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Trends in cigarette smoking and cessation among Medicare managed care recipients, 2005–2012

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HIGHLIGHTS

- Smoking is a public health problem for 65 + year-olds, but is under-researched.
- 75 + year-olds had about half the rate of smoking compared to 65-74 year-olds.
- From 2005 to 2012 we found no major changes in rates of smoking or cessation.
- There were no clear changes following national stop-smoking interventions.

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ABSTRACT

Objectives: To examine recent trends in cigarette smoking among older (65 years and above) adults in the United States.
Methods: We used data from the Medicare Health Outcomes Survey dataset to estimate rates of smoking, quitting, and (re)starting from 2005 to 2012. Medicare Advantage enrollees completed mail surveys at baseline and two years later. We included subgroup analyses by sex, race, and self-rated health.
Results: Smoking prevalence declined slightly, with most of the decline occurring over the course of a single year (2007–2008). Rates of quitting declined slightly (meaning fewer people were quitting), and (re)starting marginally declined from 2005 to 2012. There were no substantial differences between subgroups. We did not observe any significant changes in prevalence or cessation of smoking among Medicare Advantage participants during this time.
Conclusions: Smoking remains a public health problem for older adults. We did not find evidence of significant changes in smoking prevalence or cessation for older adults during the time period we examined.
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1. Introduction

Smoking remains a leading cause of preventable morbidity and mortality in the United States. Most studies of smoking cessation have focused on younger smokers, but research suggests that their findings may not generalize to older (65 years and above) adults. While it is logical to target smoking-prevention efforts at young adults or teens, studies examining cessation would benefit from inclusion of all the age ranges at risk. Yet a 2011 meta-analysis found that the average age of participants in studies of tobacco withdrawal was 37.8 years, and few studies included older adults (Kleykamp & Heishman, 2011). Targeted smoking interventions directed at adults over 65 must take into account the differences between older adults and the rest of the general population if they are to be effective when implemented in real-world settings.

Between 1965 and 2010, the prevalence of smoking among American adults declined dramatically from 42.4% to 19.3%, and since 2002 the number of former smokers has exceeded the number of current smokers (Quitting smoking among adults — United States 2001–2010 & Centers for Disease Control and Prevention, 2011). The prevalence of smoking continues to differ significantly by age, with the following rates found in a national survey: age 18–44, 20.2%; age 45–64, 19.3%; age 65–74, 11.3%; and 75 and over, 5.7% (Blackwell, Lucas, & Clarke, 2014). Despite the decrease in prevalence with age, between 2001 and 2010 only the groups younger than 64 in this survey showed an increase in rates of quitting.

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Older smokers may have different habits, motivations, and perceptions about smoking and health risks than do young-adult or middle-aged smokers. A 2007 study found that Americans age 65 and older were considerably less likely than all younger groups to attempt to quit smoking, but if they made an attempt, they were more likely to quit (Lee & Kahende, 2007). At the same time, older patients may consider that other health concerns are more important than smoking, or they might reason, on the basis of their survival until that point, that additional smoking would not put them at additional risk. These have been described as "disengagement beliefs" which discourage attempts to quit (Kleinjan, van den Eijnden, Dijkstra, Brug, & Engels, 2006). A study of older Greek-Australians summarized this attitude as, "I have never experienced any problem with my health. So far, it [smoking] hasn't been harmful" (Mohammadnezhad, Tsourtos, Wilson, Ratcliffe, & Ward, 2015). Other reasons have been described as being "too old to quit", not being addicted to cigarettes, or being unlikely to see benefits from stopping (Sheahan, 2002). Weight gain may be a particular concern about quitting among older, medically ill smokers (Sepinwall & Borrelli, 2004). Insofar as reimbursement for smoking cessation programs and drug costs seems to greatly improve quit rates, the cost of treatment may be a barrier to quitting, although this effect has not been examined with regard to advancing age (Salize et al., 2009). Given the existing research on the unique behaviors and motivations of older smokers, we wanted to examine recent prevalence and cessation trends within this population. We also sought to ascertain if there were changes following implementation of recent national cessation programs.

In 2004, the United States Department of Health and Human Services began a series of initiatives to promote smoking cessation, with the establishment of a nationwide network of toll-free phone lines that provided callers with behavioral counseling for smoking cessation, and referrals to other local cessation services. These "quitlines", administered by the Centers for Disease Control, did not target any specific age group. They were relatively underutilized by older adults, with only 6% of total quitline calls in 2010–2011 accounting for individuals over age 65 (Centers for Disease Control, n.d.), while this group constituted 16% of the adult population during that time. In 2005, Medicare began offering cessation coverage for patients who had smoking related illnesses, or were taking prescriptions for diseases related to tobacco use. This policy covered two quit attempts per year, with each quit attempt comprising of a maximum of four intermediate (3–10 min) or intensive (>10 min) counseling sessions with a health practitioner. In 2006, Medicare Part D covered physician-prescribed smoking cessation treatments, which included prescription drugs indicated for cessation. Over-the-counter smoking cessation medications such as nicotine replacement were not covered by Medicare Part D and remain as such. In 2010, with the passage of the Affordable Care Act, Medicare expanded its cessation coverage policy to include health practitioner counseling for any smoker seeking to quit, without consideration of smoking-related illnesses or prescriptions. This coverage expansion did not change the number of attempts covered for beneficiaries seeking cessation counseling.

Despite these large-scale interventions, no recent research has characterized the rates of smoking, quitting, or starting smoking among older adults. Other epidemiological research has not specifically addressed smoking among older adults or Medicare recipients (Garrett, Dube, Trosclair, et al., 2011), has not examined trends or subgroups (Messer, Trinidad, Al-Delaimy, & Pierce, 2008; Agaku, King, & Dube, 2014), or has focused on selected populations (Filion et al., 2011; Doescher, Jackson, Jerant, & Gary, 2006). We sought to establish if there were trends in smoking behaviors among Medicare Managed Care recipients during the last decade, and if these could be plausibly associated with any of the smoking cessation interventions during that time. Understanding recent trends and population-level effects of interventions can help direct future interventions and research. We hypothesized, based on the general population trends from the previous forty years, and the interventions geared at Medicare recipients in the last decade, that the prevalence of smoking would significantly decrease, and the rate of quitting would significantly increase, among Medicare Managed Care recipients between 2005 and 2012.

2. Methods

2.1. Analytic sample

We analyzed data from (years 2005–2012) the Medicare Health Outcomes Survey (MHOS) (Jones, Jones, & Miller, 2004). Surveys were conducted across Medicare Advantage Organizations (MAOs) in the US. During the years examined, about half of these plans were health management organizations (HMOs), about one-quarter were private fee-for-service groups (PFFs), and about one-sixth were preferred provider organizations (PPOs). The remaining plans reflected other payment and delivery organizational structures. Between 1000 and 1200 members were sampled from each MAO in each year. All eligible participants were sent a mailed survey in the baseline year, and (regardless of response to the first survey) a follow-up survey two years later. Participants received a standardized questionnaire, survey letters, and pre-notification and reminder/thank you postcards. For those participants who did not return surveys, up to six follow-up calls were made. The same individuals could be resampled in multiple cohorts across years.

2.2. Sociodemographic and health-related variables

Age was categorized in the public use MHOS dataset as under 65, 65 to 74 years, and 75 years and older. We did not include Medicare beneficiaries under the age of 65 in this study. Race was characterized as white or non-white, which were the only groupings available in the public use dataset. Self-rated health (SRH) was evaluated through the question, "In general, would you say your health is: excellent, very good, good, fair, or poor?" Those answering "fair" or "poor" were considered not healthy, and the remaining categories were coded as being healthy (Idler & Benyamini, 1997; Hubbard, Inoue, & Diehr, 2009).

2.3. Smoking status

We determined smoking status at baseline and follow-up through the question, "Do you now smoke every day, some days, or not at all?" Those reporting smoking every day and some days were categorized as smokers. Those smoking at baseline but not at follow-up were considered to have quit. Because prior smoking status was unknown, and it seemed unlikely that participants would initiate smoking in later life, we considered those who smoked at follow-up but not at baseline to have "(re)started".

2.4. Descriptive analyses

We analyzed data starting from the 2005 baseline survey and ending with baseline and follow-up data from 2012. We tabulated raw smoking prevalence rates for the whole group, separating those who did and did not reply to the follow-up survey. For the prevalence analyses, we included respondents who had completed the relevant items on the baseline survey; for the quitting and (re)starting analyses we used only those who had completed both surveys. Data collected in the same year was presented for that year (e.g. quitting rates for 2010 are for the baseline cohort from 2008).

2.5. Weighting by study year

In order to account for the differences in the composition of the MHOS cohort across the years, we weighted the baseline cohort samples for 2005–2011 to match the sex, race, age, and SRH distribution of the sample in 2012, using direct standardization (Curtin & Klein, 1995).