COVINFORM

CORONAVIRUS VULNERABILITIES AND INFORMATION DYNAMICS RESEARCH AND MODELLING

D3.3 – Case study coordination guidelines

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Executive Summary

COVINFORM is implementing the use of a socio-ecological systems resilience approach for developing case studies aiming to identify adaptative promising practices among vulnerable populations which contribute to improving their resilience. The implementation of such perspective is not easy, particularly when aiming for establishing a common coordination framework for case studies spanning diverse disciplines (social epidemiology, the economics of unpaid labour, the sociology of migration, etc.) and vulnerable populations (health care workers; migrant and ethnic minorities; managers, workers and families of elderly long-term facilities). Moreover, COVINFORM envisages the development of a methodology in a way to allow replication of research in a way that can be comparable and/or complimentary by defining a set of categories and variables for system analysis.

For these and other tasks regarding the comparative analysis of pandemic disruption and diverse socio-ecological systems, a robust communication plan is required to ensure the long-term success of the COVINFORM project. Among other reasons, this includes (a) a need to promote and communicate generalizability and lessons learned from one case-study that may or may not be applicable to various other cases and communities that are being researched, (b) a general awareness of new challenges, opportunities, and observations as countries around the world navigate the ongoing pandemic and its associated socioeconomic and ecological disruptions, and (c) synthesis of outputs for broader contribution to the scientific community, including considerations of what is unique or not likely to be reproduced within a certain case, as well as commonalities that have at least some generalizable potential to be applied to other cases.

This document contains core guidelines for the coordination of various COVINFORM case studies. Rather than being overly prescriptive and/or establish strict methodological requirements that are present in other reports (e.g., *D3.2 Multi-site research design and methodological framework*), the intent of these guidelines is to enable coordinators of each case-study to conduct their research in a manner that makes sense to the opportunities and limitations of the sites and populations that are being researched, while still producing broader awareness and coordination of the successes and challenges that each case may be having over time. Such coordination is intended to assist before, during, and at the completion of each case's research study. Ultimately, such coordination shall improve COVINFORM's ability to generate a more comprehensive perspective of communities' resilience that can be applied to future crisis situations.

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1 Introduction

COVINFORM report on Case study selection (Deliverable 3.1), presented the roadmap, and a first idea on the framework and methodology for intersectional case-study identification and selection. As it was also established, WP4 WP5, WP6 and WP7 research will allow establishing the broad socio-ecological systems within each case-study is nested, and provides additional in-depth analysis of adaptation and best-practices. The list of case-studies has been evolving and the research design and methodological guidelines has been established (an updated version of these can be found on COVINFORM report D3.2 Multi-site research design and methodological framework).

Case study coordination involves ensuring that the different case-studies, at various levels of scale, granularity, and topical focus, remain comparable at least with some other case-studies (e.g. those focusing on similar communities), and allow to show the methodology used in research can be generalizable for future research. Therefore, coordinating cases that may include different levels of scale and context can become a challenge if not governed properly.

Why is this important? Without proper coordination, the disparate research efforts at various levels of abstraction (e.g., Continental, regional, national, municipal...) may become disjointed – negatively affecting their ability to inform policymakers and stakeholders of critical insight regarding pandemic disruption, and reducing the scientific impact that the findings of each case may have. Where the COVINFORM project is intended to provide benefits to both decision-makers and in the scientific community alike, proper coordination allows us to develop a common framing and communication strategy to understand the commonalities across individual cases, and speak with a shared and scientifically-grounded voice in characterizing the socio-ecological and socioeconomic systems that comprise COVINFORM's various pandemic-focused case studies. In short, case coordination will allow the project and its partners to benefit from their hard work, and develop a common set of findings and discussion points for the benefit of science and policy alike.

So, how is case coordination achieved? Rather than merely an after-action component where results are tallied at the conclusion of various studies, case study coordination is a process that occurs before, during, and after a study is engaged and completed (figure 1, on the following page, represents stages before - stage 1 and 2; during - stage 3; and after - stage 4). In the early stages of case development, coordination focuses upon the data sources, methods, and research questions and theses that may be utilized in reviewing a case, as well as the stakeholder networks and target populations with whom contact must be made in order to carry out the study. As research on a case is underway, coordination includes preliminary discussion on lines of communication with stakeholders and target populations, ongoing data and results, description of roadblocks or challenges to initial research goals or methods, and any pivoting to seize new opportunities in the pursuit of quantitative, qualitative, or mixed methods research with respect to pandemic disruption. Lastly, after a case study has been concluded, coordination emphasizes the aggregation of data and outputs, and the communication of core findings and lessons learned that various cases had that might be surprising or unsurprising, and either unique or generalizable to a given jurisdiction, and target population or "community" (geographical community, community of practice, or ethnographic group; depending on the case-study[1]). As such,

[1] Considering case-studies are grouped in three main **target populations** of interest: health care workers (HCWs), migrants and ethnic minorities and governance actors (in policy, government and law enforcement);

case study coordination is an ongoing and adaptive process by which information is gathered, discussed, synthesized, and shared with partners and the public from a singular depository.

Figure 1: Process for case study set-up and implementation.

This document includes basic guidelines and recommendations for how case study coordination might be conducted to maximize the social, policy, and scientific benefits that might be yielded from the broader COVINFORM project. These guidelines are not intended to establish strict methodological requirements or tools that all partners must abide by. Such discussion is present in other reports (e.g., D3.2) - the intent here is rather to facilitate coordination across research partners. Likewise, these guidelines are not intended to be strict hurdles or set obligations that all cases must resolve (indeed, certain guidelines may not be applicable, or would be unnecessarily difficult for certain specific case studies to address). Instead, however, the coordination guidelines will provide greater transparency

comparisons will be searched mainly within the case-studies groups. As pointed out in COVINFORM D3.2 - Multi-site research design and methodological framework '*To benefit from synergies, partners focusing on similar target populations collaborate in developing their research questions and methods. As such, the COVINFORM project takes a collective case study approach: multiple cases are studied simultaneously to generate a broader appreciation of the issue under study (Stake, 1995). For example, different partners conducting case studies with migrant communities may agree to tackle a number of common specific research questions with cross-case study relevance. This way, the case studies can provide some comparative insights, as well as leave room for local specificity.*'

and generalizability of the inputs and outputs of all cases. In turn, this will amplify the impact that each individual case has upon science and society, and will allow the collection of cases across COVINFORM to build from a common platform of understanding and scientific advancement.

2 Baseline requirements to facilitate case study coordination: what are case studies, and how do we organize them?

This section details basic guidelines and recommendations for cases to follow to improve coordination across the COVINFORM project. It is acknowledged that each case is subject to their own unique limitations and challenges - portions of these guidelines may not be directly applicable to certain cases, and those scientists responsible for such cases should not feel obligated to provide unavailable or misleading information simply to fulfil administrative requirements. Though the following are only recommendations (not obligations), case researchers are requested to provide as much information as possible to promote broader awareness of their work before, during, and after its execution. The following sections will further detail case coordination guidelines as inputs (any material that is being included in the research design and execution stage) and outputs (information and data, quantitative or qualitative, that may suggest scientific findings from a given study).

Case study research seeks to explore a contemporary phenomenon at a specific place and time (Klassen et al., 2012). Within a given case study, explicitly outlining the geographic location of observation alongside the given time period of analysis is of paramount importance to researchers, where the ‘case’ is how the observed phenomenon occurs and impacts stakeholders within these dimensions (Travers 2001). Such research is helpful to address research questions regarding how a new or little understood event occurs and impacts a target population – particularly if the phenomenon in question is in its early stages or is otherwise ongoing (Creswell & Clark 2017). Specifically, Yin (2013) outlines that case study research is preferred in situations including: (i) When, how or why questions are being asked, (ii) When the researcher has little control over events, (iii) When the focus is on a contemporary phenomenon. Further, Yin (2013) stresses the importance for case study researchers to utilize multiple sources of information, including both primary and secondary data, in order to reinforce and triangulate conclusions derived from the case study. While not a necessary precondition, Creswell (2009) argues that most case study research seeks to use findings from the case to be generalized to similar situations, where the primary and secondary data may be used to better understand how certain circumstances influence human behaviour and beliefs. Case study research may also be longitudinal in nature (Leonard-Barton 1990), yet this may be financially or temporally prohibitive for the researcher (Travers 2001; Creswell 2009). Overall, case studies may include both individual and collective interviews, descriptive and advanced statistical analysis, literature reviews, historiography and ethnography, and any other quantitative or qualitative approach deemed useful by the researcher, making this particular process more flexible and methodologically inclusive based upon the needs of a given research question and the types of information available for a particular evaluation context. COVINFORM report Multi-site research design and methodological framework (Deliverable 3.2) presents a semi-standardized research design for case-studies. All case studies will cover the research design proposed and, if necessary, provide additional features to fully address specific case-studies research questions.

2.1 Generalizability of Inputs: Identifying, collecting, and synthesizing core data requirements

Each case shall be coordinated based upon the inputs (research questions, hypotheses, and qualitative/quantitative data).

1. Cases must be clearly framed, explicitly defining and bounding the case/group being studied based upon their socio-ecological and socioeconomic systems.
    a. Should include the selection of units of analysis that are comparable, where possible (e.g., geographical scale, focus on vulnerability/disproportionate impacts faced by some groups in society, and focus on the COVINFORM cross-cutting issues (domains of government, public health, community and citizens responses, communication and information))
2. Multiple data sources should be considered.
    a. Primary data (gathered either to describe the systems - government, public health, community, and communication/information research -, or focusing on the Research Questions and analysis of the specific case study)
    b. Secondary data that contributes to systems description, contextualize case-studies, or ensuring broader comparability (within COVINFORM case-studies or with research developed in other communities or including different geographical levels of analysis)
    c. All input data are coded and described in a simple, concise, and jargon-free manner to maximize understanding and promote transparency amongst COVINFORM team members.
3. Change over time is a critical variable of analysis.
    a. For all cases, consider the timing and magnitude of COVID outbreaks, as well as areas of similar and contrasting governmental response.

Inputs include everything from generating testable hypotheses and theses, to crafting research questions and overall case study research design, to even the types of data (quantitative and qualitative) selected for observation and analysis. Ideally, the goal of input coordination is to compare and contrast the communities and socio-ecological systems that comprise our different cases, and identify comparable units of analysis and variables of analysis. In coordinating the various research efforts, it is essential to communicate a full understanding of each case. What was its epidemiological experience? How were the target populations impacted? What were the adaptive responses and how were they implemented?

Coordinating inputs of various cases requires each case to follow three core guidelines. First, each case must be clearly framed, where the groups or types of individuals in question are characterized based upon their circumstances experienced with the pandemic, as well as the socioeconomic and socio-ecological systems that shape their daily life. This level of characterization will provide the broader COVINFORM consortium with a more complete view of the circumstances by which pandemic response and recovery should be evaluated, and will allow for easier comparison across different cases and amongst the broader scientific literature. Second, the use of multiple data sources to characterize response and recovery (e.g., an economic impact as being characterized by income disruption, job loss or disruption, the rising cost of goods and loss of purchasing power for basic staples, etc.) is useful to provide a richer narrative for qualitative and quantitative studies like in defining their cases and core

systems of study. Third, change over time is an essential consideration - proper case coordination is not merely about pandemic response and recovery within a narrow snapshot, but instead requires consideration of how the case evolved at the onset of the pandemic, as the different waves unfolded, and as recovery and adaptation began to take root. Addressing each of these three coordination guidelines will yield a more comparable and informative set of case inputs that will improve comparative evaluation across all COVINFORM cases.

Beyond these recommendations, many disciplines utilize various criteria for coordinating basic and applied research. For coordination guidelines regarding case study inputs, basic requirements include the need for thorough, complete, transparent, and scientifically reproducible accounts of any and all scientific data gathered for a given case study. All legal and privacy requirements shall be honoured (following COVINFORM ethics framework), but likewise, various data reporting mechanisms allow for improved comparison of case study inputs and data across a range of disciplines and practices.

For the variety of case studies and research questions that may be discussed, there are a number of core issues that coordination of case inputs and information gathering must resolve. For the purpose of coordination guidelines, these may include:

1) What purpose does the hypothesis, thesis, research questions, and research approach serve? To generate new knowledge and theory, to view individual and/or collective opinion on an event, or to test existing theory? How do these contribute to COVINFORM goals? What are the potential impacts of the research?

2) What are the common and complimentary research questions and/or variables addressed by different case-studies focusing on similar target populations? What kind of methods will be used by the case-study considering qualitative, quantitative, or mixed-methods approaches? How do the choice of these methods across case-studies support comparability and complementarity?

3) How will the research team put the case-study in practice to address the research questions? What limitations may be faced within the information gathering process?

While the first question is reflected on first descriptions of case-studies (provided on the appendix of COVINFORM report *Case study selection,* Deliverable 3.1), the second and third questions are being explored by the COVINFORM team. Systematization of reflexive exercises that have been performed by the team until now and will keep running until the end of September 2021 may be assisted through the use of a checklist such as with the COnsolidated criteria for REporting Qualitative research (or COREQ – see below for further discussion). Understanding the role and abilities of the researcher upon a given question can help coordinate the tools and skills available to conduct research, particularly related to the gathering of information from interviews or focus groups. This may be further facilitated by a thorough understanding of published scholarly literature related to the research question at hand, where the researcher may identify past strategies for successful information gathering within their field or identify strategies to organize their data collection protocols around important and unresolved research areas. A thorough literature review, alongside the assistance of a fieldwork preparedness checklist as with COREQ, will likely help the researcher structure their input/data search, organization, and assessment approaches, and reduce potential bias that could arise within the scope of such research. It will also enable greater impact for any published studies, and improve interdisciplinary understanding and benefits associated with lessons learned to be derived from the study.

Lastly, Question 4 requires an honest appraisal by the researcher regarding the limitations of the capabilities to conduct certain research and answer particular research questions. As with assistance regarding the construction of interviews and the acquisition of information, a helpful first step here would be to consult a methodological checklist such as COREQ that may indicate potential methodological concerns that may arise during the research process. However, such a checklist will not necessarily address all the specific contextual and field-specific issues that may complicate case study research, forcing the researcher to determine the methodological constraints exhibited by their approach. This could include the need to account for concerns related to not receiving ideal information detail from interview subjects, having difficulties gaining access to such subjects, or concern that the interview subjects acquired do not offer a robust sample of contacts that can offer generalizable feedback to the given research question.

With respect to mixed-methods research, the COnsolidated criteria for REporting Qualitative research (COREQ) checklist is one tool available to not only improve the coordination and communication of research studies, but also to improve their internal and external validity by identifying unique/ungeneralizable factors within the study as well as potential biases or limitations within the dataset (Tong et al 2007; Dossett et al., 2021). Dividing the checklist into three domains, COREQ requires researchers to (i) note the role of the researcher upon and within the research question and environment, (ii) address concerns of study design to note potential flaws within the interview process and help strengthen such areas of potential weakness, and (iii) offer suggestions for interview analysis and facilitate the ability to transform qualitative information derived from interviews and focus groups into useful information pertinent to the given research question, including quantifiable statistical analyses.

Table 1: COREQ Requirements Discussed in Tong et al (2007)

Item	Consideration
Domain 1: Research team and reflexivity	
Personal Characteristics	
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?
2. Credentials	What were the researcher's credentials?
3. Occupation	What was their occupation at the time of the study?
4. Gender	Was the researcher male, female, non-binary?
5. Experience and training	What experience or training did the researcher have?
Relationship with participants	
6. Relationship established	Was a relationship established prior to study commencement?
7. Participant knowledge of the interviewer	What did the participants know about the researcher?
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator?
Domain 2: study design	
Theoretical framework	
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis

Participant selection	
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email
12. Sample size	How many participants were in the study?
13. Non-participation	How many people refused to participate or dropped out?
Setting	
14. Setting of data collection	Where was the data collected?
15. Presence of non-participants	Was anyone else present besides the participants and researchers?
16. Description of sample	What are the important characteristics of the sample (age, sex, ethnicity…)?
Data collection	
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?
20. Field notes	Were field notes made during and/or after the interview or focus group?
21. Duration	What was the duration of the interviews or focus group?
22. Data saturation	Was data saturation discussed?
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?
Domain 3: analysis and findings	
Data analysis	
24. Number of data coders	How many data coders coded the data?
25. Description of the coding tree	Did authors provide a description of the coding tree?
26. Derivation of themes	Were themes identified in advance or derived from the data?
27. Software	What software, if applicable, was used to manage the data?
28. Participant checking	Did participants provide feedback on the findings?
Reporting	
29. Quotations presented	Were participant quotations presented to illustrate the themes / findings?
30. Data and findings consistent	Was there consistency between the data presented and the findings?
31. Clarity of major themes	Were major themes clearly presented in the findings?
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?

Domain 1 serves as a 'credentials check' of the given researcher, where questions here force the researcher to consider their ability to conduct field work (interviews, focus groups, and/or survey) on a given research area alongside the relationship they may have with research participants both before and during the research process. Domain 2 focuses more on evaluating the study design, where researchers are forced to consider their methodological theory and organizing principles, sampling techniques, and data collection methods used throughout the study. Lastly, Domain 3 helps the researcher take a systematic approach to classify and analyse their data, check for themes in discussion, and note potential biases or issues that may complicate or derail their research argument.

Overall, the COREQ checklist can be a helpful launch point for practitioners by helping them address potential concerns before, during, and after research, although it remains the responsibility of the researcher to honestly fill out the checklist and resolve concerns raised by checklist in a manner that reduces considerations of bias and strengthens information regarding how the research process was carried out (Tong et al 2007). Hence, this type of documentation vastly improves coordination of inputs, understanding and overcoming possible bias and making sure information is gathered in a systematic way. By providing a systematic framework of research it also provides a reliable background for the future development of comparable case-studies.

2.2 Generalizability of Conclusions: Interpretation and deduction of conclusions from case data

Coordination Guidelines: Outputs

Each case shall be coordinated based upon the outputs (output quantitative/qualitative results, general conclusions).

1. Principal investigators of each case shall share their research findings regularly, suggesting correlations and even causal linkages between system disruption and response/recovery.
2. Output sharing shall emphasize two core factors, including (a) factors the investigator believes to be unique to their case or population under study, and (b) potentially generalizable conclusions. As a safeguard to external validity, all output assessment shall include an understanding of the socio-ecological and socioeconomic systems that comprise the incentives, behaviours, and pandemic response/recovery strategies within the case.

Giacomini (2010) outlines three general axes by which case study research may be evaluated, including:

- **Ontological**, the nature of reality, or the ability of research findings to be found empirically (Blackburn 1996),
- **Epistemological**, what counts as knowledge, or concerns of how phenomena come to be understood and known (Guba and Lincoln 1994), and
- **Values**, or a researcher's position on whether morals and principles are present and reflected within scientific fact, alongside beliefs of how to control for bias from such values.

Creswell (2012) and Lewis (2015) adopt a similar approach and understanding of research philosophy and theory, although it differs from Giacomini (2010) by further defining the 'Values' axis as axiological (the role of values within research), and adding a fourth axis dubbed 'Methodological' (the procedures of qualitative research). Specific to the 'Methodological' axis, Creswell (2012) states that mixed-methods research is an inherently inductive enterprise, such research is heavily shaped by "a researcher's experience in collecting and analysing […] data", where research questions within a given venture may even change in the midst of a given research inquiry in an effort to better focus research questions in a manner more appropriate for a given series of questions or research problems. Further, when such changes occur, Snape and Spencer (2003), Hesse-Biber and Leavy (2010), and Creswell (2012) state that a researcher's data collection strategy must also shift to match the change in scope. Overall, the four axes noted by Creswell (2012) are important for case study researchers, as these

considerations help inform the general understanding and methodological approach used process outputs and generate scientific conclusions for a pre-defined research question.

Comparatively, this may include analysis of COVID-19 impacts and responses and identification of promising practices of different countries and cultures, sub-national regions and municipalities within the same country, and other levels of abstraction. Proper case selection requires the analyst to ensure that each instance (country, region, city, etc) is appropriate for comparative evaluation; for example, we would not compare the European Union (multi-government) against the city of Cape Town, South Africa without controlling or accounting for differences such as scale, underlying public health, wealth and inequality, government structure, societal composition and harmony, and other characteristics.

For COVID-19 comparative analysis, output coordination includes the evaluation of multiple objective and subjective variables. Social, economic, governmental, etc. These include top-down and bottom-up variables to get an assessment of how various actors perform within a given case (families, companies, governments, etc.). Additionally, considerations of **time** are critical – the conditions of a case may change over time. For example, considering COVID-19 impacts, target populations may have been affected differently at different stages or waves of the pandemic, hence adaptive responses may also have been different. Tracking how our units of analysis change (or do not change) over time provides a far richer and more complete narrative to understand different behaviours and operations during and after the pandemic. As referred before, within case-studies covering similar target populations, comparative analysis will be carried out in relation to the cross-cutting issues.

2.3 Other Requirements and Logistical Considerations for Case-studies Coordination

Coordination Guidelines: Logistics and Administration

Each case shall be coordinated based on logistical and administrative requirements (frequency of meetings, and transfer of data, files, and written materials).

1. Regular meetings, at least quarterly, shall occur between COVINFORM WP leaders (considering WP2, 3, 4, 5, 6 and 7) and the principal investigators of each case-study.
    a. Synthesized findings shall be shared on these meetings, identifying potentially shared/common outcomes and lessons learned that may serve as core project conclusions regarding pandemic response and recovery at varying levels of scale.
2. Written and oral reports, including results and/or data, shall be made available in a manner consistent with law and scientific best practice.
    a. Publications, podcasts/webinars, conference presentations, posters, white papers, etc.

Beyond these input/output guidelines, an essential consideration includes the frequency of coordination and study reporting. Given the fast-paced nature of scientific investigation and the diversity and complexity of pandemic case studies, regular meetings and coordination of study inputs and outputs should occur, at a minimum, on a quarterly basis. More frequent meetings and reporting are recommended, particularly when most case studies are in the early stages of hypothesis generation and research design, although many studies may not have substantial updates on a month-to-month basis.

The principal investigator of each case is responsible for ensuring regular communication and coordination with COVINFORM coordinators. This includes taking thorough and complete notes of all stages of the research process, providing a complete account of the inputs and outputs of their case for the sake of transparency and comparative analysis/generalizability, and attending established coordination sessions to represent and discuss their projects, as well as receive insights, guidance, and lessons learned from other principal investigators. Likewise, COVINFORM coordinators have the responsibility to clearly communicate the frequency of meetings, the types of information that they would specifically like to discuss and compare across projects, and any needs, incentives, or desires to develop shared knowledge or narratives intended for public release (e.g., white papers, publications and book chapters, scientific journals, interviews with media, webinars and podcasts, etc.).

Case coordination requirements will evolve over time. At the onset of research design, case coordination will center upon ensuring that all principal investigators and their teams are framing their studies in a manner consistent with prior COVINFORM guidance (e.g., case selection guidelines, research methods guidelines, ethical and legal guidelines, and others). Similarly, emphasis will be placed upon ensuring that all cases are framed using systems thinking, where social, ecological, economic, institutional, and other activities and drivers pertinent to a case are thoroughly explored to best understand how individuals, communities, or nations respond to and recover from the pandemic as benchmarked against a variety of output considerations. As cases are carried out and findings are generated, coordination meetings and reporting efforts will shift their focus to sensemaking, results interpretation, and data analytics - in other words, coordination meetings for case outputs will seek to unpack how different cases compare and contrast with respect to their responses and recovery pathways from the pandemic, as well as the overall narratives of disruption that they face (e.g., did certain burdens of pandemic disruption fall on specific members within a group or nation more than others in a consistent manner across all cases? Were some groups able to recover from and adapt to pandemic disruptions more easily than others, and are there any common explanations as to why?).

2.4 Overview of Case-studies Coordination and Timetable

In the early stages of rolling out the case studies, coordination and collaboration among partners working with similar case study population (case-study clusters) will take the following forms:

- **Regular meetings within ‘clusters’ of partners pursuing similar case studies**
- **Agreement to tackle a number of common specific research questions and/or variables with cross-case-study relevance**
- Agreement on common research methods and/or tools: e.g. use of similar topic guides or questions for qualitative interviews

Once case studies are underway, coordination and collaboration will include discussion of practical challenges, preliminary findings, and potentially methodological changes in response to changing pandemic conditions. In the latter stages of the case study research, coordination and reporting efforts will focus on cross-case study sensemaking and interpretation of findings.

The table below presents main activities to be developed during the COVINFORM project to set up, put in place and run the case-studies, including coordination activities. This is an updated version of the roadmap presented in D3.1.

Table 2: Timetable for setting up and execute COVINFORM case studies

Date	Activity	Output	Partners engaged
August 2021	COVINFORM partners will provide inputs to add on the COREQ Requirements discussed in Tong et al (2007) (provided as the Table 1 of the present document) (e.g. information based on cross-cutting ethical issues presented on COVINFORM ethical report to be included…)	Updated of COREQ Requirements Discussed in Tong et al (2007)	All partners provide input until 22 August. Final systematization to be performed by FS until 31 August
August 2021	Literature review. Based on the identification of secondary sources for the case studies analysis, that can support contextualization and eventual generalization of future results, case studies leaders will finish the development of a background section based on literature review: describe study setting and population, including some reflections on what we already know about COVID-19 impact and response in this setting. Reviewing the case-study description (template provided on D3.1), including refining the research questions and contributions to COVINFORM goals, including review of overarching objectives and specific research questions considering both the context provided and other case-studies focusing on similar populations	Case-studies description update (case-studies description version .02) - 1) literature review providing the general context; and 2) update of the case studies description using the template provided in D3.1.	Case-studies' leaders
August 2021	Development of a structure for each case-studies' report	Case studies' report draft template	FS (WP3 leader)
early September 2021	Filling in the updated COREQ Requirements Discussed in Tong et al (2007) (output listed on the first line of this table), providing a GANT chart for the case-studies implementation	Reviewed description, COREQ and GANT chart for each case-study	Case-studies' leaders
early September 2021	Finalize distilling case study research questions and variables and identify commonalities between case-studies	Document for discussion	FS (WP3 leader)
September 2021	Reflections on commonalities/potential for collaboration with other case studies: 3 case-studies meetings, concerning each one of the case-studies clusters (target populations focused by the case-studies) to discuss the communalities document and agree on common variables to be addressed, research methodologies and timelines	List of common variables, common research methodology and research timelines to be implemented by the case-studies within each cluster	FS (WP3 leader) and case-studies' leaders
early October 2021	TRI will identify tools to assess and report on common variables. A meeting will be held in early October to discuss and select data collection methods and instruments to be used in each case-studies' cluster.	List of common variables to be addressed and tools to be used by the case-studies within each cluster regarding assessment and reporting of variables	TRI (WP2 leader) FS (WP3 leader) and case-studies' leaders
October 2021	Start case-studies implementation		Case-studies' leaders
early November 2022	Meeting within case-studies' clusters to confirm the date of each case-study kick off	1) List the kick off date of each case-study; 2) update	FS (WP3 leader) and case-studies' leaders

	and make sure data gathering has started; and to discuss the case studies' report draft template	the case-studies' report template (presented in August) in line with partners' feedback	
October 2021 – March 2022	Gather case-studies baseline information. Each case-study leader will share data gathered with FS (WP3 leader) by end February 2022, that will develop D3.4.	First case-studies' report provided for each 10 case-studies (February 2022) D3.4 – case studies comparative report (April 2022)	Case-studies' leaders and FS (WP3 leader)
March 2022 – August 2022	Continue case-studies implementation		Case-studies' leaders
May 2022	Case-studies cluster meeting to discuss first results, monitor case-studies implementation, and assess the need for case-studies adjustments.	Meeting minutes on needs for case-studies adjustments	FS (WP3 leader) and case-studies' leaders
end July 2022	Update case study results, as well as review of research design and methodological framework	Second case-studies' report provided for each 10 case-studies (July 2022) Reviewed case-studies' description and COREQ	Case-studies' leaders
October 2022	Case-study update and multi-site research design and methodological framework update	D3.5 and D3.6	FS (WP3 leader)
December 2022	Case-studies cluster meeting to monitor case-studies implementation and changes	Meeting minutes on case-studies adjustments	FS (WP3 leader) and case-studies' leaders
January 2023	Case study coordination guidelines update	D3.7	FS (WP3 leader)
March 2023 – April 2023	Case-study reporting	10 final case-studies' reports	Case-studies' leaders
May 2023-June2023	Systematize findings and comparisons	D3.8 - Final case studies and comparative report	FS (WP3 leader)
June 2023 – July 2023	Identify guidelines and best practices		

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Appendix I – case studies short description

Swansea University – Migrant nurses in Wales in times of COVID-19
In Wales and the UK, many health care workers come from Black, Asian and Minority Ethnic (BAME) backgrounds and they have been disproportionately hit by COVID-19. Migrant nurses and health care workers have experienced a tremendous amount of stress, abuse, and fatigue during the pandemic both at the workplace and outside it. This case study will examine the various socio-cultural factors shaping the experiences of COVID-19 among migrant nurse populations. 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; household composition and housing conditions; daily activities; access to protective measures at work and outside work; legal allowances related to (a lack of) citizenship; and accessibility to various forms of care and support prior to, during, and after infection with COVID-19 (including Long-Covid). The case study will assess which practices and initiatives are found to improve the lives of migrant nurses in Wales with reference to the pandemic. Based on the experiences of migrant nurses, the case study will provide policy recommendations on how to better account for the needs of this group in Wales and beyond, as well as what conditions to create to allow this group to flourish in its role in healthcare.

Sapienza University & Università Cattolica del Sacro Cuore (UCSC) – Survey on the impact of the pandemic on Italian Health Care Workers and their families in Lazio Region
This case study will explore the consequences of the pandemic on the wellbeing of Italian health care workers (HCWs), both in physical and mental status, as well as the impact on their daily life and family relations. The case study sets out to understand which socio-demographic groups among health professionals are at greatest risk of experiencing negative health consequences and/or family distress, and will contribute to the understanding of the mutual relationship between public health response and the well-being of HCWs and their families. There is a strong focus on understanding gendered impacts, as prior research has highlighted i) a higher proportion of female HCWS infected compared to men; ii) a higher prevalence rate of anxiety, depression and suicide in female frontline workers compared to men; and iii) a lack of female representation in the government scientific committee and hospital organization leadership in Italy. The case study will provide insights into how best to improve support for health practitioners in managing their work-life balance (including in emergency situations). The case study will be implemented using a mixed-methods approach: initially semi-structured qualitative interviews with HCWs working in the main hospitals of the Municipality of Rome will be conducted, followed by a second stage in which a quantitative survey with the aim to cover other Italian municipalities will be designed and implemented.

SYNYO & Austrian Red Cross – Intersectional analysis of vaccination hesitancy among health care workers in Vienna, Austria.
Focusing on Health Care Workers (HCWs) as a community of practice, this case study will analyse how multiple categories of difference impact HCWs' decision to vaccinate or not. It aims to provide an in-depth analysis on how crisis communication and information campaigns differentially impact people occupying different social positions within a particular community of practice. Different groups of HCWs will be studied, with different educational backgrounds, different socioeconomic status, and different genders. The case study aims to identify best practices of addressing specific concerns as well as misinformation, and practices of information distribution among those HCW who have shown to be hard to reach through governmental crisis communication. As HCWs are also trusted advisors and influencers of vaccination decisions, the case study also aims to explore how HCWs can function as trustworthy multipliers of public health communication.

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

This case study sets out to explore 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. The case study will focus on analysing how members of ethnic minorities and social-economic vulnerable groups have responded to information from local governments 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 population in general. Results from survey and interview data will be used to develop policy guidelines and recommendations for best practices.

University of Antwerp – Access to healthcare in times of COVID-19: migrant communities in Borgerhout, Antwerp

This case study will explore how COVID-19 has impacted migrant community members' health seeking behaviour and access to health services (e.g. relating to fear to seek care, digital literacy/telemedicine), including how migrant community members experienced COVID-19 related disruptions and/or postponement of healthcare services. The case study will engage with members of migrant communities themselves, as well as with local health and community workers. 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 similar communities/settings.

Universidad Rey Juan Carlos (URJC) & SAMUR – Social protection for vulnerable migrant collectives in Madrid

This case study will focus on the impact of the COVID-19 pandemic faced by 'newcomer' migrants (post-2015 arrivals) in Madrid. The case study will explore how social service delivery has been adapted in response to COVID-19, how members of migrant communities experienced COVID-19 related disruptions and/or postponement of social services, what solidarity strategies and community services were put in place during the pandemic, and how information/misinformation issues affected access to social services. The case study will consider how the impact faced by this group is linked to intersecting variables such as race, economic activity, access to social benefits, administrative situation, access to different forms of support, daily activities and household composition. The case study will examine different – formal and informal – initiatives related to the protection of migrant communities, and will be able to provide recommendations on promising practices on the basis of this.

KEMEA - Policing in times of pandemic: impact on the role of Law Enforcement Agences (LEAs), governmental actors and policy makers and its effect on trust issues of vulnerable populations towards the former.

This case study will explore how LEAs, Governmental actors and policy makers have been prepared for and responded to the pandemic situation and how their role has been generally affected by the COVID-19 pandemic. The case study includes a special focus on trust: in particular, levels of trust among 'vulnerable populations' towards LEAs, governmental actors and policy makers. Policy recommendations will be developed related to how vulnerable populations' trusts in LEAs, governmental actors and policymakers can be reinforced.

MDI (supported by TRI) - Inclusive COVID-19 communication: A case study of minority communities in England

This case study will explore how COVID-19 communication practices in England supported (or did not support) inclusive communication approaches for minority groups in England during the COVID-19 pandemic. Minority groups are often forgotten when it comes to risk or crisis communications due to language or cultural barriers. Black, African and Minority Ethnic (BAME) minority groups have been identified as being at greater risk of mortality from COVID-19 (Aldridge et al., 2020). Research conducted by PHE, and the impact of COVID-19 on BAME communities highlights the effects of racism and discrimination faced by the BAME community as a leading factor for risk exposure and disease progression (ibid.).The case study participants will include religious (e.g. Christians, Muslims, Jewish, Hindu and Sikh) and ethnic communities (e.g. Indian, Pakistani, Polish, Moroccan, Chinese). This case study will consider the communication channels minority communities relied on during the pandemic and how these channels and communications developed over the course of the pandemic. In addition, this case study will explore how minority communities counter misinformation and lessons learnt from developing alternative channels of communication. Consideration will be given to digital communication and exclusion (i.e., the digital divide). In particular, the barriers and challenges experienced by different groups, as traditional communication practices (e.g., television broadcasts, press) shifted to online media forms (e.g., social media channels). Finally, the case study will describe and explain 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 other crises.

Factor Social - Resilience of the elderly in long term care facilities

Across Europe, long term care facilities for the elderly have been severely impacted by COVID-19. The age, the comorbidities, the cognitive and behaviour impairment, and the emotional sensitivity of the elderly are constraints that need to be considered on normal daily routines, which posed significant challenges during COVID-19 pandemics. Those in elderly long term care facilities had to deal not only with such challenges, and restrictions developed by governments and local managers to protect these particularly sensitive systems, but also with the increasing number of deaths during pandemics. This case study will explore how different elderly long term care facilities operationalized governmental and sector regulations during pandemics over time and its impacts for different users (workers, elderly, families), including differences between public and private units. The case study will aim to identify best practices that can be shared and implemented across different types of facilities.