INSIGHT on the Issues

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

Despite lack of Medicare cost sharing for the flu and pneumonia vaccines, substantial racial and ethnic disparities in immunization rates persist. This Insight on the Issues discusses current recommendations for adult immunization, current Medicare coverage policies, and federal and state initiatives that show promise in reducing disparities in immunization rates.

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 United States. 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, recommends the following:

- An *annual* influenza vaccine for adults ages 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.[7]

AARP

The Medicare Program covers pneumococcal and influenza vaccines for persons age 65 and older in accordance with ACIP recommendations. Medicare pays for 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 the annual Medicare deductible in order to receive them.[9]

Disparities in Immunization Rates among Medicare Beneficiaries

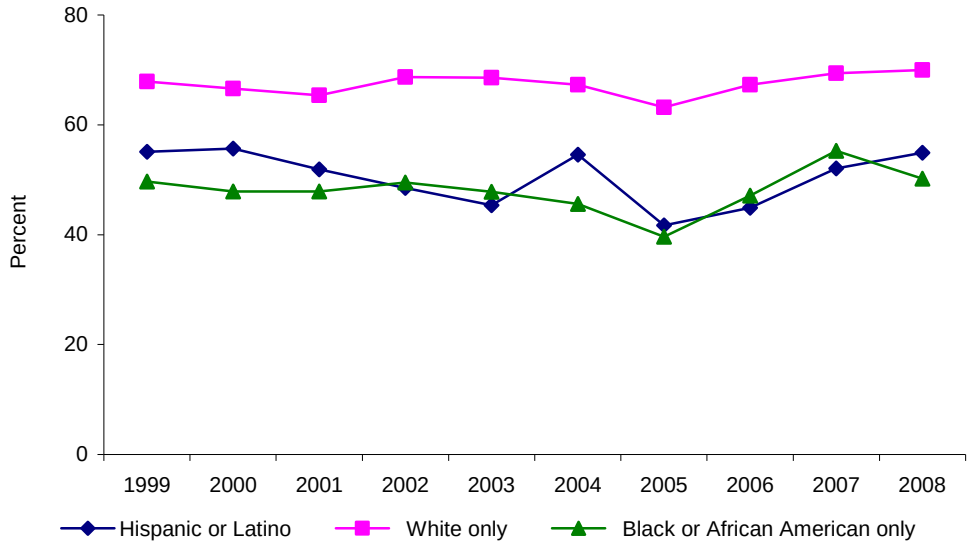
Despite Medicare's coverage of influenza and pneumonia vaccines at no out-of-pocket cost to beneficiaries, the number of people who are immunized is less than optimal, with even lower rates noted among African Americans and Hispanics.

In 2008, 70 percent of white adults age 65 and older reported receiving the influenza vaccine. During the same period, 50.2 percent of older African Americans and 54.9 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] Flu immunization rates actually dropped among older African Americans between 2007 and 2008, from 55.3 to 50.2 percent.

The gap is even wider for pneumonia immunization rates, with only 44.6 percent of African Americans and 36.4 percent of Hispanics reporting having been vaccinated in 2008, compared with 64.5 percent of their white counterparts (Figure 2).

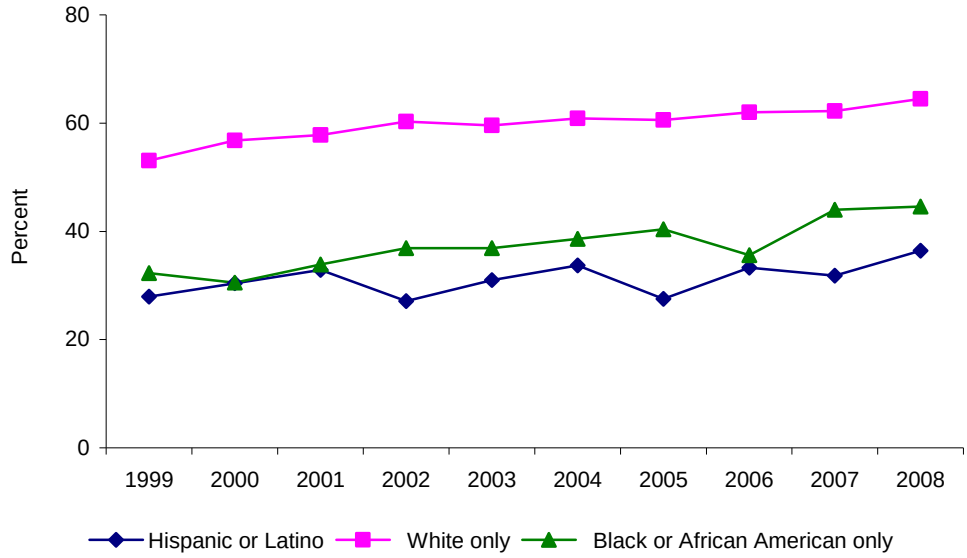
The social cost of immunization disparities is preventable hospitalizations and deaths. A 2007 study estimated that

Figure 1
Influenza Immunization Rates for Population Age 65+ by Race/Ethnicity 1999–2008



Source: National Health Interview Survey, 1999 to 2008.

Figure 2
Pneumococcal Immunization Rates for Population Age 65+ by Race/Ethnicity 1999–2008



Source: National Health Interview Survey, 1999 to 2008.

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]

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]
- Distrust of flu immunization due to lingering memories of the Tuskegee syphilis experiments;[15]
- Few consumer-initiated visits to providers to receive the vaccines;[16]
- Provider underestimation of the safety and efficacy of the vaccines;[17]
- Provider lack of familiarity with age-based immunization recommendations;[18]
- Provider failure to recommend age-appropriate immunizations to older adults;[19] and
- Provider failure to institute standing-order programs despite ACIP recommendations to use them. [20]

Federal Initiatives to Address Immunization Disparities

In 2002, the Centers for Disease Control and state health departments, initiated the Racial and Ethnic Adult Disparities in Immunization Initiative (or READII, pronounced “ready”) to address racial and ethnic disparities in immunization rates among African American and Hispanic Medicare beneficiaries.[21]

The READII project was launched in five sites and targeted different ethnic

groups. Projects in Milwaukee, Wisconsin, 19 counties in the Mississippi delta region, and those in Rochester, New York targeted an older African American Population. The San Antonio, Texas project targeted elderly Hispanics; and the Chicago, Illinois project targeted both racial groups.

Although the project designs and targeted population varied among the project sites, all projects shared three underlying strategies:

- 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.[22]

The project lasted from August 2002 through December 2004 with wrap up and evaluation activities through June 2005.

Each READII site developed community plans, undertook communications research to determine which messages resonated best with older African American and Hispanic community members, and held 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.[23]

The outcomes of READII were mixed, but provide important evidence and strategies for future efforts. Overall, flu vaccination rates decreased between year 1 and year 3 because of the fall 2004 flu vaccine shortage. Additionally, there was no statistically significant increase in overall pneumonia vaccination coverage between year 1 and year 3 of the project.[24]

Interventions such as clinic-based tracking, outreach, and patient recall were identified as effective strategies for the little improvement in flu and pneumonia vaccination among African Americans and Hispanics experienced at some of the READII sites.[25]

The most successful efforts targeted providers.[26] 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.[27]

These strategies, 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.[28] 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.[29]

In Mississippi, making offers of vaccination a standard part of health clinic visits raised immunization rates for all racial groups.[30]

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.[31]

One of the biggest challenges encountered by READII project sites was getting health care providers to shift their focus from treating acute and chronic illness in an older population to

a focus on providing comprehensive preventive services.[32]

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 are required to 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.[33]

Together with its partners,[34] 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.[35] The tour reached the 48 continental states with information about prevention and wellness.[36]

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.[37] About 16,000 vaccines were administered in the 2007–2008 flu season, with the greatest success reported in churches in the Hispanic community, though use in African American faith communities is increasing.[38] Because some of the elderly are unable to come to CDPH weekend clinics, the city supplied the vaccine to providers in the communities where the READII project operated.[39] 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.[40]

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.[41]

Recently, Minnesota enacted legislation to further the goals of the EHDI by creating a community grant program aimed at, among other things, increasing immunization rates in nonwhite racial and ethnic populations. Organizations eligible for grants include faith-based organizations, social service organizations, community nonprofit organizations, community health boards, tribal governments, and community clinics. To qualify for funding, the organizations must target racially and ethnically appropriate populations and

must have a specific strategy in place to reach the target group.[42]

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.[43] According to 2008 CHS data, 49 percent of African Americans and 55.7 percent of Hispanics age 65 and older reported receiving the influenza vaccination within the past year, compared with 58.8 percent of their white counterparts.[44] In addition, 48.3 percent of African Americans and 41 percent of Hispanics age 65 and older reported having ever received a pneumococcus vaccine, compared with 53.9 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.[45]

Texas

In 2005, the Texas Legislature passed legislation (Senate Bill 1330) seeking to increase availability of flu and pneumonia vaccines to the elderly.[46] 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.[47] Hospital licensing rules in Texas now include this requirement.[48]

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.[49] These initiatives are known as the Vote and Vax program, a collaboration between The Robert Wood Johnson Foundation and a nonprofit agency called Sickness Prevention Achieved through Regional Collaboration or SPARC. Vote and Vax works with all local public health providers seeking to offer convenient flu vaccination at polling places across the country.

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.

On Election Day 2008, Vote and Vax delivered nearly 21,500 influenza vaccines at 330 election sites in 42 states and the District of Columbia.[50] Of those vaccinated, almost half (48 percent) were "new recipients," meaning they either had not received a flu shot in the previous year or would not have received a vaccination without the program.[51] Two-thirds of the adults who were immunized through the Vote & Vax 2008 Program were in

CDC-defined "priority groups," which include persons over 50.[52]

Unlike interventions targeted to elderly and minority populations, Election Day clinics cannot limit their outreach 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.[53]

Pharmacists as Providers

The CDC has urged increasing access to vaccination services "in nontraditional settings as another strategy in pursuit of national vaccination coverage objectives."[54] Every state has enacted laws permitting pharmacists to administer certain vaccines. Many states also allow other licensed health care professionals to provide immunizations. The most recent law was enacted in October 2009 in Maine. Flu immunization clinics held each fall in retail settings 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.[55]

For nearly a decade, the American College of Physicians–American Society of Internal Medicine has supported pharmacists as immunizers.[56] 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 in jurisdictions where pharmacists' scope of practice did not include vaccination.[57] 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 settings."[58]

Making Providers Accountable

Health care providers are an important part of the vaccination challenge. Providers are trusted and respected by many patients and are 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 pneumococcal 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 among 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. Giving 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, such as immunization rates, tend to do better on such measures than plans that do not. Thus, even if consumers do not use quality measures for 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.

Some plans go beyond public reporting to base provider payments on their performance. Providers in these plans receive a financial bonus if they perform well on quality measures; for example, if they have high immunization rates they are rewarded financially.

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 the vaccine as a continuing challenge, as well as securing long-term funding commitments from public health agencies that do not prioritize adult immunization.[59,60] 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.[61] 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.[62]

Swine Flu

The 2009 H1N1 influenza, often referred to as "swine flu," is caused by a new strain of flu virus. H1N1 virus spreads from person to person in the same manner as the seasonal flu. Symptoms of the H1N1 flu—fever, cough, body aches—are also very similar to those of the regular seasonal flu. The primary difference between the two types of flu is susceptible age groups.

Unlike seasonal flu, where older adults are more likely to contract the virus, groups at higher risk of contracting H1N1 include pregnant women, those ages 6 months to 24 years, and individuals with chronic conditions. The CDC recommends that these groups receive the vaccine as soon as it becomes available. Although the CDC is encouraging seniors to get *both* seasonal and H1N1 vaccines, older adults are not in the priority group to receive H1N1 before those at higher risk. Medicare covers the H1N1 vaccine and exempts it from the Part B deductible and coinsurance.[63] Thus, financial constraints should not be a barrier to receipt of the vaccine. Although no data regarding racial and ethnic disparities among seniors receiving the H1N1 vaccine currently exists, it is highly likely that the receipt of H1N1 and seasonal flu vaccines will be similar.

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.[64]

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 supports 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.[65]

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 educating providers and health systems about the importance of prioritizing adult vaccination. The success of targeted short-term efforts depends on a broader strategy that emphasizes a sustained commitment to increase immunization rates among all populations.

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[3] Partnership for Prevention, op. cit. *Pneumococcal Immunization Table* – Pneumococcal Immunization (Adults, 65+) http://www.prevent.org/content/view/57/100/

[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.

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[12] 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.

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[20] Standing-order programs authorize nurses or pharmacists to administer vaccinations according to an institution- or clinician-approved protocol.

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[23]Kicera, T., M. Douglas, and F. Guerra, 2005. "Best Practice Models that Work." Although the projects ended in 2004, an official evaluation is still pending.

[24] *READII: Racial and Ethnic Adult 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.

[25] *READII: Racial and Ethnic Adult 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.

[26] *READII.*

[27] *READII.*

[28] *READII*. The pneumonia vaccination rates are remarkably consistent, with 79 percent of

African American and white seniors and 78 percent of Hispanic seniors receiving the 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 with 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.

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[30] *READII.*

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[38] Telephone conversation with Maribel Chavez-Torres.

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Written by Lynda Flowers, Shelly-Ann Sinclair, Carlos Figueiredo, Ben Umans, and Samantha O'Leary
AARP Public Policy Institute,
601 E Street, NW, Washington, DC 20049
www.aarp.org/ppi
202-434-3890, ppi@aarp.org