COVINFORM

CORONAVIRUS VULNERABILITIES AND INFORMATION DYNAMICS RESEARCH AND MODELLING

D3.5 Case-study selection - update M24

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Executive Summary

This deliverable is an update of D3.1 “Case-study selection” and presents the final 10 case studies for empirical research being conducted within COVINFORM’s project (until approximately August 2023), considering the work developed in D3.4 “Case study reports and comparative report (phase 1)” and following the methodological guidelines established in D3.2 “Multi-site research design and methodological framework”, as well as the coordination guidelines proposed in D3.3 “Case study implementation guidelines”.

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Acronyms & Abbreviations

Term	Description
BAME	Black, Asian, and Minority and mixed Ethnic
CSOs	Civil society organisations
HCWs	Healthcare workers
LEAs	Law enforcement agents
LTCFs	Long term care facilities
NGOs	Non-governmental organisations
NHS	National health system
SOP	Standard operating procedures

1 Introduction

COVINFORM case studies aim to describe the diversity of COVID-19 impact in a huge array of contexts and vulnerable populations, and to be able to compare the dynamics of the different systems' response to the pandemics and protection of vulnerable groups across different geographical systems. In order to accomplish this, consistent theoretical and methodological frameworks had to be found and validated to enable the analysis of cumulative and synergic vulnerabilities across all case studies.

Each case study set out to analyse the drivers (behavioural, environmental, socioeconomic, etc.) that shaped health outcomes directly pertaining to pandemic services, or indirectly to other health services. Core considerations include:

- Identify vulnerability and protective factors of both vulnerable populations and the systems/settings they are a part of, by describing the variables and indicators which characterise the relevant systems involved, providing insight regarding the resilience of such – from a system-driven point of view;
- Understand how those factors accumulate to enhance COVID-19 impacts (cumulative), as well as how they interact with one another (synergic), throughout several time points of the pandemic, providing insight to the risk assessment framework being developed in WP2;
- Understand the commonalities across several relevant dimensions (e.g., governance – WP4; public health – WP5; community – WP6; and information – WP7) and what is and is not generalizable across case studies;
- Identify continuous data collection needs in order to later provide input for public-facing material created in WP8 (e.g., recommendations, guidelines, and tool development) regarding the lessons learnt so far.

The issues explored in the case studies complement the empirical research carried out in WPs 4-7 as they allow for more in-depth exploration of specific aspects of the cross-cutting issues among specific impacted populations, within the areas of government (WP4), public health (WP5), community (WP6), and information policy (WP6). The evaluation and analysis of performance and resilience of the different systems involved also provides input for the risk assessment dashboard being developed on WP2 (see D2.4 "Cloud-based interactive dashboard for displaying geospatial layers"). Data analysis on the aforementioned aspects will later provide input for recommendations in WP8.

Relevant theoretical and methodological frameworks have been presented in D3.1 "Selection of case studies", which help to understand the evolution of systems throughout time, as well as analyse their ability to evolve, such that resilience can be seen as the outcome of a given system before, during, and after a disruptive event. The overall research design and methodological guidelines were established in D3.2 "Multi-site research design and methodological framework" and in D3.3 "Case study implementation guidelines", a set of core coordination guidelines were established in order to ensure standardisation and comparability as much as possible. Moreover, D3.4 validated the Socio-Ecological System Framework as an effective theoretical and methodological approach, such that it serves as the global framework to conduct COVINFORM case studies and allows for the cross-analysis of different contexts and communities yet belonging to similar systems dynamics.

This deliverable is one of the end results of the work conducted in WP3 tasks and WP3 outputs produced so far. Thus, it focuses on presenting the final 10[1] case studies selected: FS (Portugal); UANTWERP (Belgium); URJC & SAMUR (Spain); SAPIENZA & UCSC (Italy); SYNYO (Austria); SINUS & UGOT (Germany & Sweden); KEMEA (Greece); SWANSEA (Wales); and MDI (England). Moreover, it also compiles information on how the empirical research is carried out in each of the case studies, how each case study contributes to the 7 Objectives of the COVINFORM Project, and how each case study relates to Work Packages 4-7.

2 Case-study Theoretical and Methodological Frameworks

Previous deliverables have presented in detail the roadmap, theoretical and methodological frameworks, and a common data collection framework pertaining to COVINFORM case studies to ensure as much as possible that these would allow comparability and cross-domains analysis. Moreover, guidelines and recommendations for how case study coordination and implementation should be conducted to maximise the social, policy, and scientific benefits have also been presented in more detail. Furthermore, the Socio-Ecological System Framework adapted to the case studies research was validated and its application has also been thoroughly described.

A burgeoning corpus of scholarly evidence has made one point abundantly clear: comparative analysis of COVID-19 research, and conducting comparative analyses of various countries and communities in a manner that is generalizable to others, is exceedingly complex. The availability of health data – ranging from direct epidemiological evidence of COVID-19, to indirect population health variables such as the prevalence of chronic illness – is inconsistent across countries and even cities (Cramer et al., 2021; Galaitsi et al., 2021). Likewise, gaps in economic, social, and vocational data make it challenging to evaluate indirect pandemic consequences upon society (Keenan et al., 2021). Given this, as global society seeks to make sense of over two years of pandemic experience in order to better inform future response and recovery, overcoming these gaps and incongruities to identify common approaches for pandemic management is critical.

Complex systems analysis, including syndemic theory, seeks to understand how feedback loops and nested dependencies form within and between communities, governments, and the environment. Of critical interest is how disruption – either an acute catalyst or a chronic stress – percolates through that system. The syndemic perspective, despite its immense contribution to a better understanding of the disease dynamic and differential consequences is not centred in the system as a whole and cannot furnish a description and / or comprehension of other outcomes and the resilience of the operating system. McGinnis and Ostrom (2014), and Ling and colleagues (2021) offer guidance of how to understand the dependencies and feedback loops within and between systems – ultimately generating a range of harms to specific communities and/or the public at large. Further, Norton (2020) frames the importance of socioeconomic and socioecological factors in determining the spread and outcomes of COVID-19 outbreaks, as well as the efficacy of government programs – indicating a multi-system explanation is more appropriate to understand societal and national pandemic experiences rather than a simple, siloed framing (e.g., an individual policy or timeline regarding the imposition of lockdowns or distribution of vaccines).

[1] Case studies conducted by SINUS (Germany) and UGOT (Sweden) are presented as one since they are following the same approach and have an equivalent definition of the system under study. However, they represent two individual case studies.

Embracing the syndemic approach of complex systems analysis, the case studies of this project seek to understand how various direct and indirect systems shaped a given demographic or socioeconomic group's exposure to COVID-19 risk and access to government services. Why did certain groups suffer disproportionate rates of infection, hospitalisation, or fatality? Why were other groups less likely to access government support at various stages of the pandemic? These and other questions lack simple answers, and cannot be addressed in a one-off manner (over-generalization from single cases). With this external validity concern in mind, COVINFORM's various case study groups denote the experiences of specified groups within a determined geographic area – yielding a wealth of knowledge regarding the group's bottom-up understanding of COVID-19 risk and participation with government mandates and programs, as well as the top-down framework of society before, during the earliest stages, and throughout the various permutations of the COVID-19 virus. Common lessons can be drawn from the nexus of these cases.

In a broad manner, case studies were selected on the basis of scientific interest, partners' access, and research gaps and needs identified over the course of the project and they offer us the opportunity to focus on a specific location and/or population in line with each partner's expertise and interest. Since the assessment of systems resilience is crisis- and context-specific, it was important to employ both quantitative and qualitative methods that allow for a meaningful identification and evaluation of critical aspects of the systems involved across the case studies.

Thus, in a first phase, each partner described and characterised the different systems involved in the most objective way possible by identifying the vulnerability and protective factors within each system of their case study. This allowed for a better understanding of the resilience of target populations and policy-making organisations from a systems-driven point of view. The second phase entails mainly primary data collection through quantitative surveys and semi-structured interviews - as these are well-suited to our types of research questions and allow us to apply a retrospective and intersectional approach, as well as allow the researchers to explore participants' views in greater depth.

Consequently, this deliverable focuses on presenting the final 10 case studies, which are detailed into an updated template (see Appendix A) that provides the following information:

- **Case study name** – stating the target population, main outcome variable, and site (infrastructure and/or geographical region);
- **Scale** - stating the country, city/site/neighbourhood:
  - See Table 1 for information on case study name and scale by vulnerable target population.
- **Primary Data Collection & Timeframe** – stating expected number of interviews per target population and expected period for conducting primary data collection:
  - In order to have a better understanding of the resilience of target populations and policy-making organisations from a systems-driven point of view, in a first phase: Each partner described and characterised the different systems involved in the most objective way possible, by identifying the vulnerability and protective factors within each system of their case study;
  - See Appendix B and for a thorough description of the whole process refer to D3.4 "Case study reports and comparative report (phase 1)".
- **Timeline** – stating the pandemic time points under analysis within the interviews:
  - As the true dynamic of a system is shown through time, the timeframe key points agreed between all case studies were meant to capture all the main moments that

represent a change in the “macro system” and that have great implications in the constrained and local systems that are under study;
    - See Annex I - one of the cross-analysis outputs created in D3.4 showing COVID-19 major key time points to be integrated in all case studies data gathering.
- Main research questions:
    - See Appendix C for the compilation.
- Main disciplines to carry out work:
    - See Appendix D for the compilation.
- Contributions to COVINFORM objectives:
    - See Tables 11 to 17 for information on how each case study contributes to each COVINFORM project’s objective.
- Main domains to be considered in relation to WP4-7:
    - See Table 18 for information on how each case study relates to WP4 (governance domain);
    - See Table 19 for information on how each case study relates to WP5 (public health domain);
    - See Table 20 for information on how each case study relates to WP6 (community domain);
    - See Table 21 for information on how each case study relates to WP7 (information domain);
- Main variables and indicators to be collected under each SES Framework system:
    - See Table 26 of D3.4 for the compilation of variables and indicators identified in the Actor System (A) per case study;
    - See Table 27 of D3.4 for the compilation of variables and indicators identified in the Resource System and Units (RSU) per case study;
    - See Table 28 of D3.4 for the compilation of variables and indicators identified in the Governance System (GS) per case study.
    - See Table 29 of D3.4 for the compilation of variables and indicators identified in the Interaction Area (I) per case study.
    - Table 30 of D3.4 for the compilation of variables and indicators identified in the Outcomes (O) per case study.

3 Final Case Studies

Globally, all case studies thrive to examine how pre-existing systems and those put in place to bridge the COVID-19 crisis were able to adapt and resiliently respond to the impacts and needs of vulnerable groups throughout the pandemic. Individually, each zooms in on a target vulnerable population and focuses on specific domains of the systems involved - hypothesised to mitigate or enhance COVID-19 impacts on the chosen vulnerable target populations, throughout several time points of the pandemic. Together, they allow for a global understanding of crisis responses and non-responses towards vulnerable groups across several European countries. It is expected that the field work will provide insight regarding the fit of the hypothesised factors and the identification of others not considered, should they prove to be significant. As well as provide the opportunity to conduct a more thorough comparative evaluation of the findings across all case studies in D3.8 (D3.4 iteration).

3.1 Overview of the final 10 case studies

This section entails the description of the final 10[2] case studies of COVINFORM Project. See Table 1 for a brief overview by vulnerable target population (VTP). Note that VTP were selected considering population groups identified as vulnerable in policy documents and/or targeted with group-specific interventions (e.g., minority/migrant communities; low-income populations; people with disabilities; women; elderly; people in high-risk situations – for instance, societal gender disparities or health-related, such as higher exposure to COVID-19 infection).

Table 1. Final 10 case studies selected per country and partner by vulnerable target population.

Country, Partner	Case Study Name	Vulnerable Target Population*
Portugal FS	Resilience in long term care facilities of different socio-economic status: COVID-19 structural and psychosocial impacts on elderly residents in Évora, Portugal	Institutionalised elderly
Belgium UANTWERPEN	Mental health impacts, needs and responses among migrant communities during the COVID-19 pandemic: a qualitative case study in Antwerp, Belgium	Migrant communities
Spain URJC & SAMUR	Experiences with social protection of vulnerable Latin American and Moroccan communities in Madrid	
Germany SINUS **Sweden** UGOT	Information seeking among ethnic minorities and socio-economic vulnerable groups in Sweden and Germany related to the implementation of protective measures and vaccination willingness	
Wales SU	The multiplicity of BAME migrant nurses' vulnerabilities in South Wales	Healthcare workers
Italy SAPIENZA & UCSC	The impact of the Covid-19 pandemic on the well-being of healthcare workers (Healthcare workers)	
Austria SYNYO	Experiences of women working at the frontline of in supermarkets in Vienna, Austria	Frontline workers
Greece KEMEA	Policing in times of pandemic: impact on the role of LEAs, governmental actors and policy makers and its effect on trust issues of minority groups (migrants, refugees, and Roma communities) towards the former in Greece	Minority communities
England MDI & TRI	Hard-to-reach communities (ethnic and religious minorities) in England	
*All case studies have a particular focus on at least one of the following: low socio-economic status, gender, disabilities.		

The next subsections provide the description of the final 10 case studies, entailing an overview and their core method's information, such as the main research questions, the scale, the main disciplines

[2] Case studies conducted by SINUS (Germany) and UGOT (Sweden) are presented as one since they are following the same approach and have an equivalent definition of the system under study. However, they represent two individual case studies.

to carry out the work proposed, primary data collection details, and main variables and indicators to be analysed.

3.1.1 Portugal, FS

Resilience in long term care facilities of different socio-economic status: COVID-19 structural and psychosocial impacts on elderly residents in Évora, Portugal.

Portugal's case study will focus on dependent elderly living in Long Term Care Facilities (LTCFs) of different SES and conditions (Public vs. Private vs. 3rd Sector). Portuguese LTCFs are social response structures aimed at collective housing, for temporary or permanent use by elderly people. They provide social support and basic health care, contributing to the well-being and social integration of its users, as well as stabilising, empowering and stimulating active ageing. We are mostly interested in analysing elderly's perceptions, behaviours, and psychosocial well-being. Moreover, we will collect data on epidemiological outcomes from these LTCFs, as well as guidelines and measures implemented by the governance body of each LTCF and national policies decreed by LTCFs Associations, and Social Security. If possible, we will further analyse their social support network (e.g., visiting relatives), as well as different workers in those LTCFs (e.g., professional health workers, cleaning staff, administrative staff). We will consider secondary data regarding epidemiological outcomes of elderly living in LTCFs at a national level, as well as elderly not living in LTCFs (if available).

Table 2. Portugal's case study method information.

Main research questions	**RQ1**	**RQ2**	**RQ3**	**RQ4**
	Which socio-ecological system characteristics of LTCF were more successful in mitigating COVID-19 impacts on elderly residents?	How and why have COVID-19 and responses to COVID-19 affected elderly residents' shared attitudes, beliefs, and practices?	What particular structural features of local social networks and governments' systems and norms aggravate or mitigate elderly residents' vulnerabilities and why?	How well have governmental plans and strategies (e.g., communication and vaccination) addressed the specific needs and attributes of LTCF?
Scale	Continental Portugal ▪ Region of Alentejo ▪ City of Évora			
Main disciplines	Political science, social and environmental psychology, sociology, resilience studies, risk analysis, and risk perception.			
Primary Data Collection & Timeframe	Semi-structured Interviews: ▪ May 2022 to August 2022 ▪ Vulnerable Target Population: Elderly living in long term care facilities (LTCF; Private vs. Public vs. Third Sector) ≥15 (≥5 per type of LTCF) ▪ LTCF Administration ≥12 (≥4 per type of LTCF) ▪ LTCF Workers ≥12 (≥4 per type of LTCF) ▪ Quantitative Surveys (if possible): ▪ October 2022 to February 2022 ▪ ≥ Same sample of LTCF recruited for interviews			
Main variables				

Resource System & Units (RSU)	▪ Total number of LTCFs - national and local - (Number of Units); ▪ Number of Public vs. Private vs. 3rd Sector LTCFs (Number of Units); ▪ Number of LTCFs elderly residents - total and per type of LTCF - (Number of Units); ▪ Number of staff working in LTCFs (Number of Units); ▪ Staff - e.g., type, number, schedules, level of expertise - (Distinctive Characteristics); ▪ LTCFs' access and Availability of resources - e.g., masks, tests, vaccines - (Distinctive Characteristics); ▪ LTCFs' living conditions - e.g., space and density, amenities, equipment - (Distinctive Characteristics; Surroundings); ▪ LTCFs' healthcare services provided - e.g., physiotherapy - (Distinctive Characteristics; Surroundings); ▪ LTCFs' Resilience Plan (Distinctive Characteristics)
Governance System (GS)	▪ National Health Directorate standard operating procedures (SOP) for LTCFs – i.e., norms, guidelines, measures, policies - (Government Organisations; Constitutional, Operational & Collective-choice Rules); ▪ Social Security's SOP for LTCF (Government Organisations; Constitutional, Operational & Collective-choice Rules); ▪ Internal SOP for Public LTCFs (Government Organisations; Constitutional, Operational & Collective-choice Rules); ▪ Internal SOP for Private LTCFs (Private Organisations; Constitutional, Operational & Collective-choice Rules); ▪ Internal SOP for 3rd Sector LTCFs (Non-governmental Organisations; Constitutional, Operational & Collective-choice Rules);
Actor System (A)	▪ VTP: Elderly residents in LTCF – e.g., demographic attributes, sample characterization – (Actor's Characterization; Vulnerable Target Population); ▪ OA: Workers in LTCF - e.g., health professionals, cleaning staff, technical director – (Other Relevant Actors); ▪ OA: Elderly's relatives/visitors (Actor's Characterization);
Interaction Area (I)	▪ National Health Directorate communication/information distribution - e.g., across traditional and social media - (Communication & Information Distribution); ▪ Social Security communication/ information distribution (Communication & Information Distribution); ▪ Internal communication/ information distribution of LTCFs (Communication & Information Distribution); ▪ Elderly-related aids - e.g., health, economic, and social - (Government Investment);
Outcomes (O)	▪ Epidemiological data per type of LTCF - e.g., COVID-19 infection cases and deaths, COVID-19 tests performed, COVID-19 vaccines administered – (Monitoring); ▪ LTCFs' Resilience Plan adjustment and evolution - i.e., changes in norms - (Institutional Responses); ▪ COVID-19 mental model's evolution (Perception); ▪ Risk Perception (Perception); ▪ Levels of trust - e.g., on government; conflict between actors - (Conflicts); ▪ Elderly residents' psychosocial well-being - e.g., stressors, resilience, mood indicators - (Health); ▪ Adoption of public health measures (Cognitive, Affect & Behavioural); ▪ Social support network (Family);

3.1.2 Belgium, UANTWERPEN

Mental health impacts, needs and responses among migrant communities during the COVID-19 pandemic: a qualitative case study in Antwerp, Belgium

This case study will explore COVID-19 pandemic impact and response in the domain of mental health-related care and services, focusing on the experiences of migrant communities in Borgerhout, Antwerp. The case study will engage with members of migrant communities themselves, as well as with local (mental) health professionals, local-level government and decision makers, and representatives from community-level initiatives and services. There will be a special focus on community initiatives and promising practices that were implemented by and for the case study population. The case study findings should be informative to guide future policy on crisis responses in Borgerhout, as well as in similar communities and neighbourhoods. We will use a definition of mental health in a broad sense that encompasses different cultural interpretations of mental (and physical) health. We are interested in exploring the mental health impact of the pandemic as a whole, but we would also like to provide insight into how this impact has changed over time.

Table 3. Belgium's case study method information.

Main research questions	**RQ1**	**RQ2**	**RQ3**
	How has the COVID-19 pandemic impacted migrant community members' mental health and wellbeing?	How have migrant community members sought support to deal with the impact of the COVID-19 pandemic on their wellbeing?	How have local/community-level responses played a role in meeting demands for mental health-related support and care?
Scale	Belgium ▪ City of Antwerpen ▪ Neighbourhoods: Borgerhout and Antwerpen Noord		
Main disciplines	Migrich fation studies, sociology, public health, medical anthropology		
Primary Data Collection & Timeframe	▪ The population that is the primary focus of our case study are members of migrant communities in Borgerhout and Antwerpen Noord, specifically migrants that arrived in Belgium more than 5 years ago. ▪ Participants are recruited through organisations or actors working with migrants in Borgerhout and Antwerpen Noord, and via snowball sampling. ▪ In addition to our target population, we will engage with three additional groups of participants, linked to work packages 4, 5 and 6: ▪ WP4 link: representatives from local-level government and decision makers (Stad Antwerpen) ▪ WP5 link: professionals working in (mental) health services: GPs, psychologists, psychiatrists, councillors, etc. ▪ WP6 link: representatives from community-level initiatives and services (e.g. Coronababbels, Atlas vzw, De Borgerhoutse hulplijn) ▪ Approximate sample sizes: ▪ Key informant/expert interviews: n≥15 ▪ Interviews with migrants living in Borgerhout and Antwerpen Noord: n≥20/25		
Main variables			
Resource System & Units	▪ Sector/location is geographical neighbourhood; human-constructed facilities like mental healthcare services and other local neighbourhood services/centres;		

(RSU)	
Governance System (GS)	▪ National (Belgian federal level), Regional (Flanders), Local (city of Antwerp), Sub-local/district (Borgerhout and Antwerpen Noord)
Actor System (A)	▪ Migrants who moved to Belgium +5 years ago. Living in Borgerhout and Antwerpen Noord.
Interaction Area (I)	▪ Within and between migrant communities, migrants with local policymakers, with (mental) healthcare professionals, with community based organisations, social workers, and with neighbours
Outcomes (O)	▪ Neighbourhood integration, social welfare, educational, employment and healthcare-related outcomes

3.1.3 Spain, URJC & SAMUR

The experience with social protection of vulnerable Latin American and Moroccan communities in Madrid

This case study focuses on the extent to which migrant communities may have different experiences regarding access to welfare state provision during the COVID-19 pandemic. More precisely, we intend to focus on social services and how they tended to support migrants in a vulnerable situation. We intend to study a system of relations and behaviours that covers both individual citizens of migrant origin and the institutions (broadly understood) with whom they have interacted to gather a comprehensive view of the successful and unsuccessful practices. Within this framework, our case study intends to examine the extent to which social services and third sector organisations were able to respond to this crisis and provide support for migrants from Latin American and African origin, whose livelihoods were compromised overnight. Our case study is ambitious insofar as it tries to understand the bottom-up and top-down dynamics that take place in the system under study and the extent to which differences within migrants may have led to different lived experiences. In summary, to understand the vulnerabilities faced by migrant households in Madrid, looking only at healthcare dimensions would offer an incomplete picture. The members of these units are, on average, younger than the general population. For them, the worst consequences of the pandemic came from the combination of high-risk occupations that they hold and the sudden economic halt. Our research intends to examine the extent to which all the efforts that the system put in place contributed to bridge the crisis and whether they were able to adapt to the specific needs of a group with interacting sources of inequality in a way that satisfied the recipients of those efforts. Our overall expectation is that the vaccines did not make such a huge difference in terms of social services.

Table 4. Spain's case study method information.

Main research questions	RQ1	RQ2	RQ3	RQ4	RQ5
	What strategies, if any, did the local government put in place to tackle the COVID-19	To what extent have social services and workers of related institutions (such as firefighters or	How have members of the migrant communities studied/searched for information about the COVID-19 pandemic and	What solidarity strategies and community initiatives were put in place to tackle the COVID-19 crisis?	How have members of the two migrant communities experienced COVID-19-related

	crisis on migrant communities?	first responders) adapted to provide for the needs from migrant communities created by the pandemic? How did they do so?	how did institutional and third sector actors adapt their information to these communities?		disruptions and are there differences between the two, as well as which strategies were put in place to cope with these disruptions?
Scale	Spain ▪ City of Madrid				
Main disciplines	Public administration, political science, policy analysis, sociology and migration studies.				
Primary Data Collection & Timeframe	▪ The case study was carried out at the local level, specifically in the city of Madrid, without focusing on a specific neighbourhood or district, as the migrant population - and specifically the Latin American and Moroccan communities - resides transversally in the city of Madrid; ▪ The sample is composed of 10 interviews with the migrant population, focusing on the two largest migrant communities in Madrid, that is, the Latin American community and the Moroccan community. ▪ The sample is composed of 6 Latin American respondents and 4 Moroccan respondents. The sample also considers a 50%-50% male-female balance (i.e., 3 Latin American men and 3 Latin American women; and 2 Moroccan men and 2 Moroccan women); ▪ The fieldwork was carried out between May and July 2022.				
Main variables					
Resource System & Units (RSU)	These variables are all regarding citizens with a migration background: ▪ Age and gender, access to welfare state provision, household composition, access to amenities, employment status and occupational profile				
Governance System (GS)	▪ Local government authorities ▪ Norms regarding access to social benefit provision ▪ Third sector organisations ▪ Lockdown measures and other related policies				
Actor System (A)	▪ Migrants of Latin American and Moroccan origin [we are especially interested in their administrative status and language skills] ▪ Members of social services, local police, firefighters and first-responders.				
Interaction Area (I)	▪ Social aid provision (both governmental and NGO-funded) ▪ Crisis communication strategies and public information				
Outcomes (O)	▪ Resilience, distress and mood indicators. ▪ Access to social aid provision ▪ Impressions and motivations of citizens with a migration background ▪ Epidemiological outcomes (as will be provided in Working Package 2)				

3.1.4 Italy, SAPIENZA & UCSC

The impact of the COVID-19 pandemic on the well-being of healthcare workers (Healthcare workers)

The goal of the case study is to explore the consequences of the COVID-19 pandemic on physical and mental wellbeing of Italian healthcare workers (HCWs), as well as its impact on their daily life and family relations. To this end, we will develop a survey based on a number of hospitals located in the city of Rome. Respondents will include HCWs working in different hospitals, with different types of occupation, including nurses, generalist medical doctors, specialist medical doctors, etc. Depending on the final choice on the number of hospitals included in the analysis our case study will be either at the municipal level or at the neighbourhood level. The case study will rely on desk research (based on official documentation/legislation, national/local reports, relevant literature), qualitative data from one-to-one semi-structured interviews and quantitative data from an online survey. For the semi-structured interviews, we are planning to use a convenience sampling technique. We are planning to include professional workers (nurses, physicians, and midwives) working at the Policlinic Gemelli of Rome.

Table 5. Italy's case study method information.

Main research questions	**RQ1**	**RQ2**	**RQ3**	**RQ4**
	What have been the consequences of the pandemic on the well-being (physical and mental status), daily and working life, and family relations disruptions of health workers?	Among health professionals, which socio-demographic groups (e.g., parents of young children) are at greatest risk of experiencing negative mental health consequences and/or family distress?	What aspects of healthcare workers' lives are the greatest cause for concern and what are the coping strategies?	What lessons or good practices can be learned from the pandemic to improve support for health practitioners in managing their work-life balance (including in emergency situations)?
Scale	Italy ▪ City of Rome ▪▪ Agostino Gemelli University Hospital			
Main disciplines	Demography and statistics; sociology and gender studies; epidemiology and public health.			
Primary Data Collection & Timeframe	Quantitative Surveys: ▪ September 2022 to December 2022 ▪ At least at least 100 physicians and 200 nurses; Semi structured interviews: ▪ November 2022-February 2023 ▪ Minimum number of participants is n>14.			
Main variables				
Resource System & Units (RSU)	▪ Number of healthcare workers, number of hospitals (public/private) at the regional and country level ▪ Number of hospitals (public/private) at the regional and country level ▪ Access and availability of resources (e.g., masks, tests, vaccines) ▪ Living conditions (e.g., space and amenities) ▪ Family composition (partner, children) ▪ Organisation of household work (gender division of work, paid services, informal help)			

Governance System (GS)	▪ Ministry of Health ▪ Regional/local public health authorities ▪ Department for Family Policies
Actor System (A)	▪ Demographic and socio-economic characteristics of healthcare workers, their families and patients
Interaction Area (I)	▪ Information sharing among healthcare workers and patients ▪ Possible conflicts among healthcare workers and patients ▪ Family relationships/family conflicts ▪ Virus transmission in the family
Outcomes (O)	▪ Infections; individual risk perception; physical and mental health; work related stress; family relationships quality; time use indicators; indicators of the reconciliation of work-life balance

3.1.5 Austria, SYNYO

Experiences of women working at the frontline in supermarkets in Vienna, Austria

Our case study focuses on the embodied experience of women working at the frontline in supermarkets with regular customer contact based in Vienna. While whole nations had to follow stay-at-home orders, supermarket employees belonged to the group of essential/frontline workers that, despite the threat of COVID-19, had to go to work on a daily basis which also meant that they were potentially exposed to the virus at their workplace. As frontline workers, they had a 'frontline' experience of this pandemic through their corporal presence at the supermarket. This makes their embodied experience of threat and risk unique to many others during this pandemic. It is an *embodied* experience on several levels: the virus is a direct threat to their bodies, which are bodily present at the frontline. Furthermore, historical inequalities manifest themselves in the bodies of those who were defined as vulnerable during the pandemic, as well as those whose vulnerability may have been invisible, for example by a lack of personal protective equipment (PPE) for supermarket workers, which can be interpreted as an embodied inequality due to the prioritisation of other frontline workers.

For this, we chose a prominent Austrian-found Supermarket chain called SPAR AG. The field research will be conducted in Vienna, Austria. We will select three branches in neighbourhoods with varying demographic compositions to get a better understanding of the role of customers in the supermarket environment. Additionally, we will choose supermarkets that also vary in their size and layout. In our research, we focus on frontline workers: cashiers and other sales personnel at SPAR AG supermarkets. It is important to note that in Austria a disproportionate number of women work in public facing service jobs (e.g., sales). Additionally, low skilled labour, similar to the one performed at supermarkets, is often performed by migrants. As such, our research will focus on women with migrant backgrounds as well as Austrian-born women working in frontline jobs at Viennese supermarkets. Our research interest is to understand the women workers' perception of risk and safety in their lives as well as at their workplace at the frontline. Our overall research questions are as follows: How did they perceive the infection risk they were exposed to at their working place? Did they feel valued and protected by their co-workers, their employer, the government and the customers? How was their overall risk perception and feelings of safety throughout the COVID-19 pandemic and how did it change over time? What was their lived experience of risk and safety of working through the pandemic at the frontline?

Table 6. Austria's case study method information.

Main research questions	**RQ1**	**RQ2**	**RQ3**	**RQ4**
	How did women working at the frontline in SPAR supermarkets perceive the infection risk they were exposed to at their workplace?	How did they feel valued and protected by their co-workers, their employer, the government and the customers?	How was their overall risk perception and feelings of safety throughout the COVID-19 pandemic and how did it change over time?	What was their lived experience of risk and safety of working through the pandemic at the frontline?
Scale	Austria ▪ City of Vienna			
Main disciplines	Anthropology, communication science, sociology			
Primary Data Collection & Timeframe	We will select three branches in neighbourhoods with varying demographic compositions to get a better understanding of the role of customers in the supermarket environment. Additionally, we will choose supermarkets that also vary in their size and layout. ▪ Minimum number of interviews with women working at the frontline: total of 12-16 interviews (6-8 with Austrian-born women, 6-8 with women with migrant background); ▪ Minimum number of interviews with managers: total of 3-6 interviews (1-2 interviews with staff in supervisors, management or sustainability roles per supermarket (total of 3)); ▪ Data collection will start in October and last approximately until December 2022.			
Main variables				
Resource System & Units (RSU)	▪ City of Vienna (Location) ▪ Size: Social and physical density (Surroundings) ▪ Characterization of local sites (Surroundings) ▪ Representation of target community (Surroundings) ▪ Number of supermarket units (Number of Units) ▪ Number of supermarket workers (Number of Units) ▪ Work conditions (e.g., type of contract, workplace ergonomics) (Distinctive Characteristics) ▪ Access and Availability of resources (e.g., masks, tests, vaccines) (Distinctive Characteristics)			
Governance System (GS)	▪ National government (Government Organisations) ▪ Local government (Vienna) (Government Organisations) ▪ National Supermarkets (Government Organisations) ▪ Local Supermarkets (Vienna) (Government Organisations) ▪ National Supermarket norms (Constitutional, Operational & Collective-choice Rules) ▪ Local Supermarket chain norms and measures (hygiene, distancing, social and physical density, ventilation; Vienna) (Constitutional, Operational & Collective-choice Rules)			
Actor System (A)	▪ VTP: women working at the frontline in supermarket (SPARs of Vienna) (Vulnerable Target Population (VTP)) ▪ OA: Clients (Other Relevant Actors (OA)) ▪ OA: Management personnel (Other Relevant Actors (OA)) ▪ Demographic Attributes (e.g., age, gender, ethnicity) (Actors' Characterization) ▪ Social Attributes (e.g., place of residence, occupation) (Actors' Characterization) ▪ Economic Attributes (e.g., SES level, income) (Actors' Characterization)			

Interaction Area (I)	▪ Information distribution within supermarket (Communication & Information Distribution) ▪ Lobby communication (e.g., WKO, AK, ÖGB) (Communication & Information Distribution) ▪ COVID-19 tests performed (Monitoring) ▪ COVID-19 vaccines administered (Monitoring) ▪ Work-life balance (e.g., conflict with co-workers, with staff, with clients, with patients, with family members) (Conflicts) ▪ Trust levels (e.g., in the government) (Conflicts)
Outcomes (O)	▪ Work-related stress (health) ▪ Work environment changes (work) ▪ Risk perception (perception) ▪ COVID-19 infection cases (epidemiological) ▪ COVID-19 related deaths (epidemiological) ▪ Success rate of COVID-19 abatement (epidemiological) ▪ Containment and Health Index (epidemiological)

3.1.6 Germany, SINUS & Sweden, UGOT

Information seeking among ethnic minorities and socio-economic vulnerable groups in Sweden and Germany related to the implementation of protective measures and vaccination willingness

The work will focus on COVID-19 information-seeking and communicative behaviour among ethnic minorities living in socio-economically vulnerable sub-municipal units in Gothenburg, Sweden and Mannheim, Germany. Interviews will be conducted with ethnic minority/migration-background residents of the Östra Bergsjön and Hjällbo boroughs of Gothenburg and the Neckarstadt-West, Schönau, and Jungbusch/Innenstadt districts of Mannheim. These sub-municipal units were selected on the basis of socio-economic indicators commonly linked to negative health outcomes (e.g., high unemployment, high population density), as well as due to their large ethnic minority populations. Interviews will furthermore be conducted with local governmental, public health, and CSO stakeholders that provide services to, or regularly interact with, ethnic minority populations in the research sites. The case study will consider the individual behaviours of ethnic minority residents, but will do so within a social constructivist framework, i.e., in recognition of the embeddedness of individual behaviour and the dialectic of agency and structure. The social structures to be considered include participants' families and social networks, as well as local governmental and non-governmental institutions, in particular those involved in pandemic communication (e.g., health departments, health CSOs, the media). The specific objectives of the case study are to compare communication behaviour and activities between ethnic minorities and ethnic Germans and Swedes, respectively, living in low SES neighbourhoods on the following issues: To identify what media (local, national, international, social media) residents have used to inform themselves about the COVID-19 pandemic; To identify channels by which residents actively communicate about the COVID-19 pandemic, as well as means by which behaviours and attitudes may be passively transmitted (e.g., via social influence or "peer effects"); To study the impact of communicative behaviour among residents on vaccination willingness and adaption to protective measures in specific; To identify misconceptions about protective measures and vaccines among residents; To study local stakeholder engagement with residents, and assess the strengths and weaknesses of various stakeholders' communication strategies; To triangulate and identify mismatches between residents' and local stakeholders' understandings of the pandemic and the accompanying "infodemic"; To study how information-seeking and communication among

residents differ from communicative behaviour in the majority society. Qualitative interview data will be compared to results from previously collected national representative survey data in both countries, thus applying a multi-methodological approach. Results from interview and survey data will be used to develop policy guidelines and recommendations for best practices.

Table 7. Germany's and Sweden's case studies method information.

Main research questions	**RQ1**	**RQ2**	**RQ3**	**RQ4**	**RQ5**
	What communication strategies and practices have local government, health authorities and stakeholders implemented to inform ethnic minorities about protective measures and vaccines?	What sources/where have ethnic minorities/socio-economic vulnerable groups searched for information about protective measures, and vaccines?	What protective measures, including vaccination, have ethnic minorities/socio-economic vulnerable groups implemented to protect themselves from infection?	To what extent are there misconceptions about protective measures and vaccines among ethnic minorities/socio-economic vulnerable groups?	Are there mismatches between residents' and local stakeholders' understandings of the pandemic and the accompanying "infodemic"?
Scale	Germany ▪ City of Mannheim ▪ Neighbourhoods: Neckarstadt-West; Schönau; Jungbusch/Innenstadt Sweden ▪ City of Gothenburg ▪ Neighbourhoods: Bergsjön; Hjällbo				
Main disciplines	Communications, sociology, cultural studies				
Primary Data Collection & Timeframe	Primary data collection focuses on the neighbourhood scale from 2020 to 2022. Primary data will be analysed and interpreted in the context of secondary data on the municipal and national scales; Our sample overlaps with WP4-7. The sample plan is designed to enable: ▪ 1) comparison by migration background within WP4-7 (6 females and 6 males without migration background; and 6 females and 6 males with migration background); ▪ 2) comparison by gender within the case study (WP3).				
Main variables					
Resource System & Units (RSU)	The analysis of survey data will yield statistics on utilisation of health system resources, including vaccination programmes, and adoption of recommended proactive measures by vulnerable groups, specifically ethnic and migration-background residents, in comparison with general Swedish and German populations. This data has already been collected through panel survey studies that have been conducted on several occasions during 2018-2022. The Swedish surveys were longitudinal on the individual level, whereas the German surveys were cross-sectional, but comparable insofar as the samples are all representative on age, gender, and social position. Qualitative individual interviews are furthermore being conducted with residents of selected sub-municipal units in Gothenburg and Mannheim with and without an ethnic				

	minority/migration background. The qualitative data will offer a rich and contextual account of resource utilisation on an individual level.
Governance System (GS)	Communication and information strategies and efforts directed at vulnerable groups. This data will be collected through personal interviews with government authorities, local authorities and other stakeholders involved in crisis communication with vulnerable groups.
Actor System (A)	The following variables will be examined as factors in communication and information behaviour on an individual actor and group level: ▪ Ethnicity ▪ Age ▪ Gender ▪ Occupation ▪ Identification with Swedish/German society ▪ Trust in authorities ▪ Information-seeking habits ▪ Communication habits ▪ Adaption to protective measures ▪ Adaption to vaccination programme
Interaction Area (I)	The case study will take into account the individual behaviours of ethnic minority residents, but will do so within a social constructivist framework, i.e., in recognition of the embeddedness of individual behaviour and the dialectic of agency and structure. The social structures to be considered include participants' families and social networks, as well as local governmental and non-governmental institutions, in particular those involved in pandemic communication (e.g., health departments, health CSOs, the media).
Outcomes (O)	We will explore, and expect to find, both negative and positive outcomes with regard to breadth and depth of information-seeking and understanding, related to both vaccinations and health-protective behaviour. We expect that these outcomes will vary by population group and gender, but will refrain from speculating as to the degree of variance.

3.1.7 Greece, KEMEA

Policing in times of pandemic: impact on the role of LEAs, governmental actors and policy makers and its effect on trust issues of minority groups (migrants, refugees, and Roma) towards the former

The Greek case study will mainly emphasise a regional and local scope. This study will emphasise on target groups in Attica, Athens and Thessaloniki. Despite the targeted scope, a national approach will also be sought by including NGO and Governmental representatives, LEAs and vulnerable populations nationwide if applicable, particularly taking into consideration COVID-19 related restrictions and availability. In the Greek case study, we aim at addressing how perceptions have been altered from target groups towards LEAs and vise versa, therefore we consider the core variables of: perceptions, policing, and trust of vulnerable populations, as well as the role of LEAs and the impact of the pandemic to their mental health. We intend to understand the dynamics between vulnerable populations, NGO & Governmental representatives and LEAs interaction and communication and how COVID-19 influenced their relations, particularly emphasising on measure implementation in order to assess compliance rates. There are social, economic, legal and cultural factors that may be taken into consideration in regards to vulnerable populations, particularly Roma, Greek Muslims, Refugees and Migrants. The Greek case study encompasses all considerations relevant to the aforementioned groups. In addition, it is important to emphasise on the means of communication that have been utilised and how they have impacted trust and compliance rate of our target groups among the pandemic waves. The Greek case study will encompass several means of communication utilised prior

to and post pandemic. The Greek case study research which factors and variables influenced perceptions and communications in-between our target groups. The Greek case study will research the communication of measure implementation. Communication, trust and compliance rate have likely been influenced by the pandemic phases and infection rates as well as the vaccination availability. The baseline section of the Greek case aims to assess the first two aforementioned sections, whereas the empirical research will attempt to illustrate and analyse the current situation and onward.

Table 8. Greece's case study method information.

Main research questions	**RQ1**	**RQ2**	**RQ3**	**RQ4**
	How has the pandemic influenced LEAs, Minorities & Vulnerable groups' quality of life and attitude/behaviour?	What is the perceived impact of implemented COVID-19 measures on LEAs, Minorities & Vulnerable groups, and which steps can be taken to mitigate the negative consequences of these?	How were communication and vaccination campaigns against COVID-19 perceived by vulnerable groups, minorities, and LEAs, as well as how have these responses affected people's compliance to vaccination and protective measures?	How COVID-19 management affected vulnerable groups, minorities, and LEAs trust towards authorities?
Scale	Greece ▪ City of Athens & Thessaloniki			
Main disciplines	Political science, sociology, risk analysis, risk perception, migration studies			
Primary Data Collection & Timeframe	▪ Interviews will be scheduled with representatives from governmental institutions and LEAs, as well as with officials from well-known NGOs that deal with vulnerable populations or minorities housed under those (N=10 interviews in total, 5 of each); ▪ The recruiting period as well as the site visits to conduct the interviews and the transcripts, analysis etc. will last approximately about 3 months.			
Main variables				
Resource System & Units (RSU)	Law Enforcement Agents (& Governmental authorities - NGOs executives (Public and private institutions by extension) Vulnerable groups & minorities and/or NGOs who actively engage and/or represent the aforementioned groups (including Roma communities, Migrant communities etc).			
Governance System (GS)	▪ Roma Communities ▪ Migrant Communities (if applicable) ▪ Regional and Local Law enforcement agencies ▪ Regional and Local NGO representatives (if applicable) Communication efforts directed at vulnerable minority groups. This data will be collected through personal interviews with law enforcement agencies, local authorities and other stakeholders involved in crisis communication with vulnerable groups, as well as Roma and migrant communities.			
Actor System (A)	The following variables will be examined as factors in communication, information and trust behaviour on an individual actor and group level: ▪ Ethnicity ▪ Age			

	▪ Gender ▪ Occupation ▪ Trust in authorities ▪ Information-seeking habits Communication habits Adaption to protective measures Adaption to vaccination programme Interaction between LEAs and Minority groups and how it has changed through COVID-19 phases ▪ Members of the Roma and Migrant communities ▪ Members of Law Enforcement agents and NGOs
Interaction Area (I)	Three level interaction (LEAs, NGO executives and beneficiaries)
Outcomes (O)	Re-calibration of the role of the LEAs and the provision of services towards vulnerable populations under stressful conditions (i.e. pandemic) impacts of the pandemic crises in both groups, as well as trust and perceptions towards authorities/ LEAs. Identification of the alternation of the levels of trust through interaction between LEAS and vulnerable groups (roma and migrants) and documentation of the lessons learned.

3.1.8 Wales, SU

The multiplicity of BAME migrant nurses' vulnerabilities in South Wales

The study takes place in the organisational and territorial setting of the Swansea Bay University Health Board. The level of scale is the work and living spaces of hospital nurses (BAME overseas qualified nurses), which includes the hospital, their house, their spaces of travel and their leisure. It also includes the imagined spaces of their home country (i.e. the Philippines and Caribbean). The study examines the various socio-cultural factors shaping the experiences of COVID-19 among BAME migrant nurse populations. Focus on individual behaviours and experiences in the context of individual lives and geographies of these nurses' lives, which includes the hospitals where they work, their homes in Wales, the imaginary geographies of their origin countries, and their travels between hospital, home, and their leisure spaces. Dimensions that are part of this case study include different kinds of exposure to COVID-19, intersected with different forms of vulnerabilities and resilience that stem from: race, gender, household composition and housing conditions, daily activities, access to protective measures at work and outside work, legal allowances related to (a lack of) citizenship, accessibility to various forms of care and support prior to, during, and after infection with COVID-19 (including Long-COVID).

Table 9. Wales' case study method information.

Main research questions	RQ1	RQ2	RQ3	RQ4	RQ5
	What structural issues (mobility, opportunity, access) affect the pandemic experiences of BAME overseas qualified nurses	What organisational issues (management, spatial arrangements, institutional regulations)	What can we learn about COVID-19 politics (containment, immunisation and biopolitics) and the regulations of BAME overseas	What are the dominant rationalities (goals) in governing populations during the pandemic and	How do government policies encourage beneficial forms of movement (money, goods)

	who work in South Wales hospitals?	affect the pandemic experiences of BAME overseas qualified nurses who work in South Wales hospitals?	qualified nurses who work in South Wales hospitals?	techniques (means) of ensuring productivity, efficiency, and resilience of BAME overseas qualified nurses who work in South Wales hospitals?	and limit harmful forms of circulation (disease) with reference to the Swansea Metropolitan Area?
Scale	United Kingdom ▪ Wales ▪ City of Swansea				
Main disciplines	Medical and health sociology, human geography, nursing				
Primary Data Collection & Timeframe	Qualitative interviews: ▪ 8 BAME overseas qualified nurses ▪ 8 healthcare managers who work with BAME overseas qualified nurses ▪ Data collection: until 15 December 2022 Creative workshops: ▪ 6-12 BAME overseas qualified nurses (one or two sessions) ▪ Data collection: until 15 December 2022 Quantitative survey: ▪ 171 BAME residents in the Swansea Metropolitan Area ▪ Data collection: finished				
Main variables					
Resource System & Units (RSU)	▪ Number of hospitals in the Swansea Metropolitan Area; ▪ Access and availability of resources (e.g., PPE, tests, vaccines); ▪ Living conditions of nurses (e.g., private space, shared living facilities, presence of amenities, internet connection, means of travel); ▪ Healthcare services (in the hospitals in general and by nurses) ▪ Nurses training programme that leads BAME overseas qualified nurses to be fully qualified to work in Welsh hospitals				
Governance System (GS)	▪ NHS Wales standard operating procedures (SOP) for hospitals (norms, guidelines, measures, policies); ▪ Social Security's standard operating procedures (SOP) for hospitals; ▪ Internal SOP for hospitals, pertaining to COVID-19, nursing and nurse training; ▪ UK Home Office immigration SOP ▪ UK businesses vital services SOP				
Actor System (A)	▪ Number of hospitalised patients; ▪ Number of daily staff; ▪ COVID-19 mental model's evolution; ▪ Levels of trust in the government; ▪ Head nurse, colleague, and patient satisfaction.				
Interaction Area (I)	▪ Communication campaigns (across traditional and social media); ▪ Public opinion on COVID-19 healthcare. ▪ Social tolerance of difference (Racialisation, gendered treatment, ableism, ageism, classism in social situations)				

	▪ Management and supervision styles
Outcomes (O)	▪ Resilience, distress, and mood indicators ▪ Nurse career progression (e.g. training passed, promotion made, scope of activities widened, comfort levels with the use of Welsh healthcare jargon) ▪ Success rate of COVID-19 abatement; ▪ Containment and Health Index (for UK as Wales is not available);

3.1.9 England, MDI & TRI

Hard-to-reach communities (ethnic and religious minorities) in England

This case study of England (national case study) focuses on members of the hard-to-reach communities to examine the extent to which the official, government, and health authorities' COVID-19 messages reached members of minority groups. It explores the interplay between the mainstream COVID-19 narratives and alternative models of communication during the pandemic. Our approach in this case study will be two-folded: instead of searching for a representative sample, and trying to go through every ethnicity and every religion in England, we will conduct interviews with people who have a story to tell. Identification and selection of storytellers will be based on the researchers' engagement with the community as journalists and members of civil society organisations. The overarching objective of the MDI case study is identification of alternative communication practices developed within hard-to-reach communities as a response and adjustment to pandemic adversity. In our case study, people are foregrounded, rather than subjects of examination – an approach that encourages research as action. Combining journalistic and academic methods of interview (in-depth semi-structured conversation), visual ethnography, and thematic analysis, the project aims to assess the existing communication practices and assists in developing new forms of crisis communication that follow the idea of an inclusive society, society of all and for all. The visual ethnography – interviews – document experiences of the hard-to-reach members of the communities with the COVID-19.

Table 10. England's case study method information.

Main research questions	**RQ1**	**RQ2**	**RQ3**	**RQ4**	**RQ5**
	What communication channels hard-to-reach communities relied on during COVID-19 (mainstream media, community media, billboards, public talks, GPs)?	What additional communication channels minority communities developed during COVID-19?	What are the main characteristics of alternative communication channels (origins, people involved, frequency of posts, interactivity, number of people involved, links with the external news sources?	How minority communities counter misinformation?	What lessons can be learned from developing alternative channels of communication?
Scale	United Kingdom ▪ England				
Main disciplines	Communication studies, media studies, digital media studies				

Primary Data Collection & Timeframe	▪ Instead of searching for a representative sample, and trying to go through every ethnicity and every religion in England, we will conduct interviews with people who have a story to tell; ▪ Identification and selection of storytellers will be based on the researchers' engagement with the community as journalists and members of civil society organisations; ▪ 31 interviews have been conducted and transcribed.
Main variables	
Resource System & Units (RSU)	Origins, people involved, frequency of posts, interactivity, number of people involved
Governance System (GS)	Personal interviews with members of different communities that are hard-to-reach
Actor System (A)	Information-consuming habits Communication habits Development of new communication forms, communication channels and the adaptation of existing communication habits amongst the members of communities
Interaction Area (I)	Communication and interaction amongst different members of a community (in terms of status, occupation, and the role in the community)
Outcomes (O)	Resilience and development of alternative communication practices

3.2 Case Studies Contributions to COVINFORM Objectives 1-7

This section focuses on the contributions of case studies to COVINFORM Project objectives. To facilitate comprehension on how each of the final 10 case studies individually contribute to each of the 7 objectives, commonalities and contrasting information across case studies is presented in tables per objective.

Objective 1

Analyse preparedness, initial responses, and subsequent responses to COVID-19 across the EU27 countries and the UK and selected third countries:

Table 11. Contributions to COVINFORM Objective 1 of the final 10 case studies per country and partner.

Country, Partner	Contributions to COVINFORM Objective 1
Portugal FS	The study of the adaptation of such an important system (LTCF) that is one of the most hit by the pandemic is of utmost importance particularly due to the high vulnerability of such populations across the globe.

Belgium UANTWERPEN	Focus on preparedness and responses to COVID-19 at a local level, on neighbourhood-specific dynamics. For example, how mental health services and other community-level organisations in the local area responded to the pandemic.
Spain URJC & SAMUR	This case has a strong focus on understanding the constellation of actors that are engaged in the provision of social services and how they navigated the COVID-19 pandemic. To draw a comprehensive image of how these institutions faced this crisis, we have taken a broad definition of institution. This case has interviewed decision-makers engaged in social services, members of social services and adjacent institutions (firefighters, first responders, local police) and third sector actors. This has allowed us to explore the different steps from the plans drafted, to their implementation, through how other actors intervened to provide care for those who were not being covered by the measures designed.
Italy SAPIENZA & UCSC	The study will help to better understand the impact on the health workers population of the initial levels of preparedness of the healthcare system, the response of central and regional authorities and the resulting adaptability of hospital facilities at the local level.
Austria SYNYO	Our case study will contribute insights into how a specific group was affected by the pandemic responses. As this is a group that will likely be affected in a similar way in other health crisis and epidemics/pandemics, due to their role as essential workers and due to their increased exposure to the virus or other threats, this is expected to contribute relevant insights into how pandemic response can be improved and stress-factors and risk behaviour reduced.
Germany SINUS **Sweden** UGOT	We analyse how local authorities in Sweden and Germany prepared for producing information in different languages in order to communicate with vulnerable groups, specifically ethnic minority and migration-background residents.
Greece KEMEA	Through this case study we can obtain some more in-depth responses in the way LEAs, and potential governmental actors have responded to the pandemic situation and how their role has been generally affected and impacted. Accordingly, we will examine minorities and how their everyday life was affected from COVID-19 as well as their trust and perceptions against LEAs and authorities.
Wales SU	The answers demonstrate how prominent this vulnerable group and others with similar characteristics (ethnicity, immigrant status) and in similar situations (NHS healthcare workers, not living with family) feature in pre-pandemic social policy of national and local governments and how that fed into pandemic policies.
England MDI & TRI	This case study provides an in-depth understanding of the COVID-19 communication amongst the members of hard-to-reach communities. It describes and explains communicative practices related to crisis communication in order to generate a set of factors that might be useful for examining communicative strategies that could be developed for dealing with pandemics or global crises more broadly.

Objective 2

Index and model relevant dimensions of health, socioeconomic, political, and community vulnerability and resilience within a multidisciplinary and intersectional theoretical framework:

Table 12. Contributions to COVINFORM Objective 2 of the final 10 case studies per country and partner.

Country, Partner	Contributions to COVINFORM Objective 2
Portugal FS	The analysis of the different LTCFs' systems will allow us to distinguish what are the main factors of resilience and the most important strategies to regain control. It will be possible

	to disentangle the relative importance of factors of each system in particular, as well as the factors common to all systems.
Belgium UANTWERPEN	Different dimensions of vulnerability and resilience are considered, including relating to migration status, socioeconomic status, social exclusion, and communication.
Spain URJC & SAMUR	We have interviewed citizens from two of the largest migrant communities in Madrid, balancing our sample of interviewees to access both men and women. On average, they are young and healthy. Yet, their socioeconomic position, working in low-paying jobs or working in the informal sector rendered them vulnerable on multiple fronts. Namely, their positions could not become home-based and were often essential, such as working in the care sector or in the hospitality sector, which made them more exposed to contagion vectors. Second, these households earnings' often place themselves just above poverty thresholds. Any blow, even if minimal, can force such households to apply for any existing social aid. And last, but not least, despite governmental efforts to provide coverage for every household, these families often did not meet the requirements because they had been employed informally or working intermittently. Thus, with the cooperation of third sector organisations that became our entry points, we have contacted individuals for whom health related uncertainties mounted on top of race, economic activity, access to social benefits, administrative situation and household issues.
Italy SAPIENZA & UCSC	The survey targets health workers, one of the population groups most exposed to the risks and vulnerabilities of the pandemic. The study will adopt a gender perspective to shed light on health vulnerabilities, including mental, social and family vulnerabilities.
Austria SYNYO	The case study will contribute insights into a group that is vulnerable due to various, intersecting factors. Sales jobs are highly feminised and generally not well paid, and often women work part-time due to care responsibilities; it is also low-paid labour that is often performed by migrants or Austrian born individuals with low educational levels. To these existing vulnerabilities (economic vulnerability through profession, gender, and migrant background; often combined with care responsibilities), the pandemic added new ones. From a health point of view, that is a supposed increased risk of the disease due to exposure – during the pandemic, supermarket personnel have been continuously in contact with customers who potentially carry the virus. As part of the critical infrastructure, supermarkets were open at all times during the ongoing health crisis and home office was no option for floor staff. From a societal point of view, there are stress-related factors due to this increased risk perception as well as conflicts (with colleagues, customers) to be taken into account. Through their role, supermarket workers also have been exposed to (verbal) abuse and frustration from customers about either COVID-19 related regulations such as mandatory mask wearing and limits on bulk purchasing of essential goods. Women working at the frontline also have been affected by their continuous (and possibly increased) care responsibilities during the pandemic, for example due to school closures and the switch to distance learning. Further, as mentioned, a high proportion of our cohort are of migrant background. As such they experience discrimination and disadvantage on the job market.
Germany SINUS **Sweden** UGOT	Based on our data, it will be possible to index and/or model how ethnic belonging, age, gender and socio-economic factors all contribute and interact with habits of information seeking, trust in authorities, and willingness to take proactive measures and vaccination against COVID-19.
Greece KEMEA	This study will assess specific socioeconomic, political and community vulnerability dimensions, through assessing the levels of trust among vulnerable populations during the pandemic towards the LEAs and how this has been perceived by the latter.
Wales SU	The answers uncover aspects of life lived as a vulnerable person that have remained unconsidered in social policies, institutional organisation, and behavioural regulations. These emerge from the social, civic, and spatial organisation of their lives onto which these policies and regulations do not map well compared to the lives of less vulnerable others.

England MDI & TRI	This case study examines the members of different marginalised and minority groups defined as 'hard-to-reach' based on their ethnicity, religion and other factors. Those communities' vulnerability has been even more highlighted during the pandemic as they were not specifically considered in the governmental responses to the pandemic and its communication with the public.

Objective 3

Compare selected regional/local responses within 15 EU countries, with a focus on local social structures (including inequalities) and multi-level governance processes:

Table 13. Contributions to COVINFORM Objective 3 of the final 10 case studies per country and partner.

Country, Partner	Contributions to COVINFORM Objective 3
Portugal FS	The LTCFs' systems are deeply connected with social economic differences and inequalities. Multi-level governance processes will be considered (from Governmental decision to operating practices). The existence of LTCFs across the globe will allow an interesting and useful transferability of findings given some controlled caveats.
Belgium UANTWERPEN	This case study will allow for a spotlight on local social structures, as well as how these connect with governance processes.
Spain URJC & SAMUR	We provide an in-depth approach to how members of two migrant communities faced the COVID-19 pandemic. By looking at the top (decision makers and top administrators), meso (social workers, etc) and bottom (citizens) levels of actors we can explore how decisions were set up and evaluate the extent to which they met their goals. Policy-making during the pandemic became highly centralised so our information, combined with the data gathered in other working packages will contribute to explore how the different governmental levels intertwined and cooperated to provide an answer to those who were more harshly hit by this crisis. We also explore the extent to which the systems involved have been able to recover from the shock and how they have addressed subsequent inequalities.
Italy SAPIENZA & UCSC	Socio-economic differences will be addressed by including health workers with different professions (e.g., nurses and doctors), education levels, income, age and gender in our study. Multilevel governance processes are taken into account as the Italian health system is a regionally based national health service that provides universal coverage largely free at the point of delivery. The results of our study on the impact of the pandemic on different aspects of health workers' lives will be compared with those elaborated for other countries.
Austria SYNYO	Our case study will contribute insights into one specific context – supermarkets in Vienna, Austria. Case study-internally, we will compare different locations to understand the impact of the geographic context, layout and neighbourhood on the frontline workers. Across case studies, we will contribute insights into the indicators shared across case studies.
Germany SINUS **Sweden** UGOT	No such comparative study is planned. Our study will be based on Swedish and German data only – unless comparable data is to be found (or maybe gathered) in other European local communities. We will reach out to other research groups conducting similar research.
Greece KEMEA	Given that we have a common denominator for all the countries in the consortium (COVID-19 pandemic) a comparison is feasible provided that the same survey with the same methodology and the same format will be applied to all the relevant Consortium countries, keeping the same variables under examination.

Wales SU	The answers will elude how public health policy that underpins the pandemic responses (at the Welsh national level and the local Swansea) and that informs healthcare organisations (Swansea Bay University Health Board) and policies in care institutions (hospitals in particular) (re)produce social and health inequalities.
England MDI & TRI	Our focus is on the communities in England, no comparison is planned.

Objective 4

Assess the impacts of national and regional/local COVID-19 responses on human behaviour, social dynamics, and physical and mental health outcomes:

Table 14. Contributions to COVINFORM Objective 4 of the final 10 case studies per country and partner.

Country, Partner	Contributions to COVINFORM Objective 4
Portugal FS	Being a highly impacted area due to its highest age index, the case study will be able to point out some behavioural patterns that were followed and how these hindered particularly mental health outcomes.
Belgium UANTWERPEN	The impact of national/regional/local responses on these outcomes will be studied at the neighbourhood level.
Spain URJC & SAMUR	Our citizen interviews have also inquired the extent to which the pandemic has affected the social dynamics, behaviours and health outcomes of the members of the Latin American and Moroccan communities in Madrid. We asked interviewees to self-assess the extent to which the pandemic had affected their wellbeing, broadly understood. We also inquire whether they perceived governmental measures to have addressed their social needs adequately, putting in place measures that treated them fairly. We also research the practices put in place by these individuals and their communities to navigate the hardship besides the institutional measures and how they managed the uncertainties of this period that add to those that usually burden the migration process.
Italy SAPIENZA & UCSC	The case study will analyse the impact of the pandemic on health workers and their families. The information gathered through the survey will be used to construct indicators of healthcare workers mental health and well-being in relation to work and family life.
Austria SYNYO	The case study will provide insights into how the pandemic response in Austria/Vienna impacted the wellbeing, feeling of security and risk perception of women working at the frontline in supermarkets, as well as insights into the dynamics and behaviour of the relationships with customers.
Germany SINUS **Sweden** UGOT	We analyse how members of ethnic minorities and social-economic vulnerable groups have responded to information from the local government regarding preventive measures and vaccination willingness. We also measure emotional reaction and satisfaction with life as well as more general well-being. Data from immigrant dense suburbs will be compared to data on the Swedish and German populations in general.
Greece KEMEA	Human behaviour and social dynamics will be assessed, with a possibility to expand to physical and mental health outcomes (e.g. anxiety levels, burnout, pressure factors etc.) when dealing with COVID-19 vulnerable populations. he case study will also draw insights from trust levels and perceptions of minorities/vulnerable groups towards authorities and vice versa.
Wales SU	The answers will provide insights into how the sets of pandemic policies implemented at various institutions (Welsh government, Public Health Wales, hospitals) had differential effects on the behaviour, social lives, and health of people with particular characteristics and in particular situations.

England MDI & TRI	Our case study will provide insights into the hard-to-reach communities' exposure to risk, harms, distress and into the context within which they experienced and reacted to the exclusion.

Objective 5

Implement intervention or pilot case studies in selected EU and non-EU countries, with a focus on transferring promising practices for boosting well-being within specific vulnerable groups:

Table 15. Contributions to COVINFORM Objective 5 of the final 10 case studies per country and partner.

Country, Partner	Contributions to COVINFORM Objective 5
Portugal FS	Elderly in LTCFs are a vulnerable group. By considering different types of LTCF (public, private and 3rd sector) the analysis will allow us to deduct a set of proposals that will be useful for future practices.
Belgium UANTWERPEN	We will not implement any interventions, however there is a focus on promising practices that have been implemented by actors in our case study setting. Furthermore, we will assess what strategies vulnerable groups used to deal with the impact of COVID-19.
Spain URJC & SAMUR	All the interviews carried out ask respondents to identify which practices they found most promising, which ones were helpful during the early stages, but are no longer of use, and which ones have come to stay. Respondents, no matter their position within the system, all mentioned practices that enhanced the resilience of their organisations or their own situation.
Italy SAPIENZA & UCSC	The responses will be analysed in terms of risk perception, physical and mental discomfort related to work pressure, and difficulties in reconciling work and family life, and will provide useful information for policy makers to increase the well-being of healthcare workers and their families.
Austria SYNYO	There are a number of previous studies on supermarket frontline workers, yet none focus on Austria and its specific context. As we assume there are certain overlaps and similarities between the situation of women working at the frontline in Austria and other (European) countries, we will aim to draw comparisons with existing studies. We will further aim to identify promising practices, particularly addressing possibilities to decrease our target population's vulnerability, be it emotional (e.g., due to fear, anxiety, depression), social (e.g., due to social exclusion, discrimination), psychological (e.g., burn-out, dehumanisation), and/or occupational (e.g., job satisfaction, insecurity, exhaustion) and increase feelings of safety.
Germany SINUS **Sweden** UGOT	No direct contribution is planned. However, in principle, the data could be offered to local stakeholders as a resource for optimisation of communications campaigns during future COVID-19 waves.
Greece KEMEA	The way this case study has been designed for the Greek national context examining from an in-depth approach to identify the causational link of perception issues related to COVID-19 and if applicable, generate sustainable solutions in the form of recommendations to bridge social divisions. This case study and its outcomes, however, can be also transferred to other Consortium Countries national context and recommendations are estimated to be viable and sustainable solutions for the relevant stakeholders/vulnerable populations, therefore fulfills the criteria of transferability and sustainability.
Wales SU	This case study will produce a list of practices, regulations, and other affordances that the BAME overseas qualified nurses' identity as having been beneficial to them during the

	pandemic in any aspect of their lives in the context of the institutions they have engaged with (e.g. hospitals, immigration services, housing associations).
England MDI & TRI	No intervention is planned, but the case study will contain recommendations for better communication and inclusion of vulnerable communities in the communication strategies during the crisis.

Objective 6

Develop policy guidelines and promising practices to influence behavioural change across different groups in society and improve the resilience, wellbeing and mental health of the population:

Table 16. Contributions to COVINFORM Objective 6 of the final 10 case studies per country and partner.

Country, Partner	Contributions to COVINFORM Objective 6
Portugal FS	Analysis of processes and best practices will provide a set of recommendations to guide the decision-making of policy makers and LTCF managers.
Belgium UANTWERPEN	Our findings should be informative to guide future policy on crisis responses in similar communities/settings.
Spain URJC & SAMUR	Through the assessment of a wide variety of practices, formal and informal, we examine which ones were most effective in improving the resilience of organisations and individuals throughout the pandemic. Once the analysis of the fieldwork is completed, we will develop policy guidelines and recommendations for those interviewed, to enhance their crisis preparedness.
Italy SAPIENZA & UCSC	The study will help identify risks and vulnerabilities for healthcare workers belonging to different socio-economic groups, and a set of proposals will be developed to improve their wellbeing and work-life balance.
Austria SYNYO	Through the case study, we will identify issues/problems as well as best practices which will be written up in the form of policy briefs and recommendations, as well as other guiding materials (e.g., for supermarket management). For example, we have found that in February 2022, the Arbeiterkammer (AK, interest representation of workers in Austria) and the Österreichischer Gewerkschaftsbund (ÖGB, Austrian Trade Union Federation) asked for specific regulations for specific professions including supermarket workers regarding the increased risk to COVID-19 and the subsequent recognition of COVID-19 as an occupational disease, which has financial and other benefits to workers. Furthermore, we have identified a lack of data on how supermarket workers perceived the regulations and measures, which were seen as effective or ineffective.
Germany SINUS **Sweden** UGOT	Policy guidelines and recommendations for practices may be produced based on our results from survey and interview data with inhabitants in immigration dense suburbs in Sweden and Germany, and additional information from health practitioners will be helpful in developing such guidelines.
Greece KEMEA	Through the outputs of this study, specific policy recommendations can be proposed regarding the perceptions and experiences of vulnerable populations during the pandemic and how these can be reinforced and further supported through tailor-made behaviours from key-stakeholders (LEAs, Governmental actors, and policy makers). Additionally, guidelines and/or recommendations can be drawn for LEAs and an assessment on how the pandemic affected their work life can be also made.
Wales SU	This case study will provide new indicators as to whether pandemic social and health policy and regulations in Wales produce and reproduce inequalities between social groups with particular reference to healthcare workers, migrants, and ethnic minorities. It will also provide suggestions on how to preempt the formation of these inequities and reduce some of those that have pervaded and exist today.

England MDI & TRI	Set of recommendations for better communication and inclusion of vulnerable communities in the communication strategies during the crisis can be produced.

Objective 7

Integrate the project parameters, data flows, research findings, case study assessments, and response guidance into the COVINFORM COVID-19 Knowledge Repository:

Table 17. Contributions to COVINFORM Objective 7 of the final 10 case studies per country and partner.

Country, Partner	Contributions to COVINFORM Objective 7
Portugal FS	Findings will be published in a way that they reach a wide audience and multiple target groups.
Belgium UANTWERPEN	Our research questions and approach are informed by gaps identified in previous COVINFORM tasks/activities.
Spain URJC & SAMUR	All the information gathered (both quantitative and qualitative) will be made available on the appropriate repositories. Sources that are already available open access will also be linked for any interested party to access it.
Italy SAPIENZA & UCSC	Findings from the survey will be available through multiple channels including project reports, social networks, and scientific publication in open access journals.
Austria SYNYO	Findings will be published in a way that they reach a wide audience and multiple target groups. These results, as well as identified indicators of vulnerability which are time and context dependent, will be integrated into the Knowledge Repository.
Germany SINUS **Sweden** UGOT	Our ambition is to integrate the takeaways from our case study into the COVINFORM knowledge repository.
Greece KEMEA	The research outcomes can be integrated in the form of reports, papers, etc.to the COVINFORM COVID-19 Knowledge Repository.
Wales SU	It produces qualitative findings and combines it with insights into BAME populations from a survey conducted between November 2021 and March 2022. In doing so, the case study ensures that its insights and recommendations relate to vulnerable groups discussed in other Case Studies (e.g. BAME people, migrants, and/or healthcare workers).
England MDI & TRI	Findings will be published in different ways and made available to wider audiences.

3.3 Case Studies Relation to Work Packages 4-7

This section describes how each case study relates to other work packages, namely WP4 (Governance domain), WP5 (Health domain), WP6 (Community domain), and WP7 (Information domain). The information will be displayed in tables per case study for each work package.

Work Package 4

Government responses and impact assessment:

- Identify governmental responses relevant for case studies – empirical research on (a);
- How the case study tackles governmental response and impacts (b).

Table 18. Contributions to WP4 - Governance of the final 10 case studies per country and partner.

Country, Partner	WP4 - Governance	
	a.	b.
Portugal FS	The CS will identify decision-making processes of the government in vaccination prioritisation, general decision relating to the distribution of the COVID-19 vaccines, as well as communication strategies (e.g., information campaigns, vaccine distribution, vaccine risk), testing (e.g., financial support, policies), and treatment resources.	By analysing the vaccine distribution strategy of the Portuguese government and decisions creating an uneven distribution of the vaccine among LTCFs, as well as testing strategies and treatment resources available. Additionally, government communication strategies will be analysed with focus on communication towards vulnerable groups among LTCFs.
Belgium UANTWERPEN	▪ Focus on impact of governmental decisions/measures at the local level; ▪ Focus on effectiveness/relevance of government communication at the local level; ▪ Focus on integration of local, regional, national level governmental measures.	
Spain URJC & SAMUR	▪ Literature review; ▪ Text analysis of secondary sources (policy papers, local statistics, etc.); Interviews with policy makers from the local council specialising in social services and family affairs (4 interviews) who were those in charge of policy design in this area.	
Italy SAPIENZA & UCSC	Governmental approaches to defining and addressing vulnerability; Economic and social welfare responses.	The retrospective approach together with the multidisciplinary nature of the survey, will help us to shed light on how and to what extent governmental responses in different domains (including pandemic planning and preparedness, governmental approaches to defining and addressing vulnerability, economic and social welfare responses) have impacted on HWCs and their families' objective and subjective wellbeing (including probability of infection, mental health, paid and unpaid family workloads, work-life balance, affective relationships) in different moments of the pandemic. The survey will develop a strong gender perspective, as it has been largely shown that health and social consequences of the pandemic are generally, and especially for healthcare workers not gender neutral.

Austria SYNYO	In Austria, supermarkets were regulated by their own rules and hygiene standards as well as national and local regulations issued by the government, such as hygiene measures, distancing measures, social and physical density norms, ventilation norms. As such, we investigate measures at national (Austria), municipal (Vienna) and the supermarket level. This will provide us with insights on effectiveness of the measures, as well as problems they might have caused. Supermarkets are places where personnel and customers meet and closely interact. Through the direct customer service, the system was also impacted by current COVID-19 rules to stop the spread of the virus such as mask wearing, earlier closing hours, social distancing, etc. Finally, the frontline workers at the supermarket and their workplace are influenced by management decisions and personnel, customers and government rules to stop the spread of COVID-19. All of this will feed into a better understanding where government measures were necessary and where regulations could be taken over by the supermarkets, where problems occurred, and how future response to health crises could be improved.	
Germany SINUS **Sweden** UGOT	We intend to conduct empirical research on government authorities' and local authorities' crisis communication directed at ethnical minorities and socio-economically vulnerable residents.	We intend to analyse the communication efforts mentioned in relation to attitudes and adaption from vulnerable groups towards protective measures and vaccinations.
Greece KEMEA	This case study can be directly related to WP4, as it studies the impact COVID-19 had on the role of the relevant authorities and/or LEAs as well as on the levels of trust from vulnerable populations towards them.	
Wales SU	Pandemic policies from the Welsh government, Swansea Council, and Public Health Wales advice that has been relevant to BAME and migrant populations.	
England MDI & TRI	Background information for each selected community (how many people, what % of population, data about COVID-19, local community specific policies/activities related to the pandemic, namely the context of specific community's action to develop communication channels).	Turn it into the questions for interviews.

Work Package 5

Public Health responses and impact assessment:

- Dimensions of public health responses which are relevant to study for the case study (a);
- How the case study contributes to analyse public health response and impacts (b).

Table 19. Contributions to WP5 – Public Health of the final 10 case studies per country and partner.

Country, Partner	WP5 -	
	a.	b.
Portugal FS	The case study will identify and analyse communication strategies and information campaigns in relation to the COVID-19 vaccination among LTCFs from public health stakeholders, as well as guidelines to policy implementation.	By analysing how inclusive communication was and how they addressed concerns of various groups of LTCFs. Additionally, it will give us insight about how public health stakeholders perceive the different LTCFs´ systems and how adequate

		measures are taken into account according to social economic differences and inequalities.
Belgium UANTWERPEN	▪ Focus on impact of public health restrictions at the local level for mental health and well-being and across mental healthcare settings; ▪ Focus on access to mental health services.	
Spain URJC & SAMUR	▪ Description of the network of resources within social services; ▪ Decisions put in place to adapt the structure to the needs emerged during the COVID-19 crisis (Acuerdos de la Villa); ▪ Interviews with relevant actors: practitioners from local institutions (local police, firefighters, first-responders (SAMUR Madrid), Directors of Social Services, first-responders (Salud Madrid) – 6 interviews and a nominal technique group) and members of third sector organisations (a sample of institutions working with migrants was drawn, 8 interviews). Our case study focuses on the wellbeing dimension of public health insofar as these communities find themselves in a perfect storm. Their risk of health deterioration is the product of high levels of exposure to the virus, high risk of anxiety and related issues due to uncertainty and high risk of poverty.	
Italy SAPIENZA & UCSC	Impacts of COVID-19 on healthcare workers; Comparative definitions and operationalization of health vulnerabilities, including mental health vulnerabilities, and social precarity; Social and cultural factors influencing public health responses; Public health communication and epidemiological outcomes.	The survey will contribute to the understanding of the mutual relationship between public health response and the well-being of healthcare workers and their families. The focus on gender is key since prior research has highlighted the following aspects: i) a higher proportion of female healthcare workers infected compared to males; ii) a higher prevalence rate of anxiety, depression and suicide in female frontline workers compared to males; iii) ii) a lack of female representation in the government scientific committee and hospital organization leadership in Italy.
Austria SYNYO	We do not know whether women working at the frontline in supermarkets had higher infection rates than the general population in Austria. There may have been a higher infection rate due to the continuous exposure to customers and as a consequence a continuous exposure to the virus. Austria introduced mandatory mask wearing on the 30st of March 2020. In the middle of the second wave, FFP2 masks were made mandatory in Austria. These are known to protect well against COVID-19. FFP2 mask wearing was mandatory until June 2022; then, all regulations were lifted. The infection rate of supermarket frontline workers at their workplace might only be a little higher than in the general population since the introduction of FFP2 masks. Infection rates before mask wearing was made mandatory might have been considerably higher compared to the general population. However, there are no known COVID-19 clusters in supermarkets in Austria. Nevertheless, the Arbeiterkammer (AK), the official lobby of employees and workers in Austria, highlights that supermarkets are a high exposure site and demand that COVID-19 is recognised as occupational illness for those working in these environments. It is unlikely that the researchers will find data on the exposure and infection rate of women working in supermarkets in Austria. However, our qualitative research will focus on the perception of risk and safety in relation to COVID-19. This case study will investigate if, when, where and why women working at the frontline felt at risk of contracting the virus at their work site as well as where and through which measures, they felt well protected. Further, we will investigate their stressors and areas of concern for these frontline workers in relation to COVID-19, their work space and their private lives. This will help to provide recommendations for future epidemics/pandemics, where this target group is likely to be affected again due to their role as essential workers.	

Germany SINUS **Sweden** UGOT	The willingness of above mentioned vulnerable groups to take proactive measures and to vaccinate against COVID-19. The study will focus on both why and why not individuals take proactive measures and get vaccinated.	Methods used will be panel study surveys and interviews.
Greece KEMEA	This case study does not have a direct impact on WP5 (public health responses), rather an indirect one, as through studying the levels of trust from vulnerable populations these can be in conjunction to specific health-related decisions the former have taken for the latter. Additionally, there is the potential to identify gaps in public health responses relevant to mental or in general well-being of the groups included as well as access in public health etc.	
Wales SU	Pandemic policies from the Welsh government, Swansea Council, and Public Health Wales advice that has been relevant to (1) the employment and educational circumstances of BAME overseas qualified nurses and (2) hospital/care settings. Recommendations to Public Health Wales, health boards and hospitals will be developed.	
England MDI **Ireland** TRI	Investigate local government/NHS COVID-19 policies through news media coverage of them and press releases.	Analyse excluding/discriminating practices to those minority groups; Link the story about new communication channel to the above information

Work Package 6

Citizen and community responses and impact assessment:

- Describe the relevant target community to be studied (a);
- What kind of community responses are analysed by the case study (b);
- How the case study contributes to analyse community and citizens' responses and impacts (c).

Table 20. Contributions to WP6 – Community of the final 10 case studies per country and partner.

Country, Partner	WP6 – Community		
	a.	b.	c.
Portugal FS	Elderly long term care facilities with different socioeconomic status (e.g., private, public, 3rd sector), being the primarily residence of users aged 65 or above, with no specified disease focus (e.g., Alzheimer) and no specified enrolment condition (e.g., dependency).	Information campaigns set out by organisations to inform health professionals about public health measures (e.g., hygiene and personal protective equipment); Vaccination plan (e.g., home vaccination); Volunteering initiatives to gather resources (e.g., masks distribution); Responses from different LTCFs systems will help to understand a fuller spectrum of these settings.	By exploring how the vaccination rolled out and connected public health and government communication, as well as how social economic differences and inequalities contributed to the differentiated impact on the various groups of LTCFs of Évora city.
Belgium UANTWERPEN	▪ Focus on migrant communities in Borgerhout and Antwerpen Noord, those who have lived in Belgium for more than 5 years;		

	▪ Focus on responses to demands for mental health related support and care across diverse stakeholders: e.g. religious organisations, solidarity networks, local social assistance/welfare; ▪ What strategies migrants viewed as important for their mental health during COVID-19.		
Spain URJC & SAMUR	We focus on citizens of migrant origin from the Latin American and Moroccan communities in Madrid. These two groups, despite the differences in operationalization (one responds to a region, the other to a country), represent two of the most numerous migrant communities of Madrid. Excluding citizens from EU-Member States, almost the two largest.	We interview individuals and members of NGOs to explore the extent to which civil society organised more or less formally to respond to the COVID-19 crisis. Asking in organisations with different sizes and targets also allows this case study to better understand how the third sector established networks and cooperation strategies to maximise coverage.	Our case study contributes to analyse these two communities to understand how they faced the hardships of the crisis. We expect differences in language skills and administrative status to mediate their experience in accessing existing resources or organising to solve the challenges the crisis posed.
Italy SAPIENZA & UCSC	The community investigated by the survey is that of workers in the health field and will be representative for both genders, of all ages and levels of specialisation.	The responses are analysed in terms of risk perception, physical and mental discomfort related to work pressure, difficulties in reconciling work and family life.	The analysed subpopulation enjoys a high reputation and trust in the community of Italian citizens. The difficulties encountered by this community aroused great emotion in the media and among Italian citizens and contributed to increasing solidarity between people. Investing in the wellbeing of health workers would be very welcome. This Survey can provide useful indicators for future policy interventions.
Austria SYNYO	The case study focuses on a community of practice, brought together by the shared profession. In addition, the case study also looks into the neighbourhood, i.e., a geographical community, trying to understand how the location influences the situation in each supermarket. In terms of bottom-up responses, we are investigating how women working in supermarkets organised themselves (if at all) in case they felt at-risk or that official regulations were not sufficient; how they protected themselves within the regulations given top down. We will identify those moments when the research participants felt most at risk, as well as measures that can be taken to lower that risk, to protect them. We also investigate the work environment and conflicts with colleagues, management, and customers.		
Germany SINUS **Sweden** UGOT	Inhabitants in immigrant dense suburbs and neighbourhoods appear to have been more severely affected by COVID-19, and proactive measures and vaccination rates are lower	Information and communication efforts from government agencies on different levels.	In two ways: First through unique and innovative panel studies with residents in immigration dense suburbs. Second, through individual and group interviews.

	compared to the general population.		
Greece KEMEA	The target populations are: a. LEAs and governmental authorities; b. Vulnerable populations/minorities (based on proximity and availability on behalf of the researchers). By asking questions relevant to impacts of the pandemic participants will provide information relevant to community/citizen responses.		
Wales SU	Consider how the case study group was eligible for and received support from civic organisations, advocacy groups, and mutual aid initiatives in the experience of the nurse and manager interviewee groups. Recommendations to such groups will be identified.		
England MDI & TRI	Link to other parts of the project and their objectives/findings.		

Work Package 7

Inclusive COVID-19 communication for behaviour change and addressing misinformation:

- How will the case study analyse vulnerable groups from the perspective of communication /information (a);
- How the case study contributes to communication / information response and impacts (b).

Table 21. Contributions to WP7 – Information of the final 10 case studies per country and partner.

Country, Partner	WP7 – Information	
	a.	b.
Portugal FS	The case study will explore communication strategies (e.g., government, civil society, and public health) aimed at elderly LTCFs and how those received and perceived the information.	By gaining insights on how communication strategies were perceived by LTCFs administrators, professionals, and the elderly, and how it contributed to information campaigns, will help to set better practices in the future (having also in mind the impact of inherent social economic differences and inequalities).
Belgium UANTWERPEN	▪ How organisations reached vulnerable groups with information and support relating to mental health and wellbeing; ▪ Focus on how migrant community members searched for information regarding mental health support during COVID-19; ▪ Particular focus on how communication issues relate to access to care issues.	
Spain URJC & SAMUR	Across the interviews, respondents were asked about the communication strategies that were put in place and the extent to which they were adapted to different citizen profiles (migrants being one of the most significant). In the interviews, citizens were also asked about the sources they used to inform themselves, to evaluate the measures put in place to inform them about the pandemic, and the extent to which they trusted institutional sources. Both sets of questions will provide a comprehensive evaluation of the measures put in place and their success.	

Italy SAPIENZA & UCSC	The few existing studies have suggested that during the current pandemic healthcare workers reported more fear and worry than during other infectious disease pandemics (such as SARS). One potential reason for these apparent differences in the degree of worry involves the perceived insufficiency of information. Further, it has been suggested that (mis)information has been widely spread in the social media and the "infodemic" status made it difficult to obtain appropriate information.	Respondents will be asked about communication strategies and practices of governments and public health authorities. Up-to-date and accurate information on COVID-19 should be delivered promptly to healthcare workers to mitigate stress stemming from uncertainties regarding this disease. The results will help to assess and critique governmental and public health authorities' communication/information responses.
Austria SYNYO	The case study will gain insights into information flows from the government, from the supermarket management, as well as from colleagues and customers to the studied target population. The aim is to understand where there were information gaps and misunderstanding (misinformation even), and where information flows were sufficient and satisfactory. A lack of clear communication could lead to insecurities, particularly when supermarket workers had to enforce regulations with customers (e.g., remind them to wear masks, disinfect their hands, etc.). This will provide us with insights into how information can be improved.	
Germany SINUS **Sweden** UGOT	We will identify communication preparedness and activities from local government agencies related to preventing the spreading of COVID-19 virus, recommended proactive measures, and why, where and how to get vaccinated.	We will conduct interviews with local stakeholders in order to understand their motivations, preparedness, and strategies for communicating to the above mentioned vulnerable groups.
Greece KEMEA	Questions regarding communication and assessment of the relevant campaigns will be asked.	
Wales SU	It will analyse where uncertainties were identified by both interviewee groups and how communication and what kind of information was used to resolve (some) uncertainties. The case study will also identify what were misunderstandings between governmental agencies, hospital management, and the nurses, how they came into being, and how some could be resolved. It addresses what were the ethical, practical, and organisational dimensions of uncertainties and misunderstandings.	
England MDI & TRI	By conducting thematic analysis of interviews with vulnerable community members investigating their communication needs and perspective on mainstream communication.	Findings will be used to set up recommendations.

4 Conclusions

This deliverable presents the final 10 case studies of COVINFORM's project, their commonalities and complementary aspects within theoretical views and methodological approaches. The diversity and different fields of expertise of partners conducting the 10 case studies, as well as the different levels of know-how and science application boost the relevance of the findings and provide a more realistic analysis of the still ongoing COVID-19 pandemic. This also proves essential for recommendations addressing particularly the need of tailored information and risk communication to specific groups.

The methodological goal was to identify commonalities across case studies and manage their idiosyncrasies by incorporating what was specific to each without losing the holistic perspective and keep it as much standardised as possible. The use of holistic and syndemic models of analysis across all case studies with a strong focus on systems resilience and their ability to adapt, enabled the validation of the chosen approaches and frameworks proposed through cross-domain analysis.

This is a continuous process, revisiting and refining the relevant variables according to the characteristics of the vulnerable target populations and identified needs. This approach will continue during the ongoing second phase of data collection (interviews and surveys) through a mixed approach: on one hand, bottom-up allows for the generation of new hypotheses (constructionist approach) and top-down allows to test the fitting of the data into the model (positivist approach).

Thus, in a nutshell one can conclude that the present research conducted in the COVINFORM's case studies are fulfilling the foreseen objectives:

- Identify vulnerability and protective factors of both vulnerable populations and the systems/settings they are a part of, by describing the variables and indicators which characterise the relevant systems involved, providing insight regarding the resilience of such systems;
- Understand how those factors enhance COVID-19 impacts (cumulative), as well as how they interact with one another (synergic), throughout several time points of the pandemic, providing insight to the risk assessment framework being developed in WP2;
- Understand the commonalities across several relevant dimensions (e.g., governance – WP4; public health – WP5; community – WP6; and information – WP7) and what is and is not generalizable across case studies;
- Identify continuous data collection needs in order to later provide input for public-facing material created in WP8 (e.g., recommendations, guidelines, and tool development) regarding the lessons learnt so far;

Lastly, case studies' research will also search for dimensions not easily recognized in more formal approaches, like social identity and trust (Trump & Linkov, 2021; COVID-19 National Preparedness Collaborators, 2022) that are commonly under-recognized as being fundamental in accepting behavioural recommendations (e.g., isolation, vaccine acceptance, etc.).

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Appendix A. Case Study Template for D3.5 (update of Annex II in D3.1)

Case study name (Mention target group, main outcome variable, and infrastructure/site)	
Scale (Mention country, city/site/neighbourhood)	
Primary Data Collection & Timeframe (Mention expected number of interviews per target group & Mention expected period for conducting primary data collection)	
Timeline (Mention pandemic time points considered within interviews)	
Main research questions	
RQ1	
RQ2	
RQ3	
RQ4	
RQ5	
What are the main disciplines required for the work that will be developed?	
How does this case study contribute to COVINFORM objectives?	
O1	Analyse preparedness, initial responses, and subsequent responses to COVID-19 across the EU27 countries and the UK and selected third countries.
O2	Index and model relevant dimensions of health, socioeconomic, political, and community vulnerability and resilience within a multidisciplinary and intersectional theoretical framework.
O3	Compare selected regional/local responses within 15 EU countries, with a focus on local social structures (including inequalities) and multi-level governance processes.

O4	Assess the impacts of national and regional/local COVID-19 responses on human behaviour, social dynamics, and physical and mental health outcomes.
O5	Implement intervention or pilot case studies in selected EU and non-EU countries, with a focus on transferring promising practices for boosting well-being within specific vulnerable groups.
O6	Develop policy guidelines and promising practices to influence behavioural change across different groups in society and improve the resilience, wellbeing and mental health of the population.
O7	Integrate the project parameters, data flows, research findings, case study assessments, and response guidance into the COVINFORM COVID-19 Knowledge Repository.

Main domains to be considered on case studies (including governance (WP4), public health (WP5), community (WP6) and information (WP7), and beyond)	
WP4 a) identify governmental responses relevant for case studies – empirical research on; b) how the case study tackles governmental response and impacts	
WP5 a) dimensions of public health responses which are relevant to study for the case study b) how the case study contributes to analyse public health response and impacts	
WP6	

a) describe the relevant target community to be studied b) what kind of community responses are analysed by the case study c) how the case study contributes to analyse community and citizens response and impacts	
WP7 a) how will the case study analyse vulnerable groups from the perspective of communication /information b) how the case study contributes to communication / information response and impacts	
Main groups of variables, and indicators, to be collected under each domain (see Appendixes in D3.4)	
Resource System & Units (RSU)	
Governance System (GS)	
Actor System (AS)	
Interactions (I)	
Outcomes (O)	

Appendix B. Scale, Primary Data Collection & Timeframe of the final 10 case studies

Country, Partner	Scale	Primary Data Collection & Timeframe
Portugal FS	Continental Portugal ▪ Region of Alentejo ▪ City of Évora	Semi-structured Interviews: ▪ May 2022 to August 2022 ▪ Vulnerable Target Population: Elderly living in long term care facilities (LTCF; Private vs. Public vs. Third Sector) ≥15 (≥5 per type of LTCF) ▪ LTCF Administration ≥12 (≥4 per type of LTCF) ▪ LTCF Workers ≥12 (≥4 per type of LTCF) Quantitative Surveys (if possible): ▪ October 2022 to February 2022 ▪ ≥ Same sample of LTCF recruited for interviews
Belgium UANTWERPEN	Belgium ▪ City of Antwerpen ▪ Neighbourhoods: Borgerhout and Antwerpen Noord	▪ The population that is the primary focus of our case study are members of migrant communities in Borgerhout and Antwerpen Noord, specifically migrants that arrived in Belgium more than 5 years ago. ▪ Participants are recruited through organisations or actors working with migrants in Borgerhout and Antwerpen Noord, and via snowball sampling. In addition to our target population, we will engage with three additional groups of participants, linked to work packages 4, 5 and 6: ▪ WP4 link: representatives from local-level government and decision makers (Stad Antwerpen) ▪ WP5 link: professionals working in (mental) health services: GPs, psychologists, psychiatrists, councillors, etc. ▪ WP6 link: representatives from community-level initiatives and services (e.g. Coronababbels, Atlas vzw, De Borgerhoutse hulplijn) Approximate sample sizes: ▪ Key informant/expert interviews: n≥15 ▪ Interviews with migrants living in Borgerhout and Antwerpen Noord: n≥20/25
Spain URJC & SAMUR	Spain ▪ City of Madrid	▪ The case study was carried out at the local level, specifically in the city of Madrid, without focusing on a specific neighbourhood or district, as the migrant population - and specifically the Latin American and Moroccan communities - resides transversally in the city of Madrid; ▪ The sample is composed of 10 interviews with the migrant population, focusing on the two largest migrant communities in Madrid, that is, the Latin American community and the Moroccan community. ▪ To be representative, the sample is composed of 6 Latin American respondents and 4 Moroccan respondents. The sample also considers a 50%-50% male-female balance

		(i.e., 3 Latin American men and 3 Latin American women; and 2 Moroccan men and 2 Moroccan women); ▪ The fieldwork was carried out between May and July 2022.
Italy SAPIENZA & UCSC	Italy ▪ City of Rome ▪ Agostino Gemelli University Hospital	Quantitative Surveys: ▪ September 2022 to December 2022 ▪ At least at least 100 physicians and 200 nurses; Semi structured interviews: ▪ November 2022-February 2023 ▪ Minimum number of participants is n>14.
Austria SYNYO	Austria ▪ City of Vienna	We will select three branches in neighbourhoods with varying demographic compositions to get a better understanding of the role of customers in the supermarket environment. Additionally, we will choose supermarkets that also vary in their size and layout. ▪ Minimum number of interviews with frontline workers: total of 12-16 interviews (6-8 with Austrian-born women, 6-8 with women with migrant background); ▪ Minimum number of interviews with managers: total of 3-6 interviews (1-2 interviews with staff in supervisors, management or sustainability roles per supermarket (total of 3)); ▪ Data collection will start in October and last approximately until December 2022.
Germany SINUS **Sweden** UGOT	Germany ▪ City of Mannheim ▪ Neighbourhoods: Neckarstadt-West; Schönau; Jungbusch/Innenstadt Sweden ▪ City of Gothenburg ▪ Neighbourhoods: Bergsjön; Hjällbo	The primary data collection focuses on the neighbourhood scale from 2020 to 2022. Primary data will be analysed and interpreted in the context of secondary data on the municipal and national scales; Our sample overlaps with WP4-7. The sample plan is designed to enable: ▪ 1) comparison by migration background within WP4-7 (6 females and 6 males without migration background; and 6 females and 6 males with migration background); ▪ 2) comparison by gender within the case study (WP3).
Greece KEMEA	Greece ▪ City of Athens & Thessaloniki	▪ Interviews will be scheduled with representatives from governmental institutions and LEAs, as well as with officials from well-known NGOs that deal with vulnerable populations or minorities housed under those (N=10 interviews in total, 5 of each); ▪ The recruiting period as well as the site visits to conduct the interviews and the transcripts, analysis etc. will last approximately about 3 months.
Wales SU	United Kingdom ▪ Wales ▪ City of Swansea	Qualitative interviews: ▪ 8 BAME overseas qualified nurses ▪ 8 healthcare managers who work with BAME overseas qualified nurses ▪ Data collection: until 15 November 2022 Creative workshops:

		▪ 6-12 BAME overseas qualified nurses (one or two sessions) ▪ Data collection: until 15 November 2022 Quantitative survey: ▪ 171 BAME residents in the Swansea Metropolitan Area ▪ Data collection: finished
England MDI **Ireland** TRI	United Kingdom ▪ England	▪ Instead of searching for a representative sample, and trying to go through every ethnicity and every religion in England, we will conduct interviews with people who have a story to tell; ▪ Identification and selection of storytellers will be based on the researchers' engagement with the community as journalists and members of civil society organisations; ▪ 31 interviews have been conducted and transcribed.

Appendix C. Main research questions of the final 10 case studies

Country, Partner	RQ1	RQ2	RQ3	RQ4	RQ5
Portugal FS	Which socio-ecological system characteristics of LTCF were more successful in mitigating COVID-19 impacts on elderly residents?	How and why have COVID-19 and responses to COVID-19 affected elderly residents' shared attitudes, beliefs, and practices?	What particular structural features of local social networks and governments' systems and norms aggravate or mitigate elderly residents' vulnerabilities and why?	How well have governmental plans and strategies (e.g., communication and vaccination) addressed the specific needs and attributes of LTCF?	NA
Belgium UANTWERPEN	How has the COVID-19 pandemic impacted migrant community members' mental health and wellbeing?	How have migrant community members sought support to deal with the impact of the COVID-19 pandemic on their wellbeing?	How have local/community-level responses played a role in meeting demands for mental health-related support and care?	NA	NA
Spain URJC & SAMUR	What strategies, if any, did the local government put in place to tackle the COVID-19 crisis on migrant communities?	To what extent have social services and workers of related institutions (such as firefighters or first responders) adapted to provide for the needs from migrant communities created by the pandemic? How did they do so?	How have members of the migrant communities studied/searched for information about the COVID-19 pandemic and how did institutional and third sector actors adapt their information to these communities?	What solidarity strategies and community initiatives were put in place to tackle the COVID-19 crisis?	How have members of the two migrant communities experienced COVID-19-related disruptions and are there differences between the two, as well as which strategies were put in place to cope with these disruptions?
Italy SAPIENZA & UCSC	What have been the consequences of the pandemic on the well-being (physical and mental status),	Among health professionals, which socio-demographic groups (e.g., parents of	What aspects of healthcare workers' lives are the greatest cause for concern and	What lessons or good practices can be learned from the pandemic to	NA

	daily and working life, and family relations disruptions of health workers?	young children) are at greatest risk of experiencing negative mental health consequences and/or family distress?	what are the coping strategies?	improve support for health practitioners in managing their work-life balance (including in emergency situations)?	
Austria SYNYO	How did women working at the frontline in SPAR supermarkets perceive the infection risk they were exposed to at their workplace?	How did they feel valued and protected by their co-workers, their employer, the government and the customers?	How was their overall risk perception and feelings of safety throughout the COVID-19 pandemic and how did it change over time?	What was their lived experience of risk and safety of working through the pandemic at the frontline?	NA
Germany SINUS **Sweden** UGOT	What communication strategies and practices have local government, health authorities and stakeholders implemented to inform ethnic minorities about protective measures and vaccines?	What sources/where have ethnic minorities/socio-economic vulnerable groups searched for information about protective measures, and vaccines?	What protective measures, including vaccination, have ethnic minorities/socio-economic vulnerable groups implemented to protect themselves from infection?	To what extent are there misconceptions about protective measures and vaccines among ethnic minorities/socio-economic vulnerable groups?	Are there mismatches between residents' and local stakeholders' understandings of the pandemic and the accompanying "infodemic"?
Greece KEMEA	How has the pandemic influenced LEAs, Minorities & Vulnerable groups' quality of life and attitude/behaviour?	What is the perceived impact of implemented COVID-19 measures on LEAs, Minorities & Vulnerable groups, and which steps can be taken to mitigate the negative consequences of these?	How were communication and vaccination campaigns against COVID-19 perceived by vulnerable groups, minorities, and LEAs, as well as how have these responses affected people's compliance to vaccination and protective measures?	How COVID-19 management affected vulnerable groups, minorities, and LEAs trust towards authorities?	NA
Wales SU	What structural issues (mobility, opportunity,	What organisational issues	What can we learn about COVID-19	What are the dominant rationalities	How do government policies

	access) affect the pandemic experiences of BAME overseas qualified nurses who work in South Wales hospitals?	(management, spatial arrangements, institutional regulations) affect the pandemic experiences of BAME overseas qualified nurses who work in South Wales hospitals?	politics (containment, immunisation and biopolitics) and the regulations of BAME overseas qualified nurses who work in South Wales hospitals?	(goals) in governing populations during the pandemic and techniques (means) of ensuring productivity, efficiency, and resilience of BAME overseas qualified nurses who work in South Wales hospitals?	encourage beneficial forms of movement (money, goods) and limit harmful forms of circulation (disease) with reference to the Swansea Metropolitan Area?
England MDI & TRI	What communication channels hard-to-reach communities relied on during COVID-19 (mainstream media, community media, billboards, public talks, GPs?	What additional communication channels minority communities developed during COVID-19?	What are the main characteristics of alternative communication channels (origins, people involved, frequency of posts, interactivity, number of people involved, links with the external news sources?	How minority communities counter misinformation ?	What lessons can be learned from developing alternative channels of communicatio n?
ALL	How has it changed throughout time?				

Appendix D. Main disciplines to carry out work in each of the final 10 case studies

Country, Partner	Main disciplines			
Portugal FS	▪ Political Science	▪ Sociology	▪ Resilience Studies	
	▪ Risk Analysis and Perception	▪ Social and Environmental Psychology		
Belgium UANTWERPEN	▪ Migration Studies	▪ Sociology	▪ Public Health	▪ Medical Anthropology
Spain URJC & SAMUR	▪ Migration Studies	▪ Sociology	▪ Public Administration	
	▪ Public Science	▪ Policy Analysis		
Italy SAPIENZA & UCSC	▪ Demographics	▪ Statistics	▪ Epidemiology	
	▪ Gender Studies	▪ Public Health	▪ Sociology	
Austria SYNYO	▪ Communication Studies	▪ Anthropology	▪ Sociology	
Germany SINUS **Sweden** UGOT	▪ Economics	▪ Psychology	▪ Public Health	▪ Communications
	▪ Science Communication	▪ Communication Studies Research		
Greece KEMEA	▪ Political Science	▪ Sociology	▪ Risk Analysis	
	▪ Risk Perception	▪ Migration Studies		
Wales SU	▪ Medical and Health Sociology	▪ Human Geography	▪ Nursing	
England MDI & TRI	▪ Communication Studies	▪ Media Studies	▪ Digital Media Studies	

Appendix E. Table 31 of D3.4

COVID-19 timeline phases per case study and time point (T0, T1, T2, T3, and T4) according to each country's situation

T0	T1		T2	T3	T4	Case Study Partner, Country
Before the COVID-19 pandemic onset (baseline/ control)	During initial outbreak and lockdown		Vaccination rollout	Detection of variants of concern	Current situation	FS, Portugal
2019	March 2020 to May 2020		December 2020 to April 2021	October 2021 to February 2022	March 2022 to July 2022	
-	First phase/ immediate impact (first lockdown)	Second phase	Roll-out vaccines and boosters		The present	UANTWERPEN, Belgium
-	Spring 2020	Summer 2020 to Spring 2021	2021		Spring 2022	
-	Initial lockdown	Pre-vaccine period	Vaccine campaigns roll out	Lockdown	-	URJC & SAMUR, Spain
-	March 2020	July 2020 to December 2020	January 2021 - onwards	June 2021	-	
Before pandemic	Early in the pandemic (e.g., during first lockdown)		During the rollout of vaccines	New variants' waves	Current situation	SAPIENZA & UCSC, Italy
2019	January 2020 to May 2020		June 2020 - present			
Before COVID-19	First wave (fear)	Pre-vaccination	Feeling of immunity & security through vaccination	Omicron (feeling of security lost)	-	SYNYO, Austria

Until March 2020	March 2020 to June 2020	July 2020 to June 2021	July 2021 to December 2021		January 2021 – now		
Baseline	Initial spread of the disease		Phase where the vaccine was introduced		-	-	UGOT & SINUS, Sweden & Germany
January 2019 to January 2020	Spring 2020		Winter/Spring, 2021		-	-	
-	During initial outbreaks, lockdowns		Vaccination rollout	Post-vaccination	COVID-19 relevant waves in Greece	Current situation	KEMEA, Greece
-	January 2020 to April 2021		Until the end of February 2022			Onward (2022)	
Baseline: Before the pandemic's onset	First lockdown in Wales: wild variant/Wuhan strain	Relatively quiet period	Fire breaker/ Beta strain and post-Christmas/ Winter 2021 lockdowns/ Delta strain	Relatively quiet period in terms of restrictions	Omicron wave	-	SWANSEA, Wales
2019	March 2020 to July 2020	July 2020 to October 2020	October 2020 to April 2021	April 2021 to December 2021	December 2021 to April 2022	-	
-	Beginning of the pandemic		Changes experienced during the period of 2 years				MDI, England
-	2020		2020-2022				