INSIGHT on the Issues

Racial and Ethnic Disparities in Influenza and Pneumococcal Immunization Rates among Medicare Beneficiaries

This Insight on the Issues discusses adult immunization recommendations for flu and pneumonia and current Medicare immunization coverage policies. It also presents data on immunization disparities, discusses factors that may contribute to the disparities, and highlights federal and state initiatives to address them.

Introduction

Influenza (commonly called flu) and pneumonia are both vaccine-preventable diseases. Yet together they represented the eighth leading cause of death in the United States and the sixth leading cause of death among persons age 65 and older in 2005.[1] Influenza is responsible for approximately 36,000 deaths and more than 200,000 hospitalizations each year in the U.S. More than 90 percent of these deaths occur among those ages 65 and older.[2] Pneumococcal pneumonia affects about 33,000 persons a year, resulting in 5,000 deaths. Similar to flu, most of the deaths caused by pneumonia occur among those ages 65 and older.[3]

Flu and pneumonia immunization rates among *all* older adults are significantly below the Healthy People 2010 goals of 90 percent for each vaccine.[4] However, immunization rates among African Americans and Hispanics are substantially below those of their white counterparts.[5]

Adult Immunization Recommendations and Medicare Coverage

The Medicare population is especially susceptible to complications associated with flu and pneumonia because both diseases often exacerbate underlying chronic conditions, such as heart or lung disease, asthma, and diabetes.[6]

The Advisory Committee on Immunization Practices (ACIP) is an expert panel selected by the secretary of the U.S. Department of Health and Human Services to advise the nation on how to reduce vaccine-preventable diseases. The ACIP, which develops standards for routine vaccine administration, including dosage, periodicity schedules, and applicable contraindications for pediatric and adult populations,[7] recommends the following:

- An *annual* influenza vaccine for adults age 50 and older and for all persons who live in long-term care facilities, and
- A *one-time* vaccination for pneumococcal pneumonia for all adults age 65 and older.

The Medicare Program covers pneumococcal and influenza vaccines for persons age 65 and older in accordance with ACIP recommendations. Medicare pays both the cost of the vaccines and their

administration by participating providers. Once five years have elapsed since the initial pneumococcal vaccine, a booster vaccine is covered for persons in high-risk categories.[8]

There is no coinsurance or copayment associated with either vaccine, and beneficiaries are not required to meet a deductible to receive them.[9]

Disparities in Immunization Rates among Medicare Beneficiaries

Despite Medicare's coverage of influenza and pneumonia vaccines at no out-of-pocket cost to beneficiaries, the number of people who are immunized is less than optimal, with even lower rates noted among African Americans and Hispanics.

In 2006, 67 percent of white adults age 65 and older reported receiving the influenza vaccine. During the same period, 47 percent of older African Americans and 45 percent of older Hispanics reported having received the flu vaccine (Figure 1). Influenza immunization disparities persist, even after controlling for other factors such as socioeconomic status and the presence of risk factors for influenza.[10]

The gap is even wider for pneumonia immunization rates, with only 36 percent of African Americans and 33 percent of Hispanics reporting having been vaccinated in 2006, compared with 62 percent of their white counterparts (Figure 2).

The social cost of immunization disparities is preventable hospitalizations and deaths. A 2007 study estimated that if flu immunization rates were equal for all races, 1,880 minority deaths could be prevented every year, saving more than 33,000 minority life years.[11] Moreover, if all racial groups achieved the national Healthy People 2010 goal of 90 percent flu vaccination, 15,590 elderly deaths could be prevented annually.[12]

Figure 1.
Influenza Immunization Rates for Population Age 65+, by Race/Ethnicity, 1989-2006

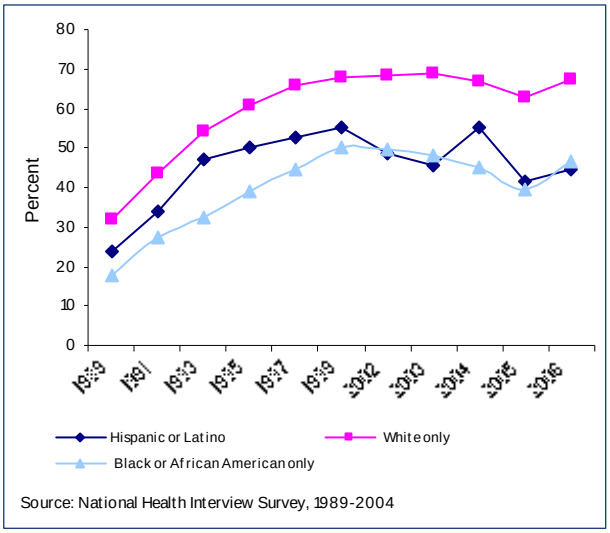
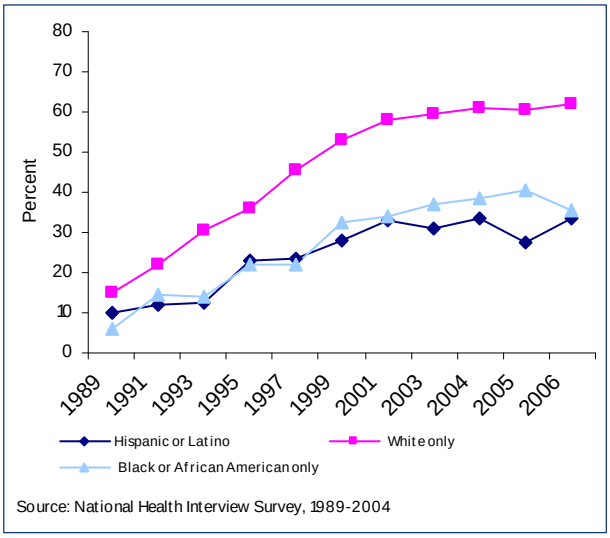


Figure 2.
Pneumococcal Immunization Rates for Population Age 65+, by Race/Ethnicity, 1989-2006



Factors Associated with Racial and Ethnic Immunization Disparities among Medicare Beneficiaries

Researchers have associated the following factors with low flu and pneumococcal pneumonia immunization rates among African Americans and Hispanics:

- Consumer lack of awareness about the need for the vaccinations;[13]
- Consumer fear that the vaccines will cause severe illness;[14]
- Few consumer-initiated visits to providers to receive the vaccines;[15]
- Provider underestimation of the safety and efficacy of the vaccines;[16]
- Provider lack of familiarity with age-based immunization recommendations;[17]
- Provider failure to recommend age-appropriate immunizations to older adults;[18] and
- Provider failure to institute standing-order programs despite ACIP recommendations to use them.[19]

Federal Initiatives to Address Immunization Disparities

In 2002, the Centers for Disease Control and Prevention (CDC), in partnership with other federal agencies, launched a three-year demonstration project to address racial and ethnic disparities in immunization rates among African American and Hispanic Medicare beneficiaries.[20] The project, called the Racial and Ethnic Adult Disparities in Immunization Initiative (or READII, pronounced "ready") was launched in five sites—Chicago, Illinois; Rochester, New York; San Antonio, Texas; Milwaukee, Wisconsin; and 19 counties in the Mississippi delta region. Although the projects and targeted population varied among the project sites, all projects shared three underlying principles:

- Develop local buy-in to the project design;
- Engage stakeholders (persons age 65 and older); and
- Use evidence-based interventions with providers and in the community.[21]

Each READII site developed community plans, conducted communications research to determine which messages resonated best with older African American and Hispanic community members, and conducted local community events. Strategies aimed at providers included education about standing orders (e.g., a notation in a patient's medical record that prompts the provider to automatically provide a flu or pneumonia vaccine to a patient), patient reminders and recalls, and provider reminders.[22]

The outcomes of READII were mixed, but provide important evidence and strategies for future efforts. Overall, flu and pneumonia vaccination disparities decreased among all the project sites, though the overall change was not statistically significant.[23] The most successful efforts targeted providers.[24] For example, outreach workers in Rochester clinics used a patient database to monitor seniors, provided direct reminders to patients by telephone and mail, and alerted providers to unvaccinated patients with chart reminders and prompts.[25] The procedures, combined with broader outreach efforts, resulted in 80 percent of seniors receiving the pneumonia vaccine over the two-year period and substantial increases in flu vaccination across racial groups.[26] It should be noted

that Rochester's successful interventions depended on outside funding, making its outcomes difficult to replicate in areas with fewer available resources.[27] In Mississippi, making offers of vaccination a standard part of health clinic visits raised immunization rates for all racial groups.[28] Collaboration with local groups—private foundations, local clinics and community health centers, media outlets, faith-based organizations, professional organizations, and AARP—varied among READII sites depending on the local environment and helped lay a foundation for future community health interventions.[29]

Another federal effort to increase immunization rates among older persons was focused on residents of long-term care facilities. The Centers for Medicare and Medicaid Services (CMS) issued final rules on October 7, 2005, requiring Medicare and Medicaid long-term care facilities to offer flu and pneumococcal vaccines to their residents. Long-term care facilities must document refusals and indicate that the resident or his or her legal representative received appropriate education and consultation. Although African Americans and Hispanics are not targeted in the rule, those living in nursing homes can benefit from this policy.[30]

Together with its partners,[31] CMS conducted a cross-country bus tour, titled "A Healthier U.S. Starts Here," during spring and summer of 2007 to promote awareness of Medicare's prevention benefits, including flu and pneumococcal immunizations. Although the tour did not specifically address immunization disparities, African American and Hispanic beneficiaries were among the targeted groups.[32] The tour reached the 48 continental states with information about prevention and wellness.[33]

State Strategies to Address Immunization Disparities

States use a variety of strategies to increase immunization rates among older adults, including Medicare beneficiaries. Some of these activities are described below.

Illinois

The Chicago Department of Public Health (CDPH) partners with community groups to provide increased access to immunizations in high-risk communities. As one of the READII project sites, Chicago developed community collaborations that have lasted beyond the conclusion of the CDC study. During flu season, the CDPH runs eight weekend faith-based vaccine clinics and promotes vaccine use in target communities.[34] In the 2007–2008 flu season, about 16,000 vaccines were administered, with the greatest success reported in churches in the Hispanic community, though use in African American faith communities is increasing.[35] Because some of the elderly are unable to come to CDPH weekend clinics, the city supplied vaccine to providers in the communities where the READII project operated.[36] Statewide, long-term care facilities are required to respond to a survey of immunization practices. The most recent survey found that 70.1 percent of residents received a flu vaccine in the 2007–2008 season and 48.8 percent had received a pneumonia vaccine in the previous five years.[37]

Minnesota

In 2001, the Minnesota legislature created the 10-year, statewide Eliminating Health Disparities Initiative (EHDI) to address health disparities in the state. The goal of the initiative is to fund a variety of projects that promote culturally appropriate, community-based public health programs.[38]

For example, one initiative that focuses on adult immunization disparities is a project, called "There Is a Balm," which targets faith-based communities to raise awareness among African Americans about the need and requirements for adult immunization, and encourages individuals to take charge of their health. The project partners with area clinics to provide free vaccines and reaches about 20 churches around the Twin Cities metro area. At present, insufficient funds have made it impossible to fully study the outcomes of EHDI efforts to increase vaccine use.[39]

New York

The New York City Department of Health and Mental Hygiene's Bureau of Immunization (the Bureau) uses data from the annual New York City Community Health Survey (CHS) to obtain neighborhood and citywide estimates of immunization rates among targeted populations.[40] According to 2006 CHS data, 46.7 percent of African Americans and 54.2 percent of Hispanics age 65 and older reported received the influenza vaccination within the past year, compared to 61.6 percent of their white counterparts.[41] In the same year, 42.9 percent of African Americans and 34.4 percent of Hispanics age 65 and older reported having ever received a pneumococcus vaccine, compared with 54.3 percent of their white counterparts.

Bureau activities to address immunization disparities include the following:

- Working with medical providers to address provider behavior and strengthen their actions to immunize their patients;
- Developing partnerships with a variety of community-based organizations to educate and motivate consumers to seek immunizations; and
- Working with media outlets to design and promote culturally appropriate messages. [42]

Texas

In 2005, the Texas Legislature passed legislation (Senate Bill 1330) seeking to increase availability of flu and pneumonia vaccines to the elderly.[43] The law requires hospitals, dialysis centers, and doctors' offices to provide information about vaccination to elderly patients and to directly offer flu and pneumonia vaccines to patients admitted for more than 24 hours.[44] Hospital licensing rules in Texas now include this requirement, and the obligation seems to have been met without incident.[45]

Linking Vaccination with Voting

Several states and nonprofit organizations have worked with local election authorities to set up vaccine clinics at or near polling places.[46] Pairing vaccination with voting is an innovative strategy and has been shown to be effective. The elderly are consistent voters, making polling places good sites for reaching high-priority individuals. Furthermore, elections occur during the recommended flu immunization season. The influenza vaccine can be administered quickly and, since no follow-up is needed, election-day clinics can supplement the efforts of primary care providers. Most important, vaccination efforts carried out at the local level can better target outreach strategies designed to reach individuals within those communities.

Several projects have shown impressive success. A 19-state project in 2006, funded by the Robert Wood Johnson Foundation through the Sickness Prevention Achieved through Regional

Collaboration (SPARC), delivered vaccines at 127 election sites in 25 cities.[47,48] More than 80 percent of the adults who were immunized through the Vote & Vax project were in CDC-defined "priority groups," which include persons over 50, and 28 percent of those immunized reported they would not have received a vaccine but for the polling place clinics.[49] Unlike interventions targeted to elderly and minority populations, Election Day clinics cannot limit their appeal to subsets of the general population (e.g., the elderly or minorities) while maintaining their political neutrality. Charges that vaccination efforts are attempts to "get out the vote" and bring specific demographic groups to the polls resulted in the closure of one clinic in 2006.[50] A larger effort is under way to organize immunization clinics at polling places for the 2008 presidential election, with a goal of 1,000 sites.[51]

Pharmacists as Providers

CDC has urged increasing access to vaccination services "in nontraditional settings as another strategy in pursuit of national vaccination coverage objectives."[52] All states but Maine have enacted laws permitting pharmacists to administer certain vaccines. Many states also permit other licensed health care professionals to provide immunizations. The most recent law was enacted in September 2008 in New York, the scope of which is similar to those on the books in many other states: licensed pharmacists may administer flu and pneumococcal vaccines to adults.[53]

In-store mass flu immunization clinics held each fall have become common, but some community-based pharmacists are trained and prepared to offer other vaccines year-round. Since 1996, more than 40,000 pharmacists and pharmacy students have been trained in vaccine information and vaccine administration through the American Pharmacists Association Immunization Delivery Program.[54]

For nearly a decade, the American College of Physicians-American Society of Internal Medicine has supported pharmacists as immunizers.[55] Further, research has demonstrated a public health benefit: One study found that persons age 65 and older who lived in states where pharmacists were allowed to provide vaccines had significantly higher flu vaccine rates than those who lived where pharmacists' scope of practice did not include vaccination.[56] Another important benefit is economic savings: Research from 2008 demonstrated that vaccination in a pharmacy is less costly than in a scheduled doctor's office visit or other "traditional setting."[57]

Making Providers Accountable

Health care providers are an important part of the vaccination challenge. Providers are trusted and respected by many patients and are often uniquely able to identify and educate at-risk patients about the benefits of prevention and allay concerns about risks of vaccinations. For many patients, the advice of a health care provider may carry more weight than public health literature and outreach campaigns.

In some types of health care organizations, providers may realize the cost savings of preventions. Influenza and pneumococcus immunization can prevent costly treatment of these diseases, and providers may be able to realize cost savings by vaccinating more of their patients.

In recent years, CMS (like other large purchasers) has promoted accountability of its contracting providers by publishing reports that compare

performance on various evidence-based measures, including immunization rates for flu and pneumonia for older adults enrolled in Medicare. Affording consumers access to comparative information, helps them choose high-performing clinicians, facilities, and health plans. In addition, there is evidence that health plans that publicly report quality measures have higher quality than plans that do not. Thus, even if consumers do not use quality measures in their decision making, providers do focus on areas for which they are held publicly accountable.

Medicare currently requires health plans participating in the Medicare Advantage program to collect and report data on flu and pneumococcal vaccination rates. These results are published on www.Medicare.gov. In addition, CMS's Physician Quality Reporting Initiative (PQRI) includes flu and pneumonia measures and offers financial incentives to physicians who report them. However, PQRI measures are not yet publicly reported.

Some plans go beyond public reporting to base payment to providers on their performance. Providers in these plans have the opportunity to receive a financial bonus if they perform well on quality measures; for example if they have high rates of vaccinations.

Challenges

Despite the success of small-scale, local initiatives, sustainability and broader reach remains a concern. Programs that operate locally and depend heavily on local resources, funding, and staffing from year to year may not last. Election Day clinics have cited difficulty obtaining vaccine as a continuing challenge, as well as securing long-term funding commitments from public health agencies that do not prioritize adult immunization.[58,59] Flu vaccines must be administered annually, and the ad hoc nature of many public health vaccination efforts undermines the effectiveness of prevention.

The key challenge remains reaching the target population: READII showed that offering vaccines directly and making patient and provider reminders routine dramatically improved vaccine usage in minority populations.[60] Nevertheless, these strategies require funding and personnel from a public health system and primary care community that often face competing priorities for financial and human resources.[61]

Conclusion

Although the Medicare program pays for influenza and pneumococcal vaccinations for all beneficiaries, racial and ethnic disparities persist among African Americans and Hispanics. A 2006 study showed that, when vaccines are offered to all persons 65 years or older in a clinical setting in the same manner, the single most important factor determining flu vaccination is past receipt of flu vaccine.[62] In the 2006 study, age, gender, education, and race were all inconsequential if a person received a vaccine the prior year. This is encouraging in the face of disparities because it implies that vaccination efforts will become easier to sustain as they progress and people's habits change. It also emphasizes a role for providers in promoting vaccine use. Evidence from local-level studies support the prediction of Douglas Shenson, the director of SPARC: "If preventive services are placed within easy reach across the community, and if health professionals provide straightforward messages about their effectiveness, more Americans will take advantage of their availability," to the betterment of the population as a whole.[63]

There are promising strategies to promote influenza and pneumococcal immunization among the general population, as well as efforts targeted at African Americans and Hispanics. The challenge is twofold: educating patients about the benefits of vaccination so they can engage in responsible disease prevention and aligning providers and health systems to prioritize adult vaccination. The success of targeted short-term efforts depends on broader sustained commitment to vaccination to increase immunization among all populations.

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[1] National Center for Health Statistics, *Health, United States, 2007, with Chartbook on Trends in the Health of Americans* (Hyattsville, MD: U.S. Department of Health and Human Services, 2007).

[2] Partnership for Prevention, *Strengthening Adult Immunization: A Call to Action* (Washington, DC: Medicare and Medicaid Programs); "Condition of Participation: Immunization Standard for Long Term Care Facilities," *Federal Register*, 70(194), Friday, October 7, 2005/Rules and Regulations.

[3] Partnership for Prevention, op. cit.

[4] Healthy People 2010 is a set of health objectives for the nation to achieve over the first decade of the new century. Healthy People 2010 was developed through a broad consultation process, built on the best scientific knowledge, and designed to measure programs over time, U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, *Healthy People*, accessed at http://www.healthypeople.gov/About/whatis.htm.

[5] *Supra*, note 5.

[6] Nichol, Kristin, et al., "Benefits of Influenza Vaccination for Low-Intermediate-, and High-Risk Senior Citizens," *Archives of Internal Medicine*, 158: 1769–1776, September 14, 1998; Centers for Disease Control and Prevention, "Influenza and Pneumococcal Vaccination Coverage among Persons Age ≥65 Years and Persons Aged 18-64 Years with Diabetes or Asthma—United States, 2003," *Morbidity and Mortality Weekly Review*, 53(43), November 5, 2004.

[7] Centers for Disease Control and Prevention, National Immunization Program, Advisory Committee on Immunization Practices, http://www.cdc.gov/nip/acip/.

[8] Persons who receive a pneumococcal vaccine before age 65 should receive another dose after they turn age 65 *and* five years have elapsed since their first dose. Persons with the following conditions should receive a booster vaccine: functional or anatomic asplenia (e.g., sickle cell disease, splenectomy), human immunodeficiency virus (HIV) infection, leukemia, lymphoma, Hodgkin's disease, multiple myeloma, generalized malignancy, chronic renal failure, nephritic syndrome, or other conditions associated with immunosuppression, such as organ or bone marrow transplantation, and those receiving immunosuppressive chemotherapy. Centers for Disease Control and Prevention, "Recommended Adult Immunization Schedule—United States, October 2006–September 2007," *Mortality and Morbidity Weekly Report*, 55(40), Q1–Q4, October 13, 2006, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5540-Immunizationa1.htm; Centers for Medicare and Medicaid Services, Dallas Regional Office, *Immunizers' Question and Answer Guide to Medicare Coverage of Influenza and Pneumococcal Vaccinations: Steps to Promoting Wellness Adult Immunizations* (Dallas, TX: October 2006).

[9] Ibid.

[10] Herbert, P.L., et al., "The Causes of Racial and Ethnic Differences in Influenza Vaccination Rates among Elderly Medicare Beneficiaries," *Health Services Research* 40(2), April 2006.

[11] Fiscella, K., et al, "Impact of influenza vaccination disparities on elderly mortality in the United States," *Preventive Medicine*, 45: 83–87, 2007. A "minority life year" refers to a year of life lived by minority persons across the population. Thus, when Fiscella et al. estimate that eliminating annual flu vaccine disparities over age 65 would save 33,090 minority life years, they mean that 33,090 years of life would be gained by minority populations as a whole.

[12] Ibid. Healthy People 2010 is a Department of Health and Human Services set of goals seeking to raise longevity and health quality while eliminating disparities in the U.S. population. The program goals include 28 focus areas,

including raising influenza and pneumococcus immunization rates for the elderly to 90 percent. For more information, see http://www.healthypeople.gov

[13] The Council of State Governments, "Protecting Our Communities: Programs to Reduce Adult Immunization Disparities," *Healthy States Brief* 1(8), August 2006; Winston, C., et al., "Factors Associated with Vaccination of Medicare Beneficiaries in Five U.S. Communities: Results from the Racial and Ethnic Adult Disparities in Immunization Initiative Survey, 2003," *Journal of the American Geriatric Society* 54: 303–310, 2006.

[14] Centers for Disease Control and Prevention, op. cit., note 6; Winston, C., et al., "Factors Associated with Vaccination of Medicare Beneficiaries in Five U.S. Communities: Results from the Racial and Ethnic Adult Disparities in Immunization Initiative Survey, 2003," *Journal of the American Geriatric Society*, 54: 303–310, 2006.

[15] Winston, 2006, op. cit.

[16] Schwartz, J. S., et al., "Internists' Practices in Health Promotion and Disease Prevention: A Survey," *Annals of Internal Medicine*, 114: 46–53, 1991.

[17] Ibid.

[18] *Supra*, note 15.

[19] Standing-order programs authorize nurses or pharmacists to administer vaccinations according to an institution- or clinician-approved protocol. Bratzler, D. W., et al., "Failure to Vaccinate Medicare Inpatients: A Missed Opportunity," *Archives of Internal Medicine*, 162: 2349–2355, November 11, 2002.

[20] Kicera, T., M. Douglas, and F. Guerra, "Best Practice Models that Work: The CDC's Racial and Ethnic Adult Disparities Immunization Initiative (READII) Programs," *Ethnicity and Disease*, 15 Supplement 3, Spring 2005.

[21] Ibid.

[22] Although the projects ended in 2004, an official evaluation is still pending; ibid.

[23] *READII: Racial and Ethnic Disparities in Immunization Initiative 2002–2005 Final Report*, November 30, 2007. It is worth noting that the nationwide flu vaccine shortage of 2004 substantially complicated efforts to understand the exact impact of READII's effectiveness.

[24] Ibid.

[25] Ibid.

[26] Ibid. The pneumonia vaccination rates are remarkably consistent, with 79 percent of African American and white seniors and 78 percent of Hispanic seniors receiving vaccine. The results for influenza are less clear because of the 2004 vaccine shortage. In the 2003–2004 flu season, 64 percent of patients in the intervention group (60 percent of African Americans, 68 percent of whites) were vaccinated compared to 22 percent in the control group (25 percent of African Americans, 10 percent of whites). In 2004–2005, the year of the shortage, late-season vaccination resulted in 62 percent of African Americans and 71 percent of White seniors being vaccinated.

[27] Ibid.

[28] Ibid.

[29] Ibid.

[30] Medicare and Medicaid Programs, *Condition of Participation: Immunization Standard for Long Term Care Facilities*. *Federal Register*, 70(194), Friday, October 7, 2005/Rules and Regulations.

[31] Other federal partners include Office of Public Health and Science, Administration for Children and Families, Administration on Aging, Agency for Healthcare Research and Quality, Centers for Disease Control and Prevention, Health Resources and Services Administration, Indian Health Service, Office of Intergovernmental Affairs, National Institutes of Health, Office of Disability, and Substance Abuse and Mental Health Services Administration.

[32] Centers for Medicare and Medicaid Services, "CMS Officials Kick Off A Healthier U.S. Starts Here Initiative: National Effort Promotes Prevention, Healthier Living," press release, Baltimore, MD, April 20, 2007, http://www.hhs.gov/news/press/2007pres/04/pr20070420a.html.

[33] Ibid. For more information about the bus tour, see http://www.healthierus.gov/Prevention/bustour.html.

[34] Conversation with Maribel Chavez-Torres, Immunization Program Director. Chicago Department of Public Health.

[35] Ibid.

[36] Ibid.

[37] LTC Reported Immunization Data, provided by Janet Larson of the Illinois Department of Public Health, Immunization Program.

[38] Minnesota Legislature, Legislative Report: Eliminating Health Disparities Initiative, Investing in Minnesota's Populations of Color and Americans Indians, January 15, 2007. http://www.health.state.mn.us/ommh/publications/legislativerpt2007.pdf.

[39] Ibid.

[40] The CHS is a telephone survey conducted by the Department of Health and Mental Hygiene, Division of Epidemiology, Bureau of Epidemiology Services to provide neighborhood and citywide estimates on a broad range of chronic diseases and behavioral risk factors. New York City Department of Health and Mental Hygiene, Community Health Survey, http://www.nyc.gov/html/doh/html/survey/survey-2006.shtml.

[41] The New York City Department of Health and Mental Hygiene Web site uses a function called EpiQuery to present data from surveys and epidemiologic datasets DHMH keeps. These data come from the 2006 Community Health Survey (CHS) and were accessed through EpiQuery at http://www.nyc.gov/health/epiquery.

[42] New York City Department of Health and Mental Hygiene, Bureau of Immunization Outline of Strategies and Plans for Influenza Season 2006–07, August 2006.

[43] Texas SB 1330, Legislative Session 79(R). See also the Statement of Intent included in the official Bill Analysis, enrolled June 28, 2005. http://www.capitol.state.tx.us/BillLookup/Text.aspx?LegSess=79R&Bill=SB1330

[44] Ibid.

[45] Correspondence with Vicki Cowling, Chief of Staff of the Division of Regulatory Services, Texas Department of State Health Services, August 25, 2008.

[46] For two prominent examples, see the efforts in Virginia, part of Project Immunize Virginia, and early work by SPARC in Connecticut, Massachusetts, and New York.

[47] "Flu Shot Program Is Ended After G.O.P. Cries Politics," Associated Press, *The New York Times*, November 3, 2006. http://www.nytimes.com/2006/11/03/us/politics/03flu.html.

[48] The Robert Wood Johnson Foundation, *Vote and Vaccinate* Grant Results Report, November 2007. http://www.rwjf.org/reports/npreports/vote.htm.

[49] Ibid.

[50] *Supra*, note 49.

[51] http://www.voteandvax.org is written, maintained, and copyrighted by Sickness Prevention Achieved through Regional Collaboration, which has organized polling place vaccine clinics for more than 10 years and served as a model for the current "Vote & Vax" program.

[52] Singleton J. A., A. J. Poel, et al., "Where Adults Reported Receiving Influenza Vaccine in the U.S," *American Journal of Infection Control*, 33(10), December 2005.

[53] http://assembly.state.ny.us/leg/?bn=S8673.

[54] Olenak, J. L., "MTM and Immunizations," *Pharmacy Today*, August 2008. http://www.pharmacist.com.

[55] Rothman R., and M. Weinberger, "The Role of Pharmacists in Clinical Care: Where Do We Go From Here?" *Effective Clinical Practice*, 5(2), March/April 2002. http://www.acponline.org/clinical_information/journals_publications/ecp/marapr02/rothman.pdf.

[56] Steyer T. E., K. R. Ragucci, et al., "The Role of Pharmacists in the Delivery of Influenza Vaccinations," *Vaccine*, 23(3), December 2004.

[57] Prosser L. A., M. A. O'Brien, et al., "Non-traditional Settings for Influenza Vaccination in Adults: Costs and Cost Effectiveness," *Pharmacoeconomics*, 26(2), 2008.

[58] *Supra*, note 49.

[59] *Supra*, note 23.

[60] *Supra*, notes 20 and 23.

[61] *Supra*, note 23.

[62] Schwartz, K. L, et al, "Racial Similarities in Response to Standardized Offer of Influenza Vaccination," *Journal of General Internal Medicine*, 21: 346–351, 2006.

[63] Shenson, D., "Putting Prevention In Its Place: The Shift From Clinic To Community," *Health Affairs* 25(4): 1012–1015, 2006.

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