



Commonwealth of Massachusetts  
Department of Public Health

Helping People Lead Healthy Lives In Healthy Communities

# Massachusetts Acute Care Hospital Healthcare Personnel Influenza Vaccination

*2013-2014 Influenza Season*

Released July, 2014



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# Introduction

- In 2008, an amendment to Massachusetts regulations required acute care hospitals (ACHs) to provide influenza vaccine and report influenza vaccination rates in their healthcare personnel (HCP).  
See 105 CMR 130.325
- The Centers for Medicare and Medicaid Services (CMS) mandated that ACHs nationwide collect and report detailed information regarding the vaccination of their employees against influenza beginning with the 2012-13 season.
- The Massachusetts Department of Public Health (DPH) and CMS required ACHs to submit data via the National Healthcare Safety Network (NHSN) by May 15, 2014.



# Introduction

- Statewide, for the 2013-14 influenza season, DPH expected that a 90% influenza vaccination rate would be reached for ACH employees.
- This performance goal, as set forth in Bureau guidance \*\* is intended to advance patient and HCP health and safety by ensuring optimal HCP influenza vaccination coverage, and corresponds with the national Healthy People 2020 target of 90% for influenza vaccination coverage of HCP.
- The goal of this data collection effort is to establish compliance with the regulations and achievement of the performance goal to ensure optimal HCP influenza vaccination coverage.

\*\*DPH Acute Care Hospital circular letter: <http://www.mass.gov/eohhs/docs/dph/quality/hcq-circular-letters/2013/dhcq-1310603.pdf>



## 130.325: Requirement that Personnel be Vaccinated Against Influenza Virus

*Selected text shown in blue for emphasis*

### (A) Definitions.

(1) For purposes of 105 CMR 130.325, personnel means an individual or individuals employed by or affiliated with the hospital, whether directly, by contract with another entity, or as an independent contractor, paid or unpaid, including but not limited to employees, members of the medical staff, contract employees or staff, students, and volunteers who either work at or come to the licensed hospital site , whether or not such individual(s) provide direct patient care.

(2) For purposes of 105 CMR 130.325, the requirement for influenza vaccine or vaccination means immunization by either influenza vaccine, inactivated or live; attenuated influenza vaccine including seasonal influenza vaccine pursuant to 105 CMR 130.325(B); and/or other influenza vaccine pursuant to 105 CMR 130.325(C).

(B) **Each hospital shall ensure that all personnel are vaccinated with seasonal influenza vaccine unless an individual declines vaccination in accordance with 105 CMR 130.325(F).** When feasible, and consistent with any guidelines of the Commissioner of Public Health or his/her designee, each hospital shall ensure that all personnel are vaccinated with seasonal influenza vaccine no later than December 15, 2009 and annually thereafter.



## 130.325: Requirement that Personnel be Vaccinated Against Influenza Virus, cont'd

(C) Each hospital also shall ensure that all personnel are vaccinated against other pandemic or novel influenza virus(es) as specified in guidelines of the Commissioner or his/her designee, unless an individual declines vaccination in accordance with 105 CMR 130.325(F). Such guidelines may specify:

- (1) the categories of personnel that shall be vaccinated and the order of priority of vaccination of personnel, with priority for personnel with responsibility for direct patient care;
- (2) the influenza vaccine(s) to be administered;
- (3) the dates by which personnel must be vaccinated; and
- (4) any required reporting and data collection relating to the personnel vaccination requirement of 105 CMR 130.325(C).

(D) Each hospital shall provide all personnel with information about the risks and benefits of influenza vaccine.

(E) Each hospital shall notify all personnel of the influenza vaccination requirements of 105 CMR 130.325 and shall, at no cost to any personnel, provide or arrange for vaccination of all personnel who cannot provide proof of current immunization against influenza, as required pursuant to 105 CMR 130.325(B) and (C), unless an individual declines vaccination in accordance with 105 CMR 130.325(F).



## 130.325: Requirement that Personnel be Vaccinated Against Influenza Virus, cont'd

*Selected text shown in blue for emphasis*

### (F) Exceptions.

(1) A hospital shall not require an individual to receive an influenza vaccine pursuant to 105 CMR 130.325(B) or (C) if:

- (a) the vaccine is **medically contraindicated**, which means that administration of influenza vaccine to that individual would likely be detrimental to the individual's health.; or
- (b) vaccination is **against the individual's religious beliefs**; or
- (c) the **individual declines the vaccine**.

(2) An **individual who declines vaccination for any reason shall sign a statement declining vaccination** and certifying that he or she received information about the risks and benefits of influenza vaccine.

(G) Unavailability of Vaccine. A hospital shall not be required to provide or arrange for influenza vaccination during such times that the vaccine is unavailable for purchase, shipment, or administration by a third party, or when complying with an order of the Commissioner which restricts the use of the vaccine. A hospital shall obtain and administer influenza vaccine in accordance with 105 CMR 130.325 as soon as vaccine becomes available.



## 130.325: Requirement that Personnel be Vaccinated Against Influenza Virus, cont'd

*Selected text shown in blue for emphasis; blue bold for strong emphasis*

### (H) Documentation.

(1) **A hospital shall require and maintain for each individual proof of current vaccination against influenza virus pursuant to 105 CMR 130.325(B) and (C) or the individual's declination statement pursuant to 105 CMR 130.325(F).**

(2) Each hospital shall maintain a central system to track the vaccination status of all personnel.

(3) If a hospital is unable to provide or arrange for influenza vaccination for any individual, it shall document the reasons such vaccination could not be provided or arranged for.

(I) Reporting and Data Collection. Each hospital shall report information to the Department documenting the hospital's compliance with the personnel vaccination requirements of 105 CMR 130.325, in accordance with reporting and data collection guidelines \*\* of the Commissioner or his/her designee.

\*\* DPH Acute Care Hospital circular letter: <http://www.mass.gov/eohhs/docs/dph/quality/hcq-circular-letters/2013/dhcq-1310603.pdf>



- NHSN requires facilities to provide the number of HCP physically at the facility for one or more days between October 1, 2013 and March 31, 2014 by the following employee categories:
  - Employees on facility payroll
  - Licensed independent practitioners
  - Students/trainees and volunteers



- Per the Centers for Medicaid Services (CMS), for each category of HCP, for the period October 1, 2013 to March 31, 2014, facilities must collect the number of:
  - HCP vaccinated at the facility
  - HCP vaccinated elsewhere (PCP office, pharmacy, etc.)
  - HCP that declined vaccine
  - HCP with a medical contraindication to the vaccine
  - HCP with unknown vaccine status †

† DPH regulations do not allow for reporting of unknown vaccine status. See 105 CMR 130.325(H)(1).



# Methodology

- The 2011-12 DPH denominator definition was defined as the total HCP employed on December 31 of the current influenza season.
- The CMS/NHSN denominator definition in 2012-13 was the number of HCP physically at the facility for 30 or more days between October 1, 2012 and March 31, 2013.
- The CMS/NHSN denominator definition in 2013-14 was the number of HCP physically at the facility for one or more days between October 1, 2013 and March 31, 2014.
- The change in CMS/NHSN denominator definition captured over 33,000 more HCP in Massachusetts in 2013-2014 than the previous year.
- Due to this change in definition, the 2013-14 data cannot be directly compared to previous years of HCP vaccination reporting.



## Measures

- Calculated aggregate percentage for all HCP across Massachusetts acute care hospitals (n=75), by HCP type, and several other factors.

Percentage HCP in facility vaccinated in 2013-14

$$\text{Vaccine Coverage} = \frac{\text{HCP Vaccinated at Facility} + \text{HCP Vaccinated Elsewhere}}{\text{Total \# HCP at Facility}}$$

Percentage HCP in facility that declined vaccine in 2013-14

$$\text{Vaccine Declination} = \frac{\text{\# HCP Declined Vaccine}}{\text{Total \# HCP at Facility}}$$



## Measures cont.

Percentage HCP in facility with a medical contraindication to vaccine in 2013-14

$$\text{Medical Contraindication} = \frac{\text{\# HCP with Medical Contraindication}}{\text{Total \# HCP at Facility}}$$

Percentage HCP in facility with unknown influenza vaccine status in 2013-14

$$\dagger \text{ Unknown Vaccine Status} = \frac{\text{\# HCP with Unknown Vaccine Status}}{\text{Total \# HCP at Facility}}$$

**† DPH regulations do not allow for reporting of unknown vaccine status. See 105 CM 130.325(H)(1).**



# Results

- All qualifying acute care hospitals (n=75) submitted HCP vaccination data
  - 31 facilities (41%) vaccinated 90% or more of their healthcare personnel
  - 20 facilities (26%) vaccinated 80-89% of their healthcare personnel
  - 18 facilities (24%) vaccinated 70-79% of their healthcare personnel
  - 6 facilities (8%) vaccinated 60- 69% of their healthcare personnel
  - 21 facilities (28%) had a vaccine declination rate of 14% or greater
  - 11 facilities (15%) classified 14% or more of their employee vaccination status as unknown

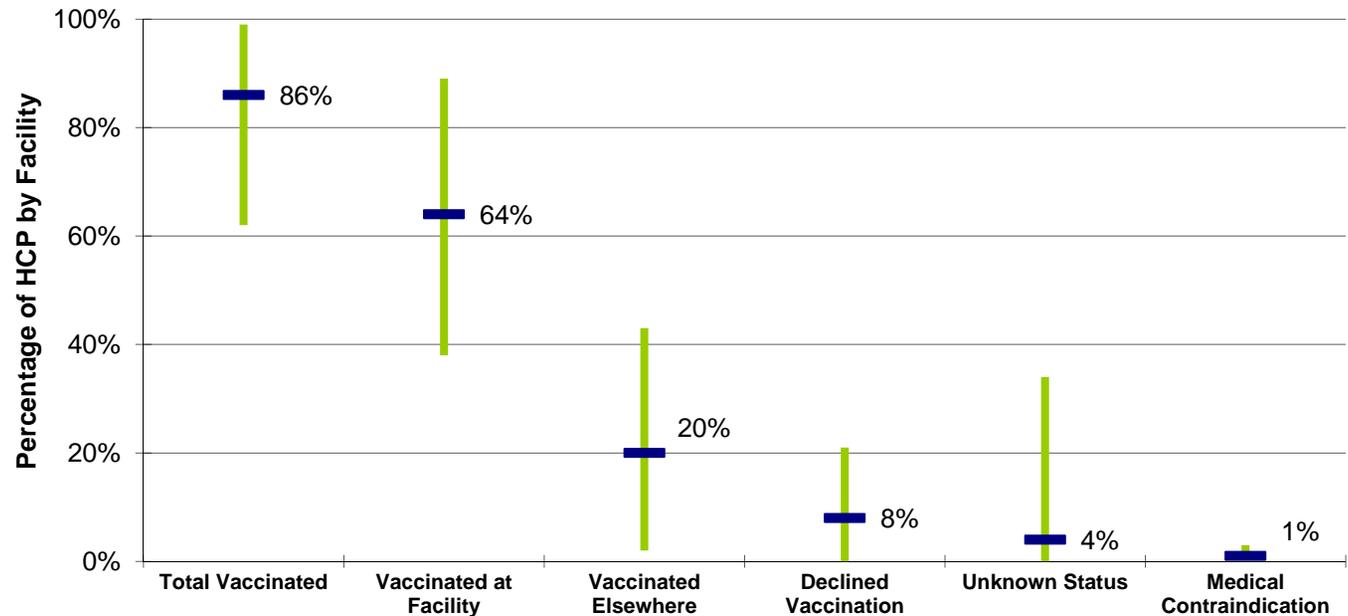


# Results

## Key Findings

The statewide median for facility vaccine coverage was 86%, meaning that 38 facilities had vaccine coverage of 86% or greater. Most HCPs were vaccinated at their workplace and median declination was 8%.

## Median and Range of HCP Influenza Vaccine Coverage at Massachusetts Acute Care Hospitals 2013-14



n=75

\*Median and range are measures of HCP vaccine coverage by reporting MA acute care hospitals, not state average rates for HCP



# Results

	State Aggregate HCP Vaccine Coverage	Median % HCPs at Facility*	Range
<b>Total HCPs Vaccinated</b>	207,138 (86%)	86%	(62-99%)
Vaccinated at Facility		64%	(38-89%)
Vaccinated Elsewhere		20%	(2-43%)
<b>HCPs Declined Vaccination</b>	19,124 (8%)	8%	(0-21%)
<b>HCPs with Unknown Vaccination Status</b>	12,743 (5%)	4%	(0-34%)
<b>HCPs with a Medical Contraindication</b>	1,794 (1%)	1%	(0-3%)

n=75

\*Please note the median is the midpoint of the distribution of each measure at MA acute care hospitals. It is not the state average, which is not the measure of HCP vaccine coverage by reporting MA acute care hospitals, as median and range are.



# Results

	Facilities	Median HCP Vaccine Coverage by Facility	Range of HCP Vaccine Coverage by Facility
<b>Hospital Teaching Status</b>			
Teaching Hospital	33	88%	(67-99%)
Non-Teaching Hospital	42	81%	(62-99%)
<b>Hospital Bed Size</b>			
<= 100	27	85%	(67-99%)
101-300	37	83%	(62-99%)
> 300	11	91%	(77-98%)

n=75

## Key Findings

Large facilities and teaching hospitals had the highest vaccine coverage rates. However there was little difference between vaccine coverage by facility bed size. Non-teaching hospitals had lower coverage than teaching hospitals.

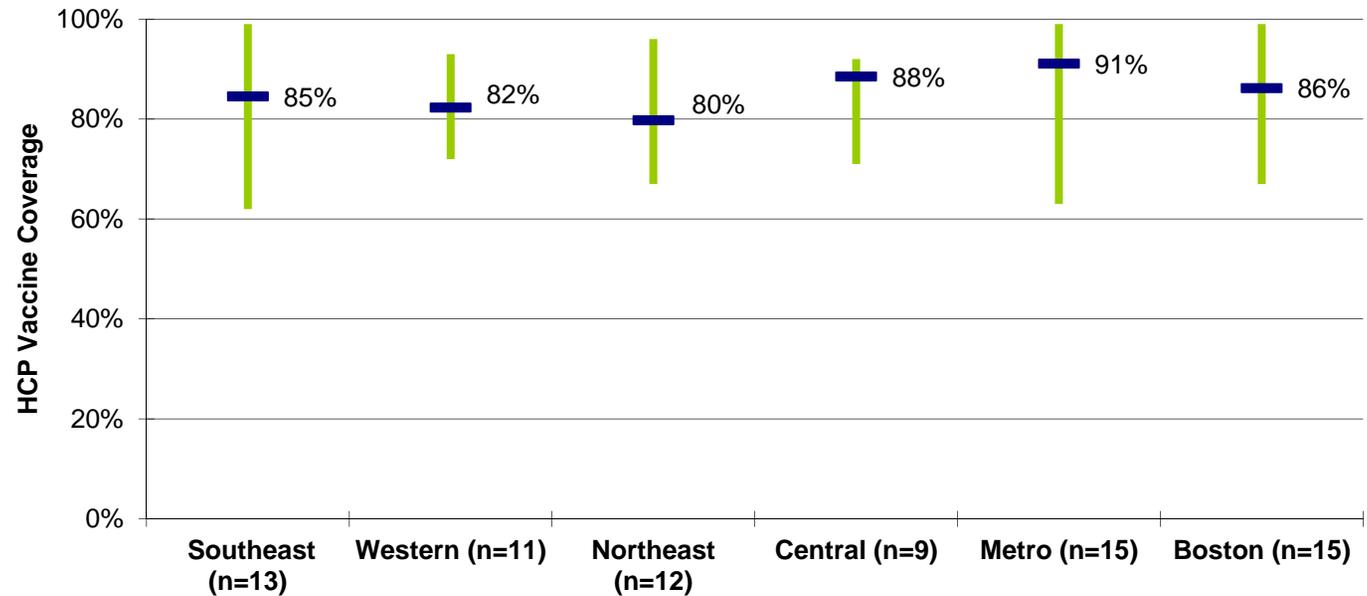
\*Teaching status was determined by hospital's most recent National Healthcare Safety Network annual hospital survey. Major teaching status is defined as a hospital that is an important part of a medical school teaching program in which the majority of medical students rotate through multiple clinical services.



## Key Findings

Metro region ACHs had median vaccine coverage of 91%, the highest in the state. Vaccine coverage was lowest in Northeastern and Western Massachusetts ACHs.

Median and Range of HCP Influenza Vaccine Coverage at Massachusetts Acute Care Hospitals by Region



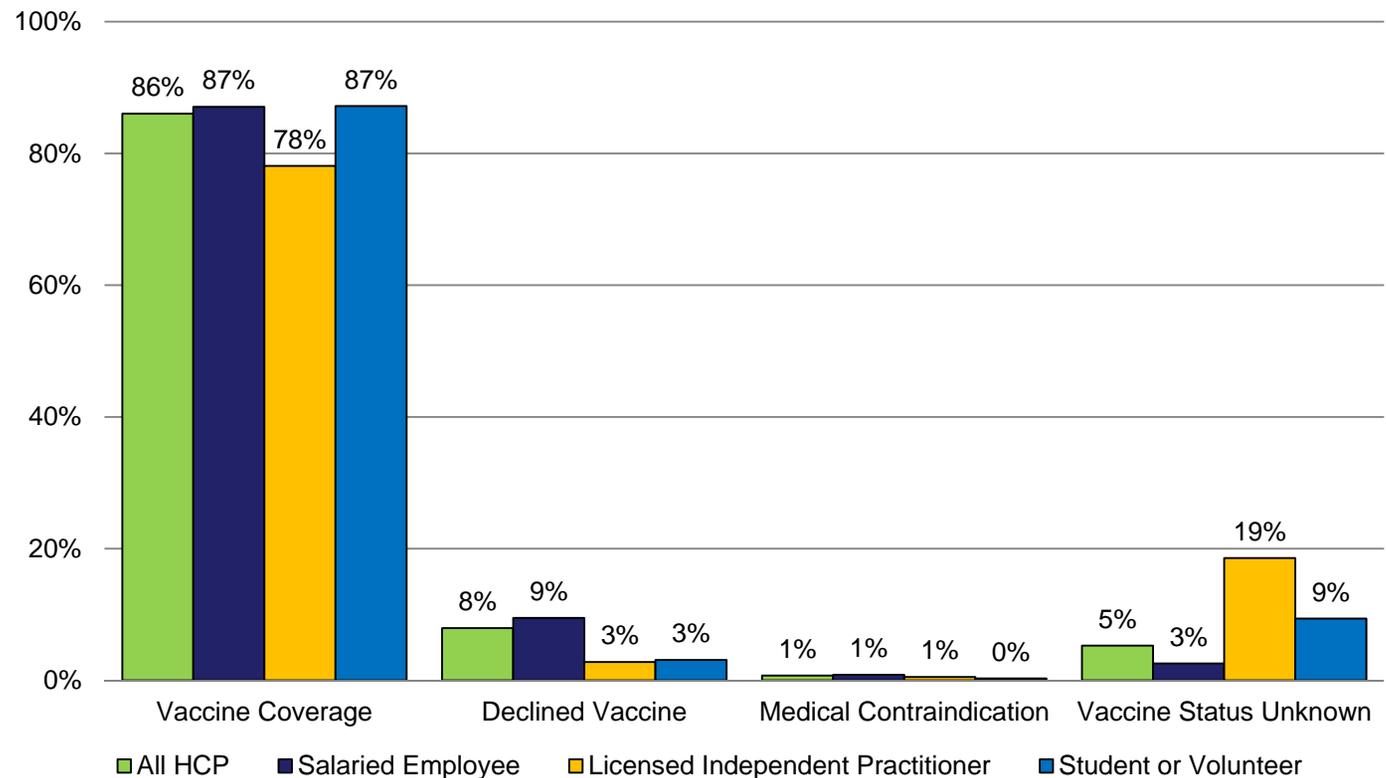
\*Median and range are measures of HCP vaccine coverage by reporting MA acute care hospitals, not state average for HCP



## Key Findings

Overall, Licensed Independent Practitioners (LIP) seem least likely to receive vaccine and are more likely to have unknown vaccine status. Salaried employees have higher vaccination rates, but also have a higher documented vaccine declination rate. This may be partially explained by salaried employees having the most complete reporting.

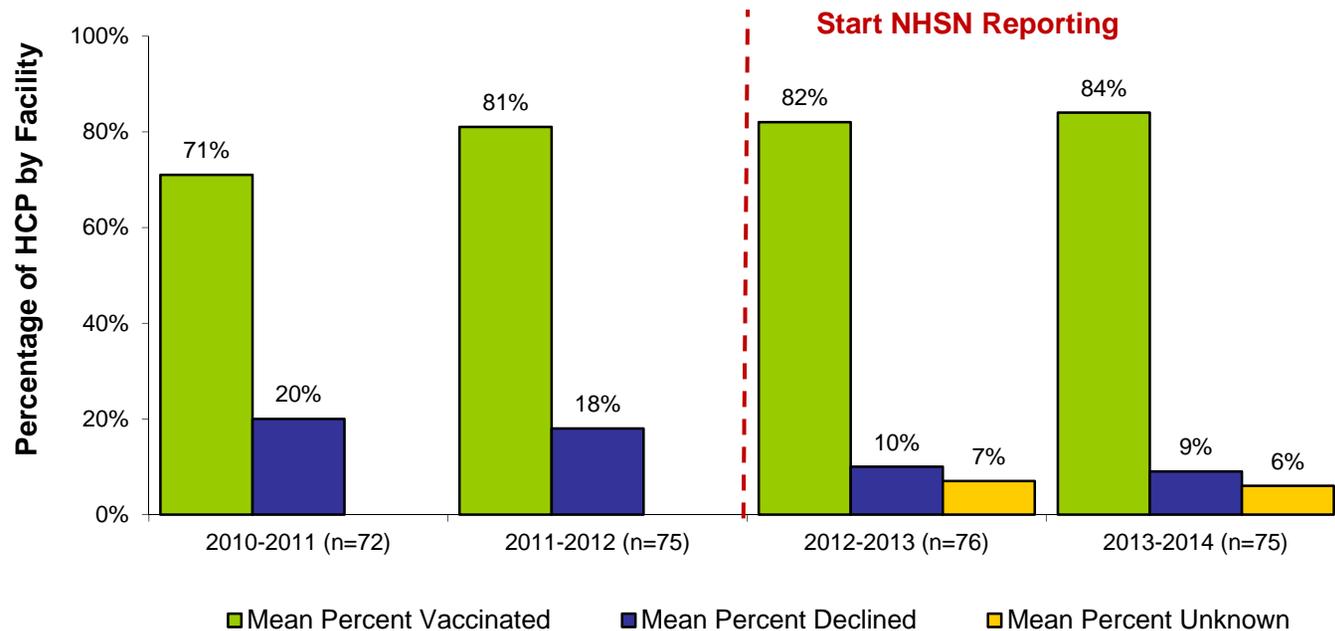
## Overall HCP Influenza Vaccine Coverage in Massachusetts ACHs by HCW Type





# Results

## Mean HCP Vaccine Coverage, Declination, and Unknown Status at Acute Care Hospitals



Mean HCP vaccine coverage at MA ACHs was not higher than previous years and did not meet the 90% benchmark. Mean vaccine declination and unknown status was similar to 2012-13, though the denominator may have captured different employees in 2013-14.



# Results

## ACHs with HCP Vaccine Coverage of $\geq 93\%$ During the 2013-14 Influenza Season

Hospital Name	# HCP Reported	HCP Vaccine Coverage	% HCP Declined Vaccine	% HCP w/ Medical Contraindication	% HCP w/ Unknown Vaccine Status
Dana Farber Cancer Institute	4,657	99%	0%	1%	0%
Sturdy Memorial Hospital	1,786	99%	0%	1%	0%
Winchester Hospital	3,086	99%	0%	1%	0%
Lahey Health - Lahey Hospital & Medical Center	6,239	98%	1%	0%	1%
Tufts Medical Center	5,223	97%	1%	0%	1%
Beth Israel Deaconess Hospital - Milton	765	96%	3%	0%	1%
Anna Jaques Hospital	1,025	96%	3%	0%	1%
Beth Israel Deaconess Medical Center	9,804	94%	5%	1%	0%
Beth Israel Deaconess Hospital - Needham	596	94%	0%	2%	4%
Baystate Health - Baystate Medical Center	6,944	93%	5%	0%	2%
Signature Healthcare - Brockton Hospital	1,818	93%	3%	0%	4%
Berkshire Health Systems - Fairview Hospital	327	93%	5%	3%	0%
Boston Medical Center	6,698	93%	1%	0%	6%
Nantucket Cottage Hospital	253	93%	6%	0%	2%
Cambridge Health Alliance - Cambridge Hospital	2,193	93%	7%	0%	0%
Cambridge Health Alliance - Whidden Hospital	1,462	93%	7%	0%	0%

## ACHs with HCP Vaccine Coverage of 90-92% During the 2013-14 Influenza Season

Hospital Name	# HCP Reported	HCP Vaccine Coverage	% HCP Declined Vaccine	% HCP w/ Medical Contraindication	% HCP w/ Unknown Vaccine Status
Hallmark Health System - Melrose-Wakefield Hospital	1,126	92%	8%	0%	0%
South Shore Hospital	4,131	92%	8%	0%	0%
Southcoast Health Systems - Tobey Hospital	595	92%	3%	0%	5%
Heywood Hospital	940	92%	8%	0%	0%
Kindred Boston	144	91%	6%	2%	0%
Southcoast Health Systems - Charlton Hospital	2,190	91%	3%	0%	6%
Athol Memorial Hospital	248	91%	9%	0%	0%
Mount Auburn Hospital	2,976	91%	5%	1%	3%
UMass Memorial Health Care - Marlborough Hospital	643	91%	8%	1%	0%
Harrington Memorial Hospital	1,353	91%	3%	1%	6%
Boston Children's Hospital	10,360	90%	2%	1%	7%
Hallmark Health System - Lawrence Memorial Hospital	568	90%	9%	0%	0%
Brigham and Women's - Faulkner Hospital	1,541	90%	9%	1%	0%
UMass Memorial Health Care - HealthAlliance Hospital	1,260	90%	10%	0%	0%
Baystate Health - Franklin Medical Center	664	90%	3%	0%	7%

# Results

## ACHs with HCP Vaccine Coverage of Less than 80% During the 2013-14 Influenza Season

Hospital Name	HCP Vaccine Coverage	% HCPs Declined Vaccine	% HCPs w/ Medical Contraindication	% HCPs w/ Unknown Vaccine Status
Holyoke Medical Center	78%	18%	1%	2%
Kindred Peabody	78%	18%	2%	3%
Martha's Vineyard Hospital	78%	16%	0%	7%
Brigham and Women's Hospital	77%	18%	1%	4%
Lahey Health - Beverly Hospital	77%	7%	2%	14%
Steward Health Care System - Carney Hospital	77%	12%	1%	10%
Steward Health Care System - Good Samaritan Medical Center	77%	18%	2%	3%
Mercy Medical Center	76%	21%	2%	2%
North Shore Medical Center - Union Hospital	76%	16%	1%	6%
MetroWest Medical Center - Framingham Union Hospital	75%	2%	2%	22%
Cooley Dickinson Hospital	74%	14%	1%	11%
Steward Health Care System - Morton Hospital	74%	15%	1%	10%
Steward Health Care System - Saint Anne's Hospital	74%	19%	0%	7%



# Results

## ACHs with HCP Vaccine Coverage of Less than 80% During the 2013-14 Influenza Season

Hospital Name	HCP Vaccine Coverage	% HCPs Declined Vaccine	% HCPs w/ Medical Contraindication	% HCPs w/ Unknown Vaccine Status
Steward Health Care System - Holy Family Hospital	73%	20%	0%	6%
UMass Memorial Health Care - Wing Memorial Hospital	72%	16%	0%	11%
UMass Memorial Health Care - Clinton Hospital	71%	18%	0%	10%
Lowell General Hospital - Saints Campus	71%	0%	0%	29%
Steward Health Care System - Nashoba Valley Medical Center	71%	16%	1%	13%
Steward Health Care System - Quincy Medical Center	68%	12%	0%	20%
Steward Health Care System - St. Elizabeth's Medical Center	67%	13%	1%	18%
Steward Health Care System - Merrimack Valley Hospital	67%	16%	0%	16%
Cape Cod Healthcare - Falmouth Hospital	67%	14%	3%	16%
MetroWest Medical Center - Leonard Morse Hospital	63%	1%	2%	34%
Cape Cod Healthcare - Cape Cod Hospital	62%	21%	2%	15%



# Results

## ACHs with Unknown HCP Vaccine Status Greater than 10% During the 2013-14 Influenza Season

Hospital Name	# HCP Reported	HCP Vaccine Coverage	% HCP Declined Vaccine	% HCP w/ Medical Contraindication	% HCP w/ Unknown Vaccine Status
<b>MetroWest Medical Center - Leonard Morse Hospital</b>	641	<b>63%</b>	1%	2%	<b>34%</b>
<b>Lowell General Hospital - Saints Campus</b>	950	<b>71%</b>	0%	0%	<b>29%</b>
<b>MetroWest Medical Center - Framingham Union Hospital</b>	1,618	<b>75%</b>	2%	2%	<b>22%</b>
<b>Lowell General Hospital</b>	2,418	<b>80%</b>	0%	0%	<b>20%</b>
<b>Steward Health Care System - Quincy Medical Center</b>	840	<b>68%</b>	12%	0%	<b>20%</b>
<b>Steward Health Care System - St. Elizabeth's Medical Center</b>	2,076	<b>67%</b>	13%	1%	<b>18%</b>
<b>Steward Health Care System - Merrimack Valley Hospital</b>	555	<b>67%</b>	16%	0%	<b>16%</b>
<b>New England Baptist Hospital</b>	1,473	<b>83%</b>	0%	1%	<b>16%</b>
<b>Cape Cod Healthcare - Falmouth Hospital</b>	885	<b>67%</b>	14%	3%	<b>16%</b>
<b>Cape Cod Healthcare - Cape Cod Hospital</b>	2,059	<b>62%</b>	21%	2%	<b>15%</b>
<b>Lahey Health - Beverly Hospital</b>	1,987	<b>77%</b>	7%	2%	<b>14%</b>
<b>Lawrence General Hospital</b>	1,872	<b>81%</b>	5%	0%	<b>13%</b>
<b>Steward Health Care System - Nashoba Valley Medical Center</b>	461	<b>71%</b>	16%	1%	<b>13%</b>
<b>UMass Memorial Health Care - Wing Memorial Hospital</b>	802	<b>72%</b>	16%	0%	<b>11%</b>
<b>Cooley Dickinson Hospital</b>	1,530	<b>74%</b>	14%	1%	<b>11%</b>



# Conclusions

- While not directly comparable to previous years, vaccine coverage did not increase in 2013-14.
- Massachusetts median HCP vaccine coverage of 86% demonstrates progress toward achieving the national Healthy People 2020 target of 90% for influenza vaccination coverage of HCP.
- However, ACH HCP in Massachusetts did not achieve vaccine coverage of 90%, and only 41% of ACHs vaccinated 90% or more of their healthcare personnel (n=31).
- Completeness of documentation varied widely, with some facilities reporting up to 34% of employees with unknown vaccination status. †

\*Please note the median is the midpoint of the distribution of each measure at MA acute care hospitals. It is not the state average, which is not the measure of HCP vaccine coverage by reporting MA acute care hospitals, as median and range are.

† DPH regulations do not allow for reporting of unknown vaccine status. See 105 CMR 130.325(H)(1).



# Next Steps

- Recognize and promote the achievements of high performers on DPH website.
- Draft letter to CEOs of hospitals reporting less than 80% vaccination coverage to reinforce compliance and reporting responsibilities.
- Identify training opportunities to provide ongoing and focused education in collaboration with our public health organization partners.
- Require hospitals with unknown HCP vaccination status to implement improved processes to identify and target all HCP.
- Amend current regulatory requirements in all licensed healthcare facilities, if improvement goals remain unmet.



# Next Steps

In light of the following conclusions:

- The number of unknown vaccination status reports is inversely proportional to a hospital's reported HCP vaccination rate;
- Nearly every hospital with more than 10% unknowns reported a vaccination rate below 80%; and
- DPH regulations do not allow for reporting of unknowns, but rather state that **“A hospital shall require and maintain for each individual proof of current vaccination against influenza virus ... or the individual's declination statement.”**

DPH is prepared to:

- Prepare deficiency statements citing hospitals for noncompliance with DPH annual influenza vaccination and reporting requirements; and
- Require corrective action, pursuant to 105 CMR 130.112.

Expand on work with key stakeholders to maximize HCP influenza vaccination rates:

- Massachusetts Coalition for the Prevention of Medical Errors
- Massachusetts Hospital Association
- Massachusetts Medical Society
- MassPro
- Massachusetts Senior Care Association
- National Institute for Occupational Safety and Health