

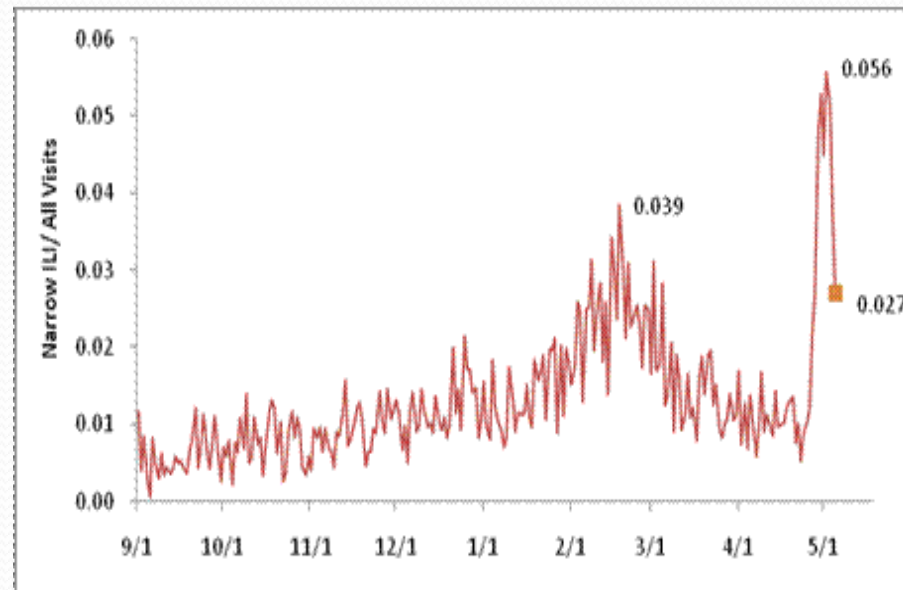


Novel H1N1 Influenza: Research Needs

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Problem

Worried Well Effect





The Question

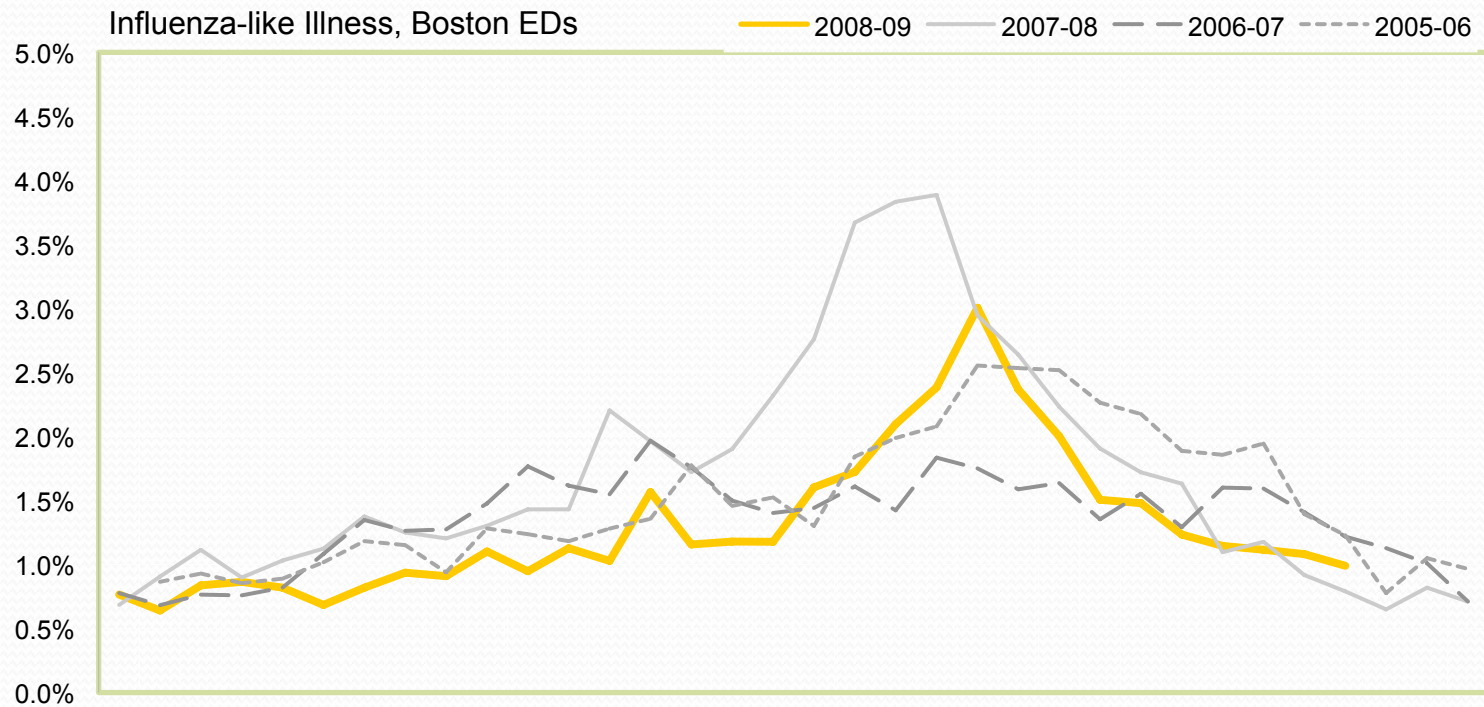
How to decrease 'noise' to find true burden of disease? How to make sense of syndromic data?



Challenges

- Health seeking behavior change
 - Increase burden of illness
 - Baseline illness (Seasonal influenza and Novel Influenza A (H₁N₁))
 - Geographic differences
 - Media effect: Clinton effect
 - Fear

Acute Care Visits for ILI: Boston, 2005-9

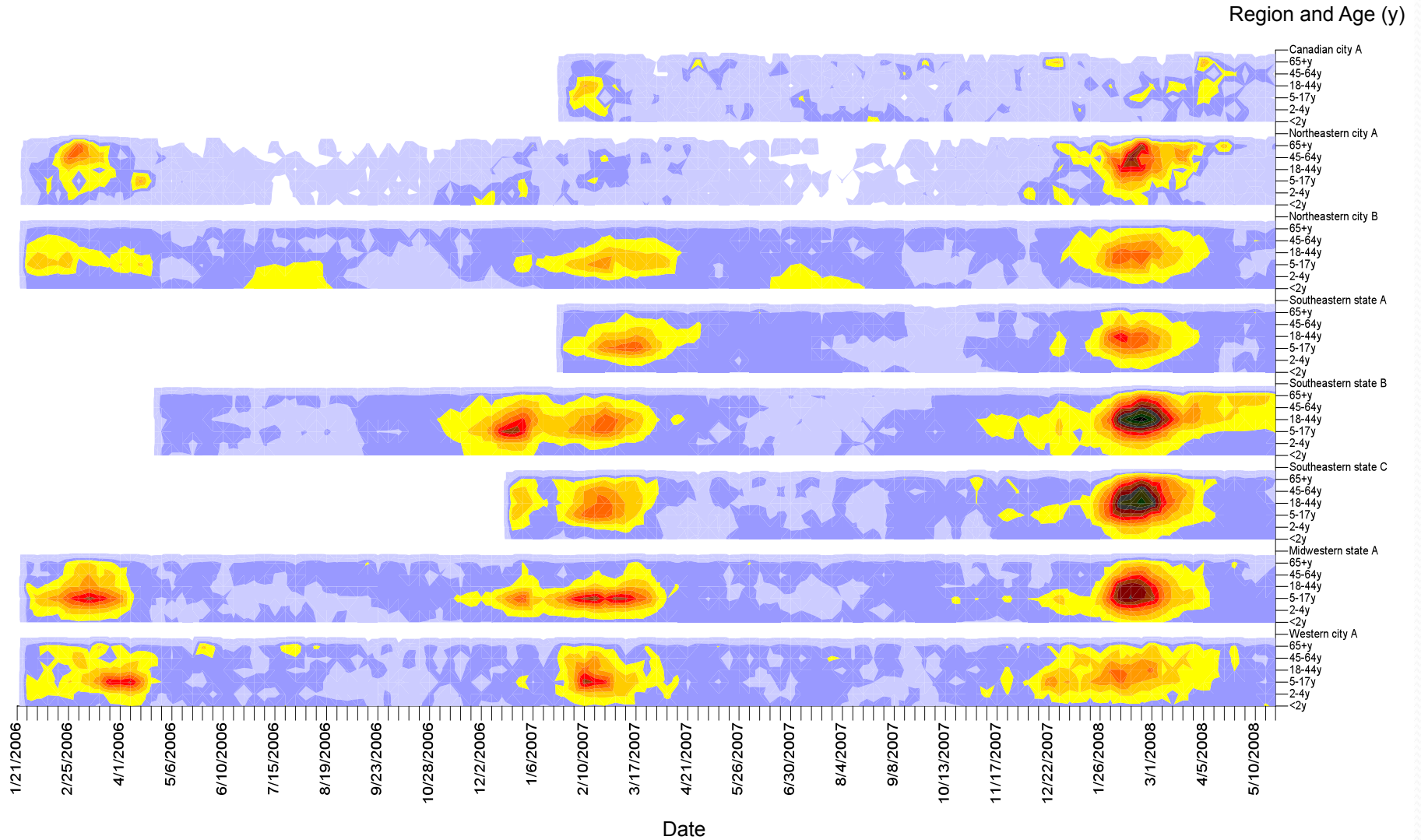




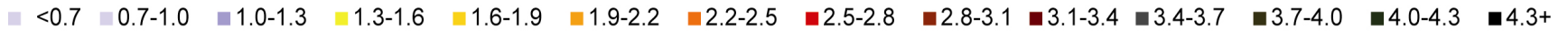
International Society
For Disease Surveillance

DiSTRIBuTE Visualizations - Week 2008-21 (ending Saturday, May 24, 2008)

Surface plots depict relative increase in ED syndrome visits as observed / baseline by jurisdiction and age.



Relative increase (observed/linear-baseline).





Ideas

- Readjust baselines using previous “worried well” periods (i.e. SARS or other major localized health scares) as a way to distinguish between true increase and shift in health seeking behavior.
- Severity adjustment – drop in % ED visits being admitted
- Objective clinical criteria – EHR surveillance, subjective vs. objective fever
- Ratio of ED visits to 911 dispatches as a way to measure degree of worried well effect

Ideas

- Adjustment of syndrome definitions: ‘Respiratory + Fever Reason for Visit’ or ‘Respiratory + Measured Temp > 99.9°F.’ The BPHC separated these two definitions and found a broadening divergence as subjective fevers climb and objective fevers remain steady.
- Auxillary real-time surveillance systems, i.e. school/workplace absenteeism
- Observing other syndromes simultaneously: Are GI complaints less susceptible to worried well effect?

Contacts

- Settings
 - Schools
 - Work places
 - Cruise ships and Airplanes
 - Homeless shelters, prisons
 - Health care settings
- Identify persons with the most risk of progress to disease
- PEP strategies

Challenges

- Limited data:
 - Location – where people sat
 - Time – length of time on a flight, hours in the classroom
 - Question of underlying illness
 - PEP effect: Treat the whole school
 - PPE effect: N95 respirator vs masks
- What have we learned from pertussis and TB

Models

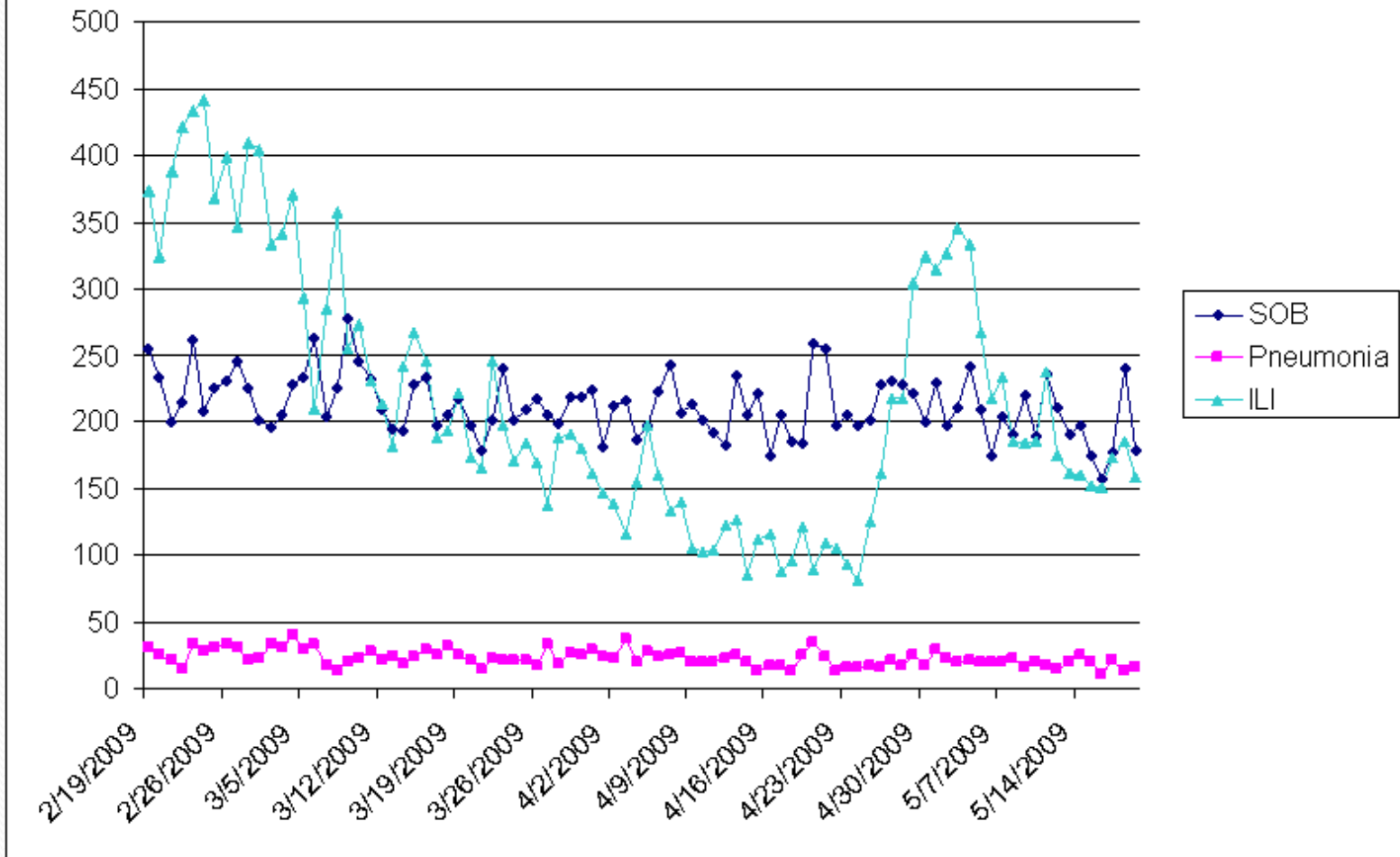
- Closing schools –
 - all schools
 - some schools with high rates of illness
 - none
- What is the effect of PEP and school closings
 - treat high risk family contacts
 - treat high risk school contacts
 - Others



Building Syndromes

- How can we use multiple syndromes to better understand H₁N₁ activity?

Respiratory Conditions, February-May 2009



Challenges

- Gi vs respiratory
 - Reports of Gi illness with H₁N₁
 - Combine the syndromes
 - Keep them separate
 - Sensitivity, specificity, positive predictive value
 - What is the impact on the various statistical models