

# Influenza 2008-2009:

*What is going on?*

*How can Community Health Centers help  
their patients?*

Beth Nivin

Bureau of Communicable Diseases

New York City Dept. of Health and Mental  
Hygiene

# By the end of this presentation

- Understand how influenza is tracked by the CDC, NY State and NY City
- Learn the different ways that NYC keeps an eye on influenza activity (not just through the labs)
- How to bring your CHC into the surveillance system and help your community detect flu activity.

# Public Health Implications

- Annual epidemics and potential for pandemics
- Significant morbidity- >200,000 flu-associated hospitalizations yearly, per epidemic, many due to post-infection bacterial pneumonia nationwide.
- Attack rates of 5-20% in general population.
- Nursing home attack rates of 25-60%, case fatality rates 10-20%.

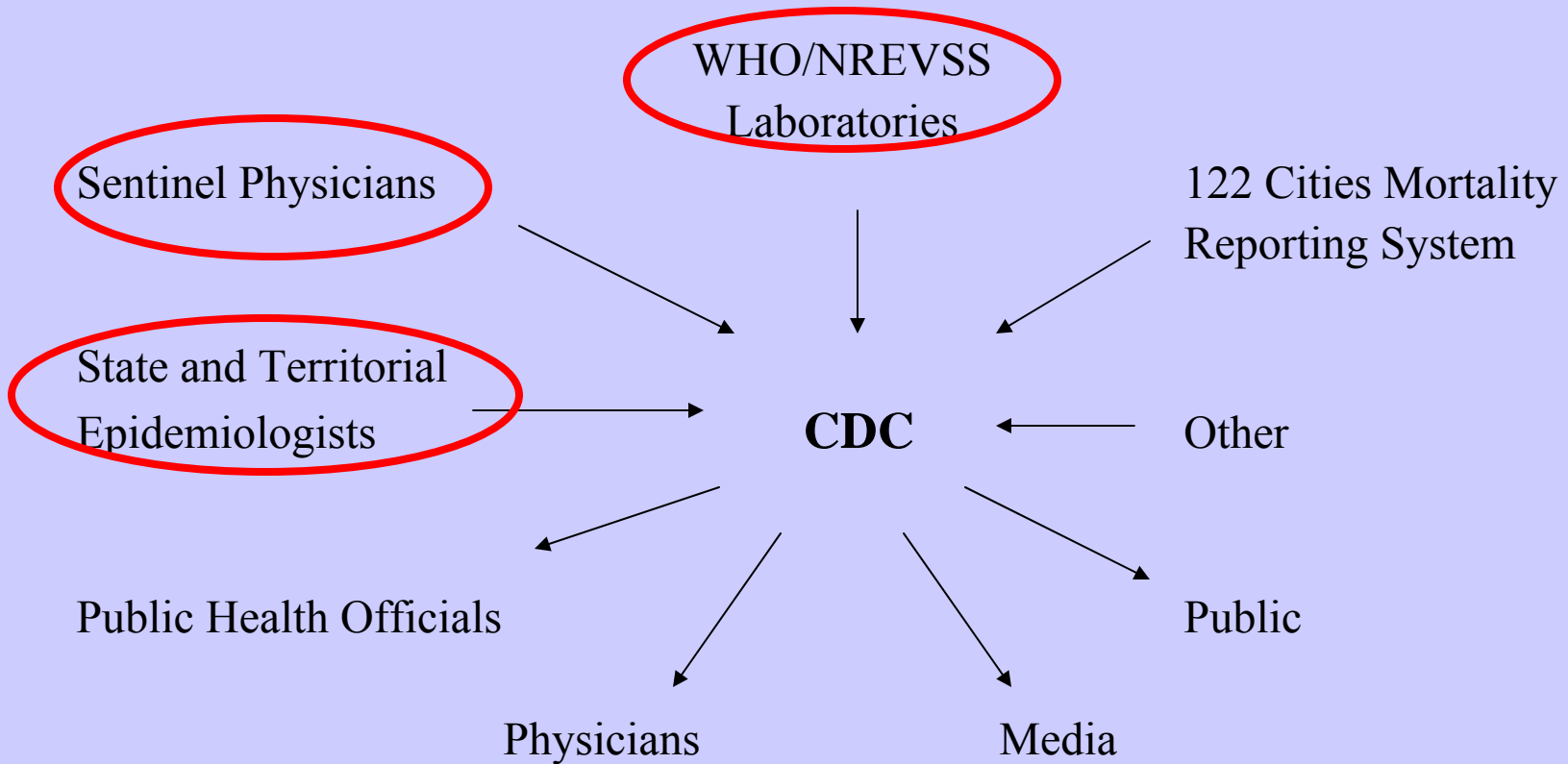
# More Public Health Implications

- Average 36,000 deaths in US yearly.  
(MVA - 40,000 deaths yearly).
- Highest rates of hospitalization among young children and persons > 65 years old.
- Over 90% of mortality in persons aged 65 and older during influenza season.

# National Surveillance Goals

- Determine when and where influenza activity is occurring
- Identify circulating strains
- Detect changes in the influenza virus
- Monitor/track influenza-related illness in the U.S.
- Monitor/measure the impact of influenza on hospitalizations and deaths in the U.S.

# US Influenza Surveillance System

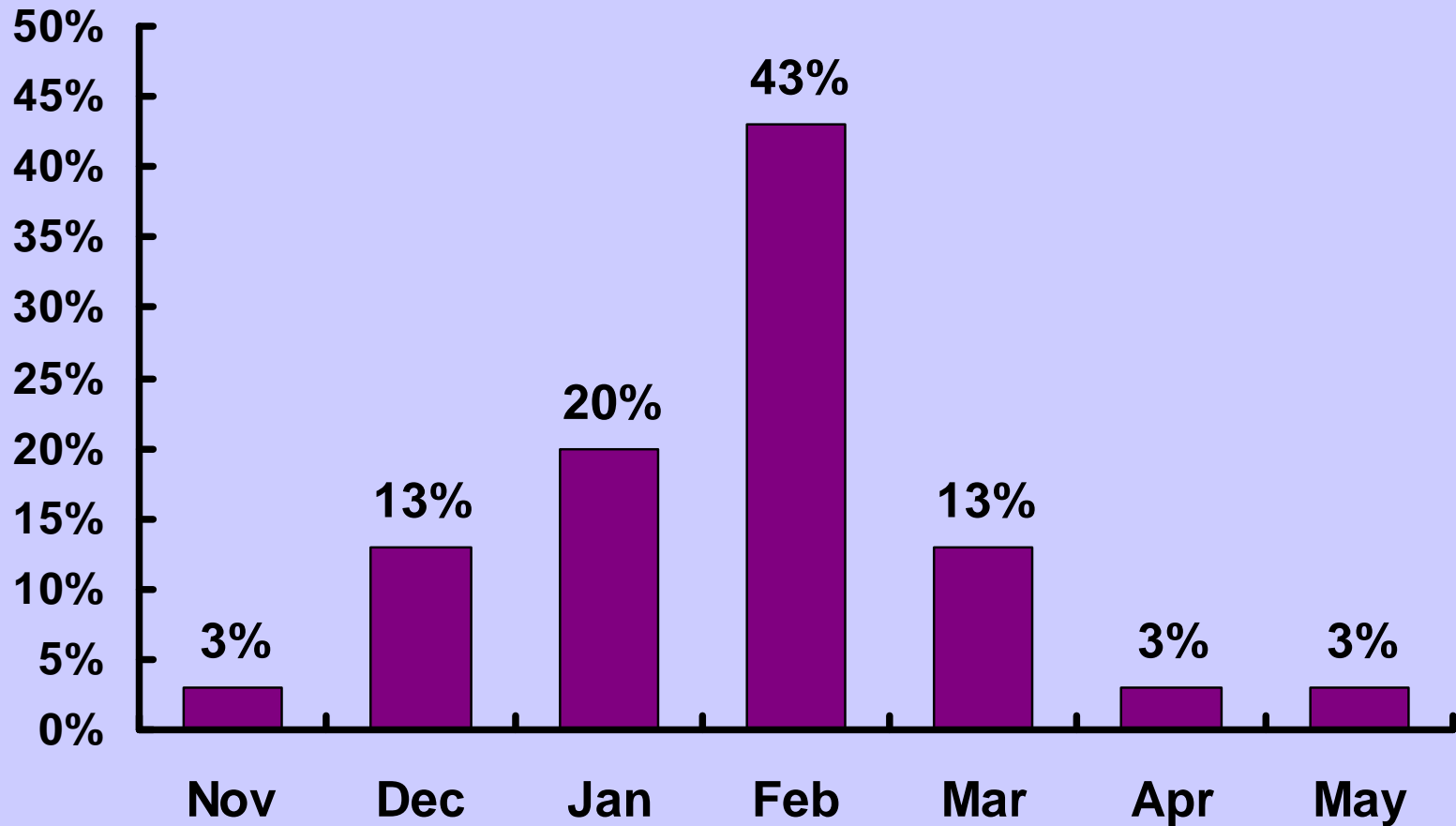


Internet (CDC&WHO), CDC Fax and Voice Information System  
MMWR and other written reports

# In addition to those resources:

- Nosocomial investigations of Nursing Homes.
- Vital Statistics- Influenza and Pneumonia Deaths
- Pediatric influenza mortality
- Hospital Emergency Response Data Systems (HERDS)
- Emergency department (ED) chief complaint system
- EMS-911 ambulance dispatch system
- Over the counter drug sales
- ECLRS- Electronic Laboratory Reporting System-  
Laboratory confirmed influenza reportable in NYC and  
NYS since 2007.

# Month of Peak Influenza Activity United States, 1976-2006





# Surveillance Objective

- **Track influenza related illness**
- Addressed by:
  - Influenza Sentinel Provider Surveillance Network
  - Syndromic Surveillance
  - Pharmacy Drug Sales
  - Nosocomial Outbreak Investigations

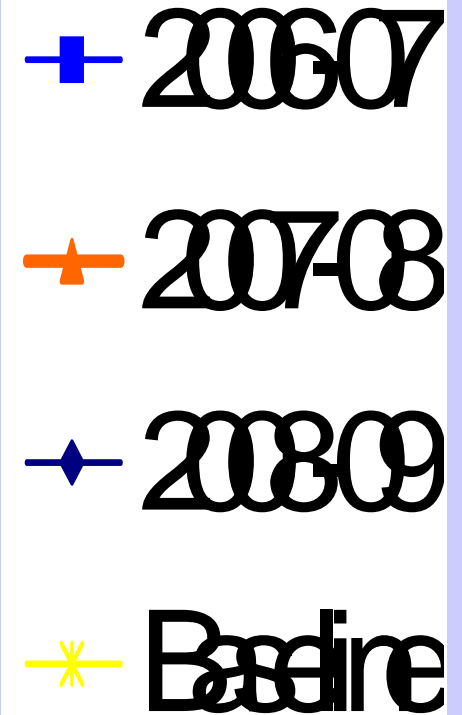
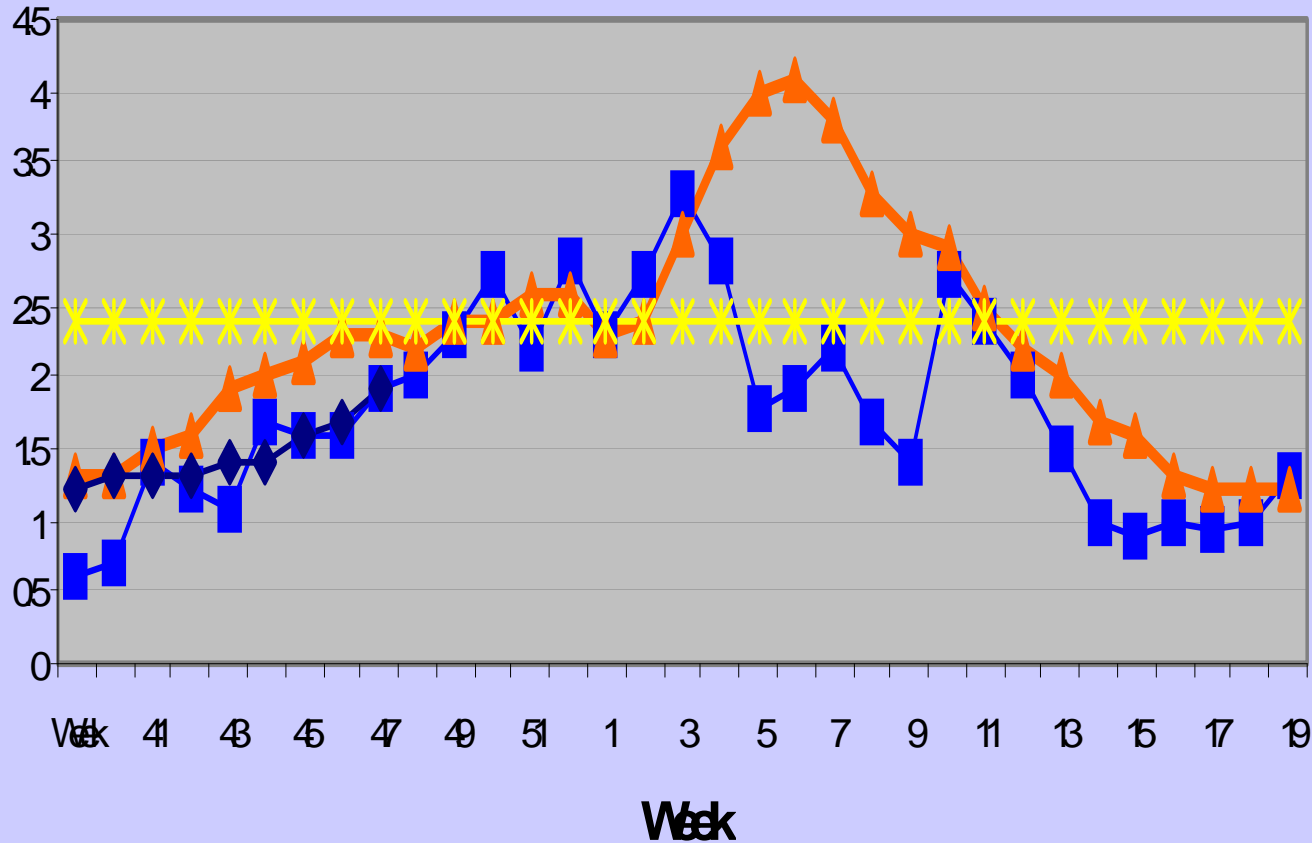
# Influenza Sentinel Provider Surveillance Network

- Nationwide 2300 sentinel providers
- NYC-40-50 providers in a variety of practices
- NYS-approximately 70 providers.
- Weekly counts
  - **Influenza-Like Illness (ILI)** by age groups
  - Total patient visits for any reason

## **Case Definition for ILI**

Fever=  $\geq 100$  F, plus cough and/or sore throat

# ISPN Influenza Likelihood Surveillance in New York City, 2006-2009



Ok, so I understand what influenza surveillance involves and why it is important...what can my community health center do to help and, in turn, help my community?????



# Be an Influenza Sentinel Site!!

- NYC DOHMH has had this collaboration with several clinics since 2006.
- Being a sentinel means:
  - Submitting weekly data on number of patients seen with influenza-like illness (ILI) by age group, and total number patients seen.
  - Submitting 4-6 specimens from patients with ILI to be tested at NYC DOHMH
  - Encouraging influenza vaccine acceptance.

# Why Participate?

- The earlier we can detect influenza in the community, the earlier we can start public health messaging for the community.
- Better knowing that influenza is circulating (not colds, not allergies) will assist your providers in making their clinical decision making.
- NYC DOHMH will provide Free CLIA-waived influenza rapid test kit after receipt of four reports.
- Viral collection kits for free testing at DOH MH Public Health Laboratory
- NYC DOHMH will provide free educational influenza information sessions to your staff and patients anywhere in the 5 boroughs.

# How to Enroll as Sentinels

- New York City DOHMH
  - Call Beth Nivin 212 442-9050  
bnivin@health.nyc.gov or Alaina Stoute 212  
788-4150 astoute@health.nyc.gov
- New York State DOH
  - Call Chris Waters at 518 473-4439  
clwo6@health.state.ny.us

# Syndromic Surveillance

- Existing electronic data from 90% of NYC emergency departments and calls from EMS-911 ambulance dispatch system are coded into disease syndromes and transmitted to DOHMH on daily basis.
- Data are used to monitor for City-wide trends and geographic clustering of clinical syndromes, which are non-specific (e.g., diarrhea and ILI) but may represent an early warning of a disease outbreak.



# Pharmacy Drug Sales

- Adjunct system that monitors trends in sales of any over-the-counter medication with “flu” or “tussin” in the name. Temporal trend analyses are similar to ED and EMS systems.
- Data also collected on prescription antiviral (influenza) medication (Medicaid) sales (e.g., oseltamivir).

# Nosocomial Investigations

- Acute and long-term care facilities must report even one confirmed case of influenza or increase in influenza-like activity.
- NYC/NYS DOH investigate and provide guidance on:
  - Laboratory testing
  - Infection control measures
  - Surveillance
  - Treatment and prophylaxis

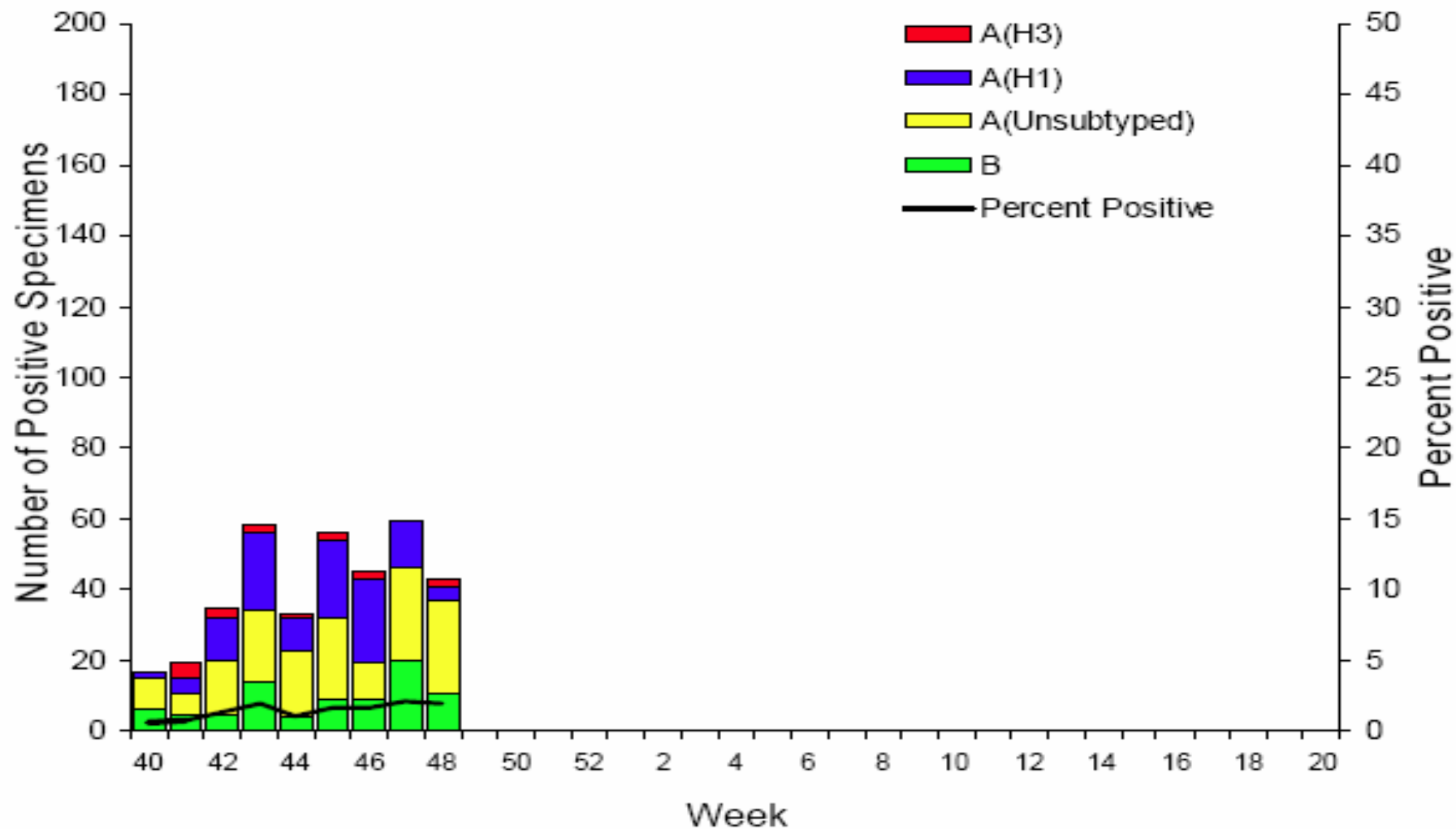
# Surveillance Objective

- **Determine when, where and which influenza viruses are circulating**
- Addressed by laboratory surveillance and ECLRS.

# Laboratory Surveillance Nationwide

- Network of state and local public health, hospital and commercial labs that test specimens during routine patient care, outbreak investigations, surveillance.
- Weekly reports of number of specimens tested, number positive for flu.
- Labs send a subset of influenza isolates to CDC for further testing/subtyping

# Influenza Positive Tests Reported to CDC by U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2008-09



2008-2009 Influenza Season – Week 48, ending November 29, 2008

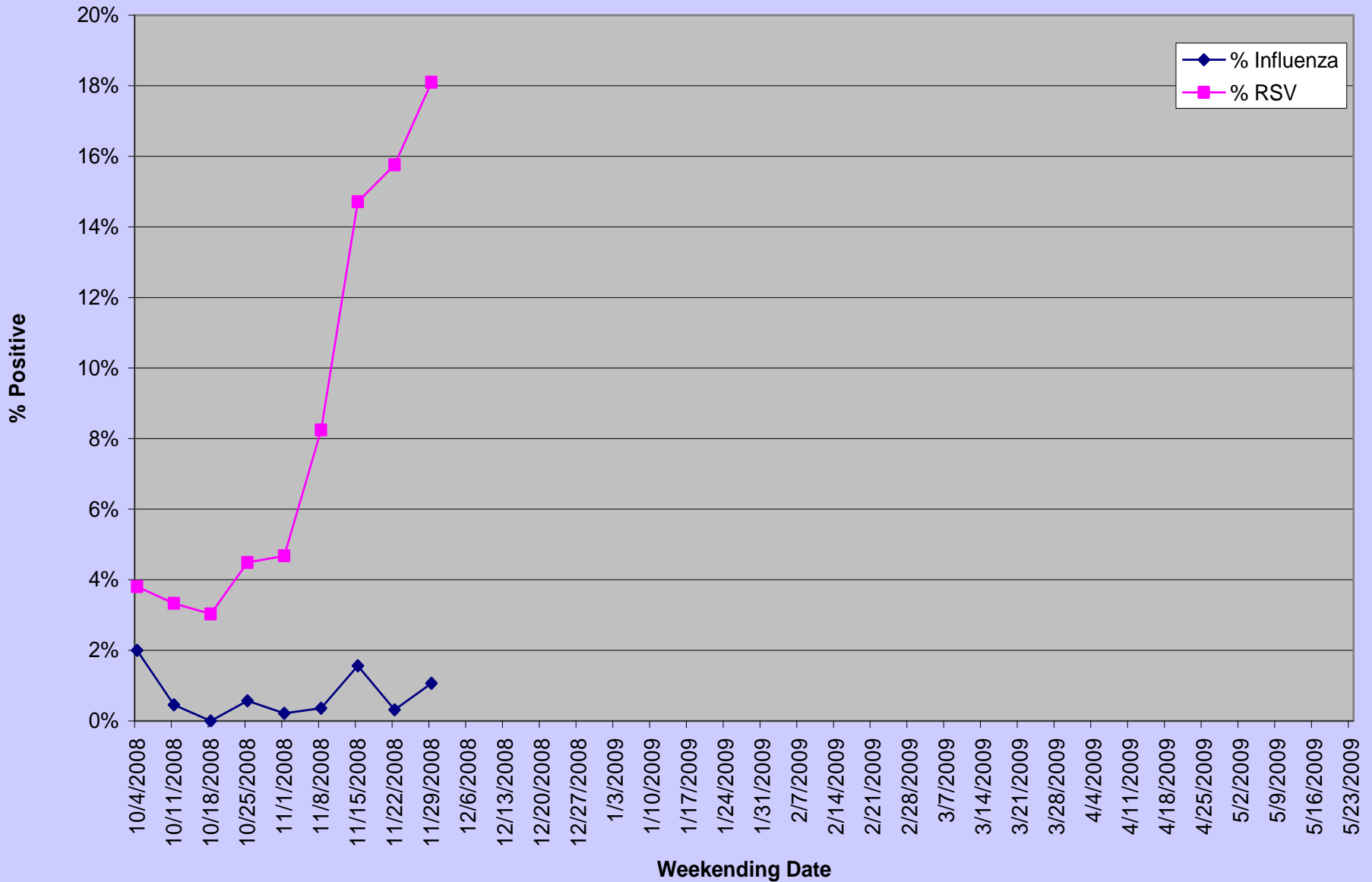


# Laboratory Surveillance

## New York City

- Approximately 40 NYC laboratories perform some kind of testing for influenza.
- Influenza surveillance coordinator calls 30-40 labs on a weekly basis-active surveillance- to obtain number of respiratory specimens tested, and number positive for Influenza A and B, RSV as well as other viral pathogens.

# NYC Laboratory Testing for Influenza and RSV



# Surveillance Objectives

- **Determine the impact of influenza on mortality**
- Addressed by:
  - 122 Cities Mortality Reporting
  - Pediatric Mortality Reporting

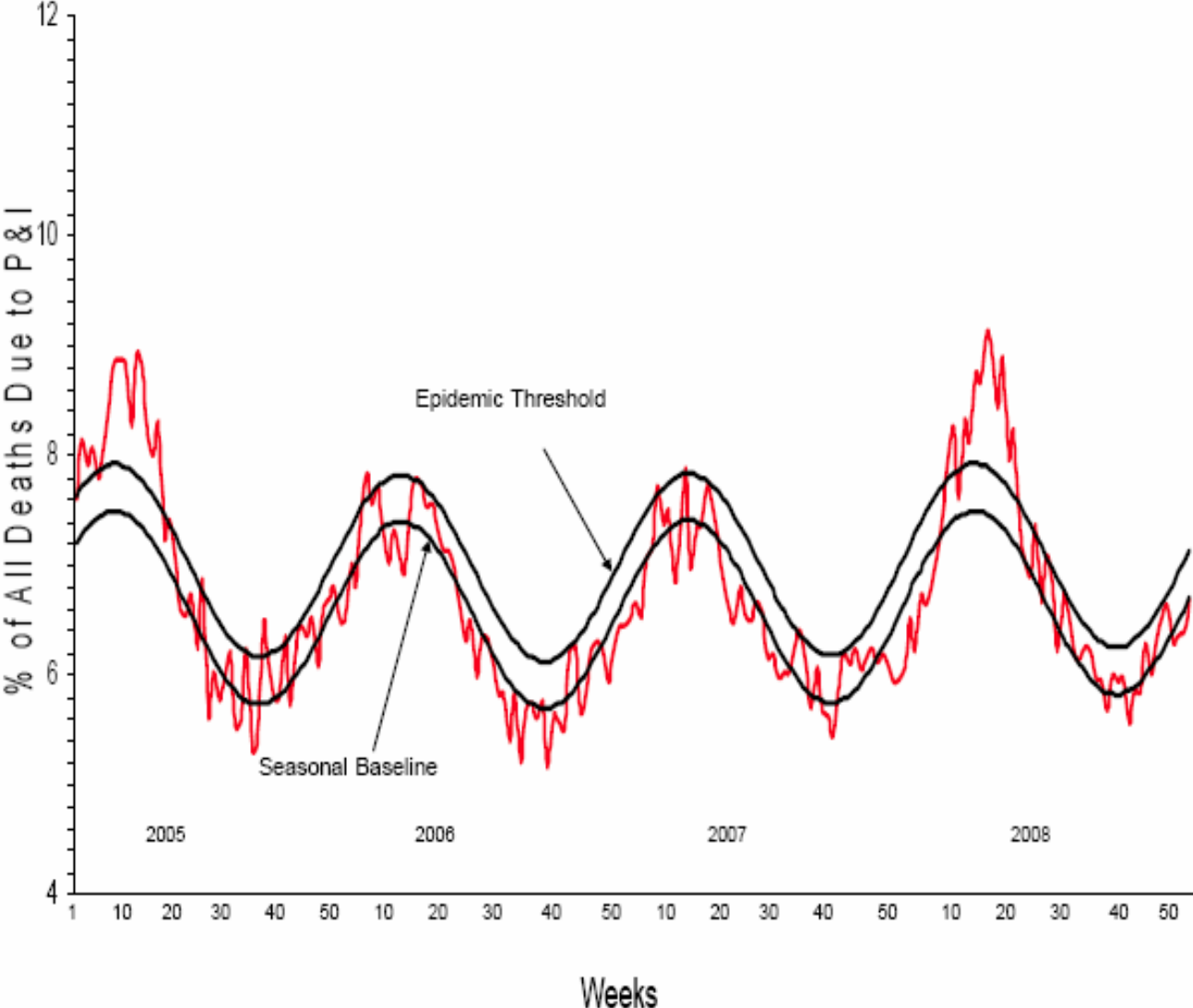


# Nationwide Surveillance

## 122 Cities Mortality Reporting

- Vital Statistics offices of 122 US cities send weekly reports
  - # of death certificates with influenza or pneumonia as underlying or contributing cause of death.
  - Total # of death certificates filed
  - Reporting occurs year round

# Pneumonia and Influenza Mortality for 122 U.S. Cities Week ending 11/29/2008



# Pediatric Mortality Reporting

- Laboratory-confirmed influenza deaths among children <18 years.
- Nationally notifiable condition
- NYC DOHMH and NYSDOH both report to CDC

# New York Surveillance Pneumonia/Influenza Deaths

- Reported by Office of Vital Statistics
- Weekly summary of Influenza and Pneumonia deaths and rates per 100,000 population
- Influenza/Pneumonia deaths further broken down by age groups

# Surveillance Objective

- **Determine the impact of influenza on hospitalizations**
- Addressed by:
  - Hospital Emergency Response Data System (HERDS)
  - Emerging Infections Influenza Project (EIP)
  - New Vaccine Surveillance Network
  - NYC only involved in HERDS system currently.

# National Surveillance

- Emerging Infections Influenza Project (EIP)
  - select sites in 10 states report data on laboratory confirmed influenza-associated hospitalizations in children and adults.
- New Vaccine Surveillance Network
  - Select sites report laboratory-confirmed influenza associated hospitalizations in children <5 yo-specimens tested by culture and PCR.

# NYC and NYS Surveillance

- Hospital Emergency Response Data System
  - Weekly reports of laboratory-confirmed hospitalized influenza cases, stratified by age group.
  - Required as per New York State Department of Health
  - Only numerator data are obtained; no personal identifiers or patient-specific information are collected, making it difficult to follow up if case investigations are needed.
  - Information submitted to HERDS requires active surveillance and manual data entry by hospital staff; not yet an automated, electronic system; variable reporting compliance.

# Surveillance Objective

- **Assess influenza activity at state level**
- Addressed by:
  - State and Territorial Epidemiologists Report

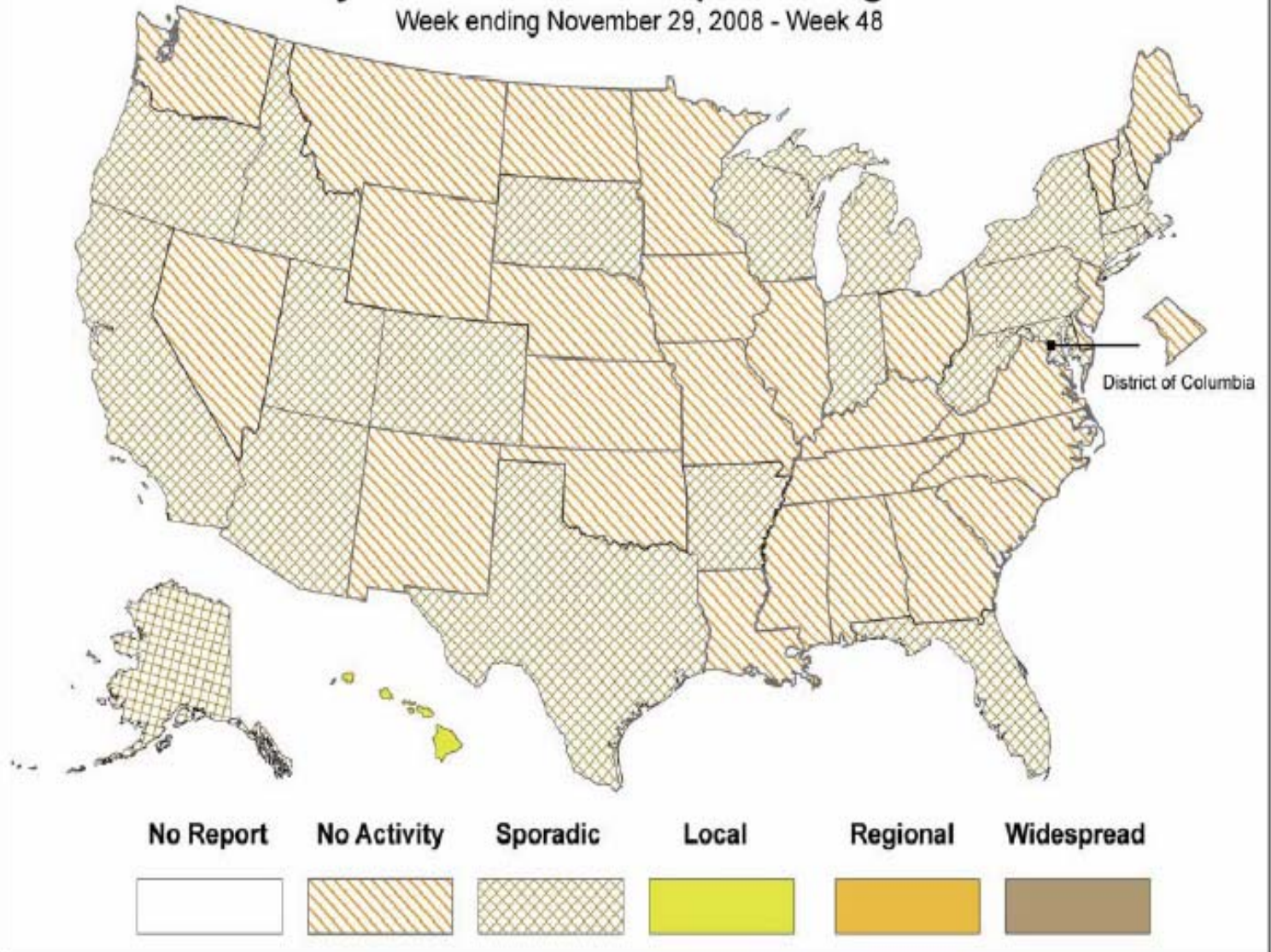


# National Surveillance

- State and Territorial Epidemiologists Report
  - State health departments report the overall level of influenza activity in their area to the CDC.
  - Weekly report of no activity, sporadic, local outbreak, regional or widespread.

# Weekly Influenza Activity Estimates Reported by State & Territorial Epidemiologists\*

Week ending November 29, 2008 - Week 48



\* This map indicates geographic spread & does not measure the severity of influenza activity

# Pandemic Influenza Surveillance Systems

- Use of existing systems, with enhancements.
- Proposed new systems
  - Enhanced passive surveillance for novel strains of influenza among travelers to areas currently affected by avian and/or human outbreaks.
  - Community outreach to city neighborhoods with large populations of immigrants from affected areas overseas.
  - Surveillance for ILI among international passengers arriving from affected areas overseas.

# Objectives for Pandemic Influenza Surveillance (1)

- Monitor City and State-wide trends in influenza-like illness (ILI) activity
- Detect outbreaks in institutional settings in order to provide public health consultation on effective control measures.
- Detect the first travel-related cases of a novel influenza viral strain with pandemic potential in NYC/NYS
- Once the pandemic reaches NYC/NYS, inform the public health response by tracking its progression.

# Objectives for Pandemic Influenza Surveillance (2)

- Characterize morbidity and mortality in NYC/NYS and identify population groups at increased risk for severe disease, complications, or death, including age-specific rates of disease.
- Assess transmissibility factors that either reduce or promote the spread of influenza in order to develop measures for community or health care settings to reduce secondary transmission.
- Assess the sensitivity and specificity of laboratory diagnostics in detecting the pandemic strain.

# Objectives for Pandemic Influenza Surveillance (3)

- Identify vaccination failures and antiviral resistance.
- Conduct epidemiologic studies to determine clinical, epidemiologic, and/or treatment criteria associated with survival and improved outcomes.
- Monitor for emergence of a second pandemic wave and/or changes in the pandemic strain.

# Influenza Surveillance is Useful

- Monitoring trends in influenza-like illness activity in the community and health care settings, and monitoring influenza related mortality.
- Information is used to identify and mitigate outbreaks in institutional settings, and alerting/informing the medical community regarding vaccination and antivirals.
- Surveillance systems will be expanded as the likelihood of an influenza pandemic becomes more imminent.

# Viewing Influenza Surveillance

- [NYSDOH webpage](http://www.health.state.ny.us/)  
<http://www.health.state.ny.us/>
- <http://www.health.state.ny.us/diseases/communicable/influenza/surveillance.htm>
- NYC DOHMH webpage  
<http://www.nyc.gov/html/doh/html/imm/imm/pinfo.shtml#sur>