

Using EHRs for Real-Time Collaboration between Primary Care and Public Health

*Successful Collaboration Between A Community
Health Center Network and a Public Health
Department*

Joseph Lurio, MD
Michelle Pichardo, MPH

The Institute for Family Health

15 Community Health Centers –

5 Bronx, 4 Manhattan,

6 Mid-Hudson Valley

8 homeless healthcare sites

1 School based health programs

3 Dental centers

2 Community Mental Health Centers

2 Free Clinics

225,000 primary care visits

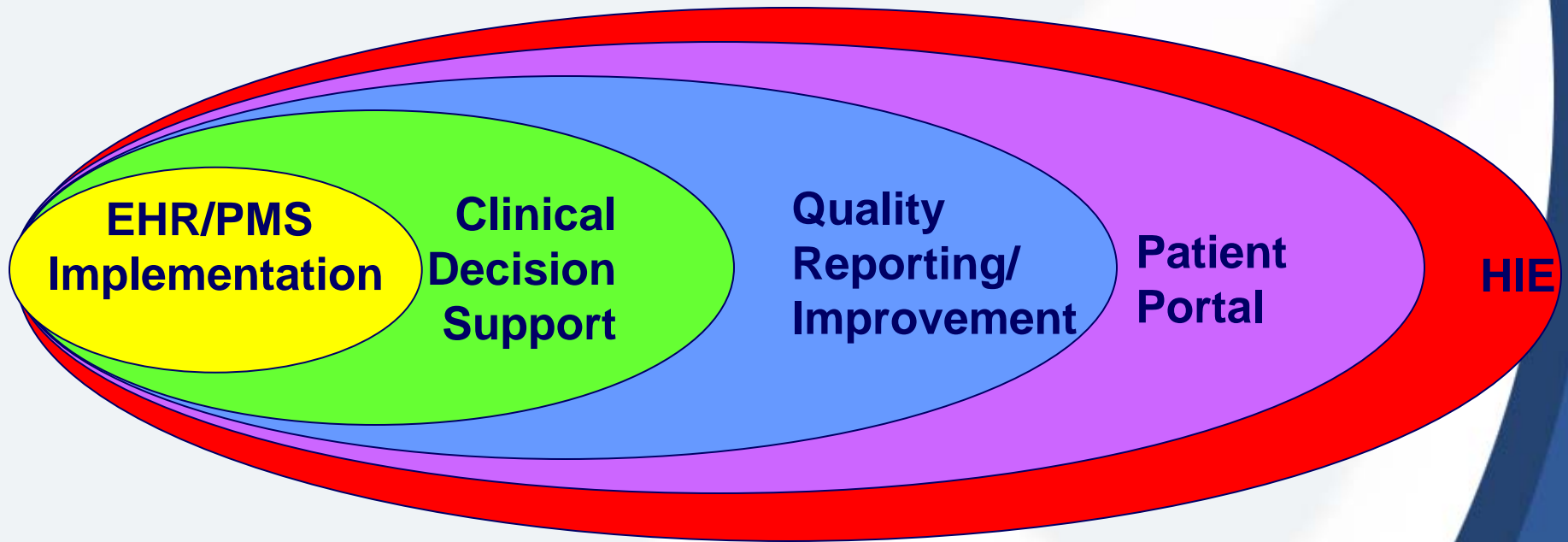
70,000 patients



The Institute has been fully paperless since September 2002 on Epic Systems (Verona, Wisconsin) Electronic Health Record and Practice Management System

In 2007 the Institute doubled in size with the acquisition of the Mid Hudson Family Health Institute. In the first month all 6 sites were live on the PMS. Six months later all sites were fully live on the EHR.

Progression of HIT Innovations at the Institute



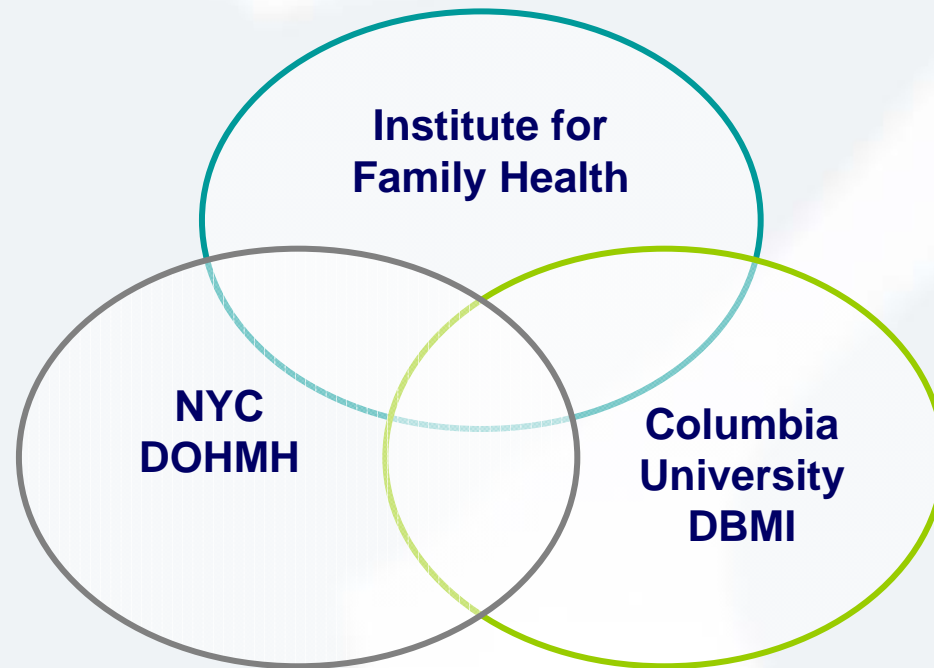
NYC DOHMH

- Serves all five boroughs of NYC
- Six Major Divisions
 - Disease Control
 - Environmental Health
 - Epidemiology
 - Health Care Access and Improvement
 - Health Promotion and Disease Prevention
 - Mental Hygiene
- Staff of 6,000

Center of Excellence in Public Health Informatics



Project Partners



NEW YORK CITY DEPARTMENT of HEALTH and MENTAL HYGIENE



Columbia University



Goals of Collaboration

- Improve Function of EHR
- Demonstrate How CHCs can be integrated into Public Health Infrastructure



Collaborative Projects



Center of Excellence (2004)

- TCNY
- Syndromic Surveillance
- Immunization Interface (Bidirectional) (NYCDOHMH & IFH)
- Medlee natural language processing data extraction project (Columbia)

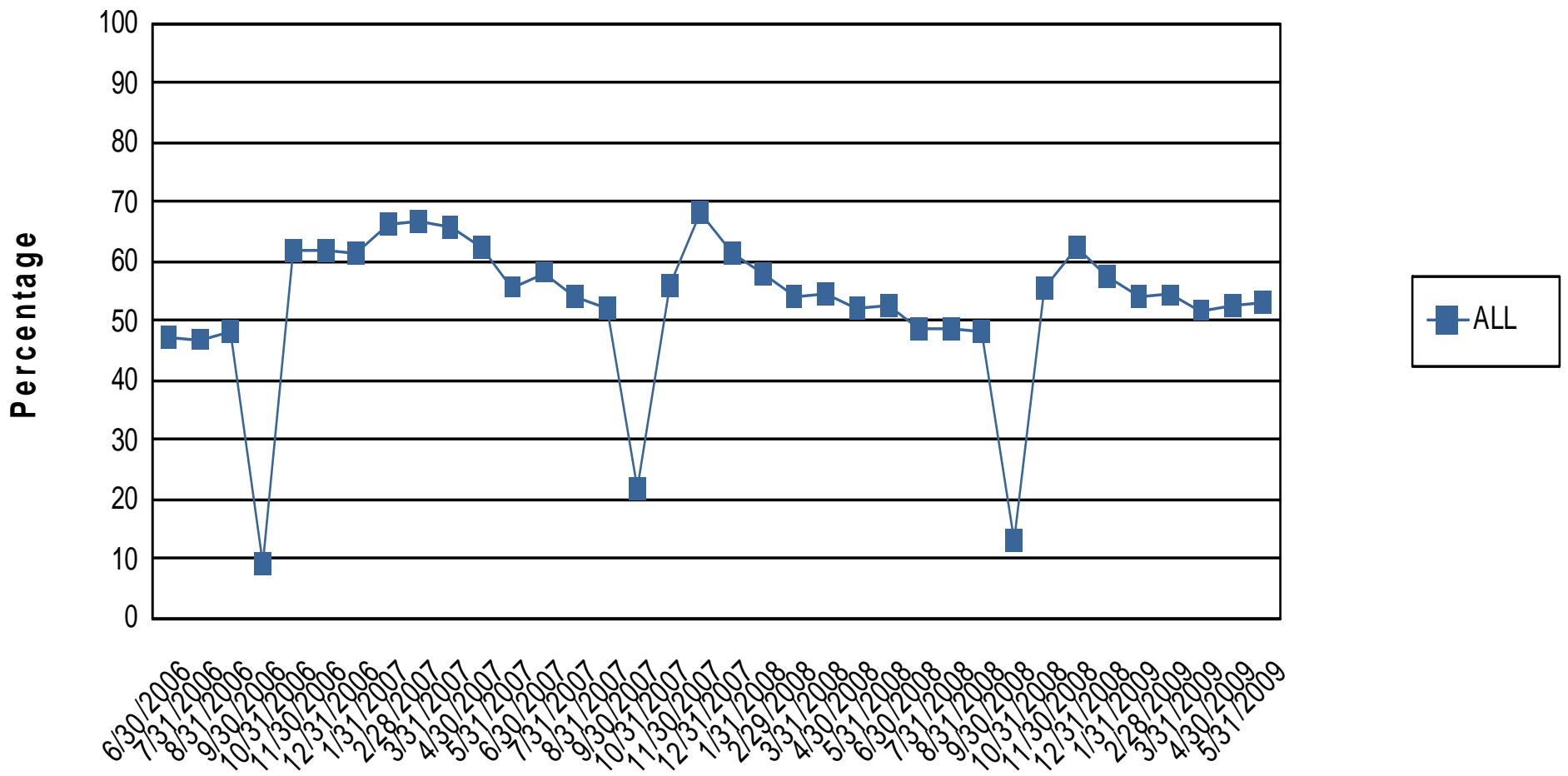
New Projects

- Reportable Disease Notification
- Real Time, Bi-Directional Alerts
- SSTI (Appropriate Skin Infection Treatment)
- Swine Flu Surveillance

Take Care New York (TCNY) Goals

- Have PCP
- Healthy Heart
 - Diabetes Mellitus: BP/LDL/A1c
 - Cardiac Patients: BP/LDL
- Cancer Screening
 - Mammo
 - Cervix
 - Colorectal
- Diabetes Screening
 - Hypertensives
 - Hyperlipidemics
- HIV Screening
- Substance Use
 - Assessment (Tobacco, Alcohol, Drugs)
 - Smokers Taking meds
 - Smoker Quit Rate
 - Buprenorphine Treatment
- Obesity (BMI Assessment and Treatment)
- Depression
 - Screening
 - Reassessment (Treatment)

Percentage of patients ages 65+ who received a flu shot since the most recent September 1



TCNY Integration into Clinical Workflow

- Strategy: Clinical Alerts (BPAs) with hyperlinked order sets (SmartSets)
- BPAs
 - Can be set to fire with:
 - Specific chief complaint entered by nurse
 - Diagnosis entered by provider
 - No order for procedure, or filed result within defined look back period
 - Selection Criteria: Age, Gender, Diagnosis, Med.

Zztrizetto, Test Age Sex DOB MRN Allergies PCP Alert INS MyChart
44 yea F 1/19/1965 999498 Peanut-derived, Latex, Furosen* ZZTEST, MD HM, AlertSLIDING FEE* Inactive

Snapshot 6/24/2009 visit with JOSEPH LURIO

Chart Review Images Questionnaires Admin Benefits Inquiry References SmartSets Scans Open Orders Change PCP Print AVS More

MyChart Results Rel... Allergies: Peanut-derived, Latex, Furosemide, Furosemide, Sulfa Drugs, Penicillins, Egg White Reviewed on 2/26/2003
ZZTRIZETTO,TEST (999498) Age: 44 Sex: F PCP: ZZTEST,M EMC #: NONE
BP: P: T: T Src: Resp: W: H:

Problem List Pack-Years: 2.5 Verified: 1/19/2004

History Charting Chief Complaint Vitals

Letters BestPractice

Demographics SmartSets

Growth Chart Nursing Notes

Allergies Progress Notes

Medications History

Order Entry Diagnoses

MyChart Administrati... Orders

Media Manager Pt. Instructions

Forms LOS & Follow-up

Imm/Injections Close Encounter

Enter/Edit Results

Visit Navigator

Hotkey List

Exit Workspace

Navigator Hotkeys

JOSEPH LURIO Cosign-Orders, Epic Info, Future/Standing Orders, Patient Call, Results, Staff Message, Addendum Notification, 11:51 AM

BestPractice Alerts

MAMMOGRAPHY - RECENT ORDER NOT FOUND
(MAMMOGRAPY BI last done: 3/12/2003)
 Open SmartSet: BREAST CANCER SCREENING

NURSE/MA: No BMI within 2 years - please record Height and Weight.

Please update Alcohol section-frequency and quantity must be completed.
[Jump to History](#)

Please offer HIV testing. Patient has no HIV screening on record.
 Open SmartSet: HIV PRE/POST TEST COUNSELING-MED PROVIDERS

NURSE/MA: Please open this smartset to perform PHQ2.
(PHQ9 last done: 3/9/2006)
 Open SmartSet: PHQ2

Smoker! Use SmartSet to refer to "Fax-to-Quit " smoker's quitline (or to document counseling).
 Open SmartSet: SMOKING CESSATION REFERRAL & TREATMENT

Refresh Accept

Nursing Notes

None

Progress Notes

+ Create Note



Zztrizetto, Test

Age Sex DOB MRN Allergies PCP Alert INS MyChart
44 yea F 1/19/1965 999498 Peanut-derived, Latex, Furosen* ZZTEST, MD HM, Alert SLIDING FEE* Inactive

- Snapshot
- Chart Review
- MyChart Results Rel...
- Results Review
- Flowsheets
- Problem List
- History
- Letters
- Demographics
- Growth Chart
- Allergies
- Medications
- Order Entry
- MyChart Administrati...
- Media Manager
- Forms
- Imm/Injections
- Enter/Edit Results
- Visit Navigator

SmartSet - Decision Support

Association
 Primary Dx
 Edit Item
 Favorite
 Pharmacy
 Questionnaire
 Health Maint
 Accept/Pend
 Accept/Sign
 Cancel

CANCER-> MAMMO > 1 YR SINCE LAST ORDER - SmartSet # 154

MAMMOGRAPHY - RECENT ORDER NOT FOUND

(MAMMOGRAPY BI last done: 3/12/2003)

Breast Cancer Screening

Mammogram Tests (single)

Mammogram Done Elsewhere (ask for copy report to be scanned)

MAMMOGRAM; UNILAT

MAMMOGRAM; BILAT

SCREENING MAMMOGRAM; BILAT

Diagnosis (multiple)

SCREENING MAMM-MALIG NEOPL-HI RISK [v76.11]

SCREENING MAMM-MALIG NEOPL-OTHER [v76.12]

Patient Information/Counseling (multiple)

Patient information

Refusal/Exclusion (multiple)

MAMMOGRAM REFUSED

MAMMOGRAM NOT INDICATED

Authorizing Provider

LURIO, JOSEPH [14]

Cosign for Procedures

SmartSet Notes

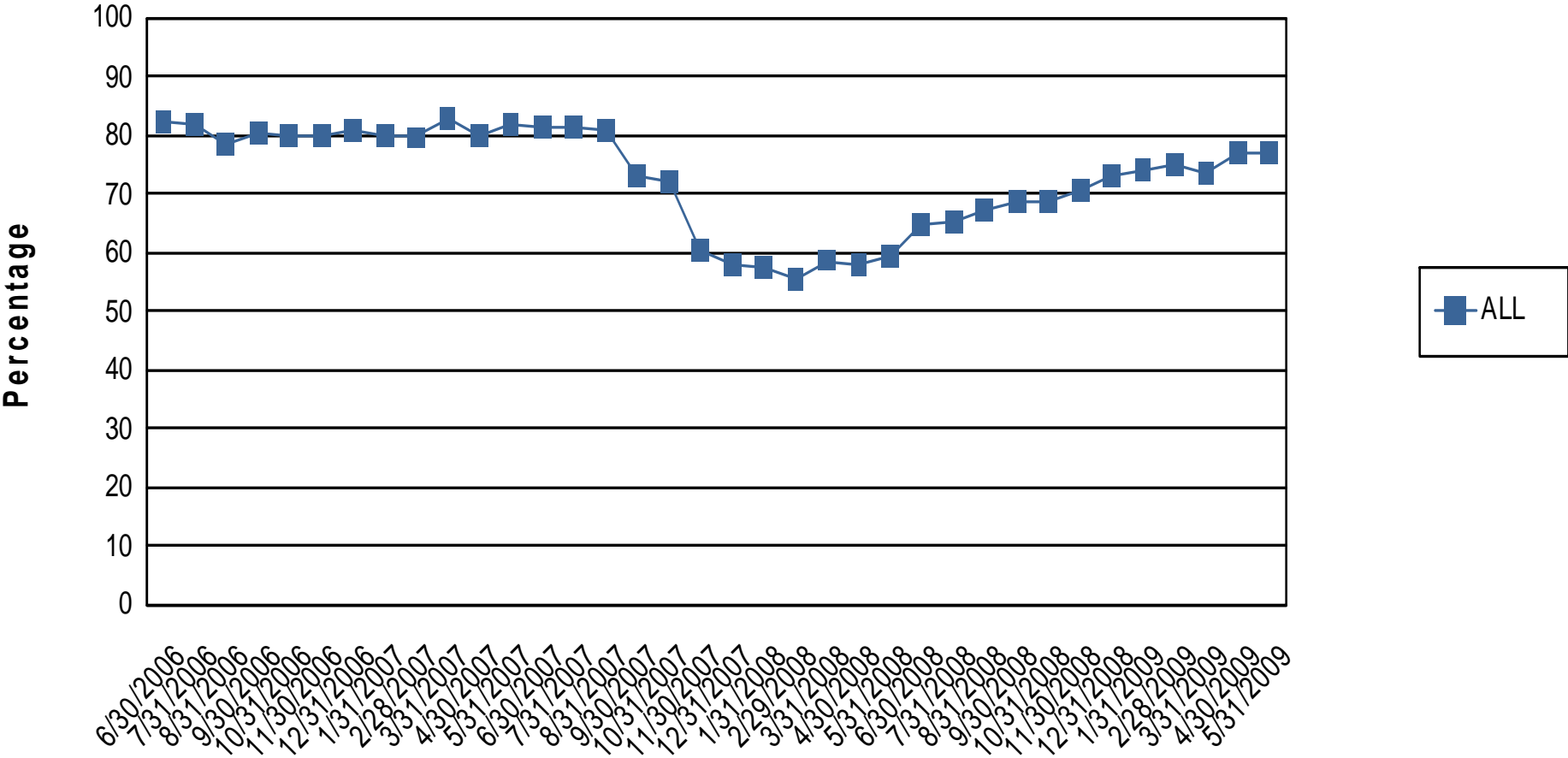
SmartSet: BREAST
CANCER
SCREENING(154)
For Ordering
Mammograms.

Legend

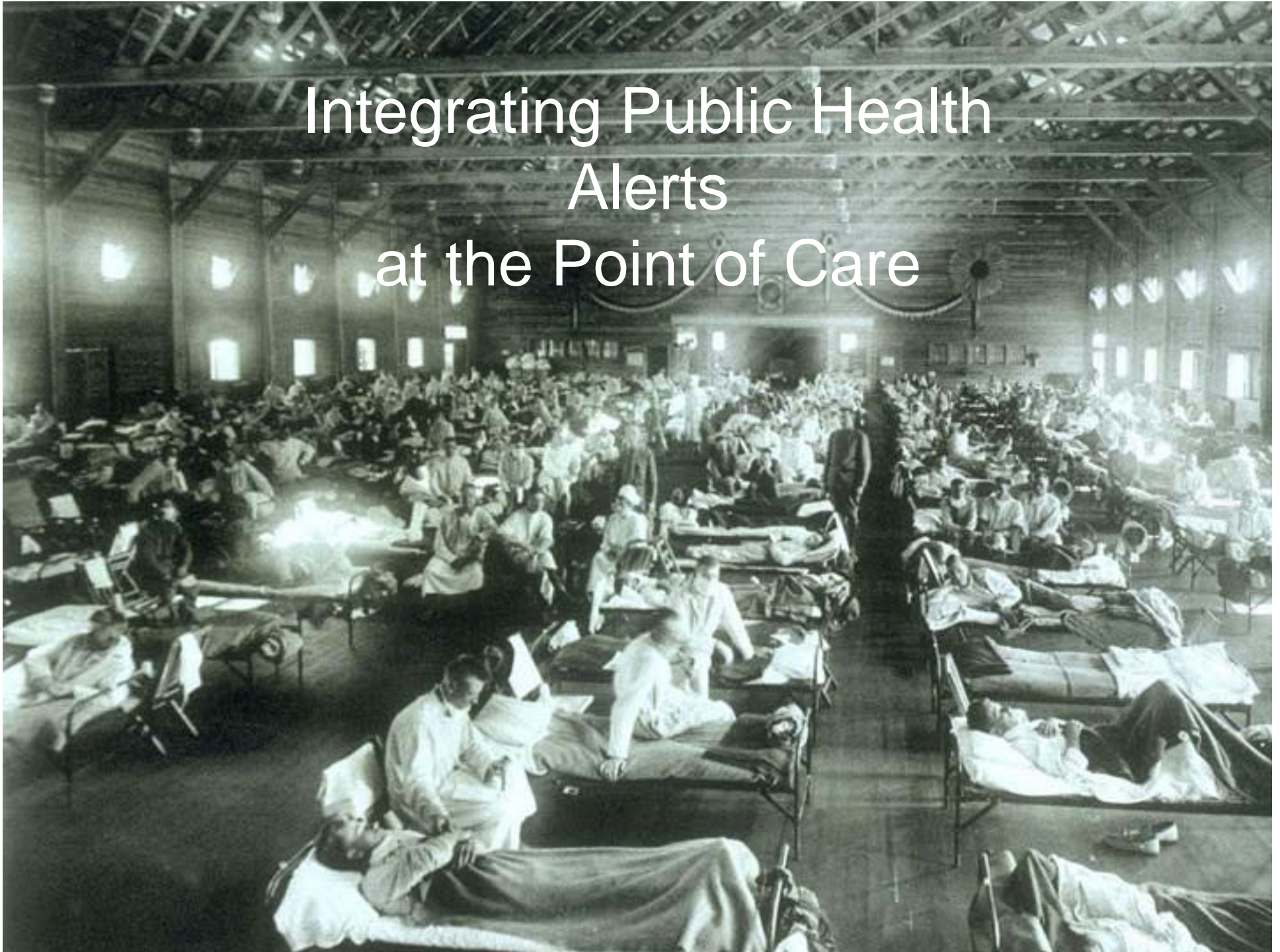
- Standing order
- Future order
- Immunization alert

Right click data row to edit. | Notes details entered.

Percentage of Women ages 52-69 that Received a Mammogram



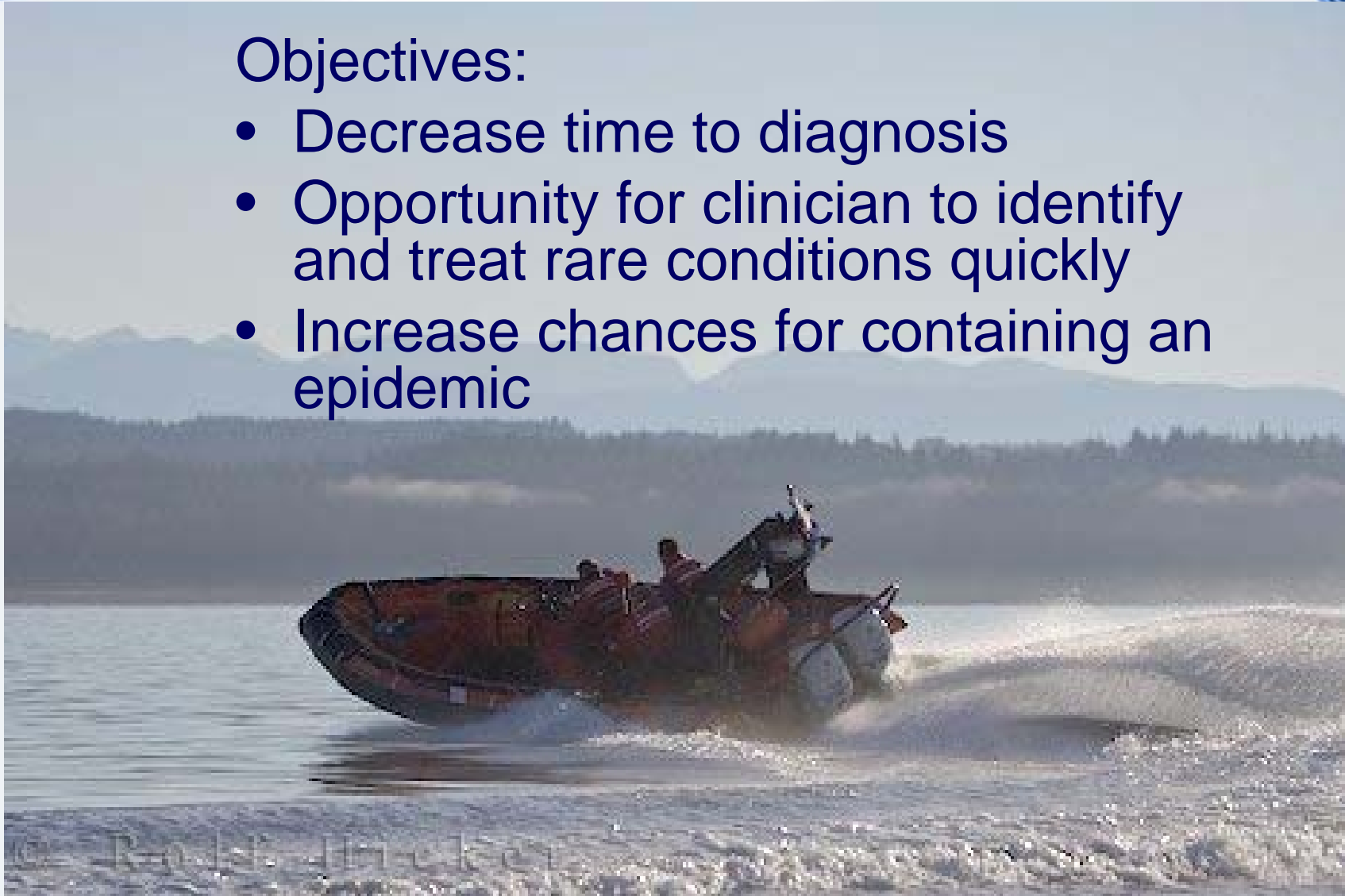
Integrating Public Health Alerts at the Point of Care



Rapid Response To Emerging Conditions

Objectives:

- Decrease time to diagnosis
- Opportunity for clinician to identify and treat rare conditions quickly
- Increase chances for containing an epidemic



Current State of Public Health Information Exchange

- Health Alert Network (HAN)
- MMWR
- Mass media
- Peer-reviewed literature
- **Problem:** Information not integrated into clinical workflow



THE CITY OF NEW YORK

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

Michael R. Bloomberg
Mayor

Thomas R. Frieden, M.D., M.P.H.
Commissioner

nyc.gov/health

Revised 2007 DOHMH Advisory #12:

Increase in Legionnaire's Disease in the Parkchester Area of the Bronx

- DOHMH is investigating an increase in cases of Legionnaire's disease in the Parkchester area of the Bronx. (See attached map)
- Environmental testing and case investigations to date have not identified an environmental source.
- Providers should have a high level of suspicion for Legionnaire's disease when evaluating patients presenting with signs of pneumonia.
 - Culturing *Legionella* from respiratory specimens (sputum or bronchoalveolar lavage) is the preferred method of diagnosis. Notify your lab to test for *Legionella*.
 - Urinary antigen testing is also recommended but should be accompanied by an attempt to isolate *Legionella* by culture.
- Report cases promptly to the Bureau of Communicable Disease (see numbers listed below)
- All *Legionella* isolates should be saved and sent to the Public Health Laboratory for serogrouping and molecular typing.

Please Distribute to All Clinical Staff in Geriatrics, Primary Care, Infectious Diseases, Emergency Medicine, Family Medicine, Laboratory Medicine and Infection Control Staff

July 25, 2007

Dear Colleagues,

In the fall of 2006, a citywide increase in Legionnaire's disease was noted in NYC. The highest increase was in the Parkchester section of the Bronx (zipcode 10462) where rates of Legionnaire's disease were noted to be 16.6 cases/100,000 people compared to the citywide rate of 2.3 cases/100,000 people, although rates were elevated to a lesser extent in nearby areas of the Bronx (see attached map with rates of Legionnaire's disease by zipcode in the Bronx 2006-present). Extensive interviewing of patients did not identify a likely common source. No additional cases were diagnosed after October 2006. In 2007, there has been 4 additional cases in the area around Parkchester (including one case from zipcode 10462). (See attached map).

Legionnaire's disease is caused by the bacteria *Legionella* and is characterized by pneumonia, occurring 2-10 days after exposure to an environmental source. *Legionella* is a ubiquitous aquatic organism that thrives in warm environments (32°- 45°C). Exposure occurs through inhalation of contaminated aerosols from devices such as cooling towers, showers, and faucets, and aspiration of contaminated water. Person-to-person transmission does not occur. Groups at high risk include the elderly, cigarette smokers, persons with chronic lung or immunocompromising disease, and persons receiving immunosuppressive drugs. The case fatality rate has declined substantially since it was first described and is estimated to be 5-30%. Recommended treatment includes the macrolide antibiotics (azithromycin) and quinolones.



JTE

FAMILY HEALTH

Delivery of Public Health Information via EHRs

- Enables:
 - Integration of information in the clinical workflow
 - Delivery of information in a specific and contextually relevant manner
 - Collection of additional
 - Patient history
 - Diagnostic tests
 - Up to date treatment (Via guideline transmittal & Linked Order Sets)



Legionella Advisory

- HAN advisory issued for increase in Legionella cases in Bronx 7/24/07
- Institute for Family Health placed alert on 7/27/07
- Alert triggered – 142 pts
- Acknowledged – 5 pts (4%)



THE CITY OF NEW YORK

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

Michael R. Bloomberg
Mayor

Thomas R. Frieden, M.D., M.P.H.
Commissioner

nyc.gov/health

Revised 2007 DOHMH Advisory #12:

Increase in Legionnaire's Disease in the Parkchester Area of the Bronx

- DOHMH is investigating an increase in cases of Legionnaire's disease in the Parkchester area of the Bronx. (See attached map)
- Environmental testing and case investigations to date have not identified an environmental source.
- Providers should have a high level of suspicion for Legionnaire's disease when evaluating patients presenting with signs of pneumonia.
 - Culturing *Legionella* from respiratory specimens (sputum or bronchoalveolar lavage) is the preferred method of diagnosis. Notify your lab to test for *Legionella*.
 - Urinary antigen testing is also recommended but should be accompanied by an attempt to isolate *Legionella* by culture.
- Report cases promptly to the Bureau of Communicable Disease (see numbers listed below)
- All *Legionella* isolates should be saved and sent to the Public Health Laboratory for serogrouping and molecular typing.

Please Distribute to All Clinical Staff in Geriatrics, Primary Care, Infectious Diseases, Emergency Medicine, Family Medicine, Laboratory Medicine and Infection Control Staff

July 25, 2007

Dear Colleagues,

In the fall of 2006, a citywide increase in Legionnaire's disease was noted in NYC. The highest increase was in the Parkchester section of the Bronx (zipcode 10462) where rates of Legionnaire's disease were noted to be 16.6 cases/100,000 people compared to the citywide rate of 2.3 cases/100,000 people, although rates were elevated to a lesser extent in nearby areas of the Bronx (see attached map with rates of Legionnaire's disease by zipcode in the Bronx 2006-present). Extensive interviewing of patients did not identify a likely common source. No additional cases were diagnosed after October 2006. In 2007, there has been 4 additional cases in the area around Parkchester (including one case from zipcode 10462). (See attached map).

Legionnaire's disease is caused by the bacteria *Legionella* and is characterized by pneumonia, occurring 2-10 days after exposure to an environmental source. *Legionella* is a ubiquitous aquatic organism that thrives in warm environments (32°- 45°C). Exposure occurs through inhalation of contaminated aerosols from devices such as cooling towers, showers, and faucets, and aspiration of contaminated water. Person-to-person transmission does not occur. Groups at high risk include the elderly, cigarette smokers, persons with chronic lung or immunocompromising disease, and persons receiving immunosuppressive drugs. The case fatality rate has declined substantially since it was first described and is estimated to be 5-30%. Recommended treatment includes the macrolide antibiotics (azithromycin) and quinolones.



INSTITUTE FOR FAMILY HEALTH

Zztest, iufh

Age Sex DOB MRN Allergies PCP Alert INS
 67 yea M 5/31/1940 1078027 **Sulfa Drugs, Tetanus Toxoids** ZZTEST, RESIDE* **HM, Aler** **SLIDING FEE**

- Snapshot
- Chart Review
- Results Review
- Flowsheets
- Problem List
- History
- Letters
- Demographics
- EMPI Demographics
- MPI History
- Order Entry
- Imm/Injections
- Allergies
- Medications
- Forms

Visit Navigator (9/4/2007 visit with LURIO)

Images Questionnaires Admin Benefits References SmartSets Scans Open Orders Change PCP Print AYS Media Manager More

Allergies **Sulfa Drugs, Tetanus Toxoids** Reviewed on 10/7/2004
 ZZTEST,IUFH (1078027) Age: 67 Sex: M PCP: ZZTEST,R EMC #: NONE
 BP: 129/75 P: 104 T: 100.4 °F (38 °C) T Src: Resp: 24 W: 240 lbs (108.863 kg) H:

- Charting**
- Chief Complaint
 - Vitals
 - BestPractice**
 - Nursing Notes
 - Progress Notes
 - Diagnoses
 - Orders
 - Pt. Instructions
 - LOS & Follow-up
 - Close Encounter

Chief Complaint

1. **Cough**
2. **Fever**



Vitals

[New Set of Vitals](#)

[09/04/07 2140](#)

BP	129/75
Pulse	104
Resp	24
Temp	100.4 °F (38 °C)
Temp src	
SpO2	
Wt - Scale	240 lbs (108.863 kg)
Height	
Peak Flow	

Additional Vitals	
Extended Vitals	Not Filed
Tobacco	Yes
Uses: Cigarettes, Chew	
Packs/Day: 1.5	
Years: 25	
Pack-Years: 37.5	
Verified: 9/4/2007 (This Encounter)	

BestPractice Alerts

Action(s)

July 25, 2007 –Following an increase in cases of Legionnaires' disease in the Parkchester area of the Bronx over the past year, the Health Department is asking doctors to test for the condition when examining patients with respiratory symptoms.

[Hotkey List](#)
 Exit Workspace

[View Hotkeys](#)

Zztest, iufh

Age Sex DOB MRN Allergies PCP Alert INS
67 yea M 5/31/1940 1078027 **Sulfa Drugs, Tetanus Toxoids** ZZTEST, RESIDE* HM, Aler SLIDING FEE

- Snapshot
- Chart Review
- Results Review
- Flowsheets
- Problem List
- History
- Letters
- Demographics
- EMPI Demographics
- MPI History
- Order Entry
- Imm/Injections
- Allergies
- Medications
- Forms

Visit Navigator

Visit Navigator (9/4/2007 visit with LURIO)

Images Questionnaires Admin Benefits References SmartSets Scans Open Orders Change PCP Print AYS Media Manager More

Allergies **Sulfa Drugs, Tetanus Toxoids** Reviewed on 10/7/2004
ZZTEST,IUFH (1078027) Age: 67 Sex: M PCP: ZZTEST,R EMC #: NONE
BP: 129/75 P: 104 T: 100.4 °F (38 °C) T Src: Resp: 24 W: 240 lbs (108.863 kg) H:

- Charting**
- Chief Complaint
 - Vitals
 - BestPractice**
 - Nursing Notes
 - Progress Notes
 - Diagnoses
 - Orders
 - Pt. Instructions
 - LOS & Follow-up
 - Close Encounter

New Set of Vitals

	09/04/07 2140	Additional Vitals
BP	129/75	Extended Vitals
Pulse	104	Tobacco
Resp	24	Uses: Cigarettes, Chew
Temp	100.4 °F (38 °C)	Packs/Day: 1.5
Temp src		Years: 25
SpO2		Pack-Years: 37.5
Wt - Scale	240 lbs (108.863 kg)	Verified: 9/4/2007 (This Encounter)
Height		
Peak Flow		

BestPractice Alerts

Action(s)

July 25, 2007 –Following an increase in cases of Legionnaires' disease in the Parkchester area of the Bronx over the past year, the Health Department is asking doctors to test for the condition when examining patients with respiratory symptoms.

Open SmartSet: JL LEGIONELLA EVAL & TX

Accept



View Hotkeys

Nursing Notes

Zztest, lufh

Age Sex DOB MRN Allergies PCP Alert INS
67 yea M 5/31/1940 1078027 Sulfa Drugs, Tetanus Toxoids ZZTEST, RESIDE* HM, Aler SLIDING FEE

- Snapshot
- Chart Review
- Results Review
- Flowsheets
- Problem List
- History
- Letters
- Demographics
- EMPI Demographics
- MPI History
- Order Entry
- Imm/Injections
- Allergies
- Medications
- Forms
- Visit Navigator

SmartSet - Decision Support

Association Primary Dx Edit Item Favorite Pharmacy Questionnaire Health Maint Accept/Pend Accept/Sign Cancel

- Diagnostic Testing
 - Radiology (multiple)
 - CXR PA & Lateral
 - Microbiology (multiple)
 - CULTURE, SPUTUM BACTERIAL [87070.022]
 - Legionella Antigen - Urine
 - Blood Tests (multiple)
 - CBC WITH DIFFERENTIAL/PLATELET [85025.002]
 - COMP METABOLIC PANEL [80053]
- Treatment
 - Antibiotics (multiple)
 - AZITHROMYCIN 250 MG OR TABS [23481]
 - LEVOFLOXACIN 500 MG OR TABS [21285]
 - Respiratory Meds (multiple)
 - PROVENTIL HFA 90 MCG/ACT IN AERS [20246]
- Diagnosis
 - Respiratory (multiple)
 - Community Aquired Pneumonia [482.9]
 - ACUTE BRONCHITIS [466.0]
 - OBST CHRON BRONCHITIS WITH EXAC(aka COPD) [491.21]
- Billing
 - Ios (single)
 - OFFIC/OUTPT VISIT E&M EST SELF-LIMIT/MI* [99212]
 - OFFIC/OUTPT VISIT E&M EST LOW-MOD SEVER* [99213]

Authorizing Provider

LURIO, JOSEPH [14] ...

Cosign for Procedures

SmartSet Notes

SmartSet: JL
LEGIONELLA EVAL &
TX(298)
Linked to Legionaire's
Disease outbreak in
Bronx July, 2007

- Legend**
- Standing order
 - Future order

Right click data row to edit. Loading SmartSet succeeded.

E. Coli Alert

- HAN alert issued for E. coli O157:H7 multistate outbreak 9/28/07
- Institute for Family Health placed alert on 10/1/07
- Alert triggers: CC of diarrhea or stomachache, or diagnosis of gastroenteritis, diarrhea or bloody stool
- Alert triggered – 287 pts
- Acknowledged – 65 pts (23%)



THE CITY OF NEW YORK

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

Michael R. Bloomberg
Mayor

Thomas R. Frieden, M.D., M.P.H.
Commissioner

nyc.gov/health

2007 Alert #29:

Multi-state *E. coli* O157:H7 outbreak associated with eating contaminated ground beef in counties surrounding New York City

- Federal, state, and local health agencies are investigating a multi-state outbreak of 25 cases of *E. coli* O157:H7 infection in eight states linked to eating Topps 100% Ground Beef Hamburgers. No confirmed cases associated with this outbreak have been reported among New York City residents as of September 28, 2007.
- DOHMH would like to remind healthcare providers that they must specifically request testing for Shiga toxin producing *E. coli* (STEC) in patients being evaluated for bloody diarrhea or hemolytic uremic syndrome (HUS). The medium of choice for isolation is sorbitol-MacConkey (SMAC) agar. Specimens sent for culture and sensitivity without a specific request for *E. coli* O157:H7 testing may NOT be tested for *E. coli* O157:H7.
- DOHMH is requesting that Emergency Departments and other providers test patients with diarrhea or bloody diarrhea and a history of having eaten ANY Topps brand Ground Beef Hamburgers in the 10 days prior to symptom onset for *E. coli* O157:H7 even if it is not their routine policy to test patients with diarrheal illness.
- Please immediately report all suspected and confirmed cases of STEC infection or HUS to the New York City Department of Health and Mental Hygiene (DOHMH).
- Send suspect and culture confirmed STEC (including *E. coli* O157:H7) isolates to the Public Health Laboratory (PHL) for confirmation, serotyping, and pulsed-field gel electrophoresis (PFGE).
 - Timely submission of STEC specimens is crucial to facilitate prompt recognition and investigation of potential outbreaks of *E. coli* O157:H7.
 - Laboratories should send original stool specimens (or broths) to PHL when patient are Shiga toxin positive, even in the absence of culture confirmation.

Please Distribute to All Clinical Staff in Pediatrics, Primary Care, Infectious Diseases, Emergency Medicine, Family Medicine, Laboratory Medicine and Infection Control Staff

September 28, 2007

Dear Colleagues,

Federal, state, and local health agencies are investigating a multi-state outbreak of 25 *E. coli* O157:H7 cases in eight states linked to eating Topps 100% Ground Beef Hamburgers. No confirmed cases associated with this outbreak have been reported among New York City residents as of September 28, 2007. DOHMH receives an average of 25 *E. coli* O157:H7 case reports per year. DOHMH wishes to remind physicians to consider Shiga toxin producing *E. coli* (STEC) in the differential diagnosis for patients presenting with bloody diarrhea, diarrhea with fever, hemolytic uremic syndrome (HUS) or

Rivera, Glenda Age 38 Sex F DOB 4/19/1970 MRN 1089317 Allergies Zithromax Z-pak 250 PCP EISNER, YVON* Alert HM, AlertHEALTHPLU!* INS Inactive MyChart

11/25/2008 visit with Zztest

Images Questionnaires Admin Benefits Inquiry References SmartSets Scans Open Orders Change PCP Print AYS More

Allergies: Zithromax Z-pak 250 Reviewed on 4/7/2008 RIVERA, GLENDA (1089317) Age: 38 Sex: F PCP: EISNER, Y EMC #: NONE BP: P: T: T Src: Resp: W: H:

- Demographics Letters Media Manager EMPI Demographics MPI History Snapshot Chart Review MyChart Results Rel... Results Review Flowsheets Problem List History Letters Demographics Growth Chart Forms Imm/Injections Medications Order Entry Enter/Edit Results

- Charting Chief Complaint Vitals BestPractice SmartSets Nursing Notes Progress Notes History Diagnoses Orders Pt. Instructions LOS & Follow-up Close Encounter

Chief Complaint Diarrhea Stomach Ache

Vitals New Set of Vitals No readings taken. Tobacco Status: Never Verified: 4/7/2008

BestPractice Alerts Multi-state E. coli O157:H7 outbreak associated with eating contaminated ground beef in counties surrounding New York City Open SmartSet: TOXOGENIC E COLI OUTBREAK

Refresh Accept

Visit Navigator Hotkey List Exit Workspace

Zztest, Beyonce Age Sex DOB MRN Allergies PCP Alert INS MyChart
16 yea F 4/20/1992 1248042 Penicillin G Benzathine, Sulfa /* BAIRD, PHILL * HM, Alert SLIDING FEE* Active

- Demographics
- Letters
- EMPI Demographics
- MPI History
- SnapShot
- Chart Review
- MyChart Results Rel...
- Results Review
- Flowsheets
- Problem List
- History
- Letters
- Demographics
- Forms
- Imm/Injections
- Medications
- Order Entry
- Enter/Edit Results
- Growth Chart
- Visit Navigator
- SmartSet Selector

SmartSet - TOXOGENIC E COLI OUTBREAK

Association
 Primary Dx
 Edit Item
 Favorite
 Pharmacy
 Questionnaire
 Health Maint
 Accept/Pend
 Accept/Sign
 Cancel

Evaluation

- Lab Orders (multiple)
 - STOOL CULTURE [87045.001] (CAMPYLOBACTER, SALMONELLA/SHIGELLA)
 - Shiga Toxin (E. coli O157:H7) Immuno-Assay
 - CBC WITH DIFFERENTIAL/PLATELET [85025.002]
 - COMP METABOLIC PANEL [80053]
 - STOOL GUIAC IN HOUSE(aka INHOUSE) [82270.INH]
 - URINE DIP W/O MICRO IN HOUSE(aka INHOUSE) [81002.INH]
- Management
 - The only current treatment of EHEC infection is supportive, with monitoring (single)
- Patient Ed
 - Patient Information (will be printed as part of After Visit Summary) (multiple)
 - Diarrhea - Brief Version
 - Pediatric Diarrhea
 - Diarrhea-Teenage Version
 - Diarrhea - Spanish version
 - Pediatric Diarrhea - Spanish Version
- Coding
 - Diagnosis (multiple)
 - DIARRHEA OF INFECTION ORIG [009.3]
 - DIARRHEA NOS [787.91]

Authorizing Provider

ZZTEST, MD [199]

Cosign for Procedures

SmartSet Notes

2007 Alert 29:
Multi-state E. coli
O157:H7 outbreak
associated with eating
contaminated ground
beef in counties
surrounding New York
City

Legend

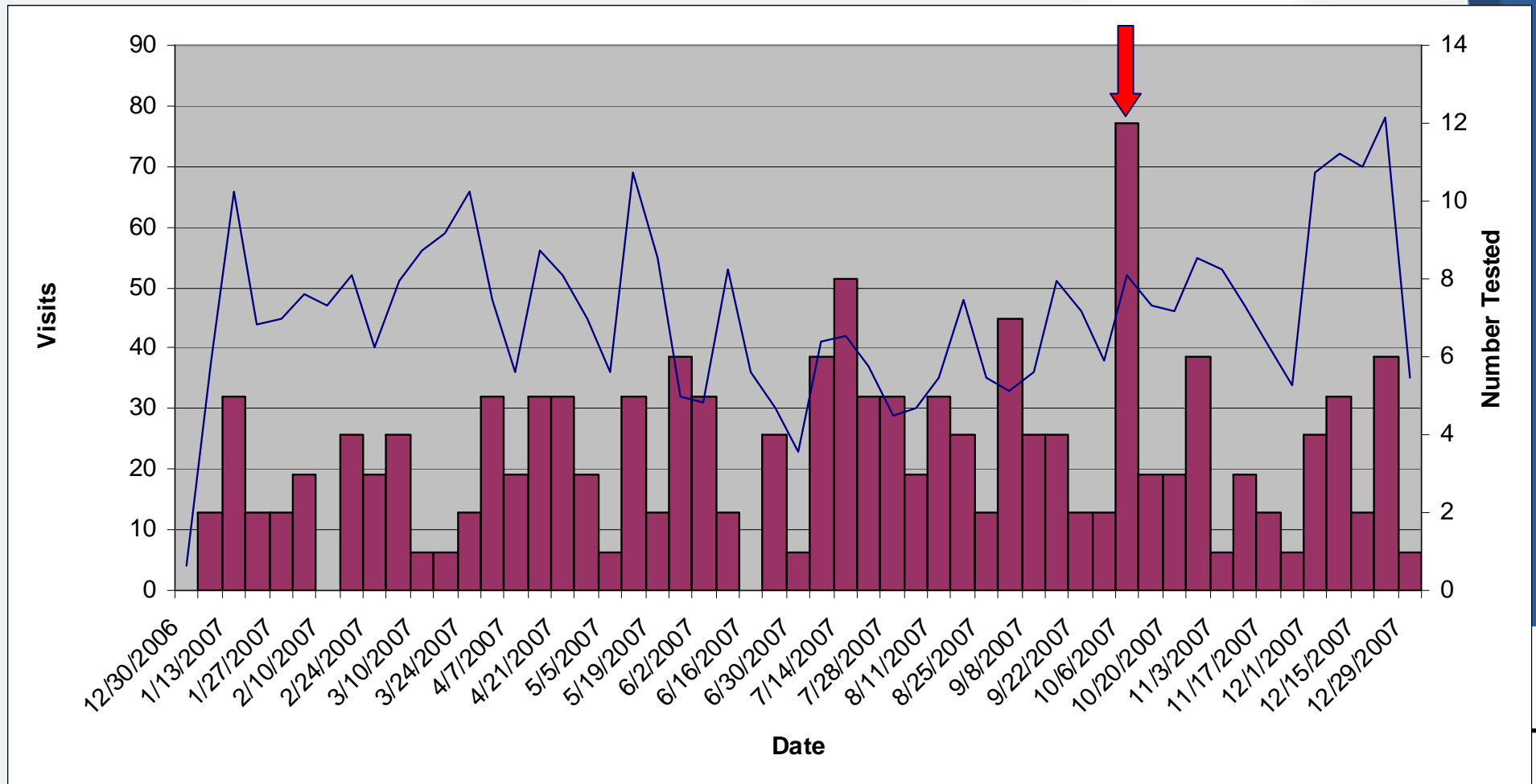
- Standing order
- Future order
- Immunization alert

Right click data row to edit. Loading SmartSet succeeded.

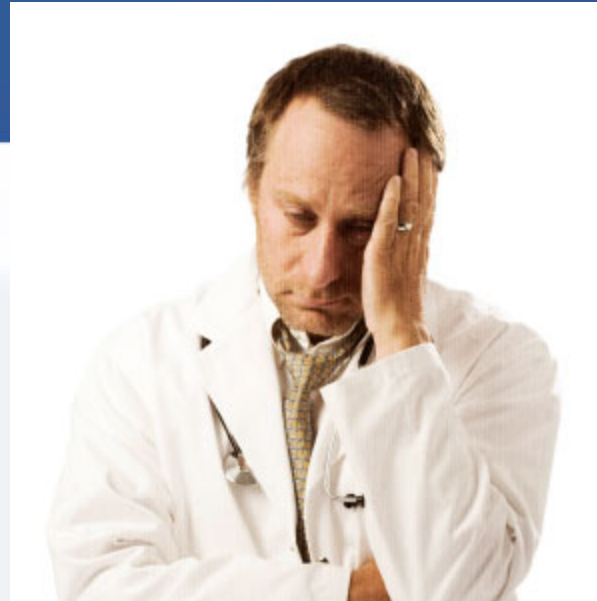
Hotkey List

Exit Workspace

Testing Performed at Visits



Decision Support



- Public Health Notices (HPN) - Good
- Best Practice Alerts - Better

“It was a dark and stormy night. Dr. Lurio’s clinic was supposed to be over at 5PM, but at 6 his nurse told him there was one more patient to be seen...”

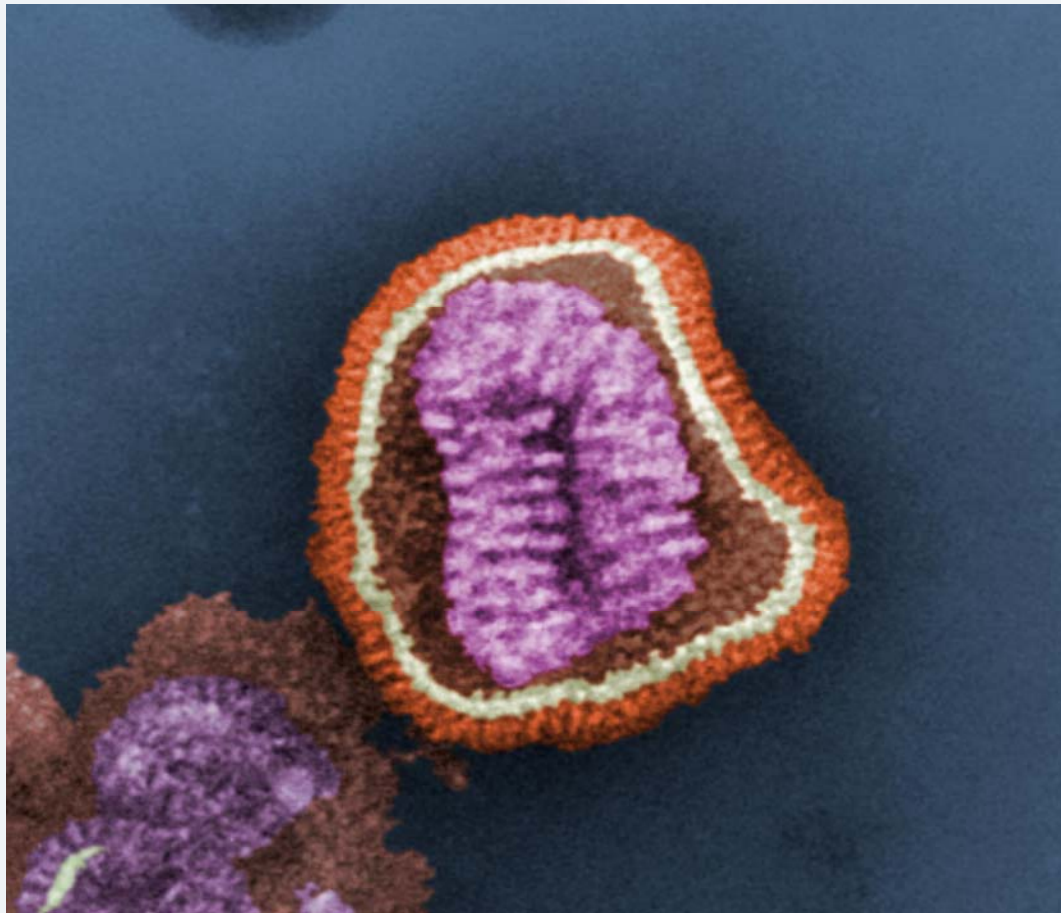
H1N1 Surveillance Project

Using IFH/DOHMH partnership



Opportunity to address:

- Proportion of ILI due to H1N1 swine influenza
- Frequency of severe illness
- Differences between mild and severe illness



H1N1 Surveillance Project

- Community surveillance project began on 5/26
- Key partners:
 - IFH
 - DOHMH
 - Columbia University
- Value to public health and clinical community





NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE

Thomas Farley, M.D., M.P.H.
Commissioner

**2009 New York City Department of Health and Mental Hygiene
Health Alert #27: Pandemic (H1N1) 2009 Influenza Update,
Revised Reporting Requirements and Testing Procedures
July 8, 2009**

Please distribute to staff in the Departments of Critical Care, Emergency Medicine, Family Practice, Geriatrics, Internal Medicine, Infectious Disease, Infection Control, Pediatrics, Pharmacy, Neonatal Units, Obstetrics and Gynecology, Pulmonary Medicine and Laboratory Medicine

- **Pandemic (H1N1) 2009 (formerly known as novel H1N1) influenza transmission in New York City has declined significantly but is still occurring at low levels.**
- **DOHMH is discontinuing routine testing of hospitalized patients with influenza A for pandemic H1N1 influenza at the Public Health Laboratory.**
 - PCR testing for pandemic H1N1 influenza is now available commercially (details below).
- **Providers should continue to report hospitalized cases of influenza A (details on how to report below).**
- **DOHMH advises providers to maintain a high degree of clinical suspicion for influenza, especially among hospitalized patients and those with underlying conditions increasing the risk for severe influenza, who should be considered for early antiviral treatment.**

The incidence of pandemic H1N1 influenza has declined in New York City. Because the outbreak of pandemic H1N1 is waning but has not ended, management of patients presenting with influenza-like illness (ILI) is more challenging. Patients with ILI could have pandemic H1N1, but could also be infected with a broad range of other pathogens that cause febrile respiratory illness (e.g., bacteria or viruses such as parainfluenza, rhinovirus, metapneumovirus, etc.). DOHMH now advises that clinicians should maintain a high degree of suspicion for influenza in patients presenting with acute febrile respiratory illness, but should no longer regard every case of ILI as presumptive H1N1 infection. Commercial polymerase chain reaction (PCR) testing for pandemic H1N1 is now available (details below). Both rapid tests, including enzyme immunoassay (EIA) and PCR can be used to test for influenza in patients with ILI. Providers should bear in mind, however, that the rapid EIA test for influenza has poor sensitivity and cannot be relied upon to rule out influenza.

Contents of this Alert:

- **Revised Reporting Requirements**
- **Revised Policies on Submitting Specimens to the New York City Public Health Laboratory for Diagnostic Testing for Pandemic H1N1 Influenza**
- **Revised Guidance on Clinical Management of Patients with Acute Febrile Respiratory Illness**
- **Epidemiologic Update on the 2009 pandemic H1N1 outbreak in New York City**

Categories of urgency levels for NYC DOHMH Broadcast Notification System:

Health Alert: conveys the highest level of importance; warrants immediate action or attention

Health Advisory: provides important information for a specific incident or situation; may not require immediate action

Health Update: provides updated information regarding an incident or situation; unlikely to require immediate action



Alert for Swine Flu

Hyperspace - Production - Institute for Family Health - AMSTERDAM AVE-FM - JOSEPH LURIO

Desktop Action Patient Care Scheduling Billing Reg/ADT Referrals Reports Report Mgmt Tools Admin Help Website

Back Forward Home Schedule In Basket Chart Encounter Tel Enc Quick Schedule Secure Intranet

Print Log Out

Epic Home Zztest, Green

EpicCare

Zztest, Green Age Sex DOB MRN Allergies PCP Alert INS MyChart
 52 yea F 3/7/1957 1128739 No Known Allergies BAIRD, PHILL * HM, Alert (None) Inactive

Snapshot

4/29/2009 visit with Zztest

Chart Review

Images Questionnaires Admin Benefits Inquiry References SmartSets Scans Open Orders Change PCP Print AVS Media Manager Patient Files Classic SmartForms

MyChart Results Rel...

Allergies: No Known Allergies Reviewed on 1/23/2006
 ZZTEST, GREEN (1128739) Age: 52 Sex: F PCP: BAIRD, P EMC #: NONE
 BP: P: T: T Src: Resp: W: H:

Results Review

Flowsheets

Problem List

History

Letters

Demographics

Growth Chart

Allergies

Medications

Order Entry

MyChart Administrati...

Media Manager

Forms

Imm/Injections

Enter/Edit Results

Visit Navigator

Charting

Chief Complaint

Vitals

BestPractice

SmartSets

Nursing Notes

Progress Notes

History

Diagnoses

Orders

Pt. Instructions

LOS & Follow-up

Close Encounter

Chief Complaint

Chief Complaint	Comment
Cough	
Fever	

Add to Preference List

Delete Selected Row

Restore Close F9

Previous F7 Next F8

Vitals

New Set of Vitals

4/29/2009 3:43 PM	
BP	Tobacco
Pulse	Status: Never
Resp	Uses: Cigarettes
Temp	Packs/Day: 0
Temp src	Years: 0
SpO2	Verified: 4/28/2009
Wt - Scale	
Height	
Peak Flow	

BestPractice Alerts

Refresh

SmartSets - Encounter Matches

Hotkey List

Exit Workspace

Navigator Hotkeys

JOSEPH LURIO Cosign-Orders, Epic Info, Patient Call, Results, Staff Message, Addendum Notification, Canceled Ord, CC'd Charts,

9:52 PM

Start 3 Microsoft ... AMB_ELEARN Epic Hyperspace ... Electronic Link ... Electronic Link ... Search Desktop

9:52 PM





Zztest, Green

Age Sex DOB MRN Allergies PCP Alert INS MyChart
52 yea F 3/7/1957 1128739 No Known Allergies BAIRD, PHILL * HM, Alert (None) Inactive

SnapShot

Chart Review

MyChart Results Rel...

Results Review

Flowsheets

Problem List

History

Letters

Demographics

Growth Chart

Allergies

Medications

Order Entry

MyChart Administrati...

Media Manager

Forms

Imm/Injections

Enter/Edit Results

Visit Navigator

Hotkey List

Exit Workspace

4/29/2009 visit with Zztest

Images Questionnaires Admin Benefits Inquiry References SmartSets Scans Open Orders Change PCP Print AYS More

Allergies: **No Known Allergies** Reviewed on 1/23/2006
ZZTEST, GREEN (1128739) Age: 52 Sex: F PCP: BAIRD, P EMC #: NONE
BP: P: T: T Src: Resp: W: H:

Charting

Chief Complaint

Vitals

BestPractice

SmartSets

Nursing Notes

Progress Notes

History

Diagnoses

Orders

Pt. Instructions

LOS & Follow-up

Close Encounter

Chief Complaint

**Fever
Cough**

Vitals

+ New Set of Vitals

4/29/2009 3:43 PM

BP

Pulse

Resp

Temp

Temp src

SpO2

Wt - Scale

Height

Peak Flow

Tobacco

Status:

Never

Uses:

Cigarettes

Packs/Day:

0

Years:

0

Verified:

4/28/2009

BestPractice Alerts

Swine Flu Alert! Chief complaint, temp, and/or diagnosis consistant with influenza. If cough, patient needs isolation and/or face mask. Click on hyperlink for up to minute recommendations.....[Click Here for CDC Webpage](#)

Refresh

SmartSets - Encounter Matches

CAM COUGH

SALMONELLAOUTBREAK (Created in response to food born salmonella outbreak)

URI

Navigator Hotkeys



Swine Flu

Swine Flu

- General Info
- Guidance for Professionals
- Emergency Use Authorization
- Reports & Publications
- Press Briefings
- Travel Notices
- Past Daily Updates
- What's New

2009 Flu Info

- [U.S. Info](#)
 - [Things You Can Do](#)
 - [Plan & Prepare](#)
 - [International Info](#)
- HHS.gov | CDC.gov

Get widget now!

Pandemic Flu Preparedness and Planning

Swine Influenza (Flu)

Swine Flu website last updated April 29, 2009, 8:15 PM ET

The outbreak of disease in people caused by a new influenza virus of swine origin continues to grow in the United States and internationally. Today, CDC reports additional confirmed human infections, hospitalizations and the nation's first fatality from this outbreak. The more recent illnesses and the reported death suggest that a pattern of more severe illness associated with this virus may be emerging in the U.S. Most people will not have immunity to this new virus and, as it continues to spread, more cases, more hospitalizations and more deaths are expected in the coming days and weeks.

CDC has implemented its [emergency response](#). The agency's goals are to reduce transmission and illness severity, and provide information to help health care providers, public health officials and the public address the challenges posed by the new virus. Yesterday, CDC issued new [interim guidance](#) for clinicians on how to care for children and pregnant women who may be infected with this virus. Young children and pregnant women are two groups of people who are at high risk of serious complications from seasonal influenza. In addition, CDC's Division of the Strategic National Stockpile (SNS) continues to send antiviral drugs, personal protective equipment, and respiratory protection devices to all 50 states and U.S. territories to help them respond to the outbreak. The swine influenza A (H1N1) virus is susceptible to the prescription [antiviral drugs](#) oseltamivir and zanamivir. This is a rapidly evolving situation and CDC will provide updated guidance and new information as it becomes available.

U.S. Human Cases of Swine Flu Infection

(As of April 29, 2009, 11:00 AM ET)

States	# of laboratory confirmed cases	Deaths
Arizona	1	
California	14	
Indiana	1	
Kansas	2	
Massachusetts	2	
Michigan	2	
Nevada	1	
New York	51	
Ohio	1	
Texas	16	1
TOTAL COUNTS	91 cases	1 death

International Human Cases of Swine Flu Infection See: [World Health Organization](#)

Text size: [S](#) [M](#)

[Email page](#)

[Print page](#)

[Bookmark and Share](#)

[Subscribe to RSS](#)

[Get email updates](#)

[Follow on Twitter](#)

[Watch Video/Download](#)

View page in

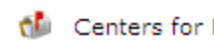
[Español \(Spanish\)](#)

[Get email updates](#)

To receive email updates about this page, enter your address:

[What's this?](#) [Search](#)

Contact Us:



necessary to understand the clinical implications of this finding. Initial data from histological examination at the Centers for Disease Control and Prevention (CDC) suggest that many decedents had evidence of primary viral pneumonia, with prominent lower airway disease, including hyaline membrane formation and heavy viral loads observed in the periphery of the lungs. This stands in contrast to seasonal influenza, in which more prominent involvement of the upper airways is often observed. Among 12 decedents with pathological specimens examined at the CDC, preliminary data indicate that eight had evidence of bacterial superinfection by immunohistochemical staining, PCR or both, including five with *Streptococcus pneumoniae*, two with Group A streptococcus, and one with methicillin-resistant *Staphylococcus aureus*.

Updated counts of hospitalized cases and deaths, along with data on underlying risk conditions, will be posted on Wednesday, July 8, on the DOHMH website at <http://www.nyc.gov/html/doh/html/cd/cd-h1n1flu-data.shtml>.

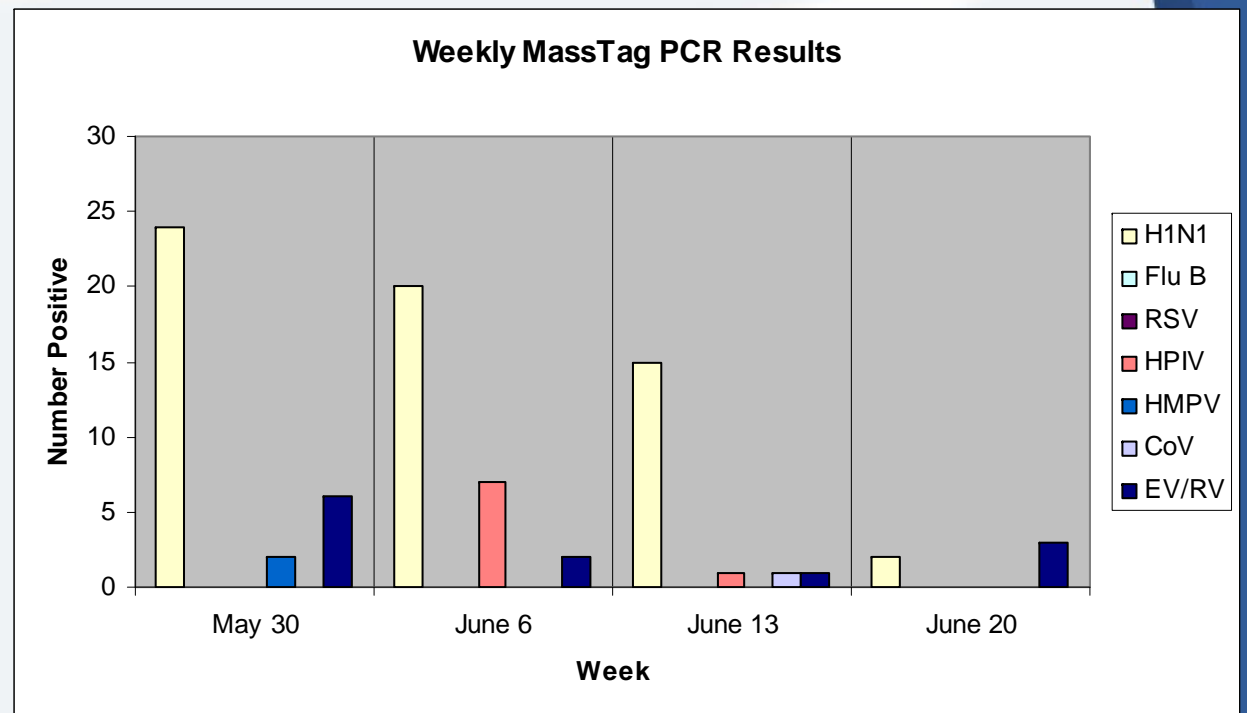
Preliminary data from an outpatient ILI surveillance project being conducted by DOHMH in collaboration with the Institute for Family Health and Columbia University show that among 114 patients presenting with febrile or respiratory illness since the end of May 2009 who had results available, 61 (54%) were positive for pandemic H1N1 by PCR testing at Columbia University, with declining incidence of pandemic H1N1 in recent weeks. Rapid test (EIA) had low sensitivity, only detecting 17 (28%) of these cases. Other viral pathogens identified by PCR among patients with ILI included entero/rhinovirus (11%), parainfluenza (7%), human metapneumovirus (2%), and coronavirus (1%).

Recognizing the clinical challenges posed by the rapidly changing epidemiology of influenza in New York City and in the US, and in anticipation of another outbreak of pandemic H1N1 in the fall or winter of 2009-2010, DOHMH is in the process of developing improved methods of surveillance and timely communication of surveillance findings to the medical community. We are working on surveillance strategies that will provide data on circulating respiratory viruses, and on the incidence of influenza-like illness in the community, in outpatient and inpatient settings in the City. Once these data are available on a regular basis, we will post them

H1N1 Surveillance Project

- Results to Date

- 114 patients tested since 5/26
- 61 (54%) positive for H1N1
- Sensitivity of rapid test: 28% (17/61)



Collaboration between DOH and CHC provides mutual Benefit

- DOH Requires Ambulatory Practices to act as eyes and arms
- CHCs rely on DOH to provide expert guidance and situational awareness to allow effective health care delivery
- Electronic Health Records are a communication tool that allows this collaboration to occur.

Special thanks to:

Frances Morrison², Rachel Berg¹, Michael Buck², Winfred Wu³, Kwame Kitson¹ Farzad Mostashari³, Neil Calman¹

1 – Institute for Family Health; 2 – Columbia University; 3 – New York City Department of Health and Mental Hygiene

Contact information:

Joseph Lurio, MD
Chief Medical Information Officer
Email: jlurio@institute2000.org
Phone: 212-865-4104

Michelle Pichardo, MPH
Project Coordinator, HIT Grants
Email: mpichardo@institute2000.org
Phone: 212-633-0800 ext.1279