

Influenza Vaccination Coverage in Connecticut Acute-care Hospital Personnel, 2013-14 Influenza Season

The Advisory Committee on Immunization Practices (ACIP) recommends that all healthcare personnel (HCP) receive an annual seasonal influenza vaccination (1), and Healthy People 2020 sets a 90% target (2). However, Centers for Disease Control and Prevention (CDC) data show national coverage of 70%-80% (3,4).

All 29 acute-care hospitals in Connecticut have tracked and reported HCP influenza vaccination data since 2012 via the National Healthcare Safety Network (NHSN), an internet-based healthcare-associated infections (HAI) surveillance system. All HCP working at the facility during the influenza season (October 1-March 31) are included in surveillance. HCP are either considered employees (on the facility payroll) or non-employees. Non-employee HCP types include licensed independent practitioners (LIP), adult students/trainees and volunteers, and other contract personnel. Surveillance for contractors is the only voluntary element of this reporting.

HCP can fall into one of three categories: vaccinated, unvaccinated, and those with unknown vaccination status. Vaccinated HCP receive an influenza vaccination for that season either at the reporting facility or elsewhere, and if elsewhere, provide documentation of receipt. Unvaccinated HCP are either medically contraindicated or decline vaccination; all other HCP have unknown vaccination status.

During the 2013-14 influenza season, overall vaccination coverage for acute-care hospital HCP was 86.0%, ranging by HCP type from 96.7% among contractors to 72.5% amongst LIP. Most employees and LIP were vaccinated at the reporting facility, while most students/volunteers and

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contractors were vaccinated elsewhere. Overall, 74.9% of HCP received their vaccination at the facility (Table 1, see page 22).

Overall, 6.8% of HCP were unvaccinated, with employees having the highest (8.9%) and contractors having the lowest (1.8%) percentages of unvaccinated HCP. Of all unvaccinated HCP, 81.5% declined vaccination and 18.5% were contraindicated; LIP had the highest percentage of unvaccinated HCP with contraindications (35.3%) and contractors had the lowest percentage of unvaccinated HCP with contraindications (5.9%).

The percentage of HCP with unknown vaccination status was 7.2%, with percentages of HCP with unknown vaccination status ranging from 1.4% (contractors) to 25.6% (LIP) (Table 1, pg. 22).

Facilities may require vaccination for LIP for credentialing (e.g., to have the right to admit patients to the facility, perform surgery, etc.), or for employees and contractors as a condition of employment. During the 2013-14 season, facilities with such requirements in place saw statistically significantly higher vaccination coverage among LIP, employees, and contractors than facilities without such requirements (Table 2, pg. 22).

Of 30 facilities, 7 (23%) had requirements for both credentialing and employment, 11 (37%) facilities did not have requirements for credentialing or employment, and 12 (40%) facilities had either a requirement for credentialing or a requirement for employment, but not both.

Reported by

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Table 1. Connecticut acute-care hospital HCP influenza vaccination status by personnel type, 2013-14 influenza season.

Vaccination Status	Employee		Non-Employee		Total
	LIP	Student/ Volunteer	Contract Personnel		
Vaccinated	65,735 (87.8%)	10,398 (72.5%)	12,831 (87.6%)	3,628 (96.7%)	92,592 (86.0%)
At Facility	56,032 (85.2%)	6,220 (59.8%)	5,739 (44.7%)	1,372 (37.8%)	69,363 (74.9%)
Elsewhere	9,703 (14.8%)	4,178 (40.2%)	7,092 (55.3%)	2,256 (62.2%)	23,229 (25.1%)
Unvaccinated	6,634 (8.9%)	269 (1.9%)	313 (2.1%)	68 (1.8%)	7,284 (6.8%)
Contraindicated	1,203 (18.1%)	95 (35.3%)	45 (14.4%)	4 (5.9%)	1,347 (18.5%)
Declined	5,431 (81.9%)	174 (64.7%)	268 (85.6%)	64 (94.1%)	5,937 (81.5%)
Unknown	2,508 (3.3%)	3,674 (25.6%)	1,506 (10.3%)	54 (1.4%)	7,742 (7.2%)
Total	74,877 (69.6%)	14,341 (13.3%)	14,650 (13.6%)	3,750 (3.5%)	107,618 (100%)

Editorial

While Connecticut’s 86.0% vaccination coverage during the 2013-14 season surpassed national estimates of HCP influenza vaccination, it falls below the Healthy People 2020 goal of 90%. However, these aggregate data remain a meaningful benchmark for statewide performance, useful for targeting interventions aimed at reducing the spread of seasonal influenza, including vaccination clinics and campaigns. These data also suggest that vaccination mandates, such as requiring vaccination as a condition for credentialing or employment, are associated with significantly higher vaccination rates and should be considered for adoption by facilities.

The Connecticut Department of Public Health encourages each facility to review its data via NHSN to gain a clearer understanding of its own successes and challenges benchmarked by statewide data. Continued progress may require focused

interventions for certain HCP types. For example, LIP have relatively low vaccination coverage; yet, because they are considered team and opinion leaders among HCP, they can use their influence to promote vaccination to others. Facilities can examine policies and adopt best practices demonstrated to improve vaccination rates at other facilities, such as stricter policies on acceptable reasons for exemption, improved documentation of vaccination status, establishment of clear consequences for HCP who decline without acceptable reasons for exemption, and requirements for non-vaccinated HCP to strictly adhere to methods to prevent transmission of influenza to others while in the facility (such as mandatory masking throughout the influenza season). Improved surveillance, reporting, and facility policies can drive Connecticut’s HCP influenza vaccination coverage towards the 90% Healthy People 2020 target.

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Table 2. Connecticut acute-care hospital HCP influenza vaccination status by vaccination requirements, 2013-14 influenza season

Personnel Type	Vaccination Required		Vaccination Not Required	
	% Vaccinated	95% CI**	% Vaccinated	95% CI**
LIP	84.7	83.52, 85.89	68.5	67.59, 69.34
Employees	96.2	96.04, 96.42	78.3	77.9, 78.76
Contractors	99.4	99.09, 99.62	74.8	70.41, 78.86

**CI = Confidence Interval

Influenza and Pneumococcal Vaccination Coverage in Connecticut, 2001-2010

The Centers for Disease Control and Prevention (CDC) has declared vaccinations against infectious diseases one of the top ten achievements in public health during the past decade (1). There are 17 diseases, including influenza (flu) and pneumococcal disease, controlled through vaccination. The CDC estimates that within each annual U.S. birth cohort vaccines save 42,000 lives and an estimated \$69 billion in societal costs (2).

The Connecticut Department of Public Health analyzed data collected through the Connecticut Behavioral Risk Factor Surveillance System (CT BRFSS) in 2001–2010 for trends in seasonal flu and pneumococcal vaccination coverage (3).

During the study period, the percent prevalence of seasonal flu vaccination among adults 18-64 years old within the previous 12 months increased significantly from a low of 24.4% in 2001 to a high of 38.0% in 2010 (Figure 1). The annual rate of increase was 1.36% (standard error = 0.18%). Among adults at least 65 years of age, a smaller increase was seen, with percent prevalence values varying from a low of 69.1% in 2001 to a high of 74.7% in 2007.

During the same time period, pneumococcal vaccination rates among adults aged 18-64 years ranged from a low of 10.0% in 2008 to a high of 13.1% in 2010 (Figure 2, see page 24). Vaccination coverage among adults at least 65 years of age, however, increased significantly across the study period, with an annual increase of 0.4% (SE = 0.2%). The coverage rate varied from 61.2% in 2001 to 65.8% in 2010.

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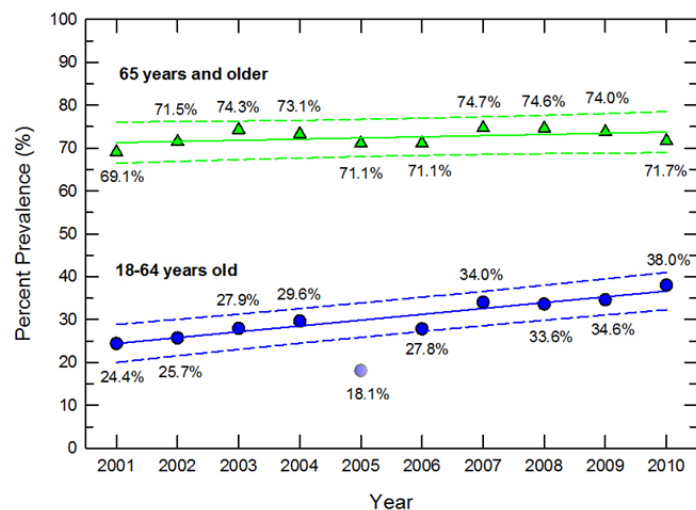
Editorial

The results indicated vaccination coverage against seasonal flu in Connecticut increased significantly among adults aged 18-64 years. During

the same time period, vaccination coverage against pneumococcal infection also increased significantly among adults at least 65 years of age. Across the decade, vaccination coverage against seasonal flu and pneumococcal vaccination among older adults remained higher than among younger adults.

Assuming a constant continued rate of vaccination coverage across the current decade, and based on available estimates for 2011 through 2013, the vaccination coverage for Connecticut adults at least 65 years of age in year 2020 is expected to be 61% for seasonal flu and 72% for pneumococcal disease, values that remain below the Healthy People 2020 objective of 90% (4). Vaccination against flu and pneumococcal infections are objectives in the Connecticut State Health Improvement Plan (5), and vaccine-preventable diseases have been designated a priority for the state (6). As president of the Association of State and Territorial Health Officers, Dr. Jewel Mullen, Commissioner of the Department of Public Health, had established a priority nationwide for Healthy Aging (7). This initiative focuses on increasing the health and wellbeing among older Americans. Increased vaccination coverage in Connecticut among older adults against flu and pneumococcal infections contributes to these initiatives.

Figure 1. Trend in seasonal flu vaccination in adults aged 18-64 years, and 65 years and older, Connecticut, 2001-2010



Source: CT BRFSS, 2001-2010

An extremely low prevalence of flu vaccine among adults 18-64 years old occurred in year 2005 (Figure 1). During the prior year, the country experienced a shortage in the vaccine, and the U.S. Advisory Council on Immunization Practice temporarily tightened its recommendation to vaccinate only high risk persons (8). Since the CT BRFSS has a question that asks about vaccination coverage in the previous 12 months, the flu shortage in 2004 may have led to the reported low prevalence in 2005.

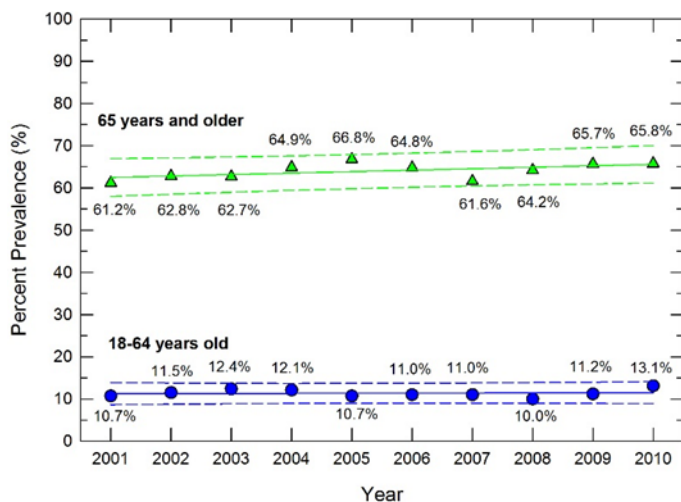
The CT BRFSS is an anonymous combined landline/cell phone population-based survey in Connecticut of randomly selected adult (18 years and older) volunteers that monitors the health and well-being of state residents. More information on this survey can be found at www.ct.gov/dph/BRFSS.

The results of this study indicate more work is needed to encourage vaccinations against both seasonal flu and pneumococcal infection among older adults in Connecticut. This could involve increasing awareness among citizens, and partnering with the state American Association of Retired Persons, as well as state and local social networking organizations. Among younger adults, continued education is also needed to increase vaccination coverage against flu.

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Figure 2. Trend in ever had pneumococcal infection vaccination in adults aged 18-64 years, and 65 years and older, Connecticut, 2001-2010.



Source: CT BRFSS, 2001-2010

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