


SURVEILLANCE, REPORTING AND CONTROL OF VACCINE PREVENTABLE DISEASES 2015



20<sup>th</sup> Annual Massachusetts Adult Immunization Conference  
April 14, 2015

Hillary Johnson, MHS  
Meagan Burns, MPH  
Epidemiologists  
Epidemiology & Immunization Division, MDPH

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PRESENTER DISCLOSURE INFORMATION  
HILLARY JOHNSON

Consultant	No relevant conflicts of interest to declare or relevant conflict
Grant Research/Support	No relevant conflicts of interest to declare or relevant conflict
Speaker's Bureau	No relevant conflicts of interest to declare or relevant conflict
Major Stockholder	No relevant conflicts of interest to declare or relevant conflict
Other Financial or Material Interest	No relevant conflicts of interest to declare or relevant conflict
Off Label Use of Vaccines	Will be discussed, but in accordance with current ACIP recommendations

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TODAY'S TOPICS

- Vaccine-preventable disease (VPD) epidemiology in Massachusetts
  - Who we are and what we do
  - Overall trends
  - Influenza and you
  - Meningitis update and case study
  - Your questions answered



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WHO ARE YOU?

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RAISE YOUR HAND

- ...if you have talked to a patient who is apprehensive about getting vaccine.
- ...if you have ever reported a suspect case of a VPD to the health dept.
- ...if you have ever had to provide proof of immunity due to an exposure in your workplace.
- ...if you know someone who is skeptical about the potential severity of influenza.
- ...if you have ever had to utilize prophylaxis for yourself or a patient after exposure to a VPD.
- ...if you think you can be exposed to a VPD through consumption of food.

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VPD EPIDEMIOLOGISTS - OUR ROLE

Hinton State Laboratory Institute (HSLI)



Surveillance, reporting and control of vaccine-preventable diseases, to reduce associated morbidity and mortality



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DIVISION OF EPIDEMIOLOGY  
AND IMMUNIZATION - EPI ON CALL

617-983-6800



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MDPH IMMUNIZATION  
EPIDEMIOLOGISTS

- For suspect cases, we
  - Partner with local health departments
  - Ensure appropriate treatment
  - Help determine if the case needs to be excluded from work or school and for how long
  - Help identify "close contacts"
  - Make recommendations for contacts including immunization, prophylaxis, treatment, and/or exclusion from work/school as needed



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HEALTHCARE PROVIDER ROLE

- Notify patient of diagnosis
- Notify the LBOH or MDPH of an infectious reportable disease
- Inform patient that the LBOH may be calling
- Educate patient about protecting their family and close contacts
- Collaborate with the LBOH to complete the official Case Report



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### WHAT IS REPORTABLE BY WHOM?

- 105 CMR 300.000
- Reportable Diseases Lists:
  - Healthcare providers
  - Clinical laboratories
  - Local Boards of Health
- Diseases in red are "immediate" diseases.
- Diseases in black are reportable within 1-2 business days.

mass.gov/dph/epi – click on "Reportable Communicable Diseases"

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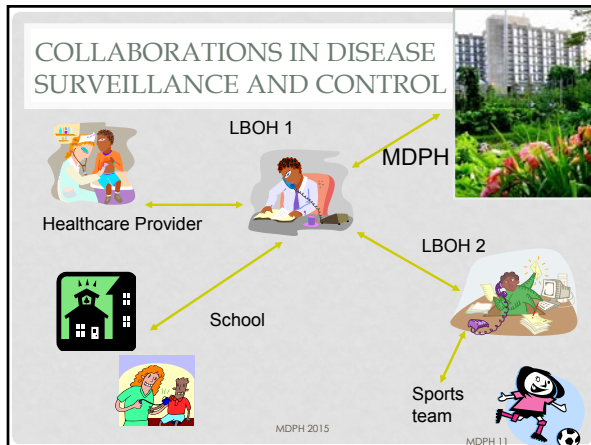
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### Vaccine-Preventable Diseases in Massachusetts Reported, Confirmed Cases, 2005-2014\*\*

Disease	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Measles	0	19	1	2	2	3	24	0	1	8
Mumps	8	7	5	7	14	9	4	2	18	4
Rubella	1	2	1	1	1	0	1	1	0	0
CRS	0	0	0	0	0	0	0	0	0	0
Pertussis	1180	1199	1198	768	379	296	273	653	346	274
Hib < 5	0	0	3	2	1	1	0	2	3	1
Tetanus	0	0	0	0	0	0	0	0	0	0
Diphtheria	0	0	0	0	0	0	0	0	0	0
Polio	0	0	0	0	0	0	0	0	0	0
Meningococcal Disease (Invasive)	29	21	21	22	14	8	14	6	11	12
Pneumococcal Disease < 5	57	85	90	82	81	69	38	45	23	27
Varicella <sup>1</sup>	2248	1998	2256	1759	1783	1751	1702	1237	1125	820

<sup>1</sup> Varicella data includes confirmed, probable, and suspect cases. <sup>2</sup> \*\*Data are preliminary as of February 2015.

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### CONFIRMED CASES & INVESTIGATIONS ARE NOT THE SAME THING

	2013 Investigations	2013 Confirmed Cases	2014 Investigations	2014 Confirmed Cases
Diphtheria	6	0	4	0
Hepatitis A	182	45	231	39
Measles	63	1	111	8
Mumps	192	18	121	4
Polio	21	0	30	0
Rubella	40	0	21	0
Pertussis	469	347	413	274
Totals	973	370	911	325

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### UNUSUAL PRESENTATIONS OF FLU

- CDC request for reporting, January 2015
- Parotitis a known but considered uncommon complication of influenza
- MDPH request for enhanced surveillance
- Surge in suspect mumps in MA
- ~ 10 cases associated with influenza identified
- Challenges in identifying cases

March 2015: CDC request for Rash & Influenza B surveillance.

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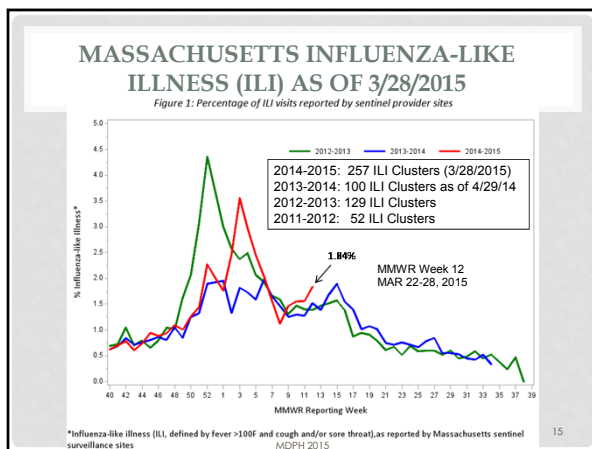
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## 2014-2015 INFLUENZA SEASON

- Influenza A (H3N2) predominated this season.
- The strain has drifted from the A(H3N2) strain contained in the vaccine.
- Vaccine was therefore not a good match for the predominately circulating strain. 18-23% effective in preventing hospitalizations and deaths.
- H3N2 years tend to be associated with higher morbidity and mortality, especially among older adults.
- Relatively early, sharp peak, similar to two seasons ago (2012-2013).

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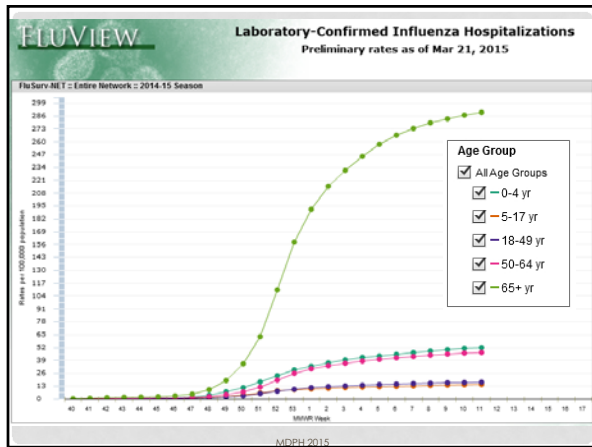
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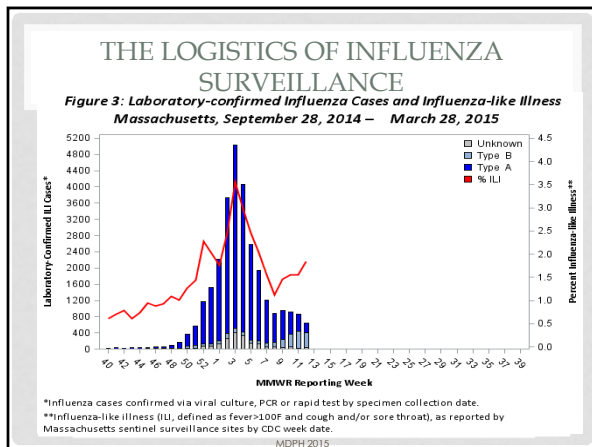
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**THE LOGISTICS OF INFLUENZA SURVEILLANCE**

**2015-2016 Influenza Vaccine Strains:**

1. A/Switzerland/9715293/2013-like (H3N2) virus (NEW)
2. A/California/7/2009-like ((H1N1)pdm09) virus (SAME)
3. B/Phuket/3073/2013-like (B/Yamagata lineage) virus (NEW)
4. Quadrivalent vaccines will include:  
B/Brisbane/60/2008-like (B/Victoria lineage) virus (SAME).

**How can you help and participate in this important work?**

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**THE LOGISTICS OF INFLUENZA SURVEILLANCE**

- Become a partner with the Massachusetts Expanded Influenza-Like Illness (ILI) Surveillance Team
  - **1. SEND SPECIMENS:**
    - Submit specimens to our laboratory for influenza surveillance testing.
    - If negative for influenza, specimens will be tested using our BioFire FilmArray for several other viruses and bacterial organisms.
    - There is no cost to your practice
  - **2. REPORT WHAT YOU SEE:**
    - Once Weekly Electronic Reporting of ILI in your facility across age groups
- Reports are summarized weekly, both nationally from the Centers for Disease Control and Prevention and at [mass.gov/flu](http://mass.gov/flu).

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**ILINET INFLUENZA SURVEILLANCE CON'T**

- Goals
  - Be part of useful real-time epidemiologic information about novel (or variant) influenza and seasonal influenza.
  - Your participation allows for rapid detection of changes in severity and/or age-distribution of affected individuals.

**Contact the Vaccine Preventable Disease Program at 617-983-6800 for further information.**

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## Tdap VACCINE DURING PREGNANCY

The Centers for Disease Control and Prevention (CDC) recommends that pregnant women receive Tdap vaccine during the third trimester of each pregnancy. This recommendation is supported by the American College of Obstetricians and Gynecologists and the American College of Nurse-Midwives. <http://www.cdc.gov/pertussis>

Getting your whooping cough vaccine in your 3<sup>rd</sup> trimester... helps protect your baby from the start.

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## Tdap VACCINE DURING PREGNANCY

- CDC's Formative Research
  - Tdap knowledge was low among both English and Spanish speakers.
  - Protecting the baby – strongest motivator for vaccination among focus groups.
  - Concerns for baby's safety – most common reason survey respondents unsure if getting Tdap during pregnancy.

"The most valuable thing is that not only will you be immunized but your baby will be born already immunized too, until he receives his own vaccine."

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## MATERNAL Tdap CAMPAIGN

- Researched-based campaign
- Targeting pregnant women & prenatal healthcare providers
- English and Spanish materials available.

[www.cdc.gov/pertussis/pregnant](http://www.cdc.gov/pertussis/pregnant)

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# MEASLES IN MASSACHUSETTS 2014

**Baystate Medical Center in Springfield patient infected with measles; 300 potentially exposed**



News | Government

## UPDATED: Samba's Patrons, Bose Employees May Have Been Exposed to Measles, Along With Trader Joe's Customers

The Massachusetts Department of Public Health confirmed a second case of measles from another MetroWest community, with associated exposures at Bose headquarters in Framingham.

Posted by Susan Petroni (Editor) · February 25, 2014 at 02:49 PM

Measles warning expands in Framingham



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# MMR VACCINE ROUTINE RECOMMENDATIONS

## Children and adolescents

- Two doses: at 12-15 months and 4-6 years or at least 28 days after the first dose
- Babies ≥ six months prior to international travel
- Catch up vaccination as needed

## Adults without evidence of measles immunity

- Birth in US prior to 1957 presumed immune if not in high risk occupation like healthcare or childcare.
- Two doses (healthcare personnel, school requirements, travelers)
- One dose (others) – 2<sup>nd</sup> dose recommended if exposed

2013 ACIP Recommendations at <http://www.cdc.gov/mmwr/pdf/mm6204.pdf>

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# MEASLES

Nationally in the  
News



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## MEASLES 2015 - UNITED STATES

### Measles Cases and Outbreaks

January 1 to March 27, 2015\*

**178**  
Cases

**4**  
Outbreaks

representing 89% of reported cases this year

reported in 17 states and the District of Columbia: Arizona, California, Colorado, Delaware, Georgia, Illinois, Michigan, Minnesota, Nebraska, New Jersey, New York, Nevada, Pennsylvania, South Dakota, Texas, Utah, Washington

### 2015 Measles Cases in the U.S.

January 1 to March 27, 2015

### U.S. Measles Cases by Year

Most of these cases [131 cases (74%)] are part of a large, ongoing multi-state outbreak linked to an amusement park in California.

\* Provisional data reported to CDC's National Center for Immunization and Respiratory Diseases

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## MEASLES TESTING

- Collection of appropriate specimens is essential to rapid and accurate diagnosis
- MDPH epidemiologists will provide guidance on specimen collection
- Testing at HSLI:

Test	Specimen	Timing (1 <sup>st</sup> Specimen)	Timing (2 <sup>nd</sup> Specimen)	Turnaround Time	Rule Out Infection?
Measles IgM	Serum (red top or serum separator tube)	Acute, at time of diagnosis	Day 4 of rash or later	1-2 days	Yes (if 2 <sup>nd</sup> specimen negative)*
PCR	NP swab in <i>Viral Transport Medium</i>	ASAP, no later than day 5 of rash	N/A	1-2 days	No
Culture	NP/Urine	ASAP, no later than day 5 of rash	N/A	Up to 2 weeks	No

\* In certain circumstances (compelling clinical presentation, known exposure), additional testing may be necessary to rule out disease.

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## MEASLES TESTING

- Nasopharyngeal (NP) swabs are VERY IMPORTANT for virus isolation & detecting measles RNA.
- MAKE SURE swab is in Viral transport medium (VTM).
  - It must be immersed in 1-3ml liquid. Dry swabs cannot be tested.

Most successful when samples are collected on the first day of rash through the 3 days following onset of rash.

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## SENDING SPECIMENS TO MDPH

**DEPARTMENT OF PUBLIC HEALTH**  
REGULATORY SERVICES DIVISION LABORATORY SERVICES  
NEW JERSEY DEPARTMENT OF HEALTH - LABORATORY SERVICES  
FORM 101-0101

<b>SENDING UNIT LABEL OR CLERK - DO NOT ALTER THIS LABEL</b>	<b>LABORATORY USE ONLY - DO NOT ALTER THIS LABEL</b>
Party: Laboratory Name (required)	Lab Name (First Name, MI)
Address:	Address:
City:	City:
State:	State:
Zip:	Zip:
Phone:	Phone:
Fax:	Fax:
Shipping Address and Name:	Lab Name (First Name, MI)
City:	City:
State:	State:
Zip:	Zip:
Phone:	Phone:
Fax:	Fax:

Test Requested:	Collection Date:	Date of Specimen:
Supplied: Use the Date	Supplied: Use the Date	Supplied:
1. Name	1. Name	1. Name
2. Code	2. Code	2. Code
3. Quantity	3. Quantity	3. Quantity
4. Lot	4. Lot	4. Lot
5. Unit	5. Unit	5. Unit
6. Specimen	6. Specimen	6. Specimen
7. Container	7. Container	7. Container
8. Other	8. Other	8. Other
9. Other	9. Other	9. Other
10. Other	10. Other	10. Other

Additional Test Information:  
Tested by: \_\_\_\_\_  
Lab Name: \_\_\_\_\_  
Lab Address: \_\_\_\_\_  
Lab Phone: \_\_\_\_\_  
Lab Fax: \_\_\_\_\_  
Lab Website: \_\_\_\_\_  
Lab Email: \_\_\_\_\_  
Lab Hours: \_\_\_\_\_  
Lab Hours (if different): \_\_\_\_\_

The information on this form is based on Laboratory Test and Service: <http://www.nj.gov/health/ohp>

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## QUESTIONS?

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