

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

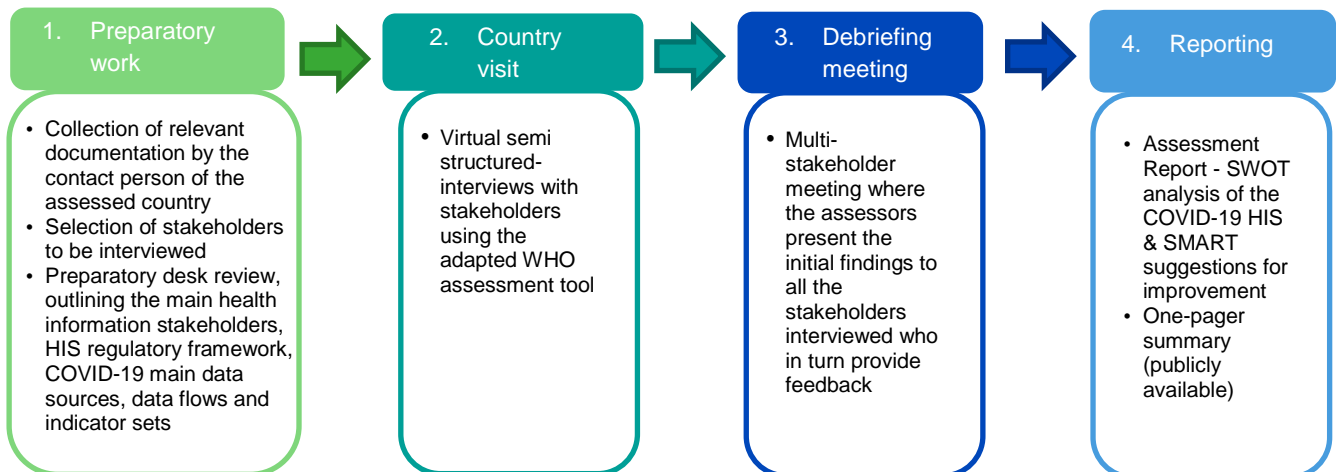
The [Population Health Information Research Infrastructure](#) (PHIRI) carries out COVID-19 Health Information System (HIS) assessments in selected countries that are part of the PHIRI consortium, mapping the Health Information System behind the data and information flows that monitor the effects of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



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 [Health Protection Surveillance Centre](#) (HPSC) within the [Health Service Executive](#) (HSE) is Ireland's specialist agency for the surveillance of communicable diseases including COVID-19. These stakeholders, together with the [Department of Health](#) (DoH), the National Health Intelligence Unit (NHIU) at HSE, [Health Information and Quality Authority](#) (HIQA), [Central Statistics Office](#) (CSO), [National Office of Clinical Audit](#) (NOCA), and [Economic and Social Research Institute](#) (ESRI) are important stakeholders in the Irish COVID-19 Health Information System. They form part of the COVID-19 Data Coordination Group (which includes the [Healthcare Pricing Office](#) and the Ordinance Survey Ireland, but not HIQA and ESRI).

## Data collections/sources

- Pre-existing national Computerised Infectious Disease Reporting (CIDR) system (HPSC) - expanded to include COVID-19 testing data and clinicians' notifications
- COVID Care Tracker (CCT) for contact tracing (HSE)
- Mortality (CSO)
- Molecular sequencing (UCD NVRL – National Virus Reference Lab)
- ICU Bed Information System (ICU-BIS) (NOCA)
- CoVax system for vaccinations (HSE)
- Serosurveillance (Seroepidemiology Unit – SEU within HPSC)
- Add-on COVID modules in well-established surveys eg SILC, Labour Force Survey (CSO)
- Ireland's COVID Tracker App (HSE)

## Data Analysis

- Extensive validations and quality checks in CIDR, also using Robotic Process Automation which also eliminates duplicates
- Lack of use and collection of a harmonised standard unique person identifier across different health datasets challenges data linking and analysis
- Indicators on COVID-19 cases, deaths, hospital admissions, ICU admissions analysed & reported
- Looking at the wider impacts of COVID-19 on the economy, labour market, social & wellbeing, transport, energy & tourism (COVID-19 Information Hub by CSO)
- Data collection systems across different hospitals and community primary healthcare are not harmonised (both manual and digital data collection in place)
- Modelling and foresight studies performed (universities, Irish Epidemiological Modelling Advisory Group - IEMAG)
- COVID-19 geospatial analysis underpinned via case geo-referencing via Health Atlas Ireland

## Reporting and knowledge translation

- Dashboards:
  - [Ireland's COVID-19 Data Hub](#) (joint collaboration between DoH, HSE, CSO, HPSC, NOCA)
  - [COVID-19 Information Hub](#) (CSO)
  - [Epidemiology of COVID-19 in Ireland](#) (HPSC)
- Regular reports published (by HPSC, HIQA, NOCA)
- Ad hoc and internal requests by policymakers and National Public Health Emergency Team for COVID-19 (NPHEM) to different stakeholders
- Expert Advisory Group (EAG) and COVID-19 Evidence Synthesis Team within HIQA support NPHEM
- Strengthened international reporting eg. by HPSC with ECDC
- Feedback to public health professionals on outbreaks and trends by NOCA & from behavioural/ attitude surveys for management response plan by ESRI
- Regular press conferences by the Chief Medical Officer (CMO)
- Direct communication with the media by the DoH
- Dot (exact location) and local service area feedback to Depts Public Health via Atlas Finder.
- Spatial displays (by LEA) on GeoHive facilitated by NHIU

## Governance and resources

- Strong collaboration between the different stakeholders
- Flexibility to mobilise resources; sufficient human resources (except epidemiologists and IT specialists)
- Great effort by DOH and HSE to roll out systems in a short and efficient manner eg CCT (for Contact Tracing), CoVax system (for vaccination).
- COVID-19 data collated and shared by CSO under different sections of the Statistics Act, following authorisation from the Minister for Health
- CIDR as a central surveillance system for COVID-19 informs both regional public health physicians and HPSC simultaneously
- Information management standards provided by HIQA but implementation and enforcement challenging
- Health Information Bill is being drafted - opportunities to address the current gaps in the legal framework for collection & sharing of health data

## Best practices

- Development of Robotic Process Automation - aligns COVID-19 data across information systems and navigates CIDR to process laboratory records, notifications and contact-tracing data (saved lot of manual work; rigorous quality checks) (HPSC)
- Deliverable outcomes are clearly stated in government research contracts at ESRI
- Multiple official independent bodies (CSO, ESRI, NOCA) publish COVID-19 related health data – strengthens credibility, transparency & public trust; HIQA & NOCA provide recommendations
- Establishment of a permanent Seroepidemiology Unit (SEU) within HPSC
- COVID-19 Data Research Hub set up by the CSO – researchers apply to access data for secondary use.

## Identified gaps

- The licensing framework of healthcare service organisations does not require periodic evaluations
- Difficulty to recruit epidemiologists and IT specialists
- Lack of use of a harmonised standard unique person identifier (3 identifiers available - PPSN / IHI / COVID ID) across different health datasets challenges data linking and analysis
- Underuse of the Eircode created logistic challenges in the geo-referencing process
- Electronic Health Records (EHRs) are not in place
- Data collection systems across different hospitals and community primary healthcare are not harmonised (both manual and digital data collection in place)
- Data from the private healthcare sector is not submitted to the HSE - no legal framework in place; unclear who owns GP data
- IT systems security issues – cyberattack in May 2021