

Using emergency department data for early warning and SARI surveillance in Italy

Alberto Mateo Urdiales

Dipartimento di malattie infettive

Istituto Superiore di Sanità

SARI surveillance in Italy – the past

- Until mid-2024 three sources of information
 1. Sentinel microbiological surveillance: result of test (pos/neg) of influenza and other 8 respiratory viruses with information if hospitalised or not.
 2. Universal SARI – ICU/Death: positive influenza cases admitted to ICU (or requiring ECMO) and/or dying
 3. SARS-CoV-2: all positive cases with information on hospitalisation, ICU admission and death

SARI surveillance in Italy – the present

- By June 2024 three sources of information
 1. Sentinel microbiological surveillance: positive cases (of influenza and other 8 respiratory viruses) with information if hospitalised or not.
 2. Universal SARI – ICU/Death: positive influenza cases admitted to ICU (or requiring ECMO) and/or dying (**agreed to extend to other 8 respiratory viruses**)
 3. SARS-CoV-2: all positive cases with information on hospitalisation, ICU admission and death
 4. **Real-time data on all emergency encounters with respiratory syndromes**

EHR on Emergency Encounters

- Individual data on all emergency encounters (denominator)
- Information available only for those with respiratory síndromes (ICD-9 codes) (numerator)
- Data received daily
- We have received as well data of the past 5 years

EHR on Emergency Encounters

Uses

- Create an Early Warning System for respiratory alerts
- Monitor SARI cases in Italy without laboratory confirmation
- Ecological integration with the rest of surveillance systems



EHR on Emergency Encounters

Currently exploring

- Data quality
- Sensitivity and specificity of the system retrospectively
- How to develop the early warning models



EHR on Emergency Encounters

Challenges

- Data privacy
- Is our list of ICD-9 codes sensitive and specific?
- How do codes at ED compare with codes at discharge?

SARI surveillance in Italy – the future

We aim to have a surveillance system that:

- Works throughout the year
- Is primarily based on EHR (ED encounters)
- Is able to monitor microbiologically the different viruses
- **Is able to link epidemiological and microbiological data**
- We are able to identify risk factors for ICU admission and death



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