New Brunswick Sentinel Practitioners Influenza Network

NB SPIN

August 2011
NB SPIN CDC Branch

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Overview

• Principles of surveillance
• Collaborations
• Distribution of NB SPIN sites
• Results
• 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

• Newer sources of surveillance data: sentinel practitioners (clinical and laboratory), drug prescriptions, hospitalizations, absenteeism from educational establishments and workplaces, 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. H1N1, H5N1, others
- Monitor health seeking behavior
NB Influenza Surveillance System

Several sources of data:

• Laboratory data from the GDL influenza reference laboratory and the National Microbiology Laboratory lab

• Reports of outbreaks of influenza and influenza-like illness from nursing homes and schools

• National CNISP/FluWatch hospital-based surveillance of influenza hospitalizations or deaths in adults

• Epidemiological data obtained from NB sentinel network of clinicians and ER sites
Role of NB SPIN in influenza surveillance activities

- **Lab system**
  - Monitor daily lab extracts
  - Prov/Regional Action, analysis, report

- **NB SPIN**
  - Weekly spec, non-ER also ILI
  - Regular analysis, report

- **Nursing home outbreak**
  - Reg. report to Regional PH
  - Regional action, regular analysis & report

- **ILI School outbreak**
  - Reg. report to Regional PH
  - Regional action, Regular analysis & report

- **Hospitalization & Death**
  - National CNISP-FluWatch study
  - National level analysis & report

Monitor, detect new strains, describe NB influenza epidemiology & provide intelligence for informed decision making

Prevent, mitigate, decrease influenza related morbidity & mortality in NB
Weekly and cumulative numbers of positive influenza specimens by Provincial Laboratories 2010-2011, up to July 30 2011

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<thead>
<tr>
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<td>A Total</td>
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<tr>
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<td>0</td>
</tr>
<tr>
<td>AB</td>
<td>2</td>
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<tr>
<td>SK</td>
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<td>MB</td>
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<tr>
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<td>0</td>
</tr>
<tr>
<td><strong>Canada</strong></td>
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<td>3</td>
</tr>
</tbody>
</table>

*Unsubtyped: The specimen was typed as influenza A, but no test for subtyping was performed. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

Reference: Figure taken from national Fluwatch report weeks 29 & 30 (to July 30 2011)
Influenza tests reported and percentage of tests positive, Canada, by report week, 2010-2011, up to July 30 2011

Reference: Figure taken from national Fluwatch report weeks 29 & 30 (to July 30 2011)
Number and percent of positive influenza specimens in New Brunswick (based on data from Dumont Laboratory), by week, as of July 30, 2011

Reference: Figure taken from Weekly New Brunswick influenza report weeks 29 & 30 (to July 30, 2011)
Influenza-like illness (ILI) consultation rates, Canada, by report week, 2010-2011 compared to 1996/97 through to 2008/09 seasons

Reference: Figure taken from national Fluwatch report weeks 29& 30 (to July 30 2011)

Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Reference: Figure taken from national Fluwatch report weeks 29& 30 (to July 30 2011)
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
  – Georges-L Dumont Hospital Laboratory, Moncton
  – FluWatch, Ottawa
  – Clinicians (NB Physicians, Nurses and Nurse Practitioners)
  – First Nation communities
  – University of NB and Universite de Moncton
Edmundston x 1
St. Anne de Madawaska x 1
Tobique First Nations x 1
Elsipogtog First Nations x 1
Doaktown x 1
Miramichi x 2
Bathurst x 1
Campbellton x 1
Dalhousie x 1
St. Anne de Madawaska x 1
Elsipogtog First Nations x 1
Woodstock x 1
Fredericton x 5
Sussex x 1
Moncton x 4
Sackville x 2
Riverside Albert x 1
Shediac x 1
Saint John x 2
(As of September 19 2011)
NB SPIN site types

- Physician Offices = 5
- ER=7 sites
- Community Health Centers = 8
- First Nation Health Clinics = 3
- University Student Clinics = 3
- Nursing Home = 1
Procedure: during each week
Procedure: during each week

- ONLY non-ER sites are asked to contribute to the ILI component
- ALL types of sites are asked to contribute to the lab component
- The site representatives are asked to contact the CD Epi 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
### Canada FluWatch Weekly Report Form

Please submit your report form **EVERY WEEK** (by Saturday, 10pm) to Fax Number 1-800-555-6755

<table>
<thead>
<tr>
<th>Sentinel Number</th>
<th>Postal Code</th>
<th>For Week Ending</th>
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<tbody>
<tr>
<td></td>
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<td>Year / Month / Day</td>
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</table>

<table>
<thead>
<tr>
<th>Report Week Code</th>
<th>Reporting Day (fill in one)</th>
<th>Year / Month / Day</th>
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<td>Sa Mo Tu We Th Fr Sa</td>
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**Influenza-Like Illness (ILI) Case 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 influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

### Patient Load:
Mark off ALL the patients within each age group seen on the reporting day, and then transfer the final values to the TOTAL boxes.

<table>
<thead>
<tr>
<th>Age &lt; 5</th>
<th>Age 5-19</th>
<th>Age 20-64</th>
<th>Age 65+</th>
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</table>

### Cases of ILI:
Mark off ONLY those patients within each age group, that fill the ILI case definition who were seen on the reporting day, and then transfer the final values to the TOTAL boxes.

<table>
<thead>
<tr>
<th>Age &lt;5</th>
<th>Age 5-19</th>
<th>Age 20-64</th>
<th>Age 65+</th>
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</table>

Your practice setting on your report day was: (choose only one answer):  (1) mostly by pre-scheduled appointment  (2) mostly walk-in appointments  (3) emergency room  (4) other. Explain:

Practice:  

Comments:

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Thank you for completing and returning this form.
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.

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.

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.

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

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
  – 2011 season influenza vaccine
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 Dr. G. L. Dumont Regional Hospital Virology Laboratory (address at bottom of form). Do not separate requisition from specimen.

Referring hospital

Specimen #

Patient name

Antibiotics

Allergies

Date of birth: y m d

Unit #

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

☐ Nasopharyngeal aspiration

☐ Nasal swab

☐ Other:

Relevant clinical and epidemiological information (check all that apply)

☐ Fever

☐ Contact with infectious person with respiratory illness within the last 10 days, specify:

☐ Pregnant

☐ Travelled in the last 10 days, specify where:

☐ Received Oseltamivir/Zanamivir

☐ Received 2011 seasonal influenza vaccine

Laboratory use only

☐ Bathurst

☐ Campbelton

☐ Caraquet

☐ Edmundston

☐ Fredericton

☐ Grand-Sault

☐ Georges L.-Dumont

☐ Lameque

☐ Miramichi

☐ Moncton Hospital

☐ St-John

☐ St-Quentin

☐ Tracadie

☐ Other, specify:

* * The original requisition and the specimen must be sent to:

DR ALFRED BASTARACHE LABORATORY, DR G.L. DUMONT REGIONAL HOSPITAL
VIROLOGY LABORATORY
330 University avenue, Moncton, N.B. PH: (506) 862-4140 Fax: (506) 862-4827

Date and hour received in G.L.-Dumont Laboratory use only
Thank you!