

New Brunswick Sentinel Practitioners Influenza Network

NB SPIN

September 2018

NB SPIN CDC Branch

Provincial Team

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Overview

- Principles of surveillance
- Collaborations
- Distribution of NB SPIN sites
- Procedures

Principles of Surveillance

- Epidemiologic surveillance is the ongoing systematic collection, recording, analysis, interpretation, and dissemination of data reflecting the current health status of a community or population
- Types of surveillance: passive, active, enhanced, syndromic
- Traditional sources of surveillance data: clinical reports, laboratory testing and results

Principles of Surveillance

- Sources of surveillance data: sentinel practitioners (clinical and laboratory), influenza-associated hospitalizations and deaths, influenza and ILI outbreak reporting (nursing homes, hospitals, schools, workplaces and other settings), media reports monitoring
- There is no single perfect source of surveillance data: different types/sources usually complement each other

Principles of Surveillance

- What are desired characteristics of a surveillance system?
 - Ownership of the system by stakeholders
 - Well described and understood processes of data flow
 - Completeness of data
 - Timeliness of data submission, collection, analyses and dissemination
 - Acceptable, flexible
 - Strong technical characteristics of data
 - Representative
 - Simple, stable

Principles of Surveillance

- How to enhance the value of surveillance system?
 - Maintain consistency and regularity in reporting
 - Build a “longer” baseline (statistics always work better with larger numbers)
 - Feedback and dissemination are as important as reporting

Principles of Surveillance

- Which condition(s) should be placed under surveillance?
 - Common and rare
 - Associated with significant mortality/morbidity
 - Required by Public Health laws, national or international authorities
 - Generate media publicity
 - Emerging diseases and syndromes
 - Usually intervention or action (immediate or delayed) is available

Principles of Surveillance

- Surveillance versus Research
 - Both can use the same scientific methods
 - Research usually tests hypothesis while surveillance frequently generates it
 - Dissemination is regular with surveillance versus one-off with research
 - Surveillance activities often fall under Public Health laws

Principles of Surveillance

- Good surveillance system should be evaluated
- Several guidelines and frameworks to evaluate surveillance systems are published

(e.g.) MMWR *Recommendations and Reports* Updated Guidelines for Evaluating Public Health Surveillance Systems. Recommendations from the Guidelines Working Group **July 27, 2001** /50(RR13);1-35

Principles of Surveillance

- Scale of surveillance
 - International
 - National
 - Provincial
 - Local
- Scale is selected based on the condition, relevant laws and regulations, number of contributors

Reasons for the effective surveillance of influenza

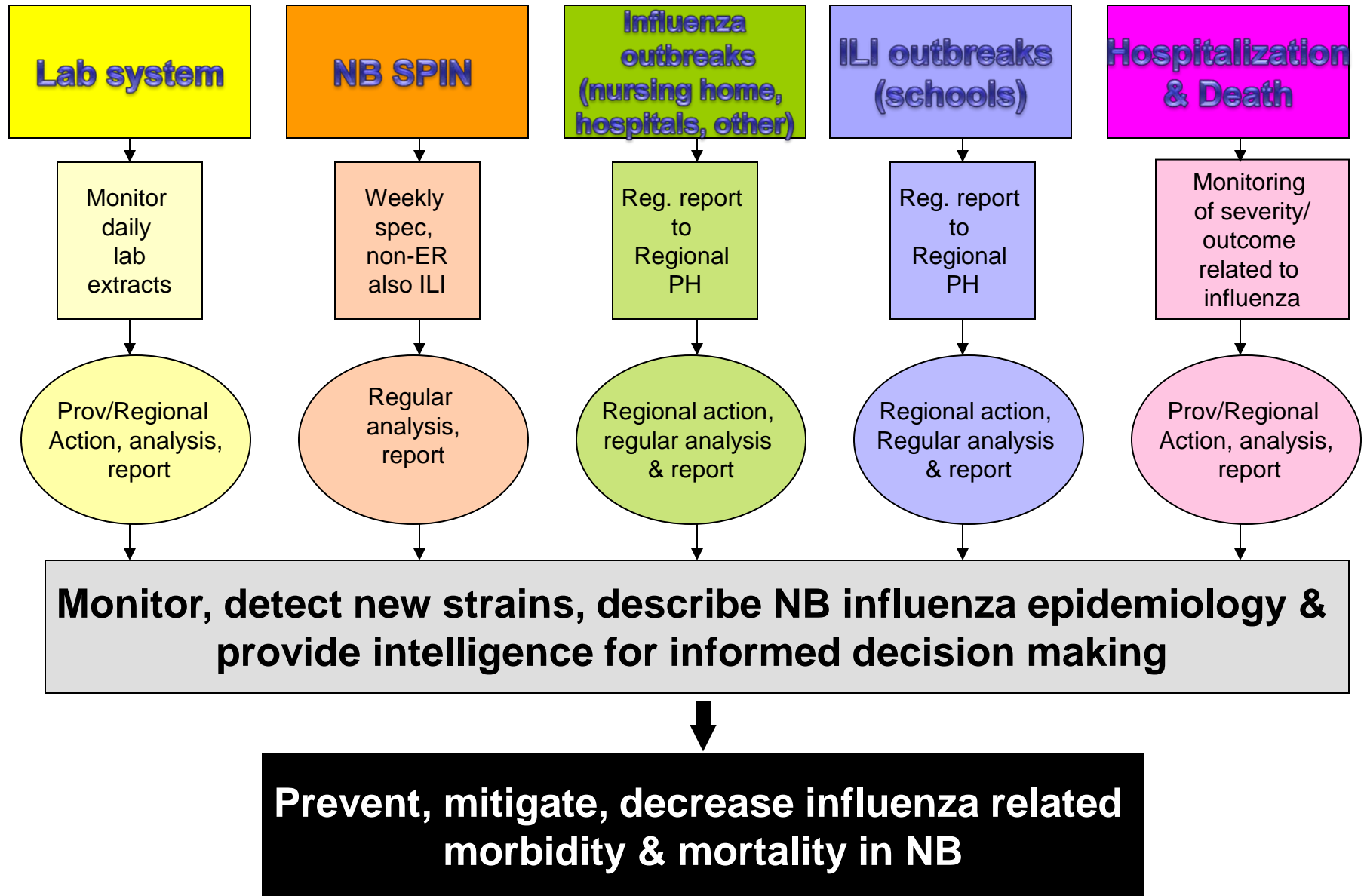
- Very common disease
- Routine notifications are incomplete
- Vaccine efficacy is not 100% but has a major impact on severity of disease
- Improve and encourage testing to detect circulating strains
- To detect early indications of changes in disease epidemiology
- Potentially be an early warning system e.g. H7N9, H1N1, H5N1, other novel viruses
- Monitor health seeking behavior

NB Influenza Surveillance System

Several sources of data:

- Laboratory data from the DGLDHUC influenza reference laboratory and the National Microbiology Laboratory.
- Reports of outbreaks of influenza and influenza-like illness from nursing homes, hospitals, schools and other settings.
- National CIRN-SOS, a hospital-based surveillance of influenza hospitalizations or deaths in adults.
- Influenza-associated Hospitalizations and Deaths surveillance data.
- Epidemiological data obtained from NB sentinel network of clinicians and ER sites.

Role of NB SPIN in influenza surveillance activities



Cumulative numbers of positive influenza specimens by subtype and age groups, Canada, 2017-2018, up to August 25 2018

Table 1 – Cumulative numbers of positive influenza specimens by type, subtype and age-group reported through case-based laboratory reporting, Canada, weeks 2017-35 to 2018-34

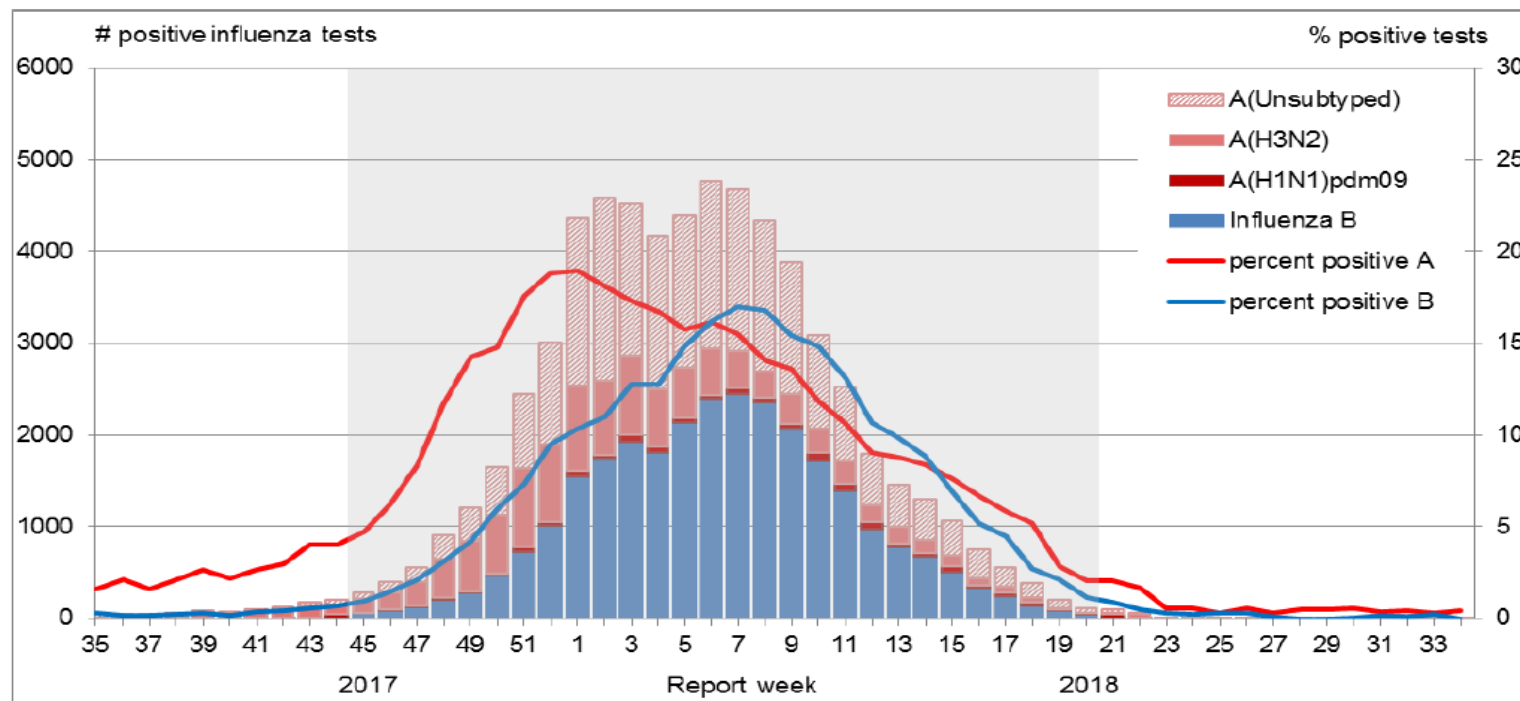
| Age groups (years) | Cumulative (August 27, 2017 to August 25, 2018) | | | | | | |
|--------------------|---|---------------|--------------|----------------------|--------------|-------------------|-------------|
| | Influenza A | | | | B | Influenza A and B | |
| | A Total | A(H1N1) pdm09 | A(H3N2) | A (UnS) ¹ | Total | # | % |
| 0-4 | 3375 | 202 | 682 | 2491 | 1616 | 4991 | 9% |
| 5-19 | 2574 | 157 | 709 | 1708 | 2993 | 5567 | 10% |
| 20-44 | 4597 | 297 | 1387 | 2913 | 3051 | 7648 | 14% |
| 45-64 | 4987 | 270 | 1597 | 3120 | 5098 | 10085 | 18% |
| 65+ | 15743 | 182 | 5882 | 9679 | 11025 | 26768 | 49% |
| Total | 31276 | 1108 | 10257 | 19911 | 23783 | 55059 | 100% |

¹UnS: unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available;

Reference: Figure taken from national Fluwatch report week 30-34 (to August 25 2018)

Influenza tests reported and percentage of tests positive, Canada, by report week, 2017-2018, up to August 25 2018

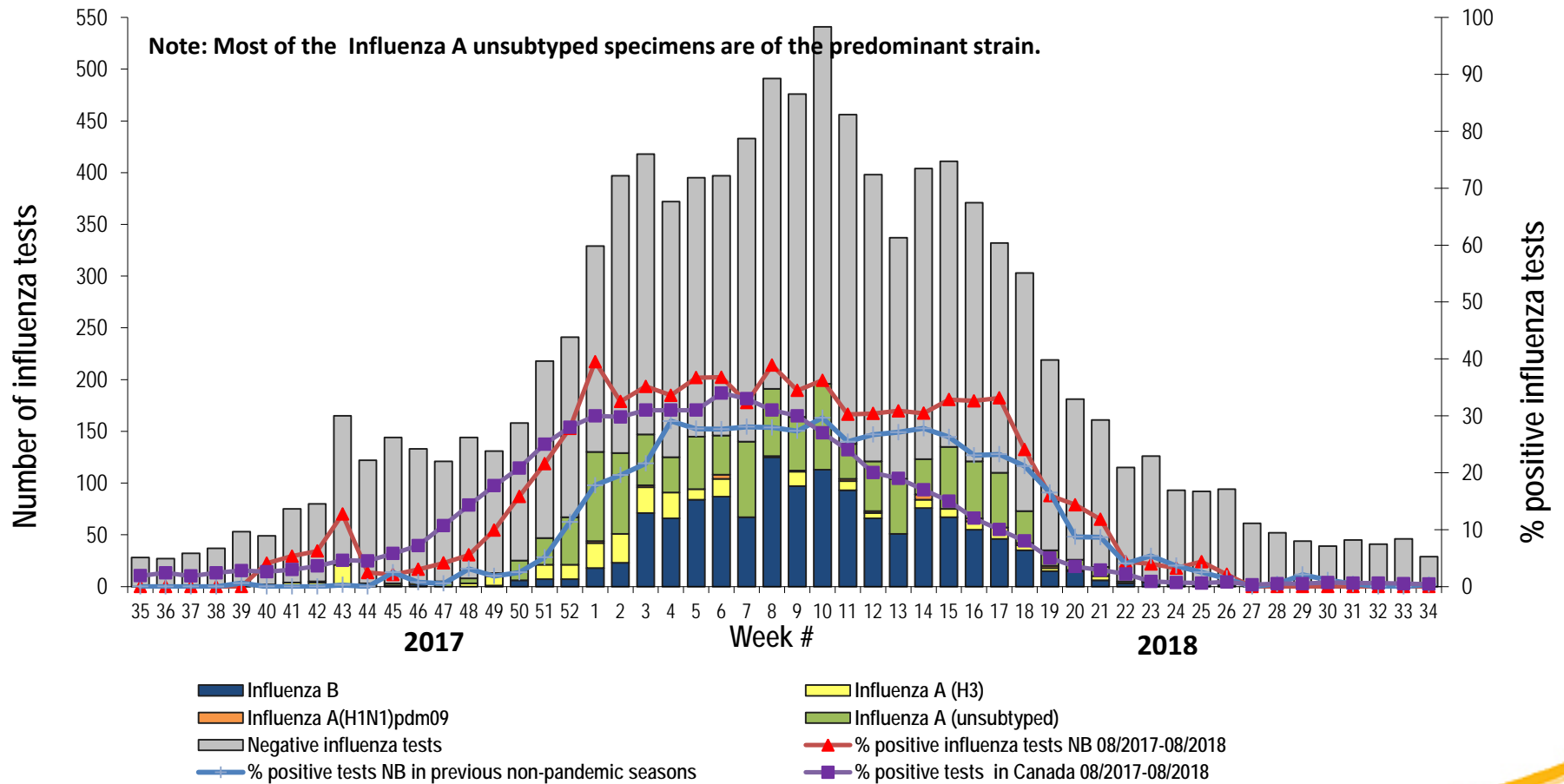
Figure 2 – Number of positive influenza tests and percentage of tests positive, by type, subtype and report week, Canada, weeks 2017-35 to 2018-34



The shaded area indicates weeks where the positivity rate was at least 5% and a minimum of 15 positive tests were observed, signalling the period of [seasonal influenza activity](#).

Reference: Figure taken from national Fluwatch report week 30-34 (to August 25 2018)

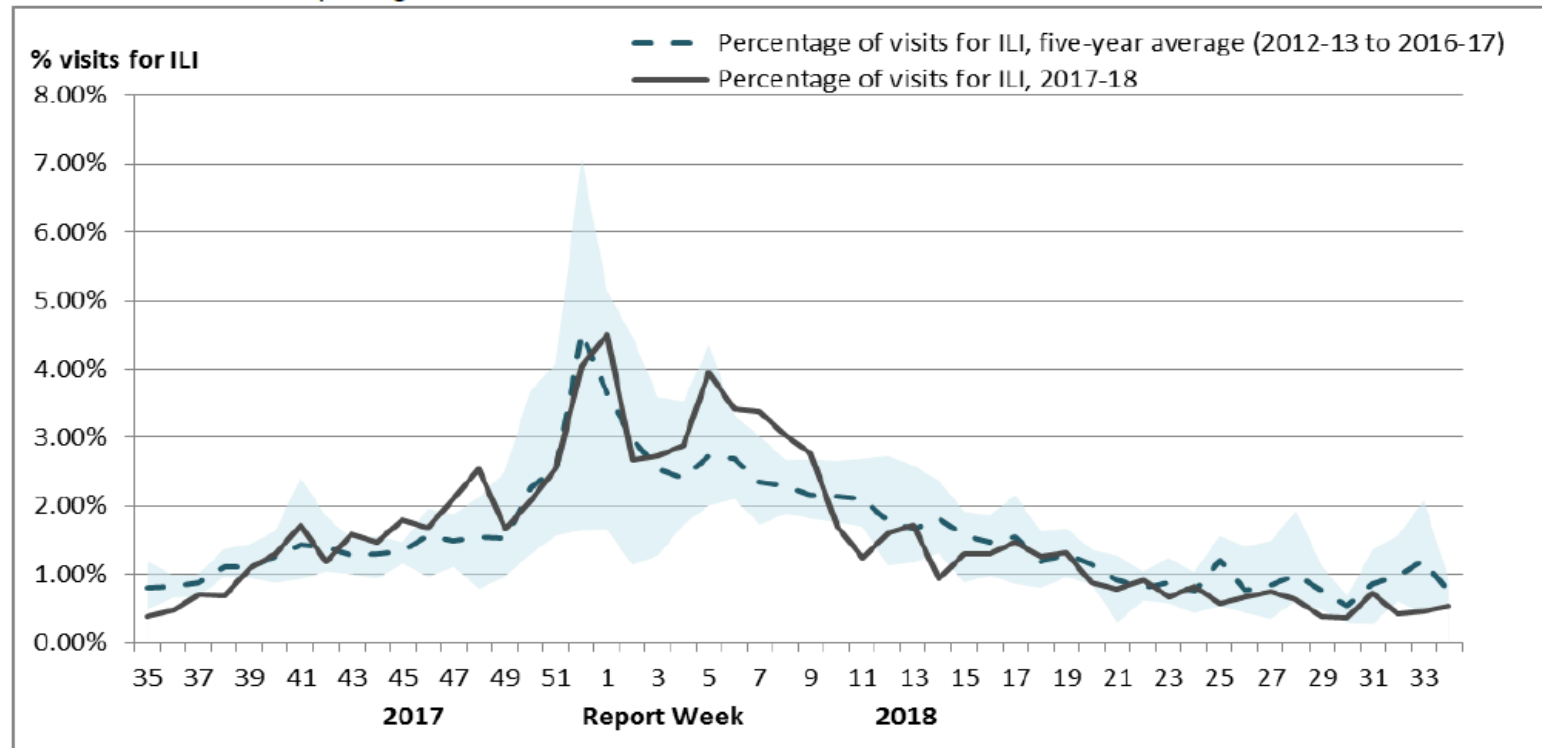
Number and percent of positive influenza specimens in New Brunswick (based on data from GDHUC Laboratory), by week, up to August 25 2018



Reference: Figure taken from New Brunswick weekly influenza report week 30-34 (to August 25, 2018)

Percentage of Influenza-like illness (ILI) visits reported by Sentinels, by report week, Canada, 2017-2018.

Figure 4 – Percentage of visits for ILI reported by sentinels by report week, Canada, weeks 2017-35 to 2018-34
 Number of Sentinels Reporting in Week 34: 120



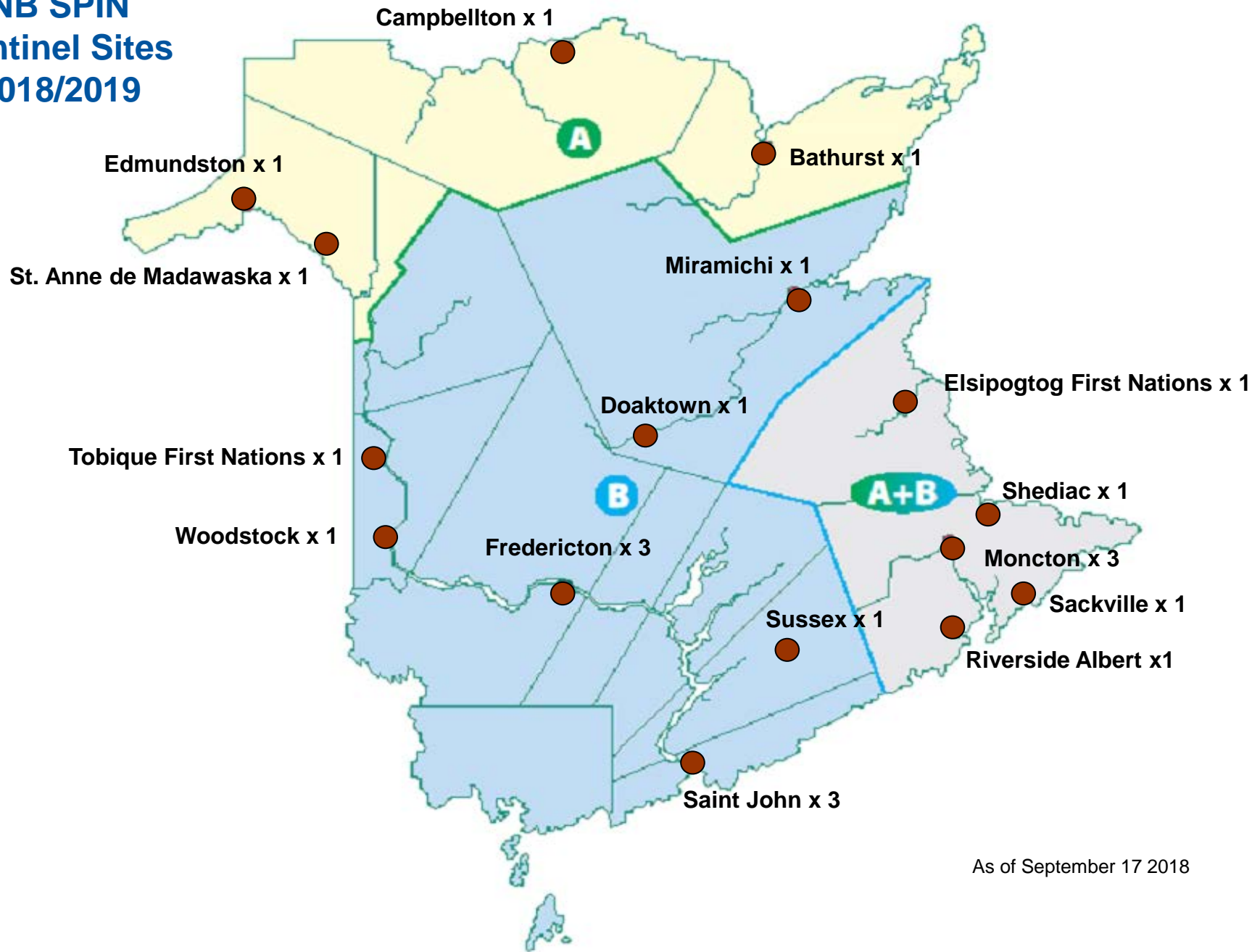
The shaded area represents the maximum and minimum percentage of visits for ILI reported by week from seasons 2012-13 to 2016-17

Reference: Figure taken from national Fluwatch report week 30-34 (to August 25 2018)

NB SPIN collaboration

- Collaboration between a number of key organizations:
 - NB Communicable Disease Control Unit
 - Regional Medical Officers of Health
 - Department of Health; Hospital Services
 - Regional Health Authorities
 - Dr. Georges-L.-Dumont University Hospital Centre Laboratory, Moncton
 - FluWatch, Ottawa
 - Clinicians(NB Physicians, Nurses and Nurse Practitioners)
 - First Nation communities
 - University of NB and Universite de Moncton

NB SPIN Sentinel Sites 2018/2019



As of September 17 2018

NB SPIN site types

- Physician Offices = 2
- ER=8 sites
- Community Health Centers =7
- First Nation Health Clinics = 2
- University Student Clinics = 2
- Nursing Home = 1

Procedure: during each week

Procedure: during each week

- ONLY non-ER sites are asked to contribute to ILI component
- ALL types of sites are asked to contribute to the lab component, although there may be a few exceptions.
- The site representatives are asked to contact the NB SPIN Coordinator if there are any problems, or if the representative determines that their site would not reliably contribute to either the ILI or lab component.

Recording ILI

ILI Definition

- Acute onset of respiratory illness with fever and cough and with one or more of the following:
 - Sore throat
 - Arthralgia
 - Myalgia or prostration

which could be due to the influenza virus

- In children under 5 GI symptoms may be present
- In patients under 5 or 65 and older, fever may not be prominent

ILI Data Entry Screen

physId=408&code=ca6961a4 Physician Weekly Report

Physician Name: Liza Lee
Sentinel #: 9999999
Report Week Code: 21
For week ending: Sat May 30
Report Date: Mon May 25

i Report week begins Sunday and goes through to Saturday.

ILI Data Entry

No Data to Report

*Number of ILI cases for each age group must be less than the total patients seen by age group.
Total Patients must be provided if there are any Cases of ILI reported for that age group.*

| Age Group | Total Patients seen by Age Group | Cases of ILI (as per case definition) |
|-----------|----------------------------------|---------------------------------------|
| Age < 5 | <input type="text"/> | <input type="text"/> |
| Age 5-19 | <input type="text"/> | <input type="text"/> |
| Age 20-64 | <input type="text"/> | <input type="text"/> |
| Age 65+ | <input type="text"/> | <input type="text"/> |

Practice Setting *

Your practice setting on your report day was

- Mostly by pre-scheduled appointment
- Mostly walk-in appointments
- Mostly emergency room visits
- Mix of pre-scheduled and walk-in appointments
- Mix of pre-scheduled appointments and emergency room visits
- Other, explain

Testing Processes

Nasopharyngeal Swab Procedure^[1]:

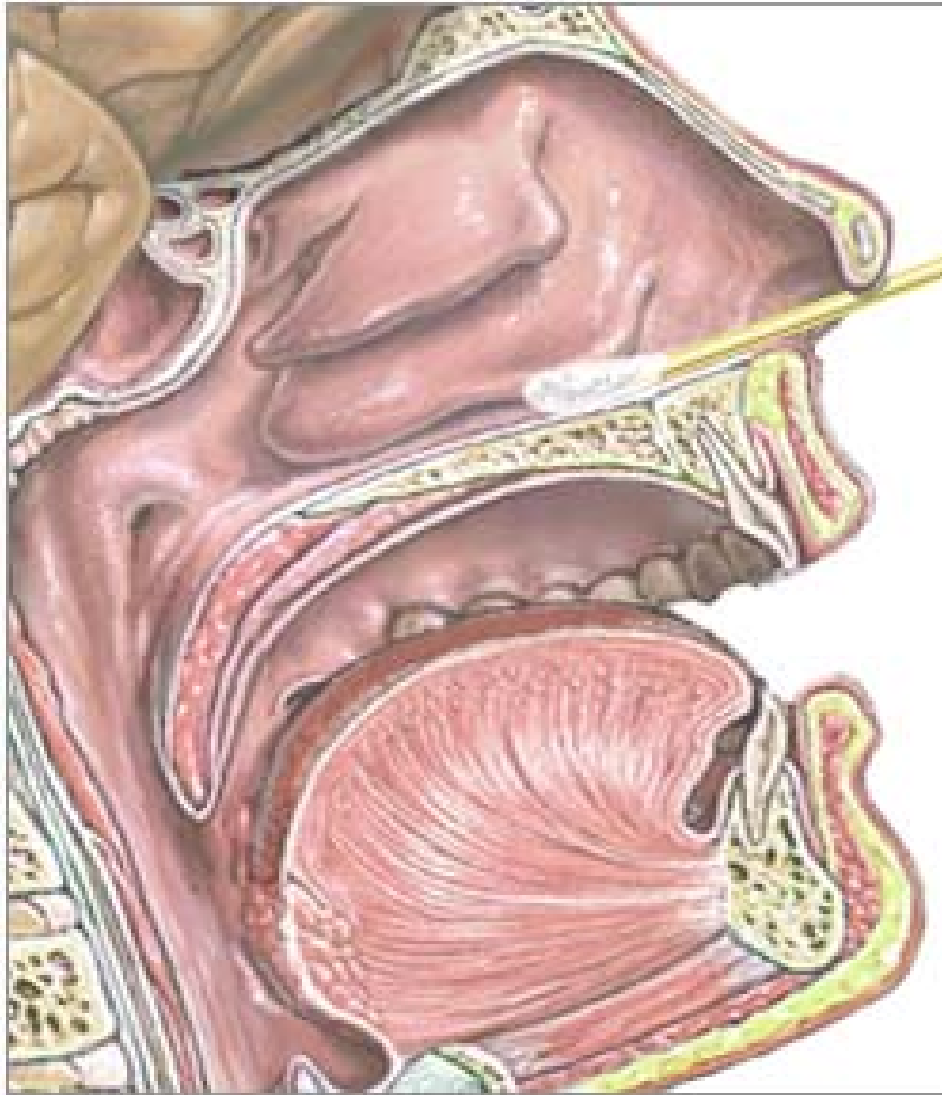
- Explain the procedure to the patient.
- Use the NP swab supplied with the viral transport media. If the patient has a lot of mucus in the nose, this can interfere with the collection of cells. Either ask the patient to use a tissue to gently clean out visible nasal mucus or clean the nostril yourself with a cotton swab (e.g. Q-Tip).
- Estimate the distance to the nasopharynx: prior to insertion, measure the distance from the corner of the nose to the front of the ear and insert the shaft approximately 2/3 of this length.

^[1]NP swab procedure based on PHAC description in Annex C of Canadian Pandemic Influenza Plan for the Health Sector (English):: <http://www.phac-aspc.gc.ca/cpip-pclcpi/ann-c-eng.php#appb3>

Nasopharyngeal Swab Procedure^[1] Cont.:

- Seat the patient comfortably. Tilt the patient's head back slightly to straighten the passage from the front of the nose to the nasopharynx to make insertion of the swab easier (see Figure 1)
- Insert the swab provided along the medial part of the septum, along the floor of the nose, until it reaches the posterior nares; gentle rotation of the swab may be helpful. (If resistance is encountered, try the other nostril; the patient may have a deviated septum.)
- Allow the swab to sit in place for 5–10 seconds.
- Rotate the swab several times to dislodge the columnar epithelial cells. Note: Insertion of the swab usually induces a cough.
- Withdraw the swab and place it in the collection tube.

^[1]NP swab procedure based on PHAC description in Annex C of Canadian Pandemic Influenza Plan for the Health Sector (English):: <http://www.phac-aspc.gc.ca/cpip-pclcpi/ann-c-eng.php#appb3>



A sterile swab is passed gently through the nostril and into the nasopharynx



Nasal Swabs

NP swab is the preferred specimen however nasal swabs will be accepted for surveillance purposes

Nasal Swab Procedure:

- Use the NP swab supplied with the viral transport media.
- Insert the swab 1.0 to 1.5 cm into the nostril and rotate it three or four times against the surface of the nasal cavity.
- Withdraw the swab and place it in the collection tube.

Reference: Ipp, M., Carson, S., Petric, M., Parkin, PC. Rapid painless diagnosis of viral respiratory infection; *Arch Dis Child*; 2002; 28: 372-373.

Nasopharyngeal aspirates

- Easier and safer than swabbing in infants and young adults
 - Insert tubing into the nostril parallel to the palate.
 - Aspirate nasopharyngeal secretions.
 - Collect the specimens in sterile vials
- When the appropriate apparatus is available, NP aspirates are to be done according to your local practices. NP aspirate sample can be shipped in their own container but they must be accompanied with the NB SPIN lab requisition form

Reference: CDC-Public Health Guidance for Community-Level Preparedness and Response to SARS Version 2, Supplement F: Laboratory Guidance, Appendix F4, Guidelines for Collecting Specimen from Potential SARS patients, 2004.

Laboratory Forms

NB SPIN Lab requisition form

- Has to be sent with every specimen
- Clinical information:
 - Fever
 - Pregnancy
 - Antiviral treatment
 - Contact with infectious person in the last 10 days
 - Travelled in the last 10 days
 - Current seasonal influenza vaccine
 - Exposure to swine or poultry in the last 10 days

NEW BRUNSWICK SENTINEL INFLUENZA PRACTITIONER NETWORK (NB SPIN) LAB REQUISITION

INSTRUCTIONS FOR NB SPIN SITE: Send completed requisition and refrigerated specimen to your laboratory as soon as possible. Specimen and requisition must be identified with patient's full name and medicare number

INSTRUCTIONS FOR REGIONAL LAB: Send completed requisition and refrigerated specimen to the Dr. G. L. Dumont University Hospital Centre Virology Laboratory (address at bottom of form). Do not separate requisition from specimen.

| | | | |
|--|------------|-------------------------------|---------------|
| Referred hospital | Specimen # | Patient name | |
| Antibiotics | Allergies | Date of birth: y m d | Unit # |
| Site <input type="checkbox"/> Hospital inpatient <input type="checkbox"/> Nursing Home <input type="checkbox"/> Doctor office <input type="checkbox"/> Emergency room <input type="checkbox"/> Intensive care unit <input type="checkbox"/> U de M <input type="checkbox"/> Clinic, specify: _____ <input type="checkbox"/> Other, specify: _____ | | Medicare # | Sex |
| Address | | | |
| Attending physician | | Ordering physician | |
| Collection date: y m d | | Time | Completed by: |

Test

Please specify required test : PCR Influenza surveillance

Specimen

Nasopharyngeal swab Nasal swab
 Nasopharyngeal aspiration Other:

Relevant clinical and epidemiological information

| | |
|---|---|
| Fever: Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <input type="checkbox"/> | Contact w ith infectious person w ith respiratory illness w ithin the last 10 days: Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <input type="checkbox"/> Specify: _____ |
| Pregnant: Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <input type="checkbox"/> | Travelled in the last 10 days: Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <input type="checkbox"/> Specify: _____ |
| Received Oseltamivir/Zanamivir: Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <input type="checkbox"/> | Exposure to swine or poultry in the last 10 days: Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <input type="checkbox"/> Specify: _____ |
| Received current seasonal influenza vaccine: Yes <input type="checkbox"/> No <input type="checkbox"/> Unk <input type="checkbox"/> | |

Laboratory use only

| | | |
|--------------------------------------|--|--|
| <input type="checkbox"/> Bathurst | <input type="checkbox"/> Grand-Sault | <input type="checkbox"/> St-John |
| <input type="checkbox"/> Campbellton | <input type="checkbox"/> Georges L.-Dumont | <input type="checkbox"/> St-Quentin |
| <input type="checkbox"/> Caraquet | <input type="checkbox"/> Lamèque | <input type="checkbox"/> Tracadie |
| <input type="checkbox"/> Edmundston | <input type="checkbox"/> Miramichi | <input type="checkbox"/> Other, specify: _____ |
| <input type="checkbox"/> Fredericton | <input type="checkbox"/> Moncton Hospital | |

**** The original requisition and the specimen must be sent to:**
DR ALFRED BASTARACHE LABORATORY, DR G.L. DUMONT UNIVERSITY
HOSPITAL CENTRE, VIROLOGY LABORATORY
330 University avenue, Moncton, N.B. PH: (506) 862-4140 Fax: (506) 862-4827

**Date and hour received in
G.L.-Dumont**

Thank you!