State-of-play of the COVID-19 Health Information System
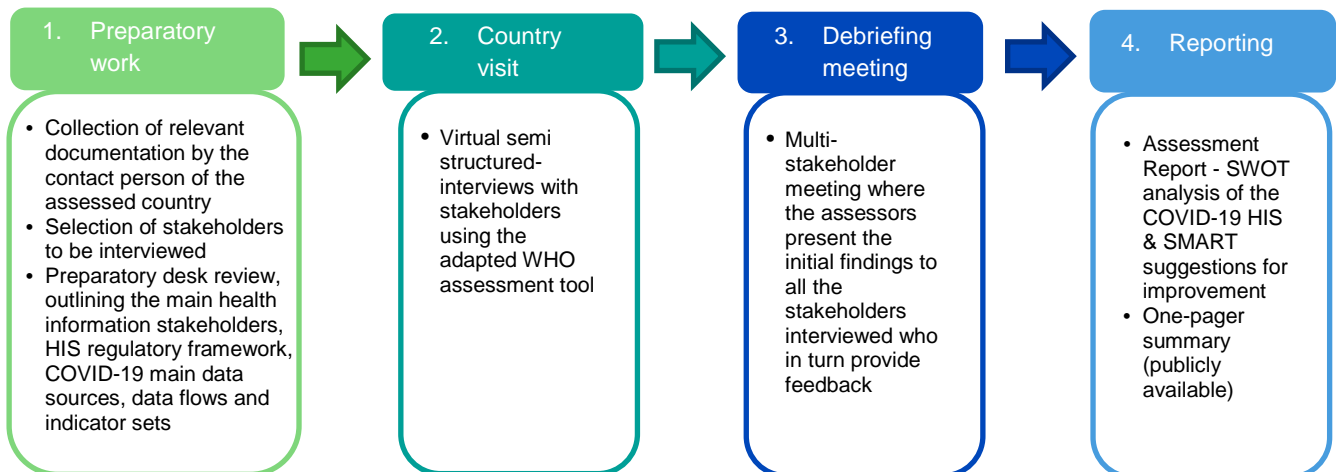## *Malta*

The Population Health Information Research Infrastructure (PHIRI) carries out COVID-19 Health Information System (HIS) assessments in selected countries that are part of the PHIRI consortium, mapping the Health Information System behind the data and information flows that monitor the effects of COVID-19 on population health.

AIMS OF THE COVID-19 HIS ASSESSMENTS

1. **Identify strengths and weaknesses** of the different data flows across Health Information Systems, whilst monitoring the (broader) effects of COVID-19 in the examined countries.
2. Provide opportunities for other countries to **learn from the experiences** gained during the assessments, and build on these when assessing their own Health Information systems and/or data flows.
3. Potentially **identify data sources** that may not have been used or fully exploited yet and feed them to the Health Information Portal.

4. **Create opportunities** for **engagement** and **knowledge exchange** with national stakeholders and authorities.
5. Contribute to **capacity building** across Europe, which in turn can contribute towards reducing health information inequalities within and between countries.
6. Identify key recommendations for **resilient Health Information Systems** and towards **increased preparedness** for future crisis.

METHODOLOGY OF THE COVID-19 HIS ASSESSMENTS

Each country is assessed by experts from another country within the PHIRI consortium. A detailed manual explains the procedure followed in the assessments, with the steps summarised below.

1. Preparatory work	2. Country visit	3. Debriefing meeting	4. Reporting
• Collection of relevant documentation by the contact person of the assessed country • Selection of stakeholders to be interviewed • Preparatory desk review, outlining the main health information stakeholders, HIS regulatory framework, COVID-19 main data sources, data flows and indicator sets	• Virtual semi structured-interviews with stakeholders using the adapted WHO assessment tool	• Multi-stakeholder meeting where the assessors present the initial findings to all the stakeholders interviewed who in turn provide feedback	• Assessment Report - SWOT analysis of the COVID-19 HIS & SMART suggestions for improvement • One-pager summary (publicly available)

An adapted version of the Health Information System assessment tool developed by the WHO Regional Office for Europe (2015), including the add-on module on Infectious Diseases (2021), is used to guide the interviews. The assessment covers data collections and data sources, data analysis, reporting, knowledge translation, governance and resources, best practices and identified gaps.

COUNTRIES INVOLVED IN THE PHIRI COVID-19 HIS ASSESSMENTS

The assessments are performed in Austria, Belgium, Italy, Greece, Hungary, Ireland, Malta, the Netherlands, Norway and Portugal by the end of the project (November 2023). Italy, Portugal, Ireland, Malta and Norway were assessed in the first semester of 2022.

Health Information System (HIS)

The main provider of public health services is the Ministry for Health (MFH), with the private sector providing mostly ambulatory services. The public health sector provides free services at the point of care. Malta and Gozo have one public acute general hospital each. The Superintendent of Public Health (SPH) and the Minister responsible for Health make recommendations to Cabinet for legal amendments in the relevant legislation. The SPH was overall responsible for the COVID-19 Public Health Response team (COVID-19 PH RT), that was set up to respond to the public health needs during the pandemic.

Data collections/sources

- The Public Health Act is an enabling legislation, containing the required provisions for COVID-19 data collection procedures and governance structure
- The COVID-19 PH RT team quickly adopted Go.Data by WHO, then developed its own data collection/management system
- *Cases*: Results sent daily to Data Management team (DMT) from Mater Dei Hospital (main state acute general hospital) lab, private labs and RAT providers. DMT updates Test, Track and Trace System (TTS) with new cases.
- *Mortality*: Daily sent to DMT, SPH, weekly to EuroMomo (excess mortality), enriched with demographic information, COVID-19 status, medical conditions and comorbidity, etc.
- *Testing*: Requests for testing made on the phone to helpline and through self-registration. Data captured in, matched with national central database and used by swabbing teams. Feedback on questions being asked by the public from Helpline team to COVID-19 PH RT team received
- *Hospitalisations*: Daily data sent to DMT by Bed Management Unit in Mater Dei Hospital (MDH) and Gozo General Hospital. Analysed and reported to ECDC.
- *Vaccination*: Development of custom-made system (Vaccination Registration System - VRS) integrated with EU Digital COVID certificates. Possibility to link the data to patient medications, healthcare activity data & identify vulnerable groups for prioritisation of vaccination
- *Molecular surveillance*: access to testing and sequencing data
- *COVID Alert Malta App*: Malta's national contact tracing app

Reporting and knowledge translation

- Daily (later weekly) press conferences were organized by the SPH
- Internal daily reports; dashboard available for the general public generated by the MFH available on Saħħa Facebook page & MFH website
- Basic information on COVID-19 provided in many languages to accommodate the foreign resident population, (im)migrants and migrant workers
- Television and Facebook were employed; engagement of political leadership and other government officials
- Dedicated sub-website located at covid19health.gov.mt with guidance for different sectors
- Hekk hu: scientific information page in Maltese with fact-checking on COVID/ health topics: run by healthcare professionals. It does not pertain to the MFH
- Engagement in infodemic management, mix of proactive and reactive approach to discuss health topics

Best practices

- Quick implementation of Go.Data which was adapted for COVID-19 with help from WHO
- Trust (and trustworthiness) in relation to health information had already been identified as a key priority in peacetime and was built over time
- Invested in national/ international networks before crisis
- Whole-of-government approach: e.g. ministries consulting with health ministry regularly
- Experts involved in an interdisciplinary manner to improve communication and dissemination activities
- Linkage of databases to ensure coverage of the vulnerable populations (e.g. prioritisation lists for vaccination)

Data Analysis

- All providers, public and private are obliged to report on all tests taken using the COVID Result Submission Portal (CRSP), unless a different submission channel is already in place with SPH
- Track & Trace System implemented by the DMT; holistic and integrated approach for all COVID data
- Unique person identifier provides opportunities to link data to other datasets
- Data analysis and quality control (standard checks such as missing data, misspelling of names, missing locality) are done by the DMT manually
- Daily upload of data on cases, mortality, vaccination and testing (and periodically for COVID Alert Malta) on GitHub

Governance and resources

- Collaboration with public and private laboratories
- Pandemic preparedness plan established prior to the COVID-19 pandemic, containing minor HIS elements in the strategy
- Employees performed multiple tasks at the same time and experienced a heavy workload
- Health Information was communicated via the Ministry Secretariat.
- The governance structure of the COVID-19 PH RT was clearly outlined and delineated internally within the Ministry
- Limited supply of data services and IT services necessitated outsourcing
- Multiple tasks were performed by volunteers in wave 1 of the pandemic

Identified gaps

- Malta's small size could hinder speed of uptake of innovative technologies in favour of manual methods especially when faced with shortage of resources
- Automated processes (for data validation and data quality checks) are essential when a system is faced with large data volumes
- Little promotion of GitHub: unawareness of its existence hinders the use of the data by researchers
- Minor health information system elements in the pandemic preparedness plan
- Difficulty to recruit IT profiles such as data specialists, data engineers

Assessment performed in:
May 2022