COVINFORM

CORONAVIRUS VULNERABILITIES AND INFORMATION DYNAMICS RESEARCH AND MODELLING

D5.3 Analysis: Public health responses and impact

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 101016247.

Project

Acronym	**COVINFORM**
Title	COronavirus Vulnerabilities and INFOrmation dynamics Research and Modelling
Coordinator	SYNYO GmbH
Reference	101016247
Type	Research and Innovation Action (RIA)
Programme	HORIZON 2020
Topic	SC1-PHE-CORONAVIRUS-2020-2C Behavioural, social and economic impacts of the outbreak response
Start	01 November 2020
Duration	36 months
Website	https://covinform.eu

Consortium

SYNYO GmbH (SYNYO), Austria
Magen David Adom in Israel (MDA), Israel
Samur Proteccion Civil (SAMUR), Spain
Università Cattolica del Sacro Cuore (UCSC), Italy
SINUS Markt- und Sozialforschung GmbH (SINUS), Germany
Trilateral Research LTD (TRI UK), UK
Trilateral Research LTD (TRI IE), Ireland
Kentro Meleton Asfaleias – Center for Security Studies (KEMEA), Greece
Factor Social Consultoria em Psicossociologia e Ambiente LDA (FS), Portugal
Austrian Red Cross (AUTRC), Austria
Media Diversity Institute (MDI), UK
Societatea Națională de Cruce Rosie Din România – Romanian Red Cross (SNCRR), Romania
University of Antwerp (UANTWERPEN), Belgium
Sapienza University of Rome (SAPIENZA), Italy
University Rey Juan Carlos (URJC), Spain
Swansea University (SU), UK
Gotenborg University (UGOT), Sweden

Acknowledgement: This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 101016247.

Deliverable

Number	**D5.3**
Title	**Analysis: Public health responses and impact**
Lead beneficiary	MDA
Work package	WP5
Dissemination level	Public (PU)
Nature	Report (RE)
Due date	31.03.2022
Submission date	31.03.2022
Authors	**Elena Ambrosetti**, SAPIENZA **Marta Pasqualini**, SAPIENZA **Diana Beljaars**, SU **Sergei Shubin**, SU **Louise Condon**, SU **Diego Castellanos,** URJC **Gloria Anderson**, UCSC **Massimo Fantoni**, UCSC
Contributors	**Itamar Laist**, MDA **Chaim Rafalowsky**, MDA **Jil Molenaar,** UANTWERPEN
Reviewers	**Lore Van Praag**, UANTWERPEN **Louise Condon,** SU **Patrick Love,** FS

Document history

Version	Date	Comments
0.1	18.03.2022	First full draft completed and shared with the reviewer team (FS). Review period until 25 March 2022.
0.2	28.03.2022	Partner feedback incorporated and revised report shared internally for final comments.
1.0	30.03.2022	Final report ready for submission.

Executive Summary

The COVINFORM project explores the impact of the COVID-19 pandemic and associated national, regional, and local responses, including a special focus on the impact on vulnerable and marginalized groups. The project aims to develop solutions, guidelines and recommendations to ensure that the needs of vulnerable and marginalised groups are appropriately considered in potential further waves of COVID-19 and future pandemics. This report examines the public health responses to the COVID-19 pandemic in various dimensions: health vulnerabilities; the institutional, legal, and data collection factors influencing public health responses; communication around vaccines and vaccination campaigns; and the impacts of COVID-19 on healthcare workers. Preliminary findings on health vulnerabilities provided already some insights in the definition and operationalisation of vulnerabilities in public health responses. The policies implemented in the different countries and their success in reducing health inequalities were also addressed in the report. Finally, the vulnerability of health care workers and public health policy and decision makers during the pandemic was analysed.

On the institutional, legal, and data collection factors influencing public health responses, our analyses indicated that newly emerging collaborations between institutional organisations suggest a different understanding of and approach towards dealing with the COVID-19 pandemic. New collaborations and pre-established ones had different contributions and impacts on the public health responses, as for instance shown in Wales.

On the communication around vaccines and vaccination campaigns, our literature review revealed that the communication campaigns around COVID-19 vaccines across the 15 countries studied in the COVINFORM project were not sufficient. Recommendations were made to improve vaccine communication strategies.

On the impacts of COVID-19 on healthcare workers, a thematic analysis of the qualitative interviews of the healthcare workers in the consortium partners' countries was conducted. These interviews focused on the healthcare workers' working conditions and realities, mental health, access to care services and their recommendations on the healthcare response to vulnerable groups' needs and to improve vaccination campaigns. The healthcare workers provided insights on hindering and facilitating factors during the design and roll-out of the vaccination campaigns. They provided suggestions on how to improve the access to care services.

Contents

Tables

Acronyms & Abbreviations

Term	Description
AIDS	Acquired Immunodeficiency Syndrome
BAME	Black, Asian and Minority Ethnic
COVID-19	Coronavirus Disease 2019
CNSSU	National Emergency Committee for Special Emergency Situations (in Romaine)
DM	Decision maker
DSU	the Department for Emergency Situation (in Romana)
GP	General Practitioner
HCW	Health Care Workers
IDF	the Israeli Defense Force
NPHET	National Public Health Emergency Team for COVID-19 (in Ireland)
PHW	Public Health Wales
PPE	Personal Protective Equipment
WHO	World Health Organization
WP	Work Package

1 Introduction

1.1 The COVINFORM project

The COVINFORM project examines how vulnerability is defined and addressed in response to the COVID-19 outbreak. Through an intersectional approach, the project analyses the impact that different national, regional, and local responses have had on vulnerable and marginalised groups, exploring the interconnection between different factors and how these may exacerbate vulnerability and marginalisation. COVINFORM will also develop solutions, guidelines and recommendations to ensure that the needs of vulnerable and marginalised groups are appropriately considered in potential further waves of COVID-19 and future pandemics.

1.2 Work package 5 (WP5)

WP5 analyzes COVID-19 impact and response from a public health perspective, with a specific focus on health inequality and vulnerability. Key dimensions of analysis are definitions and operationalisations of health vulnerability and inequality; influence of social and cultural factors, as well as institutional, legal, and data collection factors on public health responses; public health communication impacts; and COVID-19 impacts on healthcare workers. As defined in the COVINFORM proposal, WP5 empirical research will be carried out among healthcare workers, public health policymakers, decision makers, and other stakeholders in 10 local research sites. Findings and recommendations will be summarized for WP8.

1.3 The purpose of this report

In this report, we set out to assess the public health responses to the COVID-19 pandemic across COVINFORM partner countries: Austria, Belgium, Cyprus, Israel, Ireland, Italy, Germany, Greece, Portugal, Romania, Spain, Sweden, Switzerland, and the United Kingdom (England and Wales). This report relies on the previous WP5 findings (country reports for D5.1), as well as preliminary interview findings (for which the methods are described in D5.2). As when the report was prepared the interview findings collection and analysis was not completed, not all interview findings have been incorporated in the current report, and the full transcripts will be analysed in future deliverables (notably D5.4). It is important to mention that the titles of the chapters were predefined in the project's Description of Action, but due to the changing nature of the pandemic, some of these were reinterpreted or narrowed down slightly to ensure relevance to the current context. Within the broader theme of public health responses and impact, this report tackles the following subtopics:

- Comparative definitions and operationalization of health vulnerabilities, including pre-existing conditions and comorbidities, mental health vulnerabilities, and social precarity
- Institutional, legal, and data collection factors influencing public health responses
- Communication around vaccines and vaccination campaigns
- Impacts of COVID-19 on healthcare workers: preliminary findings from a qualitative analysis

2 Comparative definitions and operationalization of health vulnerabilities, including pre-existing conditions and comorbidities, mental health vulnerabilities, and social precarity

Authors: Elena Ambrosetti, Marta Pasqualini, SAPIENZA

2.1 Aim of the chapter and methodology

Based on the empirical research of D5.1. and D5.2., the aim of this chapter is to provide insights in the public health responses toward vulnerable populations furnished by the governments of COVINFORM target countries[1]. More specifically, building further on qualitative interviews conducted with public health policy- and decision-makers and health care workers, we aim to address the following research questions: (a) How have different actors defined and operationalized conceptualizations of vulnerability in public health responses? (b) How have vulnerabilities and structural health inequalities been addressed and/or exacerbated by COVID-19 public health responses? (c) Did health care workers feel more vulnerable in the context of COVID-19 pandemic?

With regard to the methodology, we will first provide a definition of health and social vulnerability, then we will summarise findings of D5.1 (baseline report on public health responses), and, finally, interview transcripts will be analysed and presented. In particular, we will especially focus on the concept "vulnerability" and all related questions. The most significant insights for this cluster will be reported verbatim or paraphrased to ensure clarity in delivering the right message. All interview data is presented in an anonymised way.

2.2 Definition of health and social vulnerability

Vulnerability can be defined as the state of "being weak and easily hurt physically or emotionally" (Oxford Dictionary). However, the concept of vulnerability is characterised by ambiguity, as it is differently interpreted in different countries, contexts, and domains (see also Molenaar & VAn Praag, forthcoming). Nonetheless, addressing what vulnerability means is essential to frame and avoid severe health implications. Etymologically, the term vulnerability refers to a danger or a threat to the person (Rogers, 1997). Namely, vulnerable people are those at higher risk of poor physical, mental and social health (Aday, 2002).

People are generally considered medically or clinically vulnerable if they are very young or very old or if they have chronic health conditions (e.g., diabetes; cardiovascular diseases; cancer; HIV-AIDS) or mental/physical disabilities. With regard to individuals considered socially vulnerable, there are people facing economic difficulties (e.g., individuals with job or income uncertainty; homeless), immigrants and refugees, abusing families, pregnant adolescents and their infants (Gitterman, 1991; Lessick et al., 1992; Aday, 2002) but also individuals with weak social support and with a low level of education.

[1] At the time of writing this chapter, WP5 empirical research preliminary findings are available for the following target countries: Austria, Belgium, England, Greece, Italy, Portugal, Sweden, Spain, Wales

In addition, vulnerability in health also results from social and economic vulnerability because the conditions in which people are born, grow up, live and work, influence a person's risk of illness and life expectancy (WHO website). This concept is known as the "social determinants of health", which does not only concern individuals' characteristics (i.e., age; gender; lifestyles; education; living conditions; work status; etc.) but also environmental and contextual factors. Accordingly, vulnerabilities are characterised by intersectionality and interdependence as a single vulnerability risk (e.g. low education) is likely to generate a path of other vulnerabilities (e.g., poverty; poor health; weak social network, etc). Profiling vulnerable individuals is, therefore, crucial to avoid harm and to generate support and access to services (Fawcett, 2016) ensuring that attempts to tackle health inequalities are relevant to local needs as well.

2.3 Implementation of the definition of health and social vulnerability in target countries

The identification of health and social vulnerability may thus be disparately implemented in different countries. For example, while almost all of the partner countries considered medically or clinically vulnerable older people, especially those living in residential care homes and adults with chronic conditions (such as type 2 diabetes; cardiovascular, lung or kidney diseases; immunity system's diseases and/or cancer), others adopted a wider definition of it by including also individuals with severe mental illness and disabilities (e.g., Ireland). During the COVID-19 pandemic, an increased risk for medically or clinically vulnerable individuals has also been observed in all the partner countries as a result of the disruption of the health systems, leading to delay in diagnosis and appropriate care.

Since health vulnerability is enforced by a range of social, economic and environmental factors influencing individuals' health outcomes (i.e., social determinants of health), people living in multi-generational households who experienced overcrowding, have been characterised by higher health vulnerability during the pandemic as observed in the UK. Moreover, people living in severe poverty conditions (e.g.., homeless; refugees) were not able to access aid services to get food and hospitality (e.g., in Belgium; Italy), beyond their general exclusion from national health systems (e.g., in Cyprus).

Finally, the COVID-19 pandemic has widened social inequalities related to occupation, family situations, material and social deprivation, legal status, race and ethnicity. More in detail, individuals employed in lower-paid jobs and health workers were among those unable to telework. Working at place and, thus, travelling to work, put these groups of people at relatively higher risk of contagion. Moreover, in the partner countries (Germany, Ireland, the UK, Spain, Belgium, Italy, Israel, Austria and Sweden) some industrial sectors deemed "essential" remained active over the entire pandemic period. For example, workers employed in these sectors (such as food production or meat processing plants) were obliged to work at place and were not allowed to keep adequate physical distance. Conversely, other productive sectors were not allowed to be active during the pandemic - due to the impossibility of keep physical distance - being also excluded from public assistance (e.g., sex workers). At the same time, low-income workers were significantly at higher risk of job loss and of poverty as their saving resources were lower (Rodriguez & Ifan, 2020). In some countries (e.g., Italy) the risk of social vulnerability was higher for younger workers, who are both mostly employed in "non-essential" sectors that have been closed during the pandemic and characterised by atypical contracts that avoid a full access to social security measures (Quaranta et al., 2020). People with children were also more exposed to social vulnerability during the pandemic, especially if they experienced social exclusion and economic uncertainty (Prainsack et al., 2020). Indeed, online learning has widened educational

inequality due to the lack of technology and of adequate home-schooling's supervision as it has been observed, for example, in Romania (Hackl, 2020). Finally, as individuals with an ethnic minority background are generally more likely to be exposed to socio-economic vulnerabilities (i.e., lower incomes, live in overcrowded households, etc.), this might have exposed them to significantly higher risk of mortality due to COVID-19 infection in all the partner countries.

Socio-economic inequalities at the country level might also have exposed individuals to vulnerability. For example, in some of the partner countries, such as Romania, Italy, Greece and Spain, more than a quarter of the population were at risk of poverty or social exclusion. This was not only associated with higher mortality rates (e.g in Belgium, Sweden and Spain) but also with poorer access to health care, especially in countries where out-of-pocket spending is high (i.e, in Cyprus, Greece, Portugal, Switzerland and Italy) (Rocha et al., 2001).

2.4 Empirical research findings

As highlighted in section 2.1, vulnerability is multidimensional. Thus, not surprisingly, the empirical research has provided a variety of definitions and operationalization of this complex concept in target countries. Among the most recurrent definitions provided by public health policy- and decision-makers and health care workers, there are: (a) the clinical vulnerability and (b) the socio-economic vulnerability. According to the public health policy- and decision-makers and health care workers, those two definitions do not necessarily exclude each other, but, on the contrary, they are most of the time interacting and can reinforce each other when juxtaposed. From the point of view of health and living conditions, characteristics such as age and pre-existing medical conditions, made some groups of the population, such as older people and those living in long term care facilities, in migrants and refugees' camps, in Roma camps, drug and alcohol addicts, people with mental health issues, the homeless, more vulnerable to COVID-19. As shown in the quote below, people may look vulnerable for one specific reason, however, if you take a closer look, there are even more vulnerabilities related to other factors, as shown by this quote of this decision-maker in Wales:

> *"The residents in those settings [here the DM was talking about healthcare workers working in care homes, residential homes, schools, hospitals, special schools and assisted living] are vulnerable. They're there for a reason, the staff that work with them is some of the most lowest paid individuals in society. They have low educational standards, low health literacy, they have poor money, they're often on the poverty line, but also they're vulnerable themselves." [DM: Wales]*

Apart from this multidimensionality of the concept vulnerability, vulnerabilities are often not visible, as also mentioned by a decision maker in Belgium:

> *"And the problem is also, I think, that part of that group is invisible. Not only invisible in society, because you don't always see these people, but certainly also invisible in the figures. Because I have no idea how big the group of undocumented migrants is in Brussels, it will not be a small group. People without legal status, by definition, are not included in those figures. It is also difficult, even if we wanted to, to get figures on that, because they don't have a national number, they don't fall within the regular system, they don't have a regular family doctor. So how do you find those people? It is absolutely complex" [Decision maker (DM): Belgium]*

However, there were also some critical conditions (i.e physical and mental health; living and working status) that emerged during the pandemic or that were exacerbated by the pandemic, which made several groups of the population at higher risk of vulnerability after the beginning of the pandemic. Women facing domestic violence, sex workers, people working in tourism, people who do not speak the national language, frontline workers (e.g. postal workers, supermarket workers, delivery drivers), health care workers, parents, children and young people are among the most cited population groups mentioned by public health policy- and decision-makers.

> *"We know the extent of impacts on children, but there are children who did not attend school because the school was closed, or they were in a cluster of infected people. This has not been good in terms of wellbeing, further to education. For many young people, school was the highlight of their life or a place to get out of their situation, so they had to stay instead in their home". [DM: England]*

> *"A new form of vulnerable group is the parents who suddenly have to adopt a very flexible attitude. [...] Those might be people who have been more targeted, specifically by the pandemic, those are actually the young parents who just had to continuously adapt to the quarantines and the isolation periods. [...] And I've seen a few parents really fall apart, like 'I just can't combine it all anymore, and I can't take them to the grandparents either...'." [General Practitioner (GP): Belgium]*

> *"The second wave started from the transmission between groups of seasonal workers in various parts of Spain, especially in the areas where a lot of fruit was picked, for example Catalonia. It moved from the area where fruit was picked in summer to where fruit was picked in autumn and so on. Obviously there, it was not a health problem. They are working people therefore they are generally younger and healthy. But their living conditions and their added risks... A lot of work was done with the Minister of Agriculture and with the companies from the Ministry of Agriculture to ensure that these people had human living conditions" [DM: Spain]*

Another recurrent issue highlighted in some contexts by the public health policy- and decision-makers and health care workers, is the disruption and related access challenges of health care services (because of fear of being infected by COVID-19) for those people suffering from other pathologies than COVID-19.

> *"The health services were really compromised by an organizational problem of the system, the system was not able to use the existing resources to continue using health institutions in other existing pathologies, in the terms in which people did not stop having cancer, people didn't stop having heart attacks, people didn't stop being diabetic and hypertensive, the system polarized all resources due to a virus (…). Non-COVID patients had difficulties accessing the health services, some sectors were replaced for COVID-19 responses." [General Practitioner (GP): Portugal]*

Patients suffering from infectious diseases such as tuberculosis and HIV are a relevant example of disruption and related access challenges to access health care services. For instance, in one of the most

important Italian hospitals for the care of infectious diseases, the impact of the pandemic was quite strong in terms of access to health care for those patients suffering from tuberculosis:

> *"Tuberculosis is, by definition, an acute-onset disease. At some point during the pandemic these patients "disappeared." The number of patients for this disease decreased significantly. "What does this mean? That a certain number of people could not be assisted either because of the reduced possibility of access to hospital facilities or because of resistance to access by the patients themselves? Only with this year's and next year's data will it be possible to understand what happened". [DM: Italy]*

The same DM reported a more positive outcome for patients suffering from HIV as they could be treated from home with telemedicine because of the characteristics of the disease (chronic). On the other hand, the preventive measures usually adopted for HIV suffered from a disruption of the services provided (e.g., testing). The number of people with HIV diagnosis has therefore strongly decreased in this hospital, compared to previous years, since the beginning of the pandemic .

Health care workers and public health policy- and decision-makers reported a mixed picture about their own vulnerability during the pandemic. Lack of personal protective equipment (PPE), contact with patients not wearing masks (e.g. in dentistry and ophthalmology), fear of getting infected by a new and highly contagious disease (especially during the first wave) and finally, increased workload were among the main reasons to feel vulnerable.

> *"Yes, I considered myself vulnerable, especially in the initial phase when we didn't have the appropriate material or rather, we had a shortage of material, I confess that it bothered me a bit to have to wear the same mask for three or four days because in fact there were no masks available, especially P2, PPE were scarce and at the time I felt that in fact at an early stage, this then reached a balance, we were not in fact sufficiently protected and therefore I felt vulnerable in that aspect." [GP: Portugal]*

> *"Hand on heart, no one of us knew how contagious this disease was – would we die?" [GP: Sweden]*

> *"(…) The additional excessive workload indeed has tired me out and I firmly believe that despite being vulnerable, many more were not included in the vulnerable groups set by the government. For example, pregnant women, have mobility issues etc. These individuals were not protected as they did not fill in the criteria set by the government to be considered vulnerable but we still feel it has impacted us negatively as we feel burned out." [Nurse: Greece]*

Especially those working as decision makers felt particularly vulnerable in front of the media and the public opinion. Some of them have also reported to have received messages with threats.

> *"There have been quite a few emails, text messages, phone calls. It has been… I got one text message, someone saying that… It was quite hard, because I… 'Your grave will be dishonored, no one will remember your name in the future'. That's pretty hard when you're working and fighting for something. But that's something that gets reported to the police. There was some sort of 'you will burn in hell' email that came." [DM: Sweden]*

Some health care workers (HCWs) didn't feel vulnerable because they had sufficient income, health literacy, and education to face the pandemic contrary to what has been observed for other vulnerable categories. However, they stated that they were afraid of exposing their family to the COVID-19.

From the point of view of the operationalized conceptualizations of vulnerability in public health responses, the empirical research provided mixed evidence. Indeed, several health care workers and public health policy- and decision-makers reported that the responses provided by public policies were inadequate and insufficient. The lack of attention towards other patients other than COVID-19 patients, is one of the reasons that lead to consider the public health response as insufficient.

> *"(…) people did not stop having cancer, people didn't stop having heart attacks, people didn't stop being diabetic and hypertensive, the system polarized all resources due to a virus (…)". [GP: Portugal]*

Another recurrent critique of governmental policies is the lack of resources allocated to address the needs of all vulnerable groups and the restrictive definition of vulnerability that governments took, thus not addressing the need of all vulnerable groups.

Indeed, many respondents found the economic measures adopted to address the need of vulnerable groups were insufficient. For instance, a GP in Portugal highlighted that more efforts are needed to provide financial support to those who could not work because they were in isolation:

> *"What should be done differently, turns out to be macro measures, but clearly having more adequate financial support for these more vulnerable groups was fundamental (...) safeguarding jobs, making financial support measures for people, namely when they lose a working day, financial support for isolated people has never been heard (…)" [GP: Portugal]*

The same concern is also expressed by a DM in England, who stresses that the government provided economic support for some categories of the population, however not for all vulnerable groups. In his view this is detrimental also for the spreading of the virus, because a lot of vulnerable people, even with symptoms of COVID-19, do not stay at home nor isolate because they need to work to make end meets:

> *"But there are people who did not have the economic resilience at the start of the pandemic, and this would make things inevitably worse. The economic government support does not apply to everyone, so we understand why some people is reluctant to test and to isolate. I think the council is going to look for these vulnerable groups, elderly, young and people with no job". [DM: England]*

The definition of vulnerability is also a controversial point. According to a Greek nurse, who reported her personal experience, some categories of people with disabilities were not considered by the government as vulnerable. As a consequence, they had to continue to work in difficult conditions and suffered from high stress levels.

> *"You happen to be talking to someone who is considered to be vulnerable but not based on the government's categorization and criteria. I happen to be considered as handicapped, however since I was not in the category which was set by the government, I did not have special time off to get some rest and shouldered a big amount of professional*

burden since several colleagues took time off due to COVID-19 related reasons (…)." [Nurse: Greece]

In Sweden, a DM underlined that weaker population groups were left behind because the information about COVID-19 was designed by the dominant groups of the population which did not consider that information should be tailored for taking into account different kinds of vulnerability (language, education, socio-economic level…).

"When all of this started, there was a significant focus on getting the information out. And of course, that information, once again, those who took part of the media, those who took part of the information, were perhaps stronger groups and that makes the weaker groups – if one looks at socioeconomically weaker groups with different languages and so on – they are being pushed to the sidelines." [DM: Sweden]

In the Belgian context, a DM was very critical about the policies adopted for vulnerable groups. According to him all the governmental efforts are focusing on the virus transmission, while not many efforts are devoted to address vulnerabilities that go beyond the health one.

"If you look at what is planned in terms of risk management and so on, the vulnerable groups as we define them in metropolitan areas, I actually see very little. There is talk of local outbreak management, and local management of COVID, but that always remains with a very strong focus on epidemiology and keeping clusters under control, and so on." [DM: Belgium]

Many health care workers and public health policy- and decision-makers mentioned the risk of increase the vulnerability of several populations groups because of the "side-effects" i.e. the long-term effects of the measures taken by governments to reduce infections (e.g. lockdowns, restriction of visits in nursing homes, restrictions of contacts among non-cohabiting family members…). Those risks are not currently addressed by several governments; however, their consequences are easy to foresee and would need immediate action.

"Especially when it comes to the protection of older people, who definitely belong to the vulnerable groups, when it comes to their protection, the goal has often been reduced to absurdity by the secondary effects of protective mechanisms. There have certainly been many effects, such as loneliness, faster progression of diseases and other illnesses, and these have unfortunately also developed as a result of the COVID measures." [DM: Austria]

"The initial response was an attempt to create a bubble to isolate people leaving in residential care homes, to make this kind of structure impermeable. However, isolation was not complete because it was not possible to force workers into prolonged quarantine and the psychological impact for the elderly was great. It would have been desirable to encourage to some extent the use of technology to maintain contact with the outside world, but this was left to the will of individual facilities or workers (…)." [DM: Italy]

On the other hand, several health care workers and public health policy- and decision-makers estimated that their governments did all the effort they could to address vulnerability, taking into account that they were taking decisions in a high risk and uncertain situation. In some countries (e.g.

Greece) the pandemic was even considered by some decision makers as an occasion to start dealing with vulnerable populations and to establish policies to address vulnerability.

> *"If you asked me if something else could have been done, I think that more can always be done, but compared to other countries, we are not bad at all, I think we are doing very well(…)" [GP: Portugal]*

> *"Tailored responses and measure adjustment were also made to address the needs of vulnerable groups such as individuals who had limited access to healthcare or limited capability to protect themselves, in order to increase the effectiveness of prevention responses." [GP: Greece]*

> *"At least as far as we are concerned, clinical guidelines have been developed for many specific groups, involving the scientific societies that work in the area of many vulnerable groups. Many medical action guidelines have been drawn up along these lines". [DM: Spain]*

Overall, even if the pandemic was perceived as a challenge for Government and Public Health authorities, it has also triggered some processes that could result in better policy making in the future, especially when dealing with vulnerable populations.

2.5 Conclusions and recommendations

Preliminary findings arising from the empirical research conducted by partners in target countries analysed in this chapter provided several insights on the definition and operationalisation of vulnerability in public health responses. Indeed, the analysis of the transcripts of the qualitative interviews with public health policy- and decision-makers and health care workers highlighted that public health responses have been adopted according to a broad definition of vulnerability, which includes both the health (physical and mental) and the socio-economic dimensions. Some forms of vulnerability pre-existed prior to the pandemic, as they relate to the socio-economic settings of people's lives (e.g. age and pre-existing medical conditions, migrants and refugees living in camps, people living in Roma camps, the homeless, people belonging to lower socio-economic status). Other forms of vulnerabilities were exacerbated or emerged because of the pandemic (e.g. women facing domestic violence forced to live in lockdown with the perpetrator of the violence, people working in tourism, people who do not speak the national language, frontline workers, health care workers, children and young people).

According to the preliminary findings of the empirical research, although vulnerabilities and structural health inequalities have been addressed by policy makers, the policies implemented did not fully succeed in reducing health inequalities and in providing tailored responses to vulnerable populations. Public health policy- and decision-makers and health care workers claimed that the main reason behind the lack of success of the public health responses in addressing vulnerable populations was the lack of funding and the adoption of a too narrow definition of vulnerability, based on health without considering the socio-economic spheres and the intersection of several factors at stake for vulnerable populations. The unintended consequences of the restrictive measures adopted to limit the spread of the Coronavirus was also another factor mentioned by public health policy- and decision-makers and health care workers. In their views, lack of access to the public health system or disruption of care provided for other diseases than COVID-19 because of the restrictive measures adopted, and the

loneliness and isolation experienced by large part of the population during the pandemic, may have exacerbated the situation of several vulnerable populations such as the older people or the children. Nevertheless, some of the interviewees believe that in a situation characterised by a high level of uncertainty and risk the response provided by public health authorities toward vulnerable populations was the best possible in such situations. In some countries (e.g. Greece) the pandemic was even considered by some decision makers as an occasion to start to deal with vulnerable populations and to establish policies to address vulnerability.

Finally, the analysis of the interview transcripts provided insights on the vulnerability of health care workers and public health policy and/or decision makers during the pandemic. Health care workers felt vulnerable because of the lack of PPE, increased workload and fear of infecting their family members. However, some of them felt less vulnerable than other groups in society because they had sufficient income, health literacy, and education to face the pandemic. Decision makers felt particularly vulnerable in front of the media and the public opinion. Some of them have also reported to have received messages with threats.

To conclude, the preliminary findings resulting from the interview transcripts provided mixed evidence on vulnerability definition and operationalisation of vulnerability in public health responses in target countries. While it is evident that public health decision or/and policy makers are well aware of the need to address vulnerability not only from the health perspective, the measures implemented did not fully take into account of this need, certainly because of lack of funding, but also because the difficulties in operationalising a broader definition of vulnerability capable to consider that individual health and well-being is a product of multiple influences of family, work, community, and the broader political environment. Thus, to tackle vulnerability and health disparities, policies should address the social and economic factors that create and perpetuate them.

3 Institutional, legal, and data collection factors influencing public health responses

Authors: Diana Beljaars, Sergei Shubin, Louise Condon, SU

3.1 Introduction

Chapter 3 assesses the institutional procedures and tools for pandemic interventions across the countries that are part of the consortium. It reflects on two meanings of vulnerability reflected in the institutional discourses. First, vulnerability is seen as a capacity or degree in physical and cognitive condition that makes a person more prone to harm or illness. In this context, vulnerability is often expressed in terms of dependency or inability to lead an independent life (Scully, 2014). Such classification constructs vulnerability as disempowering and oppressive, leading to exclusion of particular groups or even placing them in more vulnerable positions (Snipstad, 2020). Second, a broader understanding of vulnerability expresses a sense of exposure to harm, a part of being human and a possibility of being ill or injured during one's lifetime (Levine et al., 2004). Vulnerability is irreducible to specific social categories - to be human is to have a body that can be damaged. From this perspective, every living being is vulnerable to death (MacIntyre, 2000) and able to be affected by COVID-19.

The adoption of the earlier, limited understanding of vulnerability in institutional and legal discourses prioritises certain social groups at the exclusion of others, reproduces structures of inequities, and renders some people more vulnerable than others. When vulnerability is framed in terms of lack (of capacities, skills or abilities), it is often defined through calculations such as 'frailty scores', setting of quantitative targets and 'risk-management' schemes aimed at reduction of dependency and rational use of scarce public health resources (Tyner, 2018: 83). This view of vulnerability as an (in)capacity prompts bio-political institutional responses that regulate life as a calculative asset, deciding on whom to 'make live' and whom 'to let die' (Foucault, 2003). In the broader sense of this term, vulnerability says something about the differences in exposure to the virus infecting the body, intensities of illness and death ensuing. Althougheveryone is inherently vulnerable to infection in the pandemic, people with certain characteristics have disproportionately suffered the effects of the pandemic. Mobilising 'vulnerability' as a biopolitical concept allows tracing how decision-making structures have played a role in these discrepancies (Cole, 2016).

Based on and continuing the narratives set out in D5.1 and D5.2, Section 3.2 provides a brief summary of the literature and policy context for the pandemic interventions. D5.1 and D5.2 are based on an analysis of the policy documents in each of the countries that are part of the consortium in light of the emerging scientific COVID-19 literature. Section 3.3 outlines the methodology of this chapter. Section 3.4, encompassing the three-part analysis, considers how institutions have been acting and collaborating for the public health interventions. On this basis commonalities and challenges are identified in responding to a variety of vulnerabilities across the countries (section 3.4.1). This section continues with the summative framing of the legal basis for these responses in the different countries and analyses the capacity of these legal underpinnings to identify and counter some health inequities that are at the centre of these vulnerabilities as emergent from the pandemic context (section 3.4.2). This feeds into an analysis of the methods and tools for data collection and data usage that have underpinned the public health responses in the various countries. The sub section critically evaluates

institutional capacities to identify vulnerabilities and their capacities to include the perspective and voices of groups that have suffered illness and death at disproportionate rates (section 3.4.3). Analysing how these three elements interact and potentially reproduce inequities between societal groups, the final analysis sub section offers a more in-depth case study of the institutional collaborations, legal underpinning of the pandemic responses, and data collection tools in Wales. The chapter finishes with drawing conclusions from the analysis and offering recommendations.

3.2 Literature and policy document context

In many countries, governance of the COVID-19 crisis has been characterized by increased centralization to enable rapid decision-making. Even in countries where regions/provinces/counties/cantons have greater autonomy in decision-making on other topics (e.g. Austria, Belgium, Italy), top-down coordination of COVID-19 responses were often centralized to national government bodies, particularly in the early stages of the pandemic. Pandemic policies have typically been organised collaboratively in committees consisting of representatives from various governmental agencies, public health organizations, and scientific experts. Some countries rely on disaster management structures that were in place prior to the outbreak of the COVID-19 pandemic.

Across the selected countries in the COVINFORM project, measures have been implemented at the national level to curb the spread of the SARS-CoV-2-virus. Most countries built new legal structures to implement these measures to serve two main goals;

- Surveillance of the spread of the virus and the use of monitoring data to isolate infected people or households through mandatory tests and contact tracing.
- Enforcement of monitoring and control measures, introduction of punitive action through the imposition of fines or restricted access to certain venues in the case of (dangerous) non-compliance.

In most countries, emergency responses entailed a change in the distribution of power, with national governments gaining more control (Diaz Crego and Kotanidis, 2020) and public health organisations gaining more say in the implementation and execution of the pandemic policies. Examples of pandemic measures include individual behavioural measures (e.g. mask-wearing, physical distance-keeping, and limitations to social gatherings indoors and outdoors), travel restrictions (e.g. non-essential travel bans, travel-related quarantine and self-isolation, and travel COVID-19 tests), school, shop, restaurant, and sport facility closures or restrictions (e.g. distant learning, categorically and temporally differentiated opening allowances appointments, and maximum numbers of entries).

Continuous data collection has been a central component of pandemic responses to guide the planning and implementation of public health interventions. It provides numerical insights into the spread of the infections, hospitalisations, and COVID-related deaths per locational setting (for instance, care homes, hospitals, and community) and demographic characteristics (e.g. age, gender, presence of dangerous co-morbidities). Such data provides a detailed understanding of the changes in the virus' 'behaviour' and the subsequent impact of the strategies. In D5.1 and D5.2 attention has already been drawn to the great differences in counting methodologies, frequency and detail of data. Such differences have implications for the varying definitions of thresholds amongst the different countries and the initiation, altering, or lifting of context-specific measures within these countries that inform policy responses.

3.3 Methodology

This chapter considered an extensive collection of literature and policy documents that have formed the backbone and provided structure to the pandemic responses. To understand the ways in which these documents were used on a day-to-day basis as guidance to specific contexts of the living and working conditions of an array of populations in different countries, this paper analysed the accounts of:

- health practitioners, including GPs, nurses, and midwives, who worked with the pandemic measures, and
- policy and decision-makers, including public health officials from governmental agencies, public health institutes, and senior scientists who have helped formulate and implement these pandemic policies.

Therefore, the analysis of this chapter is mostly based on interviews with the people in charge of developing, implementing, and operationalising the public health policies. Important interview themes include the procedures in which pandemic policy has been implemented, the experience of cross-institutional collaborations, and the consideration of vulnerable people in operationalisations of the measures.

Following the interview topic guide that was the same for all COVINFORM partners, interviews were conducted with a semi-structured approach. All interviews were audio-recorded, transcribed, and translated in the case the interview was conducted in another language than English. Interviewees were provided a pseudonym code that makes them non-traceable in accordance with the consent forms. They were also asked to fill in a survey with generic questions about their personal living conditions. The interview transcripts were summarised by the interviewers and made available to the consortium in this form. These summaries were compared and contrasted and subjected to a discourse analysis – an analysis method of interpreting text in relation to the social context of the interviewee's situation of relevance to the interview. This allowed for identifying how the everyday experiences of the people working with the pandemic public health policies suggested how they were understood, used, and operationalised. This provides insights into how these policies addressed pre-existing and new vulnerabilities and contributed to the way the pandemic unfolded in the different countries.

3.4 Analysis

Pandemic vulnerabilities can be identified in the structures that have been set up to design, underpin, and operationalise responses to the spread of the COVID-19 virus. This analysis focuses on:

1. The institutional set-up for the development of measures (Section 3.4.1),
2. The legal aspects that have been working to enforce the measures (Section 3.4.2), and
3. The data collected to evidence the impact of the measures (Section 3.4.3).

How these three elements work in concert is demonstrated in a case study of the pandemic responses in Wales (Section 3.4.4).

3.4.1 Institutional organization and collaborations in public health responses

This section discusses how key institutions collaborated on the formation of the national and local public health responses to the pandemic. Across the board, at the beginning of the pandemic institutional collaborations seem to have been a struggle to set up and get to a point in which the

interviewed officials considered them sufficiently productive. This lack of effective collaboration was particularly remarked on in Portugal, and was often characterised by divergent approaches producing conflicting guidance. As one public health decision-maker pointed out: “the superior decision-making on COVID-19 did not always reflect what was the understanding of a general health direction of another institution, namely political decision-making”. Many messages tended to have had discrepancies coming from public health officials and political figures or were even oppositional in some senses. This was mostly considered to be due to different perspectives. In turn, such instances reflected badly on the independence of public health institutions.

Such collaborations can be characterised in roughly two ways that differ across the countries and across governance levels:

1. Intensification of already established collaborations regarding public health

Such a strategy became adopted by public health institutions that had already established a network of organisations that had been relevant to engagements with vulnerable groups. These collaborative structures were born from pre-existing crisis management set-ups present in some countries, such as in Romania with its National Emergency Committee for Special Emergency Situations (CNSSU). This inter-ministerial committee departs from the Deputy Prime Minister for National Security, and is composed of ministers and leaders of Romania’s central public institutions. It is supported by the Department for Emergency Situation (DSU) and can act on any major threat. In the pandemic the CNSSU has been responsible for emergency management and coordination of COVID-19 response actions (European Commission, 2020).

Even though the broader UK-based set up a new collaborative system to respond to the pandemic challenges, at the lower local levels, in some instances helpful collaborations had already been established. An English public health director mentions that a local, Birmingham-based branch of Public Health England already had good collaborations with community groups, schools, and media outlets, and had invested resources in creating inclusive communications. Not only did that mean that what pandemic measure operationalisations would be effective for the different communities, the pre-existing collaboration allowed for the immediate inclusion of these stakeholders in the local-level pandemic measures implementation discussions.

2. New collaborations

Since the start of the pandemic, in many countries new collaborations were developed between key institutions through new subgroups and committees that focused solely on the pandemic response. Some of these new collaborations have had a decidedly military character, given such institutions’ capacities to move forward fast with intelligence and take rapid action. For instance, the collaboration between the Israeli government’s Ministry of Health, the Israeli Defense Force (IDF), and the National Intelligence Agency (Mossad) was established in early March 2020 to devise pandemic mitigation measure at the national scale called ‘Israel’s shield’ (Magen Israel) (Waitzberg et al., 2021).

New COVID-19 collaborations were set up, such as in Ireland with its government-led National Public Health Emergency Team for COVID-19 (NPHET, 2020). This team includes government officials of a broad range and representative from a broad range of medical, clinical, and social care institutes. This collaborative strategy was replicated in many other countries (England, Austria, Belgium, Spain, and Wales). A familiarity model supporting the new collaborative structure appears to have been helpful in developing policy at rapid pace. An Irish public health official describes this as such:

> *"We work well with Public Health England and different strands of the NHS. These collaborations were already established, but we added stronger relationships with adult social care, care homes, daycare, all the range of care that is offered and that needed our support or advice."[DM: Ireland]*

Whilst the overarching collectives were new, many of the health-related institutions had already been involved in established collaborative networks that were thus used in the organisation to operationalise the pandemic measures, but with new elements added to it.

Several public health officials and medical experts who have served on these collaborative committees suggest that the political institutions seem to be ahead in the decision-making (e.g. in Portugal and Wales), leaving the collaborating health institutions to act reactively, rather than proactively. This was not experienced as not conducive to the collaborative effort. As time progressed and collaborations became smoother, these positions became more equal. In contrast, a decision-maker at the Italian National Institute for Infectious Diseases "Lazzaro Spallanzani" did argue that the collaboration with the authorities was decidedly constructive and non-competitive:

> *"During the pandemic, each structure had its own specific purpose, but in a broader framework, everyone did its part within a system. This approach was functional. There was the idea and perception of being a NETWORK of structures aimed at a common goal."[DM: Italy]*

For other countries public health and medical institutes had been requested to form 'task forces' (Portugal), 'advisory boards' (Belgium), or 'cells' (Wales) to provide insights and advice on particular aspects of the pandemic for governing actors. Such new subgroups tended to be multidisciplinary or transdisciplinary, with advisory collectives including members from multiple organisations, and operational collectives taking part within public health organisations. Such collectives were initially strictly made relevant to national-level policy making, much to the frustration of decision-makers serving on regional and local level, as local collaborations, expertise and skills have been rendered less or irrelevant in the process. In Madrid a highly ranked official in the Autonomous Community emphasised how the lack of coordination with the central government was particularly problematic. In some countries, later on into the pandemic (autumn 2021), the policy and decision-making focal points are shifting down to the regions (Belgium) and local levels (Spain). However, this Spanish official suggests that this delegation of decision-making can be perceived as central governments not taking their responsibilities.

The formation of both types of collaborations have informed the procedures of public health policy development and its implementation. Procedures discussed here reflect the structuration of information streams between different audiences that creates a prioritisation and hierarchy of concerns deemed relevant within this collaborative set-up from which policy measures flowed. In other words; pandemic policy measures result from the collaborative structures in which they are generated; the subtraction or addition of other institutes or collectives to the collaborations will have produced slightly different procedures and pandemic measures. Conversely, the selected procedures informed the collaborations between institutions and the set-up of the multi-level intra-institutional sub-groups and committees. As a result, the capacity for recognising, prioritising, and addressing vulnerabilities in the pandemic emerged from these procedures.

Representatives from most countries agreed that the public health measures did not sufficiently respond to the needs of all vulnerable groups. This lack of engagement seems to have been mostly due to the lack of effort to reach different societal groups in an effective way (Portugal, Belgium, Greece, Austria, Italy). The insufficient manner of communicating with different societal groups is thought to have been due to the deficiency of collaborative procedures at the governing and healthcare institutions. In particular, engagement policies lacked the sensitivity to identify how and why potentially 'vulnerable' groups required a different message or had different needs to protect themselves against infection, illness, and dying.

3.4.2 Legal basis for public health responses

Multiple pandemic policymakers denote geographical differences with people in certain regions adhering more strongly to the measures than people in other regions. Differences seem to manifest in urban versus rural regions; the pandemic legal structures being less effective in the rural regions (Portugal) and remote islands (Greece) where people also questioned the severity and even the existence of the pandemic.

The prioritisation of certain groups in pandemic responses early on, such as with the vaccine distribution and the more heavily controlled mobility of some groups like residents of the long term care facilities in most countries, had been designed to protect these groups against disproportionate risk of infection, illness, and death. It was understood that such measures would counterbalance inequities faced by some groups seen as 'vulnerable'. However, some policy makers argued that this targeted approach created new inequities. For instance, a Portuguese respondent argues that measures initially designed for particular groups (residents vulnerable because of their age and restricted mobility) became universal, which, in turn and by definition, would not apply very well to other groups.

In some countries (e.g. Belgium), healthcare workers such as GPs became the personification of the legal requirements of quarantine and self-isolation upon infection. As a GP in Belgium reported, the need to enforce pandemic measures created tensions between health professionals and infected populations:

> *"Last year we became a bit of a police force [for enforcing quarantine + isolation]. And we tried to limit this, because at the end of the day it's not the intention, because of course you want to work with a relationship of trust." [GP: Belgium]*

In later stages of the pandemic, GPs and other health practitioners noticed that people were reluctant to seek medical attention because GPs could tell them to isolate. Hence, whereas the legal structures worked through the primary care facilities, the presence of these institutions' capacities of enforcement (moral, if not legal) deterred potentially infected and ill people from accessing the care they needed. This effect seems to have been particularly strong for groups that were not immediately targeted or sufficiently included as target population of the pandemic policies. Another Belgian GP, who worked in an area with significant migrant populations, noted that the initial messages seemed to have resonated more with white patients than with Black, Asian and minority ethnic (BAME) people, which might have discouraged BAME patients from accessing healthcare facilities. This also emerges from the assumption of the level of trust individuals have in institutions' aim to be helpful for individuals and not do (unintended) harm (Freeman 2020, Kligler-Vilenchik 2021). Such deterrence has made these groups vulnerable to other illnesses and conditions deteriorating as well. In turn, this

hesitancy may have had a dampening effect on infection numbers of these groups, as 'documented' numbers would be lower to a much greater extent than 'actual' numbers than other, predominantly white groups.

In line with targeted groups having been less reluctant to know and follow the legal pandemic requirements, many healthcare workers across the countries reported that people of older age, who had belonged to a priority group from the start of the pandemic, were more willing to be vaccinated. They identified more with being vulnerable in the pandemic framework and were more willing to follow the law and guidance. A Belgian GP argued that this was also the case for older Berbers (a subculture in Morocco and several countries in northern Africa). Indeed, younger people seem to be less willing to follow the guidance, as they had been deemed less vulnerable, therefore less relevant within the protective legal framework, and who have even been framed as reason why older people should be protected with pandemic law.

Furthermore, in some countries (e.g. Belgium) the lifting of restrictions also seemed to have had inequitable effects. In this case, new pandemic-related legal provisions were not equally relevant to all populations. A Belgian policymaker explains how inequities have been able to emerge in the lifting of restrictions:

> *"I think that at the beginning of the crisis, the policy was geared towards the middle class having a house with a garden outside the city. Now that's a simplification, and a clichéd way of putting it. If you look at the first measures from that time - they said 'we're going to relax' last year sometime in the summer. And they said 'the garden centres will open, and you can have a BBQ'. But of course that's something that someone who lives in a city, unless they have a house and a garden... yes, that makes no sense, such a measure. So you're not reaching the population. In the beginning they took that into account far too little." [DM: Belgium]*

After ill-fitting pandemic laws and legal guidance, such redevelopments of the legal underpinnings of the pandemic responses seems to have initiated a new kind of alienation of groups from the pandemic responses.

3.4.3 Data collection and usage in public health responses

Data collection has been of vital importance in the creation, development, target audience selection, and alteration of pandemic responses. Interviewees from the different countries highlight different aspects of the data collection and usage that will have had an effect on the frequency, severity, and duration of some public health measures. Italian GPs argue that ensuring that registration systems of daily numbers (of positive cases, vaccination, deaths etc) that they had to work with was extremely difficult and time-consuming. There was a decided lack of support from the government and the regional public health institution; both in terms of adequate training through a lack of protocols and procedural clarity, and in medical material (e.g. inadequate PPE), resources, and personnel. One said that "without my secretary I would have not made it...I was alone".

In terms of the collection of data and transforming it into relevant, requested information by the decision-making institutions, many practices have had immediate effects on who data was collected from, and by extension, how marginalised people have figured in the data. An Austrian agency that acted as call centre and was tasked with data collection for contact-tracing was provided strict government guidelines that left very few uncertainties. It also meant that they therefore had no

motivation to use community input to the kind of data collected, nor were they allowed to alter the method of contact tracing, even though they saw certain problems arise and were not allowed to solve them. It also meant that they did not produce disaggregated data as this was not requested and thus not permitted by the government. At the same time, they had no possibility to deliver feedback or suggest changes to the procedures. In addition, their data collection was subjected to verification from another organisation, which required them to withhold this information and thus communicated to the public only a partial picture of the data they collected.

Another issue with data collection and data usage was the need for recent data as well as transparency of data, approaches, and models. Data that was used to build cases for policy decisions was often collected by regional or international organisations that could prohibit public display for a lack of ownership of that data, for instance in Belgium. As it was often not possible to replicate studies by public health organisations to the extent needed to draw universal, valid, and credible conclusions, creating a mandate for pandemic legal decisions was challenging, as the logic could not be made fully traceable for journalists and the wider public. In addition to this, an Austrian pandemic modeller argues that data sharing does often not happen as organisations are not keen on sharing their data:

> *"Certain stakeholders don't want others to rain on their parade, because we don't give away data. Everyone knows by now that data is power. And if I don't give data away, then someone else can't control what I do. And that's where we still have to improve." [DM: Austria]*

Such hoarding of data creates partial or narrow depictions of the pandemic development in a given area and makes it more difficult for decision-makers to combine the data bases and get more comprehensive models to work for a more comprehensive understanding of the measures in the face of the virus.

The subsequent interpretation of the collected data has also been causing uncertainties and discrepancies in what is understood as 'good' useful data upon which measures could be developed for whom and to what goal. Here priorities that fundamentally differ between politics and the biomedical sciences have been manifesting most clearly, with governments deciding to act differently from what medical advice suggested. According to a Portuguese policymaker, the design of public health measures suffered from discrepancies with the advice stemming from the scientific community that was asked to provide data. Therefore, the evidence basis for the measures will have consisted of a partially unknown underpinning.

3.4.4 Case study: Wales

This case study of Wales describes how the inter-institutional collaborations, legal underpinnings of the pandemic responses, and data collection tools worked in concert in the Welsh pandemic development.

Initially the four nations forming the United Kingdom worked together to respond to the coronavirus pandemic, but from March 25th, 2020 onward, the Welsh government had the power to manage the pandemic independently of the other British nations. The Welsh Government collaborates with national institute 'Public Health Wales' (PHW), which was tasked with operationalising the Welsh government's pandemic policies that the institution fed into reactively to a certain degree as well. PHW's pandemic work has been organised in a hierarchical structure of 'Cells' around themes that were deemed important at certain stages of the pandemic. For instance, they had a 'Telephone Cell'

at the earlier stages of the pandemic, which was later on replaced by an informative website to which questions could be submitted too. The work of the 'Guidance Cell' translated the government's policies into information that local care organisations could use to implement changes in their daily pandemic policies. At the same time, it gathered requests for clarification and alternatives for specific situations and groups for which the guidance was not (easily) applicable and fed these back to the leading 'Cell' that has been feeding directly into the policy-making Welsh Assembly. However, PHW found out about changes in pandemic policies at the same time and in the same generic sense as everyone in Wales by watching the live press conferences aired on television and various social media channels, and by keeping an eye on the government's website.

The clarification and detailing of the pandemic measures imposed by the Welsh government took place mainly through the communications between PHW and care institutions and community groups. Two interviewees who served on the 'Guidance Cell' were recruited to be part of this cell because of their already established (extremely) large professional network across organisations, localities, and health themes. attributed to Wales' small size, the feedback and requirements for alternatives to suit circumstances that had not been considered by the Welsh government and its science advisors thus seems to have hinged largely on the professional networks of individuals, which re-formed from smoke cessation and pregnancy networks to a COVID-19 network. The non-COVID basis of such networks suggests how by virtue of having been part of pre-pandemic networks, some organisations could immediately request changes and alternatives, whereas others needed to first find entry to these networks.

In several South Wales hospitals, care policies were created on the basis of the national policies and their (anticipated) effects. As such, care provision was considered to be applied universally, except on the basis of age. An advanced nurse practitioner who has been working in a South Wales hospital reported that in the early stages of the pandemic a crude line was drawn between people under and over 50. People under the age of 50 would be allocated more active treatment than their older counterparts because of a lack of resources. As noted earlier in this chapter, the use of such quantitative (age-based) thresholds of vulnerability prompted differentiated responses to different social groups. For instance, ventilation was not offered to critically ill people over 50, as the machines were reserved for under-50s. The nurse practitioner argued that the care for people over 50 had a decidedly more palliative care character than that for younger patients. It made her and her colleagues feel conflicted as they were not allowed to provide their normal high standard care. As a result, she considers that more people over the age of 50 have died whilst they may have been able to keep them alive with better care. As the fieldwork data suggests, institutional responses to older people in Wales resonated with similar strategies used in other European countries. Anxieties over care provision to older-age groups in elderly care homes have also been affecting healthcare workers in Sweden, as they were blamed for inadequate care provision to ill patients in the media. One interviewee took to social media to debunk such claims and defend the quality of care for old-age COVID patients.

Moreover, reflecting the strong presence of biomedical expertise in the UK- and Wales-based advisory panels, pandemic policy responses often focused on social affordability and rationing of healthcare resources within the imperative of 'Saving the National Health Service'. One of such responses was the restructuration of the hospital workforce, which revolved around the expertise of medical doctors, and based on job title rather than individual competencies and specialisms. Similar to what happened in Swedish care home institutions, in the early stages the nursing staff in Wales had been used as stopgaps, which resulted in sometimes severe mismatches of nursing expertise and ward specialisms,

and impacted the quantity and quality of patient care delivered. Elderly people were perceived as inherently vulnerability and hence a potential burden on the healthcare system and a destabilising factor in the pandemic governance. One interviewee, a specialist in elderly care, recalled her initial placement on a respiratory ward, when she was not included in decision-making at the level she had worked before. However, after successfully challenging this exclusion with similar colleagues in the autumn of 2020 she used her previous experience of working with elderly patients to change governing practices in the ward. She was put in charge of the hospital entry of new patients to redesign the process of separating elderly patients infected with COVID-19 patients from others, distinguishing people with different degrees of risk within seemingly homogeneous 'elderly' population. In the United Kingdom advanced practitioner nurses are trained to levels at which they work on a par with medical doctors in their recognised specialisms. In recognition of this, the advanced nurse practitioner was moved from the hospital ward that did not fit well with her specialism, and became involved in decision-making, including the design and implementation of COVID-19 care in the Emergency Department.

3.5 Discussion, conclusion and recommendations

The development of different kinds of collaborative institutional organisations in the partner countries suggests a different understanding of and approach towards COVID-19. The adoption of pre-existing collaborative structures frames the pandemic as an emergency that can be dealt with using the same institutions – and to a certain extent also specialisms – as other disasters. Such a set-up is therefore based on many pre-existing assumptions about what happens, who will be affected in what ways, and what should be done to mitigate harm and limit suffering. The chances that certain medical and social impacts of the virus will be overlooked or misrepresented, are likely to be higher than collaborative structures stemming from deliberate consideration of the virus. Such negligence can have led to disproportionate harm of certain societal groups.

On the one hand, the new inter-institutional collaborations that were set up in reaction to COVID-19 may have had greater capacities to identify how certain workings of the virus rendered certain people more vulnerable to suffering. On the other hand, pre-established collaborations had the capacity to respond more rapidly. Regardless of the origin of the collaborations, echoing an Italian decision-maker, constructive and non-competitive styles of working towards a common goal seemed to have been a better work environment for the people in charge than collaborative styles in which institutions had their own agenda.

The messiness of the construction of new collaborations and prioritised voices at the start of the pandemic may have produced inequitable outcomes in terms of good, timely, and relevant communication and the consideration of specific base-line circumstances. Indeed, the concerns of well-connected groups that are more socio-economically privileged with social and political proximity to the key institutions at this formation stage may have been represented better from the beginning of the pandemic than those of less well-connected groups. Early involvement may well have been solidified as fundamentally available to all people and on the assumption of which pandemic measures were developed (such as having a home, running water, and being registered with a GP), whereas later involvement could be framed as 'extra-ordinary', which makes such requirements a secondary concern. In Wales, organisations and unorganised groups of people who have not (or only later) been part of the professional networks have potentially missed out on crucial guidance and an important stream that could influence the Welsh government's policy decisions. Indeed, policy makers in Greece,

England, and Wales mentioned sending special teams to groups (e.g. Gypsy Travellers) that have not been of central concern and earlier excluded from policy measures.

Not only collaborative structures of key institutions have contributed to the emergent health inequities. Compounding factors were the legal framework of the public health measures that have been more difficult to comply with and have had more impact on certain groups than others. This includes the ways in which healthcare workers have been perceived as the faces of the law in some countries, such as Belgium, which may have deterred people from seeking medical care. Mistrust of healthcare workers is most likely to affect people who have to deal with financial instability and cannot afford to be quarantined with COVID-19, and who have run the risk of not being diagnosed with other medical issues. Specific groups having been less likely to come forward for testing, may result in an underestimation of the infection and illness rates for such groups. As a consequence, in databases of disaggregated data these groups seem to have lower infection and illness rates in comparison to other groups than they actually do. As a result, much needed attention and resources may be put towards protecting them from COVID-19 infection.

Another effect of hospital policy about care provision in the NHS that had had its funding severely cut since 2011 (Roberts et al., 2012) and in which resources had become (severely) limited is the clustering of a higher number of deaths in particular groups. In health economic terms, groups such as elderly and disabled people are not seen as having much quality of life or life years left to live did not always receive the same level of healthcare that younger and abled others received. For instance the now revised National Institute for Health and Care Excellence (NICE) guidelines from 21 March 2020 implored that an adult's frailty score determined the level of COVID-19 care available to them (NICE 2020). UK-based community groups, such as from people with Learning Disabilities, campaigned against it (Mencap 2020), as it also prompted GPs to issue 'Do Not Attempt Cardiopulmonary Resuscitation' (DNACPR) notices to individuals who had not requested such notice, that would reduce the level of care to this group to palliative and at home only (Mencap 2021). Unknown to the individual in question, the legal basis for their right to life had been impeded on (Ibid). In the words of Judith Butler (2015, 2020), such populations are 'let die' by the state. Disaggregated data then suggests that the virus is more dangerous for people over a certain age threshold, whilst in practice the construction of this danger has possibly been overexaggerated through such differences in care provision.

4 Communication around vaccines and vaccination campaigns

Authors: Diego Castellanos, URJC

Adequate, effective and comprehensible communication of the pandemic has a direct impact on public health. The evolution of the health crisis and its consequences, communication strategies by governments, political institutions and even the media are relevant. Vaccines, their research, impact and administration, were one of the most important communication challenges after the initial periods of the pandemic. This chapter addresses, through a descriptive analysis, the communication campaigns around COVID-19 vaccines in the 15 countries that make up the COVINFORM project. The main objective is to identify the characteristics of these strategies in terms of promoters and managers, target audiences, channels and content disseminated. In conclusion, a series of recommendations are made for future epidemiological crises.

4.1 Health communication in the COVID-19 epidemiological crisis

The crises resulting from COVID-19 have had a decisive impact on many areas of society at all levels. In addition to the health aspect, centred on the evolution of the number of infections and the increase in the number of deaths, there have been others linked to political management (state of alarm, mobility restrictions, curfew, use of masks, etc.) and the economic impact (closure and limitations of activity, unemployment).

Within this framework, communication processes and the exercise of communicating in any area of public health have also been subjected to the tensions of the pandemic. Health policy management institutions (government, ministries, research centres) were forced to design campaigns and initiatives for immediate communication on the evolution of the pandemic. So did the conventional media and their extension online through platforms, social networks and instant messaging services. In particular, this type of initiative was vital during periods of maximum intensity and uncertainty in the crisis (the start of the pandemic, mass confinements) when the public demanded accurate and rapid information.

The communication strategies at the start of the pandemic focused almost exclusively on aspects related to its evolution, features of contagion, recommendations to prevent the spread of the virus, dissemination of hospital care protocols, etc. However, the discovery of vaccines and the development of vaccination campaigns were both a milestone and a new challenge.

4.1.1 Challenges in communicating COVID-19 vaccines

The authorisation by the European Medicines Agency of the first vaccines against COVID-19 in December 2020 inaugurated not only a new phase in the pandemic, but also in the mode, form and content of communication around the health crisis. The challenges were different, but equally important. Poor communication could pose a risk to public health by discouraging people from getting vaccinated. In contrast, effective, direct and clear communication would help to reduce scepticism, doubts and conspiracies surrounding the whole process.

Communication around vaccines and vaccination campaigns faced a number of challenges (whether contextual, narrative or message reception) that conditioned each country's communication strategies. Five relevant challenges around communication strategies in vaccination can be identified:

1) Complexity of vaccine terms, procedures and administration. Despite a year and a half into the pandemic, the incursion of new frameworks for understanding and explaining vaccines and

how they work was a major challenge. These messages were often difficult for the public to assimilate and understand.

Similarly, and especially in relation to the discovery of vaccines, data on the efficacy and safety of vaccines were made public through press releases from the pharmaceutical companies themselves (Oliva, 2021), which may have generated some suspicion or mistrust.

2) Information disarray in pandemics. In 2020, the World Health Organisation (WHO) coined the term infodemic to refer to the excess of information on a subject. On a significant number of occasions, this oversaturation of information took the form of hoaxes or rumours, making it difficult for the general public to find reliable sources and guidance when they needed it.

Vaccines were not left out of this trend. Herrera-Peco et. al. (2021) argue that vaccination has not been without its detractors:"who spread false information regarding its safety, composition or even adverse effects".

3) Pandemic fatigue. According to the World Health Organisation, this behaviour can be defined as: "a lack of motivation to follow recommended protective behaviours that appears gradually over time and is affected by various emotions, experiences and perceptions, as well as by the social, cultural, structural and legislative context" (World Health Organization, 2020).

Although pandemic fatigue was present throughout the development of the pandemic (and especially with the intensification of the different waves of infection), it was a determining factor in the design of vaccination campaigns. Communication about vaccines took place in a situation of great social anxiety, weariness and social fatigue, in which it was easy for good news to be magnified while lowering the threshold of reasonable demands and criticism (Oliva, 2021).

4) Anti-vaccine movement. The pandemic has provided an incentive to make visible and strengthen anti-vaccination groups. Although these movements were already well established in some European countries, it was with the COVID-19 vaccine that they have permeated broader sectors of the population. Some authors suggest that this is due, in addition to the pandemic fatigue explained above, to the fact that many people do not respond to evidence or scientific logic, but rather to emotional issues (Campillay et. al., 2021).

On the other hand, and with regard to the design of communication campaigns, it is worth noting that the internet has become the main battleground for these groups. Previous studies show how anti-vaccine content has long been present on platforms such as Twitter (Gunaratne, Coomes & Haghbayan, 2019) or Facebook (Smith & Graham, 2019) and how the network has allowed the configuration of these groups and the launch of their strategies.

5) Political, social and communicative polarisation. The crises resulting from the outbreak of the virus have led to a polarising framework in which the usual dynamics of opposing and confrontational blocs have been replicated as the health situation evolved. Polarisation has marked every area: risk perception, imposed restrictions (De Bruin, Saw and Goldman, 2020) or even evidence-based scientific and medical knowledge (Har, Chinn and Hart, 2020), giving rise to conspiracy theories about the onset of the pandemic or the effects of vaccines.

As highlighted above, these dynamics were amplified online. The very digital logics of hyper- and self-selection of sources and news favoured the creation of partisan "echo chambers" (Van Bavel et al. 2020) encouraging anti-vaccine and anti-scientific evidence groups.

4.2 Methodology

The main objective of this chapter is to identify the characteristics of vaccination campaigns in the 15 countries that make up the COVINFORM project: Austria, Belgium, Cyprus, Germany, Greece, Ireland, Israel, Portugal, Romania, Sweden, Switzerland, United Kingdom, Italy and Spain. To this end, a descriptive analysis of the reports provided by each of these countries will be carried out in order to try to identify regularities and common characteristics in the way campaigns on COVID-19 vaccines are communicated. The most significant differences or nuances identified in each of the strategies will also be highlighted.

The analysis is structured as follows:

- Institutions, promoters and decision-makers
- Target groups
- Channels
- Content

4.3 Analysis: Characteristics of the communication campaigns on vaccines and vaccination.

4.3.1 Institutions, promoters and decision-makers

Each country managed the epidemiological crisis in a specific way. Either directly by the Ministries of Health (Cyprus or Greece), with particular emphasis on public health systems (Public Health Wales), through specific pandemic management bodies within government structures (National Vaccination Board (Austria), Paul-Ehrlich-Institut (PEI) - Bundesinstitut für Impfstoffe und biomedizinische Arzneimittel (Germany), Centro de Coordinación de alertas y emergencias sanitarias (Spain)) or through structures created for this purpose: Extraordinary Commissioner for the implementation and coordination of the measures necessary to contain and combat the epidemiological emergency of COVID-19 (Italy) and the Federal Government's Commissariat for COVID-19 (Belgium).

These different modes of management were also reflected in the communication strategies when relying on these bodies. Vaccination plans were associated with information dissemination plans. Perhaps we could not speak specifically of comprehensive communication plans. As Tur-Viñes and Monserrat-Gauchi (2014) point out, such a plan is more than just a set of specific actions for the dissemination of content. Thus, everything should be considered from an integral point of view with sequential phases that begin with an analysis of the situation and continue with a diagnosis, determination of objectives, choice of strategies or action plans. The process would end with the evaluation not only of the actions, but also of the reception of the messages.

Thus, in many cases, the promoters of vaccination strategies were also responsible for their communication plans. At the level of benefits, in-depth knowledge of pandemic management structures may have favoured adequate communication about vaccines, their research, administration, etc. On the downside, however, the lack of a comprehensive plan may have led to reactive rather than strategic communication, where immediacy rather than planning and effectiveness were paramount. For example, in the Spanish case, many of the initiatives promoted by the Ministry of Health responded to specific needs and problems that gained presence and visibility on the public and media agenda.

4.3.2 Target audiences

The communication strategies in the different countries and the target profiles of the messages were structured in two different ways:

- Messages aimed at the general public. The main objective of this type of action was to raise awareness of the importance of vaccination. They were mainly intended to make the general public appreciate the importance of receiving the vaccine and did not have a defined target audience. For example, in Austria (in collaboration with the Red Cross) the campaign "Österreich impft" was launched or in Spain "#yomevacuno" which aimed to emphasise the benefits of vaccines and the importance of getting vaccinated "to protect ourselves and others against COVID-19".
- Messages targeted to specific audiences. Each country's vaccination plan was structured around specific audiences selected for different characteristics. In the vast majority of cases, these campaigns started with medical and health care workers, followed by the older population and especially residents of long term care facilities. People with previous illnesses and pathologies and staff of essential services (police, fire brigades, etc.) also played a predominant role in these vaccination plans. The structure of this vaccination strategy was associated with direct communication with each of the groups, which increased as the vaccination progressed.

It should be noted that these campaigns (even those aimed at specific audiences) sometimes overlook complex realities and people at risk of social vulnerability: migrants, exiles, homeless people, etc., and it would be necessary to integrate these realities into campaigns of this type.

4.3.3 Dissemination channels

- Conventional media. Conventional media played a significant role in the dissemination of vaccination campaigns and in strategies to reach mass audiences (through advertising campaigns, sponsored content, etc.) via television, radio and the press (print and digital).
- Agglomerator websites. In many of the countries analysed, websites were configured as a unifying vocation. Faced with the plurality and multiplication of information, the pandemic management institutions created websites to centralise and categorise important information related to the coronavirus, such as: isolation and quarantine rules, symptoms and treatments, information on tests, masks, travel, etc. With the advent of vaccines, these websites served as repositories of information related to vaccination schedules.
- Social media: as an extension of the websites mentioned above, the countries analysed used social media (with differences in the platforms used according to each country) to disseminate information related to vaccination schedules, the importance of receiving the vaccine, etc. These networks served to reach more diverse and different audiences and to make information go viral with other codes and languages that are different and specific to these communication tools.

4.3.4 Content

The contents that were the focus of the communication campaigns on vaccination were structured in two categories:

- Content based on the characteristics of vaccines: basic information on how vaccines work, the companies that developed them, scientific evidence, expert opinion, etc.

- Content focused on vaccination schedules: dissemination of vaccination strategies, highlighting implementation periods, target population groups, dates, vaccination schedules, etc.

It is also worth noting, although not a category in itself, how some countries developed specific content to combat misinformation (e.g. Israel, Sweden, Austria). These specific materials were intended to verify false information and provide scientific evidence for the hoaxes circulating in the different countries.

4.4 Conclusions and recommendations

Based on our findings, we formulated some future policy recommendations to improve vaccine communication strategies:

- Public health communication and population risk communication, especially in relation to vaccination, needs careful planning to avoid the undermining of community participation ((Heydari et al., 2021). Hence, emergency and reactive communication should be replaced by strategic communication involving all relevant stakeholders. To this end, preventive plans and communication drills should be carried out to develop future crisis scenarios and increase citizenship participation.
- To better organise risk management, the development of new professional profiles is needed. At present, many healthcare organisations lack professional profiles to communicate in the intermediate management structures (García-Santamaría, Pérez-Serrano & Rodríguez-Pallarés 2020), (Costa-Sánchez & López-García, 2020). This prevents an exhaustive knowledge of each of the departments involved in crisis resolution. Although they should work in a complementary way, organisations need to be appoint also "crisis communication strategists" more traditional functions, such as Communication Directors.
- Communication campaigns should be comprehensive, structured and easily understandable, especially with regard to anti-vaccination messages (Wang, McKee, Torbica & Stuckler, 2019). This approach implies the development of campaigns that translate the complexity of science into accessible and easily understandable messages. Similarly, strategies should be developed that complement all possible channels (analogue and digital) as well as different formats (social networks, instant messaging services) and different actors (doctors, health instagrammers disseminating official news (Castro Higueras et al., 2021), etc.).
- It would be important for vaccination strategies not only to be developed at the macro level with unidirectional and mass messages. Training health personnel at different organisational levels on how to communicate and explain vaccination campaigns would help to develop a strategy that is closer to the citizens.
- Future policies should establish public health surveillance programmes in the field of communication. Herrera-Peco et. al. (2021) propose that "it would be advisable for public and private institutions, whose objective is to maintain public health, to establish communication plans that include public health surveillance programmes in social networks, so that they can detect the information needs demanded by the population with respect to specific issues" (Herrera-Peco et. al., 2021).
- Finally, it would be advisable to evaluate the reception of the campaigns. Take advantage of something as exceptional, universal, globalised and significant as vaccination against COVID-19 to identify failures, scope and drawbacks of the communication strategies in order to improve and plan future actions in the field of public health.

5 Impacts of COVID-19 on healthcare workers: preliminary findings from a qualitative analysis

Authors: Gloria Anderson, Massimo Fantoni, UCSC

On 30 January 2020, the World Health Organization (WHO) declared the outbreak of disease due to a novel coronavirus a public health emergency of international concern (WHO, 2021a). Since then, the health care workers' (HCWs) personal and working lives have undergone a wide range of changes. HCWs have been exposed to a heightened risk of contagion (Shah et al., 2020), and the pandemic has resulted in many deaths among HCWs and their households (Gentry et al., 2022; Shreffler et al., 2020). HCWs had to face uncertainty (Razu et al., 2021; Shreffler et al., 2020), restriction measures (Hoernke et al., 2021) and an increase in workload and shifts (Gualano et al., 2021; Razu et al., 2021). This impacted their mental health, producing an increase in anxiety, depression, stress and burnout among HCWs (Cabarkapa et al., 2020; Sun et al., 2021). HCWs were also often exposed to precarious working conditions, especially in the first waves of the pandemic. They lamented lack of personal protective equipment (PPE), lack of incentives and insurance, violence, and harassment (Felice et al., 2020; WHO, 2020). Recently, the WHO developed a framework to support the standardization of measurement and reporting of the multidimensional impact of the pandemic on HCWs (WHO, 2021b). The framework is articulated in four key dimensions focusing on the changes that HCWs faced during the pandemic in the areas of health, social well-being, working conditions and availability and distribution of resources (e.g., vaccines).

In this context, WP5 of the COVINFORM project aims to assess the public health responses to the COVID-19 pandemic in the consortium partners' countries. To gain a complete understanding of how the pandemic was managed and which policies were effective or not, HCWs were interviewed to collect their narratives and perceptions. HCWs were chosen since they played an active role in the design or implementation of many public health policies (e.g., testing and tracing; vaccination campaigns) while also subject to others (e.g., lockdown). HCWs experienced all the ups and the downs of COVID-19, as professionals and as citizens. Even if current literature (Hill et al., 2022; Riedel et al., 2022; Williams & Kaufman, 2022) is reaching a deeper understanding of how much and how COVID-19 impacted HCWs, some aspects such as physical or mental long-lasting consequences of COVID-19, gendered impact and determinants of vaccine hesitancy are still unclear. Therefore, our aim is to evaluate the impact of COVID-19 on HCWs through a thematic analysis of the narratives gathered from WP5.2 interviews to deepen the understanding of the phenomenon and synthetize valuable public health recommendations.

5.1 Methodology

Our aim is to evaluate the impact of COVID-19 on HCWs through the narratives gathered from the WP5.2 interviews. Our study objectives are to:

- Synthetize thematic findings of the impact of COVID-19 on HCWs' working reality.
- Synthetize thematic findings of the impact of COVID-19 on HCWs' mental health.
- Synthetize thematic findings of the impact of COVID-19 on access to care services.
- Synthetize HCWs' main recommendations on the health care response to vulnerable groups' needs.
- Synthetize HCWs' main recommendations on the health care response to improve vaccination campaigns.

Our research questions are:

- How has COVID-19 impacted HCWs' working reality?
- How has COVID-19 impacted HCWs' mental health?
- How has COVID-19 affected patients' access to care services?
- What categories of patients did HCWs consider vulnerable to COVID-19 and why?
- What are the main barriers and facilitators of the vaccination campaigns perceived by HCWs?

To achieve our aim, we conducted a desk-based narrative review and a thematic analysis. The desk-based narrative review was conducted to enrich the background data from WP5.1 on the impact of COVID-19 on HCWs and to provide points for discussion. The desk-based narrative review was conducted on PubMed using the following key terms combined with Boolean operator: "health care workers", "health care professionals", COVID-19, impact, or effect. Filters were used to restrict the search to the second half of 2021 (from May 2021 until January 2022), since we plan to update previous information collected for WP5.1 until April 2021, and to secondary studies (e.g., systematic reviews, scoping reviews, meta-analysis, or meta-synthesis). The thematic analysis was conducted on the preliminary findings of WP5.2 following Colaizzi's (1978) method of thematic analysis. Instead of the participants' verbatim, the preliminary findings from each WP5.2 partner which were reported in standardized template have been read and reread to acquire a deeper understanding of the phenomena. Significant statements or phrases were extracted, and formulated meanings were constructed from them with the support of Excel sheets. Then, formulated meanings were arranged into themes. Tables were constructed to synthetize the main findings. The characteristics of the samples were summarized using descriptive statistics with the support of Stata (v16.1).

5.2 Findings

5.2.1 Characteristic of the interviews

Fifteen HCWs' interviews were analyzed and synthetized. The HCWs were evenly distributed between attending physicians (AP) (n=5), general practitioners (GPs) (n=5), and nurses (n=5), as shown in Table 1. The HCWs were working in six different European Countries, with most of them (73%) coming from South European Countries (Table 1). The mean age of the sample was 47.5 (SD=3.67) years, with the Italian HCWs being the oldest sample on average. All the HCWs referred to being vaccinated against Covid-19, and only one nurse from Sweden reported being infected. The sample was very heterogeneous in terms of demographic characteristics, and some information was still being collected at the time writing of this Deliverable (Table 1). Female HCWs made up nearly half of the sample (Table 1). More than half (53%) of the HCWs reported being married and almost two third (67%) had children; however, only one third (33%) referred to living in a household with three or more persons.

Table 1. Socio-demographic characteristics of the sample

Partner	Country	N	Health profession-nals	Age, yrs (mean +SD)	Gender, female (%)	House-hold, < 3 people	Children, yes (%)	Marital status, married (%)	Vaccin-ation against Covid-19, yes (%)	Infected by Covid-19, yes (%)
USCS & Sapienza	Italy	2	2 GPs	64(1)	0%	0%	100%	100%	100%	0%

URJC	Spain	3	2 APs, 1 nurse	NA	NA	NA	NA	NA	NA
UGOT	Sweden	3	3 nurses	49(8.4)	67%	NA	NA	67%	100%	34%
UANTW-ERP	Belgium	1	1 GP	30(NA)	100%	0%	0%	0%	100%	0%
KEMEA	Greece	2	1 AP, 1 nurse	43(5)	100%	50%	50%	50%	100%	0%
FS	Portugal	4	2 APs, 2 GPs	46.6(0.33)	25%	50%	75%	25%	100%	0%

Notes: NA =not assessed

5.3 COVID-19 impact on HCWs' working reality

The COVID-19 pandemic deeply impacted HCWs' working reality. HCWs faced changes (i) in workload and work-life balance, (ii) in terms of practice organization and (iii) in interpersonal relationships and team-working. Findings are synthetized in Table 2.

In almost all the countries, the HCWs faced an increase in workload during the pandemic. The only exception were the narratives of the Portuguese HCWs who, since they worked in a COVID-19 free facility, experienced a workload decrease. Many HCWs blamed the increase of workload to the lack of optimal resource management and support from their governments. They reported to be understaffed and undertrained. This increase in workload affected HCWs' work-life balance. Many HCWs had to increase their working hours or change their working habits, adapting to the different waves of the pandemic; however, the government failed to organize and strengthen the care network.

The HCWs lamented changes in terms of practice organization. Lack of procedures or constant changes of protocols impacted on their working reality. HCWs struggled to provide the best care possible without clear therapeutic and procedural indications, and the patients were often very confused by the constant changes in the information and care practices. In some narrations, the absence of standardized communication systems between different facilities and HCWs impaired their provision of care. Moreover, HCWs faced changes in terms of organizational spaces and habits. They had to re-think their working spaces, deal with lack of individual protection devices and use alternative methods to care for patients (e.g., telemedicine. HCWs lament the lack of a care network and resources, stating that there was often no synergy between primary and secondary care.

Finally, HCWs experienced changes in interpersonal relationships and team-working. HCWs working in hospitals observed an increase in interdisciplinary teams' functionality. They stated that during the pandemic there was much more communication among different disciplines and synergies between wards; however, some HCWs reported a decrease in interpersonal relationship with both their colleagues and patients. The care relationship with the patients was impaired by the need to limit physical exchange and the overflowing of changing information on COVID-19 which mined the relationship of trust.

5.3.1 COVID-19 impact on HCWs' mental health

COVID-19 pandemic impacted on HCWs mental health (i) decreasing their psychological well-being, (ii) producing a feeling of abandonment and (iii) generating an interpersonal distance with the family. Findings are synthetizing in Table 2.

HCWs struggled with their mental health during the pandemic. They experienced fear, stress and burnout, which at times resulted in demotivation. HCWs have tried to use personal coping mechanisms to cope with the stress, but in some cases it has not been enough. The lack of formal psychological support was a big issue in almost all the countries, except for Belgium which provided it. HCWs lamented the indifference of governments and policies towards their mental health.

This situation produced in HCWs the feeling of being abandoned by the institutions. HCWs often reported a sense of helplessness in the face of COVID-19 pandemic. They experienced the pandemic as a war, and they used to compare themselves to frontline soldiers. Yet they felt that they had not received enough supplies and resources to be able to fight their war fairly. All this affected their motivation and led them to lose faith in institutions.

The pandemic generated an interpersonal distance between HCWs and their families. HCWs' families struggle with concerns, fear and sometimes even stigma. They did not want their loved ones to work with COVID-19 patients. At the same time, the HCWs tended to distance themselves from their family members for fear of infecting them. Another issue that affected family balances was the HCWs' inability to disconnect from work. During the pandemic, many HCWs carried home their own traumatic experiences, emotionally isolating themselves from their families. Due to the increased workload, some HCWs had to keep work from home after the end of their shifts, answering calls or emails.

5.3.2 COVID-19 impact on access to care services

HCWs reported that the pandemic impacted on the care services in two ways: (i) reducing the access to health care services and (ii) changing the provision of care. Findings are synthetizing in Table 2.

HCWs reported that access to health care services worsened during the pandemic. Patients were afraid to seek specialized care, and the HCWs said that there have been many delays in screening tests and disease diagnosis. HCWs lamented that the health care resources, such as health care staff and health care facilities, could have been managed better (e.g., implantation of operative COVID-19 free hospital or ambulatory), and the care network could have been improved to avoid these delays. In many countries, such as Spain or Italy, the HCWs affirmed that the health care system collapsed due to the failure of hospital centred care. They suggested that development of an integrated care network between primary and secondary care or between COVID-19 hospitals and COVID-19 free structures could have saved many lives.

The provision of care changed during the pandemic. Almost all the HCWs have cited the introduction of telemedicine and e-health as one of the biggest changes this pandemic has brought into health care systems. Overall, the HCWs were happy with the increase of telemedicine and e-health and considered video consulting as a good tool to use; however, nurses were particularly concerned that its abuse could impaired nursing care and jeopardize face-to-face assessments.

5.3.3 HCWs' reflection on vulnerable population

Regarding the concept of vulnerability, the HCWs identified three different populations: (i) those socially vulnerable, (ii) those at increased risk of adverse outcomes and (iii) those vulnerable to infection. The HCWs lamented that many of these vulnerable populations were not considered by governmental campaigns and public health strategies. Findings are synthetized in Table 2.

The HCW frequently identified "socially vulnerable" all those people who had a low socio-economic status, low education and lived in overcrowding spaces. Other populations defined as "socially

vulnerable" were children and pregnant women, as well as women facing domestic violence or young parents. Interestingly, only in two interviews -one nurse from Greece and an Italian general practitioner (GP)- people with mobility issues or disabilities were considered as "socially vulnerable".

The population defined as at increased risk of adverse outcomes were those who had higher mortality rates for COVID-19. Elder, people with chronic diseases, immunosuppressed patients and people with comorbidities were the most cited examples of "at increased risk of adverse outcomes" population. Interestingly, elders were often reported as an overexposed population since they were at increased risk of adverse outcomes but also often "socially vulnerable".

Lastly, the HCWs identified as vulnerable those people who are more exposed to the risk of COVID-19 infection. This population encompassed all the people daily exposed to an increased risk of contagion due to their work, such as HCWs or essential workers who worked at close contact with the general population or people who used the public transport to go to work. Even if HCWs considered themselves as exposed to COVID-19 infection, many of them did not perceive themselves as vulnerable to COVID-19. They used to think of frontline HCWs as a category exposed to an increased COVID-19 risk, but not themselves. This may be due to the characteristic of the sample, which involved many general practitioners or some HCWs working in COVID-19 free facilities.

5.3.4 HCWs' reflection on vaccination campaigns

Analyzing the vaccinations campaign, HCWs identified a list of possible barriers, defined as variables which hindered it, and facilitators, defined as variables which promoted it. Findings are synthetized in Table 2.

The HCWs commonly reported as hindering the poor and unreliable communication campaigns developed by their governments, which in many cases added up to an endemic low vaccination willingness. It is interesting to note that even if many HCWs from South European countries such as Spain or Italy lamented poor communication campaigns, none of them reported low vaccination willingness among the general population. Instead, the HCWs from Northern countries (Belgium and Sweden) seemed to face more endemic resistance to vaccination and the determinants are unclear. Another barrier was the lack of personnel and resources, often complicated by the absence of a functional primary care network and low engagement of community leaders. These variables slowed down vaccination campaigns, making it more difficult for HCWs to reach socially vulnerable people such as the homeless, migrants, elder or people with mobility issues. HCWs reported that another problem, especially for socially vulnerable people such as migrants or elder, was the presence of technological barriers to booking a vaccination. HCWs explained that not all the elder people who lived alone know how to book a vaccine online, and not all the migrants have access to the internet.

The HCWs identified a facilitator the enthusiasm they all felt at the start of the vaccination campaigns. They were all very motivated, and they all put a lot of personal efforts into its success. The Portuguese HCWs considered the communication campaign made by their government as well structured and clear, and they reported that good communication contributed significantly to the vaccination campaign success. Some general practitioners -one from Italy and one from Belgium- reported that their government made a lot of efforts to try to be inclusive, providing free vaccines to migrants and homeless; however, one of them highlighted that with a good primary care network and more resources they could have reached these people faster.

Table 2. Main findings

Partners	Impact on working reality			Impact on mental health			Access to Healthcare services		Conceptualization of vulnerability			Vaccination	
	Changes in workload and work-life balance	*Changes in terms of practice organization*	*Changes in interpersonal relationship and team-working*	*Decrease of psychological well-being*	*Feeling of being abandoned*	*Generating an interpersonal distance with the family*	*Reduced access to healthcare services*	*Changes in the provision of care*	*Social vulnerability*	*At high-risk population*	*Vulnerable to infection*	*Facilitators*	*Barriers*
USCS & Sapienza	increase in workload; struggles with work-life balance	lack of resources; lack of procedure and constant changing of protocol; lack of a care network; lack of standardized communication systems	impacts on the relationship of trust with patients; increase in interdisciplinary teamwork	lack of psychological support; fear and avoidance	abandoned by institution; feeling of being at war	concerns about families	worsened; increase in private expenditure	increase in telemedicine and e-health	people living alone or in overcrowding spaces; people with low education	elder	healthcare workers	enthusiasm and personal efforts; efforts to be inclusive	lack of personnel and resources/engagement with local leaders; technological barriers to booking a vaccination; poor communication
URJC	increase in workload; struggles with work-life balance	lack of resources; lack of procedure and constant changing of protocol; lack of a care network;	increase in interdisciplinary teamwork; impact on interpersonal relationship	lack of psychological support; stress and frustration, which generate demotivation	abandoned by institution	struggle to disconnect from work	worsened; delay in test and diagnosis; lack of integrated management	increase in telemedicine and e-health; fear of jeopardizing face-to-face care	people living alone or in overcrowding spaces; people with low-economic status	elder, people with comorbidities	healthcare workers	enthusiasm and personal efforts	poor communication
UGOT	increase in workload	lack of resources; lack of procedure and constant changing of protocol; lack of a care	increase in interdisciplinary teamwork; impact on interpersonal relationship	lack of psychological support; fear and stress	feeling of being at war	concerns about families	NA	NA	people who live alone or are isolated from society	NA	NA	enthusiasm and personal efforts	low vaccination willingness

		network; lack of standardize communication systems											
UANTWERP	increase in workload; struggles with work-life balance	lack of resources; lack of procedure and constant changing of protocol	impacts on the relationship of trust with patients; impact on interpersonal relationship	presence of psychological support; sense of being useful	sense of helplessness	no family concern; struggle to disconnect from work	worsened	increase in telemedicine and e-health	refugees; women facing domestic violence; children; young parents	elder	those who work at close contact with people	enthusiasm and personal efforts; engagement with local leaders; efforts to be inclusive	low vaccination willingness; technological barriers to booking a vaccination
KEMEA	increase in workload; struggles with work-life balance	lack of resources; lack of procedure and constant changing of protocol; lack of standardize communication systems	impacts on the relationship of trust with patients; increase in interdisciplinary teamwork; impact on interpersonal relationship	lack of psychological support; fear, stress, and burnout	abandoned by institution	struggle to disconnect from work	worsened; lack of integrated management	increase in telemedicine and e-health	pregnant women; people with mobility issues	immunosuppressed patients; elder; people with comorbidities	NA	enthusiasm and personal efforts;	poor communication; low vaccination willingness
FS	decrease in workload	lack of resources; lack of procedure and constant changing of protocol	impacts on the relationship of trust with patients	lack of psychological support; fear and stress	concerns about families	worsened; delay in test and diagnosis; lack of integrated management	increase in telemedicine and e-health; fear of jeopardizing face-to-face care	people with low socioeconomic status	people with low socioeconomic status	elder; people with comorbidities; chronically ill people	healthcare workers; those who work at close contact with people	enthusiasm and personal efforts; good communication	NA

5.4 Discussion

We synthetized the impact of COVID-19 on HCWs working reality and mental health, as well as how it has changed the access to care services. COVID-19 has increased HCWs' workload and impacted their work-life balance, changing both interpersonal relationships and team-working. HCWs faced a lack of resources, procedures, and protocols. HCWs suffered from the lack of an integrated care network and of standardized communication systems. The lack of psychological support, the feeling of being abandoned by their governments and the struggles to disconnect from work weighted on HCWs mental health. Moreover, we were able to synthetize HCWs' experiences and recommendations on vulnerable populations and vaccination campaigns. HCWs identified three vulnerable population, discriminating between those who were at high risk of adverse events, those who were vulnerable to infection due to their working activities and those who were socially vulnerable. Regarding the ongoing vaccination campaigns, HCWs reported barriers and facilitators, reasoning on the possible consequences of unsuccessful communication campaigns.

These findings highlight the importance of work on European preparedness documents to face effectively future pandemic. HCWs lamented the lack of strategic plans to organize workforce capacities and capabilities. In the last year, many European governments had started working on preparedness documents to identify strategies for effective prevention and case management (Coccia, 2022). Preparedness at the system level involves knowing hospitals or health care system capacities, including workforce capacity and capabilities and access to PPE, medical supplies, and medical devices (The National Academies of Sciences Engineering Medicine, 2021). It also requires having an action plan to manage the organizational challenges (WHO, 2019). Decision makers should be aware of the organizational changes HCWs faced during COVID-19 pandemic. This knowledge can help shape, organize, and implement the capacities and capabilities needed to respond effectively to the current or future pandemic.

The HCWs highlighted the lack of integrated care and the failure of hospital centred care. These findings require further reflections. Current literature (Giordano et al., 2020; Haldane et al., 2020; Hefner et al., 2021) suggests that the COVID-19 death toll could have been less catastrophic if primary care had been more involved in the initial response efforts. Missed opportunities ranged from provision of better care, to doing faster testing, more effective contact tracing to effectively differentiating between COVID-19 free hospital and COVID-19 hospitals (Haldane et al., 2020). It is interesting to notice that, while access to specialized care worsened in almost all the HCWs narrations, there were still differences on how much HCWs were involved in the public health response and how frustrated this made them feel. For example, GPs from Italy lamented that they were not involved in initial response efforts or in structured contact tracing, and this made them unhappy. Instead, the Belgium GP felt very integrated in the contact tracing system. Italian, Greece, and Spain HCWs have been very critical of the lack of integrated care management between primary and secondary care, but this did not emerge from the narratives of Sweden or Belgium HCWs. Future research should investigate further on the impact that the health care models had on COVID-19 response.

Interestingly, HCWs highlighted that in most of the South European countries (Spain, Portugal, Italy) the vaccination campaigns had higher adhesion rates than in the Northern European countries (Sweden, Belgium); however, this was not the case for Greece. It is not yet clear how much of the lower adhesion to the vaccination campaigns is related to poor communication campaigns or to cultural influences. The Greece HCWs lamented the lack of clarity and effectiveness of the governmental

communication campaigns and suggested that it may have influenced the vaccination willingness. Indeed, Greece has a low vaccination rate when compared to other south European countries (Ritchie et al., 2020). Instead, the Belgium GP suggested the problem may be more related to low engagement with local leaders or cultural influences, and the Sweden HCWs seems to share the same mindset claiming to not be in favor of measures such as mandatory vaccination for health professionals. However, the Portuguese HCWs suggested a possible relationship between good communication campaigns and low rates of vaccine hesitancy, affirming that Portugal is a good example of effective communication campaigns and low vaccine hesitancy. This relationship should be investigated further. The COVINFORM project may provide important highlights on this subject, and more efforts should be made to investigate the determinants (e.g., cultural influences, gendered impact, communication strategies) of successful and unsuccessful vaccination campaigns among the countries of the partners.

Another important finding emerged from the HCWs narrations is the need to strengthen and regulate tele-medicine and e-health. The HCWs agreed that COVID-19 pandemic highlighted the importance and usefulness of telemedicine. Telemedicine provides a way to put patients and health professionals in contact when a consultation in person is not possible (Haleem et al., 2021). Teleconsultations have proven to be a safe and effective way to assess suspected COVID-19 cases (de Oliveira Andrade et al., 2021), and to guide patients' diagnosis and treatment (Haleem et al., 2021). Legislation regarding telemedicine varies across European countries, but its use is increasing. Interestingly, even if all the HCWs recommended the use of telemedicine, some of them raised concerns on its regulation. The HCWs, especially nurses, affirmed that telemedicine should not jeopardize face-to-face care if any intercurrence is detected. This provides some important reflections not only on the development policies to implement tele-medicine, but also guidelines to regulate it.

These are preliminary findings and should be taken with caution. The thematic analysis was not conducted directly on verbatim, and some original meaning could have been lost in the translation process. Each sample size was too small to ensure data saturation; however, we analysed fifteen different narrations overall and this could be considered a good sample size in phenomenological research (Starks & Trinidad, 2007). These findings are coming from HCWs from different countries who had employed different policies and with heterogeneous social backgrounds. This may be a limit and a strength. While it impaired the internal validity of our findings, it increases external validity. Comparing narrations from different countries helped us identify future research topics, common variables, and unique aspects of the impact of COVID-19 on HCWs.

5.5 Conclusion and recommendations

This chapter allowed us to preliminarily analyze the findings of WP5.2, shedding light on the impact that COVID-19 is having on HCWs and their patients. HCWs highlighted the importance of working on preparedness documents to design strategic plans. HCWs provided some insights on variables that could have hindered or facilitated the vaccination campaigns and provided suggestions on how to improve the access to care services. Lastly, the HCWs provide a comprehensive and clear definition of vulnerable population which can be used in other deliverables.

6 Conclusions

In this report, we have analysed various dimensions of public health responses and impact to the COVID-19 pandemic across COVINFORM partner countries, covering four subjects: 1) health vulnerabilities; 2) the institutional, legal, and data collection factors influencing public health responses; 3) communication around vaccines and vaccination campaigns; and 4) the impacts of COVID-19 on healthcare workers.

With regard to health vulnerabilities, the preliminary findings resulting from the interviews' transcripts provided mixed evidence on vulnerability definition and operationalisation of vulnerability in public health responses in target countries. While it is evident that public health decision or/and policy makers are well aware of the need to address vulnerability not only from the health perspective, the measures implemented did not fully take into account of this need, certainly because of lack of funding, but also because the difficulties in operationalising a broader definition of vulnerability capable to consider that individual health and well-being is a product of multiple influences of family, work, community, and the broader political environment. Thus, to tackle vulnerability and health disparities, policies should address the social and economic factors that create and perpetuate them.

On the institutional, legal, and data collection factors influencing public health responses it was found that the development of different kinds of collaborative institutional organisations in the partner countries suggests a different understanding of and approach towards COVID-19. The adoption of pre-existing collaborative structures frames the pandemic as an emergency that can be dealt with using the same institutions as other disasters.

On the chapter about communication around vaccines and vaccination campaigns, several recommendations to improve vaccine communication were identified. These include the recommendation to avoid improvisation, to develop new professional profiles, to have communication campaigns that are comprehensive, structured and easily understandable, and several others.

Finally, the chapter on the impacts of COVID-19 on healthcare workers found that HCWs highlighted the importance of working on preparedness documents to design strategic plans. HCWs provided some insights on variables that could have hindered or facilitated the vaccination campaigns and provided suggestions on how to improve the access to care services. Lastly, the HCWs provide a comprehensive and clear definition of vulnerable population which can be used in other deliverables.

References

Aday, L. A. (2002). *At risk in America: The health and health care needs of vulnerable populations in the United States* (Vol. 13). John Wiley & Sons.

Butler, J. (2015). *Notes Towards the Performative Theory of Assemblage*. Cambridge: Harvard University Press.

Butler, J. (2020). *The Force of Nonviolence: An ethico-political bind*. Verso: London and New York.

Cabarkapa, S., Nadjidai, S. E., Murgier, J., & Ng, C. H. (2020). *The psychological impact of COVID-19 and other viral epidemics on frontline healthcare workers and ways to address it: A rapid systematic review.* Brain, behavior, & immunity - health, 8, 100144. https://doi.org/10.1016/j.bbih.2020.100144

Campillay Campillay, M., Burgos Videla, C., Calle Carrasco, A., Araya Galleguillos, F., Dubó Araya, P., & Anguita Mackay, V. (2021). *Comunicación de medidas sanitarias de distanciamiento por COVID-19 en medios de comunicación: Un análisis cualitativo.* Psicoperspectivas, 20(3), 6-17

Cano Garcinuño, M. & Arce García, S. (2020). *Análisis de la comunicación en redes sociales de la campaña de la vacuna de gripe en España.* Revista Española de Salud Pública, 94, 202003008

Castro Higueras, A., Torres Martín, J.L., Carballeda Camacho, M.R. y Aguilera Moyano, M.d. (2021). *Comunicación, salud y Covid-19. Cómo comunican los instagrammers sanitarios españoles.* Ámbitos: Revista internacional de comunicación, 53, 42-62

Coccia M. (2022). *Preparedness of countries to face COVID-19 pandemic crisis: Strategic positioning and factors supporting effective strategies of prevention of pandemic threats.* Environmental research, 203, 111678. https://doi.org/10.1016/j.envres.2021.111678

Colaizzi, P. (1978a). Psychological research as the phenomenologist's view it. In R. Vale & M. King (Eds.), Existential–phenomenological alter-natives for psychology (pp. 48–71). New York: Oxford University Press *(PDF) The extension of Colaizzi's method of phenomenological enquiry*. Available from: https://www.researchgate.net/publication/224887264_The_extension_of_Colaizzi%27s_method_of_phenomenological_enquiry; accessed Feb 18 2022.

Cole, A. (2016). All of Us Are Vulnerable, But Some Are More Vulnerable than Others: The Political Ambiguity of Vulnerability Studies, an Ambivalent Critique, *Critical Horizons*, 17:2, 260-277.

Costa-Sánchez, C., & López-García, X. (2020). *Communication and coronavirus crisis in Spain. First lessons.* El profesional de la información (EPI), 29(3).

De Bruin, W. B., Saw, H. W., & Goldman, D. P. (2020). *Political polarization in US residents' COVID-19 risk perceptions, policy preferences, and protective behaviors.* Journal of risk and uncertainty, 61(2), 177-194. https://doi.org/10.1007/s11166-020-09336-3

de Oliveira Andrade, A., Soares, A. B., de Andrade Palis, A., Cabral, A. M., Barreto, C., de Souza, D. B., de Paula Silva, F., Santos, F. P., Silva, G. L., Guimarães, J., de Araújo, L., Nóbrega, L. R., Mendes, L. C., Luiz, L., Brandão, M. R., Milagre, S. T., de Lima Gonçalves, V., de Freitas Morales, V. H., da Conceição Lima, V., & Pereira, A. A. (2021). *On the use of telemedicine in the context of COVID-19:*

legal aspects and a systematic review of technology. Research on Biomedical Engineering, 1–19. Advance online publication. https://doi.org/10.1007/s42600-021-00133-8

Diaz Crego, M., & Kotanidis, S. (2020). States of emergency in response to the coronavirus crisis: Normative response and parliamentary oversight in EU Member States during the first wave of the pandemic. European Parliamentary Research Service. (https://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_STU(2020)659385 (Accessed on 3/3/22)

European Commission (2020) 'European Civil Protection and Humanitarian Aid Operations: Romania'. (https://ec.europa.eu/echo/romania_en: accessed on 7/3/22).

Fawcett, B. (2009). *Vulnerability: Questioning the certainties in social work and health.* International Social Work, 52(4), 473-484.

Felice, C., Di Tanna, G. L., Zanus, G., & Grossi, U. (2020). *Impact of COVID-19 Outbreak on Healthcare Workers in Italy: Results from a National E-Survey.* Journal of community health, 45(4), 675–683. https://doi.org/10.1007/s10900-020-00845-5

Freeman, D. (2020). COVID-19 vaccine hesitancy in the UK. (https://www.ox.ac.uk/news/science-blog/covid-19-vaccine-hesitancy-uk, Accessed on 6-10-2021).

Foucault, M. ([1976] 2003). *Society Must Be Defended: Lectures at the Collège de France, 1975-76*. Picador.

García-Santamaría, J. V., Pérez-Serrano, M. J., & Rodríguez-Pallares, M. (2020). *Official spokespersons and audiovisual strategy in the Covid-19 crisis in Spain.* El Profesional de la información (EPI), 29(5).

Gentry, S. V., Thomas-Meyer, M., Tyrrell, C., Mavrodaris, A., Williams, R., Wallbank, S., Chitsabesan, P., Greenberg, N., Ahmed, A., & Abdul Pari, A. A. (2022). *What are the mental health impacts of epidemics on relatives of people affected, and relatives of healthcare workers: What interventions are available to support them? A systematic review and narrative synthesis.* Comprehensive psychiatry, 113, 152288. https://doi.org/10.1016/j.comppsych.2021.152288

Giordano, G., Blanchini, F., Bruno, R., Colaneri, P., Di Filippo, A., Di Matteo, A., & Colaneri, M. (2020). *Modelling the COVID-19 epidemic and implementation of population-wide interventions in Italy.* Nature medicine, 26(6), 855–860. https://doi.org/10.1038/s41591-020-0883-7

Gitterman, A. (Ed.). (1991). *Handbook of social work practice with vulnerable populations*. Columbia University Press.

Gualano, M. R., Sinigaglia, T., Lo Moro, G., Rousset, S., Cremona, A., Bert, F., & Siliquini, R. (2021*). The Burden of Burnout among Healthcare Professionals of Intensive Care Units and Emergency Departments during the COVID-19 Pandemic: A Systematic Review.* International journal of environmental research and public health, 18(15), 8172. https://doi.org/10.3390/ijerph18158172

Gunaratne, K., Coomes, E. A., & Haghbayan, H. (2019). *Temporal trends in anti-vaccine discourse on Twitter.* Vaccine, 37(35), 4867-4871

Hackl, T. (2020, October 27). *Roma children's education halted in COVID times.* www.caritas.eu. https://www.caritas.eu/roma-childrens-education-halted-in-covid-times/

Haldane, V., Zhang, Z., Abbas, R. F., Dodd, W., Lau, L. L., Kidd, M. R., Rouleau, K., Zou, G., Chao, Z., Upshur, R., Walley, J., & Wei, X. (2020). *National primary care responses to COVID-19: a rapid review of the literature.* BMJ open, 10(12), e041622. https://doi.org/10.1136/bmjopen-2020-041622

Haleem, A., Javaid, M., Singh, R. P., & Suman, R. (2021). T*elemedicine for healthcare: Capabilities, features, barriers, and applications.* Sensors international, 2, 100117. https://doi.org/10.1016/j.sintl.2021.100117

Hannah Ritchie, Edouard Mathieu, Lucas Rodés-Guirao, Cameron Appel, Charlie Giattino, Esteban Ortiz-Ospina, Joe Hasell, Bobbie Macdonald, Diana Beltekian and Max Roser (2020). *"Coronavirus Pandemic (COVID-19)".* Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/coronavirus'

Hefner, J. L., Nembhard, I. M., Singer, S. J., Glassman, J., Glaseroff, A., Joseph, G. A., Jauregui, A., Mulaney, B., Kelly, S. S., Thomas, S., Vilendrer, S., & Tietschert, M. V. (2021*). Impact of COVID-19 on Primary Care Practice Sites and Their Vulnerable Patients.* Advances in health care management, 20, 10.1108/S1474-823120210000020009. https://doi.org/10.1108/S1474-823120210000020009

Har, P. S., Chinn, S., & Hart, P. S. (2020). *Politicization and polarization in COVID-19 news coverage.*(Special Issue: Communicating risk and uncertainty in the face of COVID-19.). Science Communication, 679-697. https://doi.org/10.1177/1075547020950735

Herrera-Peco, I., Núñez, C. R., Jiménez-Gómez, B., Romero-Magdalena, C. S., & De Gracia, E. B. (2021). *COVID-19 y vacunación: Análisis del papel de las instituciones públicas en la difusión de información a través de Twitter.* Rev Esp Salud Pública, 95(16), 16

Heydari, S. T., Zarei, L., Sadati, A. K., Moradi, N., Akbari, M., Mehralian, G., & Lankarani, K. B. (2021). *The effect of risk communication on preventive and protective Behaviours during the COVID-19 outbreak: mediating role of risk perception.* BMC public health, 21(1), 1-11

Hill, J. E., Harris, C., Danielle L, C., Boland, P., Doherty, A. J., Benedetto, V., Gita, B. E., & Clegg, A. J. (2022). *The prevalence of mental health conditions in healthcare workers during and after a pandemic: Systematic review and meta-analysis.* Journal of advanced nursing, 10.1111/jan.15175. Advance online publication. https://doi.org/10.1111/jan.15175

Hoernke, K., Djellouli, N., Andrews, L., Lewis-Jackson, S., Manby, L., Martin, S., Vanderslott, S., & Vindrola-Padros, C. (2021). *Frontline healthcare workers' experiences with personal protective equipment during the COVID-19 pandemic in the UK: a rapid qualitative appraisal.* BMJ open, *11*(1), e046199. https://doi.org/10.1136/bmjopen-2020-046199

Kligler-Vilenchik, N. (2021). Collective Social Correction: Addressing Misinformation through Group Practices of Information Verification on WhatsApp, *Digital Journalism*, DOI: 10.1080/21670811.2021.1972020

Lessick, M., Woodring, B. C., Naber, S., & Halstead, L. (1992). *Vulnerability: a conceptual model applied to perinatal and neonatal nursing.* The Journal of perinatal & neonatal nursing, 6(3), 1-14.

Levine, C., Faden, R., Grady, C., Hammerschmidt, D., Eckenwiler, L., & Sugarman, J. (2004). The Limitations of "Vulnerability" as a protection for human research participants. *The American Journal of Bioethics, 4*, 44–49.

MacIntyre, A. (2000). The need for a standard of Care. In L. Pickering, F. Silvers, & A. Silvers (Ed.), *Americans with Disabilities: Exploring implications of the law for individuals and institutions* (pp. 81– 86). Routledge.

Mencap (2020) Mencap responds to new NICE COVID-19 guidance. https://www.mencap.org.uk/press-release/mencap-responds-deeply-troubling-new-nice-covid-19-guidance

Mencap, (2021) Annual Report 2021. https://www.mencap.org.uk/sites/default/files/2022-01/MENCAP%20ANNUAL%20REPORT%202021%20%281%29_0.pdf

National Institute for Health and Care Excellence (NICE) (2020) NICE Guideline NG159 'COVID-19 rapid guideline: critical care in adults'. https://fssa.org.uk/_userfiles/pages/files/covid19rapidguideline.pdf

Oliva, M. P. (2021). *Errores en la comunicación de posibles vacunas*. Quaderns de la Fundació Dr. Antoni Esteve, 38-43

Oxford Dictionary. https://www.oxfordlearnersdictionaries.com/definition/english/vulnerability#:~:text=%2F%CB%8Cv%CA%8Cln%C9%99r%C9%99%CB%88b%C9%AAl%C9%99ti%2F-,%2F%CB%8Cv%CA%8Cln%C9%99r%C9%99%CB%88b%C9%AAl%C9%99ti%2F,easily%20hurt%20physically%20or%20emotionally

Prainsack, B., Kittel, B., Kritzinger, S., & Boomgaarden, H. (2020, April 14). *COVID-19 affects us all—Unequally. Lessons from Austria.* Medium. https://bprainsack.medium.com/covid-19-affects-us-allunequally-lessons-from-austria-faf8398fddc1

Quaranta, R., Trentini, F., & Villosio, C. (2020). *First estimates of the effects of COVID-19 on young workers in Italy.* Youth Employment PartnerSHIP. https://youthemploymentmag.net/2020/10/20/first-estimates-of-the-effects-of-covid-19-onyoung-workers-in-italy/

Riedel, P. L., Kreh, A., Kulcar, V., Lieber, A., & Juen, B. (2022). *A Scoping Review of Moral Stressors, Moral Distress and Moral Injury in Healthcare Workers during COVID-19.* International journal of environmental research and public health, 19(3), 1666. https://doi.org/10.3390/ijerph19031666

Roberts, A, Marshall, L., and Charlesworth, A. (2012). *A decade of austerity? The funding pressures facing the NHS from 2010/11 to 2021/22,* Nuffield Trust. https://www.nuffieldtrust.org.uk/files/2017-01/decade-of-austerity-full-web-final.pdf

Rocha, R., Atun, R., Massuda, A., Rache, B., Spinola, P., Nunes, L., ... & Castro, M. C. (2021). *Effect of socioeconomic inequalities and vulnerabilities on health-system preparedness and response to COVID-19 in Brazil: a comprehensive analysis.* The Lancet Global Health, 9(6), e782-e792.

Rodríguez, J., & Ifan, G. (2020*). COVID-19 and the Welsh economy: Shutdown sectors and key workers [Briefing paper].* Cardiff University: Wales Fiscal Analysis. https://www.cardiff.ac.uk/__data/assets/pdf_file/0009/2409921/Covid_economy_report_1_Final_rep.pdf

Rogers, A. C. (1997). *Vulnerability, health and health care.* Journal of advanced nursing, 26(1), 65-72.

Scully, J. L. (2014). Disability and vulnerability: On bodies, dependence, and power. In C. Mackenzie, W. Rogers, & S. Dodds (Eds.), *Vulnerability: New essays in ethics and feminist philosophy* (pp. 204–221). Oxford University Press.

Shah, A., Wood, R., Gribben, C., Caldwell, D., Bishop, J., Weir, A., Kennedy, S., Reid, M., Smith-Palmer, A., Goldberg, D., McMenamin, J., Fischbacher, C., Robertson, C., Hutchinson, S., McKeigue, P., Colhoun, H., & McAllister, D. A. (2020). *Risk of hospital admission with coronavirus disease 2019 in healthcare workers and their households: nationwide linkage cohort study.* BMJ (Clinical research ed.), 371, m3582. https://doi.org/10.1136/bmj.m3582

Shreffler, J., Petrey, J., & Huecker, M. (2020). *The Impact of COVID-19 on Healthcare Worker Wellness: A Scoping Review*. The western journal of emergency medicine, 21(5), 1059–1066. https://doi.org/10.5811/westjem.2020.7.48684

Smith, N., & Graham, T. (2019). *Mapping the anti-vaccination movement on Facebook.* Information, Communication & Society, 22(9), 1310-1327

Snipstad, ØIM. (2022). Concerns regarding the use of the vulnerability concept in research on people with intellectual disability. *Br J Learn Disabil, 50*: 107-114.

SCCR. (2020, November 9). Special Committee on Covid-19 Response – 33rd Dáil – Houses of the Oireachtas, Houses of the Oireachtas, Ireland. (https://www.oireachtas.ie/en/committees/33/special-committee-on-covid-19-response, accessed on 2/3/22).

Sun, P., Wang, M., Song, T., Wu, Y., Luo, J., Chen, L., & Yan, L. (2021). *The Psychological Impact of COVID-19 Pandemic on Health Care Workers: A Systematic Review and Meta-Analysis.* Frontiers in psychology, *12*, 626547. https://doi.org/10.3389/fpsyg.2021.626547

Tarks, H., & Trinidad, S. B. (2007). *Choose your method: a comparison of phenomenology, discourse analysis, and grounded theory.* Qualitative health research, 17(10), 1372–1380. https://doi.org/10.1177/1049732307307031

The National Academies of Sciences Engineering Medicine, (2021). Engineering for pandemics: preparedness, response and recovery. https://www.nap.edu/catalog/26093/engineering-for-pandemics-preparedness-response-and-recovery-proceedings-of-a; accessed Feb 18 2022.

Tyner, J. (2016). *Violence in Capitalism: Devaluing Life in an Age of Responsibility*. Nebraska University Press.

Tur-Viñes, V., & Monserrat-Gauchi, J. (2014). *El plan estratégico de comunicación. Estructura y funciones.* Razón y palabra, (88)

Van Bavel, J. J., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., ... & Willer, R. (2020). *Using social and behavioural science to support COVID-19 pandemic response.* Nature human behaviour, 4(5), 460-471

Waitzberg, R., Penn, N., Leibner, G., & Brammli-Greenberg, S. (2021). Policy responses for Israel: Governance. COVID-19 Health System Response Monitor. (https://www.covid19healthsystem.org/countries/israel/livinghit.aspx?Section=5.1%20Governance&Type=Section, accessed on 2/3/22)

Wang, Y., McKee, M., Torbica, A., & Stuckler, D. (2019). *Systematic literature review on the spread of health-related misinformation on social media.* Social science & medicine, 240, 112552

Williams, R., & Kaufman, K. R. (2022). Narrative review of the COVID-19, healthcare and healthcarers thematic series. *BJPsych open*, *8*(2), e34. https://doi.org/10.1192/bjo.2021.1085

World Health Organization (2019). Action plan to improve public health preparedness and response in the WHO European Region 2018-2023. https://www.euro.who.int/__data/assets/pdf_file/0009/393705/Action-Plan_EN_WHO_web_2.pdf ; accessed 3 February 2022.

World Health Organization (2020). Shortage of personal protective equipment endangering health workers worldwide. https://www.who.int/news/item/03-03-2020-shortage-of-personal-protective-equipment-endangering-health-workers-worldwide; accessed 3 February 2022.

World Health Organization (2021a). Timeline: WHO's COVID-19 response (https://www.who.int/ emergencies/diseases/novel-coronavirus-2019/interactive- timeline; accessed 3 February 2022.

World Health Organization (2021b). The impact of covid-19 on health and care workers: a closer look at deaths. https://apps.who.int/iris/bitstream/handle/10665/345300/WHO-HWF-WorkingPaper-2021.1-eng.pdf accessed 3 February 2022.

World Health Organization. Regional Office for Europe (2020). *Pandemic fatigue: reinvigorating the public to prevent COVID-19: policy considerations for Member States in the WHO European Region*. World Health Organization. Regional Office for Europe

World Health Organization, www.euro.who.int/en/health-topics/health-determinants/social-determinants/social-determinants