Postcovid Surveillance - Lessons learnt from COVID-19 surveillance and other epidemics

14-2-2023

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 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:
  - Scoping review / background paper
  - Survey
  - Webinars
  - Discussion paper

European Commission

DIRECTORATE-GENERAL | SANTE

Health and Food Safety

ecdc

EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

Lessons learnt from COVID-19 surveillance and other epidemics

Scoping review results

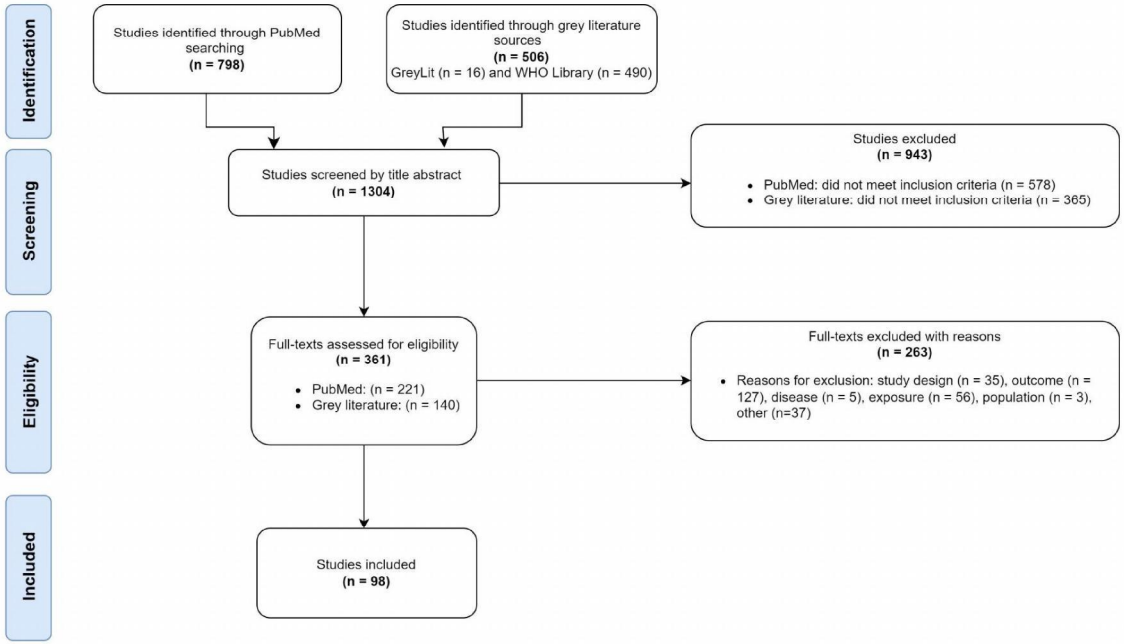
NIVEL
Research for better care

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

RCSI

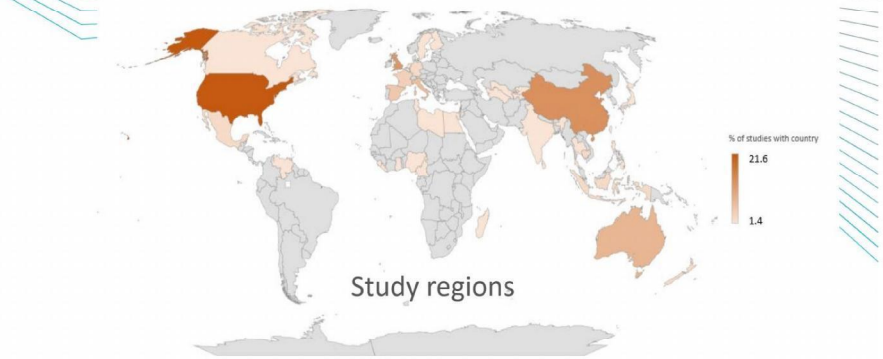
EUHealthSupport consortium; contact 5.1.2e @rivm.nl

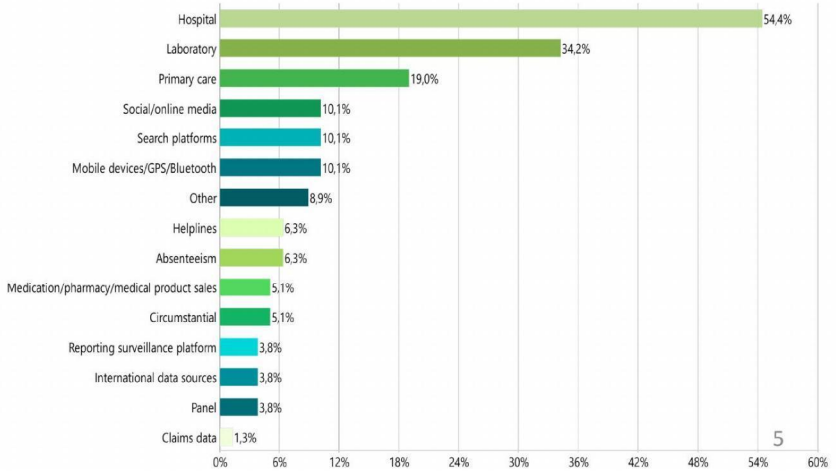
Flowchart of included literature



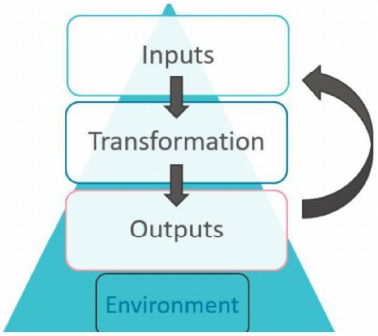
Characteristics of studies

- Mostly non-EU countries (US and China)
- Disease: Mostly influenza (44.8%) or COVID-19 (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





Conclusions scoping review



Great majority of included studies include/focus on:

- Non-EU countries (US, China)
- Disease: COVID-19 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

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

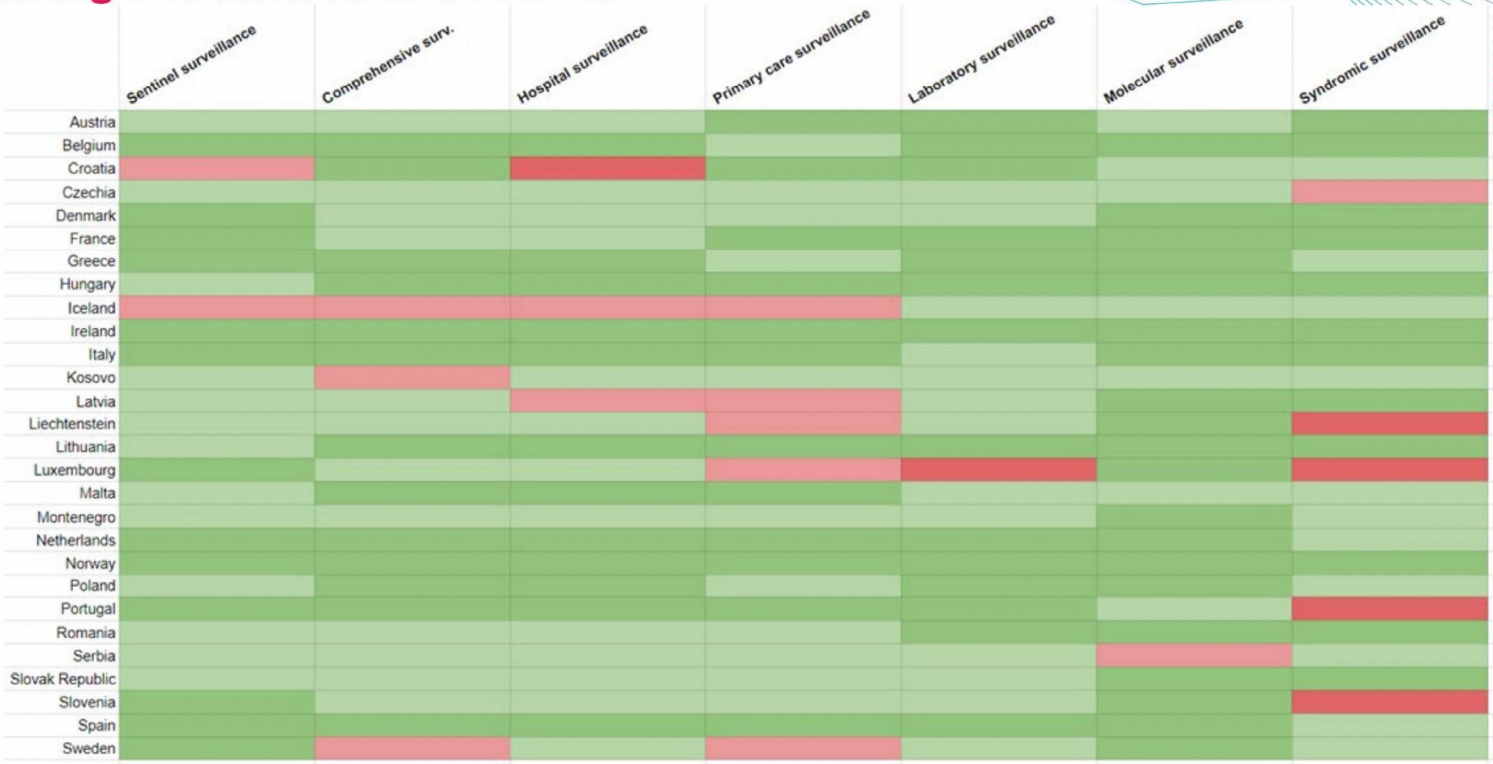
RCSI

EUHealthSupport consortium; contact 5.1.2e @rivm.nl

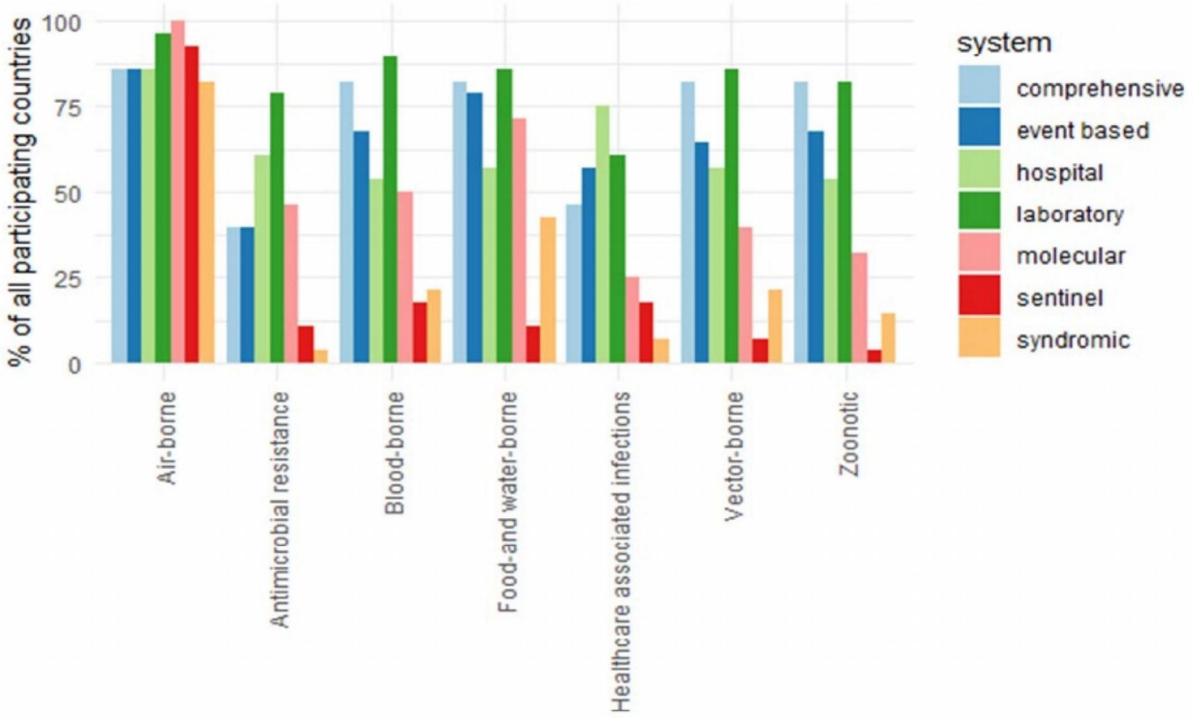
Background information on the respondents

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

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

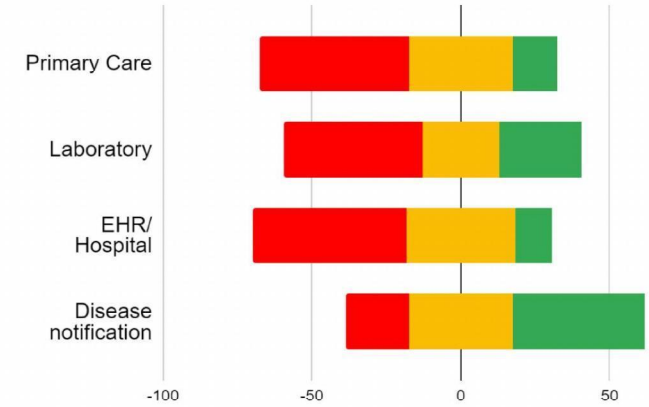


Use of surveillance system for disease groups



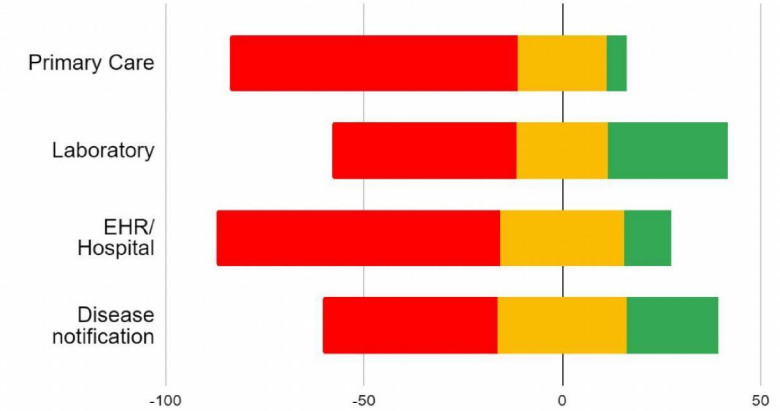
Standardisation of information systems &
Data extraction at the national level

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 extraction/reporting (1 star) to automatic extraction/reporting (5 stars) for the following information systems?

Legal context: barriers & facilitators regarding surveillance

Barriers

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

Facilitators

Legislative solutions

- Notifiable disease law
- Law as response to COVID-19
- 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

Lessons learnt from COVID-19 surveillance and other epidemics

Webinars

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

Webinars

Target group

- Key stakeholders and experts at EU level.

Objectives

- To feed back on results of scoping review and survey (plus mentimeter)
- To facilitate an exchange of practices and lessons learnt on the following main topics (break out sessions):

1. *Legal barriers and legal solutions* for data sharing
2. *Digitalisation*, including the use of new data sources
3. *Data integration*, such as technical aspects to data linking and standardisation of case definition

Lessons learnt from COVID-19 surveillance and other epidemics

Integrating all results – *discussion paper*

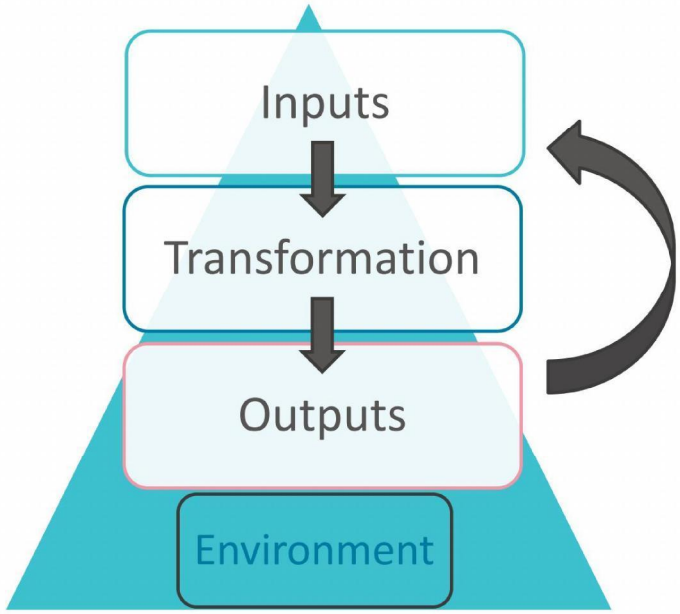
NIVEL
Research for better care

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

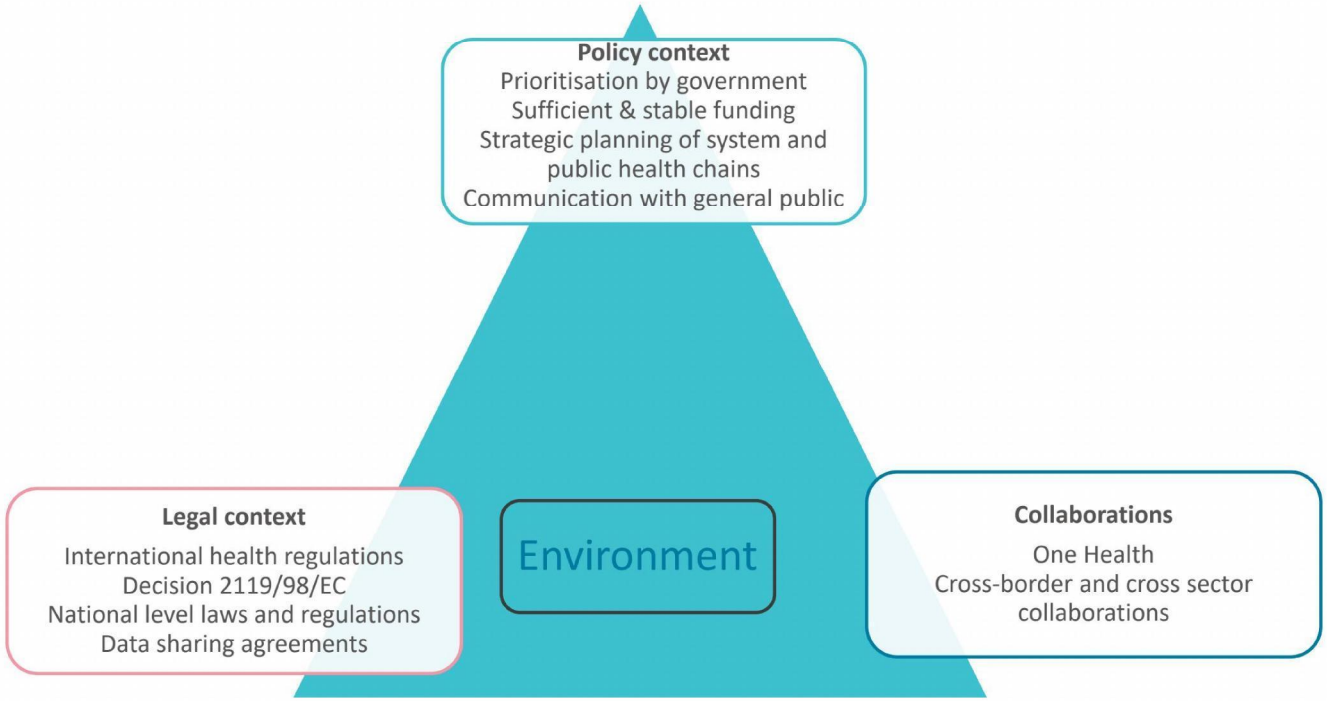
RCSI

EUHealthSupport consortium; contact 5.1.2e @rivm.nl

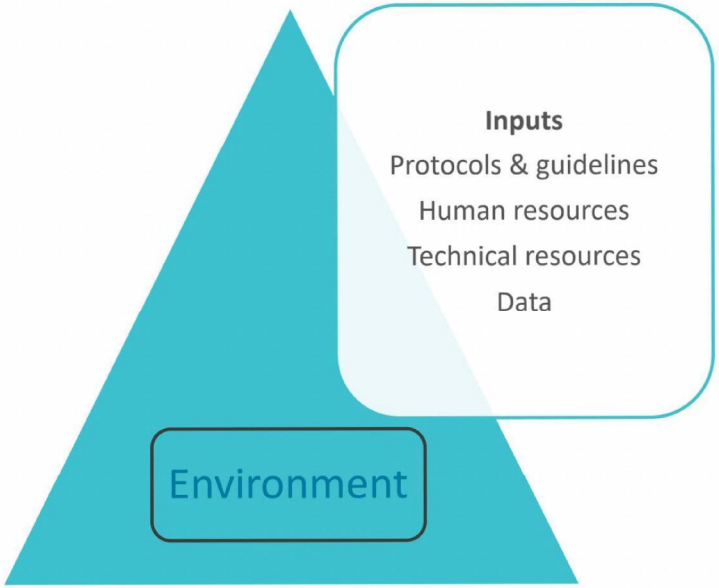
Systems thinking approach to understanding the parameters of a surveillance system



Which environmental factors were identified?



Which inputs were identified?



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

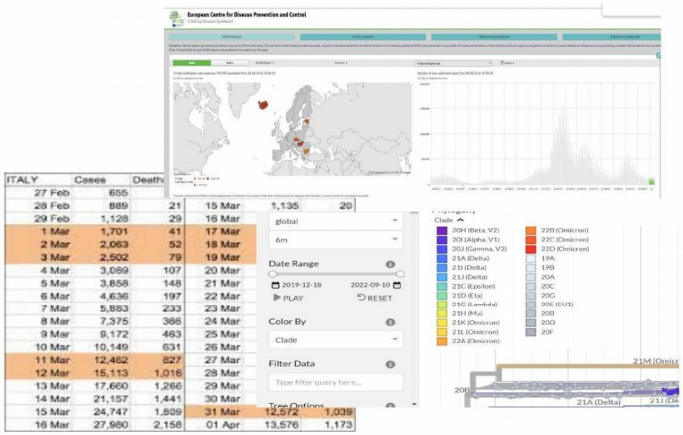
Outputs

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

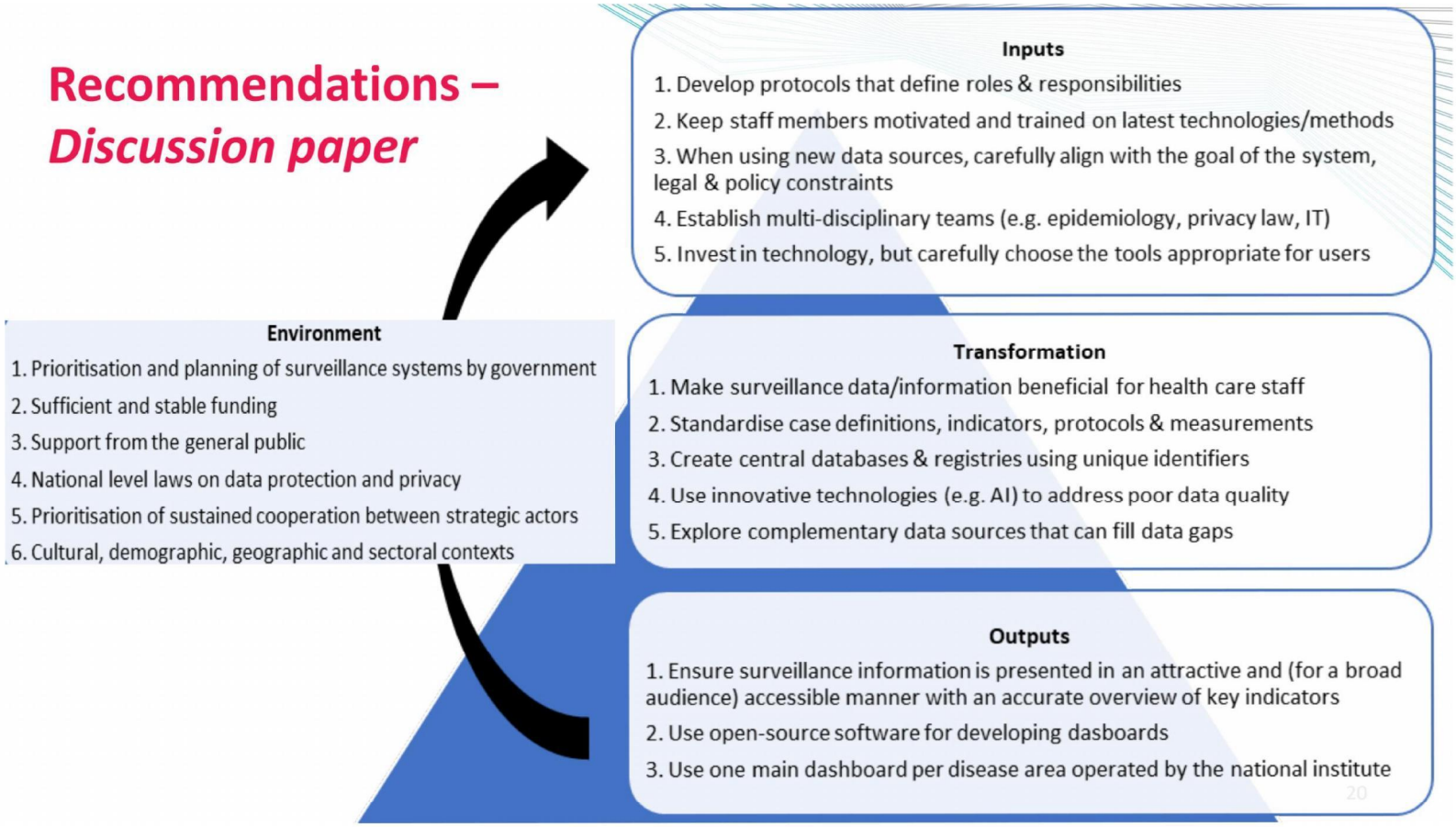
Transformations

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

Environment



Recommendations – *Discussion paper*



Thank you

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