Welcome to the

Lessons learnt from Covid-19 surveillance and other epidemics

Second expert webinar
21-9-2022

Housekeeping rules

➢ Please make sure your screened name reflects first and last name
➢ Please mute your mic on entry and switch off camera
➢ Please raise a digital hand when you have a question or comment
➢ Unmute and switch on camera (optional) when given the floor
➢ Briefly state name and affiliation before asking the question or making the comment
➢ Please note that this webinar will be recorded

NIVEL Research for better care

National Institute for Public Health and the Environment
Ministry of Health, Welfare and Sport

RCSI

EUHealthSupport consortium; contact [5.1.2e]@rivm.nl

AGENDA - Postcovid Surveillance Webinar

1. Welcome and introduction by ECDC and DG SANTE (10')

2. Scoping review and survey results (25')

3. Discussion and Q&A (10')

4. Break-out sessions (30')

5. Plenary discussion break-out sessions (10')

6. Wrapping up and adjourn (5')

Postcovid Surveillance Webinar

1. Welcome by ECDC and DG SANTE

Background of the study

- EUHealthSupport – consortium since 2018

- Experiences from implementing surveillance during the response to the COVID-19 crisis and earlier public health emergencies

- Parameters for the creation of integrated digital surveillance systems, collecting data real-time and using artificial intelligence, where appropriate

- Deliverables:
  - ➢Literature review / background paper
 - ➢Webinars
  - ➢Survey
  - ➢Discussion paper

Lessons learnt from Covid-19 surveillance and other epidemics

Scoping review results

NIVEL
Research for better care

National Institute for Public Health and the Environment
Ministry of Health, Welfare and Sport

RCSI

EUHealthSupport consortium; contact 5.1.2e @rivm.nl

Flowchart of included literature

Identification

Studies identified through PubMed searching
(n = 798)

Studies identified through grey literature sources
(n = 506)
GreyLit (n = 16) and WHO Library (n = 490)

Screening

Studies screened by title abstract
(n = 1304)

Studies excluded
(n = 943)

- PubMed: did not meet inclusion criteria (n = 578)
- Grey literature: did not meet inclusion criteria (n = 365)

Eligibility

Full-texts assessed for eligibility
(n = 361)

- PubMed: (n = 221)
- Grey literature: (n = 140)

Full-texts excluded with reasons
(n = 263)

- Reasons for exclusion: study design (n = 35), outcome (n = 127), disease (n = 5), exposure (n = 56), population (n = 3), other (n=37)

Included

Studies included
**(n = 98)**

Characteristics of studies

- Mostly non-EU countries (US and China)

- Disease: Mostly influenza (44.8%) or covid (33.3%)

- Early detection is main objective (60.5%) of studied systems, other objectives like monitoring outbreaks and viral strains also mentioned

- Syndromic (44.9%) and/or sentinel surveillance (33.9%) are most commonly reported designs

- Hospital, laboratory and/or primary care data reported as primary data sources by studies, new data sources like social media are emerging

Study regions

| Source	%
Hospital	54,4%
Laboratory	34,2%
Primary care	19,0%
Social/online media	10,1%
Search platforms	10,1%
Mobile devices/GPS/Bluetooth	10,1%
Other	8,9%
Helplines	6,3%
Absenteeism	6,3%
Medication/pharmacy/medical product sales	5,1%
Circumstantial	5,1%
Reporting surveillance platform	3,8%
International data sources	3,8%
Panel	3,8%
Claims data	1,3%
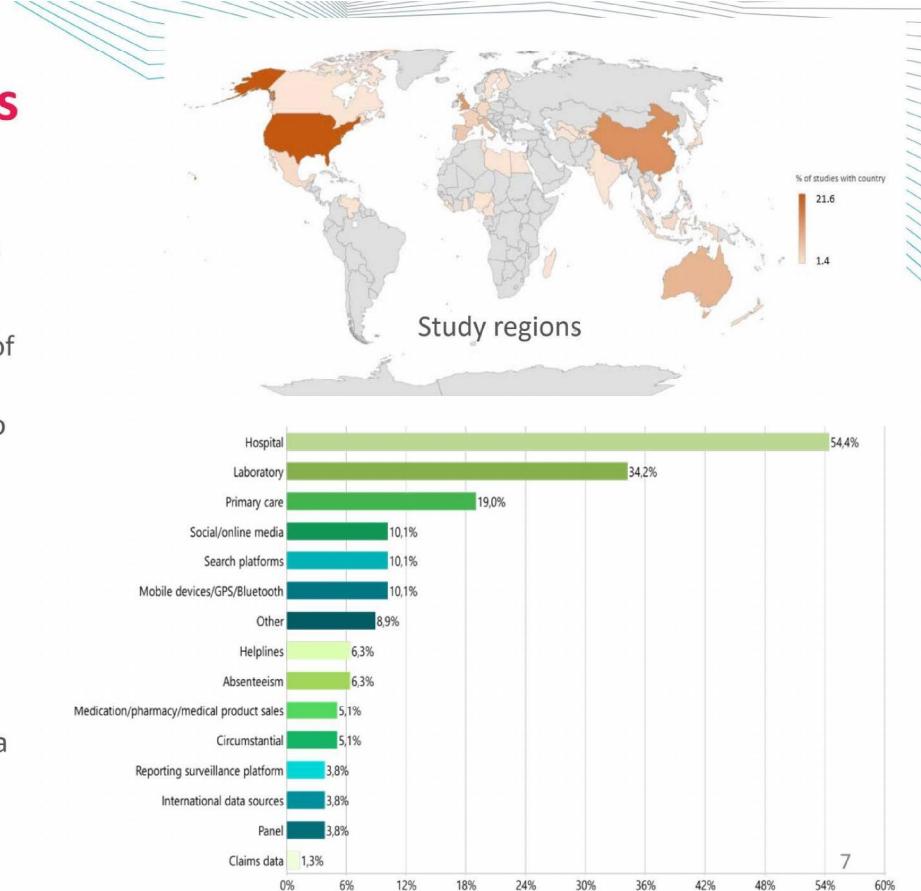
Identified parameters of surveillance systems

Systems thinking approach to understanding the parameters of a surveillance system
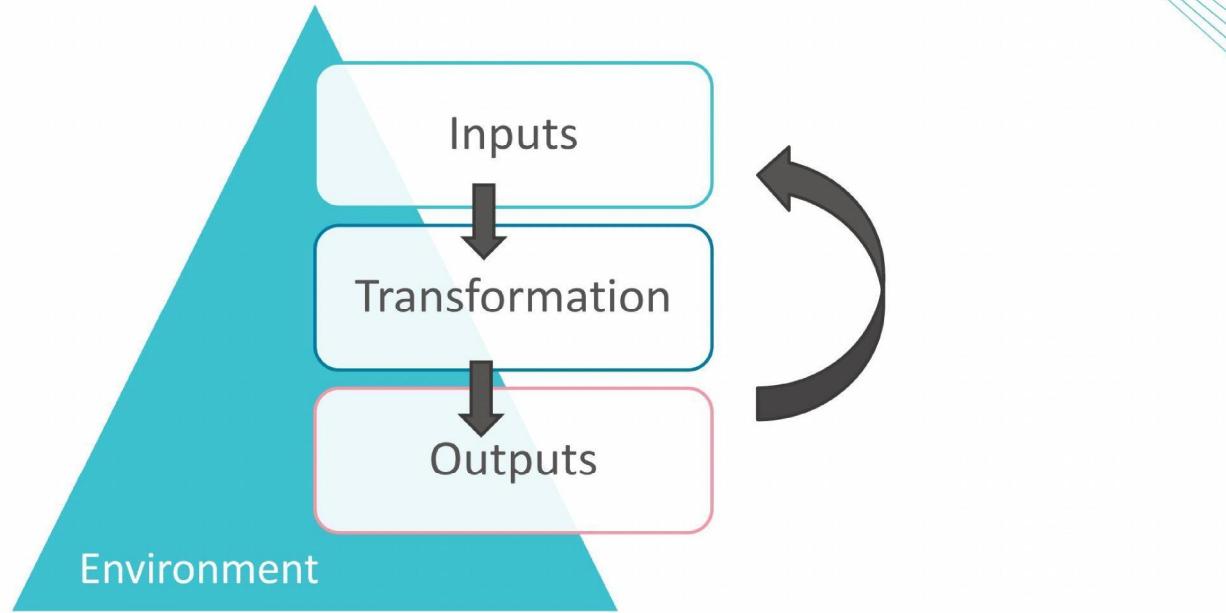
Which environmental factors were identified?

Policy context
Prioritisation by government
Sufficient & stable funding
Strategic planning of system and
public health chains
Communication with general public

Environment

Legal context

International health regulations
Decision 2119/98/EC
National level laws and regulations
Data sharing agreements

Collaborations

One Health
Cross-border and cross sector
collaborations

10

Which inputs were identified?

Inputs

Protocols & guidelines

Human resources

Technical resources

Data

Environment
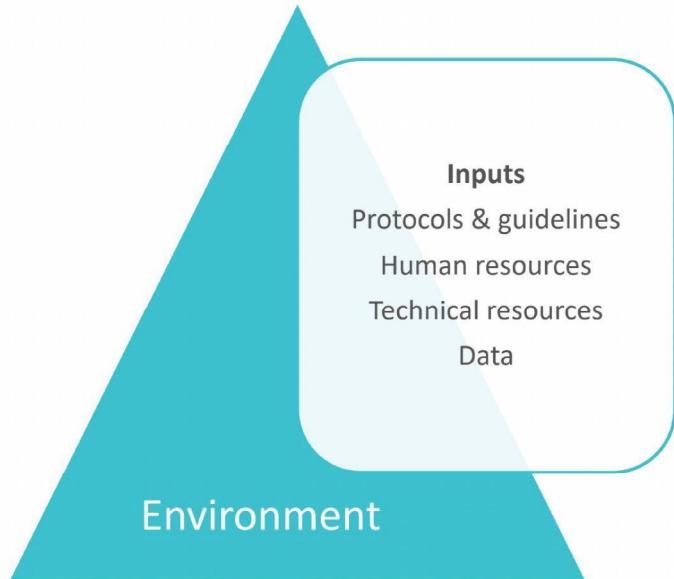
Health care data remains status quo but other data sources may complement, according to literature this may be:
- Social media
- Absenteeism data
- Wastewater
- Next generation sequencing
- Pharmacy purchases and claims data

- New sources have advantages (e.g. low costs) but also disadvantages (e.g. unreliable data)

Transforming inputs into outputs
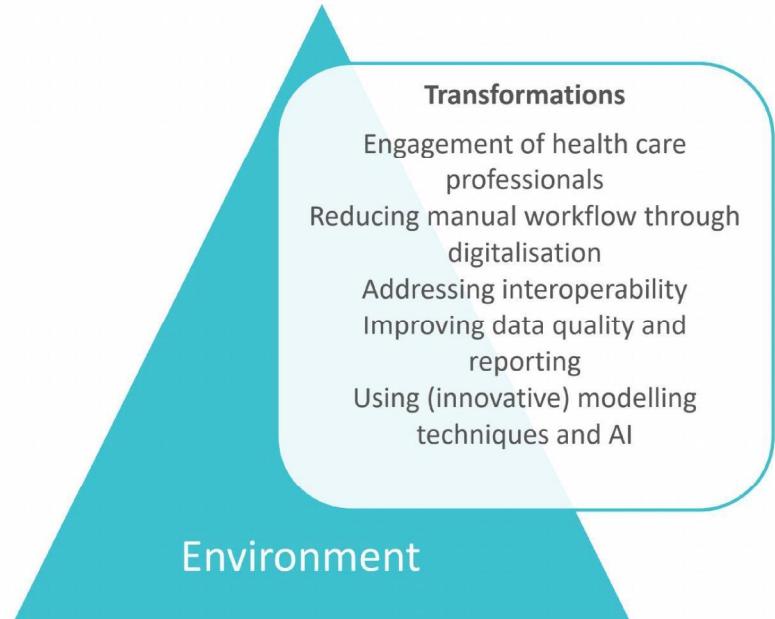
Outputs

Using open-source dashboards for integrating data and communicating about data

Transformations

Engagement of health care professionals
Reducing manual workflow through digitalisation
Addressing interoperability
Improving data quality and reporting
Using (innovative) modelling techniques and AI

Environment
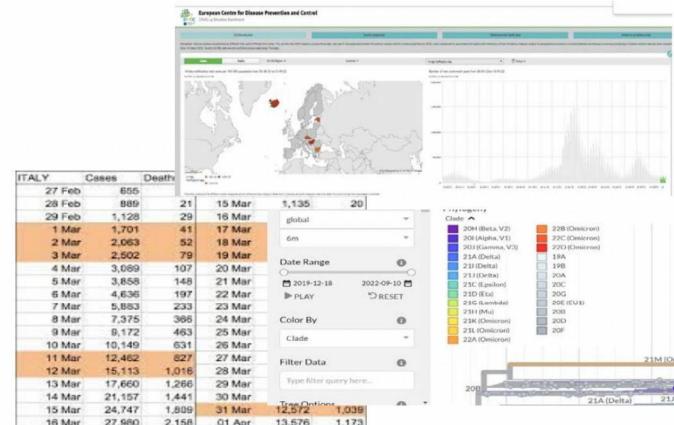
Conclusions
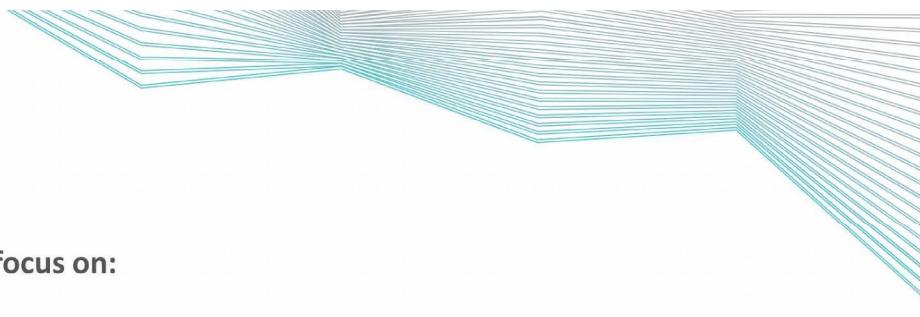
Great majority of included studies include/focus on:

- Non-EU countries (US, China)
- Disease: covid or influenza
- Early detection
- Syndromic and/or sentinel surveillance
- Hospital, laboratory or primary care data

Parameters identified for creating and sustaining surveillance systems

- Environment: Policy and legal factors to consider; collaborations to enable systems
- Inputs: Protocols, human and technical resources, data considerations
- Transformations: Engagement of health care professionals, digitalisation, interoperability, data quality & modeling techniques
- Outputs: Exploring dashboards; can support with integration of data and communication

13

Lessons learnt from Covid-19 surveillance and other epidemics

Survey results

NIVEL
Research for better care

National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

RCSI

EUHealthSupport consortium; contact [5.1.2e]@rivm.nl

Background information on the respondents

- 48 valid responses
- 28 EU/EEA and associated countries and regions
- 68.8% government employed
- 39.6% more than 20 years experience

15
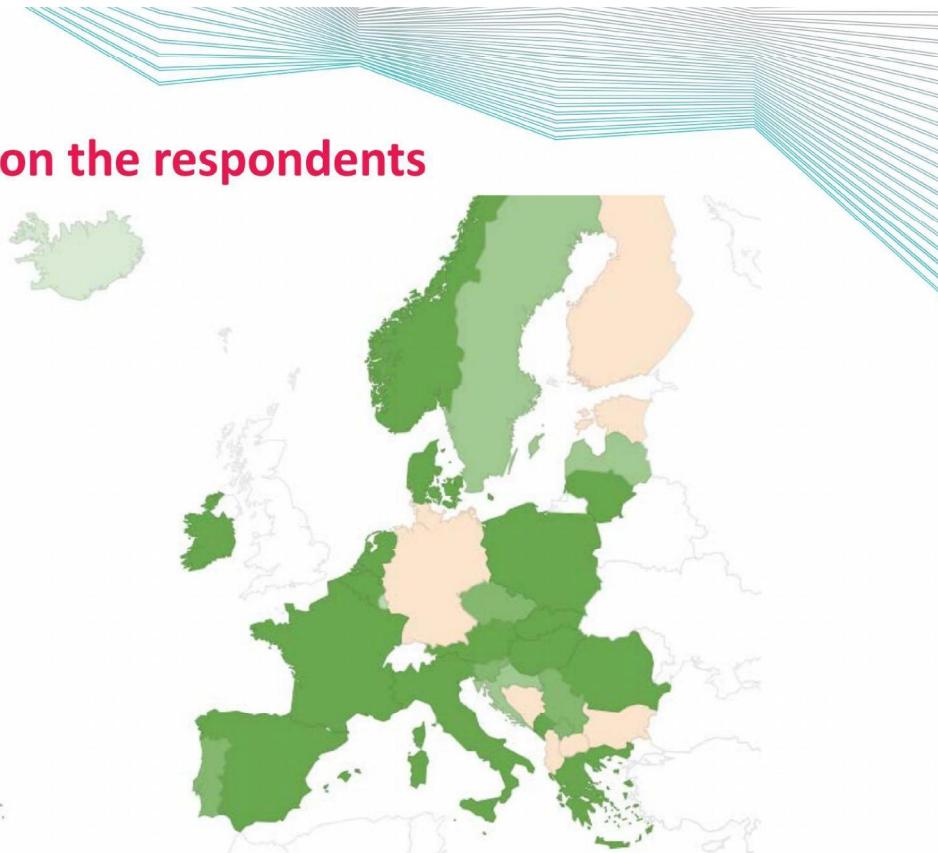
Type of surveillance systems per country and recent changes in relation to COVID-19
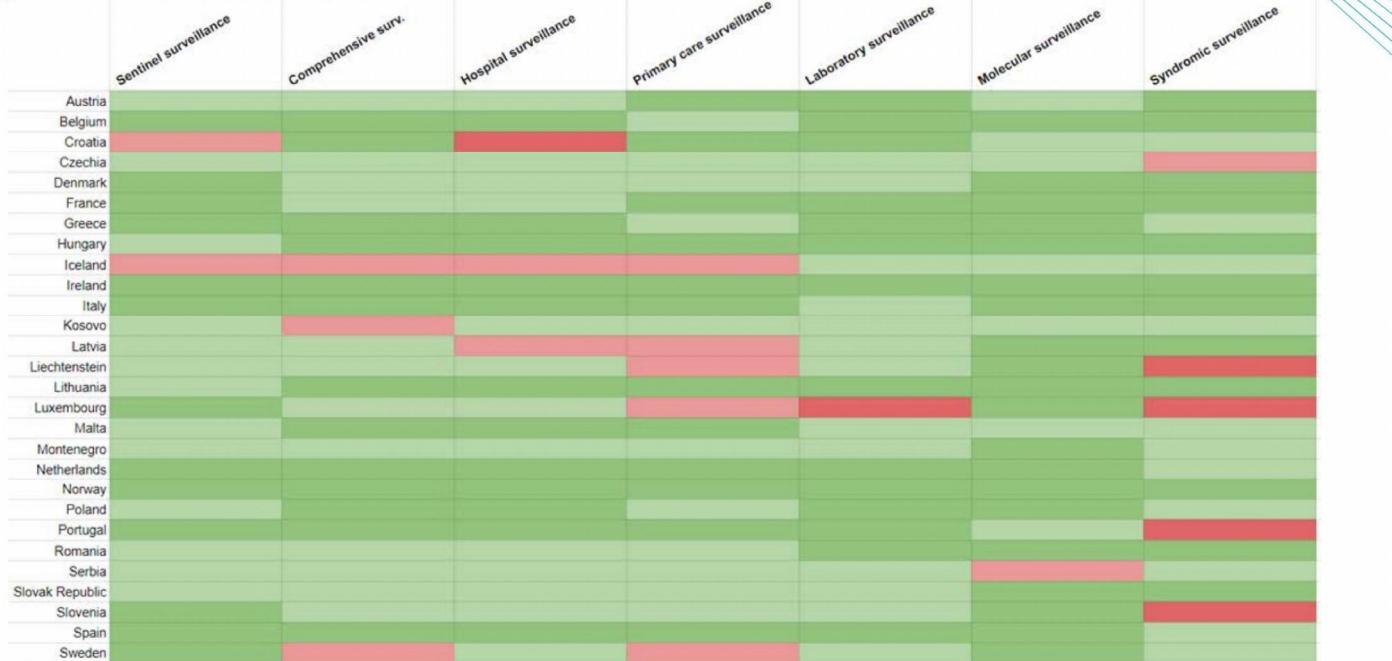
Nature of changes to surveillance systems

General improvements to digitalisation
- Introduction of new central registries
- Increased efforts to automize reporting/registration
- More (almost) real-time data
- Integration of hospital data

COVID-19 as a catalysator
- Notifiable disease
- Use of multiple data sources to capture disease spread
- Necessity of new network establishment

Use of surveillance system for disease groups
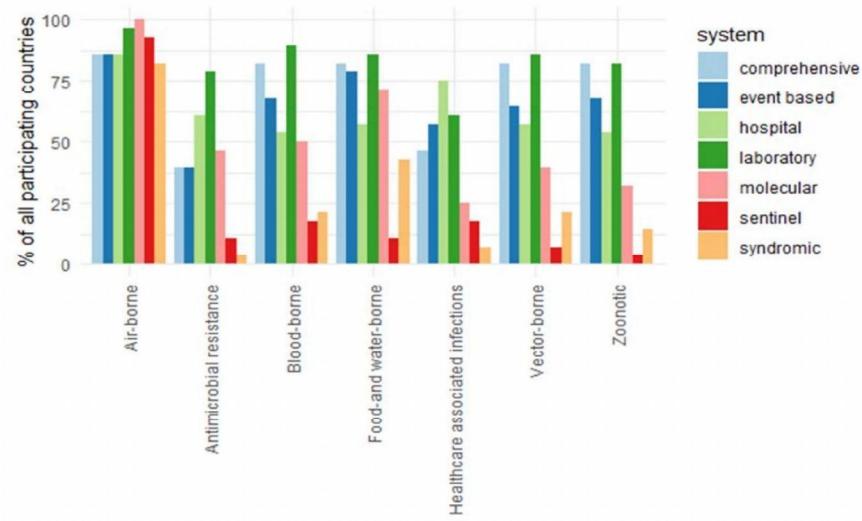
Use of new data sources
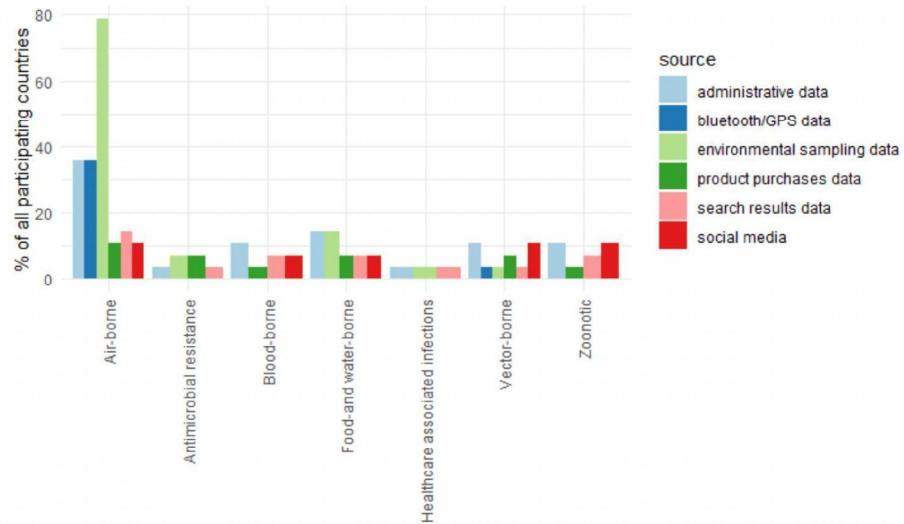
Using new data sources

General advantages
- Relative low costs
- Speed of data collection
- Filling gaps from traditional data sources

Case study: wastewater
- Well-established by some countries
- Gained in popularity during COVID-19
- Independent from human behaviour (bias)
- Valuable addition to public health infrastructure?

General disadvantages
- Difficulty in finding funding
- Human resources gaps
- Uncertainty on reliability
- Lack of standardisation
- Initial aim of data collection differs

Case study: contact tracing apps
- Data protection
- General view on whereabouts
- Lack of uptake and distrust

Standardisation of information systems &
Data extraction at the national level

Extent of standardisation of systems in...
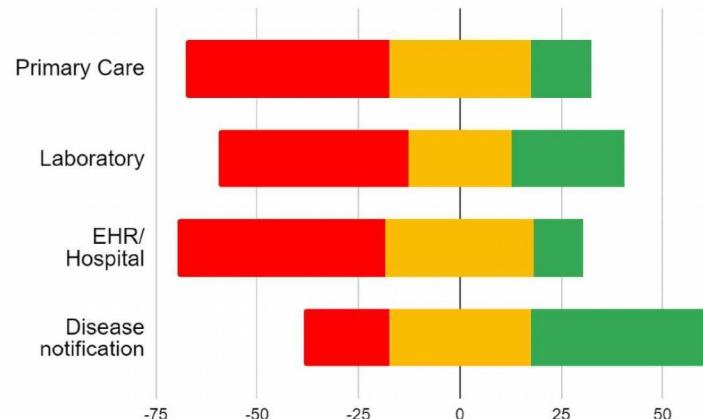
To what extent is the software used for the following information systems in your country of reference standardised? Please indicate from not standardised (1 star) to fully standardised (5 stars).

Extent of automated data extraction in systems in...
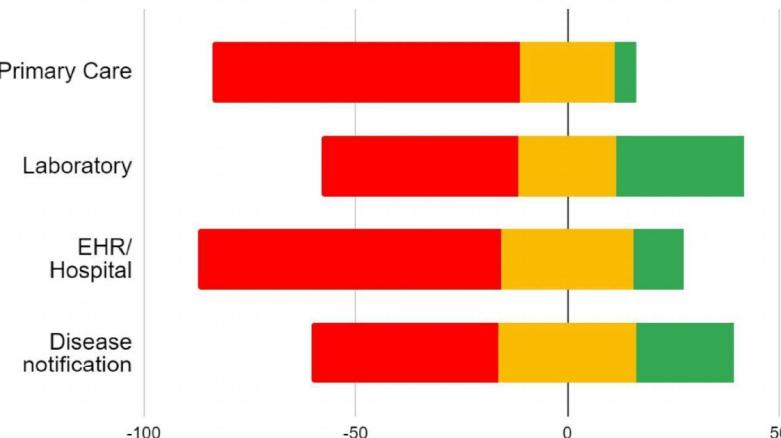
To what extent is data extraction/reporting to the national competent authorities done using manual data data extraction/reportingextraction (1 star) to automatic reporting (5 stars) for the following information systems?

21

Legal context: barriers & facilitators re surveillance

Barriers	Facilitators
National law • Rigidness of wording and ambiguity • Laws implemented before surveillance type • Strict interpretation on personal identifiers • Reliance on other national actors **International law** • GDPR • Interplay with national implementation • Discrepancy between answers • Differences in interpretations of same law	**Legislative solutions** • Notifiable disease law • Law as response to COVID • Avoid use of personal data **Political leadership** • Increased emphasis on surveillance by executives • Special authorisation of data use • Ad-hoc solutions acceptable to all stakeholders?

22

Policy aspirations

Increased data sharing between organisations
- Strengthen linkages between national institutions
- Define data landscape and assess interdependencies

Technological innovation
- Standardised (national) ICT tools
- More interaction with data subjects
- More automatic extraction

Alterations to national or EU legislation
- Mandate the sharing of certain data types
- Ease GDPR interpretations

Prioritisation of disease groups or data types
- SARI
- Medical records