attend the workplace and those who were not creates a subset of essential workers who are referred to in many other studies as “frontline workers”. It could be argued that all of those who attended their workplace during the pandemic could be considered frontline workers and therefore it would not be necessary to ascertain whether or not they were essential workers or not. Strictly speaking, however, this would not be correct as many workers may have been permitted to attend their workplace during certain stages, particularly latter stages, of the pandemic. At other times, however, during periods of strict lock-down, if they were not providing an essential service, they were very unlikely to be required or permitted to attend their workplaces.

As such, determining whether or not an essential worker is also a frontline worker is difficult. Most often the means of identification, like that with essential workers above, depends on the data used for analysis. Workers either self-report that they were required to attend a workplace or their status is determined by whether or not their workplace was open under government guidelines. Once again studies that seek to assign frontline status do so using data based on the task profile of jobs. This then builds up an index within each occupation or industry that then determines whether or not that profile of tasks could have been performed from home during the pandemic or not. This value is then linked to the classification used for determining essential workers and the combined classification is used to denote frontline workers. However, this retrospective approach to the identification of frontline workers can be imprecise because it relies heavily on the characteristics and technological capabilities that existed pre-pandemic. Jobs that could not be performed from home before the pandemic may have been modified during the pandemic to accommodate it.

Data gathered during the COVID-19 pandemic often asked respondents whether they worked at home or attended the workplace during the pandemic. When combined with essential worker status this allows for a much cleaner and precise definition of frontline work. Unlike self-reported essential worker status, there is less danger of respondents misreporting the location of where they worked.

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Prior studies of essential workers

There have been a series of studies which have sought to analyse the experience of essential workers during the pandemic. Within this literature a number of methodologies have been applied and in many cases these methodologies have been determined by the availability of data and quality of government guidelines. The first methodology we observe is based on the risk of contracting Coronavirus. Basso et al (2020), for example, seek to estimate the proportion of workers that were at risk of contagion during the pandemic. They sort all jobs into 4 categories based on how safe they were to perform during the pandemic. They determine safety by grading the degree of exposure to human contact that each job entails. Using data derived from a series of questions in the US Bureau of Labor Statistics O*NET survey, they assign each job an index value. This is then applied to occupation codes and then applied the BLS Current Population Survey (CPS) data to calculate the proportion of the workforce contained in each of the 4 categories. The O*NET and CPS data, however, were both collected before the pandemic. The main drawback of this approach is that it necessarily assumes that the task profile of jobs was unchanged by the pandemic and that job incumbents who risked increased exposure to the virus during the pandemic did not adapt their work to render it safer. Secondly, as the O*NET survey is based on US data, it cannot be easily applied to other countries where the profile of tasks may differ due to differences in job definitions or technological capabilities.

Other authors further classify the risk of contagion by whether the job can be performed at home or strictly onsite. Drawing on the O*NET survey, Dingel and Neiman (2020) applied a separate manual assignment score where they subjectively judged what proportion of jobs in each occupation code could be performed from home. However, these judgements are by their nature subjective and while there is a high degree of correlation between the O*NET classification of people's work location and the manual assignment scores, their judgements are a product of the specific time and context in which they were made.

Yet others use a different methodology to identify essential and frontline workers. The New York Department of Labor (2020) made use of the O*NET survey data in conjunction with government guidelines as to who were essential workers. They first used a memo from the Cybersecurity and Infrastructure Security Agency to determine essential industries. They then identified the occupational codes within those industries and defined this list as 'essential workers'. They then used O*NET survey data to judge whether workers occupying these roles were required to work in proximity to other workers or not. Where tasks could not be performed remotely the occupation was deemed to be frontline and essential.

Likewise, Fana et al (2020) identify essential workers across several different European countries using government guidelines for each of those countries combined with information on whether the sector is essential in whole or part, whether the work therein is teleworkable (i.e., can be performed remotely) or not, combined with the degree to which the industry is considered 'active' as opposed to closed. From this, Fana and colleagues identify 5 categories of sectors which they label 'essential and fully active' (incl. food production and health), 'active but via telework (education, public administration), 'mostly essential and partly active, not teleworkable' (retail and manufacturing of chemicals), and 'mostly non-essential and partly active, not teleworkable' (manufacturing and construction), and finally 'closed' (hospitality, leisure and recreation). They find a significant degree of variation across EU countries in the extent to which people are able to perform work tasks from home. Education is one example where a sector was deemed essential in all countries but was considered teleworkable in only some countries. This points not only to the variation in the construction of national guidelines but also to the limitations and risks in using them to define essential and frontline workers.

Combinations of some of the above methodologies are also found. For instance, Blau et al. (2021) use a three-stage process to arrive at their definition of essential frontline workers. This process combines the approach of Dingel and Neiman with that of Fana et al. They translate Department for Homeland Security regulations into the North American Industry Classification System (NAICS). They then apply the working from home framework constructed by Dingel and Neiman. This is then followed by removing sectors that were forcibly shutdown during the pandemic. They also make adjustments for changes in government guidelines during the pandemic, establishing two definitions, one that applied in March 2020 and one that applied in December 2020.

A number of other studies that use state guidelines also merit reference. Fasani and Maza (2020) use the European Commission's Guidelines concerning the exercise of the free movement of workers during COVID-19 outbreak to define a list of essential workers in ISCO occupations codes. While the Commission specified occupations at the 4-digit level, the data in the EU Labour Force Survey that was utilised only allows for analysis at the 3-digit level, meaning that the definition is necessarily broader than that envisaged by the guidelines. Similarly, Redmond and McGuinness (2020) use the Irish Government's Essential Workers register to construct a list of essential occupations which is then applied to pre-pandemic Labour Force Survey data.

Finally, there are a few studies that draw from data collected during the COVID-19 pandemic, the most significant of which is Eurofound's (2022) assessment of job quality and working conditions among workers across Europe. Uniquely it uses latent cluster analysis to group workers into four different cohorts according to their particular job attributes. They include home office workers, on-location production workers, on-location service workers, and frontline workers. Home office workers are those who worked from home during the pandemic. The on-location production workers consist mainly of plant and machine operators, craft workers and workers in elementary occupations.

They tended not to deal with customers or clients. The on-location services workers are mainly composed of services and sales workers, workers in elementary occupations and agricultural workers. The frontline workers category is comprised mainly of public sector workers working in health, education, public administration and police officers and firefighters. While most workers in these latter three groups worked at their employer's, a client's or their own business premises, or a combination of these locations during the pandemic, and risked being exposed to COVID-19 infection, frontline workers bore the greater risk of contracting the virus at work when compared to other groups. They were also under greater work strain during the pandemic and had the highest levels of emotional and physical exhaustion, anxiety and musculoskeletal pain complaints, and the lowest level of well-being. While the report desists from using the term essential workers, it does in its conclusion refer to frontline workers as being those who are "vital... for the functioning of our societies" (Eurofound, 2022; 119).

Utzet et al (2022) analyse data from an online survey that was carried out in Spain during the pandemic. Essential workers self-identified in the survey, but the authors supplemented this with a further filter which excluded industries and sectors that were closed by law during the pandemic period. Likewise, Topriceanu et al (2021) also utilize the self-reporting approach using a number of existing cohort surveys and a longitudinal survey that were in the field during the pandemic. The survey asked respondents both whether they were key workers or whether the government had designated their work as key or essential. While the question is still subjective, rooting it in government guidelines does provide a more robust estimate. Finally, Wielgoszewksa et al. (2022) also utilize this approach using many of the same cohort surveys along with the longitudinal Understanding Society survey.



Essential workers in Ireland

On the onset of the COVID-19 pandemic in March 2020, the Irish Government ordered the closure of non-essential businesses. The Government announced that for a two-week period, "Everybody must stay at home in all circumstances, except for the following situations: to travel to and from work, or for purposes of work, only where the work is an essential health, social care or other essential service and cannot be done from home." A list of essential services was then published on March 28th 2020 which again contained the proviso that attendance at work for essential services was only allowed if the work could not be done from home. The measures were extended on April 1st for a further 3 weeks and the government subsequently published a 'Roadmap for Reopening Society & Business' on May 1st 2020. The Roadmap contained 5 phases for exiting the lockdown restrictions with phase 1 due to commence on the 18th of May, with phases 2 and 3 to follow on the 8th and 29th of June respectively. Phase 1 would see the staggered return of outdoor workers with social distancing while phase 2 and 3 envisaged a return of solitary workers and low interaction workers respectively, both with heavy social distancing requirements. According to the Roadmap, phases 1 through 4 would "Continue to maintain remote working for all workers / businesses that can do so". For Retail, phase 1 allowed for the opening of outdoor retail and markets, while phases 2 and 3 saw a staggered re-opening of non-essential retail with restrictions on staff and customer numbers. The roadmap only allowed hospitality to reopen with cafés and restaurants permitted in phase 3.

However, by July 15th, the move to phase 4 that was due to take place on the 20th of July was postponed. A series of regionalised restrictions were announced throughout August culminating in the announcement of the Living with COVID plan on September 15th. This plan set out five levels of restrictions that would apply for the duration of the COVID pandemic in Ireland. With respect to work, the plan allowed a return to work in levels 1 and 2, with levels 3 to 5 maintaining restrictions on non-essential attendance at the workplace. Retail and Hospitality were permitted some activity in levels 1 through 3 although with conditions to maintain specific social distancing requirements. Both sectors remained almost entirely closed in levels 4 and 5. On September 18th, Dublin was moved into level 3 restrictions which had the effect of closing the section of the hospitality sector that had been allowed to operate since late June. Donegal followed a week later and by October 16 the entire country was moved into level 5 which continued until Christmas. There was a brief move to phase 3 which ended abruptly on the 24th of December. The country continued in a form of level 5 until June of 2021.

As the account above shows, for almost the entire period we were conducting our data collection (May-August 2021) only those considered essential workers who could not carry out their work remotely were allowed to go to their workplaces. As noted earlier, the definition of essential worker in the Irish context is particularly shaped by the Irish government's conceptualisation of essential workers during the most constricting level of restrictions, namely Level 5. This reads as follows: "Essential workers are those providing the services below [see Appendix 5]. Physical attendance at workplaces is only

permitted where such services can only be provided in person and cannot be delivered remotely. Essential workers do not include administrative and other support for such businesses and services unless specified in section 13 and the physical presence of a worker is required”.

There are two dimensions to this definition that shape the study of essential workers in Ireland. On the one hand, the government restrictions apply only to activities and services, and not to occupations. On the other hand, the government’s classification of essential activities only refers to those services or activities which cannot be undertaken remotely. This means that due to restrictions imposed on non-essential business and activities, virtually all essential workers in Ireland included those whom the literature conceptualises as frontline workers; that is, workers who could not carry out their work remotely.

For essential workers who were required to continue to attend their workplace a range of policy protocols were introduced and updated throughout the pandemic in an attempt to protect their physical and mental health. The primary one was titled the ‘Return to Work Safely Protocol’ which was initially published in May 2020. It was developed following discussion and agreement at the Labour Employer Economic Forum (LEEF).¹ In parallel with these policy developments, the Government also introduced a new code of practice on the right to disconnect from work in April 2021 (see Geary and Belizon, 2022).

In line with the international literature reviewed earlier, studies on essential workers in Ireland during the COVID-19 pandemic were scarce. A first attempt to identify essential workers in Ireland was undertaken by the Economic and Social Research Institute (ESRI) in April 2020 (Redmond and McGuinness 2020). The authors drew on the Department of the Taoiseach’s guidelines to establish a set of criteria to identify essential activities and occupations. Once specific criteria were decided, they used past LFS data (2017-2019) to analyse what constituted the first sample of essential workers in Ireland, which they estimated to constitute 22% of the Irish workforce. The authors acknowledged that while they originally intended to build a representative sample of essential workers, they soon realised that data constraints prevented them from doing so. Therefore, they admitted that: “while we endeavour to include as many essential employees as possible, based on the official Government guidance, we face some data constraints. As such, the groups we identify are not an exhaustive list of essential employees” (page 6).

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¹ The LEEF is the forum for high level dialogue between government, trade unions and employer representatives on matters of strategic national importance.

Who then did Redmond and McGuinness (2022) include in their sample? Firstly, the authors selected the most relevant essential sectors included in the government guidelines, namely, human health and social work, armed forces, public administration and defence, wholesale and retail and transport. They followed the Statistical Classification of Economic Activities in the European Community, generally known as NACE. The authors acknowledged that not everyone working in these sectors should be considered an essential worker but only those belonging to those activities previously identified by the Irish government. Therefore, they proceeded to narrow down their sample by including only those critical occupations within these sectors. For this, they employed the current version of the International Standard Classification of Occupations (ISCO), which is the International Labor Organisation (ILO)'s official taxonomy for the study of work and occupations. Within the first sector, health and social work, professional occupations, associate professional occupations and skilled trade occupations were selected. This includes, inter alia, doctors, nurses, medical technicians, and ambulance, medical and community health personnel, working either in hospitals or nursing homes. In relation to the armed forces, they included all occupations within this sector. Regarding defence and the public administration sector, they selected all skilled trade occupations, which includes the police, prison guards and firefighters. The same criteria was applied in relation to the retail sector, and thus skilled trade occupations were selected, represented primarily by sales personnel and cashiers. Finally, when it came to the transport sector, operative occupations were included, namely drivers across all means of transport. The main limitation of the ESRI's sample is that it only incorporates essential workers from four broad NACE sectors and includes only certain occupations per sector. Sectors such as agriculture, forestry and fishing, manufacturing, energy, waste and water, construction,² hospitality and entertainment were excluded.

the authors selected the most relevant essential sectors included in the government guidelines, namely, human health and social work, armed forces, public administration and defence, wholesale and retail and transport

² While large areas of construction were required to close during the pandemic, some construction activity that involved adapting hospitals, care centres, hotels, etc. for the provision of critical activities was considered essential work.



Essential workers in Ireland as identified by The UCD Working in Ireland Survey 2021.

The data used in this study are derived from the UCD Working in Ireland Survey (WIIS), 2021. It is a unique data set. WIIS is the only representative survey to comprehensively examine the content of people's jobs, including both its extrinsic and intrinsic features, and its quality during the COVID-19 Pandemic, apart that is from the EWCTS. It draws from a nationally representative sample of 2,076 people of working age in paid employment across the country. This is larger than that obtained by the EWCTS (1,785) and larger than the 1,000 cases it (EWCS) has achieved in past iterations of its survey in Ireland. Both employees and self-employed workers were eligible for inclusion in the WIIS study. The survey was conducted between May and August 2021. The data are weighted for age, gender, region and economic sector to agree with the then most recent population estimates as derived from the Labour Force Survey (Q1 2021). Ipsos MRBI was commissioned by UCD to carry out the fieldwork for the survey.

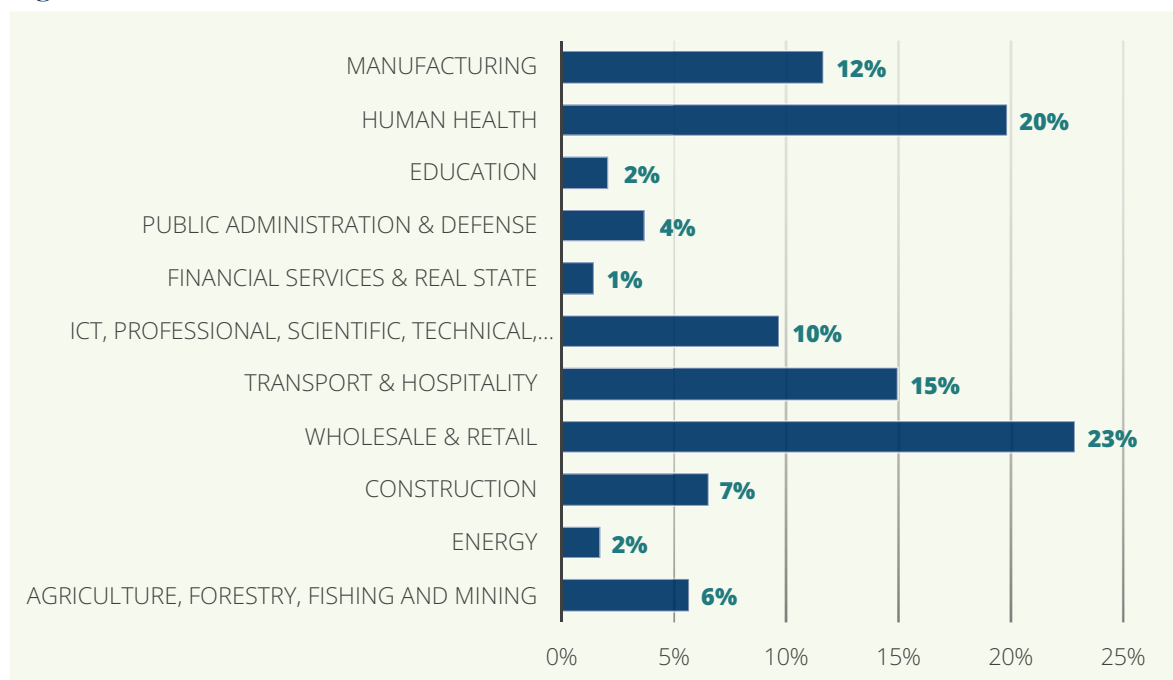
The WIIS also provides us with a most comprehensive and accurate means to date for identifying essential workers in Ireland. For the reasons detailed earlier, it did not ask participants to self-report on whether or not they were essential workers. Instead, it was thought more appropriate to identify those who were essential workers by asking all respondents for how long a time did they work at home from March 20th 2020 to May 10th 2021. Respondents could choose one of the following options: (i) the entire period; (ii) the majority of the period (9-13 months); (iii) some of the period (4-8 months); (iv) a small period (1-3 months); (v) a very small period (less than a month) and (vi) I did not work at home at all during this period. All those who had worked at home for however brief or long a period were deemed *stricto sensu* not to be essential workers. By corollary, all those who had not worked at home at all during the specified period were considered to be essential workers. From our representative sample of 2,076 workers we estimate that 953 workers, or 46% of the Irish workforce, worked in essential positions during the pandemic. This is twice the proportion estimated by the ESRI.

Of these 953 essential workers, 87% held permanent jobs, while 15% worked on temporary contracts. Three in four respondents worked full-time. The vast bulk of essential workers were employees and only 6% were self-employed. Fifty-nine percent were employed in the private sector, 27% in the public sector and 3% by a state-owned company or agency. Only 2% of the sample worked for a non-for-profit organisation. Many essential workers worked in wholesale and retail (23%), human health (20%), and transport and hospitality (15%). A second cohort of sectors was also significant, such as manufacturing (12%), professional scientific and technical staff, education, entertainment or ICT (10%) and construction (7%). Other sectors contained a residual amount of essential workers such as admin and support, public administration and defence, education, energy, and financial services and real state (see Figure 1). The number of essential workers in these sectors was very small.

In terms of essential workers' occupations, almost half of the sample is roughly equally distributed across three occupations: process, plant and machine operatives (17.4%), skilled and trade occupations (14.4%), and sales and customer service (14%). A quarter of the sample worked either in professional occupations (13%) or elementary occupations (13%). Smaller clusters are found in the associate professional occupations (8.6%), caring (8.2%), and managers, directors and senior officials (6%). Only 4.6% of our essential workers sample are found to administrative and secretarial activities.

In terms of gender, approximately 60% of the sample were male workers while 40% were female. Only 37% of essential workers reported to have financially dependent children.

Figure 1. The distribution of essential workers across economic sectors

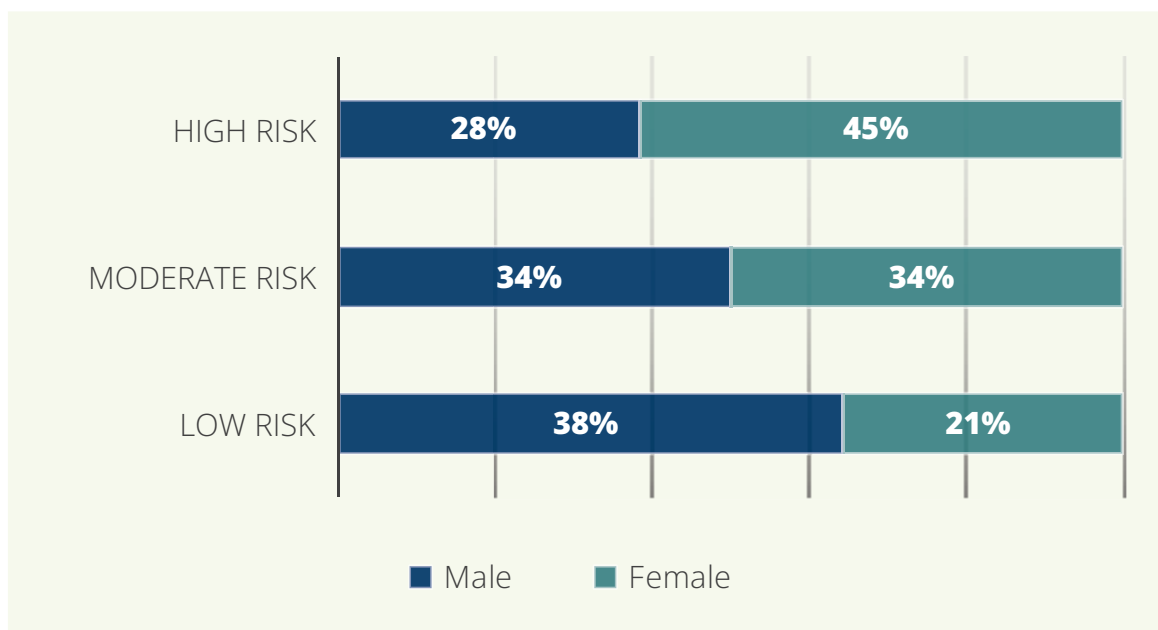


Essential workers' exposure to COVID-19 in the workplace and their well-being

We begin our analysis of the conditions of work and the job quality of essential workers by looking at the extent to which they were exposed to contracting COVID-19 while at work and whether they felt they could approach management about their worries and concerns. We continue by assessing essential workers' well-being. Then, we examine if a trade union presence in the workplace had any effect in addressing and mitigating workers' worries. Finally, we conclude by looking at workers' working hours and how hard they worked.

While all essential workers risked contracting coronavirus while at work, some were more at risk than others. We estimate that at least six in ten essential workers experienced a moderate to high risk of contracting the virus. The distribution of risk, however, was gendered. Some 45% of female essential workers experienced a high risk of exposure to contracting COVID-19, whereas only 28% of male workers were in the same position (See Figure 2).

Figure 2. Essential workers' risk exposure to contracting COVID-19 by gender.



In relation to occupations, a substantial incidence of high-risk exposure was experienced by workers in caring (54%), professional occupations (48%), sales and customer services occupations (44%) and associate professional occupations (41%). See Figure 3 for a breakdown across occupations. Essential workers holding a college degree or above were more likely to face a high risk of getting the virus than those who did not go to university.

Turning to economic sector, there were three sectors wherein workers reported that they were particularly exposed to contracting COVID, namely, public administration and defence (69%), human health (56%) and financial services and real estate (43%). It does however need to be borne in mind that the number of essential workers in financial services and real estate was small. See Table 1 for a complete breakdown of the incidence of essential workers' risk exposure to COVID-19 across age, education, salary levels, sector, and caring responsibilities. It is worth noting that essential workers reporting financially dependent children aged one to 8 years old were particularly exposed to contracting COVID-19 in their workplaces.

Figure 3. Essential workers' risk exposure to contracting COVID-19 by occupations.

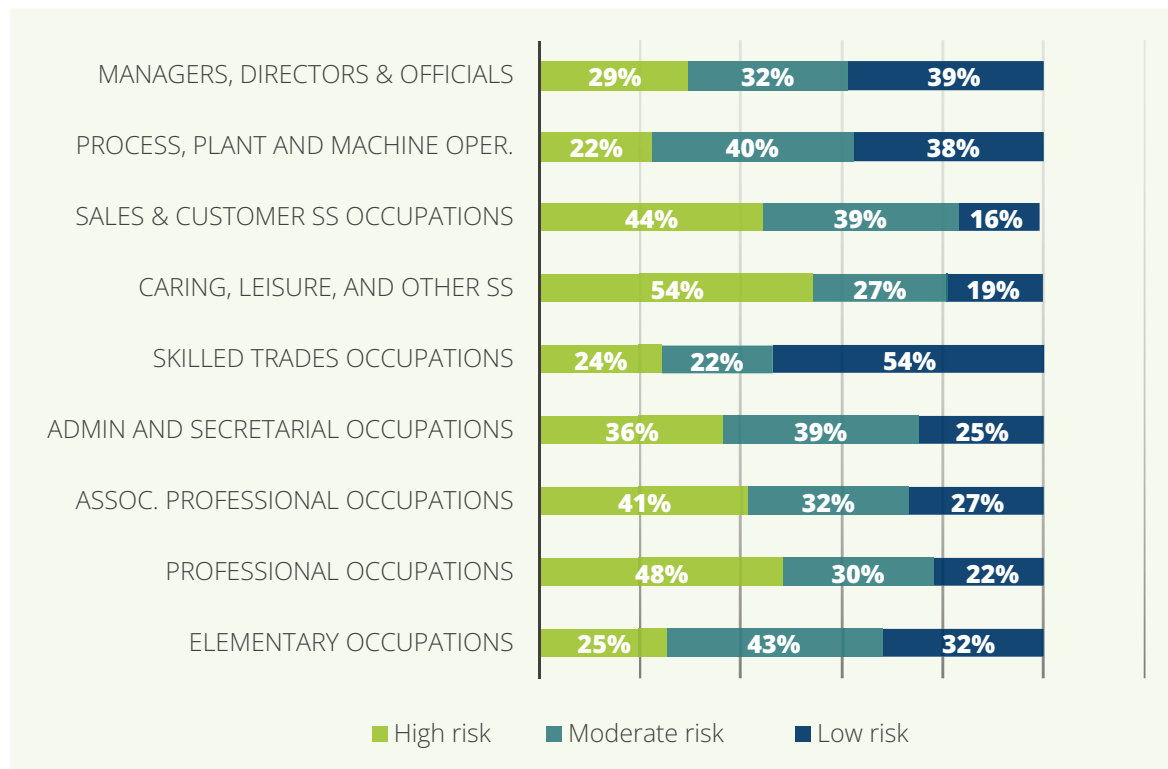


Table 1. Essential workers' risk exposure to contracting COVID-19

	Low risk	Moderate risk	High risk
Total sample	31%	34%	35%
Age			
15-24	32%	45%	23%
25-34	23%	35%	42%
35-44	36%	29%	34%
+45	32%	32%	36%
Education			
Up to short-cycle tertiary	34%	37%	29%
College degree or above	29%	31%	40%
Salary levels			
Below €20,000	26%	36%	38%
Between €20,000 and €39,999	27%	35%	39%
Between €40,000 and €64,999	43%	27%	30%
Over €65,000	43%	52%	5%
Sector			
Agriculture, forestry, fishing and mining	70%	17%	13%
Energy	35%	41%	24%
Construction	47%	33%	20%
Wholesale & retail	22%	43%	35%
Transport & hospitality	30%	39%	30%
ICT, professional, scientific, technical, admin & support, arts & other ss	43%	27%	30%
Financial services & real estate	36%	21%	43%
Public administration & defence	17%	14%	69%
Education	35%	45%	20%
Human health	12%	32%	56%
Manufacturing	46%	33%	21%
Caring responsibilities			
Financially dependent children	31%	32%	38%
Infants (1-3 years)	27%	23%	50%
Early-stage primary (4-8 years)	30%	30%	40%
Late-stage primary (9-12 years)	33%	33%	34%
Post primary (13-18 years)	34%	40%	27%
N	294	322	329

Essential workers' well-being

Previous studies on essential workers indicate they encountered higher levels of anxiety and depression, had more sleep problems as well as physical symptoms than those reported by remote workers (Bell et al. 2021). This was particularly pervasive in the human health sector where essential workers not only had to deal with a high level of risk exposure to contracting coronavirus,³ but also faced other stressors such as grieving or making decisions that involved serious ethical dilemmas. In our survey, we asked

³ In the early weeks of the pandemic, healthcare workers accounted for around 40% of all COVID-19 infections, and, although that proportion declined in later months, it oscillated from lows of about 2% to around 16%. Between week 32 and week 51 of 2020 over a third of healthcare workers acquired the virus from other staff members within a healthcare setting (Health Service Executive, 2020).

respondents to indicate the level of anxiety they experienced during the pandemic in relation to a series of issues involving themselves and their work. These questions have been widely used in international surveys of job quality. Additionally, we also asked them to report on their general health.

Even though six in ten essential workers reported they enjoyed excellent or very good general health, they experienced high levels of anxiety in their work. This was especially the case for women. A substantial proportion of essential workers were moderately anxious over losing their jobs (35%), over securing new employment if they lost their current job (42%), and over changes in their work that may lead to a reduction in their pay (40%). (See Table 2 below). Women felt considerably more anxious than men, as did essential workers holding a college degree. Essential workers in certain sectors also reported that they experienced moderate levels of anxiety, such as those in the human health, public administration and defence, education, financial services, and the ICT, professional, scientific, technical, admin and support, arts and other services sector.

Table 2. Essential workers' well-being

	Anxiety over losing one's job	Anxiety over one's skills and abilities	Anxiety over unexpected pay cuts	Anxiety over unexpected working time cuts	Anxiety over securing a new job	General Health (excellent/very good)
Total sample	35%	31%	40%	30%	42%	60%
Gender						
Male	31%	28%	39%	26%	37%	54.7%
Female	41%	34%	41%	36%	49%	66.7%
Age						
15-24	40%	33%	43%	36%	51%	71%
25-34	35%	27%	37%	31%	44%	67%
35-44	40%	30%	38%	27%	41%	56%
+45	31%	32%	41%	29%	38%	54%
Education						
Up to short-cycle tertiary	33%	29%	40%	28%	39%	55%
College degree or above	37%	32%	40%	32%	44%	64%
Salary levels						
Below €20,000	38%	37%	38%	39%	50%	60%
Between €20,000 and €39,999	31%	25%	38%	24%	37%	60%
Between €40,000 and €64,999	30%	35%	35%	20%	33%	58%
Over €65,000	29%	24%	52%	36%	24%	67%

Occupations						
Elementary occupations	41%	37%	41%	37%	48%	58%
Professional occupations	29%	34%	41%	34%	40%	66%
Assoc. professional occupations	32%	30%	42%	30%	38%	65%
Admin and secretarial occupations	30%	39%	28%	18%	59%	73%
Skilled trades occupations	26%	18%	41%	29%	30%	55%
Caring, leisure, and other ss	40%	38%	44%	44%	47%	61%
Sales & customer ss occupations	46%	34%	43%	36%	54%	67%
Process, plant and machine oper.	35%	24%	37%	20%	38%	42%
Managers, directors & officials	38%	20%	37%	17%	42%	74%
Sector						
Agriculture, forestry, fishing and mining	25%	33%	46%	13%	21%	64%
Energy	24%	29%	63%	31%	29%	47%
Construction	29%	15%	31%	15%	25%	50%
Wholesale & retail	39%	30%	38%	28%	46%	65%
Transport & hospitality	35%	32%	42%	36%	38%	50%
ICT, professional, scientific, technical, admin & support, arts & other ss	41%	29%	29%	29%	49%	57%
Financial services & real estate	36%	57%	31%	36%	50%	78.6%
Public administration & defence	19%	40%	46%	39%	40%	60%
Education	44%	35%	26%	30%	50%	53%
Human health	34%	34%	42%	37%	43%	68%
Manufacturing	37%	26%	39%	28%	50%	53%
Caring responsibilities						
Financially dependent children	34%	31%	42%	28%	40%	62%
Infants (1-3 years)	30%	25%	31%	29%	40%	63%
Early-stage primary (4-8 years)	35%	30%	45%	26%	35%	67%
Late-stage primary (9-12 years)	38%	29%	45%	21%	40%	56%
Post primary (13-18 years)	31%	37%	44%	33%	45%	62%
N	947	945	940	945	943	953

We also examined whether there was any relationship between workers' perception of their contracting coronavirus in the workplace and their anxiety levels. The results from our statistical tests (Spearman correlations) suggests that there was: essential workers exposed to higher levels of risk of contracting coronavirus experienced higher levels of anxiety. This was particularly the case in respect of concerns over changes and cuts on their working time. There was no correlation, however, between essential workers risk of exposure to COVID-19 and their general health. See Appendix 2 for a complete breakdown of these correlations.

Finally, we examined the extent to which essential workers felt connected to their work after work hours and their anxiety levels. These correlations were low and reported no statistical significance.

Changes to essential workers' terms and conditions of employment during COVID-19

WIIIS also examined whether essential workers experienced particular changes to their work and employment during the pandemic. One notable finding is that while a substantial proportion (32%) were required to self-isolate having contracted the virus, not all were paid sick pay by their employer while off work⁴. Around two-thirds were but the other third received no such payment or compensation other than that provided by the State. The proportions receiving sick pay from their employer were highest in the public administration and defence sector (43%), the human health sector (33%) and the manufacturing sector (31%) and among those in professional occupations, associate professional occupations and managers and senior directors.

The essential workers who were required to isolate without sick pay were mainly employed in low paid positions in elementary and caring occupations.

One in four essential workers was able to alter their working hours in order to take care of domestic responsibilities. This percentage was particularly high for essential workers parents of infants (52%) or early primary school children (42%). However, there was a small proportion of essential workers that were unable to work sometimes due to childcare reasons or domestic responsibilities. This was more pronounced for essential workers employed in the public administration and defence sector (19%).

Only one in ten essential workers was paid hazard pay or received risk premium payments. The incidence of risk premium payments was slightly higher in manufacturing (15%), wholesale and retail (14%) and the financial services (14%). See Table 3 for a full breakdown.

One in four essential workers was able to alter their working hours in order to take care of domestic responsibilities

⁴ An employer was not legally obliged to pay a worker sick pay during the pandemic. If an essential worker was diagnosed with COVID-19 and was required to self-isolate or restrict their movement, they could apply to the Department of Social Protection for a COVID-19 Enhanced Benefit payment of €350 per week which may have been increased for a qualified adult and qualified children. It was paid for a maximum of 2 weeks where a worker was self-isolating due to being a probable source of infection, and for a maximum of 10 weeks if they had been diagnosed with COVID-19. In circumstances where a worker in receipt of the enhanced illness benefit payment faced particular financial difficulties and where their employer did not pay sick pay beyond the level paid by the State, they could apply (to the State) for additional emergency income support, in the form of Supplementary Welfare Allowance (based on a means test) or an urgent or exceptional needs payment.

Table 3. Essential workers' additional stressors

	Required to self-isolate due to COVID-19 (paid)	Required to self-isolate due to COVID-19 (unpaid)	Unable to work sometimes due to childcare reasons/ domestic responsibilities	Able to alter working hours to take care of domestic responsibilities	I was paid hazard pay or given risk premium payments
Total sample	22%	10%	7%	24%	9%
Gender					
Male	21%	8%	7%	23%	8%
Female	22%	11%	8%	24%	10%
Age					
15-24	17%	11%	5%	25%	10%
25-34	31%	12%	6%	23%	13%
35-44	23%	8%	12%	37%	13%
+45	19%	9%	6%	16%	5%
Education					
Up to short-cycle tertiary	19%	9%	6%	24%	8%
College degree or above	24%	11%	8%	24%	10%
Salary levels					
Below €20,000	17%	13%	10%	27%	12%
Between €20,000 and €39,999	24%	9%	6%	24%	8%
Between €40,000 and €64,999	29%	2%	3%	23%	8%
Over €65,000	18%	5%	-	29%	10%
Occupations					
Elementary occupations	15%	16%	11%	19%	8%
Professional occupations	37%	5%	2%	21%	6%
Assoc. professional occupations	33%	4%	9%	21%	10%
Admin and secretarial occupations	19%	2%	5%	28%	9%
Skilled trades occupations	14%	11%	8%	26%	4%
Caring, leisure, and other ss	20%	14%	14%	32%	10%
Sales & customer ss occupations	22%	12%	6%	28%	15%
Process, plant and machine oper.	13%	10%	5%	22%	11%
Managers, directors & officials	31%	7%	9%	22%	9%

Sector					
Agriculture, forestry, fishing and mining	11%	7%	4%	19%	4%
Energy	13%	6%	-	18%	6%
Construction	11%	8%	7%	37%	3%
Wholesale & retail	14%	11%	7%	28%	14%
Transport & hospitality	19%	11%	10%	21%	11%
ICT, professional, scientific, technical, admin & support, arts & other ss	17%	13%	7%	23%	7%
Financial services & real estate	23%	8%	-	21%	14%
Public administration & defence	43%	8%	19%	17%	-
Education	15%	-	5%	21%	10%
Human health	33%	8%	7%	22%	5%
Manufacturing	31%	10%	5%	21%	15%
Caring responsibilities					
Financially dependent children	22%	8%	13%	35%	7%
Infants (1-3 years)	20%	12%	22%	52%	12%
Early-stage primary (4-8 years)	29%	10%	9%	42%	8%
Late-stage primary (9-12 years)	18%	4%	17%	34%	9%
Post primary (13-18 years)	20%	5%	6%	16%	6%
N	953	953	953	953	

Essential workers' access to voice and management's response

We reported above on the extent to which essential workers perceived they were exposed to contracting COVID-19 in the workplace. Here, we turn to assessing whether they voiced their concerns to management and with what outcomes. Almost seven in ten essential workers approached management to share their worries. Half of these essential workers reported their concerns were fully addressed, a third saw their concerns were partially addressed and a little over 10% said their concerns were not addressed at all.

There was little variation across different worker cohorts reporting their concerns about the virus to management. Few workers on high incomes voiced their worries, although those who did had their concerns fully addressed. In other sectors too respondents reported that management fully addressed their concerns, most notably in the agriculture, forestry, fishing and mining sector (100%) and the construction sector (78%).

Roughly 14% of essential workers reported that they did not receive any support from their employer upon reporting their fears of contracting COVID-19. The proportion was substantially higher for essential workers in elementary occupations (25%) and skilled trade occupations as well as for essential workers in public administration and defence (33%) and the financial services (25%) sectors (See Table 4).

Table 4. Essential workers' access to voice during COVID-19 and management response

	Voicing COVID-19 concerns	COVID-19 concerns fully addressed	COVID-19 concerns partially addressed	COVID-19 concerns not addressed at all
Total sample	67%	51%	35%	14%
Gender				
Male	66%	53%	33%	14%
Female	68%	49%	36%	15%
Age				
15-24	56%	45%	36%	19%
25-34	78%	45%	40%	15%
35-44	65%	52%	35%	13%
+45	65%	57%	30%	13%
Education				
Up to short-cycle tertiary	67%	54%	31%	15%
College degree or above	67%	49%	37%	14%
Salary levels				
Below €20,000	65%	49%	36%	15%
Between €20,000 and €39,999	72%	51%	35%	14%
Between €40,000 and €64,999	58%	45%	35%	20%
Over €65,000	33%	100%	-	-
Occupations				
Elementary occupations	49%	46%	29%	25%
Professional occupations	63%	49%	33%	18%
Assoc. professional occupations	72%	32%	55%	13%
Admin and secretarial occupations	67%	72%	21%	7%
Skilled trades occupations	63%	50%	27%	23%
Caring, leisure, and other ss	68%	61%	33%	6%
Sales & customer ss occupations	78%	45%	43%	12%
Process, plant and machine oper.	72%	59%	26%	15%
Managers, directors & officials	65%	80%	13%	7%
Sector				
Agriculture, forestry, fishing and mining	83%	100%	-	-
Energy	75%	-	67%	33%
Construction	60%	78%	11%	11%
Wholesale & retail	68%	46%	40%	14%
Transport & hospitality	70%	55%	33%	12%
ICT, professional, scientific, technical, admin & support, arts & other ss	69%	56%	36%	8%
Financial services & real estate	67%	25%	50%	25%
Public administration & defence	78%	17%	59%	33%
Education	25%	50%	50%	-
Human health	64%	57%	31%	12%
Manufacturing	71%	52%	29%	19%
Caring responsibilities				
Financially dependent children	68%	55%	36%	9%
Infants (1-3 years)	80%	50%	40%	10%
Early-stage primary (4-8 years)	67%	64%	25%	11%
Late-stage primary (9-12 years)	61%	58%	37%	5%
Post primary (13-18 years)	64%	57%	33%	10%
N	409	140	95	39

We also examined essential workers' perceptions of and orientations to unions during the pandemic as well as the extent to which they received support from their union representatives for matters in respect of COVID-19. Four in ten essential workers are employed in a unionised organisation. This figure increases considerably in some sectors such as public administration and defence where nine in ten essential workers are represented by a trade union in their workplaces. Approximately, 60% of essential workers in human health also have access to union representation. Finally, over half of essential workers in the energy sector are employed in a unionised organisation.

Essential workers' perceptions of trade union influence over employment matters are generally positive, particularly among female workers. Younger cohorts of essential workers also feel positive about union influence and are well disposed towards keeping the union in the workplace. Essential workers earning low- and middle-income levels are much more likely to vote to keep the union in the organisation compared to those classified as high-income earners.

Table 5. Essential workers' perceptions of trade union influence

	Presence of a trade union	TU influence over T&Cs of employment	TU influence over work organisation	TU influence over flexible working conditions	Favourable to keep the union	IR context: Trust	IR context: Fairness
Total sample	41%	64%	45%	56%	79%	68%	77%
Gender							
Male	42%	62%	47%	55%	77%	70%	81%
Female	40%	67%	43%	58%	83%	64%	73%
Age							
15-24	36%	68%	56%	66%	87%	72%	76%
25-34	37%	58%	47%	56%	79%	70%	74%
35-44	38%	62%	40%	53%	68%	67%	79%
+45	47%	66%	45%	55%	83%	64%	78%
Education							
Up to short-cycle tertiary	36%	61%	50%	58%	79%	70%	79%
College degree or above	46%	66%	42%	55%	80%	65%	75%
Salary levels							
Below €20,000	31%	66%	49%	59%	86%	68%	72%
Between €20,000 and €39,999	42%	60%	44%	53%	81%	66%	78%
Between €40,000 and €64,999	68%	65%	38%	58%	76%	59%	76%
Over €65,000	41%	67%	50%	57%	57%	71%	82%

Occupations							
Elementary occupations	28%	64%	33%	41%	88%	68%	70%
Professional occupations	65%	58%	39%	55%	81%	63%	77%
Assoc. professional occupations	54%	66%	53%	58%	85%	54%	77%
Admin and secretarial occupations	48%	58%	33%	58%	71%	65%	84%
Skilled trades occupations	34%	56%	35%	47%	71%	75%	81%
Caring, leisure, and other ss	40%	79%	68%	75%	93%	63%	69%
Sales & customer ss occupations	29%	59%	54%	51%	77%	67%	73%
Process, plant and machine oper.	39%	73%	52%	60%	75%	72%	84%
Managers, directors & officials	42%	67%	33%	67%	65%	75%	83%
Sector							
Agriculture, forestry, fishing and mining	35%	33%	33%	33%	89%	85%	72%
Energy	53%	86%	50%	50%	79%	67%	80%
Construction	43%	72%	45%	55%	65%	81%	93%
Wholesale & retail	22%	65%	54%	56%	72%	76%	80%
Transport & hospitality	29%	64%	50%	50%	74%	64%	75%
ICT, professional, scientific, technical, admin & support, arts & other ss	35%	82%	61%	67%	83%	59%	73%
Financial services & real estate	62%	63%	29%	57%	88%	75%	77%
Public administration & defence	89%	55%	41%	48%	84%	46%	83%
Education	47%	50%	43%	57%	78%	83%	95%
Human health	61%	64%	41%	58%	85%	61%	70%
Manufacturing	40%	63%	43%	64%	77%	67%	76%
Caring responsibilities							
Financially dependent children	41%	64%	39%	54%	74%	67%	77%
Infants (1-3 years)	36%	55%	30%	45%	71%	68%	82%
Early-stage primary (4-8 years)	42%	64%	41%	50%	73%	74%	83%
Late-stage primary (9-12 years)	42%	78%	37%	71%	82%	67%	73%
Post primary (13-18 years)	42%	66%	39%	52%	74%	62%	74%
N	867	342	342	342	358	868	868

We also examined whether the level of risk exposure to COVID-19 was mitigated by the presence of a trade union. We found a modest but significant correlation between low levels of perceived risk in contracting Coronavirus and a union presence. A reported high level of union influence over working terms and conditions and over flexible working practices was also positively correlated in turn with management addressing workers' worries more effectively. Additionally, a favourable management-employee relations context whereby employees reported that they trust management and believe that management treats them fairly is also positively correlated with lower levels of perceived risk exposure as it was with a greater likelihood of workers voicing their concerns and worries about COVID to management. See Appendix 2 for a full account of these correlations.

Furthermore, training and development also emerged as a mitigating factor. Here, we looked at the provision of on- and off-the-job training as well as essential workers' perception of training effectiveness. It is important to note that we did not ask participants about the provision of training specifically tailored to COVID-19 requirements or needs, but about training and development in general. Nonetheless, we find a modest but significant correlation between the extent of training and development effectiveness and levels of anxiety in essential workers: the greater the effectiveness of training, the lower the anxieties levels reported by essential workers.



Essential workers' working hours and work effort

We also assess the levels of work effort expended by essential workers during the pandemic and the consequences for their health and well-being. There is a vast literature on work effort, the great bulk of which has come to accept its multi-faceted nature and that its measurement requires the use of a variety of indicators that include both objective and perceptual data derived from employee responses. We use a range of such measures that have been proven in previous international research to be associated empirically with employee well-being.

We distinguish between two dimensions of work effort, namely, 'extensive work effort' and 'intensive work effort' (Green, 2001). First, *extensive work effort* relates to employees' working hours. We asked our respondents how many hours did they normally work each week, including overtime. Second, *intensive effort* refers to the actual intensity with which the work is carried out, encapsulating physical, mental and emotional demands on employees. We asked our respondents how often (i) they felt they had to work 'at very high speeds'; (ii) whether they had to work 'to tight deadlines'; (iii) whether they found their job stressful; and (iv) the extent they worried about work problems after work.

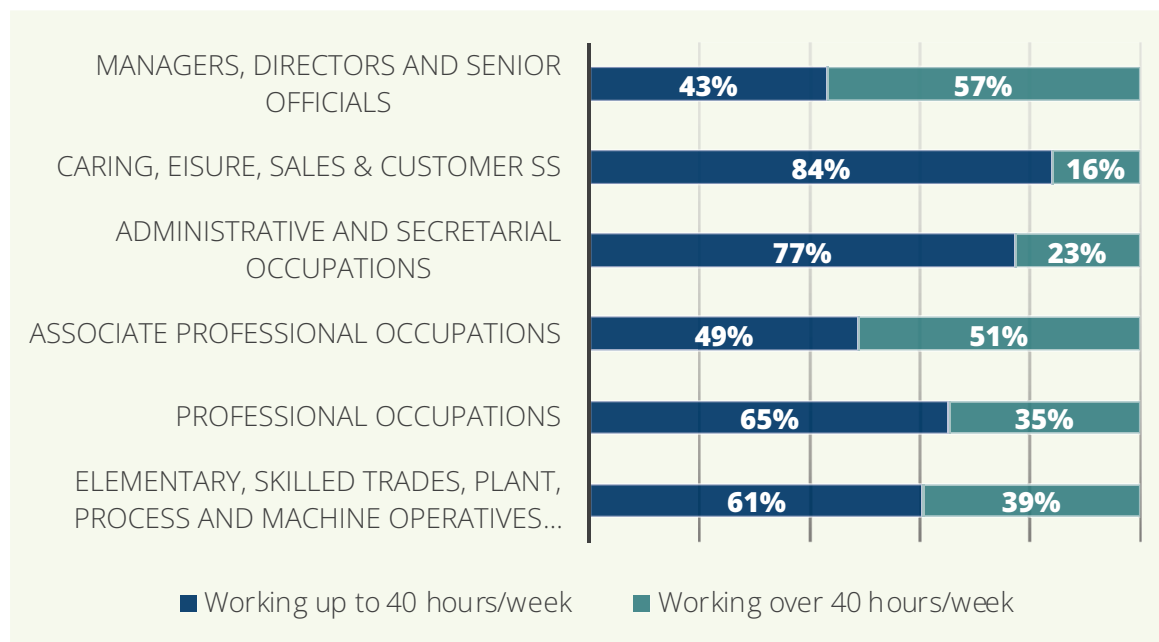
Extensive work effort. We were particularly interested in knowing what proportion of essential workers worked long hours; that is, in excess of the standard 40-hour working week. We found 35% worked more than 40 hours a week. Of these 20% worked between 41 and 48 hours, and 15% worked over 48+ hours a week. Long working hours was primarily a feature of male employees: 83% of those working long hours (40 hours+) were male, whereas only 17% were female. In terms of age, almost 42% of those who worked long hours were over 45 years of age. High extensive work intensification was also linked to particular income levels; for instance, 44% of those earning between €20,000 and €39,999 worked in excess of 40 hours a week and it was even higher at 64% for those earning between €40,000 and €64,999. Table 6 reports the distribution of essential workers who work long hours by gender, age, salary levels, occupation, sector, caring responsibilities, and geographical location.

Long working hours was also a feature of particular occupational groups with almost 60% of managers, directors and senior officials working over 40 hours a week. One in two associate professionals also engaged in overtime working. Approximately, 40% of elementary, skilled trades, plant, process or machine operatives occupations also reported that they worked over 40 hours a week. Finally, over a third of professional occupations worked long hours.

Long working hours was primarily a feature of male employees: 83% of those working long hours (40 hours+) were male, whereas only 17% were female

Table 6. Extensive work effort levels among essential workers

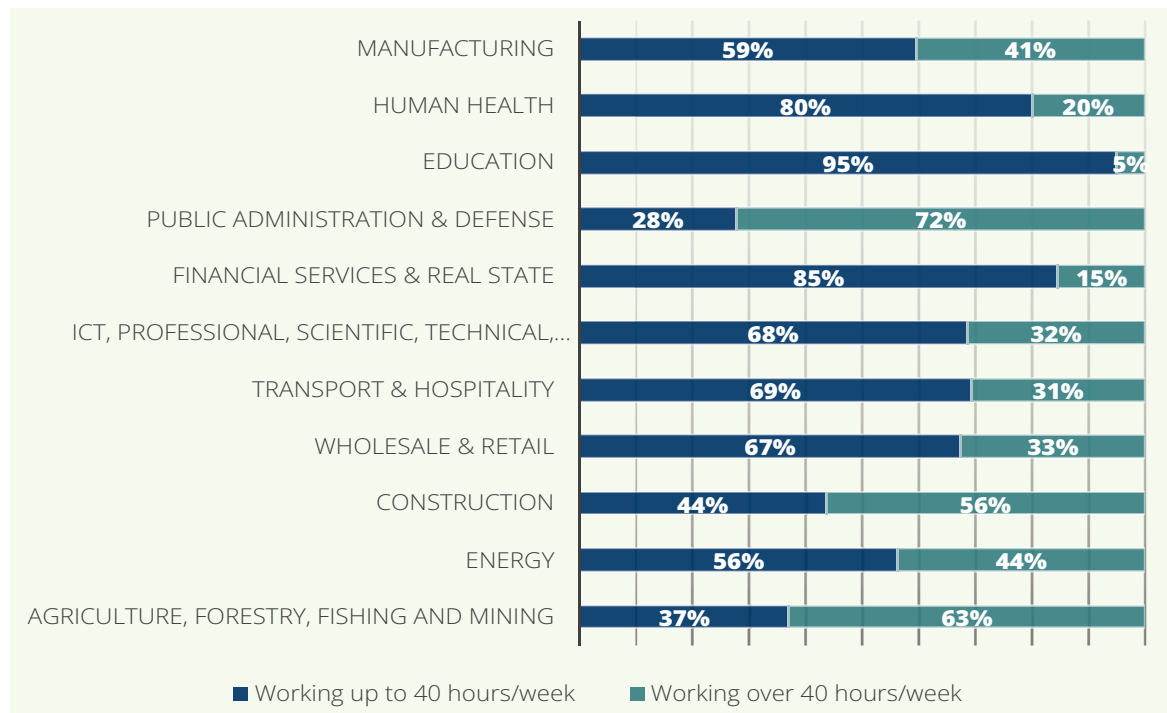
	Extensive work effort (40+ hours/week)
Total sample	35%
Gender	
Male	49%
Female	15%
Age	
15-24	16%
25-34	40%
35-44	43%
+45	35%
Education	
Up to short-cycle tertiary	36%
College degree or above	34%
Salary levels	
Below €20,000	13%
Between €20,000 and €39,999	44%
Between €40,000 and €64,999	62%
Over €65,000	27%
Occupations	
Elementary occupations	19%
Professional occupations	35%
Assoc. professional occupations	51%
Admin and secretarial occupations	23%
Skilled trades occupations	37%
Caring, leisure, and other ss	18%
Sales & customer ss occupations	15%
Process, plant and machine oper.	56%
Managers, directors & officials	57%
Sector	
Agriculture, forestry, fishing and mining	63%
Energy	44%
Construction	56%
Wholesale & retail	33%
Transport & hospitality	31%
ICT, professional, scientific, technical, admin & support, arts & other ss	32%
Financial services & real estate	15%
Public administration & defense	67%
Education	5%
Human health	20%
Manufacturing	41%
Caring responsibilities	
Financially dependent children	41%
Infants (1-3 years)	40%
Early-stage primary (4-8 years)	43%
Late-stage primary (9-12 years)	39%
Post primary (13-18 years)	37%
N	954

Figure 4. Essential workers' extensive work effort within occupations

We now turn to analyse the incidence of long working hours across sectors. Seven in ten essential workers in the public administration and defence sector reported that they worked over 40 hours a week. Over six in ten workers in the agriculture, forestry, fishing and mining also did long hours. This is followed by three other sectors, namely, construction (56%), energy (44%) and manufacturing (41%). One third of those essential workers employed in the wholesale and retail; ICT, professional, scientific, technical, admin support, arts and other services; and transport and hospitality reported working long hours. Finally, there are some sectors where the proportion of essential workers who worked over 40 hours a week was relatively low, namely, human health (20%); financial services and real estate (15%) and education (5%).



Figure 5. Extensive work effort within sectors



Intensive work effort. In an earlier analysis of our survey results we found that the intensity with which work was performed during the pandemic grew considerably for those working remotely (Geary and Belizon, 2022). We enquire here whether essential workers encountered similar work pressures. In the main, we found that they did. Over a third reported that they had to work at very high speeds and to tight deadlines all or most of the time. Having to work at very high speeds was particularly apparent among female essential workers and young workers aged between 15 and 24 years of age as well as those aged between 35 and 44 years.

Essential workers with a college degree or above also tended to report high intensive work effort across all dimensions, namely, working at very high speeds, to tight deadlines, finding their job stressful and worrying about work problems after work. This was also the case for those reporting middle level incomes (between €40,000 and €64,999), as well as among those in professional occupations and in managerial positions.

There were certain sectors where essential workers experienced a particularly high level of intensive work effort across all dimensions. These were, as expected, human health and manufacturing. Additionally, one in two essential workers in manufacturing and construction reported very high intensive work effort when it came to working to tight deadlines.

Almost half of essential workers with financially dependent very young children (infants between 1 and 3 years of age) felt the pressure of working at very high speeds and working to tight deadlines.

Finally, essential workers living in urban areas were considerably more exposed to higher levels of intensive work effort than essential workers located in a commuting belt or indeed in rural Ireland.

Table 7. Intensive work effort levels in essential workers

	Work at very high speeds	Work to tight deadlines	Finding one's job stressful	Worrying about work problems afterwork
Total sample	36%	38%	17%	12%
Gender				
Male	31%	38%	14%	13%
Female	44%	38%	20%	10%
Age				
15-24	48%	32%	15%	5%
25-34	38%	40%	23%	16%
35-44	44%	42%	11%	15%
+45	26%	36%	15%	11%
Education				
Up to short-cycle tertiary	33%	35%	13%	9%
College degree or above	39%	41%	19%	14%
Salary levels				
Below €20,000	39%	31%	13%	10%
Between €20,000 and €39,999	33%	40%	17%	13%
Between €40,000 and €64,999	45%	49%	21%	22%
Over €65,000	24%	36%	5%	-
Occupations				
Elementary occupations	36%	28%	20%	8%
Professional occupations	48%	46%	27%	17%
Assoc. professional occupations	34%	38%	19%	10%
Admin and secretarial occupations	34%	45%	7%	5%
Skilled trades occupations	34%	43%	14%	16%
Caring, leisure, and other ss	35%	33%	21%	8%
Sales & customer ss occupations	38%	28%	10%	9%
Process, plant and machine oper.	27%	38%	9%	8%
Managers, directors & officials	46%	49%	27%	26%
Sector				
Agriculture, forestry, fishing and mining	24%	18%	9%	20%
Energy	33%	25%	18%	13%
Construction	31%	47%	16%	19%
Wholesale & retail	41%	35%	11%	8%
Transport & hospitality	38%	37%	15%	10%
ICT, professional, scientific, technical, admin & support, arts & other ss	28%	40%	11%	12%
Financial services & real estate	31%	46%	29%	25%
Public administration & defence	31%	29%	23%	14%
Education	30%	26%	5%	10%
Human health	41%	39%	29%	14%
Manufacturing	36%	51%	14%	8%
Caring responsibilities				
Financially dependent children	33%	41%	15%	13%
Infants (1-3 years)	42%	51%	14%	16%
Early-stage primary (4-8 years)	36%	36%	15%	13%
Late-stage primary (9-12 years)	27%	37%	10%	17%
Post primary (13-18 years)	26%	33%	16%	8%
N	954	954	954	954

We also enquired whether essential workers felt they had to remain connected to their work after they completed their standard working hours. A little over one in five reported that they “always” felt obliged to remain connected to their work. This was particularly the case among men, workers in senior positions as well as those whose earnings exceeded €40,000 a year and among those employed in the agriculture, forestry, fishing and mining (43%), the energy (38%), and public administration and defence sectors (29%). When we turn to those who reported that they “sometimes” felt obliged to remain connected to their work, the proportion at 29% was a little larger. Interestingly, though, the gender picture is reversed here with considerably more women (33%) in this position than men (26%).



**A little over one in
five reported that they
“always” felt obliged to
remain connected to
their work**

Table 8. The extent to which essential workers are feeling always connected after work hours

	Always	Sometimes	Rarely	Never
Total sample	22%	29%	19%	30%
Gender				
Male	27%	26%	18%	29%
Female	15%	33%	20%	32%
Age				
15-24	12%	27%	26%	35%
25-34	25%	35%	15%	25%
35-44	26%	29%	15%	30%
+45	22%	27%	20%	31%
Education				
Up to short-cycle tertiary	21%	26%	18%	35%
College degree or above	24%	32%	19%	25%
Salary levels				
Below €20,000	16%	28%	25%	31%
Between €20,000 and €39,999	23%	30%	18%	29%
Between €40,000 and €64,999	29%	35%	15%	21%
Over €65,000	38%	29%	24%	9%
Occupations				
Elementary occupations	18%	23%	20%	39%
Professional occupations	23%	43%	18%	17%
Assoc. professional occupations	20%	43%	14%	23%
Admin and secretarial occupations	17%	23%	23%	37%
Skilled trades occupations	29%	25%	18%	28%
Caring, leisure, and other ss	24%	22%	24%	30%
Sales & customer ss occupations	7%	33%	27%	33%
Process, plant and machine oper.	25%	19%	14%	42%
Managers, directors & officials	43%	37%	7%	13%
Sector				
Agriculture, forestry, fishing and mining	43%	28%	11%	18%
Energy	38%	37%	-	25%
Construction	26%	12%	18%	44%
Wholesale & retail	18%	26%	24%	32%
Transport & hospitality	24%	26%	15%	35%
ICT, professional, scientific, technical, admin & support, arts & other ss	25%	30%	18%	27%
Financial services & real estate	8%	42%	8%	42%
Public administration & defence	29%	43%	11%	17%
Education	21%	26%	21%	32%
Human health	20%	37%	21%	22%
Manufacturing	15%	25%	19%	41%
Caring responsibilities				
Financially dependent children	25%	26%	19%	30%
Infants (1-3 years)	23%	27%	16%	34%
Early-stage primary (4-8 years)	24%	26%	19%	31%
Late-stage primary (9-12 years)	27%	25%	18%	30%
Post primary (13-18 years)	27%	23%	26%	24%
N	211	275	178	288

Effort levels and workers' well-being. Our findings to date indicate that substantial numbers of essential workers worked long hours and with considerable intensity during the pandemic. Further analysis also revealed that there was a relationship, albeit a variable one, between their experience of effort intensification and the effects on their health and well-being. Again, we distinguish between the effects of long working hours (extensive effort) and high effort levels (intensive effort). With respect to the former we did not find substantial evidence that long working hours was necessarily associated with an impairment of workers' well-being in respect of their anxiety levels. It is not that there was no evidence pointing in this direction but rather that the links between the two were modest.

However, the picture is very different with respect to intensive effort. We found there is a significant correlation between the presence of intensive work effort levels and essential workers' mental health: the greater the level of intensive work effort expended by essential workers, the greater their levels of anxiety.

While these are the report's dominant findings, in some cases, the relationship between whether essential workers encountered effort intensification and an impairment in their well-being is weaker than in others, or these effects were not encountered across the entire essential workforce. This raises an important possibility: that is, that these adverse consequences of engaging in essential work during the pandemic might have been moderated by the presence of certain social supports. To see whether this was the case we looked at the influence of the quality of line management, the employment relations climate within an organisation and whether a union was present and the level of influence it may have exerted over essential workers' terms and conditions of employment. We found modest but nonetheless significant correlations to affirm that both the presence of supportive line management and a favourable employment relations environment in the workplace was associated with reduced intensive work effort levels. Essential workers employed in supportive workplaces, where they trusted management and believed they were treated fairly were also less likely to experience high levels of anxiety. So, too, the presence of a trade union was associated with less extensive work effort levels, and where unions were reported to have had a considerable level of influence over the organisation of work, essential workers experienced yet lower levels of anxiety. These findings mirror those reported above where the same social supports – a union presence, good management-employee relations, and supportive line management – were also associated with essential workers being less likely to feel exposed to contracting COVID-19 and, also, being more likely to voice their concerns and worries about COVID to management.

In conclusion, our findings indicate that although essential workers' work intensification levels were somewhat lower than those experienced by remote workers (Geary and Belizón, 2022), their well-being was impaired much more substantially due to their risk of exposure to contracting COVID-19 in the workplace. Our data supports the fact that essential workers' mental health's stressors were different from those affecting remote workers. For remote workers, the inability to switch off and feeling under obligation to be always connected to work and the emotional demands brought about by juggling home and work needs increased their work intensification. For essential workers, however, the main stressors were working at high speeds and working towards tight deadlines.

Conclusions: some implications for policy and practice

To conclude, we take stock of our research findings in order to offer a discussion of the implications for policymakers and practitioners. First, we reiterate that The UCD Working in Ireland Survey 2021 (WIIS) is the only representative study to examine the world of work in Ireland during the COVID-19 pandemic. This detailed report examines the level of risk faced by essential workers in contracting Coronavirus, their work experiences, health and well-being, and whether their concerns were addressed by their organisations.

Much of the public debate on work and employment since the pandemic has focused on remote and hybrid work. This



can be most clearly seen in the content of the Work Life Balance and Miscellaneous Provisions Bill 2022, which will be enforced soon. However, public debate has generally neglected to reflect upon and learn from the experiences of essential workers during the pandemic. We regard this to be a shameful omission and is a disservice to those essential workers we rightfully applauded and extolled for their work and bravery. We consider it to be an imperative to learn from essential workers' experience of work so that we can better support them in future emergencies. We turn now to those possible managerial and policy responses that may alleviate the negative and palpable effects a future emergency crisis would likely again have on essential workers.

Considerations for managers and organisations

A large proportion of essential workers reported in our study that they were at a moderate to a high risk of contracting COVID-19 while at work. Before time moves on, we need to discuss why this risk exposure may have been so overwhelmingly stark for essential workers, and how organisations can plan to mitigate against it in future emergencies.

One plausible reason behind the high-risk exposure is the complex, insufficient or untimely provision of Personal Protective Equipment (PPE) and the slow and uncertain delineation of COVID-19 protocols, both of which - if provided

more quickly - would have aided essential workers to work in a safer environment. In Ireland, there are two pieces of legislation enforcing the provision of PPE. Firstly, the Safety, Health and Welfare at Work (General Application) Regulations 2007 establishes a specific framework for organisations to ensure a certain degree of health and safety standards in the workplace. Secondly, the EU's (Personal Protective Equipment) Regulations 2018, which also documents the quality requirements under which PPE can be traded, including the obligations of manufacturers, importers and distributors. Additionally, the Safety, Health and Welfare at Work (General Application) Regulations 2007 also regulates the use, maintenance and training related to PPE. The use of PPE is, indeed, complex. Not only do organisations need to source legitimate PPE but they also need to be knowledgeable of the intricacies of its use, which in some sectors involves demanding protocols and training. These complexities should not just be left in the hands of employers, but oftentimes their design and implementation requires of workers' and union representatives' involvement.

While one may reasonably claim that organisations did all they could in the circumstances, the key question now is whether their management have translated their more-or-less successful COVID-19 responses into sustainable policies and practices that will allow them to face a future emergency more effectively. Our findings are very clear. The notorious levels of risk experienced by essential workers in Ireland were correlated with high levels of anxiety, while the presence of a union in the workplace and a favourable management-employee

we suggest organisations work together with trade unions in order to identify the causes of moderate to high-risk exposure and design a sustainable emergency response

relations climate paved the way to a greater mitigation of the harsher effects of the pandemic in the workplace. This reflection is especially relevant for the two high-risk prone sectors of the economy, namely, public administration and defence and human health. We suggest organisations work together with trade unions in order to identify the causes of moderate to high-risk exposure and above all, to jointly design a sustainable emergency response in order to buffer the effects of a future shock.

We now know that 70% of essential workers in Ireland voiced their concerns to management. However, one in two of these essential workers did not see their worries addressed due to the ineffectiveness of management in handling them. Even for those who did find management effective, the results were not uniform. Our findings indicate that management was particularly effective at delivering COVID-19 mitigating solutions for high income essential workers. The question remains, however, why were 50% of essential workers' concerns not fully addressed. Was it due to a lack of voice channels, whether direct or indirect? Or was it due to an unwillingness or inability to truly solve these issues?

As noted earlier, our findings support that when a trade union was present in

the workplace, the level of risk exposure to COVID-19 was significantly lower. We also found evidence to argue that trade union influence over working terms and conditions and flexible working practices is strongly associated with a more effective provision of mitigating strategies by management. This suggests that the role of trade unions in essential workers' workplaces was crucial in reducing risk of exposure and ensuring a successful management response to COVID-19. In the main, the presence of trade unions is also positively correlated with the provision of effective training.

Finally, essential workers' impaired mental health remains a pending subject. Our research shows that essential workers in Ireland generally experienced high levels of anxiety. Naturally, the risk of contagion played a part in this. We also now know that there are certain factors that helped essential workers' mental health during the COVID-19 pandemic. Those who did not work to high speeds and did not have to deliver to tight deadlines reported lower levels of anxiety. For these reasons, we invite organisations employing essential workers to re-evaluate their workforce planning carefully. The organisational level interventions that can be implemented and would be immediately helpful include adequate staffing levels and fair workload allocation models, the inclusion of sufficient rest breaks and ample time off between shifts, effective training, and paid leave policies to allow essential workers to convalesce and recuperate. Organisations are also called to pursue interventions that

**we invite organisations
employing essential workers
to re-evaluate their workforce
planning carefully**

can contribute to building a psychosocially safe workplace, chief among them being breaking through the stigma related with seeking mental health supports. The World Health Organisation has encouraged employers and governments to own their duty of care not only in respect of workers' physical health and safety, but also their psychological well-being. This can be done by providing high quality mental health supports and strengthening human resources management practices focused on well-being.



Considerations for policy-makers

The findings from the WIIS presented here detail not only how essential workers in Ireland experienced the pandemic, but importantly the factors that either mitigated or aggravated that experience. We reiterate, one of the key findings is that the presence of a trade union had a significant effect in mitigating the impacts of exposure to high levels of work intensification and indeed exposure to the virus itself. This finding clearly has implications for the relationship between management and trade unions, as discussed in the previous section, but it also has implications for the relationship between unions and policymakers. The findings point to a need for structured engagement between government and trade unions in order to bring forward policies which can avoid a recurrence of the negative outcomes experienced by essential workers during the pandemic.

Furthermore, government policy should recognize that the positive effect of union representation for essential workers is something that should be available to all workers who wish to avail of it. While workers cannot be prevented from joining a trade union, there is currently no legislative framework that affords a worker the right to have that membership vindicated by their employer. There is the prospect of legislation arising from the European Commission Directive on Adequate Minimum Wages and the report of the government convened High Level Group on Collective Bargaining. The findings in this report provide further evidence of the need for a substantial and comprehensive legislative response to both of these opportunities.

Another key finding in this report is the degree of work intensification experienced

The findings point to a need for structured engagement between government and trade unions in order to avoid a recurrence of the negative outcomes experienced by essential workers during the pandemic

by essential workers during the pandemic and the negative consequences for workers' health and well-being. As in the preceding section, the findings reported in this paper strongly point to the need for adequate staff resourcing in order to manage periods of significant disruptions. The health sector, where many of the essential workers in the WIIS were located, is routinely faced with periods of acute disruption (especially in emergency departments) due to other seasonal viruses and cyclical pressures, which are exacerbated by already intolerable levels of patient overcrowding, reduced bed capacity, and staff recruitment and retention difficulties. Given the role of public sector funding in providing resources for the health sector in Ireland, these findings clearly have implications for government spending decisions. Providing adequate resources to increase staffing and capacity, and generally to build greater resilience into our health care system, is necessary to avoid the negative outcomes for staff that have been identified in these findings.

While the experiences of essential workers outlined in this report are likely to be compared and contrasted with remote workers, there are also important differences in the experiences of essential workers themselves. This can also be seen in the experience of

work intensity encountered by essential workers. As we outlined earlier, while male essential workers were more likely to have experienced extensive work effort (that is, working in excess of 40 hours a week), female essential workers were more likely to have encountered an increase in the intensity of their work. In addition to these gendered differences, workers with dependent children were also more likely to experience increased intensive work effort. It was also the case that increased work effort levels was associated with increased stress and anxiety.

These findings should not surprise. In a situation, like a pandemic, where there is a sudden increase in workloads, essential workers who have caring responsibilities within the home are much less likely to be able to respond by extending the hours they work. In such cases, then, increasing workloads within the set working hours is the only viable option available. Therefore, when workloads increase suddenly, work intensification increases among all essential workers. Additionally, for female workers and workers with dependent children, the response to that intensification is different and leads to inferior outcomes related to stress and anxiety.

We cannot ignore the circumstances of workers beyond the workplace in terms of building their resilience. Caring responsibilities and other work-life balance issues are important and, if not properly addressed, they can create the kind of gendered negative outcomes outlined in this report. To date, much of the policy focus has been on supporting work-life balance for remote workers (e.g. the right to disconnect). Policy should equally be focused on supporting a proper balance for essential workers who cannot take advantage of flexible work practices available to the workforce at large.

Mitigating these deleterious effects can be achieved by ensuring there is adequate resourcing in key essential services, by vindicating workers' rights to access union representation, and to acknowledge the importance of work-life balance in order to better enable workers to cope with increased demands and risks, and avoid the negative gendered outcomes identified here.

In summary, our findings outline some very negative consequences of the pandemic for essential workers but they also show how these harmful consequences can be lessened or avoided. Policymakers should be concerned with mitigating these deleterious effects. This can be achieved by ensuring that there is adequate resourcing in key essential services, by vindicating workers' rights to access union representation, and to acknowledge the importance of work-life balance in order to better enable workers to cope with increased demands and risks and avoid the negative gendered outcomes identified here.

Finally, we would urge too that when the Government does decide to undertake a public or statutory review of how the State managed the pandemic and its effects – and it has not yet initiated such an assessment in contrast to many other countries – it would examine the effects of the pandemic on essential workers' work and well-being and how they might be better handled or mitigated if any such similar crisis was to occur in the future.

This report has aimed to shed light on the work circumstances and job quality of essential workers in Ireland during the COVID-19 pandemic. It has provided first hand data on important issues that remain to be more fully debated and addressed both by policy makers and organisations. We sincerely hope this report may be useful in the identification of areas for potential improvement in order to ensure future provisions of enhanced risk management solutions and workplace conditions for essential workers.

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Appendix 1:

Spearman correlations for essential workers' risk exposure to COVID-19, union presence and management support

Table 1: Risk of contracting COVID-19 and anxiety levels during the COVID-19 pandemic

COVID-19 Risk & anxiety over losing one's job	0.105**
COVID-19 Risk & anxiety over needing to upskill	0.180**
COVID-19 Risk & anxiety over unexpected pay cuts	0.114**
COVID-19 Risk & anxiety over unexpected cuts in working time	0.202**
COVID-19 Risk & anxiety over securing a job	0.111**
COVID-19 Risk & general health	-0.020

N = 865

Table 2: Feeling connected to work after work hours and anxiety levels during the COVID-19 pandemic

Feeling connected after work & anxiety over losing one's job	0.014
Feeling connected after work & anxiety over needing to upskill	0.061
Feeling connected after work & anxiety over unexpected pay cuts	0.076
Feeling connected after work & anxiety over unexpected cuts in working time	0.041
Feeling connected after work & anxiety over securing a job	-0.020
Feeling connected after work & general health	-0.005

N = 953

Table 3: Risk of contracting COVID-19 and union presence and influence

COVID-19 Risk & union presence	-0.166**
COVID-19 Risk & union influence over working T&C's	0.066
COVID-19 Risk & union influence over work organisation	-0.009
COVID-19 Risk & union influence over flexible working	0.105

N= 889

Table 4: Risk of contracting COVID-19 and management support

COVID-19 Risk & management respects you	-0.115**
COVID-19 Risk & management praises you	-0.090**
COVID-19 Risk & management is helpful	-0.147**
COVID-19 Risk & management encourages you	-0.096**

N= 889

Table 5: Risk of contracting COVID-19 and industrial relations context

COVID-19 Risk & employees trust management	-0.224**
COVID-19 Risk & employees are treated fairly	-0.203**

N= 889

Table 6: Voicing COVID-19 concerns and union presence and influence

COVID-19 Risk & union presence	0.012
COVID-19 Risk & union influence over working T&C's	-0.019
COVID-19 Risk & union influence over work organisation	-0.011
COVID-19 Risk & union influence over flexible working	-0.112

N= 889

Table 7: Voicing COVID-19 concerns and management support

COVID-19 Risk & management respects you	-0.051
COVID-19 Risk & management praises you	-0.069
COVID-19 Risk & management is helpful	-0.039
COVID-19 Risk & management encourages you	-0.092

N= 889

Table 8: Voicing COVID-19 concerns and industrial relations context

COVID-19 Risk & employees trust management	-0.115*
COVID-19 Risk & employees are treated fairly	-0.122*

N= 889

Table 9: Addressing COVID-19 concerns and union presence and influence

Management addressing COVID-19 concerns & union presence	-0.089
Management addressing COVID-19 concerns & union influence over working T&C's	0.246**
Management addressing COVID-19 concerns & union influence over work organisation	0.163
Management addressing COVID-19 concerns & union influence over flexible working	0.254**

N= 889

Table 10: Addressing COVID-19 concerns and management support

Management addressing COVID-19 concerns & management respects you	0.257**
Management addressing COVID-19 concerns & management praises you	0.229**
Management addressing COVID-19 concerns & management is helpful	0.275**
Management addressing COVID-19 concerns & management encourages you	0.299**

N= 889

Table 11: Addressing COVID-19 concerns and industrial relations context

Management addressing COVID-19 concerns & employees trust management	0.273**
Management addressing COVID-19 concerns & employees are treated fairly	0.266**

N= 889

Appendix 2:

Spearman correlations for essential workers' extensive work effort, wellbeing, union presence and management support during the COVID-19 pandemic

Table 1: Extensive work effort and anxiety levels during the COVID-19 pandemic

Extensive effort & anxiety over losing one's job	0.064*
Extensive effort & anxiety over needing to upskill	0.052
Extensive effort & anxiety over unexpected pay cuts	-0.031
Extensive effort & anxiety over unexpected cuts in working time	0.052
Extensive effort & anxiety over securing a job	0.118**
Extensive effort & general health	-0.040

N= 953

Table 2: Extensive work effort and union presence and influence during the COVID-19 pandemic

Extensive effort & union presence	-0.082*
Extensive effort & union influence over working T&C's	-0.026
Extensive effort & union influence over work organisation	0.007
Extensive effort & union influence over flexible working	-0.040

N= 889

Table 3: Extensive work effort and management support during the COVID-19 pandemic

Extensive effort & management respects you	0.004
Extensive effort & management praises you	0.047
Extensive effort & management is helpful	0.033
Extensive effort & management encourages you	0.036

N= 889

Table 4: Extensive work effort and industrial relations context during the COVID-19 pandemic

Extensive effort & employees trust management	0.093**
Extensive effort & employees are treated fairly	-0.009

N= 889

Appendix 3:

Spearman correlations for essential workers' intensive work effort, wellbeing, union presence and management support during the pandemic

Table 1: Intensive work effort and anxiety levels during the pandemic

Intensive effort & anxiety over losing one's job	0.205**
Intensive effort & anxiety over needing to upskill	0.258**
Intensive effort & anxiety over unexpected pay cuts	0.156**
Intensive effort & anxiety over unexpected cuts in working time	0.186**
Intensive effort & anxiety over securing a job	0.169**
Intensive effort & general health	-0.057

N= 953

Table 2: Intensive work effort and union presence and influence during the pandemic

Intensive effort & union presence	0.099**
Intensive effort & union influence over working T&C's	-0.080
Intensive effort & union influence over work organisation	-0.122*
Intensive effort & union influence over flexible working	-0.076

N= 889

Table 3 Intensive work effort and management support during the pandemic

Intensive effort & management respects you	-0.171**
Intensive effort & management praises you	-0.152**
Intensive effort & management is helpful	-0.181**
Intensive effort & management encourages you	-0.135**

N= 889

Table 4: Intensive work effort and industrial relations context during the pandemic

Intensive effort & employees trust management	-0.222**
Intensive effort & employees are treated fairly	-0.193**

N= 889

Appendix 4:

Spearman correlations for essential workers' training and development, wellbeing, union presence and management support

Table 1: Training and development effectiveness and anxiety levels during the pandemic

Training and development effectiveness & anxiety over losing one's job	-0.139**
Training and development effectiveness & anxiety over needing to upskill	-0.138**
Training and development effectiveness & anxiety over unexpected pay cuts	-0.031
Training and development effectiveness & anxiety over unexpected cuts in working time	-0.110**
Training and development effectiveness & anxiety over securing a job	-0.192**
Training and development effectiveness & general health	0.245**

N= 953

Table 2: Training and development effectiveness and union presence and influence during the pandemic

Training and development effectiveness & union presence	-0.001
Training and development effectiveness & union influence over working T&C's	0.119
Training and development effectiveness & union influence over work organisation	0.192**
Training and development effectiveness & union influence over flexible working	0.179**

N= 889

Table 3: Training and development effectiveness and management support during the pandemic

Training and development effectiveness & management respects you	0.380**
Training and development effectiveness & management praises you	0.420**
Training and development effectiveness & management is helpful	0.412**
Training and development effectiveness & management encourages you	0.450**

N= 889

Table 4: Training and development effectiveness and industrial relations context during the pandemic

Training and development effectiveness & employees trust management	0.375**
Training and development effectiveness & employees are treated fairly	0.358**

N= 889

Table 5: Training and development effectiveness and COVID-19 risk exposure

Training and development effectiveness & COVID-19 risk exposure	0.065
Training and development effectiveness & voicing COVID-19 concerns	0.042

N= 889

Appendix 5:

Irish Government's List of Essential Workers, Level 5, April 2021

Essential workers are those providing the services below. Physical attendance at workplaces is only permitted where such services can only be provided in person and cannot be delivered remotely. Essential workers do not include administrative and other support for such businesses and services unless specified in section 13 and the physical presence of a worker is required.

Agriculture, horticulture, forestry, fishing, animal welfare and related services

The following services relating to agriculture, horticulture, forestry, fishing, animal welfare and related services:

- farming
- farm labour
- farm relief services
- crop and animal production
- fishing for commercial purposes
- aquaculture and fish farming
- horticulture
- forestry
- veterinary, animal welfare and related services
- marts held online with arrangements to facilitate weighing of animals, matching of stock between buyers and sellers, drop off of animals and buyers inspection of stock in the pens by appointment. Bidding process is online only
- the provision of support services relating to any of the services specified above (including artificial insemination and animal disposal)

Manufacturing

The following services relating to manufacturing:

- the manufacture, production or processing of food and beverage products
 - the manufacture, production or processing of animal feeds
 - the manufacture of work-wear apparel, personal protective equipment or footwear
 - the manufacture of wood pulp, paper and paperboard
 - the operation of sawmills and the processing of wood and cork
 - the printing and reproduction of newspapers and other media services
 - the distillation of coke and refined petroleum products
 - the refining of alumina
 - the manufacture of chemicals and chemical products
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- the manufacture of pharmaceutical products and preparations
- the manufacture of products necessary for the supply chain of essential services
- the manufacture of products necessary for national and international supply chains, other than the supply chain of essential services
- the manufacture of computers, electronic and optical products (including semi-conductors)
- the manufacture of electrical equipment, machinery and other equipment (including agricultural and forestry machinery)
- the manufacture of medical devices or appliances
- the manufacture of medicinal, health, dental and other personal hygiene products, equipment, appliances and supplies

Supply, repair and installation of machinery and equipment

The following services relating to the supply, repair and installation of machinery and equipment:

- the supply, repair and installation of machinery and equipment (including mechanically propelled vehicles, industrial machinery and equipment) for essential services
- the repair of mechanically propelled vehicles or the repair of bicycles and related facilities

Electricity, gas, water, sewage and waste management

The following services relating to electricity, gas, water, sewage and waste management:

- the generation, transmission, supply and distribution of electric power
- the extraction and distribution of gas and decommissioning activities in relation to offshore gas field facilities
- the collection, treatment and supply of water
- the collection, treatment and disposal of sewage or wastewater
- the collection of waste, remediation activities and other waste management treatment and disposal activities (including the operation of landfill sites, waste transfer stations, waste processing centres and recycling facilities or waste recovery)

Construction and development

The following services relating to construction and development:

- the construction or development of essential health and related projects, including those relevant to preventing, limiting, minimising or slowing the spread of COVID-19
 - construction or development projects relating to early years services (as defined in section 58A of the Child Care Act 1991 (No. 17 of 1991)), or essential maintenance or refurbishment works to an existing early years service
 - certain essential projects relating to the construction and development at Technological University Dublin Campus Grangegorman
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- the repair, maintenance and construction of critical transport and utility infrastructure
- the supply and delivery of essential or emergency maintenance, installation or repair services to businesses and places of residence (including electrical, gas, oil, plumbing, glazing, security and roofing services)
- construction or development of housing, including adaptation and remediation work and work on vacant residential properties, and the provision of support services relating to such construction or development
- construction and development projects necessary for the maintenance of supply chains in respect of services specified in subparagraphs (h) to (p) of paragraph 2 or information and communications specified in subparagraphs (c) and (d) of paragraph 9 but shall exclude general purpose facilities such as office accommodation and car parks
- construction and development projects that relate to the direct supply of medical products for COVID-19
- construction and development projects necessary for the provision of services by Forensic Science Ireland or the Irish Prison Service
- the construction or development of essential educational facilities at primary and post-primary level, including school building projects, which will provide additional capacity for students or involve essential maintenance or refurbishment works in support of the continued provision of education

Wholesale and retail trade

The following services relating to wholesale and retail trade:

- the operation of essential retail outlets
- wholesale and distribution services necessary for ensuring the availability for sale of food, beverages, fuel, medicinal products, medical devices or appliances, other medical or health supplies or products, essential items for the health and welfare of animals, or supplies for the essential upkeep and functioning of a place of residence
- the operation of automated teller machines and related services

Transport, storage and communications

The following services relating to transport, storage and communications:

- the provision of land transport, including bus, rail and taxi services
 - road, rail, sea and air freight
 - the provision of sea and air passenger services
 - the operation of ports, harbours and airports
 - the operation of lighthouses
 - warehousing and support activities (including cargohandling, postal and courier activities) for the transportation of goods
 - the control and critical maintenance of the transport infrastructure network (including roads)
 - any service required for the safe provision of a service specified above
-

Accommodation and food services

The following services relating to accommodation and food services provision:

- hotel or similar accommodation services to guests travelling for purposes other than social, recreational, cultural or tourist purposes
- the operation of hotels or similar accommodation services providing essential accommodation (including accommodation for homeless persons and persons in direct provision, persons who are unable to reside in their usual place of residence due to reasons related to the spread of COVID-19 or otherwise) and related services
- hotel or similar accommodation services to guests attending a wedding
- food and beverage service activities for supply to a business engaged in an essential service
- the provision of food or beverage takeaway or delivery services

Information and communications

The following services relating to information and communications:

- the production and publication of newspapers, journals and periodicals and the distribution of those publications, whether in hardcopy or digital format
- the production of television and radio programmes, video, sound, digital or other electronic content and the broadcast or publication of the same to the public or a portion of the public
- the provision of services necessary to deliver and support electronic communications services, networks and associated facilities (including wired and wireless telecommunication activities, satellite telecommunication activities, and other communications activities (including broadband, internet and cloud services providers) from providers Authorised by legislation)
- the provision of data centre services and related services

Financial and legal activities

The following services relating to financial and legal activities:

- financial, insurance and banking services (including post office and credit union services) provided by a financial services provider
 - accounting services or audit services
 - legal services provided by practising barristers or practising solicitors
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Professional, scientific and technical activities

The following services relating to professional, scientific and technical activities:

- the provision of engineering, technical testing activities and analysis (including the performance of physical, chemical and other analytical testing of materials and products)
- the provision of scientific research and development services
- regulation, inspection and certification services, in accordance with law, of a particular sector by a body created by statute for that purpose

Rental and leasing activities

The following services relating to rental and leasing activities:

- property services (within the meaning of the Property Services (Regulation) Act 2011 (No. 40 of 2011)), property letting and management services
- the provision of a service for the rental or leasing of mechanically propelled vehicles or bicycles

Administrative and support activities

The following services relating to administrative and support activities:

- payroll and payment services necessary for the operation of undertakings and bodies
 - employment placement and human resources services associated with the recruitment and deployment of workers engaged in the provision of essential services
 - data processing, website hosting and related activities
 - security activities to assist in either or both of the following:
 - (i) the delivery of essential services
 - (ii) the securing of premises closed to the public
 - funeral, burial and related services
 - business support services (including information and communications technology support and sales, repair and maintenance for information and communications technology and telephones) where such services are necessary to support:
 - (i) any other essential service
 - (ii) a person working from their place of residence where the business concerned is being operated from a place of residenceor
 - (iii) a business that is not an essential service, to the extent required to maintain that business in operation or to minimise any delay in the business resuming operation after these Regulations have ceased to be in operation
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- where such services are necessary to support any other essential service:
 - (i) the cleaning of buildings
 - (ii) industrial cleaning activities
 - (iii) the provision of key third party supports other than those referred to in paragraph (f) provided under contract to a person providing an essential service
- essential health and safety training (that cannot be done remotely)

Public administration, emergency services and defence

The following services relating to public administration, emergency services and defence:

- the performance by the Garda Síochána, including members and civilian staff of the Garda Síochána, of its functions under the Garda Síochána Act 2005 (No. 20 of 2005)
 - public order, rescue and emergency services (including fire, coastguard, lifeboat, mountain rescue and ambulance services)
 - the performance by the Defence Forces of the functions conferred on them by or under any enactment
 - emergency call answering services
 - services to enable the administration of justice
 - prison services and child detention services (including all onsite activities)
 - cyber-security services
 - the provision of social protection benefits
 - regulatory processes and certification required to ensure supply chains, safety of food, beverages, medicinal products, medical devices or appliances, other medical or health supplies or products, and general process safety
 - the operation and maintenance of botanical gardens, parks, forests, nature reserves and playgrounds
 - activities relating to the management, protection, restoration and conservation of protected species, habitats and designated natural, archaeological and built heritage sites
 - providing security, care and maintenance of the premises, collections and objects under the care and management of the National Gallery of Ireland, the National Library of Ireland, the National Museum of Ireland, the National Concert Hall, the National Archives, the Irish Museum of Modern Art, the Chester Beatty Library and the Crawford Art Gallery
 - services relating to the deaths and funerals of persons
 - chaplaincy services
 - services provided or functions performed by an office holder appointed under any enactment or under the Constitution, or members of either House of the Oireachtas, the European Parliament or a local authority
 - services provided under the Child Care Act 1991 (No. 17 of 1991)
 - adoption services under the Adoption Act 2010 (No. 21 of 2010)
 - services provided to victims
-

- services, including regulation services, provided by, and activities of, the Central Bank of Ireland, the Investor Compensation Company DAC (otherwise known as the Investor Compensation Company Limited) and the National Treasury Management Agency
- any other service provided, or function performed, by a public body (within the meaning of the Data Sharing and Governance Act 2019 (No. 5 of 2019)), where the provision of the service or performance of the function is necessary to support or manage:
 - (i) other essential services
 - or
 - (ii) the response of the State to the spread of COVID-19
- Driver Testing Services provided by the Road Safety Authority for the purposes of section 33 of the Road Traffic Act 1961 (No. 24 of 1961) for people involved in the provision of essential services or essential retail outlets
- driving instruction provided by instructors on the Register of Approved Driving instructors, established under Part 3 of the Road Traffic (Driving Instructor Licensing) (No.2) Regulations 2009 (S.I. No. 203 of 2009), where the person receiving instruction has a booking reserved to undergo a test for the purposes of section 33 of the Road Traffic Act 1961 (No. 24 of 1961)
- Commercial Vehicle Roadworthiness Test services provided by the Road Safety Authority for the purposes of section 5 of the Road Safety Authority (Commercial Vehicle Roadworthiness) Act 2012 (No. 16 of 2012)
- National Car Test services provided by the Road Safety Authority for the purposes of section 18(8) of the Road Traffic Act 1961 (No. 24 of 1961)
- statutory planning system activities, insofar they cannot be carried out remotely
- National Driver Licence Service, insofar as it provides services by appointment to persons involved in the provision of essential services or essential retail outlets, and insofar as such services cannot be carried out remotely

Human health and social work activities

The following services relating to human health and social work activities:

- hospital services
 - therapy services provided by a member of a designated profession within the meaning of section 3 of the Health and Social Care Professionals Act 2005 (No. 27 of 2005)
 - services relating to public health, including services relating to:
 - (i) the identification, tracing and contacting of persons who have been in contact with persons who have been diagnosed, or are suspected of having been infected, with COVID-19
 - and
 - (ii) the testing of persons for COVID-19
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- laboratory services
- drug treatment and addiction services
- hospice services
- pharmacy services
- primary care and general and specialist medical practice activities
- dental services
- blood donation and related services
- tissue or organ donation and related services
- residential care services (including nursing care, mental health and substance abuse services, services for elderly persons and persons with disabilities) and children's residential services
- homecare, home help and other health services in the community
- social work and social care services, (including disability services, mental health services, child protection and welfare services, domestic, sexual and gender-based violence services) and homeless services including homeless outreach services
- paramedical, ambulance and pre-hospital care services
- services provided by minor injury units
- maternity services
- food safety and environmental services
- certain childcare services
- youth work services, within the meaning of the Youth Work Act 2001 (No. 42 of 2001), that cannot be provided remotely
- anti-doping services in accordance with Part 4 of the Sport Ireland Act 2015 (No. 15 of 2015)

Education

- Schools: certain education provision such as teaching, SNA support and other services required to support the delivery of the education related services being provided under Level 5. See more here.
- Higher, further and adult education should remain primarily online.

Community and voluntary services

The following services relating to community and voluntary services:

- services not otherwise specified in this Schedule, provided by community and voluntary workers and the Civil Defence, as part of a publicly commissioned service, deployed to assist in the delivery of essential services
- volunteer services operating under the local authority emergency management framework in accordance with public health guidance

Diplomatic missions and consular affairs

- The provision of services essential to the functioning of diplomatic missions and consular posts in the State.
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