



PHIRI

Population Health Information
Research Infrastructure

Needs assessment summary

Milestone 53, October 2023

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Executive summary

The Rapid Exchange Forum (REF) emerged as a crucial initiative during the Covid-19 pandemic, facilitating swift and structured cross-country information exchange among experts and institutions supporting national governments in crisis response. This collaborative effort, initially fostered by members of the Joint Action on Health Information (JA InfAct), quickly gained the European Commission's support and formalisation under the Population Health Research Infrastructure (PHIRI).

REF meetings provided a trusted platform for ad-hoc inquiries, shared perspectives, and insights, involving altogether 31 countries, thereof 3 non-PHIRI partners, and 11 organisations. This exchange included data, key indicators, best practices, and experiences pertinent to the Covid-19 crisis response. Notably, all REF meetings were expertly hosted, moderated, and documented by Gesundheit Österreich GmbH (GÖG) with support from Sciensano.

A retrospective Needs Assessment Summary (M53) reflects on REF's development over four phases corresponding to pandemic evolution across Europe. It showcases main topics and modifications to the REF processes and methodology as well as the progress of topics over time.

A SWOT Analysis reveals that strengths include REF's adaptability for expanding to other thematic areas, its transparent structure fostering trust, and the rapid communication and information exchange it facilitated. However, it also shared the need for incentives to sustain long-term engagement.

In conclusion, REF demonstrated its value during the Covid-19 pandemic by providing a reliable network for evidence-based cross-country exchange. Its flexibility and expansion into population health topics illustrate its sustainability. The European [Health Information Portal](#) (HIP) and REF exchange must be maintained to enable efficient communication among stakeholders for future health crises.

Key points

- During the Covid-19 outbreak, experts and policy/decision makers at the core of the Covid-19 response teams indicated a strong need to exchange data and information in a timely manner between European countries, involving researchers, population health experts, Ministry of Health representatives and crisis response team members resp. their advisors. To fill the gap, PHIRI set up a Rapid Exchange Forum (REF) to urgently respond to questions of decision-makers with EU wide coverage.
- The Rapid Exchange Forum (REF) offers a structured and highly needed platform for regular quick exchange of fellow countries, policy advisors, commission services and researchers in the joint efforts to manage the Covid-19 pandemic.
- The methodology of the Rapid Exchange Forum (REF) was flexible so that it could address the changing and additional needs during pandemic waves, but also beyond Covid-19 on a more general level regarding population health.
- All results of non-confidential nature, i.e. the vast majority of information obtained, of each REF were published on the [Health Information Portal](#) (HIP) immediately after each meeting, making them freely available to the public. This made the Rapid Exchange Forum an important pillar of the Portal.

PHIRI: Needs assessment summary

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Abbreviations

| | |
|--------------|--|
| COST Action | European Cooperation in Science and Technology Action |
| CO-VERSATILE | Adaptive and resilient production methods and supply chain solutions for urgent need of essential medical equipment |
| Covid-X | Covid eXponential Programme |
| COVINFORM | Coronavirus Vulnerabilities and information dynamics research and modelling |
| CPME | Standing Committee of European Doctors |
| DG SANTE | Directorate-General for Health and Food Safety |
| EC | European Commission |
| ECDC | European Centre for Disease Prevention and Control |
| EMA | European Medicines Agency |
| EU4Health | EU4Health Union action in the field of health |
| EUPHA | European Public Health Association |
| EUR3KA | European Vital Medical Supplies and Equipment Resilient and Reliable Repurposing Manufacturing as a Service Network for fast Pandemic Reaction |
| EUROSTAT | Statistical office of the European Union |
| GÖG | Gesundheit Österreich GmbH (The Austrian National Public Health Institute) |
| HIP | Health Information Portal |
| HSC | Health Security Committee |
| ICU | Intensive Care Unit |
| InfAct | Joint Action on Health Information |
| JCR | Joint Research Centre |
| LINKS | Strengthening links between technologies and society for European disaster resilience. |
| ML | Milestone |
| NO FEAR | Network Of practitioners For Emergency medicAl systems and cRitical care |
| OECD | Organisation for Economic Co-operation and Development |
| PANDEM-2 | Pandemic Preparedness and Response-2 |
| PathoCERT | Pathogen Contamination Emergency Response Technologies |
| PERISCOPE | Pan-European Response to the Impacts of Covid-19 and Future Pandemics and Epidemics |
| PHIRI | Population Health Information Research Infrastructure |
| PREPARE | PREParedness and Response for emergency situations in Europe. |
| REA | European Research Executive Agency |
| REF | Rapid Exchange Forum |
| REF-SE | Rapid Exchange Forum Special Edition |
| RISKPACC | Integrating Risk Perception and Action to enhance Civil protection-Citizen interaction. |
| RIZIV/INAMI | Belgian Commission for Reimbursement of Pharmaceuticals |
| STAMINA | Demonstration of intelligent decision support for pandemic crisis prediction and management within and across European borders |
| STRATEGY | Facilitating EU pre-Standardization process Through stReamlining and vAlidating inTeroperability in systems and procEdures involved in the crisis manaGement cYcle |
| SWOT | Strengths-Weaknesses-Opportunities-Threats |

TEHDAS
WHO
WP

Joint Action Towards the European Health Data Space
World Health Organization
Work Package

I. Introduction

As the Covid-19 pandemic swept over Europe, an exigent need arose for quick exchange of information among experts and institutions lending their support to national governments in managing the crisis response. Thus, devoted members of the former [Joint Action on Health Information](#) (JA InfAct) started to meet regularly already end of March 2020 online to foster cross-country exchange¹. The sessions have been jointly organised by the Public Health Institute in Belgium, Sciensano and the Austrian Public Health Institute Gesundheit Österreich GmbH (GÖG). Within these virtual meetings, participating partners were afforded a platform to pose inquiries, exchange perspectives, and share insights within a trusted environment. Recognizing the significance of this endeavour, the European Commission extended its support to this initiative titled “Rapid Exchange Forum (REF)”, formalising it as Task 8.2 under the umbrella of the Population Health Research Infrastructure (PHIRI), as detailed at www.phiri.eu.

This development allowed a group of population health experts and advisors to crisis response teams a swift and bi-weekly exchanges of data, key indicators, best practices, and experiences pertinent to the Covid-19 crisis response, all executed in a structured and efficient manner across 31 countries (thereof 28 PHIRI partners: Austria, Belgium, Bosnia And Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Moldova, The Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, United Kingdom, and additionally Albania, Denmark and Cyprus) and 11 organisations ([ECDC](#), [EUPHA](#), [European Observatory on Health Systems and Policies](#), [CPME](#), [OECD](#), [WHO](#), [EMA](#), [EC](#), [DG SANTE](#), [DG RTD](#) and [ELIXIR](#))¹. Notably, all REF meetings were hosted, moderated, and documented by the GÖG-team, with valuable support by Sciensano. In total 58 regular meetings and 6 special meetings with an average number of 25 participants took place in the PHIRI grant period, i.e., between October 2020 and October 2023. For a comprehensive overview of all matters discussed in these sessions see Annex I.

Building upon the first Needs Assessment (D8.1)² - which was performed in 2020/2021 to identify priority topics of the public health and crisis control community for the meetings - this Needs Assessment Summary (ML53) takes a retrospective look at the development of the REFs and assesses the relevance of REFs at the end of PHIRI. In a first part, it gives an overview of the development of the REF Meetings, which evolved over 4 phases, mirroring the pandemic phases and developments in countries across Europe. After three years of excellent collaboration and the end of the project in sight, the analysis aims to highlight how the REF responded to the specific needs in the light of the evolution of the Covid-19 pandemic. In a second part, a SWOT Analysis is performed to assess strengths and weaknesses as well as external threats and opportunities of REFs meetings. Finally, this exercise results in a discussion on the relevance of REFs as a good practice regarding the response and management of recent and future public health crisis.

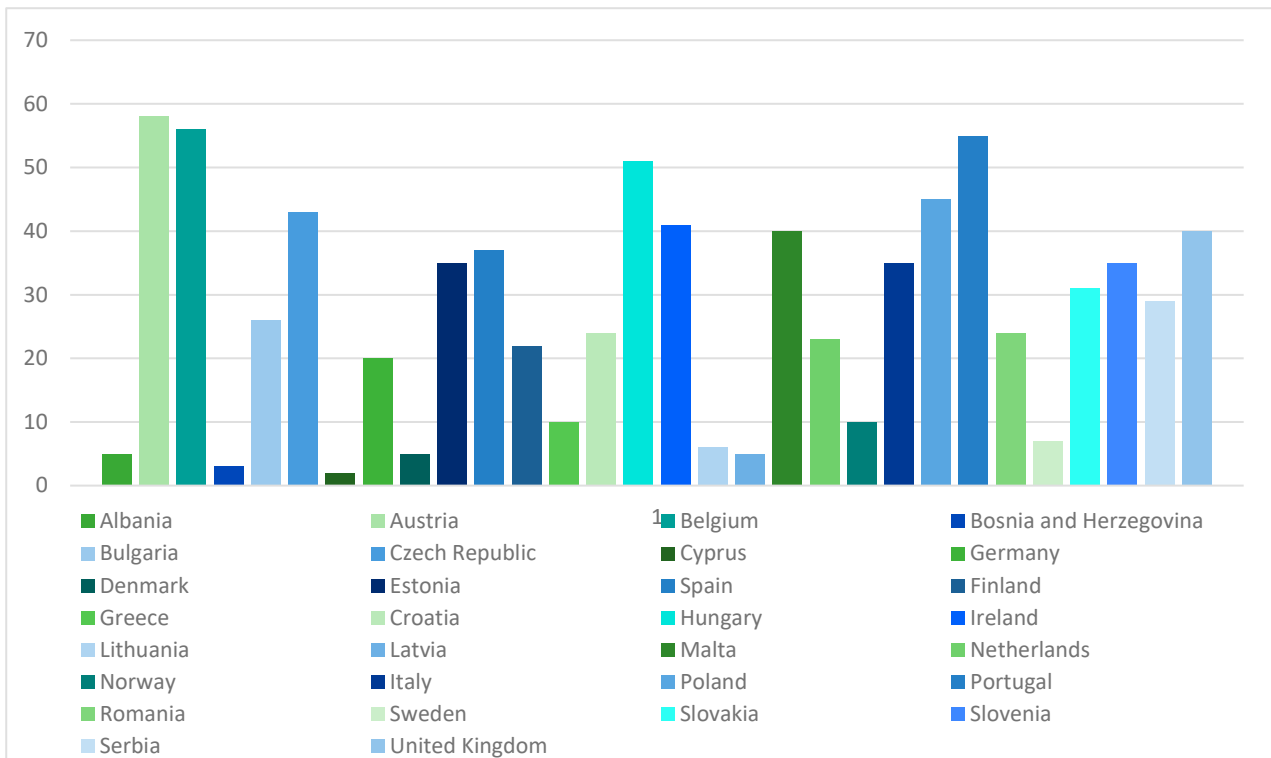


Figure 1: Aggregate number of session participation by country

Source: GÖG

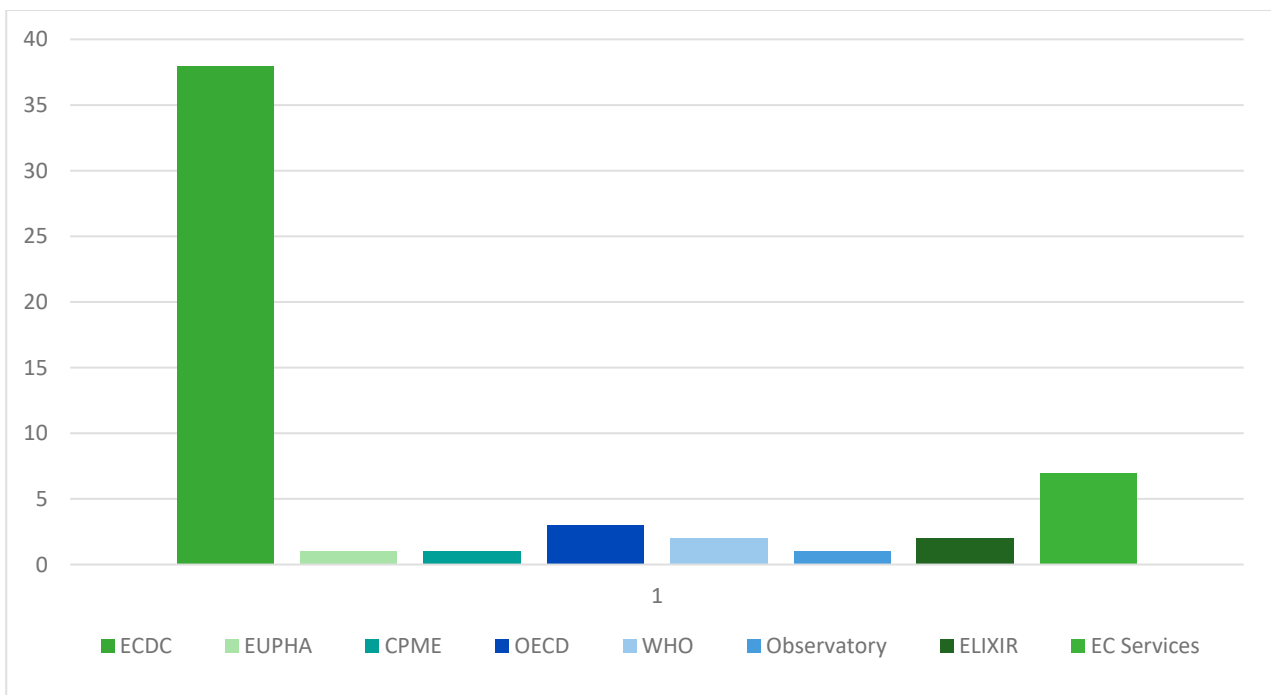


Figure 2: Aggregate number of session participation by institutions and organisations

Source: GÖG

II. Objectives

The Rapid Exchange Forum (REF) was set up as a service to the project partners, other EU-countries, associated organisations and EC services and aimed for

- introducing a renowned and trusted online platform for health policy exchange
- structured, moderated, quick, and regular exchange of information
- providing publicly available evidence and findings generated on the Health Information Portal (HIP)
- anticipating and identifying upcoming needs of population health issues
- creating a network of networks among policy advisors, EU Commission services and researches
- seeking synergies with EU services and related initiatives and projects
- improving national institutions' resilience against potential future crisis

By covering these objectives, the REF became a unique blueprint at the interface of health research infrastructure and health policy informed decision making to collectively address existing, as well as future, pan-European crises.

III. The evolution of the Rapid Exchange Forum

a. Topic finding (1st Phase)

From December 2020 to February 2021 an open survey among all PHIRI partners aimed to reach a wider audience involved in Covid-19 activities including government authorities, national decision support advisers/experts, public health institutes, universities, non-university research organisations or scientific/medical associations on a national level. The survey aimed to identify short-term, mid-term and long-term priority topics for upcoming exchanges. This Needs Assessment² accompanied the official starting point of the Rapid Exchange Forum (REF) meetings.

Specifically, the survey allowed participants the opportunity to rank a maximum of ten current and ten future priority topics out of 36 pre-defined issues based on the literature and, not surprisingly, in line with public debates at that time:

- National continuous Covid-19 testing strategies
- Mass testing approaches
- Surveillance of seroprevalence and associated immunity
- Accuracy and usability of different test methods
- Protection of care facilities
- Protection of hospitals
- Protection of vulnerable groups
- Protection of schools and kindergardens
- Protection of essential infrastructures
- Changes in lifestyle due to the pandemic
- Impact of voluntary (partial) self-isolation on society and individuals (e.g., transmission, social contacts, effect on economy)
- Impacts of pandemic on (non-Covid) health (e.g., medication use, chronic care, mental health, routine care, conditions like heart attacks, strokes, cancer, childhood vaccination)
- Impact of pandemic on education
- Changes in availability of medications and medical equipment (Covid and non-Covid)
- Long Covid (long-term clinical effects; health monitoring of individuals who recovered from infection)
- Monitoring of effectiveness and harms of policy/containment measures
- Centralised vs. De-centralised pandemic management
- Collaboration between institutions/authorities
- Refine/strengthen the role of the EU in pandemic management
- Participation/empowerment on community/organisation/citizen level
- Communication between actors/players
- Communication towards population
- Infodemic
- Hospital capacities (ICU and non-ICU) and primary care capacities (non-Covid-19)
- Treatments for Covid-19 patients
- Use of telemedicine
- Vaccination strategies (availability, distribution, implementation, documentation)
- Effectiveness and safety of vaccines
- Foresight/forecast, preparedness, implementation of modelling
- Case definitions (number of cases, deaths, recovered)
- Management of (Covid-19) health data
- Covid-19 training provided for specific target groups
- Strengthen skills and address potential shortage of health professionals
- Mitigation of economic and social consequences
- Relaxing/ease of containment measures
- Public Health concepts for balancing between protection from virus and protection of per-sonal freedom

The timeframe yielded until 3-6 months into the future and for future priorities beyond 3-6 months into the future.

Regarding the rating of national pandemic management, another 14 areas were defined that respondents could rate for three different periods (first wave, summer period and second wave):

- International networking, exchange
- Health data management/quality
- Communication (of risks, developments, measures, recommendations, ...) by politicians, experts, and media
- Launching telemedicine and digital tools
- Transparency
- Collaboration of national and regional authorities
- Solidarity across parties, groups, ministries, sections of the population, etc.
- Forecasting, modelling
- Involvement of experts in decision-making
- Experts/PH institutes supply decision makers with best available evidence
- National policy response: containment measures
- National policy response: legal framework and conditions
- Clinical response: health care and services for Covid-19 patients
- Clinical response: health care and services for non-Covid-19 patients

In addition to both categories respondents could also indicate additional issues that were not included in the lists of the ranking exercise.

The results of the Needs Assessment² fed into a 'pipeline' of questions to be addressed in the course of the REF. Prior to each meeting the REF secretariat at GÖG sent out a pre-selected question as part of the agenda, allowing the participants to consult or involve the appropriate experts from their countries to answer the questions. The results and findings together with the minutes were sent to all participants via email as well as uploaded to the PHIRI SharePoint shortly after each meeting.

Some of the topics identified in the needs assessment survey, such as Long Covid, Vaccination strategies or protection of hospitals etc., have continued throughout the years of pandemic and will remain relevant for some time to come.

b. Topic voting (2nd Phase)

In February 2021 the REF secretariat offered the participants to express their opinion on whether they themselves want to select the topics to be discussed in the meetings. It turned out that 100% of the participants favored a voting among all partners prior to each meeting via an appropriate survey tool. As a result, a so called "topic voting" via [LimeSurvey](#) was performed on two up to four issues during each intermediate week of the meetings. The subjects that were put to vote came from the "pipeline" which was constantly fed by questions of partners collected during the meetings or by email.

This procedure allowed for more flexibility and coverage of acute topic in the REFs, coming from National Crisis Response Teams for discussion and answering by the participant countries. Issues that popped up with regards to pandemic preparedness can be identified:

- Vaccination strategy
- Testing & reporting strategies
- Non-pharmaceutical measures (especially in schools)
- Long-Covid (management)
- Tourism and travel (certificates incl. acceptance of recovery certificates, validity, and testing)
- Vaccination compliance/vaccine hesitancy
- ICU
- Cost-effectiveness of vaccinations and non-pharmaceutical interventions

At the same time, meetings got a new, more formalized format. Besides the pre-selected topics, the agenda included a thematical presentation aligned to the topic by Task 8.4 (Covid-19 related

international guidelines, initiatives, projects and information sources) and Task 8.5 (Monitor Covid-19 Policy and Impact Measures) partners (i.e., OKFO, ISS and UNL). The remaining time was used for ad-hoc questions and discussion.

With the launch of the [Health Information Portal](#) (HIP) end of May 2021, also selected results of non-confidential nature of each REF were immediately published on the Portal, making them freely available to the public. An own section, the so called “Corona-Corner”, was dedicated to the listing of the REF topics and questions, the upload of findings including the task presentations, backed up by national report and guidelines that were briefly presented. This made the Rapid Exchange Forum an important pillar of the Portal A concise overview of NPIs established by European countries was added shortly after.³ The status of the measures was updated by each PHIRI partner, and was widely recognized, e.g., also by ECDC.

As a mirror of the pandemic, with the summer of 2021 bringing a brief relaxing of pandemic incidents, the REF meetings were held only monthly, but returned to their regular bi-weekly frequency by joint decision at the end of September.

c. Slowdown on pandemic (3rd Phase)

With the continuation of the REF meetings, they have become very well established as a knowledge-sharing platform that links national crisis response teams, health policy makers or decision advisors and national expertise by providing evidence-based information as a basis for health policy decision making.

One secret of success of the forum were precisely the national structures of information gathering between Ministries, competent authorities, research institutions, universities, and stakeholders behind the curtains.

Besides establishing its own REF network, the WP8 secretariat was striving for synergies with EU services as [ECDC](#), the [Joint Research Committee](#) (JRC), the EU Health Security Committee (HSC) and other stakeholders and projects such as the PREPARE cluster ([CO-VERSATILE](#), [COVID-X](#), [COVINFORM](#), [EUR3KA](#), [LINKS](#), [NO FEAR](#), [PANDEM-2](#), [PathoCERT](#), [PERISCOPE](#), [PHIRI](#), [RISKPACC](#), [STAMINA](#) and [STRATEGY](#))⁴.

As long as the lively networking was established, topics for the “pipeline” were also continuously promoted and did not run the risk of drying up. This changed with the 2nd half of 2022, when national structures of the pandemic management bit by bit eroded which was coupled with the lifting of Covid-19 measures all over Europe. This brought the REF secretariat the opportunity to actively start calls for topics during the meetings for the first time while the “pipeline” dried up more and more. Thus, the topic voting was replaced by sending in issues by email that were then finally phrased and announced by the secretariat. In case that no topic was raised for the next meeting it was jointly agreed that the secretariat has the right to cancel the upcoming meeting on short notice.

d. Beyond Covid-19 (4th Phase)

In light of this development and in response to the increasing number of ad-hoc questions (as outlined in the Table 1 below) Steering Committee VIII, decided to expand the meetings’ scope and extend the REF’s focus to encompass population health issues, extending beyond Covid-19. Despite the launch of this approach in mid-2022, it wasn’t until 2023 that participants began addressing REF topics reflecting this expanded emphasis on population health. Table 1 below shows examples of the topics addressed in the meeting expanding beyond Covid-19.

| REF No. | Topic |
|---------|--|
| 47 | Waiting list for scheduled hospital care / Data on waiting times |
| 48 | Analysis of telemedicine and/or artificial intelligence |
| 51 | Health crisis procedures and exercises |
| 52 | Biosimilar medicines |
| 56 | The ELSI (Ethical, Legal and Social Issues) Survey |
| 57 | Discussion on future opportunities for cooperation |

Table 1: REF topics not directly related to Covid-19

e. Fast lane: ad-hoc questions

In late 2020, an additional service entitled „Country request“ was set up in parallel to the regular meetings, utilising the PHIRI network to contact other colleagues in the event of highly time sensitive requests that couldn't wait to be answered within a two week timeframe. To standardise this service and to ensure transparency GÖG developed an own procedure for initiating ad-hoc queries across countries. In order to streamline the process, GÖG also developed a pre-filled excel template for the questions and answers (see Annex III). The process was modified over time and included the following steps:

First, a new request had to be sent by email including the pre-filled attached Excel template to the REF network as well as the REF secretariat in copy. At the time, the REF secretariat is in charge of monitoring and consolidating the responses. Following a preliminary deadline, the filled-in template was uploaded on SharePoint to be then updated by the participating countries independently. Over time, the excel template was replaced by a MS Word template, and the compilation of answers had to be organised by the requesting country (rather than the secretariat). In average 5-7 countries replied within 24 hours.

The compilation of the responses, as far as shared with the WP8 secretariat, was made uploaded on the PHIRI's SharePoint as well as publicly available on the Health Information Portal immediately thereafter.

For an overview of all submitted ad-hoc questions from 4/2/21 until 16/6/22 please see Annex II.

f. The Rapid Exchange Forum Special Edition

In order to support learnings on Covid-19 activities, exchange between experts' groups already in place were promoted through an additional service: the Rapid Exchange Forum Special Edition (REF-SE) aimed to bring together national and international experts to discuss.

existing and emerging activities and initiatives on a 3-6-monthly basis. The REF-SE served as a global collaboration platform, facilitating information exchange on international efforts or expert groups that had been set up related to Covid-19. These occasions offered a valuable opportunity to exchange knowledge, identify opportunities for collaboration and ensure alignment of international efforts in addressing the pandemic. Between February 2021 and October 2023 six REF-SE events were organised by PHIRI Coordination (WP1), hosting experts from a range of organisations, including [DG SANTE](#), [WHO](#), [ECDC](#), [Eurostat](#), [OECD](#), [European Observatory](#) or [EMA](#), among others. The REF-SE also set the starting point for new collaborations especially with ECDC regarding the Covid-19 Policy Measures page of the [Health Information Portal](#) (HIP) and the [ECDC-JRC Response Measures Database](#).

Within the scope of the Special Edition format two webinars, one on “Medical Therapies for Covid-19” and one on “What next for pandemic preparedness in Europe?” as part of the European Public Health Week 2022 were hosted by PHIRI. The recordings of the online webinars along with the presentations are available for free download on the [PHIRI website](#).

For all topics of the REF Special Edition see the overview below.

1st Rapid Exchange Forum Special Edition 15/02/2021

Guest speakers and topics:

Eurostat: “EuroWDC: the European data collection on weekly death counts” - *Giampaolo Lanzieri*

OECD: “Overview of OECD work on Covid-19” - *Gaetan Lafortune*

ECDC: “PHIRI Rapid Exchange Forum – Special Edition ECDC Activities “- *Howard Needham*

OBS: “European observatory on health systems and policies” - *Marina Karanikolos*

2nd Rapid Exchange Forum Special Edition 26/04/2021

Guest speakers and topics:

OBS: “Tracking Health Systems Response to Covid-19” – *Marina Karanikolos*

OECD: “OECD work on mental health” – *Emily Hewlett*

WHO: “WHO EPI (Expanded Programme on Immunization) department” – *Boris Pavlin*

3rd Rapid Exchange Forum Special Edition 08/11/2021

Guest speakers and topics:

WHO: “WHO Regional Office for Europe. Technical guidance” - *David Novillo Ortiz*

EMA: “Covid-19 vaccines’ extra doses” - *Rosa Gonzalez-Quevedo*

Vaccination Plan Task Force Portugal: “Covid-19 Vaccination Plan Task Force Portugal” - *Admiral Henrique Gouveia e Melo*

4th Rapid Exchange Forum Special Edition 28/03/2022

Guest speakers and topics:

HERA: “Working under the preparedness mode” – *Christian Wimmer*

ECDC: “The ECDC/JRC response database” - *Marie Heloury & Ettore Severi*

DG SANTE: “European health systems resilience in the face of the Covid-19 pandemic” - *Federico Pratellesi*

OECD: “State of Health in the EU Country Health Profiles” - *Gaetan Lafortune*

OBS: “The Observatory Covid-19 resources” - *Matthias Wismar*

5th Rapid Exchange Forum Special Edition 27/02/2023: Resilient Health Information Systems

Guest speakers and topics:

Sciensano: “PHIRI: Covid-19 health information system assessments” – *Miriam Saso*

TEHDAS: “Countries’ readiness to join the European health data space (EHDS)” – *Linda Abboud*

Sciensano: “EU HIP: Interoperability with the upcoming HERA IT Platform” – *Shona Cosgrove*

ECDC: “Public health surveillance in a pandemic, how to prepare” – *Bruno Ciancio*

6th Rapid Exchange Forum Special Edition 09/10/2023: Harmonizing advances in Long Covid research

Guest speakers and topics:

EC: *Stefan Schreck*

Long Covid Europe: *Chantal Britt*

GÖG: “Rapid evidence synthesis: Interventions to treat long Covid” - *Richard Pentz*

Sciensano: “Caring for Long Covid patients in primary health care” - *Sarah Moreels*

Long Covid Europe: *Chantal Britt*

Università Cattolica del Sacro Cuore: *Graziano Onder*

Université de Lille: *Oliver Robineau*

1st Rapid Exchange Forum EUPHW Webinar 25/01/2022

“Medicinal Therapies for Covid-19”

Speakers and topics:

HTA Institute Austria: “Covid-19 medicines: Hype and hope. Added value of therapies/potential impact on population health” – *Claudia Wild*

RIZIV/INAMI: “Covid-19 medicines: From a payers’ perspective” – *Joel Daems*

Columbia University/University of Sao Paulo, Brazil: “Covid-19 therapies vs. vaccination: The false debate. Impact of medicinal therapies on Covid-19 vaccination” – *Natalia Pasternak-Taschner*

2nd Rapid Exchange Forum EUPHW Webinar 20/05/2022

“What next for pandemic preparedness in Europe?”

Speakers and topics:

Sciensano: “Introduction to PHIRI, Covid-19 Health Information System assessments and resilience of European health information systems” – *Nienke Schutte*

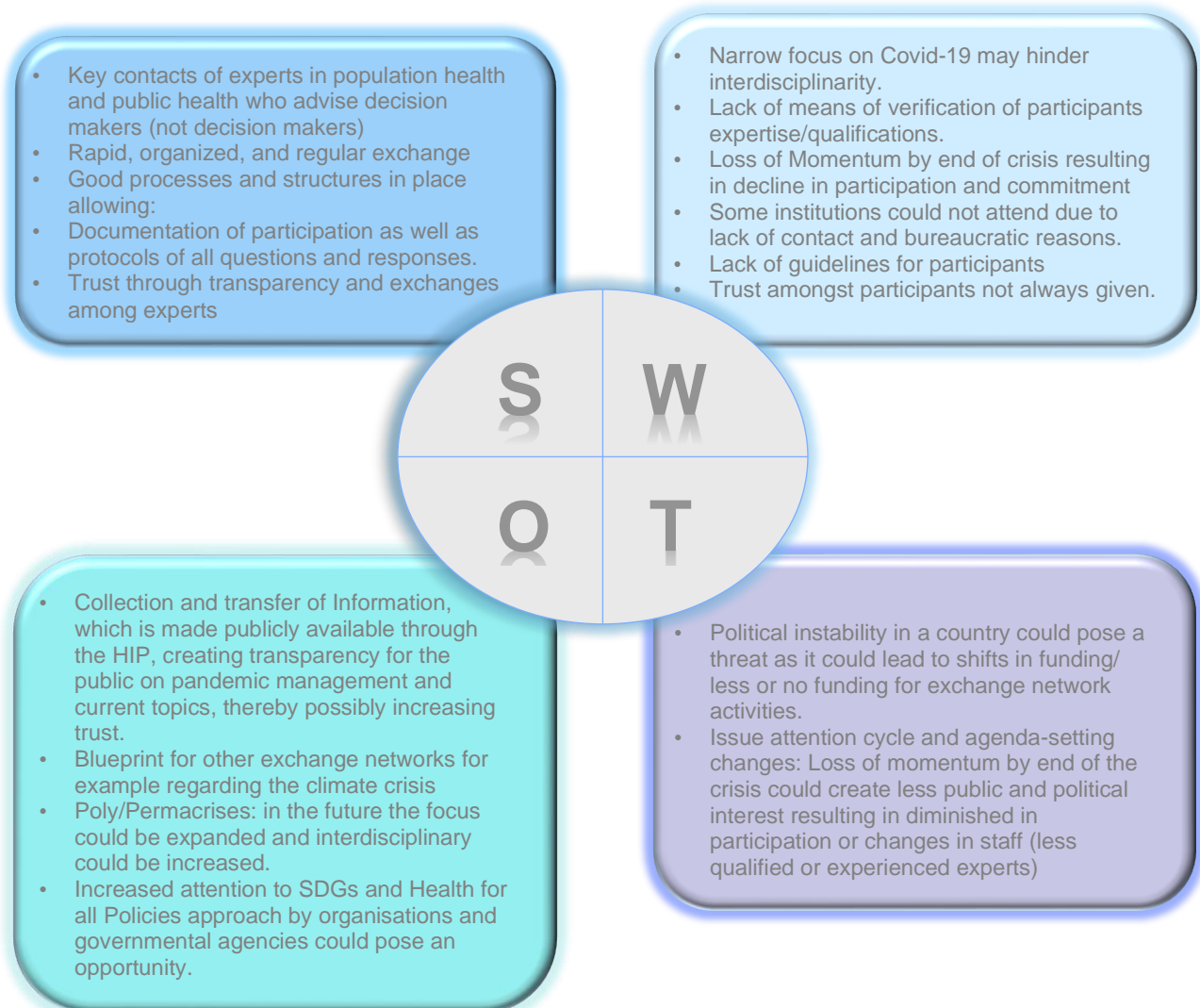
ECDC: “Facing current and upcoming threats” – *Marie Heloury & Jonathan Suk*

Universidade Nova de Lisboa (UNL): “Predicting the future: Covid-19 models and forecasting at the transition from pandemic to (hyper-)endemic” – *Marilia Silva Paulo & Luis Velez Lapão*

IV. SWOT

The SWOT Analysis on the main learnings of the Rapid Exchange Forum can be summarised into the following bullet points:

1. REF can be used as a blueprint for other Network Exchanges and could be expanded to other themes/issues and fields as it is a true EU response and coordination mechanism.
2. The REF Model and structure allows for transparency which can increase trust both for the participating experts as well as for civil society (by providing publicly available protocols and documentation) in a crisis.
3. An important strength of the REF is the availability of rapid communication and information exchange across experts and countries. This is an important aspect especially in times of acute public health threats/matters.
4. To improve the REF, a selection and “Quality assurance” system needs to be established to assure that the most suited experts participate to the REF meetings in a sustainable manner.
5. The development of “housekeeping rules” and guidelines could strengthen commitment and participation. It would support also the transparency.



Source: GÖG

6. One of the limitations of REF is the loss of momentum in the later stages, possibly due to the decrease or shift of resources (for example changes of staff or non-participation) which may be attributed to decreased public interest and media attention and/or changes in agenda-setting in policy towards other issues (external threat). To counteract this, incentives to increase engagement, attention, and resources long-term could be developed.
7. Finally, complex poly- and perma-crises create the need for interdisciplinary exchange and action across fields, which is one of the strengths of the REF due to the transparent and documented exchanges between high-level experts in the field. Therefore, if the REF was expanded to include experts from a range of diverse fields, beyond population health, it could be used as a model/tool for establishing international and interdisciplinary cross-sectoral networks to exchange information across different sectors and improve response on threats to society and public health.

V. Conclusions

The REF showcased its value for swift, evidence-driven, and well-organised international exchange during the Covid-19 pandemic by establishing a dependable network. This network enabled participating countries to share experiences and access the most up-to-date evidence. Even beyond the acute crisis, it demonstrated its durability through its adaptable methods and expanded focus on topics beyond Covid-19, particularly population health issues, with the goal of enhancing capabilities and fostering mutual learning.

Having a pre-established network readily available for sharing information on urgent public health matters is of paramount importance. It facilitates efficient and rapid communication among pertinent stakeholders in preparation for any future healthcare crisis and any further challenges in population health.

In conclusion, it is imperative to uphold both the [Health Information Portal](#) (HIP) as a repository for evidence and findings and the REF exchange as an avenue for ongoing mutual learning and capacity building as strong and successful components of PHIRI which has demonstrated to be an existing EU response and coordination mechanism. To this end sustainability of both services through further funding (e.g., as COST Action or as inclusion into the EU4Health Program) or establishing as own legal entity should be aimed.

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Annex

Annex I: List of REF Topics, with research questions and REF meeting date

Topics discussed prior to the funding period of PHIRI are not included in the overview

| REF No. | Question keyword | Question | Date |
|---------|---|---|----------|
| 1 | Testing strategy/ Preparations for winter | <ul style="list-style-type: none"> • What are the testing strategies currently in your country? • How is your country preparing for winter in relation to Covid-19? | 16.11.20 |
| 2 | Vaccine prioritization | Vaccine prioritization lists – target groups: <ul style="list-style-type: none"> • Order of target groups (1. HCWF, 2. vuln groups,...) • Where do young people who are vulnerable fit in? | 30.11.20 |
| 2 | Mass testing | Experiences on mass testing | 30.11.20 |
| 3 | Counting of RAT | Counting of Rapid Antigen Tests: <ul style="list-style-type: none"> • Are negative tests captured too? • Are they included with the number of tests reported to ECDC on TESSy? • Are cases detected on Rapid Antigen Tests included in the case notification numbers? | 14.12.20 |
| 3 | Update on Covid-19- diagnostics | Update on Covid-19 diagnostics (strategy, ongoing projects, policy direction) - especially children strategies | 14.12.21 |
| 4 | RAT tests | Are RAT tests being used to: <ul style="list-style-type: none"> • Find more cases to ask to isolate • Allow test negative people to do things which otherwise would not be allowed e.g., fly, visit care homes and hospitals, reduce isolation duration | 04.01.21 |
| 5 | Risk classification/traffic light systems | Which indicators and thresholds are used in order to change the risk level/class or traffic light of the systems (threshold values and/or ranges of incidences)? | 18.01.21 |
| 5 | Measures winter/Christmas 2020 | Have any measures been taken before Winter/Christmas to better prepare the Healthcare system for the 3rd wave? (e.g., new beds/infrastructure/hiring new people) | 18.02.21 |
| 6 | Moribund Covid-19 patients | <ul style="list-style-type: none"> • Are there specific protocols or procedures for the treatment of moribund Covid-19 patients all the way through death and burial available in your country? • If yes, what kind of protocols or procedures are in place/available? | 01.02.21 |
| 7 | Reduction in infection rates in vaccinated persons | Is there any reduction in infection rates in vaccinated persons already visible? | 15.02.21 |
| 8 | Variants of concern | <ul style="list-style-type: none"> • What is the percentage of the variants of infections? • Has your country implemented specific regulations concerning isolation/quarantine or testing for people who are (or are suspected to be) infected with a variant of concern and/or their contacts? (e.g., longer isolation/quarantine; additional testing) | 01.03.21 |
| 9 | Mental health | There are many reports pointing out the urgency of tackling mental health Covid-19 related cases: <ul style="list-style-type: none"> • What are the main measures that MS are putting in place or planning to do so during 2021? | 15.03.21 |

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| 9 | Self-tests | <ul style="list-style-type: none"> • Has your country implemented self-tests carried out at home as a prerequisite for access to certain services/locations? (e.g., in order to go shopping or to be able to use services of daily living, such as visits to the hairdresser, etc.) If yes, <ul style="list-style-type: none"> • What conditions must be met in your country for self-tests carried out at home to be recognised by the authorities? • Can or must the test results be passed on to e.g., authorities? If so, how is this done? • Are there differences in the recognition of test results along the test procedures (e.g., rapid antigen test vs. PCR test) or brand-specific test parameters (sensitivity/specificity)? • How long are the test results recognised by the authorities in your country (e.g., 24 hours/ 48 hours etc.)? | 15.03.21 |
| 9 | AstraZeneca | Did your country stop the use of the AstraZeneca vaccine or not? (Yes/No) | 15.03.21 |
| 10 | Vaccination strategy | <ul style="list-style-type: none"> • What is your vaccination strategy? • Which products are used for which age groups? • Is data on the effectiveness of vaccines already available in your country? • Does your country plan or already started studies to assess the effectiveness of the corona vaccinations (case-control studies in the roll out phase)? If yes, please share further information. • Is or will someone be working on a synthesis/summary of the data on vaccine effectiveness that is available from each country. | 29.03.21 |
| 11 | Long Covid | <ul style="list-style-type: none"> • What is being done in your country considering the management of “long Covid”, specifically: • Is your country collecting data/conducting studies (e.g. surveillance) on long Covid – if so, please describe how this is done (e.g. data collection, study design, organisational/legal aspects...). • Which guidelines/recommendations (national or international) is your country following considering the definition, diagnosis and treatment of long Covid? | 12.04.21 |
| 11 | Masks outdoors | <ul style="list-style-type: none"> • Is wearing masks outdoors mandatory in your country? • If yes, in which settings is wearing masks outdoors mandatory? | 12.04.21 |
| 12 | Re-opening projects | <ul style="list-style-type: none"> • Are there controlled/piloting projects in your country with the aim of testing options for re-opening steps in the sectors culture/sports/entertainment/gastronomy? (E.g., despite current lockdown measures a ‘mass event’ is organized where all attendees have to present a negative test result.) • If yes, please describe finished/ongoing/planned projects and/or re-opening concepts for these sectors in your country. | 26.04.21 |
| 12 | Testing school children | Are there any studies about children’s perceptions and mental health regarding testing children in schools? | 26.04.21 |
| 13 | Recovery certificates | Are you planning to accept recovery certificates for travel purposes, despite the data on reinfection risk? If yes, please share further information. | 10.05.21 |
| 03 Special REF | Validity of vaccination certificates | <ul style="list-style-type: none"> • What are the criteria regarding the validity of vaccination certificates for travel purposes in your country? • If there are differences between incoming and outgoing travellers, please specify. • If bilateral agreements are in place, please specify. | 17.05.21 |

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| 14 | Treatment/management of long Covid patients | <ul style="list-style-type: none"> • How does your country organise the treatment/management of long Covid patients? Are there specialised clinics/departments/centres or are concepts for their creation being developed? If so, please provide details, such as: <ul style="list-style-type: none"> • Which professional groups (specialists, nurses, psychologists, ...) and disciplines are involved? • How can individuals access the clinics (walk-in, referral ...)? • Are the clinics stand-alone entities or part of larger institutions such as hospitals or primary care centres? | 07.06.21 |
| 15 | Updates on travel certificates in the countries | <ul style="list-style-type: none"> • Updates on travel certificates in the countries | 21.06.21 |
| 16 | Vaccination compliance | <ul style="list-style-type: none"> • What is the Covid-19 vaccination rate in your country? • What is the level of Covid-19 vaccination compliance in your country? • Are measures either in place or planned for enhancing public trust in Covid-19 vaccination? | 05.07.21 |
| 17 | Delta variant | <ul style="list-style-type: none"> • Has your country implemented new/adapted measures specifically to address the threat posed by the spread of the Delta variant? • Or are such measures planned? | 02.08.21 |
| 18 | School start in autumn 2021 (with regard to delta, recommendations for adolescents to get vaccinated, progress of vaccination, etc.) | <ul style="list-style-type: none"> • Are you preparing/discussing specific measures/strategies for the start of schools in autumn (Y/N)? • Which measures are in place / planned for schools in your country / region? (Y/N) <ul style="list-style-type: none"> - Different rules apply for children <12 years and those >12 years <ul style="list-style-type: none"> - Split classes / alternate terms - Mandatory face-masks - Regular testing of school-kids - Regular testing of teachers/staff - Distance teaching/learning - Humidifiers - Other: _____ • In case schools have already opened after summer break: Do you see effects on incidence (rate of infected persons) already? | 30.08.21 |
| 18 | 3rd dose of vaccine | Which country is considering the third dose of vaccine? | 31.08.21 |
| 19 | Vaccination hesitancy | <ul style="list-style-type: none"> • Are there studies/surveys in your country aimed at identifying individual reasons for vaccine hesitancy? (please also share links to international studies that you are aware of) • Has your country taken specific actions to enhance people's willingness to get vaccinated? (e.g., innovative/targeted communication approaches; reward-based nudging approaches) | 13.09.21 |
| 20 | Hospitalizations of vaccinated/unvaccinated persons | <ul style="list-style-type: none"> • Is there any data available in your country on the proportion of vaccinated/unvaccinated hospitalized? • Is there any data available in your country on the proportion of vaccinated/unvaccinated persons who require treatment in ICUs? • If yes, please share further information. | 27.09.21 |
| 21 | Verification of vaccine certificates | <ul style="list-style-type: none"> • Is your country automatically accepting all vaccine certificates you accept for entry into the country for domestic use too? (e.g., entry to restaurants etc)? • If yes, please specify in which sectors vaccine certificates are valid and how the certificates are checked in specific sectors. • If no, please indicate if and how entry for vaccinated individuals in specific sectors (e.g., restaurants, museums, ...) in your country is verified. | 11.10.21 |
| 22 | Tourism - payment policy / testing policy | <ul style="list-style-type: none"> • Who is or should be paying Covid-19-tests for tourists in your country? • Does your country have a specific testing strategy for tourism in place? If yes, please share further information. | 25.10.21 |

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| 23 | Health of HCW | <ul style="list-style-type: none"> • What kind of monitoring is your country doing to protect the health of Health of healthcare workers? • What factors are you looking at, when it comes to protection of HCW? (e.g., anxiety, depression, burnout, ...) • Is data on the health of HCW collected routinely in your country? | 08.11.21 |
| 24 | Fake certificates | <ul style="list-style-type: none"> • What is the state of play on fake certificates in your country? • Is there information on the number of false certificates available in your country? • Do you have information on whether fake vaccination certificates are purchased for domestic use or cross-border travel? • To what extent border control is aware of false certificates in your country? | 22.11.21 |
| 24 | Measures Update | Brief report of updated Non-Pharmaceutical Interventions / Measures | 22.11.21 |
| 25 | Covid-19 vaccinations for children | <p>In the light of the recent EMA decision:</p> <ul style="list-style-type: none"> • Do you currently have a specific vaccination strategy for children below 12 years? Yes/No • If yes, please share further information. • If yes, to what extent schools, school doctors and nurses will provide Covid-19 vaccinations for children? | 06.12.21 |
| 26 | VOC 'Omicron' | <ul style="list-style-type: none"> • What is the state of play regarding the recent VOC 'Omicron' in your country? • Has your country implemented new/adapted measures specifically to address the threat posed by the spread of the Omicron variant? (Or are such measures planned?) | 21.12.21 |
| 27 | VOC 'Omicron' - Update | <ul style="list-style-type: none"> • Are there any (further) containment measures (i.e., closure of businesses, closure of bars, closure of schools/kindergartens, restrictions in private or public gatherings, wearing nose-mouth masks indoor/outdoor) planned in your country? • If yes, which measures? If not, please kindly explain reasons for not introducing any measures. • If you are using risk classification systems to assess the current epidemiological risk in your country/its regions ("traffic light" systems): have you made or are you planning to make changes to them (indicators, thresholds)? | 17.01.22 |
| 28 | Overview of current national / international duration of "vaccination passes" / "recovered passes" | <ul style="list-style-type: none"> • What is the duration of your digital certificates / vaccination passes on a national or international level (in case there is a difference)? <p>Please explain:</p> <ul style="list-style-type: none"> • if there is any difference between the vaccine given (i.e., AZ/ Pfizer/ Moderna/ J&J/ other)? • if there is any difference when persons are boosted or not? | 31.01.22 |
| 29 | Long Covid management | <ul style="list-style-type: none"> • Are there existing or planned processes for coordinated management of care for long Covid patients in your country? <p>If yes, please describe/share:</p> <ul style="list-style-type: none"> • Tools for (differential) diagnosis / symptom screening for clinicians? • Standardised treatment pathways for long Covid patients? • Patient information material about long Covid? • Registries of long Covid patients? | 14.02.22 |
| 30 | Long-term pandemic monitoring and surveillance | <ul style="list-style-type: none"> • Was the 'state-of-emergency' activated in your country when the pandemic hit, or other emergency legislation set in place in order to set up a Covid-19 monitoring and surveillance system, including regulations for data access and linkage of data sources? Did your constitution already include such mechanisms before Covid-19? • As a state of emergency or emergency decrees are temporary, what will happen to your Covid-19 monitoring mechanism in the long run? Has a long-term strategy been developed to ensure the continuity of surveillance of Covid-19 and research? | 28.02.22 |

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| 31 | Health screening for refugees from Ukraine | <ul style="list-style-type: none"> • Is there any health screening protocol that is being put in place for arriving refugees from Ukraine in your country at the moment (concerning Covid-19 and/or other screenings)? Covid-19 certificates from Ukraine have been established as equivalent to EU certificates in the Commission Implementing Decision 2021/1380. • Are there mandatory stipulations for entry of refugees arriving to your country from Ukraine when it comes to Covid-19 vaccination status, and/or is there a non-mandatory vaccination offer for arriving refugees? • Are (and if so how are) additional vaccinations and vaccination history recorded for refugees from Ukraine in your country? | 14.03.22 |
| 32 | Strategies for winter 2022 and BA.2 subvariant | <ul style="list-style-type: none"> • Is your country taking actions at the moment (or are there plans in place) to anticipate/mitigate a potential spike in Covid-19 infections in autumn/winter 2022? Have any strategies to this effect been developed based on lessons learned in the previous two years? • Have plans and strategies changed in your country since emergence of the BA.2 subvariant? If so, how? Are there any recommendations you would like to share with other countries in this scope? | 28.03.22 |
| 33 | Covid-19 pandemic evaluation | <ul style="list-style-type: none"> • Have any data analyses or studies been published in your country yet (on national level, or comparing several countries) that investigate direct and indirect health impacts of the pandemic (including indicators such as excess mortality, burden of disease, diminished mental health and well-being, diminished physical activity, loneliness, years of life lost, DALYs/QALYs etc.)? • Other than already published works, is there data analysis currently ongoing or in preparation in your country that investigates direct and indirect health impacts of the pandemic? If so, which indicators are mainly being investigated in this scope? | 11.04.22 |
| 34 | Communication strategies | <ul style="list-style-type: none"> • What communication channels are currently used by official sources in your country to disseminate Covid-19 information / which is the most common tool? • In your opinion, which communication channels/tools are working best to reach the people in your country at this stage of the pandemic? Have there been any (recent) adaptations to your country's national communication strategies with respect to countering pandemic fatigue and improving effectiveness of communication? | 25.04.22 |
| 35 | Covid Mortality | <ul style="list-style-type: none"> • How long does the entire process take to obtain ICD-10 coding of causes of death from death certificates? • Do you already have access to information (complete or partial) on Covid-19 as cause of death from death certificates? Have the death certificates now been integrated in the Covid-19 mortality statistics? • Are death certificates completed by the physician in electronic or paper format? If completed electronically, what location of death do they cover (ex. hospital only?) and what is the coverage in relation to all deaths? • Are there any Covid-19 mortality reports you can share, or reports of excess mortality during the Covid-19 crisis? | 09.05.22 |
| 36 | Foresight | Session limited to the PHIRI partners for the brainstorm of a policy workshop dedicated to addressing relevant discussion topics in foresight (minutes will not be shared with the general public) | 23.05.22 |

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| 37 | National public vaccination plans | <ul style="list-style-type: none"> • Do you have a publicly funded plan with recommended vaccinations (for everyone or only for kids)? If yes, please provide the link if it is published. • In the light of Chickenpox and Diphtheria, are there any plans to update publicly funded vaccination plan? For which disease(s) and for which age-cohort? • If not, when did the last update take place in regard to which disease or booster jab? | 20.06.22 |
| 38 | Protecting vulnerable groups | <ul style="list-style-type: none"> • Is your country currently taking any actions to protect vulnerable groups (i.e., groups who are, due to their own health status, highly susceptible to severe Covid-19)? For example, if no obligatory mouth nose protection needs to be worn, are there e.g., specific train compartments where masks are worn or similar measures? • How do you define vulnerable groups? (Are these primarily groups who define themselves as vulnerable or are defined as vulnerable based on existing evidence?) | 04.07.22 |
| 39 | Comparing the European Covid-19 situation at the beginning of Summer 2020 and 2021 with Summer 2022 | <ul style="list-style-type: none"> • Is the current overall Covid-19 situation in your country similar to that at the beginning of the two previous Summer seasons (2020 and 2021), or are there clear differences? • Have the expectations expressed in last summer seasons regarding the European pandemic status in the Summer of 2022 come true, or has the situation developed differently from what was expected? • What do you expect for the 2022 Autumn season? | 18.07.22 |
| 40 | Healthcare workforce conditions before and since the pandemic | <p>In your country, what were</p> <ul style="list-style-type: none"> • the average hours worked per week by doctors/nurses before the pandemic vs. now? • the average monthly salary of doctors/nurses before the pandemic vs. now? <p>If possible, please provide separate answers for both:</p> <ul style="list-style-type: none"> • doctors/nurses in hospitals and • doctors/nurses in the outpatient sector | 01.08.22 |
| 41 | Cost-effectiveness of vaccines and NPIs | <ul style="list-style-type: none"> • What kind of research are you developing in terms of the cost-effectiveness of vaccines and non-pharmaceutical interventions (NPIs) in your country? • In the past since start of the pandemic, has existing evidence on cost-effectiveness of interventions already factored into political decision-making (if so, please provide details)? For future strategies on NPIs in your country, is evidence on cost-effectiveness foreseen to play a role (if so, please provide details)? • Will it be sustainable economically to keep vaccination to the entire population? Will there be priority groups as foreseen in your country? | 29.08.22 |
| 42 | Upcoming school and kindergarten year 2022/23 | <p>With regard to the upcoming school and kindergarten year and as follow-up to the situation in 2021:</p> <ul style="list-style-type: none"> • Are there still mandatory measures in place or only voluntary initiatives? Are voluntary measures publicly supported? • If there are mandatory measures in place or planned for autumn/winter season what is foreseen in regards to quarantine / mask wearing / testing strategy in schools and kindergartens? | 12.09.22 |
| 43 | Future vaccination priorities and vaccine trials addressing public health needs | <ul style="list-style-type: none"> • Which of the following issues have the highest public health priority in your country in relation to future Covid-19 vaccination strategy and vaccine trials: Vaccine efficacy, vaccine development, specific populations, or any other? • Is there any example in your country of Covid-19 vaccine trials that are addressing public health needs? | 10.10.22 |

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| 44 | Digitalisation - going from a paper death certificate to an (100%) electronic death certificate | <ul style="list-style-type: none"> • Could you describe the dataflow, from the source filling in the death certificate to the final destination (statistical institute or others)? The different stages through which a death certificate passes would be of interest. • If necessary, could you describe the process of making this transition between paper registration and electronic registration? What were the specific periods & phases? Have you planned a hybrid situation (paper/electronic) or an exit from the paper system and a direct transition to electronics? • Have you implemented direct cause-of-death coding using ICD-10 codes in the registration tool or does the doctor have to type? If you implemented direct ICD-10 coding in the tool, who set it up and is there still manual code checking? Does it contain a kind of decision tree to fill it out/to avoid obvious errors? • Is there a real time use of this digital data? And if not, have you planned a direct use of the data in case of epidemiological emergencies (such as Covid-19). | 24.10.22 |
| 45 | Update on Long Covid management | <ul style="list-style-type: none"> • Have there been any major changes in your country following your possible original response in early 2022 (29 REF) when it comes to existing or planned processes for coordinated management of care for long Covid patients in your country? • Specifically, do these processes also relate to tools for (differential) diagnosis / symptom screening for clinicians, and standardised treatment pathways for long Covid patients? • In addition, could you briefly describe how your country organises the treatment/management of long Covid patients? Specifically, are there specialised clinics/departments/centres and are these clinics stand-alone entities or part of larger institutions such as hospitals or primary care centres? • Does your country have a registry of Long Covid patients? | 05.12.22 |
| 46 | Diagnosis Coding | <p>Are the health care providers (hospitals and publicly/private funded outpatient care centres) in your country obliged to use a coding system for diagnoses?</p> <p>If yes,</p> <ul style="list-style-type: none"> • Did the implementation predate Covid-19, or has it only been implemented since then? • Please describe the coding system in place (e. g, ICD, ICPC, SNOMED, CT, other or combinations). • Please describe the usage of the data (who's the data holder, Covid analyses, analyses in general, scientific studies regarding Covid...). | 30.01.23 |
| 47 | Waiting list for scheduled hospital care / Data on waiting times | <ul style="list-style-type: none"> • Are waiting lists and/or wait times for the following types of scheduled hospital care an issue in your country? <ul style="list-style-type: none"> - Inpatient/Day Case procedures - Outpatient appointments (i.e., specialist assessment) • Does your country publish data on waiting lists and/or wait times for scheduled hospital care? This may include total numbers currently waiting on the list and numbers waiting over certain time bands (e.g., 12 months) for <ul style="list-style-type: none"> - Inpatient/Day Case procedures - Outpatient appointments • If yes, what breakdowns does your country report for waiting list data, which may include e.g. <ul style="list-style-type: none"> - Categories of waiting lists (e.g., patients waiting for an appointment date, patients who have received an appointment date and are waiting to come in) - Time period waiting (0-3 months, 3-6 months etc.) | 13.02.23 |

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| | | <ul style="list-style-type: none"> - Geographical disaggregation - Any other disaggregation • How are wait times measured? For example, <ul style="list-style-type: none"> - Outpatient waiting time: time from GP referral to specialist consultation - Inpatient waiting time: time from when the patient is added to the treatment waiting list to when they are treated - Referral to treatment waiting time: time from GP referral to treatment. • Does your country publish data on the level of inflows to and outflows from waiting lists (i.e., the numbers being added to and removed from waiting lists)? • What formats are the data published in (e.g., open data, PDF reports, others)? | |
| 48 | Analysis of telemedicine and/or artificial intelligence | <ul style="list-style-type: none"> • Is there an analysis of the use of telemedicine and/or artificial intelligence in your countries' inpatient sector (published or ongoing)?? • If yes, <ul style="list-style-type: none"> - Who has carried out/is carrying out this analysis? Which authority (or other partner) is or has been commissioned to carry out such an analysis? - What conceptual framework do you use for the definition of telemedicine and/or artificial intelligence (e.g. functions like storage and forwarding/monitoring/interaction for telemedicine; prediction/diagnosis/treatment for AI) - What were the methods used (literature search, web search, expert interviews, etc.)? • If no, are there plans to carry out such a study? • Has there been an increase in the use or implementation of telemedicine and/or artificial intelligence since the beginning of the pandemic? If yes, please give examples. | 27.02.23 |
| 49 | Vision on resilience indicators | <ul style="list-style-type: none"> • As Covid-19 measures has been lifted or relaxed around Europe, which Covid-19 indicators, if any, are foreseen to be measured long-term in your country, and are there any thresholds defined that would trigger reintroduction of measures or emergency action? • Have analyses been performed in your country regarding population adherence to NPIs (e.g. via mobility data, surveys), and/or has there been a weighted analysis of effectiveness and economic viability of measures on another basis? • Have strategies/tools/mechanisms for measuring or evaluating the improvement of health system resilience been set up or are there plans to do so? | 27.03.23 |
| 50 | Treatment of long Covid patients | <p>In order to keep up with this topic, we would kindly ask for a follow-up to REF 14 (07/06/21):</p> <ul style="list-style-type: none"> • How does your country organise the physical and psychological treatment of long Covid patients, especially with regard to Mental Health? • Are there specialized clinics/departments/centres in place or are specialized clinics/departments/centres currently being developed? <p>If so, please provide details, such as:</p> <ul style="list-style-type: none"> - Which professional groups (specialists, nurses, psychologists, ...) and disciplines are involved? - How can individuals access the clinics (walk-in, referral ...)? - Are the clinics stand-alone entities or part of larger institutions such as hospitals or primary care centres? • Are there specific pathways in the treatment of children and youths established? <p>If so, please provide details, such as:</p> | 24.04.23 |

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| | | <ul style="list-style-type: none"> - Is there a publicly funded facility for parents to obtain publicly funded long Covid consultations with specialised physicians? - Have any day care centres been set up for children affected by long Covid? • Is there any available data on waiting times or information on bridging measures during the waiting period for a specialized programme? • Is there any legal protection or special support for employees (not to be terminated or pressured, e.g. helpline) in the process of diagnosis-finding? | |
| 51 | Health crisis procedures and exercises | <ul style="list-style-type: none"> • We are interested to learn more about your organisation's different roles in case of a health crisis emergency (for example an infectious disease outbreak). If your organisation is involved in management of a public health crisis, what are your duties? • Did your organisation ever simulate these emergencies for an (internal or joint) exercise? If yes, what are your experiences with this health crisis simulation and are you willing to share some documents? A wide range of crisis exercise scenarios is welcome: accidents with chemical or biological agents, infectious disease outbreaks...). | 08.05.23 |
| 52 EUPHW Editon | Covid-19 impact on population's mental health | <ul style="list-style-type: none"> • How does your country measure the pandemic's effect on the population's mental health? • Which tools or monitoring (systems) does your country use to obtain information on the mental health of the population? • Which subgroups are most affected in your country? • What implementation measures have been/are being taken to respond to the impact of the pandemic? • How does your country deal with suicidality in the wake of the pandemic? Is there any special support since the pandemic? | 22.05.23 |
| 53 | National action plan on postviral / postinfectious syndromes | Does your country have a national action plan or similar strategic policy papers regarding post viral / post infectious syndromes (in general or associated with specific pathogens, e.g. Long Covid)? We are interested in documents that cover aspects such as care pathways, healthcare planning and financing, data collection and registries, research, awareness raising and others. Please provide links to the relevant documents or websites? | 05.06.23 |
| 54 | Biosimilar medicines | <ul style="list-style-type: none"> • Interchangeability: Does your country have a legal arrangement in place such that once a biosimilar is approved in the EU (or through some other mechanism) it is interchangeable, which means the biosimilar can be used instead of its reference product (or vice versa) or one biosimilar can be replaced with another biosimilar of the same reference product? If so, please briefly describe the arrangement? • Substitution at point of issuing medicine: Can a pharmacist / dispenser substitute biological medicines with biosimilars at the point of dispensing (e.g., at a pharmacy/hospital)? <ul style="list-style-type: none"> - If so, is it a requirement of State-funded schemes / social health insurance reimbursement to substitute with the available medicine of lowest costs or medicines within a lower cost bracket? (i.e., only reimburse the preferred biosimilar) - If so, does the pharmacist/dispenser receive training or specific payment from the Government or insurer? • Has the above approach encountered criticism in your country? • Influencing clinical prescribing of biosimilar medicines: How is this done (e.g., incentives as in Best Value Biologics Programme (BvB), described below)? • Broad process of choosing preferred biosimilars: What is the overall process to determine preferred biosimilars for prescribing over their reference biological medicine? For instance, what broad criteria are used, and what organisation has responsibility for this? • Response to the EMA September statement: Following the September statement from the European Medicines Agency (EMA) (presented below) on the interchangeability of biosimilars, is your | 03.07.23 |

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| | | country planning any changes to increase biosimilar penetration/uptake? | |
| 55 | New Covid-19 variants | <ul style="list-style-type: none"> • How are MoH preparing for the next winter? Are there any specific plans or are you aware of any ongoing planning with regard to the new Covid-19 strains BA 2.86 (Pirola) and EG 5 (Eris)? • To what extent are MoHs using lessons learned from the Covid-19 pandemic? Please give examples. | 11.09.23 |
| 56 | The ELSI (Ethical, Legal and Social Issue) Survey | <p>We would like to discuss the state of play in your country, e.g.:</p> <ul style="list-style-type: none"> • Are there any best practices or specific limitations? • Are there efforts for more coherent ELSI principles? • Which enablers or which barriers do you experience? • Current changes in legislation (e.g. in light of upcoming EHDS regulation)? | 25.09.23 |
| 57 | Discussion on future opportunities for cooperation | | 09.10.23 |
| 58 | Covid-19 measures – Update per October 2023 | <p>The following Y/N questions, asked in a live poll during the meeting, are intended to be displayed on the Health Information Portal:</p> <p>A. Vaccination</p> <ol style="list-style-type: none"> 1. Is Covid-19 vaccination for free in your country? 2. Is a booster vaccination free in your country? 3. Is Covid-19 vaccination or booster available in pharmacies? 4. Do you have a vaccination strategy / recommendation for children below 12 year? 5. What is the vaccination coverage rate in your country: <ol style="list-style-type: none"> a. 0-50% b. 50-75% c. 75%-100% <p>B. Surveillance</p> <ol style="list-style-type: none"> 6. Is there a Long-Covid strategy in place in your country? 7. Does your country have a registry on Long-Covid patients? 8. Is there a wastewater monitoring in your country or at least regionally? 9. Is there a national Covid-19 dashboard that is currently being serviced? <p>C. Measures</p> <ol style="list-style-type: none"> 10. Are there actually any measures or restrictions in place? 11. Is self-testing for free in your country? 12. Is it mandatory to wear face masks in hospital settings? 13. Is an evaluation of the pandemic measures in your country planned or already ongoing? 14. Can the pandemic response team be reactivated any time quickly (within 2 days)? | 23.10.23 |

Annex II: Overview of ad-hoc questions until end of October 2023

| | Topic | Questions | Date |
|---|---|--|----------|
| 1 | Data from surveillance systems and death certificates | <ul style="list-style-type: none"> • Does the data of death certificates differ from those of national surveillance systems in your country? • If yes, please explain how differences between the two data sources are handled in your country. • If yes, please explain how differences between the two data sources are communicated. | 04.02.21 |
| 2 | Reporting of Covid-19 deaths of "unofficial residents" to the relevant countries via the national surveillance system | <ul style="list-style-type: none"> • Are deaths of unofficial residents reported in your national surveillance system? • If yes, are you sharing this information with the country of residence? If yes, how are you sharing these data? • If no, are you sharing this information with the country of residence? If yes, how are you sharing these data? | 04.02.21 |
| 3 | Strategies and regulations for quarantine | <ul style="list-style-type: none"> • Are there specific strategies/regulations for quarantine or cordoning off of (large) cities, i.e., restrictions for entering or leaving cities, in your country? If yes, which ones? | 18.03.21 |
| 4 | Self tests | <ul style="list-style-type: none"> • Are there specific strategies/regulations for self-testing in your country? If yes, which ones? | 31.03.21 |

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| | | <ul style="list-style-type: none"> Do you apply isolation to individuals who test positive for self-test and begin contact tracing or await a confirmatory test result? | |
| 5 | Surveillance hospitalized cases | <ul style="list-style-type: none"> How are other countries performing now surveillance of hospitalized Covid cases? Do you have international contacts that could be contacted? Have there been discussions on how to prepare for these changes? | 31.03.21 |
| 6 | Whole Genome sequencing | <ul style="list-style-type: none"> How much does the Whole Genome Sequencing of Covid-19 cost in your country? Do laboratories get compensated by the government for the whole Genome Sequencing of Covid-19? <ul style="list-style-type: none"> Is there a fixed price per test and/or other ways of compensation for the labs? Does its price/compensation include <ul style="list-style-type: none"> transport of the samples? RNA extraction (are RNA extracts or original samples processed)? library preparation? data analysis? Are there fixed quality standards (e.g., depth of reads and coverage)? Is it mandatory to report the result: <ul style="list-style-type: none"> to the GP/treating physician? to the regional or national public health officers? into a public database? | 14.04.21 |
| 7 | Boarding requirements | <ul style="list-style-type: none"> Can you share copies of the legal instrument you may have to oblige incoming passengers to have PCR/RATs, Passenger Locator Forms etc? For those of you requiring PCRs from incoming travellers, what is the lower limit of age above which PCRs are required? | 12.05.21 |
| 8 | Opening steps summer 2021 | <ul style="list-style-type: none"> Please tell us all your opening plans from now on until July 2021 (There is no need to outline the currently existing rules, we have prepared an overview). | 19.05.21 |
| 9 | Additional information on vaccination certificates | <ul style="list-style-type: none"> We would urgently need the following additional information on vaccination certificates: If you plan / have implemented / accept vaccination certificates, do they consider the following options: <ul style="list-style-type: none"> heterologous vaccination schemes (heterologous prime-boost Covid-19 vaccination), one dose vaccination regime for recovered persons, prolongation of time between 1st and second dose? | 20.05.21 |
| 10 | Concessions for vaccinated | <ul style="list-style-type: none"> Please share any concessions that are being provided to vaccinated citizens in your respective countries? For example there are some countries in which access to restaurants or clubs or mass events is facilitated for vaccinated persons. | 12.07.21 |
| 11 | Mandatory Vaccination | <ul style="list-style-type: none"> If yes, in which areas or for which professions is the Covid-19 vaccination mandatory? | 02.08.21 |
| 12 | Vaccination Compliance for Specific Population Groups | <ul style="list-style-type: none"> Do you have information on vaccination compliance at the following specific population groups? | 17.08.21 |
| 13 | Delta and (unvaccinated) children | <ul style="list-style-type: none"> What is the proportion of (unvaccinated) children who need to be hospitalized? What is the proportion of (unvaccinated) children hospitalized in ICUs? | 02.09.21 |
| 14 | Rapid antigen testing | <ul style="list-style-type: none"> What are national health authorities in other European countries recommending in respect of rapid antigen testing for screening asymptomatic people? Is rapid antigen testing endorsed by the public health authorities in these countries? To what extent is rapid antigen testing being used in these countries? What sectors are using it? | 07.09.21 |
| 15 | Indicators for patients hospitalized | <ul style="list-style-type: none"> Which parameters/indicators do you collect in hospitals in your country for patients hospitalized due to Covid-19 (e.g., BMI, vaccination status, underlying health conditions etc.)? | 16.09.21 |
| 16 | Antibody testing for proof of immunity | <ul style="list-style-type: none"> In your country, can a proof of immunity by antibody testing be used as an alternative to a vaccination or PCR/antigen test certificate in order to access places where such restrictions exist? | 28.09.21 |

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| | | <ul style="list-style-type: none"> • Which guidelines for Covid-19 Antibody Testing are actual valid in your country? (e.g., regarding types of tests, thresholds, validity period etc.) • Which policies do you pursue in this context in your country? | |
| 17 | Covid forecast | <ul style="list-style-type: none"> • Are there official and published Covid-forecasts being conducted in your country? (Y/N) <ul style="list-style-type: none"> - If yes, which institutions are responsible for and involved in official Covid-forecasting in your country? - If yes, are Covid-forecasts published officially in your country? (Y/N) - If yes, please indicate where and how frequently they are published. - Please share a link, if available. • If Covid-forecasts are not officially published in your country, are documents otherwise available in your country? <ul style="list-style-type: none"> - If yes, please share further information. | 20.10.21 |
| 18 | Current Wave | <ul style="list-style-type: none"> • Which measures were implemented in your country in order to break either the most recent or the current wave of Covid-19 infections? (depending on your country's situation) • Which of these measures do you deem effective? • Were measures implemented that applied differently to vaccinated, recovered, and unvaccinated individuals? If yes, please share further information. | 09.11.21 |
| 19 | Health Seeking Behaviour in population-based surveys | <ul style="list-style-type: none"> • Are there population-based surveys in your country in which this topic of health seeking behaviour has been addressed? • If so, which questions/instruments have been used? | 17.11.21 |
| 20 | Hidden Covid-19 cases | <ul style="list-style-type: none"> • Measures in quantifying the current hidden number of Covid-19 cases in other countries. • Are there any examples for how best to measure the potential "hidden number" of Covid-19 cases (people infected with Covid-19 who have only mild symptoms and neither go to a general practitioner nor get tested for various reasons -not wanting to be in isolation, family in quarantine, etc-). • Are you measuring this? If yes, what questions or instruments are you using for? | 02.12.21 |
| 21 | Covid-19 Hospital Ward Adaptation | <ul style="list-style-type: none"> • Given the fact that the hospital treatment of Covid-19 patients, both in regular care and in ICUs, will have to be integrated in the "normal care" system we would like to know: • If there are plans to modify the set-up of hospitals a/o rooms in your country, and if so, which changes do you consider? • Please let us know especially if you plan for "pandemic specific hospitals or hospital wards". | 22.12.21 |
| 22 | Covid-19 pandemic evaluation | <ul style="list-style-type: none"> • Within the Netherlands, as well as perhaps in many of your countries, the first formal evaluations of the Covid-19 pandemic have started. Besides this, a multitude of informal evaluations and media reflections are taking place at the moment. However, so far, most of them are process evaluations. Which are relevant, but don't give much insights on the direct and indirect health impacts of the pandemic. We are interested In gathering data-analyses/studies on health indicators like summed-up below: <ul style="list-style-type: none"> - Excess mortality - Burden of disease - Direct impact of Covid - Indirect impact of Covid - DALY's - QALY's - Years of life lost - Change in life expectancy - Diminished sense of well being - Deteriorated mental state - Increased smoking - Decreased physical activity, like sports. - Loneliness • Could you inform us on studies conducted in your country that relate to the hereabove mentioned health indicators? These studies may be conducted on a national level or contain a comparison between countries. | 31.03.22 |
| 23 | Physical activity and healthy nutrition | During the Covid-19 pandemic, which national policies and programmes were implemented in your country to promote | 04.07.22 |

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| | | physical activity and healthy nutrition in children and young people? | |
| 24 | Covid-19 containment measures in metropolitan areas | <ul style="list-style-type: none"> Do you have different (i.e., stricter) containment measures in your capital or other large metropolitan areas than in the rest of your country? If so, could you please provide information on the differences? | 15.07.22 |
| 25 | Covid-19 mortality statistics | <ul style="list-style-type: none"> In your country, are deaths where Covid-19 is reported as a contributory cause of death and not as underlying cause of death also reported and included in mortality statistics reported to ECDC? What definition is currently used in your country to report Covid-19 deaths? If a person dies suddenly or of unknown cause or external cause of death and requires an autopsy, is a test for Covid-19 carried out post-mortem? In reporting mortality statistics due to Covid-19, are all Covid-19 deaths (community + nursing homes + hospital) included or just hospital deaths? Does a Covid-19 death require a positive laboratory diagnosis or is clinical diagnosis sufficient? | 28.07.22 |
| 26 | Storage of Covid-19 data | <ul style="list-style-type: none"> Which parties are involved in determining storage periods within your country? For instance: responsible ministers, healthcare administrations, parliament, ethical committees, data protection bodies, data governance bodies, ...? What are the frameworks used to define storage periods? For instance: general archiving legislation or practices, medical legislation, bio-ethical guidelines, decisions from ethical committees or data protection bodies, ... ? Did the Covid-19 crisis and its high visibility regarding data use lead to certain debate regarding storage periods? Or was a standardized storage period used (similar to other healthcare databases)? <p>As of today, what are the defined storage periods?</p> | 29.09.22 |
| 27 | Data on Covid-19 similar cases | In your country have there been observed any changes in the incidence or survival of diseases whose symptoms may be confused with Covid symptoms? In particular, we are interested in data on the registered incidence (i.e., the number of newly diagnosed patients) and 1-year survival for malignant lung cancer and COPD (chronic obstructive pulmonary disease) in 2020-2022 in relation to previous years. | 09.02.23 |
| 28 | Covid-19 management pool | <ul style="list-style-type: none"> Did your country used, during the Covid-19 pandemic, a specific tool to determine the level of severity of the pandemic, at national level (e.g., level 1, level 2, level3)? If yes, <ul style="list-style-type: none"> was this tool linked to public health measures (e.g., different testing, isolation, quarantine, mask wearing, ..., measures depending on the level)? what were the different indicators included in that tool? is this tool still applicable today? Why? | 10.05.23 |
| 29 | Medical equipment | <ul style="list-style-type: none"> What benchmarks are being used to determine device life expectancy based on age and/or utilization level for linear accelerators, brachytherapy machines and ECMO machines? Which guidelines in terms of renewal of above-mentioned equipment do you use (national/international/EU?) Where could these be found? | 12.05.23 |
| 30 | National reviews of Covid-19 response | <ul style="list-style-type: none"> Has a Review of the Response to Covid-19 been undertaken or is currently underway in your country? If so, please provide the title of the Review. What areas / topics are covered by the Review? How is the Review structured / undertaken? What type of Review was undertaken and what type of organisation undertook the Review? Are the Terms of Reference for the Review publicly available? If so, please provide a link to the Terms of Reference. Was the Review made publicly available? If so, please provide a link to the publication | 16.06.23 |

Annex III. Template for topic support of WP8 secretariat for ad-hoc questions valid since mid 2022

PHIRI Rapid Exchange Forum: Ad-Hoc question

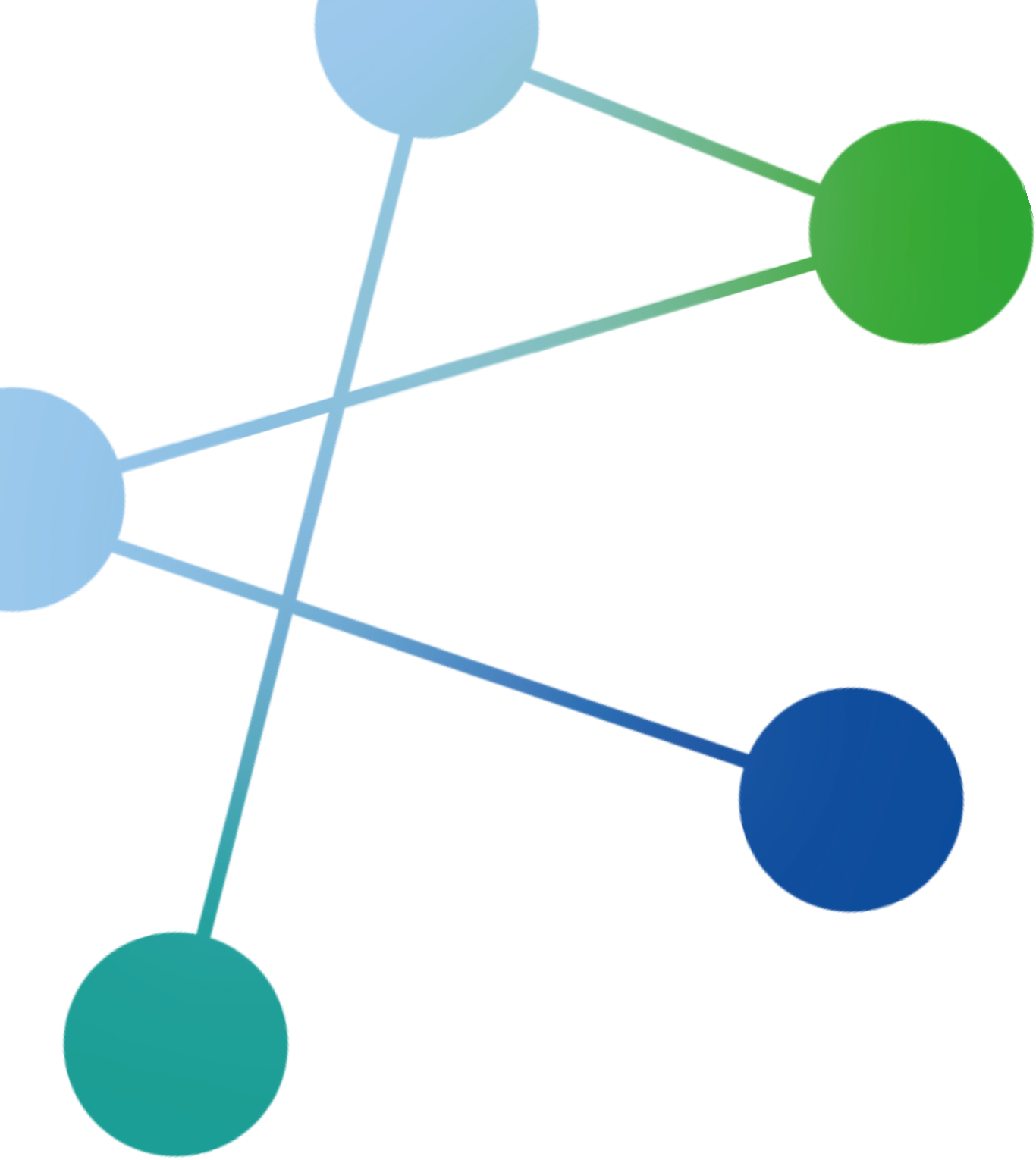
Asked by: **[COUNTRY]**

Asked on: **[DATE THAT YOUR QUERY WAS SHARED WITH THE PHIRI PARTNERS VIA THE REF SECRETARIAT]**

Disclaimer: The data contained in this document have been provided by members of the PHIRI network. Due to the diverse and heterogeneous nature of the questions and dynamic situations they pertain to, some of the information might be incomplete or only correct for the time being. The data do not have any legally binding value.

Table 1: Country responses

| Country | Topic: PLEASE FILL IN THE TOPIC OF YOUR QUERY Question(s): PLEASE FILL IN THE QUESTION OR QUESTIONS OF YOUR QUERY |
|------------------|---|
| COUNTRY A | ANSWER RECEIVED FROM COUNTRY A |
| COUNTRY B | ... |
| ... | ... |



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