



Original Research

Racial and ethnic disparities in influenza vaccinations among community pharmacy patients and non-community pharmacy respondents

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Abstract

Background: Since 2009, pharmacists in all 50 states in the U.S. have been authorized to administer vaccinations.

Objectives: This study examined racial and ethnic disparities in the reported receipt of influenza vaccinations within the past year among noninstitutionalized community pharmacy patients and non-community pharmacy respondents.

Methods: The 2009 Medical Expenditure Panel Survey was analyzed. The sample consisted of respondents aged 50 years or older, as per the 2009 recommendations by the Advisory Committee on Immunization Practices. Bivariate and multivariate logistic regression analyses were conducted to examine the influenza vaccination rates and disparities in receiving influenza vaccinations within past year between non-Hispanic Whites (Whites), non-Hispanic Blacks (Blacks) and Hispanics. The influenza vaccination rates between community pharmacy patients and non-community pharmacy respondents were also examined.

Results: Bivariate analyses found that among the community pharmacy patients, a greater proportion of Whites reported receiving influenza vaccinations compared to Blacks (60.9% vs. 49.1%; $P < 0.0001$) and Hispanics (60.9% vs. 51.7%; $P < 0.0001$). Among non-community pharmacy respondents, differences also were observed in reported influenza vaccination rates among Whites compared to Blacks (41.0% vs. 24.3%; $P < 0.0001$) and Hispanics (41.0% vs. 26.0%; $P < 0.0001$). Adjusted logistic regression analyses found significant racial disparities between Blacks and Whites in receiving influenza vaccinations within the past year among both community pharmacy patients (odds ratio [OR]: 0.81; 95% CI: 0.69–0.95) and non-community pharmacy respondents (OR: 0.66; 95% CI: 0.46–0.94). Sociodemographic characteristics and health status accounted for the disparities between Hispanics and Whites. Overall, community pharmacy patients reported higher influenza vaccination rates compared to non-community pharmacy respondents (59.0% vs. 37.2%; $P < 0.0001$).

Conclusion: Although influenza vaccination rates were higher among community pharmacy patients, there were racial disparities in receiving influenza vaccinations among both community pharmacy

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patients and non-community pharmacy respondents. Increased emphasis on educational campaigns among pharmacists and their patients, especially minorities, may be needed.

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Introduction

Seasonal epidemics of influenza typically occur annually during the fall or winter periods in the United States.¹ Influenza related complications include hospitalizations and death, and may occur as a result of the direct effects from the influenza virus infection, or due to certain risk factors such as age of infection, pregnancy, or comorbid conditions.² Estimates from prior seasonal influenza epidemics reported that on average, the number of influenza-related hospitalizations ranged from approximately 55,000 to 431,000 per annual influenza epidemic, with a mean of approximately 226,000.³ During the period from 1990 to 1999, an average of 36,000 influenza-related deaths per influenza season were estimated to have occurred.⁴ Influenza combined with pneumonia was the eighth leading cause of death in the United States in 2009, responsible for approximately 53,692 deaths in that year.⁵

Vaccination against influenza represents a highly efficacious and cost-effective strategy for reducing the morbidity and mortality associated with influenza among the U.S. population.^{6–8} Nonetheless, despite widespread efforts to increase influenza vaccination coverage, the vaccination rates continue to remain low and fail to meet national goals. The Healthy People 2010 goal for influenza immunization was to achieve a vaccination coverage rate of 90% among adults aged 18 years and older. As of 2008, however, only 25% of noninstitutionalized adults aged 18–64 years, and 67% of elderly aged 65 and above were vaccinated against seasonal influenza.⁹

The role of pharmacists in the delivery of immunizations has gained prominence in recent years. The first organized immunization training for a group of 50 pharmacists was held in Seattle, Washington in late 1994.¹⁰ The American Pharmacists Association (then known as the American Pharmaceutical Association) began its first formal nationally recognized program to train pharmacists in vaccine administration on November 1, 1996.¹⁰ As of 2009, all 50 U.S. States, the District of Columbia, and Puerto Rico have legislation in

place to allow pharmacists to administer vaccinations.¹¹ Previous studies have determined the benefits of influenza vaccinations by community pharmacists. States that had authorized their pharmacists to administer influenza vaccinations showed significantly greater influenza vaccination rates among all age groups, in comparison to states that did not provide such authority to pharmacists.^{12,13} In addition, pharmacist-administered vaccinations within a pharmacy have been found to more cost-effective compared to “traditional settings”.¹⁴

The Institute of Medicine (IOM) in its report entitled *Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare* observed that “Racial and ethnic disparities in health care exist, and are consistent and extensive across a range of medical conditions and health care services, are associated with worse health outcomes, and occur independently of insurance status, income, and education.”¹⁵ Empirical evidence demonstrates significant differences in influenza vaccinations when comparing non-Hispanic Blacks (Blacks) and Hispanics to non-Hispanic Whites (Whites), among the adult, the near-elderly, and particularly the Medicare population groups.^{16–28} Researchers have found several factors that play a role in these racial and ethnic disparities, including differences in consumer attitude toward vaccination and preventive care, and differences in quality of care received by populations of different races and ethnicities.^{22,29} Although some studies have attempted to determine the influenza vaccination status of community pharmacy users,^{13,30–32} none of the earlier studies have examined racial and ethnic disparities in influenza vaccinations among individuals who utilize community pharmacies to fill their prescriptions and those who have not used community pharmacies, nor have they compared the influenza vaccination rates between these two subpopulations. The objectives of the present study were: (1) to examine racial and ethnic disparities in influenza vaccinations among community pharmacy patients (respondents who utilized community pharmacies to fill a minimum of one prescription

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