



An update on RSV surveillance in Canada

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Objectives

1. To describe the current RSV surveillance landscape in Canada
2. To provide an update on Canada's progress towards piloting RSV sentinel surveillance

Background

- In Canada, approximately ½ of acute respiratory illness hospitalizations are due to RSV (among kids <2 years)*
- Palivizumab treatment is available for high risk children
- Currently, there is no population-based or sentinel surveillance for RSV in Canada
 - Not reportable provincially/territorially or nationally
- Canada confirmed its participation in the Global RSV Surveillance Pilot in fall 2016

* Canadian Institute for Health Information, Discharge Abstract Database

RSV surveillance in Canada: current state

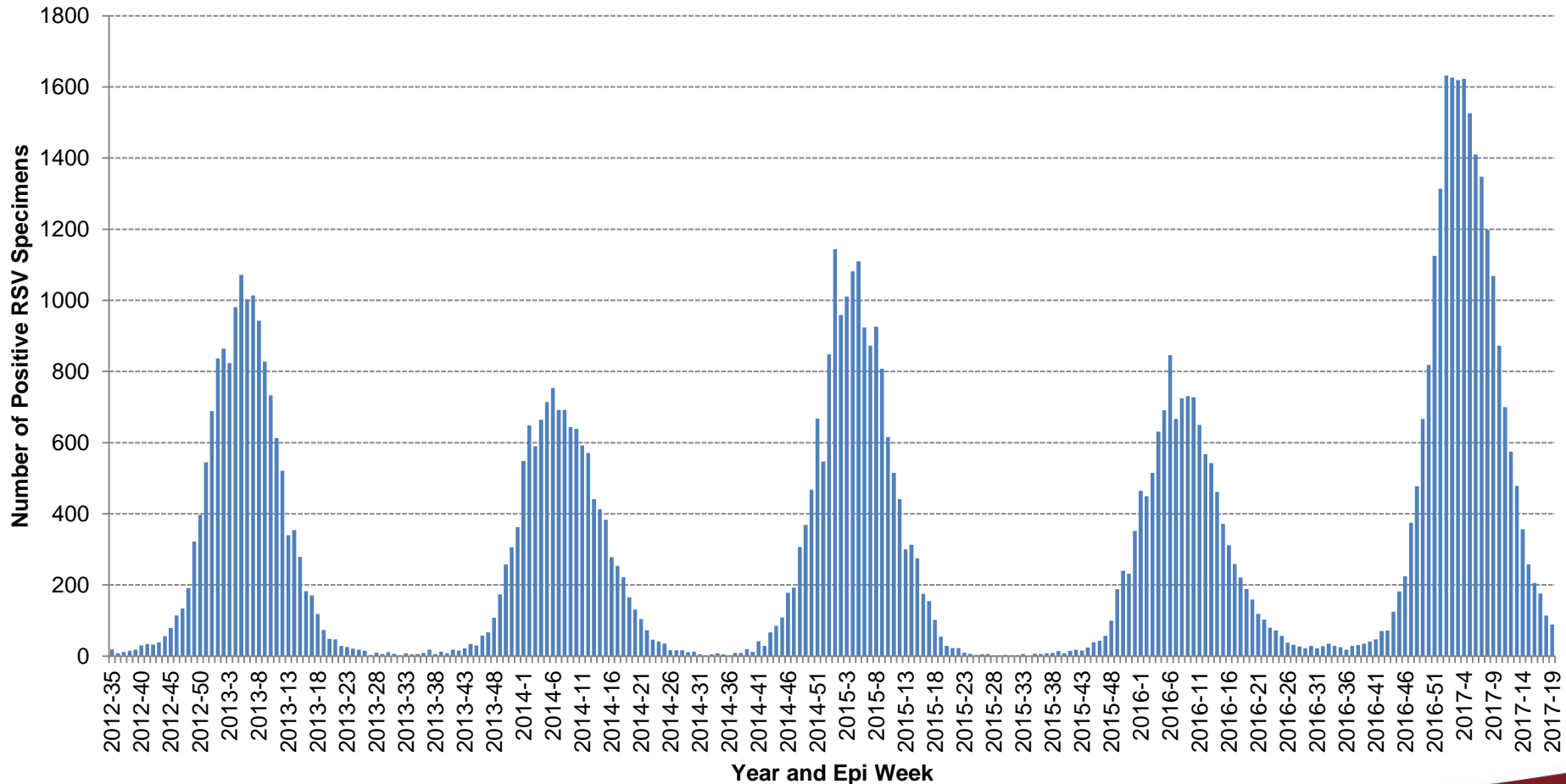
- Nationally, RSV data are available from two sources:
 1. Hospital administrative data (Discharge Abstract Database)
 - Available annually
 - Includes all but one province/territory
 - Limited epidemiological and clinical information
 2. Laboratory-based surveillance (Respiratory Virus Disease Surveillance System)
 - Available weekly
 - 32 public health and hospital laboratories across the country
 - Limited epidemiologic and clinical information

Known surveillance gap

Inability to comprehensively assess burden of illness or impacts of future vaccination programs

RSV in Canada

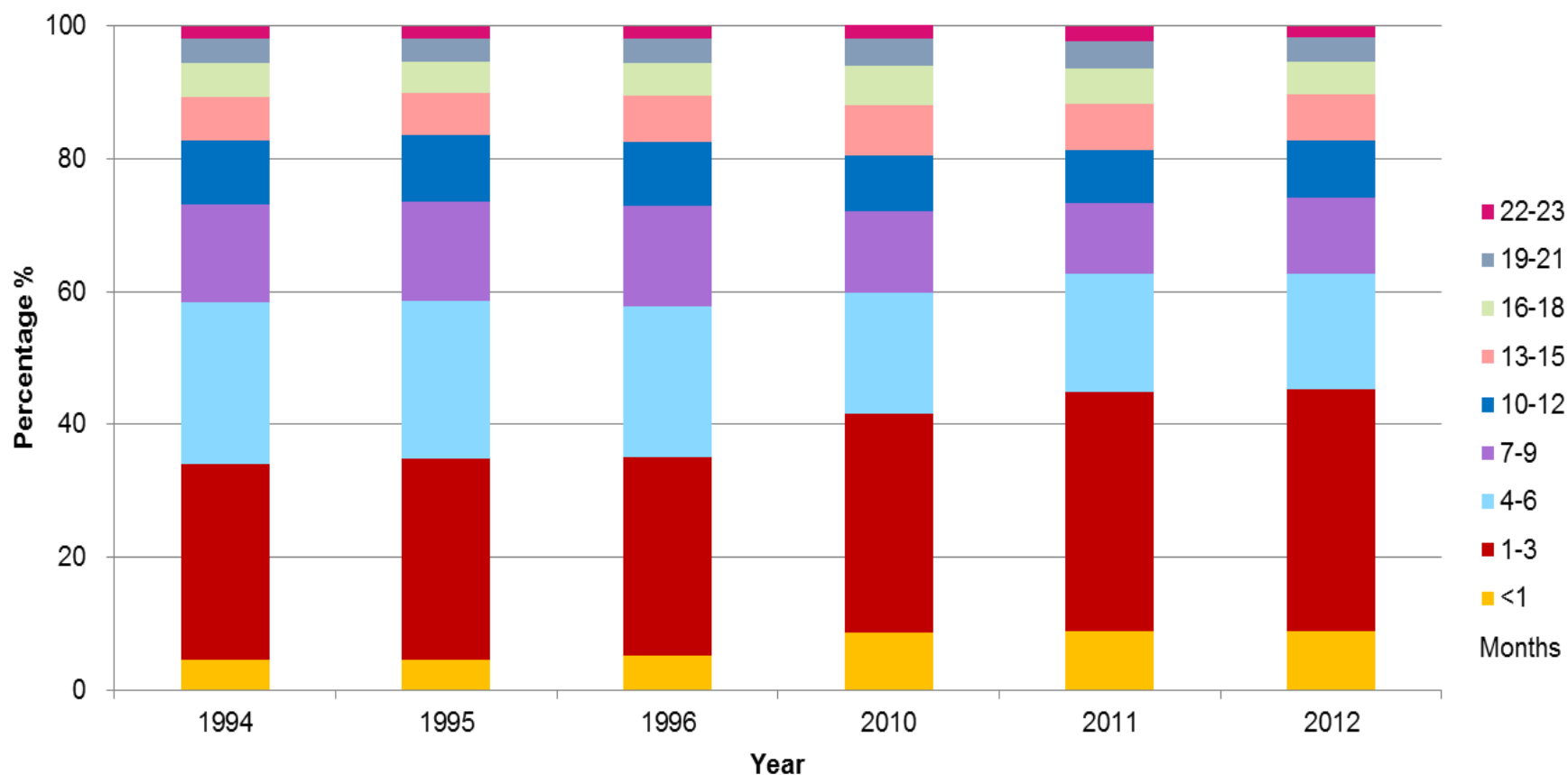
Figure 2. Number of positive RSV specimens by week, August 26, 2012 to May 13, 2017, Canada.



Source: Respiratory Virus Disease Surveillance System.

RSV in Canada

Figure 3. Total hospitalizations (<2 years) using RSV related ICD codes by age and year, Canada.



Source: Canadian Institute for Health Information.

Project and surveillance objectives

Project objectives

- To assess the feasibility of ongoing RSV surveillance via a sentinel pediatric hospital network
- To contribute towards the WHO Global RSV Surveillance Pilot

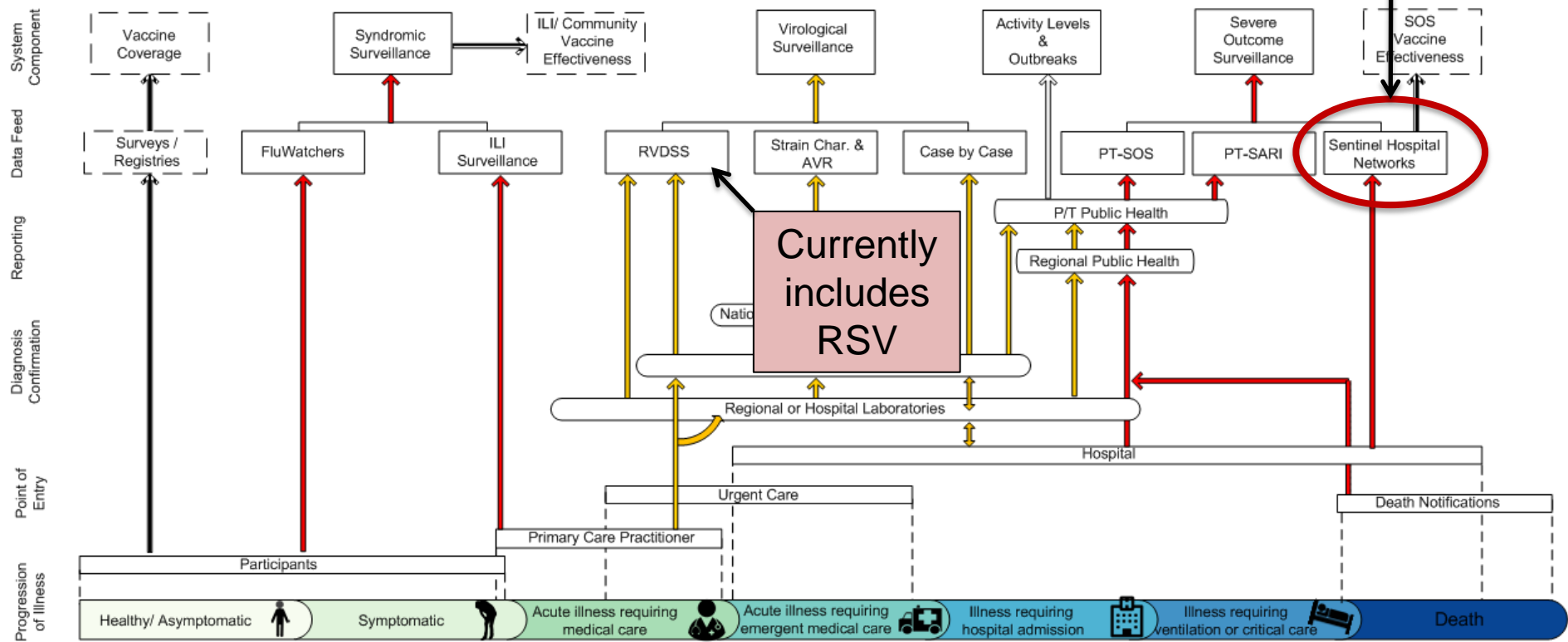
Surveillance objectives

- Quantify the burden of RSV hospitalizations among the Canadian pediatric population
- Provide data to inform future decision making about the use and effectiveness of RSV vaccines

Leveraging influenza surveillance

Figure 1. National influenza surveillance (“FluWatch”) data system flows.

Leverage for pediatric hospital sentinel surveillance of RSV



Surveillance pilot overview

Sentinel site location (n=12)

- Hospital in-patient
- Hospital-ICU

Age

- 0 to 15 years

Sample size

- All admissions

Duration of surveillance

- 52 weeks/year

Demographics

- Age in years and months
- Gender
- Forward Sortation Area

Laboratory

- Specimen collection date
- Specimen type

Severity

- Length of stay
- ICU admission (Y/N)
- ICU length of stay

Treatment with palivizumab

Outcome

- Discharged or died
- Outcome date

Monthly reporting

Out of scope for Year 1

- Comorbidities
- Symptom onset date and symptoms at presentation
- Viral and bacterial co-infections
- Ventilation (Y/N)
- Forwarding all specimens to the laboratory focal point

Progress to date

Laboratory

- The National Microbiology Laboratory (NML) is the laboratory focal point
- NML Received primers and probes from US CDC in December 2016
- Passed the US CDC's RSV EQA Panel
- Prepared and able to test 600 specimens annually

Epidemiology

- Agreement on surveillance approach with pediatric sentinel network
- Planned implementation for 2017/18 season

Opportunities and Challenges

- Canada's pediatric hospital sentinel network is flexible and able to incorporate RSV as a new surveillance target
 - Focusing on readily available administrative and laboratory data will allow for an assessment of the burden, demographic and spatial distribution of RSV among children in Canada
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- The cost to collect all suggested WHO Pilot epidemiologic information on 600 cases annually was prohibitive
 - Logistics and research/ethics requirements prevented centralized laboratory testing for the beginning of the 2017/18 season
 - A feasibility assessment will be incorporated into Year 1 to determine best way forward

Summary

- An RSV surveillance gap exists in Canada – in the context of vaccine development and anticipated vaccination program implementation
- Canada will leverage a core component of its influenza surveillance infrastructure to pilot RSV surveillance in the pediatric hospitalized population in 2017/18
- Data and information gathered during the pilot year will inform future system modifications