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# Preventive visit among older adults with Medicare's introduction of Annual Wellness Visit: Closing gaps in underutilization

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ABSTRACT

Preventive visit rates are low among older adults in the United States. We evaluated changes in preventive visit utilization with Medicare's introduction of Annual Wellness Visits (AWVs) in 2011. We further assessed how coverage expansion differentially affected older adults who were previously underutilizing the service. The study included Medicare beneficiaries aged 65 to 85 from a mixed-payer multispecialty outpatient healthcare organization in northern California between 2007 and 2016. Data from the electronic health records were used, and the unit of analysis was patient-year (N = 456,281). Multivariable logistic regression models were used to assess determinants of "any preventive visit" use. Prior to the AWV coverage (2007–2010), Medicare beneficiaries who were older, with serious chronic conditions, and with a fee-for-services (FFS) plan underutilized preventive visits such that odds ratio (OR) for age groups (vs. age 65–69) ranges from 0.826 (age 70–74) to 0.522 (age 80–85); for Charlson comorbidity index (CCI) (vs. 0 CCI) ranges from 0.77 (1 CCI) to 0.65 (≥2 CCI); and for FFS (vs. HMO) is 0.236. With the Medicare coverage (2011–2016), the age-based gap reduced substantially, but the difference persisted, e.g., OR for age 80–85 (vs. 65–69) is 0.628, and FFS (vs. HMO) beneficiaries still have far lower odds of using a preventive visit (OR = 0.278). The gap based on comorbidity was not reduced. Medicare's coverage expansion facilitated the use of preventive visit particularly for older adults with more advanced age or with FFS, thereby reducing disparities in preventive visit use.

## 1. Introduction

Older Americans use preventive care services at half the recommended rate (McGlynn et al., 2003; National Ambulatory Medical Care Survey, 2010). Accordingly, Healthy People 2020 sets a goal of a 10% increase in the proportion of older adults who receive a core set of preventive services (e.g., influenza and pneumococcal vaccinations, colonoscopy/sigmoidoscopy or fecal occult blood test, and mammography for women) (Anon, 2014). These preventive care services can help delay disease onset or progression and, in some cases, prevent diseases from occurring (e.g., immunizations) (National Prevention Strategy, 2011).

Lack of coverage under traditional fee-for-service (FFS) Medicare on preventive visits had been cited as one barrier to delivering preventive care for older adults (Anon, n.d.-a). Routine primary care office visits are typically scheduled for 20 min or less, and face-to-face time with a provider is even shorter (Tai-Seale et al., 2007). Given this limited time, conversation surrounding acute or existing chronic health problems tends to take priority leaving typically little time for in-depth discussions regarding preventive care, such as health education, counseling, and screening (Abbo et al., 2008; Baron, 2010; Lesser and Bazemore, 2009).

Recognizing the need for better preventive care, Medicare introduced the Annual Wellness Visit (AWV) in 2011 under the Affordable Care Act (ACA). The AWV requires a comprehensive range of preventive services targeted to older adults (e.g., screening for cognitive and functional impairment), which is beyond the scope of complete physical exam which has been covered and widely used by Medicare HMO beneficiaries (Petroski and Regan, 2009; Anon, n.d.-b). With an AWV, all Medicare beneficiaries would have similar access at no cost to annual preventive visits. Subsequently, there was a marked increase in the use of preventive visits among Medicare FFS beneficiaries in the first few years after introduction of the AWV (Chung et al., 2015; Ganguli et al., 2017).

In this study of Medicare beneficiaries, we investigate who utilized preventive visits during four years before and six years after the introduction of AWV, and how the expanded ACA coverage affected preventive visit utilization. Despite the potential benefits of AWVs, older adults of more advanced age and/or with multiple chronic conditions may be less likely to make a separate preventive visit, as they

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are already overwhelmed by frequent visits and may prefer receiving preventive care during their problem-oriented visits. On the other hand, for those older adults who rarely see a primary care provider, a no-cost dedicated preventive visit may be perceived as necessary to receive recommended preventive care. Preventive visit utilization may also differ by sociodemographic characteristics given existing disparities in preventive care (Nelson et al., 2002; AHRQ, 2010). A recent study conducted in a Midwest healthcare system (Hu et al., 2015) reported that patients who were older, sicker, or African American were less likely to use preventive visit as compared to younger, healthier and non-Hispanic white patients. Our study setting serves patients from diverse racial/ethnic backgrounds including substantial proportions of Asians, Hispanics, and African American, and those with Medicare HMO and FFS insurances.

We hypothesize that (1) older adults are less likely to make a preventive visit as they age; (2) older adults who have multiple serious comorbidities are less likely to make a separate preventive visit; and (3) the impact of coverage expansion is greater among groups of older adults who have been previously underutilizing preventive visits, thereby reducing utilization gaps.

## 2. Methods

### 2.1. Study setting and study cohorts

The study population consisted of Medicare beneficiaries, aged 65 to 85 years, who were primary-care patients in a large, mixed payer outpatient healthcare organization in northern California. The organization serves more than a million patients annually and is representative of the underlying geographic area in terms of racial and ethnic composition (United States Census Bureau, n.d.). Using data from the electronic health records (EHR), primary care patients were defined each year as those who saw a primary care provider practicing in 30 clinics/departments in the current or previous year. Thus, there are up to ten observations per patient in the study sample that covers four years before (2007–2010) and six years after (2011–2016) the expansion of Medicare's preventive visit coverage.

All data elements were de-identified according to the Health Insurance Portability and Accountability Act requirement; the study was approved by the Institutional Review Board at the health care organization.

### 2.2. Measures

Preventive visits were identified based on Current Procedural Terminology (CPT) codes and Medicare's Healthcare Common Procedure Coding System (HCPCS) codes in billing records. HCPCS codes used for Medicare-covered preventive visits were G0344 ("Welcome to Medicare visit" (WMV) in 2007–2010), G0402 (WMV in 2011–2016), G0438 (initial AWV), and G0439 (subsequent AWVs). Additionally, "complete physical exam" (CPT codes of 99387 and 99397) was included as it has been used widely by Medicare HMO beneficiaries who are covered with or without co-payment; Medicare FFS beneficiaries have to pay the full cost for this type of visit out-of-pocket. Non-preventive, problem-oriented visits to a primary care provider were identified using CPT codes of 99201–99215.

Patients were classified into Medicare FFS and Medicare HMO beneficiaries based on their primary insurance for that year. Most (78.8%) used one insurance throughout the year, and the remainder used two or more: Medicare FFS and Medicare HMO (5.5%), Medicare and Medicaid (0.3%), Medicare and commercial insurance (6.1%), or self-pay and Medicare (9.6%). When multiple insurances were used during a year, the insurance most frequently used (or covering most charges if two were used with equal frequencies) was assigned as the primary insurance. Patient age, sex, and race/ethnicity were based on self-reporting as contained in the EHR.

### 2.3. Analytical approach

Multilevel logistic regression models were used to estimate predictors of any preventive visit (yes/no) as the dependent variable. Models included patient-level and provider-level random effects to account for multiple observations per patient, nested within provider. Random effects model uses variation within and between patients and within and between providers, and thus all the patients from the sample, regardless whether they made any preventive visit during the study period or not, are included in the estimation.

The main predictor variables were indicators of (1) age category: 65–69 (referent group), 70–74, 75–79, and 80–85, (2) burden of comorbid conditions based on the Charlson Comorbidity Index (CCI) without age: 0 (referent group), 1, and 2 or more, (3) primary care (non-preventive) visit frequency: 0 (referent group), 1, 2, 3, and 4 or more, and (4) primary insurance: Medicare HMO (referent group) and Medicare FFS. Patient sex and race/ethnicity, and indicators of year were included as covariates.

To estimate differential impact of the new coverage by patient demographic and clinical characteristics, we ran stratified sample analyses with pre-AWV and post-AWV periods separately. For most covariates in the model, the effect size during pre-AWV vs. post-AWV periods differed practically and statistically (Clogg et al., 1995; Paternoster et al., 1998),as indicated by significance of interaction terms of "post-AWV" and each covariate (Likelihood Ratio test: Chi-sq = 1548, $p < 0.001$) (see Appendix Table C). We present results from the stratified analysis which is consistent with the interaction terms model but is easier to interpret. For all the analysis, results with $p < 0.001$ were considered statistically significant, given sizable sample sizes. Stata 11.1 (College Park, TX) was used to conduct the data analysis.

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## 3. Results

Of 456,281 patient-years (of 108,734 unique patients), a majority was female (59.8%), non-Hispanic white (64.4%), and Medicare FFS beneficiaries (80.7%) (Table 1). In this study setting, Medicare FFS beneficiaries were likely to be younger and healthier than Medicare HMO beneficiaries (Appendix Table A). Overall, 32% made a preventive visit, with an increase from 19% in 2007–2010 to 38% in 2011–2016 (Table 1). The unadjusted rate of preventive visits declined with age and with increasing CCI. Patients who made frequent primary care visits were less likely to make a separate preventive visit than those who did not. Non-Hispanic white patients were more likely than African-American or Hispanic patients to make a preventive visit. Medicare FFS beneficiaries were less likely to make a preventive visit than HMO beneficiaries.

As expected, preventive visit rates increased from 2011 to 2016. Generally, there was a greater increase among the patient groups with initially lower preventive visit use (Table 1). By age, there were 20 percentage-point increase among people aged 70–74 versus a 15 percentage-point increase for those aged 65–69. The increase in rates was smaller for patients with higher comorbidity burden, but, in relative terms, the increase was larger for patients with higher comorbidity burden (121% increase for CCI ≥ 2) than for those with lower burden (87% increase for CCI = 0). The gap based on race/ethnicity slightly widened, however. For example, the difference between non-Hispanic white and African Americans increased from 1 percentage-point pre-AWV to 5 percentage-point post-AWV. For Medicare FFS and Medicare