



# Exploring the use of school absenteeism data for the early detection influenza outbreaks in the community

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Ontario Public Health Association Annual Conference  
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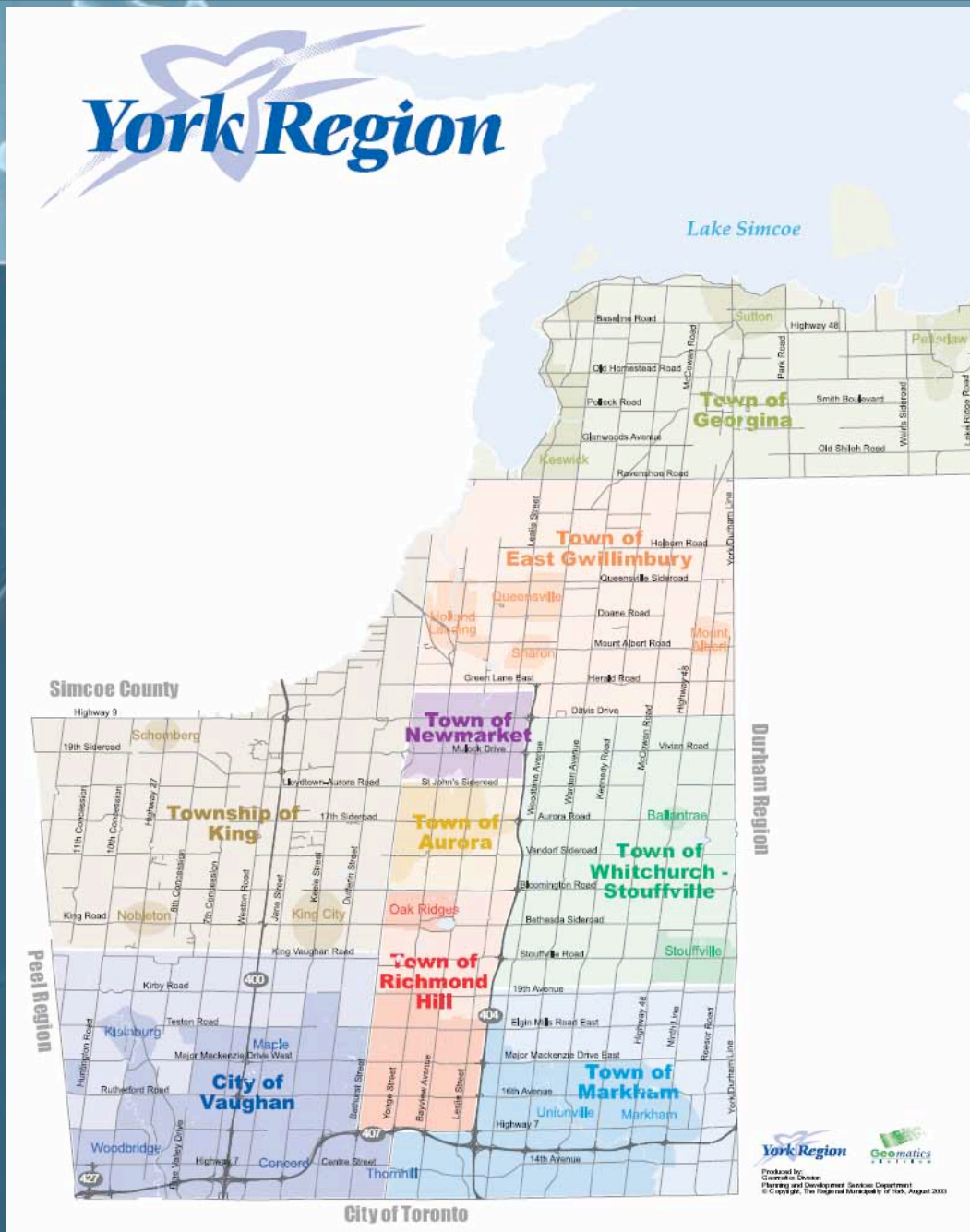
**Session 1b: Community Capacity**

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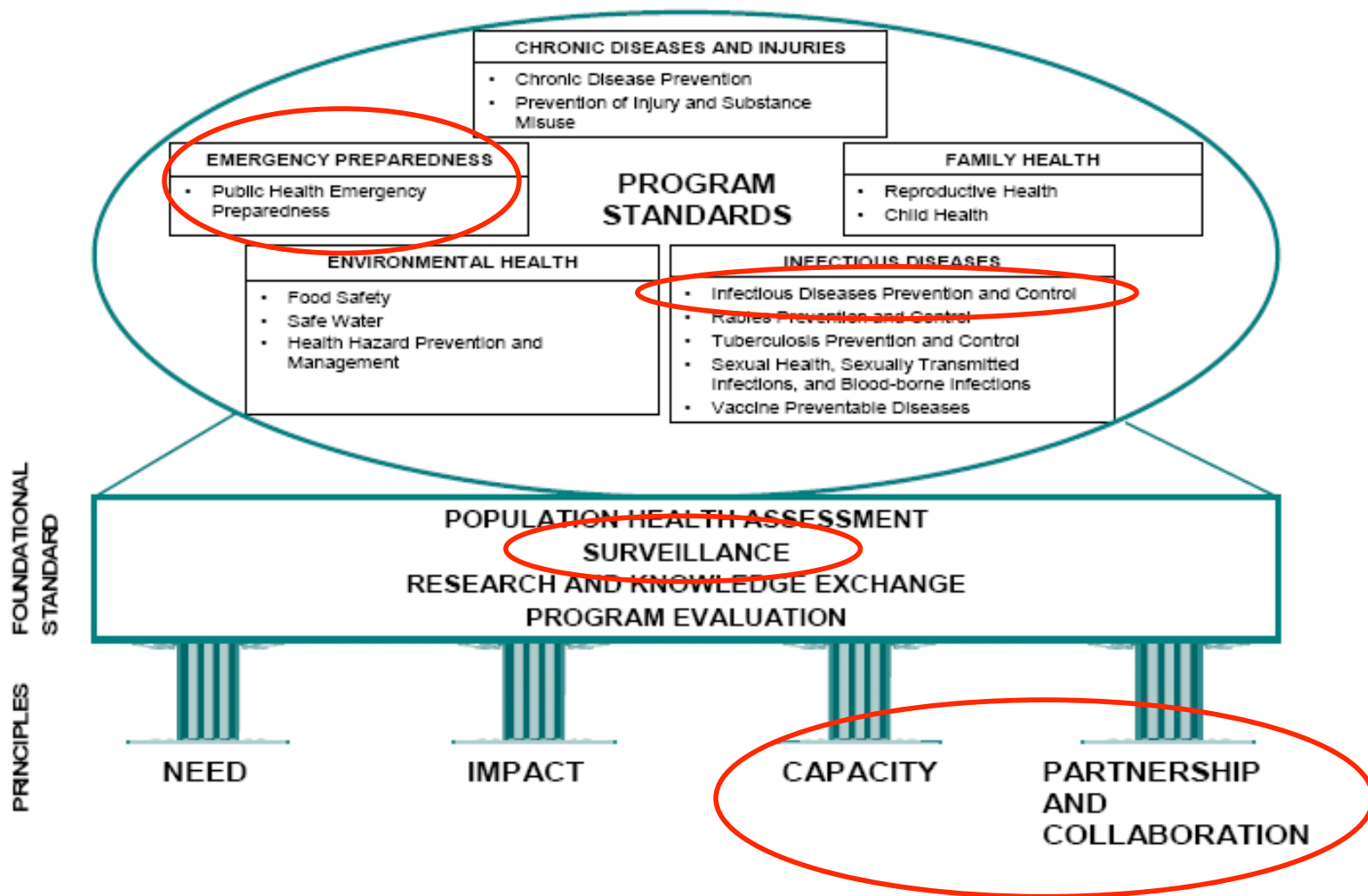
# Welcome to York Region!

- Nine municipalities
- Population = 892,712 (2006 Census)
- Rapid population growth
  - Especially in immigrant population
- Densely populated southern municipalities





# Ontario Public Health Standards: Relationship between the Principles, the Foundational Standard, and the Program Standards





## Rationale for sentinel school surveillance

- Naylor, Walker, and Campbell reports in response to SARS
  - Similar recommendations to strengthen surveillance programs and to ensure the timely dissemination of information collected by these programs
- Traditional vs. Non-traditional sources of surveillance data
- Sentinel school data may provide early detection of outbreaks before they reach their peak level
- Potential of being a timely indicator of the beginning of influenza season in the community

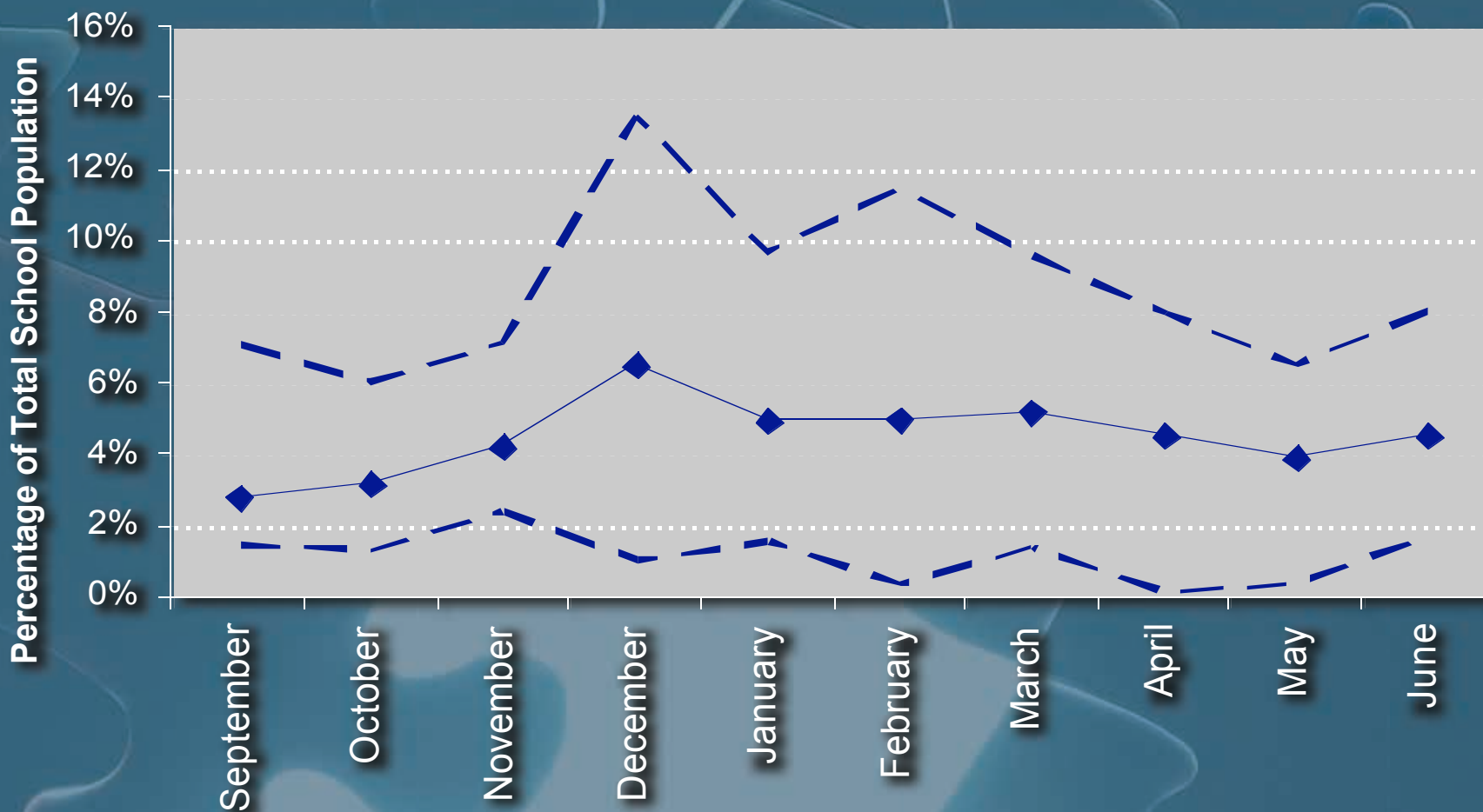


# Objectives

- **Monitoring and collecting data on student absenteeism due to illness to identify trends within York Region schools;**
- Detecting outbreaks of respiratory and/or enteric illness in York Region schools;
- Evaluating the potential of using school absenteeism rates for the early identification of novel illnesses in York Region, such as pandemic flu;
- Providing summary feedback on illness trends within York Region schools to YRDSB; and
- Continuing to strengthen and facilitate the working relationship that exists between YRDSB and YRHS.

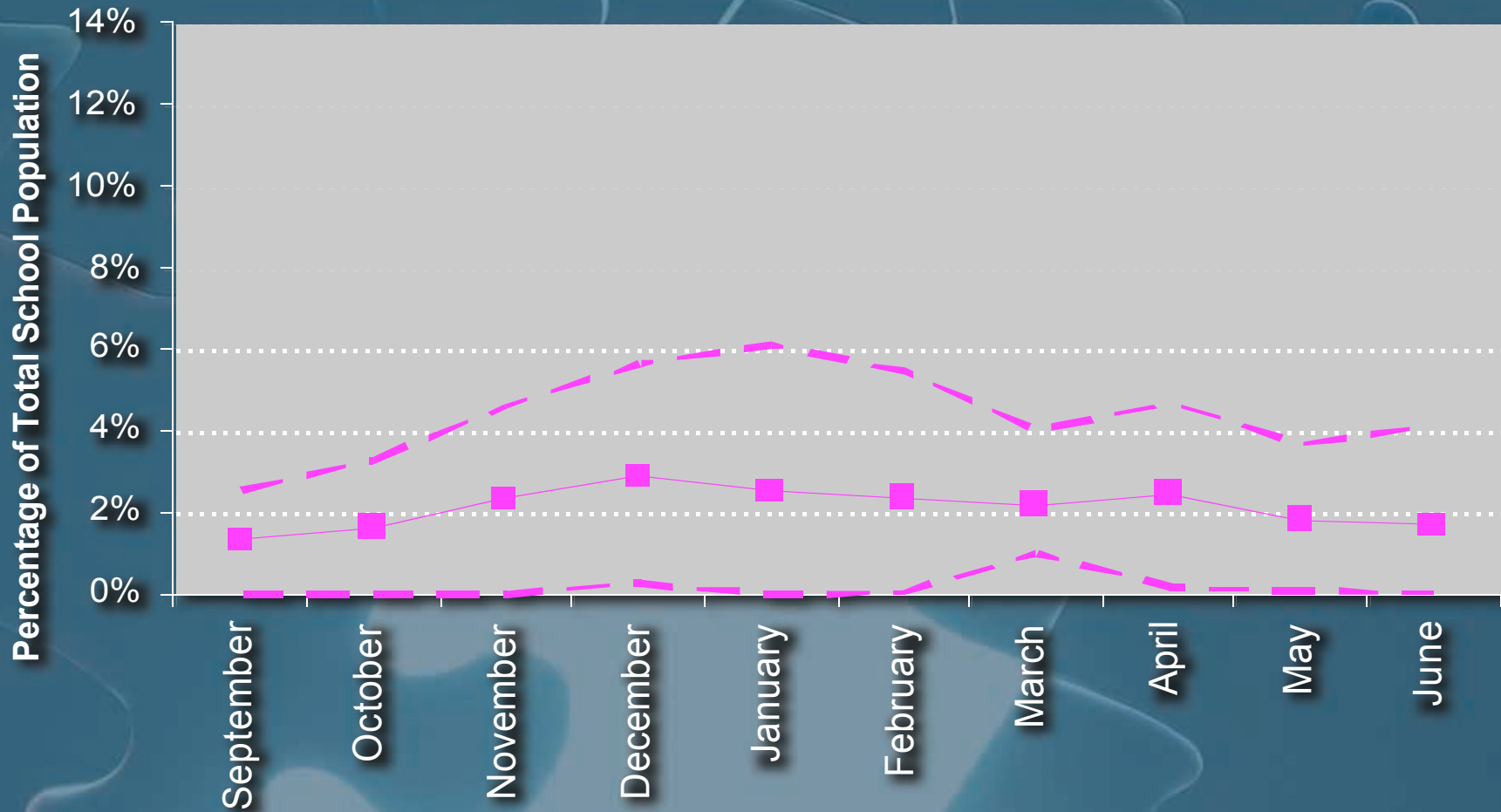


# Average Percentage of Student Absences due to All Cause by month – Elementary schools (N=155) (Sep 2007 – Jun 2008)



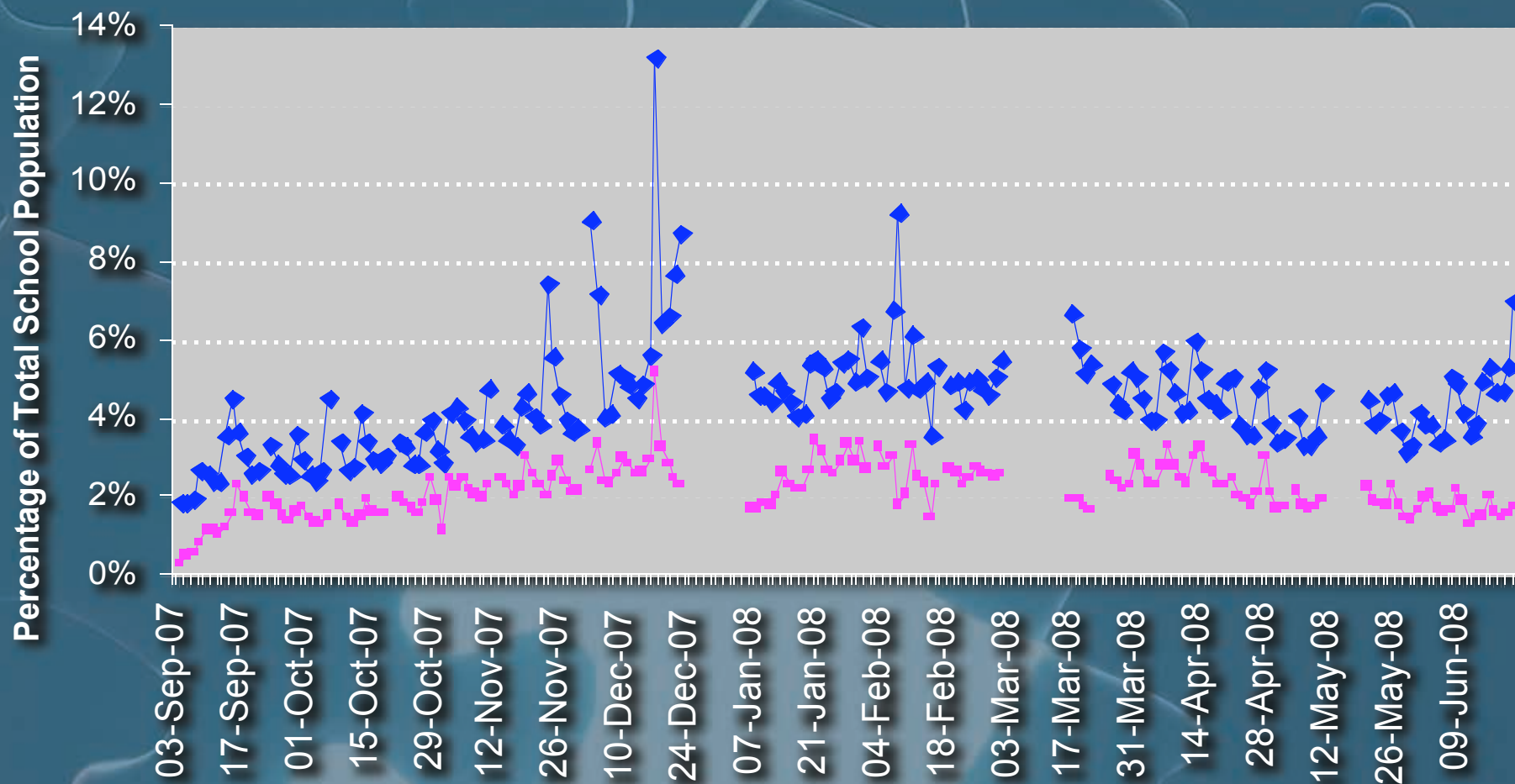


# Average Percentage of Student Absences due to All Illness by month – Elementary schools (N=155) (Sep 2007 – Jun 2008)











# Average Daily Percentage of Student Absences – All YRDSB Elementary schools (N=155) (2007-2008)





# Framework for syndromic surveillance evaluation

[Miller et al. EID 2004;10(10)]

-  Data are collected and should exist for reasons other than surveillance;
-  Data should be available for analysis in a timely manner;
-  Data should be recorded and accessible in a recognized, consistent, electronic format;
-  **Syndromes should be validated against existing traditional data sources;**
-  Sufficient historical data sources should be available that represent a reasonably static and definable population; and
-  Thresholds set for these systems should achieve high sensitivity and positive predictive value.



## 4. Syndromes should be validated against existing traditional data sources

- Sentinel school surveillance data → one piece of a larger puzzle
- Findings from one data stream may provide additional evidence as to whether a syndromic signal requires a public health response or whether a change is part of the normal baseline observed from year to year
  - Data on student absences due to breathing-related illness collected as part of this program coincided with increases of common respiratory illnesses in the community.



# Definitions



- Breathing-related illness

- Persistent cough, either dry or productive;
- Either a runny nose or nasal congestion; and/or
- Sore throat or hoarseness.



- Stomach-related illness

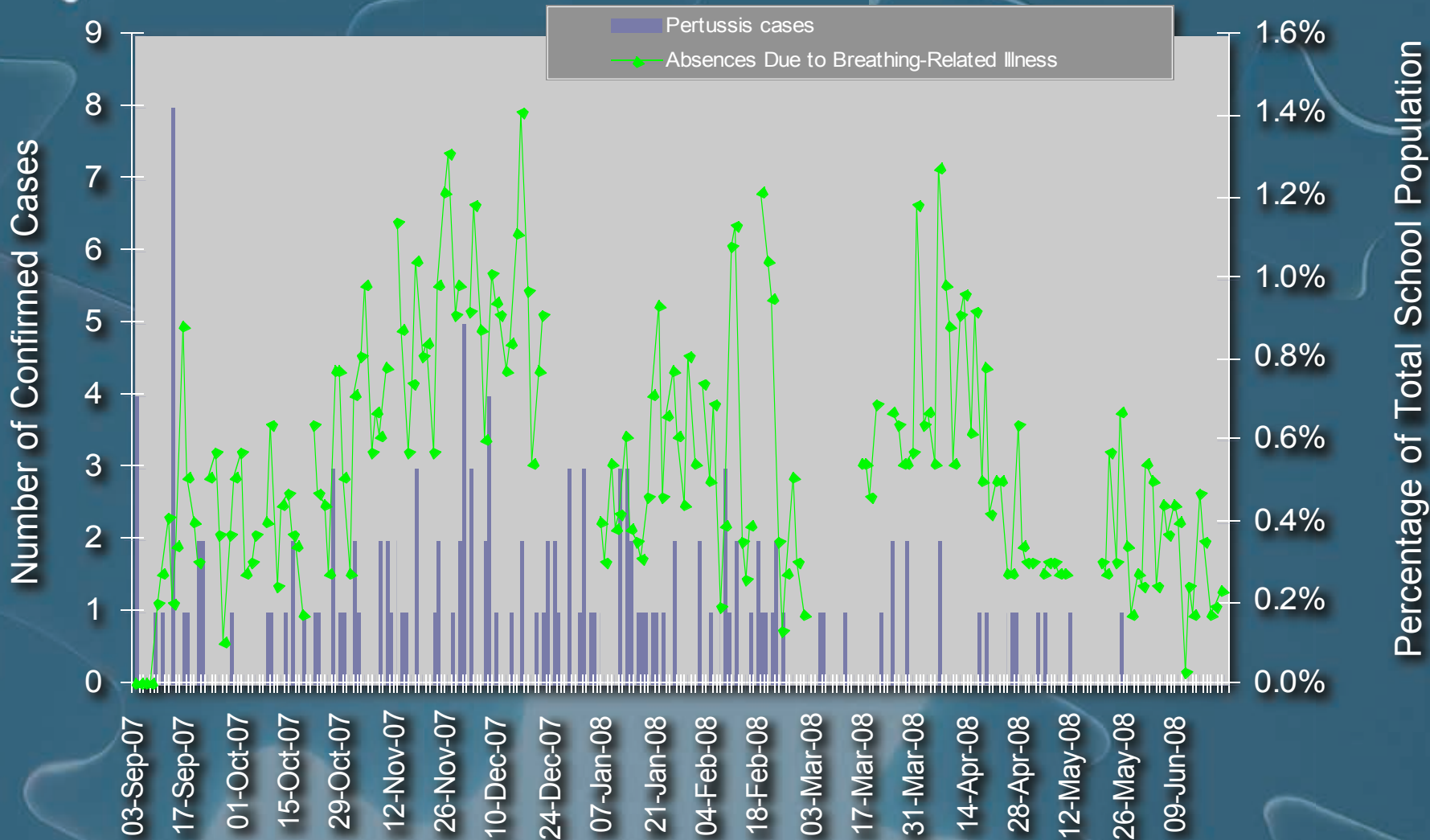
- Diarrhea;
- Vomiting; and/or
- Stomach cramps.

- 'Other'

- Fever;
- Malaise;
- Lethargy; and/or
- Anything that does not fit into above categories.

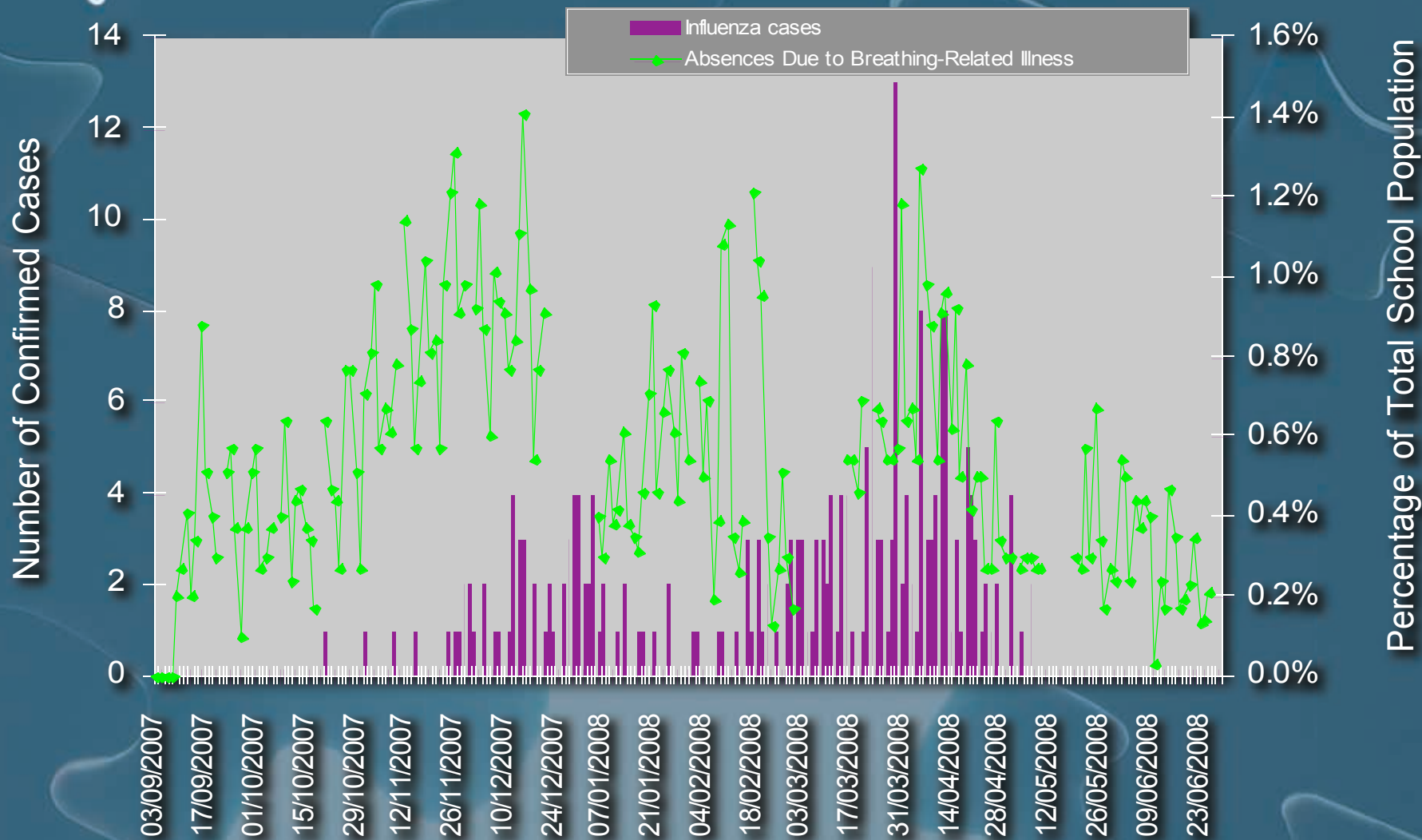


# Average Daily Percentage of Student Absences Due to Breathing-Related Illness (N=6) and Pertussis cases (2007-2008)





# Average Daily Percentage of Student Absences Due to Breathing-Related Illness (N=6) and Influenza cases (2007-2008)





## Current Activities

- Electronic transfer of data expanded to both Public and Catholic school boards
- Geographic Information System (GIS) analyses
- Historical analyses to help define baseline information for both school boards
- Collaboration to explicitly define co-ordinated activities in the event of a major increase in school absenteeism



# Summary

(1)

- Similar to the previous years, moderate increases in school absenteeism during the 2007-2008 school year were detected that coincided with peaks in influenza and pertussis activity.
  - Potential of providing insight into patterns of less severe illness occurring among children who do not seek medical attention in close to a real-time setting



# Summary

(2)

- Introduction of automatic data extractions has greatly enhanced the scope of this program
- Balanced against this wealth of data of student absences due to all illness and though more labour intensive, there is still demonstrated utility to collecting and monitoring student absenteeism by specific syndrome groups.



# Infectious Diseases Surveillance Unit

- For further information or to request previous annual summary reports:

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