Patient Cost-Sharing and Healthcare Utilization: Evidence from the ACA's Medicare Preventive Benefits

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Dr. Siying Liu conducted research for this poster as a PhD student at the University of Pittsburgh. The views expressed are her own and do not necessarily represent the views of the IMPAQ International, LLC.

BACKGROUND

This presentation studies the effects of removing patient cost-sharing on the usage of preventive services among the elderly, exploiting the removal of copayment and coinsurance of Medicare-covered preventive services that are recommended by the US Preventive Services Task Force, as a part of the reform of Affordable Care Act (ACA).

On January 1, 2011, about ten types of preventive services to Medicare beneficiaries became free for the patients. These preventive services, which are rated A or B by the US Preventive Services Task Force, include several cancer screening, major chronic condition screening and self-management training, etc. Before the implementation of Medicare Preventive Benefits (hereafter MPB), Medicare beneficiaries paid 20% coinsurance of the Medicare-approved rate for preventive services covered by Medicare Part B.

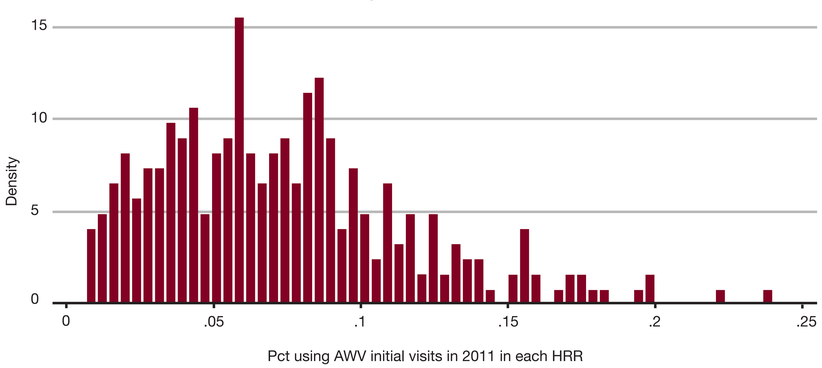
METHODS

The empirical challenge to estimate the impact is that the policy change applies to all Medicare beneficiaries: there exists no comparison group. However, the knowledge of the new benefits and the preference of using preventive services vary across individuals.

Following the intuition in Chetty et al. (2013) that individuals with no knowledge of certain policies behave as they would in the absence of the policy, we categorize individuals on the basis of their potential knowledge of this new Medicare benefits reform. In particular, we calculate the take-up rate of a new service started at the same time of the implementation of the policy: the Annual Wellness Visit (hereafter AWV), for each of the 306 Hospital Referral Regions (HRRs).

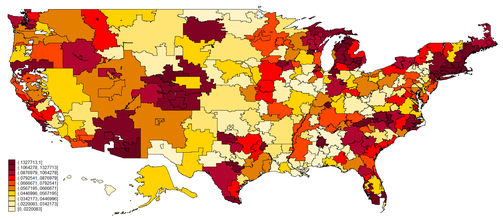
The AWV is offered for free every 12 months to all Medicare beneficiaries. An AWV might include a health risk assessment, a review of medical and family history, some routine measurements, personalized health advice, a list of personalized risk factors and treatment options, and a screening schedule for appropriate preventive services.

Exhibit 1: Histogram of the Annual Wellness Visit Take-up rate at the Hospital Referral Region (HRR) level



Notes: The y axis shows the number of HRRs. The x axis shows the AWV take-up rate at the HRR level.

Exhibit 2: Geographic Variation of the Annual Wellness Visit Take-up Rate at the HRR Level



Notes: Each color represents a decile of the distribution of the Annual Wellness Visit take-up rate at the HRR level. The darkest color is the 10th decile (highest rate) and the lightest color represents the 1st decile (lowest rate).

FRAMEWORK AND MOTIVATING FIGURES

A DID models using the 2008-2013 5% Medicare claims data:

$$usage_{izt}=\alpha+\beta_1 AWV_z+\beta_2 Post_t+\beta_3 AWV_z\times Post_t+\theta_i+\theta_t+E_{izt},$$

where the $usage_{izt}$ is a dummy variable which equals 1 if the individual *i* in HRR *z* in year *t* uses one of the preventive services that are affected by the policy, and 0 otherwise. AWV_z is the take-up rate of the Annual Wellness Visit at the HRR level, and $Post_t$ equals 1 if the years are 2011-2013. β_3 is the estimate of interest, which is the causal impact of removing patient cost sharing on a beneficiary's probability of using each preventive service within the first three years of the implementation of the policy.

Services affected by the policy:

- Abdominal aortic aneurysm (AAA) screening
- Screening mammogram
- Hepatitis b vaccination
- Nutrition therapy services (medical)
- Pap test
- Pelvic exams
- Bone mass measurement (bone density)
- Colonoscopy screening among beneficiaries with average risks of colorectal cancer
- Colorectal cancer screening, fecal occult blood test, and
- Colonoscopy among beneficiaries with high risks of colorectal cancer
- Colorectal cancer screening, flexible sigmoidoscopy
- Colorectal cancer screening, blood, occult.

Services not affected by the policy and we can estimate the impact of the policy on the following Placebo outcomes:

Services that have always been free:

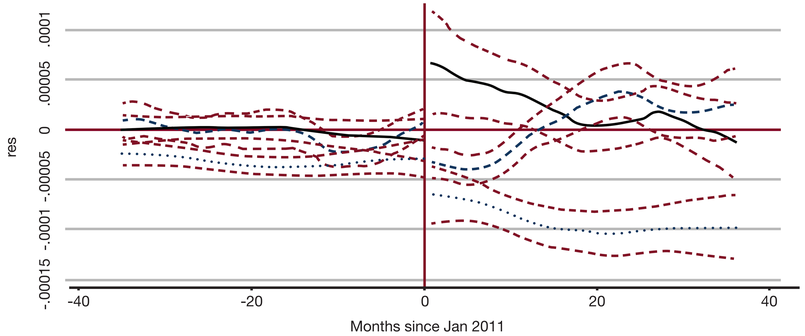
- Flu shots
- Pneumonia shots
- Diagnostic colonoscopy (including screening with polyps detected ex post)
- Diabetes screening

Services with copayment/coinsurance or deductibles remain:

- Prostate cancer screening
- Cardiovascular disease screening tests
- Glaucoma
- Diabetes self-management training

Exhibit 3 plots an event-study figure of the change of the usage of one preventive service, the Abdominal Aortic Aneurysm Screening among all non-movers (living in the same HRR during the sample period) who live in the 1st, 5th, and 10th decile of the AWV take-up rates.

Exhibit 3: Usage of the Abdominal Aortic Aneurysm Screening, by AWV Take-up Rate Decile



Notes: The y-axis plots the residual of a regression of the usage of the service on the gender, race categories, birth year-fixed effects, and monthly dummies. The blue lines are the de-trended usage rate and the red lines are the 95% confidence intervals: Solid line: the average usage in the highest (10th) AWV take-up rate decile; Dashed line: the average usage in the medium (5th) AWV take-up rate decile; Dotted line: the average usage in the lowest (1st) AWV take-up rate decile.

FINDINGS

The most price-sensitive services are the abdominal aortic aneurysm, screening mammogram and two types of tests for colorectal cancer (colonoscopy among beneficiaries with average risks, and the fecal occult blood test).

No effects on usages for the bone mass measurement, medical nutritional therapy, hepatitis B vaccination, pelvic tests, and other types of colorectal screening tests such as flexible sigmoidoscopy. The usage of pat tests decreased. Possible reasons for no effects are: eligibility criterion of the service; the incidence and seriousness of the target disease; low AWV take-up rates; when the reform took effect, the majority of beneficiaries already carried insurance beyond traditional Medicare that would have eliminated or greatly reduced any out-of-pocket costs.

For most of the placebo outcomes, there are no effects. Interestingly, the usage of flu vaccinations increased, and the usage of diabetes self-management training and the diagnostic colonoscopy decreased.

CONCLUSIONS

Following the ACA's removal of the cost-sharing of Medicare-covered preventive services, the usages of many affected services increased among beneficiaries with better knowledge of the reform. Policy makers should increase people's awareness about the coverage of health insurance and the benefits of following guidelines to promote usages of preventive services and reduce long-term healthcare costs.