Overview of European level monitoring and data collection

Nick Bundle, ECDC
GenEpi-BioTrain 13 December 2024

Overview

Learning objective: Understand how EU/EEA-level RSV surveillance is conducted, from data collection to reporting and dissemination.

1. Regional integrated surveillance objectives
2. Respiratory virus surveillance types
3. Legal basis for RSV
4. Data flows
5. Summary of RSV epidemiology to week 49, 2024
6. Tour of European Respiratory Virus Surveillance Summary (ERVISS)

Regional integrated surveillance objectives

Surveillance objectives

1. monitor spread, intensity and temporal patterns of respiratory viruses in different populations
2. monitor severity, risk factors for severe disease, impact on healthcare systems
3. monitor changes and characteristics of circulating and emerging respiratory viruses
4. describe burden of disease
5. assess vaccine effectiveness

Operational considerations for respiratory virus surveillance in Europe

18 July 2022

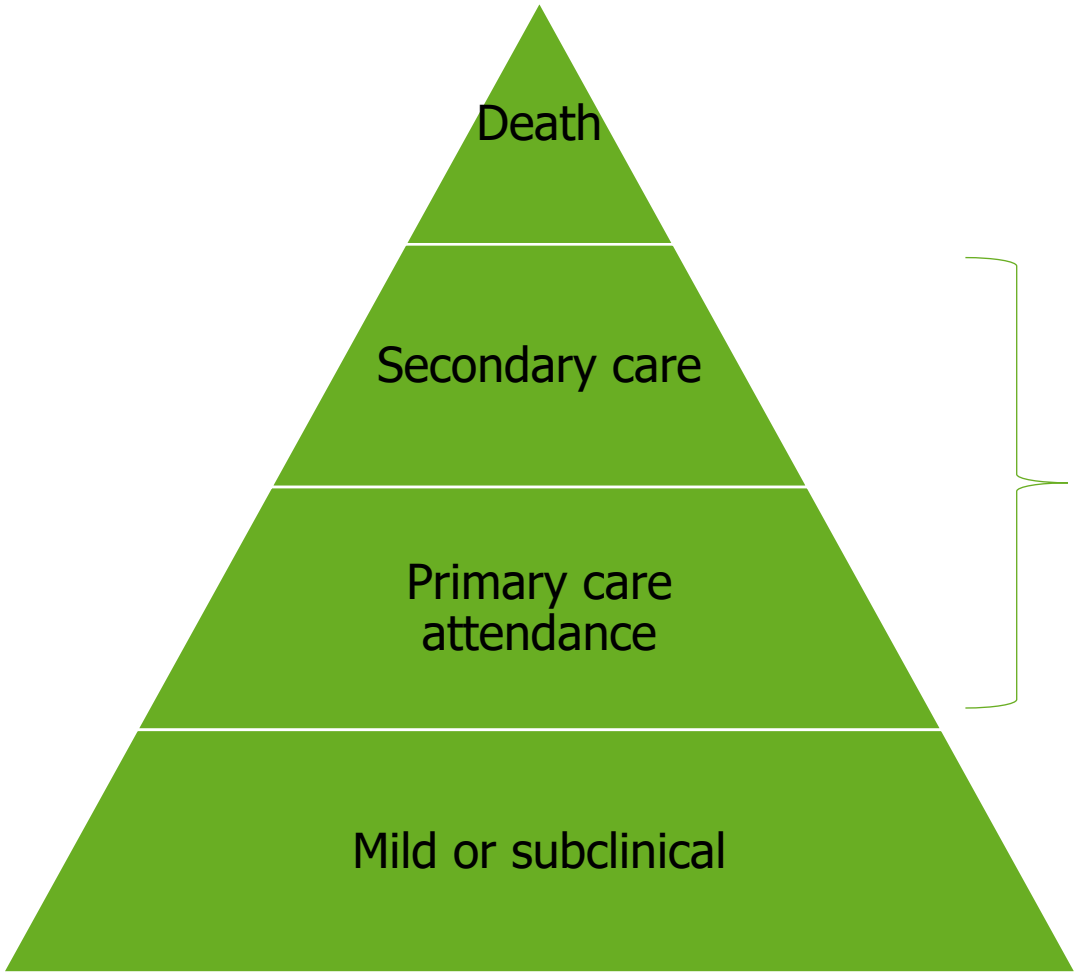
https://www.ecdc.europa.eu/en/publications-data/operational-considerations-respiratory-virus-surveillance-europe

How?

- Population-based surveillance with syndromic case definition and multiplex virological testing
- Non-sentinel laboratory-based surveillance
- Other complementary surveillance systems and studies

Integration is a big focus of post-pandemic respiratory virus surveillance - still a work in progress in many countries and at ECDC!

Respiratory virus surveillance types



Population-based, syndromic case definition → virological testing (multiplex)

High quality, estimate incidence and contribution of pathogens to respiratory disease in the population, risk factors, vaccine effectiveness

SARI

Often sentinel, recommend all cases to be tested.

Clinical vs electronic health records

ILI/ARI

Usually sentinel, few patients swabbed by GP each week following a pre-defined strategy

Non-sentinel laboratory-based surveillance

Testing based on clinical need, screening etc. Many settings.

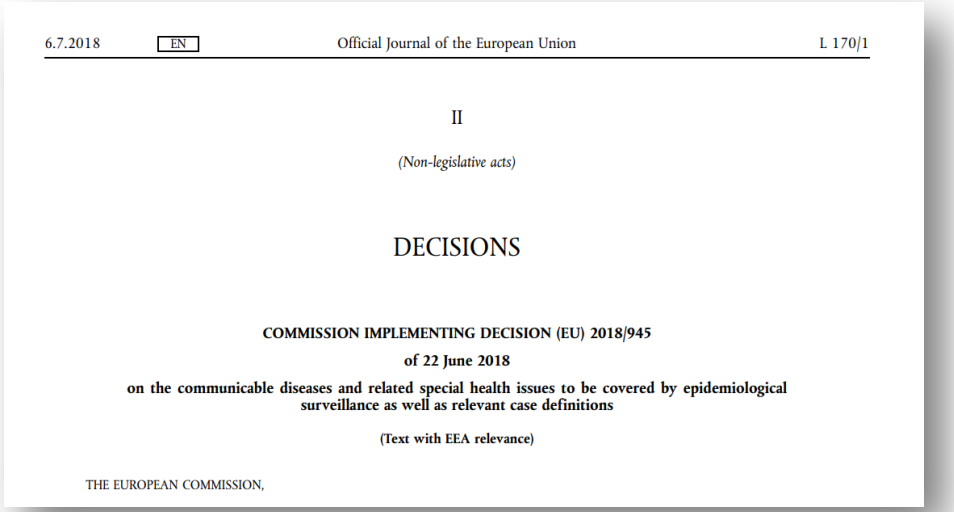
High counts, trends, may provide early or out-of-season signals, but biases often unknown

Complementary systems and studies

e.g. other syndromic surveillance, participatory surveillance, wastewater surveillance, mortality monitoring, outbreaks, LTCF, VE studies

Legal implementing acts for notifiable diseases

Hoping to be adopted in 2025



6.7.2018 EN Official Journal of the European Union L 170/1

II

(Non-legislative acts)

DECISIONS

COMMISSION IMPLEMENTING DECISION (EU) 2018/945

of 22 June 2018

on the communicable diseases and related special health issues to be covered by epidemiological surveillance as well as relevant case definitions

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Proposal: Communicable diseases and related special health issues to be notified at the Union level:

- RSV: Indicator-based surveillance

Clinical Criteria

At least one of the following:

— ARI

— ILI

— SARI

Laboratory Criteria

At least one of the following:

— Detection of RSV nucleic acid in a clinical specimen

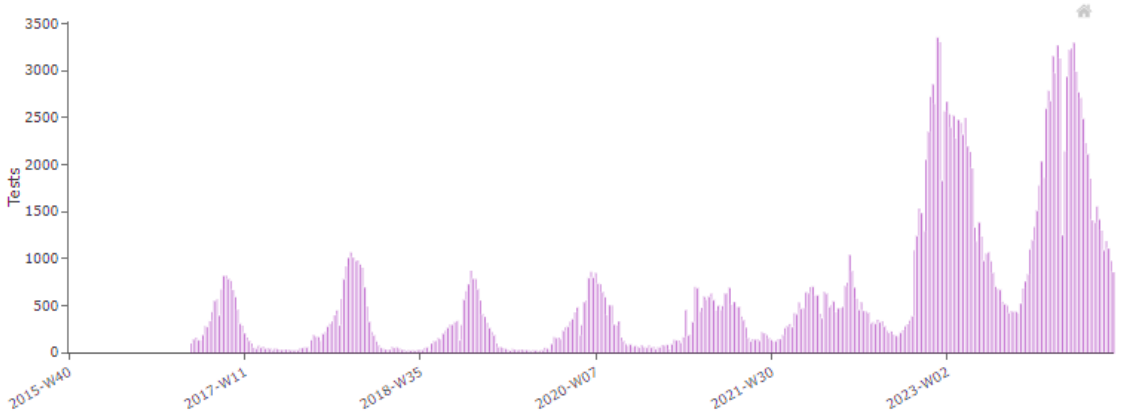
— Identification of RSV antigen in a clinical specimen

— Isolation of RSV from a clinical specimen

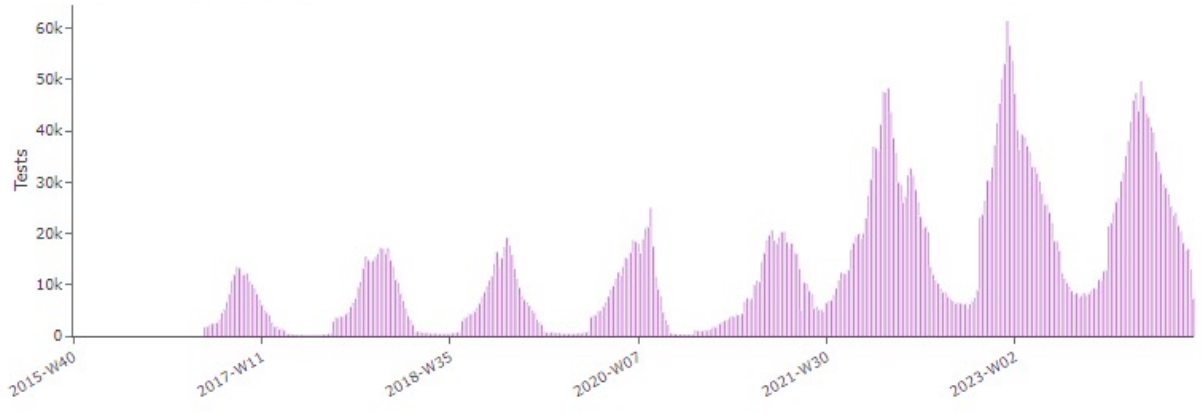
Data since 2016 despite voluntary reporting

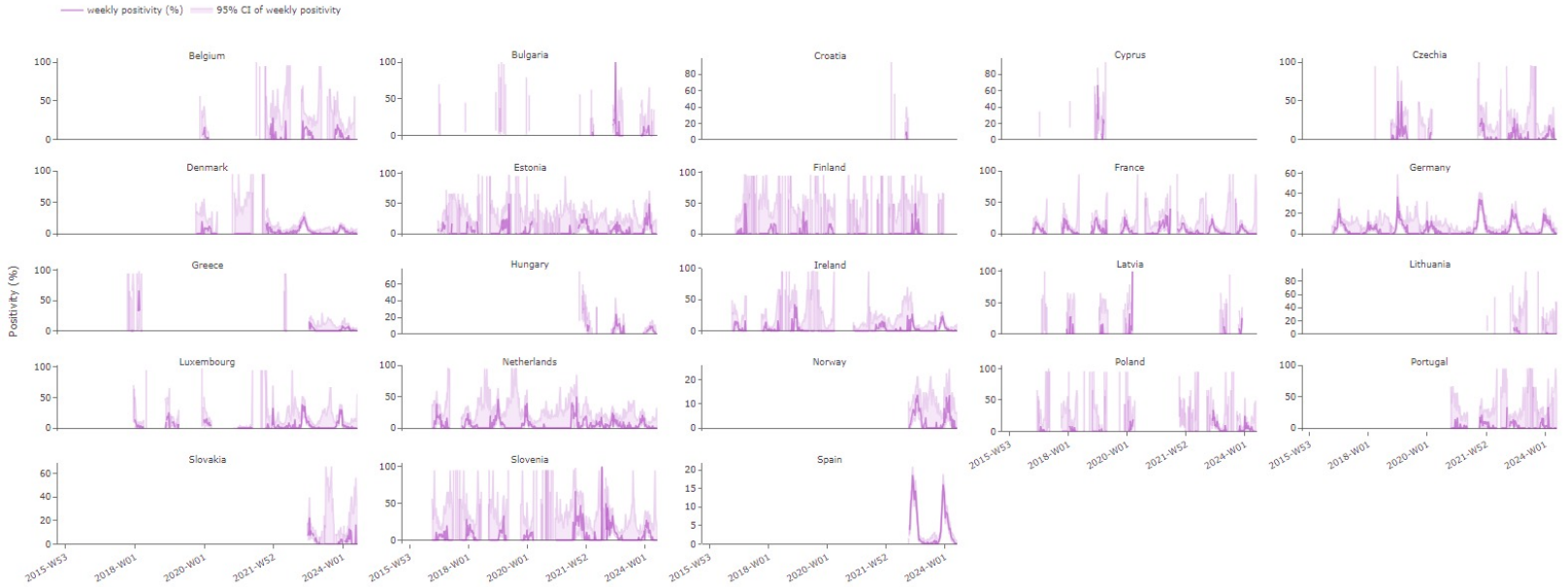
Historical trends based on multiple countries' data

Aggregate tests from ILI/ARI virological surveillance



Tests from non-sentinel laboratory-based surveillance





- Weekly tests up to ~3k ILI/ARI virological surveillance, ~50k non-sentinel in recent years
- Year-round testing reported since 2021 with increasing volume

Data flows

National

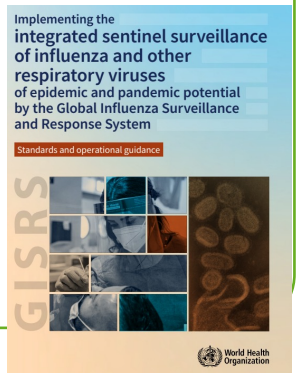
- Compile data from sub-national systems or reporting sites
- Nominated Operational Contact Points report weekly data to ECDC via TESSy:
  - Case-based and/or
  - Aggregate age-specific counts of:
    - ILI/ARI/SARI cases
    - Tests, detections, hospital, ICU, death by RSV type/group

ECDC

- Coordinate surveillance with WHO/EURO
- Coordinate EU/EEA respiratory viruses surveillance network (epi and micro)
- Define metadata for TESSy reporting
- Interpret and report data weekly via https://erviss.org/

WHO

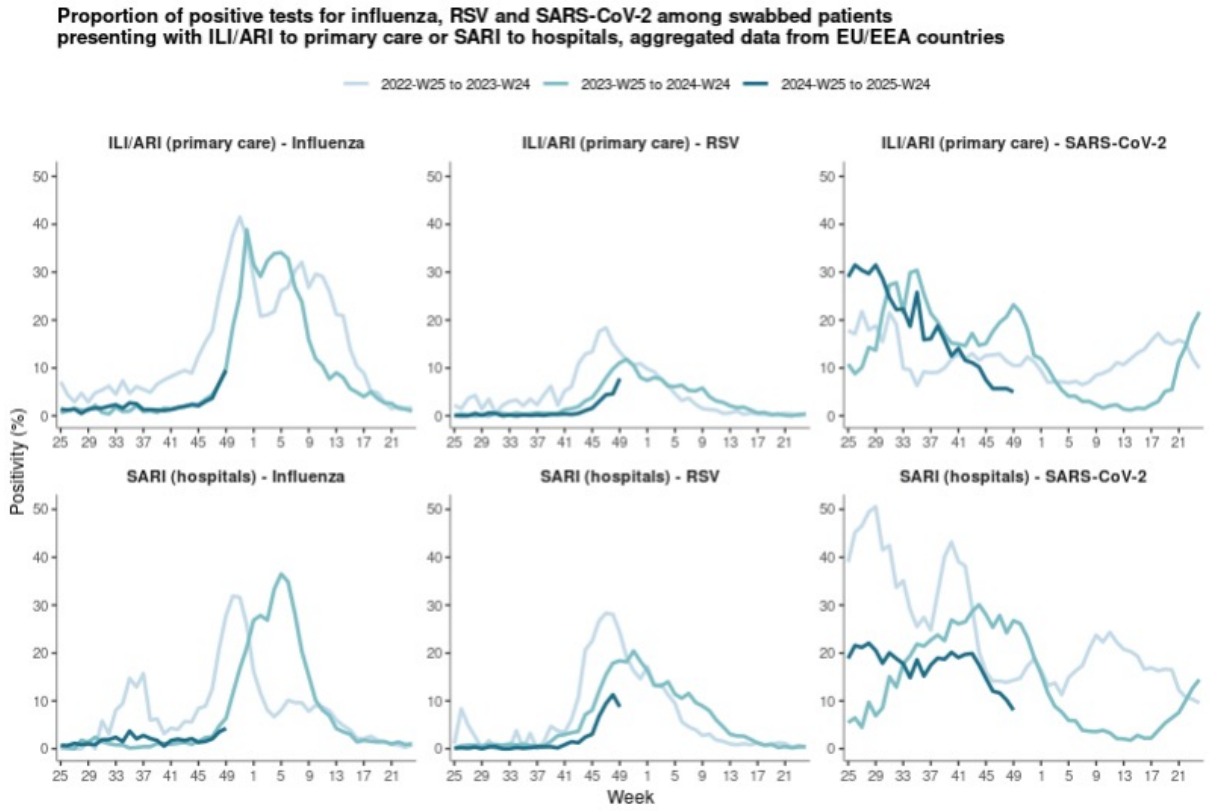
- WHO/EURO report data onwards to HQ RespiMart for display in Global outputs
- WHO HQ coordinates expanded Global Influenza Surveillance and Response System (GISRS), which now includes RSV and SARS-CoV-2



https://www.ecdc.europa.eu/en/publications-data/reporting-protocol-integrated-respiratory-virus-surveillance
https://iris.who.int/bitstream/handle/10665/379678/9789240101432-eng.pdf

Summary of RSV epidemiology to week 49, 2024

- Increasing activity for last six weeks with most reporting countries now affected
- Impacts visible in hospital indicators
- 83% of RSV positive SARI hospitalisations aged <5, 11% aged 65+ years
- Seasonal epidemics becoming more regular post-pandemic? ~2 weeks behind last year

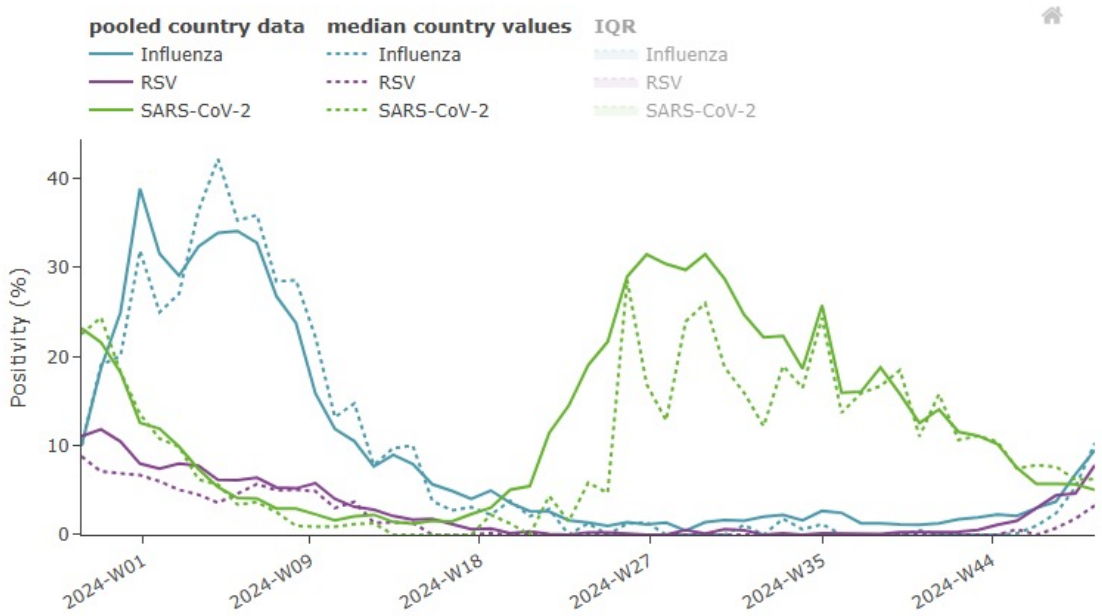


Weekly data display and interpretation

ERVISS European Respiratory Virus Surveillance Summary

ILI/ARI virological surveillance in primary care – weekly test positivity

Figure Table



SARI virological surveillance in hospitals – weekly test positivity

Figure Table