

The Impact of the Medicare Shared Savings Program on Fall Prevention Services and Falls Among Community-Dwelling Older Adults

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A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of
Philosophy in Health Services Research at the Brown University School of Public Health

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This dissertation by Courtney Elizabeth Baird is accepted
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VIII. PEER REVIEWED PUBLICATIONS

Published

1. **Baird, C.E.**, Wulff-Burchfield, E., Egan, P.C., Hugar, L.A., Vyas, A., Trikalinos, N.A., Liu, M.A., Olszewski, A.J., Bantis, L.E., Panagiotou, O.A., et al. Predictors and Drivers of End-of-Life Medicare Spending Among Older Adults with Solid Tumors: A Population-Based Study. *Cancers* 2025, 17, 1016. <https://doi.org/10.3390/cancers17061016>.
2. **Baird, CE**, Wulff-Burchfield E, Egan PC, Hugar LA, Vyas A, Trikalinos NA, Liu MA, Bélanger E, Olszewski AJ, Bantis LE, Panagiotou OA. Predictors of high-intensity care at the end of life among older adults with solid tumors: A population-based study. *J Geriatr Oncol.* 2024 Apr 26;15(5):101774. doi: 10.1016/j.jgo.2024.101774.
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5. **Baird CE**, Guiahi M, Chudnoff S, Loyo-Berrios N, Garcia S, Jung M, Gressler LE, Mao J, Hodshon B, Sedrakyan A, Andrews S, Colden K, Roberts J, Anderson A, Sewell C, Marinac-Dabic D. Building Blocks for the Long-acting and Permanent Contraceptives Coordinated Registry Network. *BMJ Surg Interv Health Technol.* 2022 Nov 11;4(Suppl 1):e000075. doi: 10.1136/bmjst-2020-000075.

6. **Baird CE**, Myers E, Jacoby V, Gressler LE, Venable S, O'Neill A, Price V, Lee A, Roberts J, Andrews S, Sedrakyan A, Marinac-Dabic D. Development of a core minimum data set to advance real-world evidence generation for uterine fibroids treatment technologies. *BMJ Surg Interv Health Technol*. 2022 Nov 11;4(Suppl 1):e000094. doi: 10.1136/bmjst-2021-000094.
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IX. POLICY BRIEFS AND BLOG POSTS

1. Committee for Economic Development. *Modernizing Medicare*. 2016. Available at: https://www.ced.org/pdf/CED_Medicare_Report.pdf
2. Committee for Economic Development. *Tackling Economic Inequality, Boosting Opportunity*. 2016. Available at: <https://www.ced.org/pdf/CED-Inequality-Report.pdf>
3. Committee for Economic Development. *Adjusting the Prescription: Committee for Economic Development Recommendations for Health Care Reform*. 2015. Available at: https://www.ced.org/pdf/CED_Health_Care_Report.PDF
4. Committee for Economic Development. *Crony Capitalism: Unhealthy Relations Between Business and Government*. 2015. Available at: <https://www.ced.org/pdf/CED - Crony Capitalism - Report.pdf>
5. Committee for Economic Development. *Every Other One: More Women on Corporate Boards*. 2014. Available at: https://www.ced.org/pdf/Every_Other_One_-_More_Women_on_Corporate_Boards.pdf
6. Baird, Courtney, "Is More Choice Always Better?" June 7, 2016. Available at: <https://www.ced.org/blog/entry/is-more-choice-always-better>
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8. Baird, Courtney, "Top Healthcare Stories for 2016: Insurance Company Mergers," February 16, 2016. Available at: <https://www.ced.org/blog/entry/top-healthcare-stories-for-2016-insurance-company-mergers>
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12. Baird, Courtney, "Diving into the Deficit," November 6, 2014. Available at: <https://www.ced.org/blog/entry/diving-into-the-deficit>
13. Baird, Courtney, "The Skinny on the Fat Tax," September 17, 2014. Available at: <https://www.ced.org/blog/entry/the-skinny-on-the-fat-tax>

X. PRESENTATIONS

Invited Talks

1. **Baird, CE**. *County-Level Mandates Were Generally Effective At Slowing COVID-19 Transmission*. Health Affairs Podcast – A Health Podyyssey. March 2024. Virtual.
2. **Baird, CE**. *County-Level Mandates Were Generally Effective At Slowing COVID-19 Transmission*. Columbia University, COVID Information Commons. January 2024. Virtual.
3. **Baird, CE**. *Injuries and the Built Environment*. Brown University School of Public Health. March 2021. Providence, RI.

4. **Baird, CE.** *How to Read an Academic Journal Article*. Brown University School of Public Health. February 2021. Providence, RI.
5. **Baird, CE.** *Health System Financing*. Brown University School of Public Health. October 2020. Providence, RI.
6. **Baird, CE.** *Women's Health Technologies CRN and Beyond: Engaging and Empowering our Patient Partners*. 2018 MDEpiNet Annual Meeting: Building Collaboratives Without Borders, The Center for Devices and Radiological Health (CDRH) at the Food and Drug Administration (FDA). October 2018. Silver Spring, MD.
7. **Baird, CE.** *Women's Health Technologies CRN and Beyond: Engaging and Empowering our Patient Partners*. Medical Devices: Patient Engagement in Real World Evidence: Lessons Learned and Best Practices, University of Maryland Center of Excellence in Regulatory Science and Innovation (M-CERSI). September 2018. Baltimore, MD.
8. **Baird, CE.** *MDEpiNet Women's Health Technologies CRN: Overview of Objectives and Workstreams*. 2018 MDEpiNet WHT-CRN Annual Meeting, The Center for Devices and Radiological Health (CDRH) at the Food and Drug Administration (FDA). September 2018. Silver Spring, MD.
9. **Baird, CE.** *The Patient Protection and Affordable Care Act: Then and Now*. Weill Cornell Graduate School of Medical Sciences. September 2018. New York, NY.
10. **Baird, CE.** *From Volume to Value: MACRA & the Future of Medicare Payment Models*. Weill Cornell Graduate School of Medical Sciences. September 2017. New York, NY.

International Podiums

1. **Baird, CE.,** Berry S., Goldberg, E., Ryan, A., Gozalo, P. The Impact of the Medicare Shared Savings Program on Fall Prevention and Fall-Related Injuries Among Older Adults. International Health Economics Association Annual Congress. July 2025. Bali, Indonesia.
2. **Baird, CE.,** Thapa, B., Galárraga, O. The Impact of the Possible Accountable Care Organization on Women's and Children's Health in Nepal. International Health Economics Association Annual Congress. July 2021. Virtual.

National Podiums

1. **Baird, CE.,** Panagiotou, O., Lake, D., Gozalo, P. Predictors of High-Intensity Care at the End of Life among Older Adults with Solid Tumors. AcademyHealth Annual Research Meeting. June 2023. Seattle, WA.
2. **Baird, CE.,** Panagiotou, O., Lake, D., Gozalo, P. The impact of non-pharmaceutical interventions on the growth rate of COVID-19. AcademyHealth Annual Research Meeting. June 2022. Washington, DC.
3. Gozalo, P., **Baird, CE.,** Lake, D., Shewmaker, P., Panagiotou, O. Association of COVID-19 Infection Burden with Hospital Admissions and Mortality among Medicare Patients. AcademyHealth Annual Research Meeting. June 2022. Washington, DC.
4. **Baird, CE.,** Galárraga, O. Competing with TikTok: Redesigning Learning for the Short-Attention-Span Era. Association of American Colleges & Universities Massachusetts PKAL Regional Network Winter Meeting. January 2021. Virtual.

Posters

1. **Baird, CE.,** Berry S., Goldberg, E., Ryan, A., Gozalo, P. The Impact of the Medicare Shared Savings Program on Fall Prevention and Fall-Related Injuries Among Older Adults. The American Geriatrics Society Annual Meeting 2025. May 2025. Chicago, Illinois.
2. **Baird, CE.,** Berry S., Goldberg, E., Ryan, A., Gozalo, P. The Impact of the Medicare Shared Savings Program on Fall Prevention and Fall-Related Injuries Among Older Adults. AcademyHealth Annual Research Meeting 2025. June 2025. Minneapolis, Minnesota.
3. **Baird, CE.,** Panagiotou, O., Lake, D., Gozalo, P. The Impact of the Medicare Shared Savings Program on Osteoporosis Screening Among the Elderly. Academy Health Annual Research Meeting 2021. June 2021. Virtual.
4. **Baird, CE.,** Panagiotou, O., Lake, D., Gozalo, P. The Effect of Primary Care on MSSP ACO Quality Performance. Academy Health Annual Research Meeting. June 2021. Virtual.

5. **Baird, CE.**, Cooper, E., Haskell, J., Gardner, R. A Cross-sectional Study of the Association between Physician Participation in Alternative Payment Models and EHR Use. Academy Health Annual Research Meeting. July 2020. Virtual.
6. **Baird, CE.** Development of a Coordinated Registry Network for Women’s Health Technologies. ISPOR 2018, Real-World Evidence, Digital Health, and the New Landscape for Health Decision Making, The Professional Society for Health Economics and Outcomes Research (ISPOR). May 2018. Baltimore, MD

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XII. TRAINING COURSES

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XIII. JOURNAL REVIEWER

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2. Journal of Urban Health
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Chapter 1:

Generating a Medicare Claims-Based Fall Risk Prediction Model for Community-Dwelling Older Adults

Abstract

Introduction: Falls are a leading cause of morbidity, mortality, and healthcare spending among older adults, yet preventive screenings and multifactorial interventions remain underused. To support large-scale evaluation and targeting of prevention efforts where clinical data are unavailable, we developed and validated claims-based models to predict fall risk among community-dwelling Medicare beneficiaries.

Methods: Using a nationally representative 5% sample of fee-for-service Medicare claims (2011–2018), we identified community-dwelling adults aged 65 years and older. Falls were ascertained with three previously validated algorithms of varying sensitivity and specificity, labelled ECO, ECDC, and AUR. Predictors ($n=107$ a priori; 105 retained) spanned demographics, chronic conditions, assistive devices, and healthcare utilization. All predictors were measured in the prior year to predict falls in the subsequent year. We fit logistic regression models for each algorithm using the pooled 2011-2018 data and conducted secondary models stratified by prior-year fall history. Variable selection used repeated LASSO with stability screening. Discrimination and fit were assessed with AUC, pseudo- R^2 , AIC/BIC, and calibration plots.

Results: The cohort included 10,676,150 beneficiaries (mean age 74.7; 56% female). Fall incidence by algorithm was 5.1% (ECO), 6.2% (AUR), and 12.1% (ECDC). The discrimination for the primary models was strong, with AUC values of 0.7757 (ECO), 0.7444 (AUR), and 0.7057

(ECDC), with the ECO model generally demonstrating the best model fit. Calibration showed close alignment between predicted and observed risk across strata. Prior year fall was the strongest predictor (OR ≈ 2.19 – 2.27), with additional elevated risks for Parkinson's disease (OR ≈ 1.31 – 1.59) and Alzheimer's/Dementia (OR ≈ 1.25 – 1.45). In secondary analyses, AUCs were slightly lower and differed by prior year fall status.

Conclusions: Our Medicare claims-based fall risk prediction models achieved strong discrimination and calibration. These models can be implemented at scale by researchers, clinicians, and policymakers to stratify risk, guide targeting of preventive services, and support policy evaluation. By providing fall risk scores under three different fall identification methods, our study allows users to choose sensitivity-specificity trade-offs that are suited to their resource constraints and objectives, which may facilitate more efficient allocation of fall prevention efforts in the Medicare population.

Introduction

Falls are the most common mechanism of injury among older adults in the U.S.¹ and a costly burden on our healthcare system. Annually, approximately 30-40% of community-dwelling adults aged 65 and older experience a fall.² Almost half of these falls result in an injury and 10% of all falls result in a serious injury.^{3,4} Although there is no widely agreed upon statistic for the percentage of adults who experience their first ever fall each year, longitudinal studies suggest this percentage is closer to 10%.^{2,5} Falls are a serious threat to older adults' quality of life, with the consequences ranging from depression, decreased overall functional ability, and

pain, to fractures, traumatic brain injury, and death.⁶⁻⁹ Additionally, the healthcare system burden of falls is increasing due to rapid growth in the aging population. The number of Americans aged 65 and older is projected to nearly double from 54 million in 2021 to 95 million by 2060, and this age group's share of the total population will rise from 16% to 23%.¹⁰ With the continued aging of the population, it is estimated that the cost related to falls will double from about \$51 billion in 2015¹¹ to about \$101 billion by 2030.¹²

Despite the high prevalence of falls, falling is not an inevitable result of aging. There is a large body of research demonstrating that multifactorial fall interventions can substantially reduce an older adult's risk of falling.¹³⁻¹⁸ The American Geriatrics Society (AGS) guidelines recommend screening all adults aged 65 years and older for fall risk annually.¹⁹ Using a multifactorial fall risk assessment, the healthcare provider first asks the patient a series of questions about whether they have had previous falls or experienced any problems with walking, gait, or balance. Based on the patient's response to these questions, the healthcare provider may conduct an evaluation of the patient's risk factors, such as gait, balance, mobility, vision, cognition, and many more. The result of this evaluation determines the provider's recommendations, which may include interventions such as medication modifications, exercise programs, vision treatments, and home environment modifications. Because this multifactorial approach can be costly and resource-intensive for both physicians and patients, the screenings and interventions are often performed at a much lower rate than what is recommended by the AGS.²⁰⁻²³ Given the current resource limitations of our healthcare system, it would be most beneficial for fall risk screenings and interventions to be tailored to those individuals who have the greatest risk of falling.

Many models have been developed and validated to predict falls among community-dwelling older adults using data derived from in-person clinical evaluations, electronic health records, and patient questionnaires.²⁴⁻³³ These models are useful for researchers and providers operating in clinical settings, where they can use data sourced directly from a patient's evaluation or medical record to estimate that patient's risk of falling. However, these models are less useful for researchers who study the large-scale impacts of national-level policy interventions on clinical outcomes for older adults. This growing community of researchers often relies on large administrative claims datasets from Medicare, as there is currently no reliable source of nationally representative electronic medical records for older adults.

Yet, to the best of our knowledge, only one study to date has used administrative claims data to develop a fall prediction model for community-dwelling older adults. In this study, Homer, et al., used private Aetna insurance claims from 120,881 older adults to derive and validate a predictive model for falls.³⁴ However, this model did not incorporate many chronic conditions and diagnoses which are known to contribute to fall risk, although they are easily accessible within Medicare claims data. This means a more accurate prediction model may be available if we incorporate these known risk factors. Additionally, this study used only e-codes to identify the occurrence of falls, which is a highly specific fall identification method, but is well known to greatly underestimate the true prevalence of falls among older adults.³⁵⁻³⁷ A model that employs a broader fall identification algorithm could capture substantially more fall events and offer a fall risk prediction model with higher sensitivity.

As such, the objective of this study was to develop and validate a fall risk prediction model for community-dwelling older adults using nationally representative Medicare claims

data and several fall identification algorithms which offer different levels of sensitivity and specificity. This model will enable health services researchers to evaluate whether clinical preventive care interventions and policies are more broadly effective when tailored toward high-risk patients or when applied more broadly to include moderate risk patients. Specifically, this model will be applied in Chapters 2 and 3 of this dissertation, which evaluate the impacts of the Medicare Shared Savings Program (MSSP) Accountable Care Organizations (ACOs) on fall prevention services and fall-related healthcare encounters among older community-dwelling adults. The MSSP incentivizes broad fall prevention measures because an MSSP ACO's final reimbursement from Medicare of their share in the savings they generated requires that the ACOs meet minimum quality performance thresholds which include fall risk screening as one of these quality measures. In Chapters 2 and 3, we will use the fall risk prediction model from this chapter to evaluate whether MSSP ACOs are targeting fall risk screening towards higher risk patients or more broadly and whether we see greater reduction in fall-related healthcare encounters among the high fall risk subgroup relative to those in lower fall risk groups.

Methods

Study Population

We started with all community-dwelling adults aged 65 years and older who were enrolled in Medicare Parts A and B for at least one month and who were included in the 20% random sample of carrier claims between 2010 and 2018. Due to computational constraints, we selected a random 25% sample of this data, which lead to a study sample that is approximately

5% of the Medicare population. We considered a beneficiary to be institutionalized (not community-dwelling) during the calendar year if they spent a total of 100 or more days in a skilled nursing facility (SNF). We excluded any beneficiaries who were ever enrolled in Medicare Advantage (MA), as we do not have access to the MA encounter data required to identify falls among this population during all of our study years. To select the study population, we used the Medicare Master Beneficiary Summary File (MBSF) to obtain a list of Medicare beneficiaries and their characteristics for each year from 2010 to 2018. The MBSF contains data on individual level enrollment, demographics, date of death, MA participation, Part D coverage, dual eligibility, mailing address ZIP code, and indicators for more than sixty of the most important comorbidities for all Medicare beneficiaries through the Chronic Conditions Warehouse (CCW) file. We also used the Cost and Use segment of the MBSF to obtain a summary of utilization and total annual payments for services such as physician visits, hospital stays, dialysis, emergency room visits, imaging, and Part B/D drugs.

Study Outcome: Fall Identification

Using fee-for-service Medicare claims, we identified falls through three different previously validated algorithms. The first algorithm (“ECO”) uses ICD-9 and ICD-10 external cause of injury codes (E-codes). In theory, when a patient presents with an injury that was precipitated by a fall, this event should be recorded in their claim with the appropriate ICD-9 or ICD-10 external cause of injury codes which identifies which type of fall caused the injury (e.g., E881.0: fall from ladder). However, previous fall identification studies have estimated that only about 66% to 85% of claims using E-codes are in agreement with patient medical records,³⁵⁻³⁷ and several other studies have discussed how this low sensitivity may lead to underestimates

when using only ICD-9 E-codes to identify fall-related injuries (FRIs).^{38,39} To address this issue, we also used two other ICD-9 and ICD-10 algorithms to identify falls in Medicare claims: (1) The “ECDC” algorithm, which includes additional diagnosis codes indicating fractures, dislocations, sprains, strains, head injuries, and contusions; and (2) The “AUR” algorithm, which applies a different algorithm of the E-codes and inpatient primary diagnosis codes and also adds outpatient claims’ procedure codes for imaging and repair procedures. These ICD-9 code algorithms were described in detail in previous work by Hoffman et al.,³⁹ and we translated these algorithms into ICD-10 code algorithms for all observations occurring on or after October 1, 2015. We used all three algorithms to identify fall-related encounters within inpatient claims, skilled nursing facility (SNF) claims, home health agency (HHA) claims, outpatient claims, and carrier file claims. Appendix Table 1 provides the full list of ICD-9 and ICD-10 codes used for these algorithms. For each individual in the model, we used the current calendar year as the 12-month observation period and the following calendar year as the 12-month follow-up period during which identified falls.

Predictor Selection & Construction

We conducted a review of the literature to identify factors that are associated with falls among community-dwelling older adults. All predictors were selected a priori for inclusion in statistical models, based on their clinical significance and a review of the existing literature. This selection process was informed through discussions with our team, which is comprised of practicing physicians who care for older adults (Berry, Goldberg) and experts in health services research for older adults (Baird, Berry, Goldberg, Gozalo, Ryan). As a result of this process, we hypothesized that factors within the following categories could influence an older adult’s

likelihood of experiencing a fall: sociodemographic characteristics, balance and gait, chronic diseases and symptoms, functional impairment, medication use, strength, mental or psychiatric disorders, lifestyle factors, body composition, and medical cost and utilization history. The full list of factors within these categories is provided in Appendix Table 2. We included as many of these factors in our prediction models as our data allowed, which we indicated in Appendix Table 2. The medical cost and utilization history variables were available through the Cost & Use segment of the MBSF file. All of the demographic predictors were available through the MBSF and many of the disease predictors were available through the CCW file. Any predictors included in the model that were not available from these files were constructed from Medicare claims using the appropriate ICD-9, ICD-10, or HCPCS codes. For each of these claims-derived predictors, we flagged any claim that contained one of the appropriate ICD-9, ICD-10, or HCPCS codes from years 2010 through 2018 using inpatient claims, outpatient claims, part B claims, SNF claims, and HHA claims. In the prediction models, we used baseline predictors derived from the prior calendar year to predict falls in the current calendar year to guarantee that none of the predictors were impacted by the current fall itself.

Statistical Analysis

For our main analysis, we ran three separate regression models for each of the three fall identification algorithms. We considered a beneficiary to have experienced a fall in the calendar year if they had any fall-related claim, according to the three algorithms, within inpatient claims, SNF claims, HHA claims, outpatient claims, and carrier file claims. We labeled this fall outcome “any setting” in our regression tables. We ran these models using the combined years from 2011 through 2018. The year 2010 was not included in our regression analyses, as this was only

used to construct baseline predictors for falls occurring in 2011. Regression model diagnostics determined that a Logistic regression model was the best fitting model for our data.

For our secondary analyses, in order to account for the significantly higher risk of falls among those with a recent history of falls, we ran two separate logistic regression models for each of the three fall algorithms for those beneficiaries who experienced a fall in the previous calendar year and those that did not. Previous systematic reviews have found that a history of falls is the strongest predictor of future falls.^{40,41} The regression results for our secondary analyses are presented in the Appendix. To select which variables should be included in our regression models, we used machine learning techniques. Specifically, we used LASSO (Least Absolute Shrinkage and Selection Operator) logistic regression, which, in sum, uses a coefficient shrinkage technique to identify the predictors that produce a model with the least prediction error. For each regression model, we ran 10 separate LASSO regressions using different random 10% samples of our data. The resulting variable lists were compared to identify which predictors were consistently selected by the LASSO regressions. Finally, we evaluated each model's goodness-of-fit by evaluating and comparing each model's Pseudo R^2 , Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and Area Under the Curve (AUC). All analyses were conducted in Stata version 18.0 or SAS version 9.4.

Results

Study Sample Characteristics

Our study cohort included 10,676,150 community-dwelling older adults from 2011 to 2018 with a mean age of 74.7 and approximately 56% percent of beneficiaries were female. Our study sample was predominately Non-Hispanic White (82.6%), followed by Black (7.4%), Hispanic (5.3%), Asian/Pacific Islander (2.6%), and American Indian/Alaska Native (0.4%). Beneficiaries in our cohort had more than 4 chronic conditions on average, with the most common chronic conditions including Hypertension (56.2%), Hyperlipidemia (47.2%), Rheumatoid Arthritis/Osteoarthritis (29.5%), Ischemic Heart Disease (27.5%), and Diabetes (25.5%). The most common types of healthcare utilization in our study cohort included Part D events (dispensed drug prescriptions) (19.1), testing events (13.1), physician office Part B visits (7.4), other procedures events (6.2), and hospital outpatient visits (5.8). According to the ECO fall algorithm, 548,193 (5.1%) beneficiaries had at least one claim for a fall within any setting during the study period and 450,624 (4.2%) beneficiaries had a fall-related claim in the previous calendar year. Using the ECDC fall algorithm, 1,293,492 (12.1%) beneficiaries had at least one claim for a fall within any setting during the study period and 1,244,768 (11.7%) beneficiaries had a fall-related claim in the previous calendar year. Under the AUR fall algorithm, 666,160 (6.2%) beneficiaries had at least one claim for a fall within any setting during the study period and 574,310 (5.4%) beneficiaries had a fall-related claim in the previous calendar year. A full table of beneficiary characteristics is provided in Table 1.

Regression Model Performance

We relied on a variety of statistical methods to evaluate the goodness-of-fit of our logistic regression models. A table of these statistics is provided in Table 2. The Pseudo R^2 for logistic regression is not as easily interpretable as the R^2 for OLS, and is best applied as a tool for comparing the goodness-of-fit of different models. Higher values indicate better model fit, but a logistic regression model can have a low Pseudo R^2 and still have strong predictive power. Among the three models in our main analyses, the ECO model had the highest Pseudo R^2 for three out of four calculation methods, followed by the AUR model and the ECDC model. The Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) are additional statistical measures that penalize models with more parameters and can be used to compare the goodness-of-fit of different models, but in this case lower values indicate better model fit. We observe the same pattern for the AIC and BIC, with the ECO method having the best model fit, followed by the AUR model and the ECDC model.

The Area Under the ROC Curve (AUC), represents the probability that the model, if given a randomly chosen positive and negative example, will rank the positive higher than the negative. The perfect regression model has an AUC of 1, and thus values closer to 1 indicate better model fit. All three models had strong AUC values, with the same pattern of the ECO method having the best model fit (0.7757), followed by the AUR model (0.7444) and the ECDC model (0.7057). Another intuitive approach that we used to evaluate the fit of our prediction models was to evaluate how closely our model's predicted fall probabilities matched the actual fall probabilities within our data. First, we binned beneficiaries into 20 strata based on the model's predicted fall probability. Then within each strata, we computed the mean of the

model's predicted fall risk for that strata, and the actual percentage of beneficiaries in our data who fell within that strata. Then we graphed these two fall probabilities across strata as presented in Figure 1. As shown in Figures 1a – 1c, for most fall risk strata, the regression model's predicted fall probability very closely matches the actual probability of a fall.

For the secondary analyses, the goodness of fit statistics are provided in Appendix Tables 3 and 4 and the actual versus predicted risk graphs are provided in Appendix Figures 1a-1c and 2a-2c. For the secondary analyses in which we ran a separate model for beneficiaries who did and those who did not have a fall in the previous year, the AUC values were slightly smaller as compared to the original pooled model. For the model for beneficiaries with no recent history of falls, the ECO method had the best model fit (0.7562), followed by the AUR model (0.7208) and the ECDC model (0.6673). For the model for beneficiaries with a recent history of falls, the AUR method had the best model fit (0.6615), followed by the ECO model (0.6559) and the ECDC model (0.6306).

Predictors

For all three fall algorithms, we ran LASSO Logistic regression models in order to identify which of the 107 a priori predictors (described in Appendix Table 2) carried the strongest predictive signal for falls. Given the high dimensionality and correlation among claims-based measures, we used LASSO logistic regression to shrink and select coefficients that minimize out-of-sample prediction error. This will both guide clinical assessments and interventions by highlighting the most informative predictors and also yield parsimonious, well-calibrated prediction models. The claims-based variables that we created for use of a wheelchair and for

use of a hospital bed were dropped by most LASSO regressions. All other variables were chosen by at least 60% of the LASSO regressions and were retained for our final prediction models. The LASSO regressions retained and dropped the same variables for the secondary analyses. It is not surprising that the LASSO excluded the wheelchair and hospital bed variables, as these variables had extremely low frequencies within our data. There were only 19 beneficiaries for which hospital beds equaled 1, and only 41 beneficiaries for which wheelchair equaled 1. These variables are derived from the revenue center files, which means that beneficiaries needed to be reimbursed by Medicare for their purchase of this equipment in order to be flagged as using this assistive equipment. The low frequency counts in our data are likely a result of the fact that many beneficiaries purchase this equipment out-of-pocket and do not file for or qualify for reimbursement. Thus, our final regression models included 105 predictors that fall within the following broad categories: demographics, healthcare utilization, assistive devices and equipment, and clinical conditions. Table 3 presents the regression results for all three fall algorithms. The vast majority of variables had statistically significant odds ratios in all three regression models. Having a fall within the last year had the highest odds ratio for all three models, with odds ratios ranging from 2.19 to 2.27. Parkinson's Disease was also significantly associated with increased odds of experiencing a fall, with odds ratios ranging from 1.31 to 1.59 in all three models. Alzheimer's and dementia were also highly associated with falls, with odds ratios ranging from 1.25 to 1.45. Appendix Tables 5 and 6 present the regression results for the secondary analyses, which have similar patterns of odds ratios.

Discussion

This study used nationally representative Medicare claims data to develop and validate predictive models that estimate fall risk among community-dwelling older adults. By leveraging a broad set of clinical, demographic, and healthcare utilization predictors, the models achieved strong discrimination and calibration across multiple fall identification algorithms. These models can provide researchers, clinicians, and policymakers with robust options for identifying high-risk older adults in large administrative datasets, helping to target fall prevention interventions more efficiently and to help evaluate to what degree physician practices and health care systems like the ACOs use these preventive measures effectively by targeting those at high risk of falls.

Our fall prediction models demonstrated strong performance across multiple evaluation metrics. The models achieved excellent discrimination, as indicated by AUC values of 0.7757 (ECO), 0.7444 (AUR), and 0.7057 (ECDC), all of which compare favorably to prior fall prediction models developed from claims or clinical datasets.⁴²⁻⁴⁴ Model calibration was also strong, with predicted probabilities closely tracking observed probabilities across predicted fall risk strata. These results suggest that the models can effectively stratify older adults by fall risk within large administrative datasets, supporting their use for research, policy evaluation, and targeted interventions. Notably, the performance of our models exceeded that of another claims-based fall prediction model,⁴³ which reported an AUC of 0.69 using private insurance claims, highlighting the potential advantage of leveraging Medicare's broader and more clinically detailed data. For certain use cases in which researchers or policymakers are specifically

studying recent fallers or never fallers, it may also be useful to have access to separate predictive models for those with or without a recent history of falls. Because recent fall history is such a dominant predictor of future falls, pooling older adults with and without previous falls could cause that single variable to overwhelm the model, masking different risk signals among never-fallers and causing miscalibration for both groups. Building separate models enables different odds ratios for the predictors to emerge, supporting tailored prevention strategies and resource allocation (e.g., intensive secondary prevention for prior fallers versus primary prevention for never-fallers). The pooled model is more useful for situations in which recent fall history is not known among the study population.

One of the distinctive contributions of our study was the direct comparison of model performance across three claims-based fall identification algorithms. We found that the model using the ECO algorithm demonstrated the strongest performance, followed by the AUR and ECDC models. This pattern is consistent with the algorithms' relative specificities: the ECO method, with the highest specificity, produces the fewest false positive falls, whereas the broader ECDC method, with lower specificity, yields the most false positive falls. Given that our predictors were selected a priori based on strong evidence of their associations with falls, it is expected that models using less specific fall definitions would have worse performance.

Although the ECO-based model performed best, providing scores under all three definitions remains useful because the optimal sensitivity-specificity trade-off is use-case dependent. For example, for policymakers seeking to cast a wide net to identify patients who could benefit from inexpensive fall risk screenings, a broader definition such as AUR or ECDC may be advantageous to avoid missing high-risk individuals who might otherwise incur costly fall-related

hospitalizations under the more specific, less sensitive ECO definition. Alternatively, when resources are constrained or downstream interventions are costly, a more specific definition (ECO) may be preferred to limit unnecessary spending.

The main predictors identified in our final models were largely consistent with established risk factors for falls described in the literature, providing external validation for our approach. Prior fall history, fractures, mobility impairment, psychiatric disorders, and use of assistive devices were among the strongest predictors, aligning with findings from other prediction models for community-dwelling older adults.^{42,44} Chronic conditions such as osteoporosis, Parkinson's disease, and dementia were also significant, mirroring established epidemiological patterns. Our study's inclusion of healthcare utilization metrics, such as outpatient imaging use and hospitalization history, offers a novel dimension to prediction, similar to recent trends in using claims data to capture frailty and functional decline.^{45,46} Overall, the predictors identified reinforce the multifactorial nature of fall risk in older adults and support the robustness of claims-based models in identifying at-risk individuals.

The development of a fall risk prediction model using nationally representative Medicare claims data has important implications for policy, research, and clinical practice. Falls among older adults are a major driver of morbidity, mortality, and healthcare costs, with national expenditures projected to exceed \$100 billion annually by 2030.¹² Previous studies have shown that broad fall prevention programs are most effective when resources are targeted toward high-risk populations.^{45,47} By providing a reliable and accessible method of identifying Medicare beneficiaries who have the greatest risk of falls, our prediction model enables Medicare policymakers to allocate scarce funding and resources to those beneficiaries who will benefit

the most from fall prevention strategies. Additionally, health policy researchers can use these models to evaluate whether national Medicare programs that incorporate interventions to reduce falls, such as the Medicare Share Savings Program ACOs, are more or less effective among different fall risk subgroups. Health systems and payers could also apply our model to predict future fall burden among their populations, design preventive services, or meet Medicare quality measurement goals that are tied to fall prevention. Importantly, because our model uses widely available administrative claims data, it facilitates scalable and ongoing monitoring without the need for costly clinical assessments or prospective data collection.

Our study has a few limitations that warrant discussion. First, our fall outcomes were derived using Medicare claims data, rather than through patient-reported survey data such as the Medicare Current Beneficiary Survey (MCBS). Because our fall outcomes were derived from claims, our fall outcomes only capture falls that required medical attention and thus do not capture most non-injurious falls. It has been well established that the incidence of falls derived from Medicare claims is lower than the incidence derived from survey data.⁴⁸ However, injurious falls have greater consequences in terms of both patient health and healthcare system burden, and thus our model predicts those falls that precipitate the most loss. Additionally, we were not able to include some variables in our regression models that, based on prior literature reviews and causal frameworks, could increase an older adult's risk of falling. Specifically, it is possible that the predictive accuracy of our model could be improved by including additional variables for sociodemographic characteristics (e.g., marital status, education level, living alone), physical measures of balance, gait, and strength, and medication usage. Future work could merge in other data sources, such as survey data and EHR records, to explore how these

factors affect the model's goodness-of-fit. Nevertheless, the purpose of our study was to create a tool that could be easily applied by health services researchers who largely rely on claims data for their research and often do not have access to clinical EHR data or prospective survey data.

In summary, we developed and validated fall risk prediction models using nationally representative Medicare claims data, achieving strong discrimination and calibration across multiple fall identification algorithms. The models offer a scalable, claims-based tool for researchers, policymakers, and health systems to identify older adults at greatest risk of falls. By leveraging widely available administrative data, these models can facilitate more targeted allocation of fall prevention resources, support evaluation of policy interventions, and enhance the broader effort to reduce fall-related morbidity, mortality, and healthcare costs among the aging U.S. population.

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CHAPTER 1 – TABLES & FIGURES

Table 1: Study Sample Characteristics

	All Beneficiaries* (N=10,676,150)	Beneficiaries with a Fall ECO All Settings** (N=548,193)	Beneficiaries with a Fall ECDC All Settings‡ (N=1,293,492)	Beneficiaries with a Fall AUR All Settings† (N=666,160)
<u>Demographic Characteristics</u>				
Age, mean (SD)	74.70 (7.79)	79.76 (8.61)	77.12 (8.44)	78.94 (8.67)
Sex, (%)				
Male	43.6%	33.2%	35.2%	33.7%
Female	56.4%	66.8%	64.8%	66.3%
Race, (%)				
Non-Hispanic White	82.6%	87.3%	86.5%	87.4%
Black (Or African American)	7.4%	5.4%	5.6%	5.2%
Hispanic	5.3%	4.3%	4.5%	4.4%
Asian/Pacific Islander	2.6%	1.5%	1.7%	1.6%
American Indian / Alaska Native	0.4%	0.5%	0.5%	0.5%
Unknown	1.0%	0.4%	0.5%	0.4%
Other	0.8%	0.5%	0.6%	0.5%
Total months of state buy-in coverage, mean (SD)	1.18 (3.52)	1.64 (4.06)	1.42 (3.83)	1.55 (3.97)
Dual Eligible (any code) Months, mean (SD)	1.24 (3.59)	1.75 (4.16)	1.52 (3.92)	1.66 (4.07)
<u>Healthcare Utilization (Baseline)</u>				
Acute Inpatient Stays, mean (SD)	0.21 (0.64)	0.54 (1.02)	0.41 (0.89)	0.49 (0.98)
Anesthesia Events, mean (SD)	0.41 (1.03)	0.58 (1.32)	0.58 (1.27)	0.58 (1.31)
Ambulatory Surgery Center Events, mean (SD)	0.21 (0.86)	0.24 (1.03)	0.28 (1.08)	0.25 (1.07)
Dialysis Events, mean (SD)	0.07 (1.17)	0.22 (2.04)	0.15 (1.70)	0.20 (1.94)

Durable Medical Equipment Events, mean (SD)	2.27 (6.22)	3.98 (8.19)	3.43 (7.59)	3.75 (7.97)
Evaluation & Management Events, mean (SD)	4.48 (12.43)	10.26 (19.32)	7.95 (17.00)	9.47 (18.57)
Home Health Visits, mean (SD)	2.84 (16.64)	9.40 (29.58)	6.21 (24.44)	8.34 (27.98)
Hospital Outpatient Visits, mean (SD)	5.75 (14.75)	11.19 (23.29)	9.36 (19.96)	10.49 (22.29)
Hospice Stays, mean (SD)	0.01 (0.09)	0.01 (0.18)	0.01 (0.09)	0.01 (0.11)
Imaging Events, mean (SD)	3.78 (5.68)	6.74 (7.96)	6.16 (7.38)	6.51 (7.80)
Inpatient Emergency Room Visits, mean (SD)	0.14 (0.51)	0.40 (0.87)	0.29 (0.75)	0.36 (0.83)
Other Inpatient Stays (Incl Transfers), mean (SD)	0.02 (0.14)	0.05 (0.26)	0.03 (0.22)	0.04 (0.25)
Other Procedures Events, mean (SD)	6.15 (14.99)	9.21 (18.61)	9.41 (19.24)	9.11 (18.64)
Other Part B Carrier Events, mean (SD)	1.63 (8.39)	3.00 (11.69)	2.56 (10.88)	2.83 (11.47)
MD Office Part B Events, mean (SD)	7.41 (7.81)	10.88 (9.65)	10.63 (9.43)	10.63 (9.52)
Part B Drug Events, mean (SD)	2.75 (6.50)	3.91 (8.17)	3.69 (7.73)	3.81 (7.99)
Part D Events, mean (SD)	19.09 (28.85)	31.61 (39.03)	26.86 (35.76)	29.85 (37.99)
Hospital Readmissions, mean (SD)	0.03 (0.25)	0.09 (0.44)	0.06 (0.37)	0.08 (0.42)
Skilled Nursing Facility Stays, mean (SD)	0.04 (0.27)	0.15 (0.49)	0.11 (0.41)	0.14 (0.47)
Tests Events, mean (SD)	13.07 (18.67)	18.62 (23.41)	17.66 (22.42)	18.13 (23.04)
<u>Assistive Devices and Equipment</u>				
Diabetic Footwear, No (%)	2,290 (0.0%)	179 (0.0%)	472 (0.0%)	213 (0.0%)
Walking Aids, No (%)	560 (0.0%)	31 (0.0%)	148 (0.0%)	47 (0.0%)
Hospital Beds, No (%)	15 (0.0%)	2 (0.0%)	2 (0.0%)	2 (0.0%)
Wheelchair, No (%)	33 (0.0%)	5 (0.0%)	8 (0.0%)	5 (0.0%)
<u>Clinical Conditions</u>				
ESRD, (%)	0.6%	1.6%	1.1%	1.4%
Abnormal Gait, (%)	5.9%	18.4%	12.8%	16.5%
Orthostatic Hypotension, (%)	0.8%	2.5%	1.7%	2.2%

Sarcopenia, (%)	0.5%	1.3%	1.1%	1.2%
Weight Loss, (%)	1.8%	4.2%	3.1%	3.8%
Weight Gain, (%)	0.3%	0.5%	0.4%	0.5%
Underweight, (%)	0.1%	0.2%	0.1%	0.2%
Overweight, (%)	0.3%	0.5%	0.4%	0.5%
Parkinson, (%)	1.2%	3.7%	2.4%	3.3%
Incontinence, (%)	3.7%	8.6%	6.7%	8.0%
Dizziness Vertigo, (%)	6.7%	13.0%	11.0%	12.2%
Cognitive Impairment, (%)	1.0%	3.2%	2.1%	2.8%
Restless Leg Syndrome, (%)	0.8%	2.0%	1.6%	1.9%
Movement Disorders, (%)	1.3%	3.2%	2.3%	3.0%
Melanoma, (%)	1.5%	2.2%	1.8%	2.1%
Bladder Cancer, (%)	1.1%	1.4%	1.3%	1.4%
Kidney Cancer, (%)	0.5%	0.8%	0.7%	0.7%
Pancreatic Cancer, (%)	0.1%	0.2%	0.2%	0.2%
Other Cancer, (%)	9.9%	13.5%	12.9%	13.2%
Alzheimer's Disease, (%)	3.0%	9.4%	5.9%	8.3%
Alzheimer's Disease & Related Disorders or Senile Dementia, (%)	7.7%	22.9%	14.7%	20.5%
Acute Myocardial Infarction, (%)	0.7%	1.4%	1.1%	1.3%
Anemia, (%)	20.1%	36.5%	30.8%	34.5%
Asthma, (%)	4.6%	7.9%	7.0%	7.5%
Atrial Fibrillation, (%)	8.2%	17.0%	13.4%	15.6%
Breast Cancer, (%)	3.2%	4.5%	4.3%	4.5%
Colorectal Cancer, (%)	1.2%	1.8%	1.5%	1.7%
Endometrial Cancer, (%)	0.3%	0.4%	0.4%	0.4%
Lung Cancer, (%)	0.8%	1.4%	1.1%	1.3%
Prostate Cancer, (%)	3.4%	3.7%	3.6%	3.7%

Cataract, (%)	20.4%	20.1%	22.4%	20.7%
Heart Failure, (%)	12.1%	26.6%	20.1%	24.3%
Chronic Kidney Disease, (%)	15.5%	29.1%	22.0%	26.7%
Chronic Obstructive Pulmonary Disease, (%)	9.7%	18.8%	15.2%	17.5%
Depression, (%)	11.4%	25.1%	19.7%	23.4%
Diabetes, (%)	25.5%	33.7%	30.7%	32.4%
Glaucoma, (%)	10.4%	11.9%	12.1%	11.8%
Hip/Pelvic Fracture, (%)	0.6%	2.3%	2.0%	2.3%
Hyperlipidemia, (%)	47.2%	55.4%	54.9%	54.7%
Benign Prostatic Hyperplasia, (%)	6.7%	8.0%	7.6%	7.8%
Hypertension, (%)	56.2%	74.1%	68.4%	71.7%
Hypothyroidism, (%)	14.3%	22.2%	19.8%	21.4%
Ischemic Heart Disease, (%)	27.5%	43.4%	38.1%	41.3%
Osteoporosis, (%)	6.6%	13.1%	11.5%	12.6%
Rheumatoid Arthritis / Osteoarthritis, (%)	29.5%	46.9%	44.2%	45.5%
Stroke / Transient Ischemic Attack, (%)	3.2%	7.6%	5.6%	6.9%
ADHD & Other Conduct Disorders, (%)	0.2%	0.5%	0.4%	0.4%
Anxiety Disorders, (%)	9.1%	18.8%	14.8%	17.4%
Autism Spectrum Disorders, (%)	0.0%	0.0%	0.0%	0.0%
Bipolar Disorder, (%)	1.1%	2.7%	2.0%	2.5%
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, (%)	0.3%	0.8%	0.6%	0.7%
Cerebral Palsy, (%)	0.1%	0.1%	0.1%	0.1%
Cystic Fibrosis & other Metabolic Developmental Disorders, (%)	0.5%	0.8%	0.6%	0.7%
Depression, (%)	10.5%	24.1%	18.6%	22.4%
Epilepsy, (%)	1.2%	3.1%	2.2%	2.9%
Chronic Pain Fatigue & Fibromyalgia, (%)	10.2%	18.8%	16.0%	17.6%

Deafness & Hearing Impairment, (%)	4.4%	7.8%	6.5%	7.3%
Viral Hepatitis (General), (%)	0.6%	0.9%	0.8%	0.9%
HIV/AIDS, (%)	0.1%	0.1%	0.1%	0.1%
Intellectual Disabilities & Related Conditions, (%)	0.2%	0.5%	0.4%	0.4%
Learning Disabilities, (%)	0.0%	0.1%	0.1%	0.1%
Leukemias & Lymphomas, (%)	1.4%	2.0%	1.8%	2.0%
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), (%)	2.7%	4.4%	3.8%	4.2%
Migraine & Other Chronic Headache, (%)	1.4%	2.4%	2.2%	2.3%
Mobility Impairments, (%)	1.5%	3.9%	2.7%	3.5%
Multiple Sclerosis & Transverse Myelitis, (%)	0.3%	0.4%	0.4%	0.4%
Muscular Dystrophy, (%)	0.0%	0.0%	0.0%	0.0%
Obesity, (%)	8.9%	12.3%	10.7%	11.6%
Other Developmental Delays, (%)	0.0%	0.1%	0.0%	0.1%
Personality Disorders, (%)	0.3%	0.8%	0.5%	0.7%
Post-Traumatic Stress Disorder, (%)	0.3%	0.5%	0.4%	0.5%
Peripheral Vascular Disease, (%)	10.2%	21.1%	16.5%	19.4%
Schizophrenia, (%)	0.4%	0.9%	0.6%	0.8%
Schizophrenia & Other Psychotic Disorders, (%)	1.3%	4.0%	2.7%	3.6%
Spina Bifida & Other Congenital Anomalies Nervous Sys, (%)	0.1%	0.2%	0.1%	0.2%
Spinal Cord Injury, (%)	0.2%	0.8%	0.6%	0.8%
Tobacco Use Disorders, (%)	4.7%	7.1%	6.0%	6.8%
Pressure Ulcers & Chronic Ulcers, (%)	3.1%	8.0%	6.0%	7.3%
Blindness & Visual Impairment, (%)	0.6%	1.7%	1.2%	1.6%
Fall History (ECO Method) (previous year), (%)	4.2%	17.6%	12.2%	16.1%
Fall History (ECDC Method) (previous year), (%)	11.7%	28.3%	27.9%	27.8%
Fall History (AUR Method) (previous year), (%)	5.4%	19.3%	14.9%	18.5%

Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	4.63 (3.89)	7.75 (4.67)	6.60 (4.42)	7.33 (4.65)
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* This column includes the entire sample of 10,676,150 beneficiaries that were used in the main logistic regression models.

** This column includes the 548,193 beneficiaries who experienced a fall at some point during the study period when using the ECO fall identification algorithm.

‡ This column includes the 1,293,492 beneficiaries who experienced a fall at some point during the study period when using the ECDC fall identification algorithm.

† This column includes the 666,160 beneficiaries who experienced a fall at some point during the study period when using the AUR fall identification algorithm.

Table 2: Regression Model Goodness-of-fit Statistics

	Fall E-Codes All Settings (N=10,676,150)	Fall ECDC All Settings (N=10,676,150)	Fall AUR All Settings (N=10,676,150)
McFadden's Pseudo R ²	0.123	0.080	0.101
Cragg & Uhler's Pseudo R ²	0.145	0.110	0.124
Efron's Pseudo R ²	0.062	0.068	0.059
McKelvey & Zavoina Pseudo R ²	0.188	0.123	0.156
Akaike Information Criterion (AIC)	0.355	0.679	0.420
Bayesian Information Criterion (BIC)	-1.690e ⁸	-1.655e ⁸	-1.683e ⁸
Area Under ROC Curve (AUC)	0.7757	0.7057	0.7444

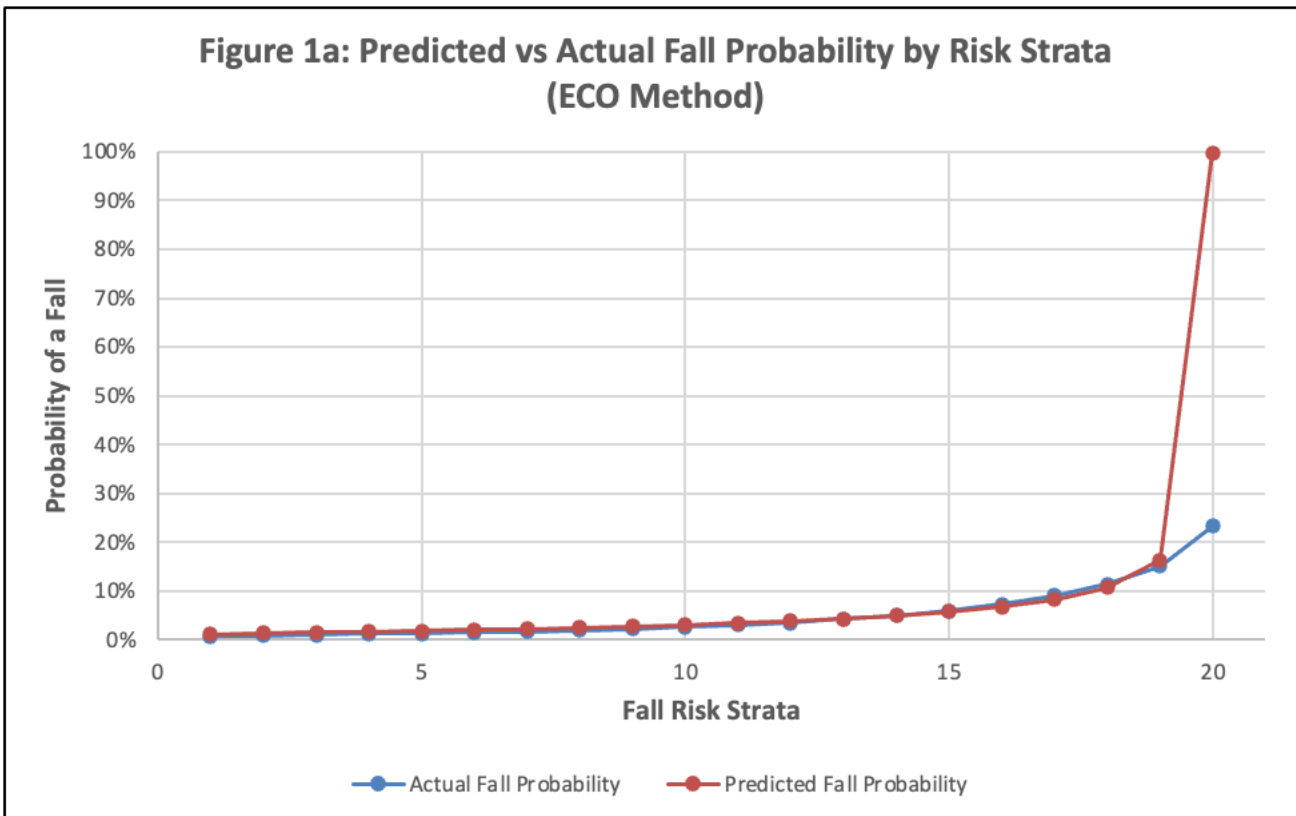


Figure 1b: Predicted vs Actual Fall Probability by Risk Strata (ECDC Method)

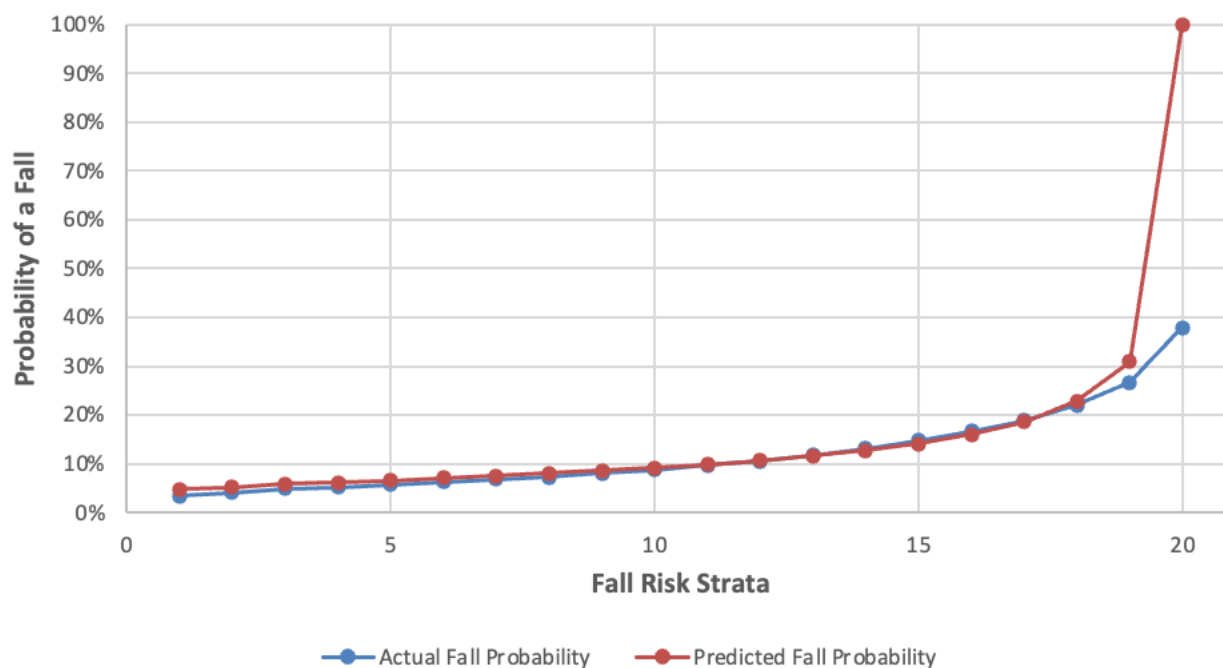


Figure 1c: Predicted vs Actual Fall Probability by Risk Strata (AUR Method)

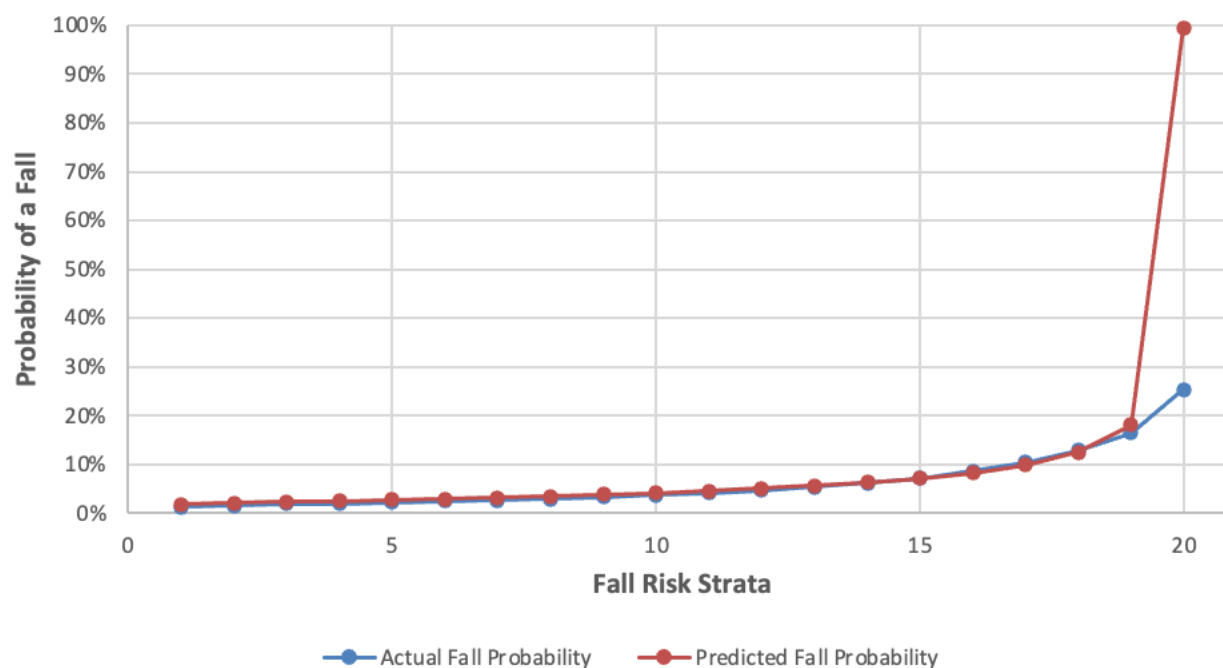


Table 3: Logistic Regression Model Results†

	Fall E-Codes All Settings (N=10,676,150)		Fall ECDC All Settings (N=10,676,150)		Fall AUR All Settings (N=10,676,150)	
	Odds Ratio (95% CI)	P- Value	Odds Ratio (95% CI)	P- Value	Odds Ratio (95% CI)	P- Value
Age	1.06 (1.06 to 1.06)	0.000	1.02 (1.02 to 1.02)	0.000	1.05 (1.05 to 1.05)	0.000
Race						
Unknown	1 [Reference]		1 [Reference]		1 [Reference]	
Non-Hispanic White	1.24 (1.18 to 1.29)	0.000	1.26 (1.23 to 1.29)	0.000	1.20 (1.16 to 1.25)	0.000
Black (Or African American)	0.87 (0.83 to 0.91)	0.000	0.93 (0.91 to 0.96)	0.000	0.80 (0.77 to 0.83)	0.000
Hispanic	0.97 (0.93 to 1.02)	0.197	1.05 (1.03 to 1.08)	0.000	0.95 (0.91 to 0.99)	0.011
Asian / Pacific Islander	0.74 (0.71 to 0.78)	0.000	0.84 (0.81 to 0.86)	0.000	0.74 (0.71 to 0.77)	0.000
American Indian / Alaska Native	1.51 (1.42 to 1.60)	0.000	1.53 (1.47 to 1.59)	0.000	1.42 (1.35 to 1.50)	0.000
Other	0.90 (0.85 to 0.96)	0.001	0.97 (0.94 to 1.00)	0.091	0.88 (0.84 to 0.93)	0.000
Sex						
Male	1 [Reference]		1 [Reference]		1 [Reference]	
Female	1.29 (1.28 to 1.30)	0.000	1.28 (1.27 to 1.28)	0.000	1.29 (1.28 to 1.30)	0.000
ESRD	1.45 (1.38 to 1.52)	0.000	1.23 (1.18 to 1.27)	0.000	1.43 (1.37 to 1.50)	0.000
Diabetic Footwear	1.00 (0.85 to 1.17)	0.972	1.25 (1.12 to 1.39)	0.000	1.03 (0.89 to 1.19)	0.729
Walking Aids	1.10 (0.76 to 1.59)	0.616	1.49 (1.23 to 1.81)	0.000	1.21 (0.89 to 1.65)	0.219
Abnormal Gait	1.28 (1.27 to 1.30)	0.000	1.12 (1.11 to 1.13)	0.000	1.24 (1.23 to 1.25)	0.000
Orthostatic Hypotension	1.17 (1.15 to 1.20)	0.000	1.08 (1.06 to 1.09)	0.000	1.15 (1.13 to 1.17)	0.000
Sarcopenia	0.98 (0.96 to 1.01)	0.206	1.11 (1.09 to 1.14)	0.000	1.02 (0.99 to 1.04)	0.248
Weight Loss	1.20 (1.19 to 1.22)	0.000	1.09 (1.07 to 1.10)	0.000	1.17 (1.15 to 1.19)	0.000
Weight Gain	1.05 (1.01 to 1.10)	0.019	1.08 (1.05 to 1.12)	0.000	1.07 (1.03 to 1.11)	0.001
Underweight	1.24 (1.16 to 1.32)	0.000	1.05 (0.99 to 1.11)	0.079	1.19 (1.12 to 1.27)	0.000

Overweight	0.99 (0.95 to 1.03)	0.641	0.94 (0.91 to 0.97)	0.000	0.97 (0.93 to 1.01)	0.089
Parkinson	1.59 (1.56 to 1.61)	0.000	1.31 (1.29 to 1.33)	0.000	1.52 (1.49 to 1.54)	0.000
Incontinence	1.11 (1.10 to 1.13)	0.000	1.09 (1.08 to 1.10)	0.000	1.11 (1.10 to 1.12)	0.000
Dizziness & Vertigo	1.13 (1.12 to 1.14)	0.000	1.10 (1.09 to 1.11)	0.000	1.11 (1.10 to 1.12)	0.000
Cognitive Impairment	1.05 (1.03 to 1.07)	0.000	0.99 (0.97 to 1.00)	0.065	1.03 (1.01 to 1.05)	0.001
Restless Leg Syndrome	1.15 (1.12 to 1.17)	0.000	1.14 (1.12 to 1.16)	0.000	1.14 (1.11 to 1.16)	0.000
Movement Disorders	1.19 (1.17 to 1.21)	0.000	1.08 (1.06 to 1.09)	0.000	1.16 (1.14 to 1.18)	0.000
Melanoma	1.08 (1.06 to 1.10)	0.000	0.92 (0.91 to 0.93)	0.000	1.04 (1.02 to 1.06)	0.000
Bladder Cancer	0.95 (0.93 to 0.98)	0.000	0.95 (0.93 to 0.97)	0.000	0.95 (0.93 to 0.98)	0.000
Kidney Cancer	0.97 (0.94 to 1.00)	0.067	1.00 (0.97 to 1.02)	0.704	0.97 (0.94 to 1.00)	0.076
Pancreatic Cancer	0.98 (0.92 to 1.04)	0.529	0.83 (0.79 to 0.87)	0.000	0.94 (0.89 to 1.00)	0.050
Other Cancer	1.00 (0.99 to 1.01)	0.548	1.03 (1.03 to 1.04)	0.000	1.01 (1.00 to 1.02)	0.012
Alzheimer's Disease	1.09 (1.08 to 1.11)	0.000	1.06 (1.05 to 1.07)	0.000	1.09 (1.07 to 1.10)	0.000
Alzheimer's Disease & Related Disorders or Senile Dementia	1.45 (1.43 to 1.46)	0.000	1.25 (1.24 to 1.26)	0.000	1.41 (1.40 to 1.42)	0.000
Acute Myocardial Infarction	0.98 (0.96 to 1.01)	0.149	0.93 (0.91 to 0.94)	0.000	0.96 (0.94 to 0.99)	0.002
Anemia	1.10 (1.09 to 1.11)	0.000	1.08 (1.08 to 1.09)	0.000	1.10 (1.09 to 1.10)	0.000
Asthma	1.02 (1.00 to 1.03)	0.006	1.01 (1.00 to 1.02)	0.085	1.01 (1.00 to 1.02)	0.195
Atrial Fibrillation	1.19 (1.18 to 1.20)	0.000	1.11 (1.10 to 1.12)	0.000	1.15 (1.14 to 1.16)	0.000
Breast Cancer	0.96 (0.94 to 0.97)	0.000	0.93 (0.92 to 0.94)	0.000	0.96 (0.95 to 0.97)	0.000
Colorectal Cancer	0.95 (0.93 to 0.97)	0.000	0.92 (0.90 to 0.93)	0.000	0.94 (0.92 to 0.96)	0.000
Endometrial Cancer	0.91 (0.87 to 0.95)	0.000	0.88 (0.85 to 0.91)	0.000	0.88 (0.85 to 0.92)	0.000
Lung Cancer	1.00 (0.98 to 1.03)	0.865	0.87 (0.85 to 0.88)	0.000	0.97 (0.95 to 0.99)	0.008
Prostate Cancer	1.01 (0.99 to 1.03)	0.210	1.00 (0.99 to 1.01)	0.987	1.02 (1.00 to 1.03)	0.009
Cataract	0.93 (0.93 to 0.94)	0.000	1.01 (1.01 to 1.02)	0.000	0.95 (0.95 to 0.96)	0.000
Heart Failure	1.10 (1.09 to 1.11)	0.000	1.06 (1.05 to 1.06)	0.000	1.09 (1.08 to 1.10)	0.000

Chronic Kidney Disease	1.12 (1.11 to 1.13)	0.000	0.96 (0.96 to 0.97)	0.000	1.08 (1.07 to 1.09)	0.000
Chronic Obstructive Pulmonary Disease	1.11 (1.10 to 1.12)	0.000	1.06 (1.05 to 1.06)	0.000	1.10 (1.09 to 1.11)	0.000
Depression	1.23 (1.21 to 1.24)	0.000	1.13 (1.12 to 1.14)	0.000	1.20 (1.19 to 1.21)	0.000
Diabetes	1.14 (1.13 to 1.15)	0.000	1.07 (1.07 to 1.08)	0.000	1.11 (1.11 to 1.12)	0.000
Glaucoma	0.96 (0.95 to 0.96)	0.000	1.01 (1.01 to 1.02)	0.000	0.97 (0.96 to 0.97)	0.000
Hip/Pelvic Fracture	0.81 (0.79 to 0.83)	0.000	1.28 (1.26 to 1.31)	0.000	0.87 (0.85 to 0.89)	0.000
Hyperlipidemia	0.87 (0.87 to 0.88)	0.000	0.95 (0.94 to 0.95)	0.000	0.89 (0.89 to 0.90)	0.000
Benign Prostatic Hyperplasia	0.97 (0.96 to 0.98)	0.000	1.00 (0.99 to 1.00)	0.415	0.98 (0.97 to 0.99)	0.000
Hypertension	1.12 (1.11 to 1.13)	0.000	1.06 (1.05 to 1.06)	0.000	1.08 (1.08 to 1.09)	0.000
Hypothyroidism	1.01 (1.00 to 1.02)	0.019	1.00 (1.00 to 1.01)	0.066	1.01 (1.00 to 1.01)	0.028
Ischemic Heart Disease	1.11 (1.11 to 1.12)	0.000	1.12 (1.12 to 1.13)	0.000	1.10 (1.10 to 1.11)	0.000
Osteoporosis	1.12 (1.11 to 1.13)	0.000	1.12 (1.12 to 1.13)	0.000	1.12 (1.11 to 1.13)	0.000
Rheumatoid Arthritis / Osteoarthritis	1.15 (1.15 to 1.16)	0.000	1.22 (1.22 to 1.23)	0.000	1.16 (1.16 to 1.17)	0.000
Stroke / Transient Ischemic Attack	1.12 (1.10 to 1.13)	0.000	1.05 (1.04 to 1.06)	0.000	1.10 (1.08 to 1.11)	0.000
ADHD & Other Conduct Disorders	1.12 (1.07 to 1.17)	0.000	1.07 (1.03 to 1.11)	0.000	1.11 (1.06 to 1.15)	0.000
Anxiety Disorders	1.14 (1.13 to 1.15)	0.000	1.04 (1.03 to 1.04)	0.000	1.10 (1.10 to 1.11)	0.000
Autism Spectrum Disorders	1.24 (1.05 to 1.47)	0.012	1.08 (0.94 to 1.23)	0.287	1.15 (0.98 to 1.35)	0.096
Bipolar Disorder	1.25 (1.22 to 1.27)	0.000	1.14 (1.13 to 1.16)	0.000	1.21 (1.19 to 1.24)	0.000
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage	1.14 (1.10 to 1.18)	0.000	1.14 (1.11 to 1.18)	0.000	1.12 (1.09 to 1.16)	0.000
Cerebral Palsy	1.34 (1.23 to 1.46)	0.000	1.13 (1.05 to 1.20)	0.000	1.28 (1.18 to 1.39)	0.000
Cystic Fibrosis & other Metabolic Developmental Disorders	0.99 (0.96 to 1.02)	0.506	0.95 (0.93 to 0.98)	0.000	0.98 (0.95 to 1.01)	0.156
Depression	1.18 (1.17 to 1.19)	0.000	1.12 (1.11 to 1.13)	0.000	1.17 (1.16 to 1.18)	0.000
Epilepsy	1.40 (1.37 to 1.42)	0.000	1.24 (1.22 to 1.26)	0.000	1.36 (1.34 to 1.38)	0.000
Chronic Pain, Fatigue & Fibromyalgia	1.21 (1.20 to 1.22)	0.000	1.07 (1.06 to 1.08)	0.000	1.16 (1.15 to 1.17)	0.000
Deafness & Hearing Impairment	0.99 (0.98 to 1.00)	0.025	1.00 (0.99 to 1.01)	0.454	0.99 (0.98 to 1.00)	0.238

Viral Hepatitis (General)	1.27 (1.23 to 1.31)	0.000	1.14 (1.11 to 1.17)	0.000	1.24 (1.20 to 1.27)	0.000
HIV/AIDS	1.43 (1.31 to 1.56)	0.000	1.20 (1.12 to 1.27)	0.000	1.36 (1.25 to 1.47)	0.000
Intellectual Disabilities & Related Conditions	1.82 (1.73 to 1.91)	0.000	1.49 (1.44 to 1.55)	0.000	1.69 (1.61 to 1.77)	0.000
Learning Disabilities	1.14 (1.05 to 1.24)	0.003	0.99 (0.92 to 1.06)	0.710	1.10 (1.01 to 1.19)	0.030
Leukemias & Lymphomas	1.08 (1.06 to 1.11)	0.000	0.97 (0.96 to 0.99)	0.000	1.05 (1.03 to 1.07)	0.000
Liver Disease, Cirrhosis & Other Liver Conditions (Excluding Hepatitis)	1.14 (1.12 to 1.15)	0.000	1.03 (1.02 to 1.04)	0.000	1.11 (1.09 to 1.12)	0.000
Migraine & Other Chronic Headaches	1.14 (1.12 to 1.16)	0.000	1.06 (1.05 to 1.08)	0.000	1.10 (1.08 to 1.12)	0.000
Mobility Impairments	1.09 (1.07 to 1.11)	0.000	1.02 (1.01 to 1.04)	0.001	1.09 (1.07 to 1.11)	0.000
Multiple Sclerosis & Transverse Myelitis	1.44 (1.38 to 1.51)	0.000	1.16 (1.12 to 1.20)	0.000	1.34 (1.29 to 1.40)	0.000
Muscular Dystrophy	1.38 (1.20 to 1.59)	0.000	1.12 (1.00 to 1.24)	0.043	1.25 (1.10 to 1.43)	0.001
Obesity	1.06 (1.05 to 1.07)	0.000	0.90 (0.90 to 0.91)	0.000	1.00 (0.99 to 1.01)	0.952
Other Developmental Delays	1.13 (0.99 to 1.30)	0.063	1.11 (1.00 to 1.24)	0.050	1.12 (0.99 to 1.27)	0.079
Personality Disorders	1.13 (1.09 to 1.17)	0.000	0.90 (0.88 to 0.93)	0.000	1.07 (1.04 to 1.11)	0.000
Post-Traumatic Stress Disorder	1.18 (1.13 to 1.23)	0.000	1.13 (1.10 to 1.17)	0.000	1.16 (1.11 to 1.21)	0.000
Peripheral Vascular Disease	1.09 (1.08 to 1.10)	0.000	1.06 (1.05 to 1.07)	0.000	1.08 (1.07 to 1.08)	0.000
Schizophrenia	1.21 (1.16 to 1.26)	0.000	1.08 (1.05 to 1.11)	0.000	1.15 (1.11 to 1.19)	0.000
Schizophrenia & Other Psychotic Disorders	1.07 (1.05 to 1.09)	0.000	1.06 (1.05 to 1.08)	0.000	1.08 (1.06 to 1.10)	0.000
Spina Bifida & Other Congenital Anomalies of the Nervous System	1.24 (1.15 to 1.33)	0.000	1.15 (1.09 to 1.22)	0.000	1.22 (1.13 to 1.31)	0.000
Spinal Cord Injury	1.15 (1.11 to 1.19)	0.000	1.12 (1.09 to 1.15)	0.000	1.12 (1.08 to 1.16)	0.000
Tobacco Use Disorders	1.32 (1.30 to 1.34)	0.000	1.08 (1.07 to 1.09)	0.000	1.24 (1.23 to 1.26)	0.000
Pressure Ulcers & Chronic Ulcers	1.05 (1.04 to 1.07)	0.000	1.05 (1.04 to 1.06)	0.000	1.05 (1.04 to 1.07)	0.000
Blindness & Visual Impairment	1.05 (1.02 to 1.07)	0.000	1.08 (1.06 to 1.10)	0.000	1.06 (1.03 to 1.08)	0.000
Acute Inpatient Stays	1.08 (1.08 to 1.09)	0.000	1.03 (1.02 to 1.03)	0.000	1.05 (1.05 to 1.06)	0.000
Anesthesia Events	1.00 (0.99 to 1.00)	0.045	0.99 (0.99 to 0.99)	0.000	0.99 (0.99 to 1.00)	0.000
Ambulatory Surgery Center Events	1.00 (1.00 to 1.01)	0.113	1.01 (1.01 to 1.02)	0.000	1.01 (1.00 to 1.01)	0.000

Dialysis Events	0.99 (0.98 to 0.99)	0.000	0.99 (0.99 to 0.99)	0.000	0.99 (0.99 to 0.99)	0.000
Durable Medical Equipment Events	1.00 (1.00 to 1.00)	0.024	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.003
Evaluation & Management Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Home Health Visits	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Hospital Outpatient Visits	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Hospice Stays	0.46 (0.45 to 0.47)	0.000	0.46 (0.45 to 0.47)	0.000	0.47 (0.46 to 0.48)	0.000
Imaging Events	1.01 (1.01 to 1.01)	0.000	1.01 (1.01 to 1.01)	0.000	1.01 (1.01 to 1.01)	0.000
Inpatient Emergency Room Visits	1.00 (1.00 to 1.01)	0.244	1.02 (1.02 to 1.03)	0.000	1.02 (1.01 to 1.03)	0.000
Other Inpatient Stays (Including Transfers)	1.00 (0.99 to 1.02)	0.791	1.01 (1.00 to 1.03)	0.021	1.00 (0.98 to 1.01)	0.793
Other Procedures Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.007
Other Part B Carrier Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.003	1.00 (1.00 to 1.00)	0.000
MD Office Part B Events	1.01 (1.01 to 1.01)	0.000	1.02 (1.02 to 1.02)	0.000	1.01 (1.01 to 1.01)	0.000
Part B Drug Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Part D Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Hospital Readmissions	0.90 (0.89 to 0.91)	0.000	0.93 (0.92 to 0.94)	0.000	0.91 (0.90 to 0.92)	0.000
Skilled Nursing Facility Stays	0.87 (0.86 to 0.87)	0.000	0.92 (0.92 to 0.93)	0.000	0.89 (0.88 to 0.89)	0.000
Tests Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Fall History (fall in the previous calendar year)	2.19 (2.17 to 2.21)	0.000	2.27 (2.26 to 2.28)	0.000	2.18 (2.16 to 2.20)	0.000

†All predictors are from the previous calendar year.

CHAPTER 1 – APPENDIX

Appendix Table 1: ICD-9 and ICD-10 Codes used for Fall Algorithms

Method	ICD-9 Codes	ICD-10 Codes
ECO E-Code Only	E880.0, E880.1, E880.9, E881.0, E881.1, E882, E884.0, E884.1, E884.2, E884.3, E884.4, E884.5, E884.6, E884.9, E885.0, E885.1, E885.2, E885.3, E885.4, E885.9, E888.0, E888.1, E888.8, E888.9 ➔ Flag as fall if diagnosis code occurs anywhere in the claim (primary, secondary, etc.)	V00.111A, V00.121A, V00.131A, V00.141A, V00.151A, V00.181A, V00.211A, V00.221A, V00.281A, V00.311A, V00.321A, V00.381A, V00.811A, V00.821A, V00.831A, V00.841A, V00.891A, V93.31XA, W00.0XXA, W00.1XXA, W00.2XXA, W00.9XXA, W01.0XXA, W01.10XA, W01.110A, W01.111A, W01.118A, W01.119A, W01.190A, W01.198A, W05.0XXA, W05.1XXA, W05.2XXA, W06.XXXA, W07.XXXA, W08.XXXA, W09.0XXA, W09.1XXA, W09.2XXA, W09.8XXA, W10.0XXA, W10.1XXA, W10.2XXA, W10.8XXA, W10.9XXA, W11.XXXA, W12.XXXA, W13.0XXA, W13.1XXA, W13.2XXA, W13.3XXA, W13.4XXA, W13.8XXA, W13.9XXA, W14.XXXA, W15.XXXA, W17.4XXA, W17.81XA, W17.82XA, W17.89XA, W18.00XA, W18.01XA, W18.02XA, W18.09XA, W18.11XA, W18.12XA, W18.2XXA, W18.30XA, W18.31XA, W18.39XA, W19.XXXA ➔ Flag as fall if diagnosis code occurs anywhere in the claim (primary, secondary, etc.)
ECDC E-Code & Broad Diagnostic Code	- E880.0, E880.1, E880.9, E881.0, E881.1, E882, E884.0, E884.1, E884.2, E884.3, E884.4, E884.5, E884.6, E884.9, E885.0, E885.1, E885.2, E885.3, E885.4, E885.9, E888.0, E888.1, E888.8, E888.9 800, 8000, 80000, 80001, 80002, 80003, 80004, 80005, 80006, 80009, 8001, 80010, 80011, 80012, 80013, 80014, 80015, 80016, 80019, 8002, 80020, 80021, 80022, 80023, 80024, 80025, 80026, 80029, 8003, 80030, 80031, 80032, 80033, 80034, 80035, 80036, 80039, 8004, 80040, 80041, 80042, 80043, 80044, 80045, 80046, 80049, 8005, 80050, 80051, 80052, 80053, 80054, 80055, 80056, 80059, 8006, 80060, 80061, 80062, 80063, 80064, 80065, 80066, 80069, 8007, 80070, 80071, 80072, 80073, 80074, 80075, 80076, 80079, 8008, 80080, 80081, 80082, 80083, 80084, 80085, 80086, 80089, 8009, 80090, 80091, 80092, 80093, 80094, 80095, 80096,	- V00.111A, V00.121A, V00.131A, V00.141A, V00.151A, V00.181A, V00.211A, V00.221A, V00.281A, V00.311A, V00.321A, V00.381A, V00.811A, V00.821A, V00.831A, V00.841A, V00.891A, V93.31XA, W00.0XXA, W00.1XXA, W00.2XXA, W00.9XXA, W01.0XXA, W01.10XA, W01.110A, W01.111A, W01.118A, W01.119A, W01.190A, W01.198A, W05.0XXA, W05.1XXA, W05.2XXA, W06.XXXA, W07.XXXA, W08.XXXA, W09.0XXA, W09.1XXA, W09.2XXA, W09.8XXA, W10.0XXA, W10.1XXA, W10.2XXA, W10.8XXA, W10.9XXA, W11.XXXA, W12.XXXA, W13.0XXA, W13.1XXA, W13.2XXA, W13.3XXA, W13.4XXA, W13.8XXA, W13.9XXA, W14.XXXA, W15.XXXA, W17.4XXA, W17.81XA, W17.82XA, W17.89XA, W18.00XA, W18.01XA, W18.02XA, W18.09XA, W18.11XA, W18.12XA, W18.2XXA, W18.30XA, W18.31XA, W18.39XA, W19.XXXA - S12000A, S12000B, S12001A, S12001B, S1201XA, S1201XB, S1202XA, S1202XB, S12030A, S12030B, S12031A, S12031B, S12040A, S12040B, S12041A, S12041B, S12090A, S12090B, S12091A, S12091B, S12100A, S12100B, S12101A, S12101B, S12110A, S12110B, S12111A, S12111B, S12112A, S12112B, S12120A, S12120B, S12121A, S12121B, S12130A, S12130B, S12131A, S12131B, S1214XA, S1214XB,

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		S90129A, S90211A, S90212A, S90219A, S90221A, S90222A, S90229A, S9030XA, S9031XA, S9032XA ➔ Flag as fall if diagnosis code occurs anywhere in the claim (primary, secondary, etc.)
AUR Adapted UCLA/RAND	E880.0, E880.1, E880.9, E881.0, E881.1, E882, E884.0, E884.1, E884.2, E884.3, E884.4, E884.5, E884.6, E884.9, E885.0, E885.1, E885.2, E885.3, E885.4, E885.9, E888.0, E888.1, E888.8, E888.9 ➔ Flag as fall if diagnosis code occurs anywhere in the claim (primary, secondary, etc.) *For inpatient setting, only use ICD-9 codes. For outpatient setting, at least one of the ICD-9 codes must be paired with at least one of the procedure codes: <u>Hip Fractures</u> ICD-9 CODES = 820, 8200, 82000, 82001, 82002, 82003, 82009, 8201, 82010, 82011, 82012, 82013, 82019, 8202, 82020, 82021, 82022, 8203, 82030, 82031, 82032, 8208, 8209 PROCEDURE CODES = 27230, 27231, 27232, 27233, 27234, 27235, 27236, 27237, 27238, 27239, 27240, 27241, 27242, 27243, 27244, 27245, 27246, 27247, 27248 <u>Other Fractures – Pelvis</u> ICD-9 CODES = 808, 8080, 8081, 8082, 8083, 8084, 80841, 80842, 80843, 80844, 80849, 8085, 80851, 80852, 80853, 80854, 80859, 8088, 8089 PROCEDURE CODES = 27193, 27194, 27215, 27216, 27217, 27218, 27219, 27220, 27221, 27222, 27223, 27224, 27225, 27226, 27227, 27228 <u>Other Fractures – Rib</u>	V00.111A, V00.121A, V00.131A, V00.141A, V00.151A, V00.181A, V00.211A, V00.221A, V00.281A, V00.311A, V00.321A, V00.381A, V00.811A, V00.821A, V00.831A, V00.841A, V00.891A, V93.31XA, W00.0XXA, W00.1XXA, W00.2XXA, W00.9XXA, W01.0XXA, W01.10XA, W01.110A, W01.111A, W01.118A, W01.119A, W01.190A, W01.198A, W05.0XXA, W05.1XXA, W05.2XXA, W06.XXXA, W07.XXXA, W08.XXXA, W09.0XXA, W09.1XXA, W09.2XXA, W09.8XXA, W10.0XXA, W10.1XXA, W10.2XXA, W10.8XXA, W10.9XXA, W11.XXXA, W12.XXXA, W13.0XXA, W13.1XXA, W13.2XXA, W13.3XXA, W13.4XXA, W13.8XXA, W13.9XXA, W14.XXXA, W15.XXXA, W17.4XXA, W17.81XA, W17.82XA, W17.89XA, W18.00XA, W18.01XA, W18.02XA, W18.09XA, W18.11XA, W18.12XA, W18.2XXA, W18.30XA, W18.31XA, W18.39XA, W19.XXXA ➔ Flag as fall if diagnosis code occurs anywhere in the claim (primary, secondary, etc.) *For inpatient setting, only use ICD-10 codes. For outpatient setting, at least one of the ICD-10 codes must be paired with at least one of the procedure codes: <u>Hip Fractures</u> ICD-10 CODES = S72001A, S72001B, S72001C, S72002A, S72002B, S72002C, S72009A, S72009B, S72009C, S72011A, S72011B, S72011C, S72012A, S72012B, S72012C, S72019A, S72019B, S72019C, S72021A, S72021B, S72021C, S72022A, S72022B, S72022C, S72023A, S72023B, S72023C, S72024A, S72024B, S72024C, S72025A, S72025B, S72025C, S72026A, S72026B, S72026C, S72031A, S72031B, S72031C, S72032A, S72032B, S72032C, S72033A, S72033B, S72033C, S72034A, S72034B, S72034C, S72035A, S72035B, S72035C, S72036A, S72036B, S72036C, S72041A, S72041B, S72041C, S72042A, S72042B, S72042C, S72043A, S72043B, S72043C, S72044A, S72044B, S72044C, S72045A, S72045B, S72045C, S72046A, S72046B, S72046C, S72051A, S72051B, S72051C, S72052A, S72052B, S72052C, S72059A, S72059B, S72059C, S72061A, S72061B, S72061C, S72062A, S72062B, S72062C, S72063A, S72063B, S72063C, S72064A, S72064B, S72064C, S72065A, S72065B, S72065C, S72066A, S72066B, S72066C, S72091A, S72091B, S72091C, S72092A, S72092B, S72092C, S72099A, S72099B, S72099C, S72101A, S72101B, S72101C, S72102A,

	ICD-9 CODES = 807, 8070, 80700, 80701, 80702, 80703, 80704, 80705, 80706, 80707, 80708, 80709, 8071, 80710, 80711, 80712, 80713, 80714, 80715, 80716, 80717, 80718, 80719 PROCEDURE CODES = 21800, 21805, 21810, 71010, 71015, 71020, 71021, 71022, 71023, 71030, 71034, 71035, 71100, 71101, 71110, 71111, 71250, 71260, 71270, 71275, 71550, 71551, 71552, 71553, 71554, 71555 <u>Other Fractures – Clavicle</u> ICD-9 CODES = 810, 8100, 81000, 81001, 81002, 81003, 8101, 81010, 81011, 81012, 81013 PROCEDURE CODES = 23500, 23501, 23502, 23503, 23504, 23505, 23506, 23507, 23508, 23509, 23510, 23511, 23512, 23513, 23514, 23515, 71010, 71015, 71020, 71021, 71022, 71023, 71030, 71034, 71035, 71250, 71260, 71270, 71275, 71550, 71551, 71552, 71553, 71554, 71555, 73000, 73020, 73030, 73040 <u>Other Fractures – Humerus</u> ICD-9 CODES = 812, 8120, 81200, 81201, 81202, 81203, 81209, 8121, 81210, 81211, 81212, 81213, 81219, 8122, 81220, 81221, 8123, 81230, 81231, 8124, 81240, 81241, 81242, 81243, 81244, 81249, 8125, 81250, 81251, 81252, 81253, 81254, 81259 PROCEDURE CODES = 23600, 23601, 23602, 23603, 23604, 23605, 23606, 23607, 23608, 23609, 23610, 23611, 23612, 23613, 23614, 23615, 23616, 23617, 23618, 23619, 23620, 23621, 23622, 2362, 23624, 23625, 23626, 23627, 23628, 23629, 23630, 23665, 23666, 23667, 23668, 23669, 23670, 23671, 23672, 23673, 23674, 23675, 23676, 23677, 23678, 23679, 23680, 24500, 24501, 24502, 24503, 24504, 24505,	S72102B, S72102C, S72109A, S72109B, S72109C, S72111A, S72111B, S72111C, S72112A, S72112B, S72112C, S72113A, S72113B, S72113C, S72114A, S72114B, S72114C, S72115A, S72115B, S72115C, S72116A, S72116B, S72116C, S72121A, S72121B, S72121C, S72122A, S72122B, S72122C, S72123A, S72123B, S72123C, S72124A, S72124B, S72124C, S72125A, S72125B, S72125C, S72126A, S72126B, S72126C, S72131A, S72131B, S72131C, S72132A, S72132B, S72132C, S72133A, S72133B, S72133C, S72134A, S72134B, S72134C, S72135A, S72135B, S72135C, S72136A, S72136B, S72136C, S72141A, S72141B, S72141C, S72142A, S72142B, S72142C, S72143A, S72143B, S72143C, S72144A, S72144B, S72144C, S72145A, S72145B, S72145C, S72146A, S72146B, S72146C, S7221XA, S7221XB, S7221XC, S7222XA, S7222XB, S7222XC, S7223XA, S7223XB, S7223XC, S7224XA, S7224XB, S7224XC, S7225XA, S7225XB, S7225XC, S7226XA, S7226XB, S7226XC, S72301A, S72301B, S72301C, S72302A, S72302B, S72302C, S72309A, S72309B, S72309C, S72321A, S72321B, S72321C, S72322A, S72322B, S72322C, S72323A, S72323B, S72323C, S72324A, S72324B, S72324C, S72325A, S72325B, S72325C, S72326A, S72326B, S72326C, S72331A, S72331B, S72331C, S72332A, S72332B, S72332C, S72333A, S72333B, S72333C, S72334A, S72334B, S72334C, S72335A, S72335B, S72335C, S72336A, S72336B, S72336C, S72341A, S72341B, S72341C, S72342A, S72342B, S72342C, S72343A, S72343B, S72343C, S72344A, S72344B, S72344C, S72345A, S72345B, S72345C, S72346A, S72346B, S72346C, S72351A, S72351B, S72351C, S72352A, S72352B, S72352C, S72353A, S72353B, S72353C, S72354A, S72354B, S72354C, S72355A, S72355B, S72355C, S72356A, S72356B, S72356C, S72361A, S72361B, S72361C, S72362A, S72362B, S72362C, S72363A, S72363B, S72363C, S72364A, S72364B, S72364C, S72365A, S72365B, S72365C, S72366A, S72366B, S72366C, S72391A, S72391B, S72391C, S72392A, S72392B, S72392C, S72399A, S72399B, S72399C, S72401A, S72401B, S72401C, S72402A, S72402B, S72402C, S72409A, S72409B, S72409C, S72411A, S72411B, S72411C, S72412A, S72412B, S72412C, S72413A, S72413B, S72413C, S72414A, S72414B, S72414C, S72415A, S72415B, S72415C, S72416A, S72416B, S72416C, S72421A, S72421B, S72421C, S72422A, S72422B, S72422C, S72423A, S72423B, S72423C, S72424A, S72424B, S72424C, S72425A, S72425B, S72425C, S72426A, S72426B, S72426C, S72431A, S72431B, S72431C, S72432A, S72432B, S72432C, S72433A, S72433B, S72433C, S72434A, S72434B, S72434C, S72435A, S72435B, S72435C, S72436A, S72436B, S72436C, S72441A, S72441B, S72441C, S72442A, S72442B, S72442C, S72443A, S72443B, S72443C, S72444A, S72444B, S72444C, S72445A, S72445B, S72445C, S72446A, S72446B, S72446C, S72451A, S72451B, S72451C, S72452A, S72452B, S72452C, S72453A, S72453B, S72453C, S72454A, S72454B, S72454C, S72455A, S72455B, S72455C, S72456A, S72456B, S72456C, S72461A,
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	<u>Other Fractures – Ankle</u> ICD-9 CODES = 824, 8240, 8241, 8242, 8243, 8244, 8245, 8246, 8247, 8248, 8249 PROCEDURE CODES = 27760, 27761, 27762, 27763, 27764, 27765, 27766, 27767, 27768, 27769, 27808, 27809, 27810, 27811, 27812, 27813, 27814, 27815, 27816, 27817, 27818, 27819, 27820, 27821, 27822, 27823, 28430, 28431, 28432, 28433, 28434, 28435, 28436, 28437, 28438, 28439, 28440, 28441, 28442, 28443, 28444, 28445 <u>Joint Dislocation – Shoulder</u> ICD-9 CODES = 831, 8310, 83100, 83101, 83102, 83103, 83104, 83109, 8311, 83110, 83111, 83112, 83113, 83114, 83119 PROCEDURE CODES = 23650, 23655, 23660, 71010, 71015, 71020, 71021, 71022, 71023, 71030, 71034, 71035, 71250, 71260, 71270, 71275, 71550, 71551, 71552, 71553, 71554, 71555, 73020, 73030, 73040, 29105, 29106, 29107, 29108, 29109, 29110, 29111, 29112, 29113, 29114, 29115, 29116, 29117, 29118, 29119, 29120, 29121, 29122, 29123, 29124, 29125, 29126, 29127, 29128, 29129, 29130, 29131, 29505, 29506, 29507, 29508, 29509, 29510, 29511, 29512, 29513, 29514, 29515 <u>Joint Dislocation – Elbow</u> ICD-9 CODES = 832, 8320, 83200, 83201, 83202, 83203, 83204, 83209, 8321, 83210, 83211, 83212, 83213, 83214, 83219, 8322 PROCEDURE CODES = 24600, 24605, 24615, 73070, 73080, 73085, 73200, 73201, 73202, 73203, 73204, 73205, 73206, 73221, 73222, 73223, 73224, 73225, 29105, 29106, 29107, 29108,	73189, 73190, 73191, 73192, 73193, 73194, 73195, 73196, 73197, 73198, 73199, 73200, 73201, 73202, 73203, 73204, 73205, 73206, 73207, 73208, 73209, 73210, 73211, 73212, 73213, 73214, 73215, 73216, 73217, 73218, 73219, 73220, 73221, 73222, 73223, 73224, 73225 <u>Other Fractures – Hand – Phalanges</u> ICD-10 CODES = S62501A, S62501B, S62502A, S62502B, S62509A, S62509B, S62511A, S62511B, S62512A, S62512B, S62513A, S62513B, S62514A, S62514B, S62515A, S62515B, S62516A, S62516B, S62521A, S62521B, S62522A, S62522B, S62523A, S62523B, S62524A, S62524B, S62525A, S62525B, S62526A, S62526B, S62600A, S62600B, S62601A, S62601B, S62602A, S62602B, S62603A, S62603B, S62604A, S62604B, S62605A, S62605B, S62606A, S62606B, S62607A, S62607B, S62608A, S62608B, S62609A, S62609B, S62610A, S62610B, S62611A, S62611B, S62612A, S62612B, S62613A, S62613B, S62614A, S62614B, S62615A, S62615B, S62616A, S62616B, S62617A, S62617B, S62618A, S62618B, S62619A, S62619B, S62620A, S62620B, S62621A, S62621B, S62622A, S62622B, S62623A, S62623B, S62624A, S62624B, S62625A, S62625B, S62626A, S62626B, S62627A, S62627B, S62628A, S62628B, S62629A, S62629B, S62630A, S62630B, S62631A, S62631B, S62632A, S62632B, S62633A, S62633B, S62634A, S62634B, S62635A, S62635B, S62636A, S62636B, S62637A, S62637B, S62638A, S62638B, S62639A, S62639B, S62640A, S62640B, S62641A, S62641B, S62642A, S62642B, S62643A, S62643B, S62644A, S62644B, S62645A, S62645B, S62646A, S62646B, S62647A, S62647B, S62648A, S62648B, S62649A, S62649B, S62650A, S62650B, S62651A, S62651B, S62652A, S62652B, S62653A, S62653B, S62654A, S62654B, S62655A, S62655B, S62656A, S62656B, S62657A, S62657B, S62658A, S62658B, S62659A, S62659B, S62660A, S62660B, S62661A, S62661B, S62662A, S62662B, S62663A, S62663B, S62664A, S62664B, S62665A, S62665B, S62666A, S62666B, S62667A, S62667B, S62668A, S62668B, S62669A, S62669B PROCEDURE CODES = 26720, 26725, 26727, 26735, 26740, 26742, 26746, 26750, 26755, 26756, 26765, 29105, 29106, 29107, 29108, 29109, 29110, 29111, 29112, 29113, 29114, 29115, 29116, 29117, 29118, 29119, 29120, 29121, 29122, 29123, 29124, 29125, 29126, 29127, 29128, 29129, 29130, 29131, 29505, 29506, 29507, 29508, 29509, 29510, 29511, 29512, 29513, 29514, 29515, 73120, 73121, 73122, 73123, 73124, 73125, 73126, 73127, 73128, 73129, 73130, 73131, 73132, 73133, 73134, 73135, 73136, 73137, 73138, 73139, 73140, 73141, 73142, 73143, 73144, 73145, 73146, 73147, 73148, 73149, 73150, 73151, 73152, 73153, 73154, 73155, 73156, 73157, 73158, 73159, 73160, 73161, 73162, 73163,
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	29127, 29128, 29129, 29130, 29131, 29505, 29506, 29507, 29508, 29509, 29510, 29511, 29512, 29513, 29514, 29515 <u>Other Fractures – Patella</u> ICD-10 CODES = S82001A, S82001B, S82001C, S82002A, S82002B, S82002C, S82009A, S82009B, S82009C, S82011A, S82011B, S82011C, S82012A, S82012B, S82012C, S82013A, S82013B, S82013C, S82014A, S82014B, S82014C, S82015A, S82015B, S82015C, S82016A, S82016B, S82016C, S82021A, S82021B, S82021C, S82022A, S82022B, S82022C, S82023A, S82023B, S82023C, S82024A, S82024B, S82024C, S82025A, S82025B, S82025C, S82026A, S82026B, S82026C, S82031A, S82031B, S82031C, S82032A, S82032B, S82032C, S82033A, S82033B, S82033C, S82034A, S82034B, S82034C, S82035A, S82035B, S82035C, S82036A, S82036B, S82036C, S82041A, S82041B, S82041C, S82042A, S82042B, S82042C, S82043A, S82043B, S82043C, S82044A, S82044B, S82044C, S82045A, S82045B, S82045C, S82046A, S82046B, S82046C, S82091A, S82091B, S82091C, S82092A, S82092B, S82092C, S82099A, S82099B, S82099C PROCEDURE CODES = 27520, 27524, 29105, 29106, 29107, 29108, 29109, 29110, 29111, 29112, 29113, 29114, 29115, 29116, 29117, 29118, 29119, 29120, 29121, 29122, 29123, 29124, 29125, 29126, 29127, 29128, 29129, 29130, 29131, 29505, 29506, 29507, 29508, 29509, 29510, 29511, 29512, 29513, 29514, 29515 <u>Other Fractures – Ankle</u> ICD-10 CODES = S8251XA, S8251XB, S8251XC, S8252XA, S8252XB, S8252XC, S8253XA, S8253XB, S8253XC, S8254XA, S8254XB, S8254XC, S8255XA, S8255XB, S8255XC, S8256XA, S8256XB, S8256XC, S8261XA, S8261XB, S8261XC, S8262XA, S8262XB, S8262XC, S8263XA, S8263XB, S8263XC, S8264XA, S8264XB, S8264XC, S8265XA, S8265XB, S8265XC, S8266XA, S8266XB, S8266XC, S82841A, S82841B, S82841C, S82842A, S82842B, S82842C, S82843A, S82843B, S82843C, S82844A, S82844B, S82844C, S82845A, S82845B, S82845C, S82846A, S82846B, S82846C, S82851A, S82851B, S82851C, S82852A, S82852B, S82852C, S82853A, S82853B, S82853C, S82854A, S82854B, S82854C, S82855A, S82855B, S82855C, S82856A, S82856B, S82856C PROCEDURE CODES = 27760, 27761, 27762, 27763, 27764, 27765, 27766, 27767, 27768, 27769, 27808, 27809, 27810, 27811, 27812, 27813, 27814, 27815, 27816, 27817, 27818,
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	27819, 27820, 27821, 27822, 27823, 28430, 28431, 28432, 28433, 28434, 28435, 28436, 28437, 28438, 28439, 28440, 28441, 28442, 28443, 28444, 28445 <u>Other Fractures - Other & Unspecified Fractures of Lower Leg</u> ICD-10 CODES = S82891A, S82891B, S82891C, S82892A, S82892B, S82892C, S82899A, S82899B, S82899C, S8290XA, S8290XB, S8290XC, S8291XA, S8291XB, S8291XC, S8292XA, S8292XB, S8292XC PROCEDURE CODES = 27760, 27761, 27762, 27763, 27764, 27765, 27766, 27767, 27768, 27769, 27808, 27809, 27810, 27811, 27812, 27813, 27814, 27815, 27816, 27817, 27818, 27819, 27820, 27821, 27822, 27823, 28430, 28431, 28432, 28433, 28434, 28435, 28436, 28437, 28438, 28439, 28440, 28441, 28442, 28443, 28444, 28445, 27520, 27524, 29105, 29106, 29107, 29108, 29109, 29110, 29111, 29112, 29113, 29114, 29115, 29116, 29117, 29118, 29119, 29120, 29121, 29122, 29123, 29124, 29125, 29126, 29127, 29128, 29129, 29130, 29131, 29505, 29506, 29507, 29508, 29509, 29510, 29511, 29512, 29513, 29514, 29515, 27500, 27501, 27502, 27503, 27504, 27505, 27506, 27507, 27508, 27509, 27510, 27511, 27512, 27513, 27514, 27530, 27531, 27532, 27533, 27534, 27535, 27536, 27537, 27538, 27539, 27540, 27750, 27751, 27752, 27753, 27754, 27755, 27756, 27757, 27758, 27759, 27780, 27781, 27782, 27783, 27784, 27785, 27786, 27787, 27788, 27789, 27790, 27791, 27792, 27824, 27825, 27826, 27827, 27828, 29000, 29001, 29002, 29003, 29004, 29005, 29006, 29007, 29008, 29009, 29010, 29011, 29012, 29013, 29014, 29015, 29016, 29017, 29018, 29019, 29020, 29021, 29022, 29023, 29024, 29025, 29026, 29027, 29028, 29029, 29030, 29031, 29032, 29033, 29034, 29035, 29036, 29037, 29038, 29039, 29040, 29041, 29042, 29043, 29044, 29045, 29046, 29047, 29048, 29049, 29050, 29051, 29052, 29053, 29054, 29055, 29056, 29057, 29058, 29059, 29060, 29061, 29062, 29063, 29064, 29065, 29066, 29067, 29068, 29069, 29070, 29071, 29072, 29073, 29074, 29075, 29076, 29077, 29078, 29079, 29080, 29081, 29082, 29083, 29084, 29085, 29086, 29305, 29306, 29307, 29308, 29309, 29310, 29311, 29312, 29313, 29314, 29315, 29316, 29317, 29318, 29319, 29320, 29321, 29322, 29323, 29324, 29325, 29326, 29327, 29328, 29329, 29330, 29331, 29332, 29333, 29334, 29335, 29336, 29337, 29338, 29339, 29340, 29341, 29342, 29343, 29344, 29345, 29346, 29347, 29348, 29349, 29350, 29351, 29352, 29353, 29354, 29355, 29356, 29357, 29358, 29359, 29360, 29361, 29362, 29363, 29364, 29365, 29366, 29367, 29368, 29369, 29370, 29371, 29372, 29373, 29374, 29375, 29376, 29377, 29378, 29379, 29380, 29381, 29382,
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	29383, 29384, 29385, 29386, 29387, 29388, 29389, 29390, 29391, 29392, 29393, 29394, 29395, 29396, 29397, 29398, 29399, 29400, 29401, 29402, 29403, 29404, 29405, 29406, 29407, 29408, 29409, 29410, 29411, 29412, 29413, 29414, 29415, 29416, 29417, 29418, 29419, 29420, 29421, 29422, 29423, 29424, 29425, 29426, 29427, 29428, 29429, 29430, 29431, 29432, 29433, 29434, 29435, 29436, 29437, 29438, 29439, 29440, 29441, 29442, 29443, 29444, 29445, 29446, 29447, 29448, 29449, 29450, 29105, 29106, 29107, 29108, 29109, 29110, 29111, 29112, 29113, 29114, 29115, 29116, 29117, 29118, 29119, 29120, 29121, 29122, 29123, 29124, 29125, 29126, 29127, 29128, 29129, 29130, 29131, 29505, 29506, 29507, 29508, 29509, 29510, 29511, 29512, 29513, 29514, 29515 <u>Joint Dislocation – Shoulder</u> ICD-10 CODES = S43001A, S43002A, S43003A, S43004A, S43005A, S43006A, S43081A, S43082A, S43083A, S43084A, S43085A, S43086A, S43301A, S43302A, S43303A, S43304A, S43305A, S43306A, S43391A, S43392A, S43393A, S43394A, S43395A, S43396A, M24311, M24312, M24319, M24411, M24412, M24419 PROCEDURE CODES = 23650, 23655, 23660, 71010, 71015, 71020, 71021, 71022, 71023, 71030, 71034, 71035, 71250, 71260, 71270, 71275, 71550, 71551, 71552, 71553, 71554, 71555, 73020, 73030, 73040, 29105, 29106, 29107, 29108, 29109, 29110, 29111, 29112, 29113, 29114, 29115, 29116, 29117, 29118, 29119, 29120, 29121, 29122, 29123, 29124, 29125, 29126, 29127, 29128, 29129, 29130, 29131, 29505, 29506, 29507, 29508, 29509, 29510, 29511, 29512, 29513, 29514, 29515 <u>Joint Dislocation – Elbow</u> ICD-10 CODES = S53031A, S53032A, S53033A, M24321, M24322, M24329, M24421, M24422, M24429 PROCEDURE CODES = 24600, 24605, 24615, 73070, 73080, 73085, 73200, 73201, 73202, 73203, 73204, 73205, 73206, 73221, 73222, 73223, 73224, 73225, 29105, 29106, 29107, 29108, 29109, 29110, 29111, 29112, 29113, 29114, 29115, 29116, 29117, 29118, 29119, 29120, 29121, 29122, 29123, 29124, 29125, 29126, 29127, 29128, 29129, 29130, 29131, 29505, 29506, 29507, 29508, 29509, 29510, 29511, 29512, 29513, 29514, 29515
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		<u>Joint Dislocation – Wrist</u> ICD-10 CODES = S63001A, S63002A, S63003A, S63004A, S63005A, S63006A, S63011A, S63012A, S63013A, S63014A, S63015A, S63016A, S63021A, S63022A, S63023A, S63024A, S63025A, S63026A, S63031A, S63032A, S63033A, S63034A, S63035A, S63036A, S63091A, S63092A, S63093A, S63094A, S63095A, S63096A, S63301A, S63302A, S63309A, S63311A, S63312A, S63319A, S63391A, S63392A, S63399A, M24331, M24332, M24339, M24431, M24432, M24439 PROCEDURE CODES = 25660, 25670, 25671, 25675, 25676, 25690, 25695, 73200, 73201, 73202, 73203, 73204, 73205, 73206, 73221, 73222, 73223, 73224, 73225, 73100, 73101, 73102, 73103, 73104, 73105, 73106, 73107, 73108, 73109, 73110, 73111, 73112, 73113, 73114, 73115, 29000, 29001, 29002, 29003, 29004, 29005, 29006, 29007, 29008, 29009, 29010, 29011, 29012, 29013, 29014, 29015, 29016, 29017, 29018, 29019, 29020, 29021, 29022, 29023, 29024, 29025, 29026, 29027, 29028, 29029, 29030, 29031, 29032, 29033, 29034, 29035, 29036, 29037, 29038, 29039, 29040, 29041, 29042, 29043, 29044, 29045, 29046, 29047, 29048, 29049, 29050, 29051, 29052, 29053, 29054, 29055, 29056, 29057, 29058, 29059, 29060, 29061, 29062, 29063, 29064, 29065, 29066, 29067, 29068, 29069, 29070, 29071, 29072, 29073, 29074, 29075, 29076, 29077, 29078, 29079, 29080, 29081, 29082, 29083, 29084, 29085, 29086, 29305, 29306, 29307, 29308, 29309, 29310, 29311, 29312, 29313, 29314, 29315, 29316, 29317, 29318, 29319, 29320, 29321, 29322, 29323, 29324, 29325, 29326, 29327, 29328, 29329, 29330, 29331, 29332, 29333, 29334, 29335, 29336, 29337, 29338, 29339, 29340, 29341, 29342, 29343, 29344, 29345, 29346, 29347, 29348, 29349, 29350, 29351, 29352, 29353, 29354, 29355, 29356, 29357, 29358, 29359, 29360, 29361, 29362, 29363, 29364, 29365, 29366, 29367, 29368, 29369, 29370, 29371, 29372, 29373, 29374, 29375, 29376, 29377, 29378, 29379, 29380, 29381, 29382, 29383, 29384, 29385, 29386, 29387, 29388, 29389, 29390, 29391, 29392, 29393, 29394, 29395, 29396, 29397, 29398, 29399, 29400, 29401, 29402, 29403, 29404, 29405, 29406, 29407, 29408, 29409, 29410, 29411, 29412, 29413, 29414, 29415, 29416, 29417, 29418, 29419, 29420, 29421, 29422, 29423, 29424, 29425, 29426, 29427, 29428, 29429, 29430, 29431, 29432, 29433, 29434, 29435, 29436, 29437, 29438, 29439, 29440, 29441, 29442, 29443, 29444, 29445, 29446, 29447, 29448, 29449, 29450, 29105, 29106, 29107, 29108, 29109, 29110, 29111, 29112, 29113, 29114, 29115, 29116, 29117, 29118, 29119, 29120, 29121, 29122, 29123, 29124, 29125, 29126, 29127, 29128, 29129, 29130, 29131, 29505, 29506, 29507, 29508, 29509, 29510, 29511, 29512, 29513, 29514, 29515
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		<u>Joint Dislocation – Knee</u> ICD-10 CODES = S83101A, S83102A, S83103A, S83104A, S83105A, S83106A, S83111A, S83112A, S83113A, S83114A, S83115A, S83116A, S83121A, S83122A, S83123A, S83124A, S83125A, S83126A, S83131A, S83132A, S83133A, S83134A, S83135A, S83136A, S83141A, S83142A, S83143A, S83144A, S83145A, S83146A, S83191A, S83192A, S83193A, S83194A, S83195A, S83196A, S83200A, S83201A, S83202A, S83203A, S83204A, S83205A, S83206A, S83207A, S83209A, S83211A, S83212A, S83219A, S83221A, S83222A, S83229A, S83231A, S83232A, S83239A, S83241A, S83242A, S83249A, S83251A, S83252A, S83259A, S83261A, S83262A, S83269A, S83271A, S83272A, S83279A, S83281A, S83282A, S83289A, S8330XA, S8331XA, S8332XA, M2200, M2201, M2202, M24361, M24362, M24369, M24461, M24462, M24469 PROCEDURE CODES = 27550, 27552, 27556, 27557, 27558, 27560, 27562, 27566, 73560, 73561, 73562, 73563, 73564, 73565, 73566, 73567, 73568, 73569, 73570, 73571, 73572, 73573, 73574, 73575, 73576, 73577, 73578, 73579, 73580, 73700, 73701, 73702, 73703, 73704, 73705, 73706, 73721, 73722, 73723, 73724, 73725, 29000, 29001, 29002, 29003, 29004, 29005, 29006, 29007, 29008, 29009, 29010, 29011, 29012, 29013, 29014, 29015, 29016, 29017, 29018, 29019, 29020, 29021, 29022, 29023, 29024, 29025, 29026, 29027, 29028, 29029, 29030, 29031, 29032, 29033, 29034, 29035, 29036, 29037, 29038, 29039, 29040, 29041, 29042, 29043, 29044, 29045, 29046, 29047, 29048, 29049, 29050, 29051, 29052, 29053, 29054, 29055, 29056, 29057, 29058, 29059, 29060, 29061, 29062, 29063, 29064, 29065, 29066, 29067, 29068, 29069, 29070, 29071, 29072, 29073, 29074, 29075, 29076, 29077, 29078, 29079, 29080, 29081, 29082, 29083, 29084, 29085, 29086, 29305, 29306, 29307, 29308, 29309, 29310, 29311, 29312, 29313, 29314, 29315, 29316, 29317, 29318, 29319, 29320, 29321, 29322, 29323, 29324, 29325, 29326, 29327, 29328, 29329, 29330, 29331, 29332, 29333, 29334, 29335, 29336, 29337, 29338, 29339, 29340, 29341, 29342, 29343, 29344, 29345, 29346, 29347, 29348, 29349, 29350, 29351, 29352, 29353, 29354, 29355, 29356, 29357, 29358, 29359, 29360, 29361, 29362, 29363, 29364, 29365, 29366, 29367, 29368, 29369, 29370, 29371, 29372, 29373, 29374, 29375, 29376, 29377, 29378, 29379, 29380, 29381, 29382, 29383, 29384, 29385, 29386, 29387, 29388, 29389, 29390, 29391, 29392, 29393, 29394, 29395, 29396, 29397, 29398, 29399, 29400, 29401, 29402, 29403, 29404, 29405, 29406, 29407, 29408, 29409, 29410, 29411, 29412, 29413,
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Appendix Table 2: Predictor Selection and Associated ICD-9/10 Codes

Predictor	Included in the Model?	ICD Codes
Sociodemographic Characteristics		
Age	Yes – derived from MBSF	MBSF
Sex	Yes – derived from MBSF	MBSF
Race/Ethnicity	Yes – derived from MBSF	MBSF
Falls History	Yes – derived from Medicare claims data	See Table 1 for ICD-9 & ICD-10 code algorithms for falls
Living Alone	No – no data available	
Education Level	No – no data available	
Marital Status	No – no data available	
Balance & Gait		
Gait Measures	Yes – derived from Medicare claims data	ICD-9 Codes = 7812 ICD-10 Codes = R26, R260, R261, R262, R268, R2681, R2689, R269
Balance Measures	No – no data available	
Gait, balance, and/or strength combined	No – no data available	
Self-perceived gait problems	No – no data available	
Self-perceived balance problems	No – no data available	
Chronic Diseases and Symptoms		
Heart Failure	Yes – derived from MBSF CCW	MBSF CCW
Stroke	Yes – derived from MBSF CCW	MBSF CCW
Acute Myocardial Infarction	Yes – derived from MBSF CCW	MBSF CCW
Ischemic Heart Disease	Yes – derived from MBSF CCW	MBSF CCW
Atrial Fibrillation	Yes – derived from MBSF CCW	MBSF CCW
Peripheral Vascular Disease	Yes – derived from MBSF CCW	MBSF CCW
Hyperlipidemia	Yes – derived from MBSF CCW	MBSF CCW
Hypertension	Yes – derived from MBSF CCW	MBSF CCW
Breast Cancer	Yes – derived from MBSF CCW	MBSF CCW
Colorectal Cancer	Yes – derived from MBSF CCW	MBSF CCW
Endometrial Cancer	Yes – derived from MBSF CCW	MBSF CCW
Lung Cancer	Yes – derived from MBSF CCW	MBSF CCW
Prostate Cancer	Yes – derived from MBSF CCW	MBSF CCW
Leukemias and Lymphomas	Yes – derived from MBSF CCW	MBSF CCW
Melanoma	Yes – derived from Medicare claims data	ICD-9 Codes = 1720, 1721, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729, V1082 ICD-10 Codes = C430, C4310, C4311, C43111, C43112, C4312, C43121, C43122, C4320, C4321, C4322, C4330, C4331, C4339, C434, C4351, C4352, C4359, C4360, C4361, C4362, C4370, C4371, C4372, C438, C439, C4400, C4401, C4402, C4409, C44101, C44102, C441021,

		C441022, C44109, C441091, C441092, C44111, C44112, C441121, C441122, C44119, C441191, C441192, C44121, C44122, C441221, C441222, C44129, C441291, C441292, C44131, C441321, C441322, C441391, C441392, C44191, C44192, C441921, C441922, C44199, C441991, C441992, C44201, C44202, C44209, C44211, C44212, C44219, C44221, C44222, C44229, C44291, C44292, C44299, C44300, C44301, C44309, C44310, C44311, C44319, C44320, C44321, C44329, C44390, C44391, C44399, C4440, C4441, C4442, C4449, C44500, C44501, C44509, C44510, C44511, C44519, C44520, C44521, C44529, C44590, C44591, C44599, C44601, C44602, C44609, C44611, C44612, C44619, C44621, C44622, C44629, C44691, C44692, C44699, C44701, C44702, C44709, C44711, C44712, C44719, C44721, C44722, C44729, C44791, C44792, C44799, C4480, C4481, C4482, C4489, C4490, C4491, C4492, C4499, D030, D0310, D0311, D03111, D03112, D0312, D03121, D03122, D0320, D0321, D0322, D0330, D0339, D034, D0351, D0352, D0359, D0360, D0361, D0362, D0370, D0371, D0372, D038, D039, Z85820
Bladder Cancer	Yes – derived from Medicare claims data	ICD-9 Codes = 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 2337, V1051 ICD-10 Codes = C670, C671, C672, C673, C674, C675, C676, C677, C678, C679, D090, Z8551
Kidney Cancer	Yes – derived from Medicare claims data	ICD-9 Codes = 1890, 1891, V1052, V1053 ICD-10 Codes = C641, C642, C649, C651, C652, C659, Z8552, Z85520, Z85528, Z8553
Pancreatic Cancer	Yes – derived from Medicare claims data	ICD-9 Codes = 1570, 1571, 1572, 1573, 1574, 1578, 1579 ICD-10 Codes = C250, C251, C252, C253, C254, C257, C258, C259, Z8507

Other Cancer	Yes – derived from Medicare claims data	ICD-9 Codes = 1400,1401, 1403, 1404, 1405, 1406, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1418, 1419, 1420, 1421, 1422, 1428, 1429, 1430, 1431, 1438, 1439, 1440, 1441, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1478, 1479, 1480, 1481, 1482, 1483, 1488, 1489, 1490, 1491, 1498, 1499, 150, 1500, 1501, 1502, 1503, 1504, 1505, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1518, 1519, 1520, 1521, 1522, 1523, 1528, 1529, 1542, 1543, 1548, 1550, 1551, 1552, 1560, 1561, 1562, 1568, 1569, 1580, 1588, 1589, 1590, 1591, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1608, 1609, 1610, 1611, 1612, 1613, 1618, 1619, 1620, 1630, 1631, 1638, 1639, 1640, 1641, 1642, 1643, 1648, 1649, 1650, 1658, 1659, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1730, 17300, 17301, 17302, 17309, 1731, 17310, 17311, 17312, 17319, 1732, 17320, 17321, 17322, 17329, 1733, 17330, 17331, 17332, 17339, 1734, 17340, 17341, 17342, 17349, 1735, 17350, 17351, 17352, 17359, 1736, 17360, 17361, 17362, 17369, 1737, 17370, 17371, 17372, 17379, 1738, 17380, 17381, 17382, 17389, 1739, 17390, 17391, 17392, 17399, 1760, 1761, 1762, 1763, 1764, 1765, 1768, 1769, 179, 1800, 1801, 1808, 1809, 181, 1821, 1828, 1830, 1832, 1833, 1834, 1835, 1838, 1839, 1840, 1841, 1842, 1843, 1844, 1848, 1849, 1860, 1869, 1871, 1872, 1873, 1874, 1875, 1876, 1877,
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Blindness and Visual Impairment	Yes – derived from MBSF CCW	MBSF CCW
Cataracts	Yes – derived from MBSF CCW	MBSF CCW
Glaucoma	Yes – derived from MBSF CCW	MBSF CCW
ADRD	Yes – derived from MBSF CCW	MBSF CCW
Global cognitive impairment (not including codes already included in CCW variables for ADRD)	Yes – derived from Medicare claims data	ICD-9 Codes = 0461, 04611, 04619, 2908, 2909, 2912, 29282, 33182, 33183, 33189, 3334, 4380, 79955 ICD-10 Codes = A810, A8100, A8101, A8109, F02811, F02818, F0282, F0283, F0284, F02A0, F02A11, F02A18, F02A2, F02A3, F02A4, F02B0, F02B11, F02B18, F02B2, F02B3, F02B4, F02C0, F02C11, F02C18, F02C2, F02C3, F02C4, F03911, F03918, F0392, F0393, F0394, F03A0, F03A11, F03A18, F03A2, F03A3, F03A4, F03B0, F03B11, F03B18, F03B2, F03B3, F03B4, F03C0, F03C11, F03C18, F03C2, F03C3, F03C4, F1027, F1097, F1327, F1397, F1817, F1827, F1897, F1917,

		F1927, F1997, G10, G3183, G3184, G3189, I6901, I69010, I69011, I69012, I69013, I69014, I69015, I69018, I69019, I6911, I69110, I69111, I69112, I69113, I69114, I69115, I69118, I69119, I6921, I69210, I69211, I69212, I69213, I69214, I69215, I69218, I69219, I6931, I69310, I69311, I69312, I69313, I69314, I69315, I69318, I69319, I6981, I69810, I69811, I69812, I69813, I69814, I69815, I69818, I69819, I6991, I69910, I69911, I69912, I69913, I69914, I69915, I69918, I69919, R41844
Diabetes	Yes – derived from MBSF CCW	MBSF CCW
Deafness and Hearing Impairment	Yes – derived from MBSF CCW	MBSF CCW
End Stage Renal Disease (ESRD)	Yes – derived from MBSF	MBSF
Chronic Kidney Disease	Yes – derived from MBSF CCW	MBSF CCW
Asthma	Yes – derived from MBSF CCW	MBSF CCW
COPD	Yes – derived from MBSF CCW	MBSF CCW
Rheumatoid Arthritis	Yes – derived from MBSF CCW	MBSF CCW
Osteoarthritis	Yes – derived from MBSF CCW	MBSF CCW
Osteoporosis	Yes – derived from MBSF CCW	MBSF CCW
Hip/Pelvic Fracture	Yes – derived from MBSF CCW	MBSF CCW
Chronic Pain, Fatigue, and Fibromyalgia	Yes – derived from MBSF CCW	MBSF CCW
Migraine and Other Chronic Headache	Yes – derived from MBSF CCW	MBSF CCW
Pressure Ulcers and Chronic Ulcers	Yes – derived from MBSF CCW	MBSF CCW
Anemia	Yes – derived from MBSF CCW	MBSF CCW
Benign Prostatic Hyperplasia (BPH)	Yes – derived from MBSF CCW	MBSF CCW
Acquired Hypothyroidism	Yes – derived from MBSF CCW	MBSF CCW
Liver Disease, Cirrhosis, and Other Liver Conditions (Excluding Hepatitis)	Yes – derived from MBSF CCW	MBSF CCW
Viral Hepatitis (general)	Yes – derived from MBSF CCW	MBSF CCW
HIV/AIDS	Yes – derived from MBSF CCW	MBSF CCW
Multiple Sclerosis and Transverse Myelitis	Yes – derived from MBSF CCW	MBSF CCW
Restless Legs Syndrome (RLS)	Yes – derived from Medicare claims data	ICD-9 Codes = 33394 ICD-10 Codes = G2581
Movement Disorders	Yes – derived from Medicare claims data	ICD-9 Codes = 3072, 30720, 30721, 30722, 30723, 3331, 3333, 3336, 33372, 33379, 33381, 33383, 33389, 33399, 3340, 3341, 3342, 3343, 3344, 43884 ICD-10 Codes = F950F951, F952, F958, F959, G110, G111, G1110, G1111, G1119, G112, G113, G114, G115, G116, G118, G119, G3281, I69093, I69193, I69293, I69393, I69893, I69993, R270, G2402, G2409, G241, G242, G243, G244,

		G245, G248, G249, R251, G250, G251, G252, G2561, G2589, G259, G26
Cerebral Palsy	Yes – derived from MBSF CCW	MBSF CCW
Epilepsy	Yes – derived from MBSF CCW	MBSF CCW
Muscular Dystrophy	Yes – derived from MBSF CCW	MBSF CCW
Spina Bifida & Other Congenital Anomalies of the Nervous System	Yes – derived from MBSF CCW	MBSF CCW
Spinal Cord Injury	Yes – derived from MBSF CCW	MBSF CCW
Traumatic Brain Injury and Nonpsychotic Mental Disorders due to Brain Damage	Yes – derived from MBSF CCW	MBSF CCW
Cystic Fibrosis and Other Metabolic Developmental Disorders	Yes – derived from MBSF CCW	MBSF CCW
Other Developmental Delays	Yes – derived from MBSF CCW	MBSF CCW
Incontinence (bowel or urine)	Yes – derived from Medicare claims data	ICD-9 Codes = 6256, 7876, 78760, 7883, 78830, 78831, 78832, 78833, 78834, 78835, 78836, 78837, 78838, 78839, 7889, 78891 ICD-10 Codes = N39, N393, N394, N3941, N3942, N3943, N3944, N3945, N3946, N3949, N39490, N39491, N39492, N39498, R15, R159, R32, R398, R3981
Dizziness / Vertigo	Yes – derived from Medicare claims data	ICD-9 Codes = 780, 7804, 078, 07881, 386, 3860, 38600, 38601, 38602, 38603, 38604, 3861, 38610, 38611, 38612, 38619, 3862 ICD-10 Codes = R42, A88, A881, H81, H810, H8101, H8102, H8103, H8109, H811, H8110, H8111, H8112, H8113, H813, H8131, H81311, H81312, H81313, H81319, H8139, H81391, H81392, H81393, H81399, H814, T75, T752, T7523, T7523XA, T7523XD, T7523XS
Orthostatic Hypotension	Yes – derived from Medicare claims data	ICD-9 Codes = 4580 ICD-10 Codes = I951
Parkinson's Disease & Secondary Parkinsonism	Yes – derived from Medicare claims data	ICD-9 Codes = 09482, 3320, 3321, 33182 ICD-10 Codes = G20, G20A1, G20A2, G20B1, G20B2, G20C, G2111, G2119, G213, G214, G218, G219, G3183
Functional Impairment		
Mobility Impairments	Yes – derived from MBSF CCW	MBSF CCW
Use of Assistive Devices or Care Equipment: Diabetic Footwear	Yes – derived from Medicare claims data	HCPCS Codes = A5500, A5501, A5503, A5504, A5505, A5506,

		A5507, A5508, A5510, A5512, A5513, A5514
Use of Assistive Devices or Care Equipment: Walking Aids and Attachments	Yes – derived from Medicare claims data	HCPCS Codes = E0100, E0105, E0110, E0111, E0112, E0113, E0114, E0116, E0117, E0118, E0130, E0135, E0140, E0141, E0143, E0144, E0147, E0148, E0149, E0153, E0154, E0155, E0156, E0157, E0158, E0159
Use of Assistive Devices or Care Equipment: Hospital Beds and Associated Supplies	Yes – derived from Medicare claims data	HCPCS Codes = E0250, E0251, E0255, E0256, E0260, E0261, E0265, E0266, E0270, E0271, E0272, E0273, E0274, E0275, E0276, E0277, E0280, E0290, E0291, E0292, E0293, E0294, E0295, E0296, E0297, E0300, E0301, E0302, E0303, E0304, E0305, E0310, E0315, E0316, E0325, E0326, E0328, E0329, E0350, E0352, E0370, E0371, E0372, E0373
Use of Assistive Devices or Care Equipment: Wheelchair/transport chair & related accessories	Yes – derived from Medicare claims data	HCPCS Codes = E0950, E0951, E0952, E0953, E0954, E0955, E0956, E0957, E0958, E0959, E0960, E0961, E0966, E0967, E0968, E0969, E0970, E0971, E0973, E0974, E0978, E0980, E0981, E0982, E0983, E0984, E0985, E0986, E0988, E0990, E0992, E0994, E0995, E1002, E1003, E1004, E1005, E1006, E1007, E1008, E1009, E1010, E1011, E1012, E1014, E1015, E1016, E1017, E1018, E1020, E1028, E1029, E1030, E1031, E1035, E1036, E1037, E1038, E1039, E1050, E1060, E1070, E1083, E1084, E1085, E1086, E1087, E1088, E1089, E1090, E1092, E1093, E1100, E1110, E1130, E1140, E1150, E1160, E1161, E1170, E1171, E1172, E1180, E1190, E1195, E1200, E1220, E1221, E1222, E1223, E1224, E1225, E1226, E1227, E1228, E1229, E1230, E1231, E1232, E1233, E1234, E1235, E1236, E1237, E1238, E1239, E1240, E1250, E1260, E1270, E1280, E1285, E1290, E1295, E1296, E1297, E1298, E2201,

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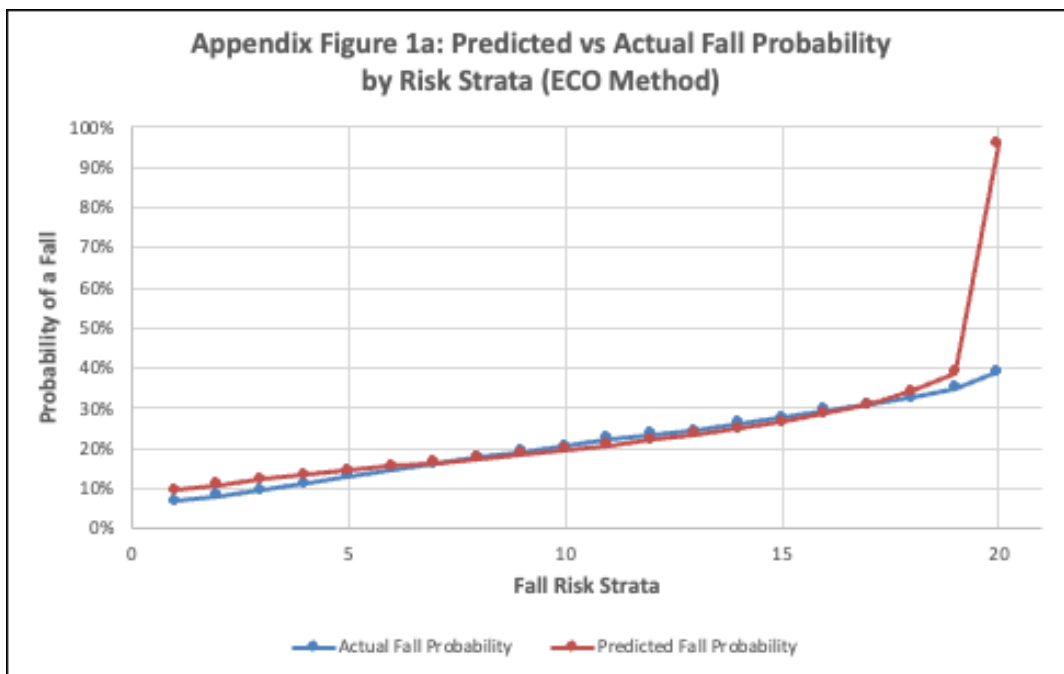
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Activities of Daily Living	No – no data available	
Receiving Help	No – no data available	
Instrumental Activities of Daily Living	No – no data available	
Needing Supervision	No – no data available	
Medication Use		
Taking more than a specific number of drugs	No – no data available	
Hypnotics or Sedatives	No – no data available	
Psychotropics	No – no data available	
Anti-epileptics	No – no data available	
Total number of medications	No – no data available	
Other drugs	No – no data available	
Strength		
Sarcopenia	Yes – derived from Medicare claims data	ICD-9 Codes = 7282, 7289 ICD-10 Codes = M6284
Leg strength	No – no data available	
Grip strength	No – no data available	
Self-perceived low grip strength	No – no data available	
Mental or Psychiatric Disorders		
Depression	Yes – derived from MBSF CCW	MBSF CCW
ADHD and Other Conduct Disorders	Yes – derived from MBSF CCW	MBSF CCW
Anxiety Disorders	Yes – derived from MBSF CCW	MBSF CCW
Autism Spectrum Disorders	Yes – derived from MBSF CCW	MBSF CCW
Bipolar Disorder	Yes – derived from MBSF CCW	MBSF CCW
Intellectual Disabilities and Related Conditions	Yes – derived from MBSF CCW	MBSF CCW
Learning Disabilities	Yes – derived from MBSF CCW	MBSF CCW
Personality Disorders	Yes – derived from MBSF CCW	MBSF CCW
Post-Traumatic Stress Disorder	Yes – derived from MBSF CCW	MBSF CCW
Schizophrenia	Yes – derived from MBSF CCW	MBSF CCW
Schizophrenia and Other Psychotic Disorders	Yes – derived from MBSF CCW	MBSF CCW
Fear of Falling	No – no data available	
Lifestyle Factors		
Alcohol Consumption	Yes – derived from MBSF CCW	MBSF CCW
Tobacco use	Yes – derived from MBSF CCW	MBSF CCW
Drug Use	Yes – derived from MBSF CCW	MBSF CCW
Physical Activity	No – no data available	

Self-perceived Health	No – no data available	
Body Composition		
Weight Loss	Yes – derived from Medicare claims data	ICD-9 Codes = 78321 ICD-10 Codes = R634
Weight Gain	Yes – derived from Medicare claims data	ICD-9 Codes = 7831 ICD-10 Codes = R635
Obesity	Yes – derived from MBSF CCW	MBSF CCW
Overweight	Yes – derived from Medicare claims data	ICD-9 Codes = 27802 ICD-10 Codes = E663
Underweight	Yes – derived from Medicare claims data	ICD-9 Codes = 78322 ICD-10 Codes = R636
Medical Cost and Utilization History		
Acute Inpatient Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Acute Inpatient Stays	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Anesthesia Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Anesthesia Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Ambulatory Surgery Center Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Ambulatory Surgery Center Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Dialysis Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Dialysis Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Durable Medical Equipment Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Durable Medical Equipment Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Evaluation and Management Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Evaluation and Management Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Home Health Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Home Health Visits	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Hospital Outpatient Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Hospital Outpatient Visits	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Hospice Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Hospice Stays	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Imaging Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Imaging Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Inpatient Emergency Room Visits	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Other Inpatient Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Other Inpatient Stays (including transfers)	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Other Procedures Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Other Procedures Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Other Part B Carrier Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Other Part B Carrier Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
MD Office (E&M) Part B Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
MD Office (E&M) Part B Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Part B Drug Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Part B Drug Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Part D Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Part D Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Hospital Readmissions	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Skilled Nursing Facility Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File

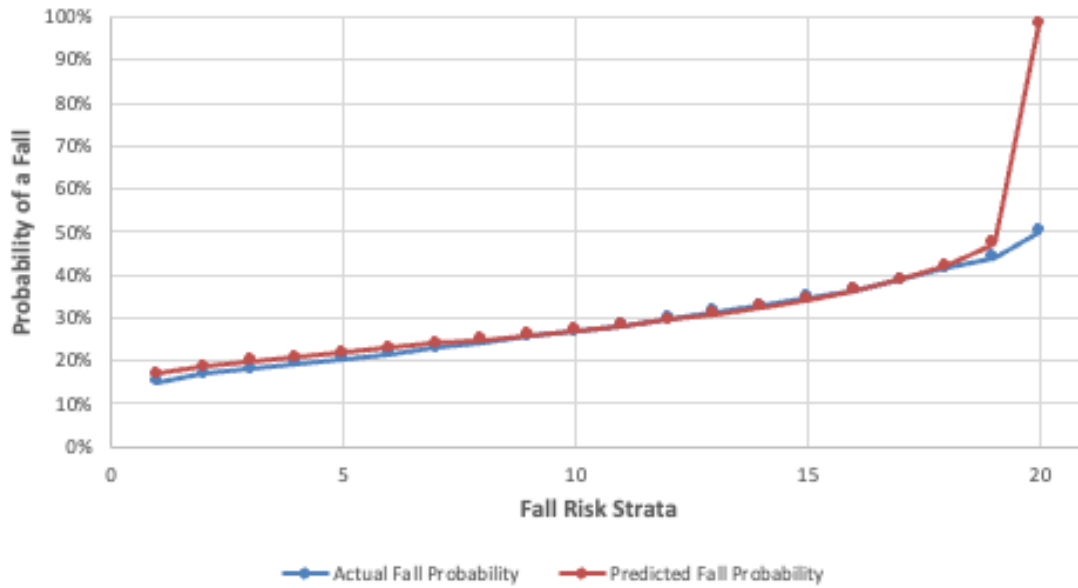
Skilled Nursing Facility Stays	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Tests Events	Yes – derived from Medicare cost & use	Medicare Cost & Use File
Tests Medicare Payments	Yes – derived from Medicare cost & use	Medicare Cost & Use File

Appendix Table 3: Regression Model Goodness-of-fit Statistics – beneficiaries who had a fall in the previous calendar year

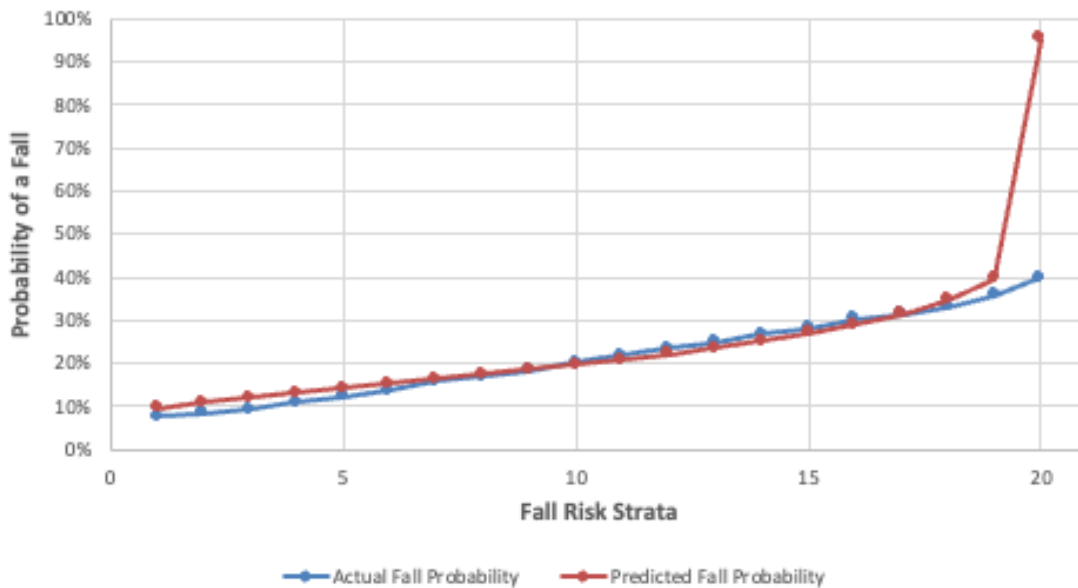
	Fall E-Codes All Settings (N=450,624)	Fall ECDC All Settings (N=1,244,768)	Fall AUR All Settings (N=574,310)
McFadden's Pseudo R ²	0.047	0.035	0.050
Cragg & Uhler's Pseudo R ²	0.074	0.060	0.079
Efron's Pseudo R ²	0.047	0.043	0.051
McKelvey & Zavoina Pseudo R ²	0.084	0.060	0.089
Akaike Information Criterion (AIC)	0.990	1.161	0.988
Bayesian Information Criterion (BIC)	$-5.418e^6$	$-1.602e^7$	$-7.046e^6$
Area Under ROC Curve (AUC)	0.6559	0.6306	0.6615



**Appendix Figure 1b: Predicted vs Actual Fall Probability
by Risk Strata (ECDC Method)**

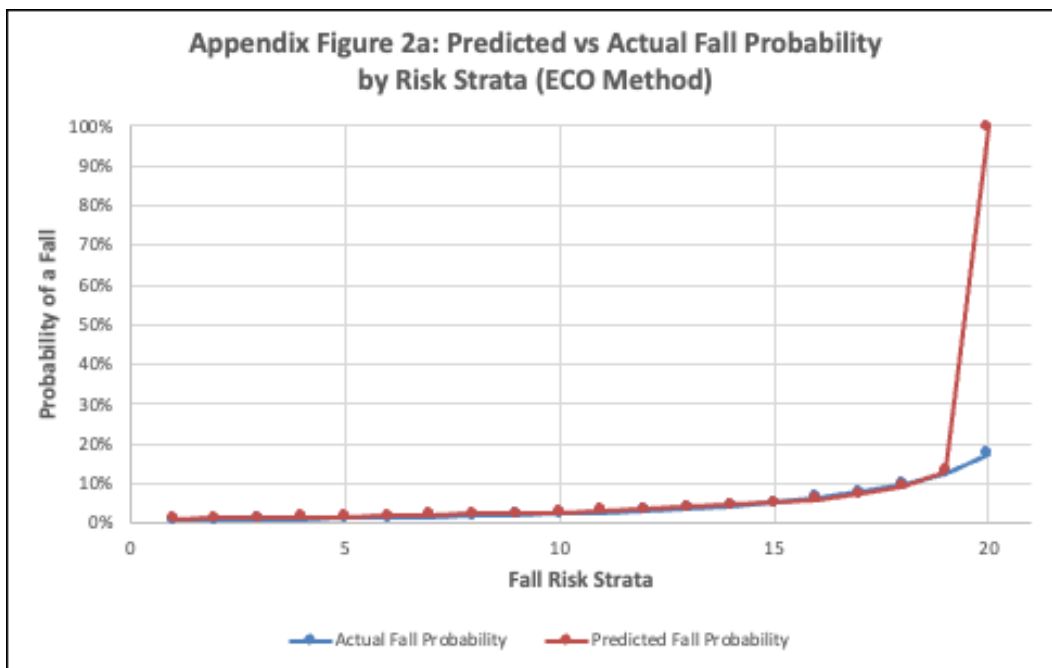


**Appendix Figure 1c: Predicted vs Actual Fall Probability
by Risk Strata (AUR Method)**

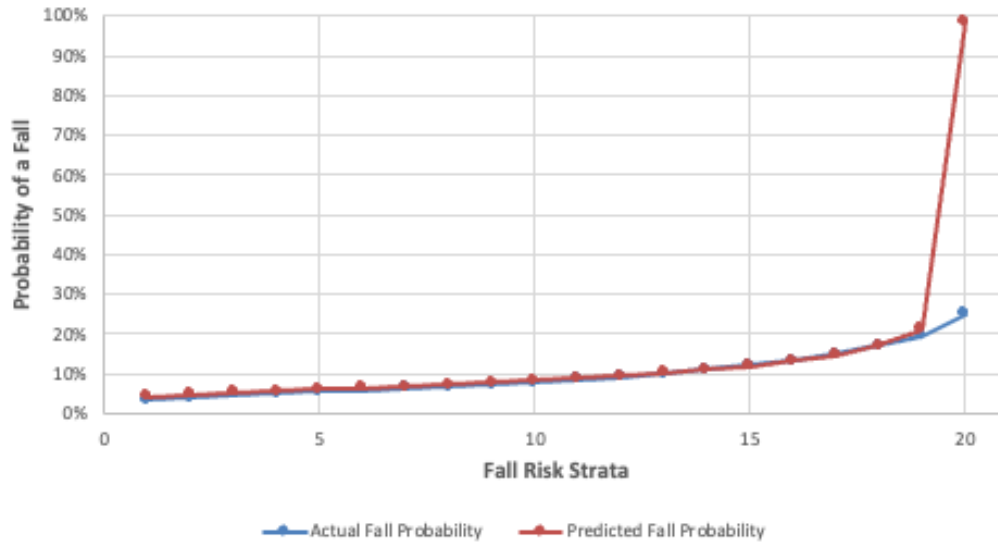


Appendix Table 4: Regression Model Goodness-of-fit Statistics – beneficiaries who did not have a fall in the previous calendar year

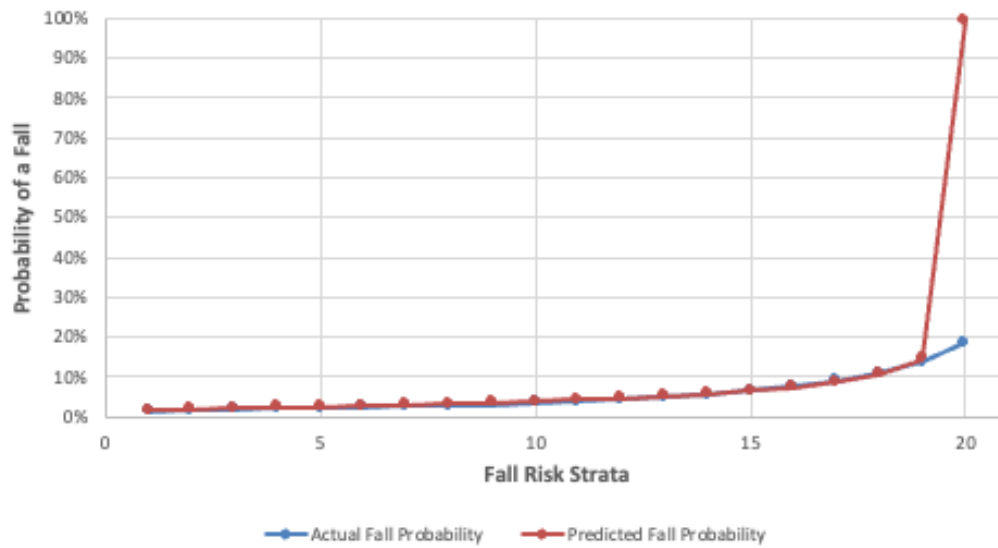
	Fall E-Codes All Settings (N=10,225,526)	Fall ECDC All Settings (N=9,431,382)	Fall AUR All Settings (N=10,101,840)
McFadden's Pseudo R ²	0.099	0.048	0.076
Cragg & Uhler's Pseudo R ²	0.115	0.065	0.092
Efron's Pseudo R ²	0.040	0.034	0.037
McKelvey & Zavoina Pseudo R ²	0.170	0.085	0.135
Akaike Information Criterion (AIC)	0.326	0.614	0.387
Bayesian Information Criterion (BIC)	$-1.617e^8$	$-1.457e^8$	$-1.590e^8$
Area Under ROC Curve (AUC)	0.7562	0.6673	0.7208



**Appendix Figure 2b: Predicted vs Actual Fall Probability
by Risk Strata (ECDC Method)**



**Appendix Figure 2c: Predicted vs Actual Fall Probability
by Risk Strata (AUR Method)**



Appendix Table 5: Logistic Regression Model Results – beneficiaries who had a fall in the previous calendar year†

	Fall E-Codes All Settings (N=450,624)		Fall ECDC All Settings (N=1,244,768)		Fall AUR All Settings (N=574,310)	
	Odds Ratio (95% CI)	P- Value	Odds Ratio (95% CI)	P- Value	Odds Ratio (95% CI)	P- Value
Age	1.03 (1.03 to 1.03)	0.000	1.01 (1.01 to 1.01)	0.000	1.03 (1.03 to 1.03)	0.000
Race						
Unknown	1 [Reference]		1 [Reference]		1 [Reference]	
Non-Hispanic White	1.16 (1.00 to 1.35)	0.044	1.23 (1.15 to 1.31)	0.000	1.22 (1.08 to 1.39)	0.002
Black (Or African American)	0.91 (0.78 to 1.06)	0.235	0.96 (0.90 to 1.03)	0.231	0.94 (0.83 to 1.07)	0.363
Hispanic	0.94 (0.81 to 1.10)	0.442	1.10 (1.03 to 1.17)	0.006	1.01 (0.89 to 1.15)	0.827
Asian / Pacific Islander	0.84 (0.71 to 0.98)	0.032	0.97 (0.90 to 1.04)	0.341	0.88 (0.76 to 1.01)	0.060
American Indian / Alaska Native	1.38 (1.16 to 1.65)	0.000	1.35 (1.24 to 1.47)	0.000	1.47 (1.26 to 1.71)	0.000
Other	0.97 (0.81 to 1.17)	0.765	1.06 (0.97 to 1.15)	0.202	1.01 (0.86 to 1.18)	0.916
Sex						
Male	1 [Reference]		1 [Reference]		1 [Reference]	
Female	1.06 (1.04 to 1.08)	0.000	1.17 (1.15 to 1.18)	0.000	1.12 (1.10 to 1.14)	0.000
ESRD	1.35 (1.21 to 1.49)	0.000	1.26 (1.18 to 1.36)	0.000	1.44 (1.31 to 1.59)	0.000
Diabetic Footwear	0.89 (0.61 to 1.30)	0.554	1.21 (1.00 to 1.47)	0.051	0.87 (0.62 to 1.23)	0.431
Walking Aids	0.53 (0.21 to 1.34)	0.180	1.32 (1.05 to 1.64)	0.016	0.49 (0.26 to 0.94)	0.033
Abnormal Gait	1.23 (1.21 to 1.25)	0.000	1.13 (1.11 to 1.14)	0.000	1.21 (1.19 to 1.22)	0.000
Orthostatic Hypotension	1.11 (1.08 to 1.15)	0.000	1.05 (1.03 to 1.08)	0.000	1.10 (1.07 to 1.14)	0.000
Sarcopenia	0.98 (0.94 to 1.03)	0.464	1.11 (1.08 to 1.15)	0.000	1.02 (0.98 to 1.07)	0.232
Weight Loss	1.09 (1.06 to 1.12)	0.000	1.03 (1.01 to 1.05)	0.004	1.08 (1.05 to 1.11)	0.000
Weight Gain	1.07 (0.97 to 1.17)	0.166	1.06 (1.01 to 1.12)	0.022	1.07 (0.98 to 1.16)	0.123
Underweight	1.20 (1.08 to 1.34)	0.001	1.00 (0.92 to 1.09)	0.992	1.20 (1.08 to 1.33)	0.001

Overweight	1.01 (0.92 to 1.10)	0.862	0.95 (0.90 to 1.00)	0.054	0.97 (0.90 to 1.06)	0.522
Parkinson	1.38 (1.33 to 1.42)	0.000	1.24 (1.21 to 1.27)	0.000	1.39 (1.35 to 1.44)	0.000
Incontinence	1.09 (1.07 to 1.12)	0.000	1.06 (1.05 to 1.08)	0.000	1.09 (1.07 to 1.11)	0.000
Dizziness & Vertigo	1.12 (1.10 to 1.14)	0.000	1.07 (1.06 to 1.08)	0.000	1.12 (1.10 to 1.14)	0.000
Cognitive Impairment	1.01 (0.98 to 1.05)	0.395	0.96 (0.94 to 0.99)	0.002	1.00 (0.97 to 1.03)	0.767
Restless Leg Syndrome	1.14 (1.10 to 1.19)	0.000	1.13 (1.10 to 1.16)	0.000	1.15 (1.10 to 1.19)	0.000
Movement Disorders	1.14 (1.10 to 1.18)	0.000	1.04 (1.02 to 1.07)	0.000	1.13 (1.10 to 1.17)	0.000
Melanoma	1.10 (1.05 to 1.15)	0.000	0.93 (0.90 to 0.96)	0.000	1.08 (1.04 to 1.13)	0.000
Bladder Cancer	0.99 (0.93 to 1.05)	0.688	0.97 (0.94 to 1.01)	0.124	0.99 (0.94 to 1.04)	0.612
Kidney Cancer	1.02 (0.94 to 1.10)	0.677	1.01 (0.97 to 1.06)	0.670	1.03 (0.96 to 1.10)	0.460
Pancreatic Cancer	0.92 (0.80 to 1.07)	0.289	0.84 (0.77 to 0.92)	0.000	0.90 (0.79 to 1.03)	0.134
Other Cancer	1.00 (0.98 to 1.03)	0.737	1.00 (0.99 to 1.01)	0.763	1.00 (0.99 to 1.02)	0.653
Alzheimer's Disease	1.06 (1.03 to 1.09)	0.000	1.05 (1.03 to 1.07)	0.000	1.07 (1.05 to 1.10)	0.000
Alzheimer's Disease & Related Disorders or Senile Dementia	1.31 (1.29 to 1.34)	0.000	1.15 (1.14 to 1.17)	0.000	1.29 (1.27 to 1.31)	0.000
Acute Myocardial Infarction	0.91 (0.87 to 0.96)	0.001	0.88 (0.85 to 0.91)	0.000	0.89 (0.84 to 0.93)	0.000
Anemia	1.04 (1.03 to 1.06)	0.000	1.07 (1.06 to 1.08)	0.000	1.07 (1.05 to 1.08)	0.000
Asthma	1.05 (1.02 to 1.07)	0.000	1.00 (0.99 to 1.02)	0.771	1.03 (1.01 to 1.05)	0.016
Atrial Fibrillation	1.07 (1.05 to 1.09)	0.000	1.03 (1.02 to 1.04)	0.000	1.07 (1.05 to 1.08)	0.000
Breast Cancer	0.97 (0.94 to 1.00)	0.071	0.95 (0.93 to 0.97)	0.000	0.98 (0.96 to 1.01)	0.235
Colorectal Cancer	0.96 (0.91 to 1.00)	0.076	0.93 (0.90 to 0.96)	0.000	0.95 (0.91 to 0.99)	0.014
Endometrial Cancer	0.98 (0.89 to 1.07)	0.635	0.95 (0.89 to 1.00)	0.057	0.95 (0.87 to 1.04)	0.250
Lung Cancer	0.91 (0.86 to 0.96)	0.002	0.81 (0.78 to 0.84)	0.000	0.92 (0.87 to 0.97)	0.002
Prostate Cancer	0.98 (0.94 to 1.02)	0.257	0.97 (0.95 to 0.99)	0.005	1.00 (0.96 to 1.03)	0.874
Cataract	0.95 (0.93 to 0.97)	0.000	0.99 (0.98 to 1.00)	0.132	0.96 (0.95 to 0.98)	0.000
Heart Failure	1.04 (1.02 to 1.06)	0.000	1.03 (1.02 to 1.04)	0.000	1.04 (1.03 to 1.06)	0.000

Chronic Kidney Disease	1.04 (1.03 to 1.06)	0.000	0.94 (0.93 to 0.95)	0.000	1.03 (1.02 to 1.05)	0.000
Chronic Obstructive Pulmonary Disease	1.07 (1.04 to 1.09)	0.000	1.03 (1.02 to 1.04)	0.000	1.08 (1.06 to 1.09)	0.000
Depression	1.14 (1.11 to 1.17)	0.000	1.10 (1.09 to 1.12)	0.000	1.15 (1.12 to 1.18)	0.000
Diabetes	1.06 (1.05 to 1.08)	0.000	1.05 (1.04 to 1.06)	0.000	1.08 (1.06 to 1.10)	0.000
Glaucoma	0.98 (0.96 to 1.00)	0.111	1.01 (1.00 to 1.02)	0.196	0.98 (0.96 to 1.00)	0.063
Hip/Pelvic Fracture	0.87 (0.85 to 0.89)	0.000	1.34 (1.31 to 1.37)	0.000	0.94 (0.92 to 0.96)	0.000
Hyperlipidemia	0.90 (0.88 to 0.91)	0.000	0.93 (0.92 to 0.93)	0.000	0.89 (0.88 to 0.90)	0.000
Benign Prostatic Hyperplasia	0.95 (0.92 to 0.98)	0.000	0.97 (0.96 to 0.99)	0.001	0.97 (0.94 to 0.99)	0.012
Hypertension	1.07 (1.04 to 1.09)	0.000	1.01 (1.00 to 1.02)	0.028	1.08 (1.06 to 1.10)	0.000
Hypothyroidism	1.00 (0.98 to 1.01)	0.614	0.99 (0.98 to 1.00)	0.166	1.00 (0.98 to 1.01)	0.645
Ischemic Heart Disease	1.06 (1.04 to 1.08)	0.000	1.08 (1.07 to 1.09)	0.000	1.07 (1.05 to 1.09)	0.000
Osteoporosis	1.06 (1.04 to 1.08)	0.000	1.14 (1.12 to 1.15)	0.000	1.07 (1.05 to 1.09)	0.000
Rheumatoid Arthritis / Osteoarthritis	1.11 (1.09 to 1.12)	0.000	1.11 (1.10 to 1.12)	0.000	1.06 (1.04 to 1.07)	0.000
Stroke / Transient Ischemic Attack	1.05 (1.02 to 1.07)	0.000	1.00 (0.98 to 1.02)	0.926	1.05 (1.02 to 1.07)	0.000
ADHD & Other Conduct Disorders	1.12 (1.03 to 1.22)	0.007	1.04 (0.98 to 1.10)	0.182	1.10 (1.02 to 1.19)	0.018
Anxiety Disorders	1.11 (1.09 to 1.13)	0.000	1.04 (1.02 to 1.05)	0.000	1.09 (1.08 to 1.11)	0.000
Autism Spectrum Disorders	1.01 (0.73 to 1.39)	0.953	1.04 (0.83 to 1.30)	0.731	0.91 (0.67 to 1.24)	0.556
Bipolar Disorder	1.16 (1.11 to 1.20)	0.000	1.12 (1.09 to 1.15)	0.000	1.16 (1.12 to 1.20)	0.000
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage	1.04 (0.98 to 1.10)	0.157	1.11 (1.07 to 1.16)	0.000	1.06 (1.00 to 1.11)	0.038
Cerebral Palsy	1.28 (1.08 to 1.52)	0.005	1.11 (0.99 to 1.24)	0.072	1.34 (1.15 to 1.57)	0.000
Cystic Fibrosis & other Metabolic Developmental Disorders	1.00 (0.93 to 1.07)	0.984	0.96 (0.92 to 1.00)	0.056	0.99 (0.93 to 1.05)	0.698
Depression	1.16 (1.13 to 1.19)	0.000	1.11 (1.09 to 1.12)	0.000	1.16 (1.13 to 1.18)	0.000
Epilepsy	1.24 (1.20 to 1.29)	0.000	1.18 (1.16 to 1.21)	0.000	1.25 (1.21 to 1.29)	0.000
Chronic Pain, Fatigue & Fibromyalgia	1.14 (1.12 to 1.17)	0.000	1.06 (1.05 to 1.07)	0.000	1.12 (1.11 to 1.14)	0.000
Deafness & Hearing Impairment	0.99 (0.96 to 1.01)	0.339	0.99 (0.97 to 1.00)	0.115	0.98 (0.96 to 1.00)	0.083

Viral Hepatitis (General)	1.21 (1.13 to 1.29)	0.000	1.10 (1.06 to 1.15)	0.000	1.19 (1.11 to 1.26)	0.000
HIV/AIDS	1.26 (1.02 to 1.55)	0.034	1.18 (1.04 to 1.34)	0.009	1.19 (0.98 to 1.45)	0.076
Intellectual Disabilities & Related Conditions	1.53 (1.39 to 1.68)	0.000	1.43 (1.34 to 1.52)	0.000	1.52 (1.39 to 1.66)	0.000
Learning Disabilities	1.09 (0.93 to 1.26)	0.283	0.98 (0.87 to 1.10)	0.712	1.07 (0.93 to 1.23)	0.369
Leukemias & Lymphomas	1.00 (0.95 to 1.05)	0.941	0.93 (0.90 to 0.96)	0.000	0.99 (0.95 to 1.04)	0.776
Liver Disease, Cirrhosis & Other Liver Conditions (Excluding Hepatitis)	1.06 (1.02 to 1.09)	0.001	0.99 (0.97 to 1.01)	0.511	1.06 (1.02 to 1.09)	0.000
Migraine & Other Chronic Headaches	1.13 (1.09 to 1.18)	0.000	1.06 (1.04 to 1.09)	0.000	1.12 (1.08 to 1.16)	0.000
Mobility Impairments	1.02 (0.99 to 1.05)	0.206	1.00 (0.98 to 1.02)	0.869	1.03 (1.00 to 1.06)	0.040
Multiple Sclerosis & Transverse Myelitis	1.17 (1.06 to 1.29)	0.002	1.04 (0.98 to 1.11)	0.155	1.20 (1.10 to 1.31)	0.000
Muscular Dystrophy	0.92 (0.68 to 1.25)	0.592	1.11 (0.93 to 1.34)	0.254	0.98 (0.74 to 1.30)	0.902
Obesity	0.97 (0.94 to 0.99)	0.004	0.89 (0.88 to 0.91)	0.000	0.96 (0.94 to 0.98)	0.000
Other Developmental Delays	1.19 (0.94 to 1.51)	0.142	1.08 (0.91 to 1.27)	0.400	1.25 (1.01 to 1.56)	0.041
Personality Disorders	1.16 (1.08 to 1.24)	0.000	0.95 (0.91 to 1.00)	0.071	1.13 (1.06 to 1.21)	0.000
Post-Traumatic Stress Disorder	1.15 (1.06 to 1.25)	0.001	1.10 (1.05 to 1.17)	0.000	1.16 (1.07 to 1.25)	0.000
Peripheral Vascular Disease	1.07 (1.05 to 1.09)	0.000	1.04 (1.03 to 1.05)	0.000	1.06 (1.05 to 1.08)	0.000
Schizophrenia	1.08 (1.00 to 1.16)	0.038	1.05 (1.00 to 1.11)	0.055	1.10 (1.03 to 1.18)	0.005
Schizophrenia & Other Psychotic Disorders	1.09 (1.05 to 1.12)	0.000	1.06 (1.04 to 1.09)	0.000	1.08 (1.05 to 1.11)	0.000
Spina Bifida & Other Congenital Anomalies of the Nervous System	1.09 (0.94 to 1.27)	0.236	1.10 (1.00 to 1.21)	0.057	1.15 (1.00 to 1.32)	0.046
Spinal Cord Injury	1.07 (1.02 to 1.12)	0.006	1.11 (1.07 to 1.14)	0.000	1.01 (0.97 to 1.06)	0.541
Tobacco Use Disorders	1.16 (1.12 to 1.19)	0.000	1.04 (1.03 to 1.06)	0.000	1.16 (1.13 to 1.19)	0.000
Pressure Ulcers & Chronic Ulcers	1.02 (1.00 to 1.04)	0.092	1.03 (1.02 to 1.05)	0.000	1.02 (1.00 to 1.04)	0.101
Blindness & Visual Impairment	1.04 (1.00 to 1.09)	0.072	1.07 (1.04 to 1.11)	0.000	1.05 (1.01 to 1.10)	0.015
Acute Inpatient Stays	0.98 (0.97 to 1.00)	0.024	0.99 (0.98 to 1.00)	0.296	1.00 (0.98 to 1.01)	0.626
Anesthesia Events	0.98 (0.97 to 0.98)	0.000	0.99 (0.99 to 0.99)	0.000	0.98 (0.97 to 0.98)	0.000
Ambulatory Surgery Center Events	1.00 (0.99 to 1.01)	0.835	1.01 (1.01 to 1.01)	0.000	1.00 (0.99 to 1.01)	0.715

Dialysis Events	0.99 (0.99 to 1.00)	0.029	0.99 (0.99 to 1.00)	0.000	0.99 (0.99 to 1.00)	0.008
Durable Medical Equipment Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.007	1.00 (1.00 to 1.00)	0.000
Evaluation & Management Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Home Health Visits	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.003	1.00 (1.00 to 1.00)	0.000
Hospital Outpatient Visits	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Hospice Stays	0.47 (0.45 to 0.49)	0.000	0.43 (0.42 to 0.45)	0.000	0.46 (0.44 to 0.48)	0.000
Imaging Events	1.01 (1.01 to 1.01)	0.000	1.02 (1.02 to 1.02)	0.000	1.01 (1.01 to 1.01)	0.000
Inpatient Emergency Room Visits	1.01 (1.00 to 1.03)	0.080	1.04 (1.03 to 1.05)	0.000	1.02 (1.00 to 1.03)	0.020
Other Inpatient Stays (Including Transfers)	0.96 (0.94 to 0.99)	0.001	1.02 (1.00 to 1.04)	0.013	0.97 (0.95 to 0.99)	0.009
Other Procedures Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Other Part B Carrier Events	1.00 (1.00 to 1.00)	0.600	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.611
MD Office Part B Events	1.01 (1.01 to 1.01)	0.000	1.01 (1.01 to 1.01)	0.000	1.01 (1.01 to 1.01)	0.000
Part B Drug Events	1.00 (1.00 to 1.00)	0.231	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.452
Part D Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Hospital Readmissions	1.00 (0.98 to 1.02)	0.851	0.94 (0.93 to 0.95)	0.000	0.97 (0.96 to 0.99)	0.002
Skilled Nursing Facility Stays	0.92 (0.90 to 0.93)	0.000	0.97 (0.96 to 0.98)	0.000	0.94 (0.93 to 0.95)	0.000
Tests Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000

†All predictors are from the previous calendar year.

Appendix Table 6: Logistic Regression Model Results – beneficiaries who did not have a fall in the previous calendar year†

	Fall E-Codes All Settings (N=10,225,526)		Fall ECDC All Settings (N=9,431,382)		Fall AUR All Settings (N=10,101,840)	
	Odds Ratio (95% CI)	P- Value	Odds Ratio (95% CI)	P- Value	Odds Ratio (95% CI)	P- Value
Age	1.06 (1.06 to 1.06)	0.000	1.03 (1.03 to 1.03)	0.000	1.05 (1.05 to 1.05)	0.000
Race						
Unknown	1 [Reference]		1 [Reference]		1 [Reference]	
Non-Hispanic White	1.22 (1.17 to 1.28)	0.000	1.25 (1.22 to 1.29)	0.000	1.18 (1.14 to 1.23)	0.000
Black (Or African American)	0.84 (0.80 to 0.88)	0.000	0.91 (0.89 to 0.94)	0.000	0.77 (0.74 to 0.81)	0.000
Hispanic	0.95 (0.91 to 1.00)	0.060	1.03 (1.00 to 1.06)	0.054	0.93 (0.89 to 0.97)	0.001
Asian / Pacific Islander	0.72 (0.68 to 0.76)	0.000	0.80 (0.78 to 0.83)	0.000	0.71 (0.68 to 0.74)	0.000
American Indian / Alaska Native	1.48 (1.39 to 1.58)	0.000	1.56 (1.50 to 1.62)	0.000	1.39 (1.31 to 1.47)	0.000
Other	0.88 (0.82 to 0.93)	0.000	0.94 (0.90 to 0.98)	0.002	0.86 (0.81 to 0.91)	0.000
Sex						
Male	1 [Reference]		1 [Reference]		1 [Reference]	
Female	1.31 (1.30 to 1.32)	0.000	1.30 (1.29 to 1.31)	0.000	1.31 (1.30 to 1.31)	0.000
ESRD	1.44 (1.36 to 1.53)	0.000	1.18 (1.12 to 1.24)	0.000	1.40 (1.33 to 1.48)	0.000
Diabetic Footwear	1.02 (0.86 to 1.22)	0.829	1.26 (1.11 to 1.43)	0.000	1.06 (0.90 to 1.25)	0.454
Walking Aids	1.22 (0.82 to 1.82)	0.331	1.46 (0.99 to 2.16)	0.055	1.59 (1.13 to 2.24)	0.008
Abnormal Gait	1.31 (1.29 to 1.32)	0.000	1.14 (1.13 to 1.15)	0.000	1.26 (1.25 to 1.27)	0.000
Orthostatic Hypotension	1.23 (1.19 to 1.26)	0.000	1.13 (1.10 to 1.15)	0.000	1.20 (1.17 to 1.23)	0.000
Sarcopenia	0.98 (0.95 to 1.02)	0.294	1.13 (1.09 to 1.16)	0.000	1.01 (0.98 to 1.05)	0.502
Weight Loss	1.23 (1.21 to 1.25)	0.000	1.11 (1.10 to 1.13)	0.000	1.19 (1.17 to 1.21)	0.000
Weight Gain	1.05 (1.00 to 1.10)	0.062	1.09 (1.05 to 1.13)	0.000	1.07 (1.02 to 1.12)	0.003
Underweight	1.25 (1.15 to 1.35)	0.000	1.09 (1.01 to 1.17)	0.023	1.18 (1.09 to 1.28)	0.000

Overweight	0.98 (0.93 to 1.03)	0.396	0.94 (0.90 to 0.97)	0.000	0.96 (0.92 to 1.00)	0.075
Parkinson	1.61 (1.58 to 1.65)	0.000	1.33 (1.31 to 1.36)	0.000	1.53 (1.50 to 1.56)	0.000
Incontinence	1.12 (1.11 to 1.14)	0.000	1.11 (1.10 to 1.12)	0.000	1.12 (1.10 to 1.13)	0.000
Dizziness & Vertigo	1.12 (1.11 to 1.13)	0.000	1.12 (1.11 to 1.12)	0.000	1.11 (1.10 to 1.12)	0.000
Cognitive Impairment	1.07 (1.05 to 1.09)	0.000	1.01 (0.99 to 1.03)	0.254	1.05 (1.03 to 1.08)	0.000
Restless Leg Syndrome	1.16 (1.13 to 1.19)	0.000	1.17 (1.14 to 1.19)	0.000	1.15 (1.12 to 1.17)	0.000
Movement Disorders	1.20 (1.18 to 1.23)	0.000	1.10 (1.09 to 1.12)	0.000	1.17 (1.15 to 1.20)	0.000
Melanoma	1.08 (1.05 to 1.10)	0.000	0.92 (0.90 to 0.93)	0.000	1.03 (1.01 to 1.05)	0.012
Bladder Cancer	0.95 (0.92 to 0.97)	0.000	0.94 (0.92 to 0.96)	0.000	0.95 (0.92 to 0.97)	0.000
Kidney Cancer	0.96 (0.92 to 0.99)	0.017	0.99 (0.96 to 1.02)	0.435	0.96 (0.92 to 0.99)	0.015
Pancreatic Cancer	0.99 (0.92 to 1.06)	0.736	0.83 (0.78 to 0.87)	0.000	0.95 (0.89 to 1.01)	0.127
Other Cancer	1.00 (0.99 to 1.01)	0.819	1.05 (1.04 to 1.05)	0.000	1.01 (1.00 to 1.02)	0.017
Alzheimer's Disease	1.10 (1.08 to 1.12)	0.000	1.06 (1.05 to 1.08)	0.000	1.09 (1.07 to 1.10)	0.000
Alzheimer's Disease & Related Disorders or Senile Dementia	1.48 (1.46 to 1.49)	0.000	1.29 (1.28 to 1.31)	0.000	1.45 (1.43 to 1.46)	0.000
Acute Myocardial Infarction	1.00 (0.97 to 1.03)	0.908	0.95 (0.92 to 0.97)	0.000	0.98 (0.96 to 1.01)	0.286
Anemia	1.10 (1.09 to 1.11)	0.000	1.08 (1.07 to 1.09)	0.000	1.09 (1.09 to 1.10)	0.000
Asthma	1.01 (0.99 to 1.02)	0.367	1.01 (1.00 to 1.02)	0.047	1.00 (0.99 to 1.01)	0.968
Atrial Fibrillation	1.22 (1.21 to 1.23)	0.000	1.15 (1.14 to 1.15)	0.000	1.18 (1.17 to 1.19)	0.000
Breast Cancer	0.96 (0.94 to 0.97)	0.000	0.93 (0.92 to 0.94)	0.000	0.96 (0.94 to 0.97)	0.000
Colorectal Cancer	0.95 (0.92 to 0.97)	0.000	0.91 (0.90 to 0.93)	0.000	0.94 (0.92 to 0.96)	0.000
Endometrial Cancer	0.90 (0.85 to 0.94)	0.000	0.85 (0.82 to 0.89)	0.000	0.87 (0.83 to 0.91)	0.000
Lung Cancer	1.02 (0.99 to 1.04)	0.272	0.89 (0.87 to 0.91)	0.000	0.98 (0.95 to 1.00)	0.066
Prostate Cancer	1.01 (0.99 to 1.03)	0.291	1.01 (0.99 to 1.02)	0.418	1.02 (1.00 to 1.03)	0.027
Cataract	0.93 (0.92 to 0.94)	0.000	1.01 (1.01 to 1.02)	0.000	0.95 (0.94 to 0.96)	0.000
Heart Failure	1.11 (1.10 to 1.12)	0.000	1.07 (1.06 to 1.08)	0.000	1.11 (1.10 to 1.12)	0.000

Chronic Kidney Disease	1.14 (1.13 to 1.15)	0.000	0.97 (0.97 to 0.98)	0.000	1.09 (1.08 to 1.10)	0.000
Chronic Obstructive Pulmonary Disease	1.12 (1.11 to 1.13)	0.000	1.06 (1.05 to 1.07)	0.000	1.10 (1.09 to 1.11)	0.000
Depression	1.24 (1.23 to 1.26)	0.000	1.15 (1.13 to 1.16)	0.000	1.21 (1.20 to 1.23)	0.000
Diabetes	1.15 (1.14 to 1.16)	0.000	1.08 (1.07 to 1.08)	0.000	1.11 (1.10 to 1.12)	0.000
Glaucoma	0.95 (0.94 to 0.96)	0.000	1.01 (1.01 to 1.02)	0.001	0.96 (0.96 to 0.97)	0.000
Hip/Pelvic Fracture	1.12 (1.06 to 1.20)	0.000	1.08 (0.87 to 1.34)	0.472	1.25 (1.10 to 1.42)	0.001
Hyperlipidemia	0.87 (0.86 to 0.87)	0.000	0.95 (0.94 to 0.95)	0.000	0.89 (0.88 to 0.90)	0.000
Benign Prostatic Hyperplasia	0.96 (0.95 to 0.97)	0.000	0.99 (0.98 to 1.00)	0.119	0.97 (0.96 to 0.98)	0.000
Hypertension	1.10 (1.10 to 1.11)	0.000	1.05 (1.05 to 1.06)	0.000	1.07 (1.06 to 1.08)	0.000
Hypothyroidism	1.01 (1.01 to 1.02)	0.001	1.01 (1.00 to 1.02)	0.000	1.01 (1.00 to 1.02)	0.002
Ischemic Heart Disease	1.12 (1.11 to 1.13)	0.000	1.13 (1.13 to 1.14)	0.000	1.11 (1.10 to 1.11)	0.000
Osteoporosis	1.14 (1.13 to 1.15)	0.000	1.13 (1.12 to 1.14)	0.000	1.15 (1.14 to 1.16)	0.000
Rheumatoid Arthritis / Osteoarthritis	1.15 (1.15 to 1.16)	0.000	1.25 (1.24 to 1.25)	0.000	1.17 (1.17 to 1.18)	0.000
Stroke / Transient Ischemic Attack	1.14 (1.12 to 1.15)	0.000	1.07 (1.06 to 1.09)	0.000	1.11 (1.10 to 1.13)	0.000
ADHD & Other Conduct Disorders	1.10 (1.04 to 1.15)	0.001	1.07 (1.03 to 1.12)	0.001	1.10 (1.04 to 1.15)	0.000
Anxiety Disorders	1.15 (1.14 to 1.16)	0.000	1.04 (1.03 to 1.05)	0.000	1.10 (1.10 to 1.12)	0.000
Autism Spectrum Disorders	1.28 (1.05 to 1.56)	0.013	1.07 (0.90 to 1.26)	0.456	1.22 (1.01 to 1.47)	0.039
Bipolar Disorder	1.26 (1.23 to 1.29)	0.000	1.15 (1.13 to 1.17)	0.000	1.22 (1.19 to 1.25)	0.000
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage	1.21 (1.16 to 1.27)	0.000	1.20 (1.15 to 1.25)	0.000	1.19 (1.14 to 1.25)	0.000
Cerebral Palsy	1.28 (1.16 to 1.42)	0.000	1.10 (1.01 to 1.19)	0.028	1.21 (1.10 to 1.33)	0.000
Cystic Fibrosis & other Metabolic Developmental Disorders	0.99 (0.95 to 1.02)	0.461	0.95 (0.92 to 0.98)	0.001	0.97 (0.94 to 1.01)	0.171
Depression	1.18 (1.16 to 1.19)	0.000	1.13 (1.12 to 1.14)	0.000	1.17 (1.16 to 1.18)	0.000
Epilepsy	1.41 (1.38 to 1.44)	0.000	1.25 (1.23 to 1.27)	0.000	1.38 (1.35 to 1.40)	0.000
Chronic Pain, Fatigue & Fibromyalgia	1.21 (1.20 to 1.23)	0.000	1.08 (1.07 to 1.08)	0.000	1.16 (1.15 to 1.17)	0.000
Deafness & Hearing Impairment	1.00 (0.98 to 1.01)	0.663	1.01 (1.00 to 1.02)	0.005	1.00 (0.99 to 1.02)	0.447

Viral Hepatitis (General)	1.27 (1.23 to 1.31)	0.000	1.14 (1.11 to 1.17)	0.000	1.23 (1.19 to 1.27)	0.000
HIV/AIDS	1.43 (1.29 to 1.57)	0.000	1.19 (1.10 to 1.27)	0.000	1.37 (1.25 to 1.50)	0.000
Intellectual Disabilities & Related Conditions	1.79 (1.69 to 1.89)	0.000	1.48 (1.42 to 1.55)	0.000	1.67 (1.59 to 1.77)	0.000
Learning Disabilities	1.16 (1.04 to 1.29)	0.005	0.99 (0.90 to 1.09)	0.800	1.11 (1.00 to 1.23)	0.047
Leukemias & Lymphomas	1.09 (1.07 to 1.12)	0.000	0.98 (0.97 to 1.00)	0.073	1.06 (1.04 to 1.08)	0.000
Liver Disease, Cirrhosis & Other Liver Conditions (Excluding Hepatitis)	1.14 (1.12 to 1.16)	0.000	1.04 (1.02 to 1.05)	0.000	1.11 (1.09 to 1.13)	0.000
Migraine & Other Chronic Headaches	1.13 (1.11 to 1.16)	0.000	1.06 (1.04 to 1.08)	0.000	1.09 (1.07 to 1.11)	0.000
Mobility Impairments	1.08 (1.06 to 1.10)	0.000	1.01 (0.99 to 1.03)	0.164	1.08 (1.06 to 1.10)	0.000
Multiple Sclerosis & Transverse Myelitis	1.45 (1.38 to 1.53)	0.000	1.18 (1.14 to 1.23)	0.000	1.35 (1.28 to 1.41)	0.000
Muscular Dystrophy	1.49 (1.28 to 1.73)	0.000	1.10 (0.97 to 1.25)	0.153	1.32 (1.14 to 1.52)	0.000
Obesity	1.06 (1.05 to 1.08)	0.000	0.90 (0.89 to 0.91)	0.000	1.00 (0.99 to 1.01)	0.896
Other Developmental Delays	1.08 (0.92 to 1.26)	0.354	1.12 (0.98 to 1.28)	0.109	1.04 (0.89 to 1.21)	0.661
Personality Disorders	1.11 (1.07 to 1.16)	0.000	0.88 (0.85 to 0.91)	0.000	1.05 (1.01 to 1.09)	0.012
Post-Traumatic Stress Disorder	1.16 (1.10 to 1.21)	0.000	1.13 (1.08 to 1.17)	0.000	1.14 (1.09 to 1.19)	0.000
Peripheral Vascular Disease	1.09 (1.08 to 1.10)	0.000	1.07 (1.06 to 1.08)	0.000	1.08 (1.07 to 1.09)	0.000
Schizophrenia	1.20 (1.15 to 1.26)	0.000	1.05 (1.02 to 1.09)	0.006	1.13 (1.08 to 1.18)	0.000
Schizophrenia & Other Psychotic Disorders	1.07 (1.05 to 1.10)	0.000	1.08 (1.06 to 1.10)	0.000	1.09 (1.06 to 1.11)	0.000
Spina Bifida & Other Congenital Anomalies of the Nervous System	1.28 (1.17 to 1.39)	0.000	1.18 (1.10 to 1.27)	0.000	1.24 (1.14 to 1.34)	0.000
Spinal Cord Injury	1.30 (1.24 to 1.37)	0.000	1.24 (1.18 to 1.30)	0.000	1.32 (1.26 to 1.38)	0.000
Tobacco Use Disorders	1.32 (1.30 to 1.33)	0.000	1.07 (1.06 to 1.08)	0.000	1.23 (1.22 to 1.25)	0.000
Pressure Ulcers & Chronic Ulcers	1.07 (1.05 to 1.08)	0.000	1.08 (1.06 to 1.09)	0.000	1.07 (1.06 to 1.08)	0.000
Blindness & Visual Impairment	1.06 (1.03 to 1.09)	0.000	1.09 (1.06 to 1.12)	0.000	1.06 (1.03 to 1.09)	0.000
Acute Inpatient Stays	1.10 (1.09 to 1.11)	0.000	1.04 (1.04 to 1.05)	0.000	1.07 (1.06 to 1.08)	0.000
Anesthesia Events	1.00 (0.99 to 1.00)	0.162	0.99 (0.98 to 0.99)	0.000	1.00 (0.99 to 1.00)	0.001
Ambulatory Surgery Center Events	1.00 (1.00 to 1.01)	0.035	1.02 (1.01 to 1.02)	0.000	1.01 (1.00 to 1.01)	0.000

Dialysis Events	0.99 (0.98 to 0.99)	0.000	0.99 (0.98 to 0.99)	0.000	0.99 (0.98 to 0.99)	0.000
Durable Medical Equipment Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Evaluation & Management Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Home Health Visits	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Hospital Outpatient Visits	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Hospice Stays	0.48 (0.46 to 0.49)	0.000	0.49 (0.48 to 0.51)	0.000	0.49 (0.48 to 0.51)	0.000
Imaging Events	1.01 (1.01 to 1.01)	0.000	1.01 (1.01 to 1.01)	0.000	1.01 (1.01 to 1.01)	0.000
Inpatient Emergency Room Visits	1.02 (1.01 to 1.03)	0.000	1.02 (1.01 to 1.03)	0.000	1.04 (1.03 to 1.05)	0.000
Other Inpatient Stays (Including Transfers)	1.04 (1.02 to 1.06)	0.000	1.02 (1.01 to 1.04)	0.007	1.03 (1.01 to 1.05)	0.002
Other Procedures Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.113
Other Part B Carrier Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.214	1.00 (1.00 to 1.00)	0.000
MD Office Part B Events	1.01 (1.01 to 1.01)	0.000	1.02 (1.02 to 1.02)	0.000	1.01 (1.01 to 1.01)	0.000
Part B Drug Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Part D Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000
Hospital Readmissions	0.87 (0.86 to 0.88)	0.000	0.92 (0.91 to 0.93)	0.000	0.89 (0.88 to 0.90)	0.000
Skilled Nursing Facility Stays	0.88 (0.87 to 0.89)	0.000	0.91 (0.90 to 0.92)	0.000	0.89 (0.88 to 0.90)	0.000
Tests Events	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000	1.00 (1.00 to 1.00)	0.000

†All predictors are from the previous calendar year.

Chapter 2:

The Impact of the Medicare Shared Savings Program on Fall Risk Screenings and Osteoporosis Screenings

Abstract

Introduction: Falls and fall-related injuries lead to substantial morbidity and spending among older adults, yet preventive services remain underused. We evaluated whether participation in Medicare Shared Savings Program (MSSP) Accountable Care Organizations (ACOs) increased delivery of fall risk screening, which is directly incentivized by a quality measure in the MSSP, and osteoporosis screening, which is not directly incentivized by the MSSP.

Methods: We analyzed a random 5% sample of community-dwelling, fee-for-service (FFS) Medicare beneficiaries aged 65 years and older from 2011 to 2018. Outcomes were annual indicators for fall risk screening and osteoporosis screening. Treatment was attribution to the 2015 MSSP ACO cohort using CMS's TIN-based assignment, with "not-yet-treated" beneficiaries serving as controls. We estimated effects using the Callaway and Sant'Anna staggered difference-in-differences approach with doubly robust estimation and beneficiary-clustered standard errors to account for staggered entry into the MSSP starting in 2012. We assessed parallel trends using event studies, and examined heterogeneity by age, sex, baseline fall-risk tercile, and ACOs' pre-MSSP fall risk screening levels. Sensitivity analyses excluded counties with low ACO penetration and utilized an NPI-based attribution.

Results: The sample included 10,676,150 beneficiaries (8.12M non-ACO; 2.19M ACO; 388 ACOs). MSSP attribution was associated with a 3.42 percentage point increase in fall risk

screening (95% CI, 0.0288-0.0396), representing a 96% rise relative to the ACO group's pre-contract mean (3.57%). Osteoporosis screening showed no overall change (0.0020; 95% CI, -0.0035-0.0076). Effects were larger for men (3.41 pps) than women (3.24 pps), for ages 65-74 (3.89 pps) versus age 85+ (2.41 pps), and among beneficiaries with middle baseline fall risk scores. ACOs with higher pre-MSSP fall risk screening levels achieved greater gains. In those aged 85+, osteoporosis screening declined modestly in ACOs (≈ 1.5 pps). Results were robust to excluding low ACO penetration counties, and the NPI-based attribution yielded effects that were approximately 7-8% larger in magnitude.

Conclusions: MSSP participation substantially increased fall risk screening, the directly incentivized preventive service, without improving unincentivized but clinically related osteoporosis screenings. Our findings highlight both the power and limits of incentivizing process-based quality measure and suggest value in broadening quality portfolios or aligning bundled preventive pathways to avoid potential crowd-out of unmeasured services.

Introduction

Falls are a serious threat to older adults' quality of life and a costly burden on our healthcare system. In the U.S., falls are the primary cause of fatal and non-fatal injuries among older adults.¹ Approximately 33% of adults aged 65 years and older and 50% of adults aged 80 years and older experience a fall each year.² Fall-related injuries (FRIs) are a serious threat to older adults' quality of life, with many leading to depression, decreased overall functional ability, chronic pain, disability, deformity, and death.³⁻⁸ Additionally, approximately \$80 billion dollars is spent due to non-fatal falls in the U.S. each year, with Medicare paying for the majority

of this cost.⁹ Osteoporosis is a medical condition in which an individual's bones and bone tissues deteriorate, leading to compromised bone architecture and a reduction in bone strength.¹⁰ About 10% of non-institutionalized adults aged 50 and older have osteoporosis and about 44% have overall low bone mass, placing them at an increased risk for osteoporosis.¹¹ While osteoporosis does not increase the risk of falling, it drastically increases the risk of incurring a serious injury from a fall.¹² Approximately 40-50% of women and approximately 13-22% of men experience an osteoporosis-related fracture within their lifetime.^{13,14}

The prevalence of FRIs among older adults could be substantially reduced through evidence-based preventive services. A 2012 systematic review found that a combination of fall risk screening by a healthcare provider, treatment of risk factors and follow-up reduced the rate of falls by 24%.¹⁵ As such, the American Geriatrics Society (AGS) recommends annual fall risk screening for all adults aged 65 years and older.¹⁶ Similarly, clinical practice guidelines recommend that all women age 65 and older and any patient with an increased fracture risk should receive bone mineral density testing and be treated for osteoporosis if present.^{10,17-20} These guidelines are supported by many clinical trials which suggest that fractures could be reduced through population-based osteoporosis screening.²¹⁻²⁴ In spite of this evidence, FRI prevention guidelines have not been widely adopted by clinicians. For example, numerous studies have found that only a fraction of eligible older women without prior osteoporosis or fracture receive preventive osteoporosis screenings.²⁵⁻²⁷ Additionally, studies conducted in primary care settings found that less than a third of patients who experienced a fall were subsequently given a fall risk examination and treatment plan.^{28,29} In two studies, clinicians attributed this failure to a lack of reimbursement for fall risk screening and a lack of fall

prevention guideline knowledge.^{30,31} Given the low rates of fall and osteoporosis screening, there is a critical need to identify policies that increase provider adoption of clinical guidelines for FRI prevention in older adults.

One policy that shows promise in achieving these goals is the Medicare Shared Savings Program (MSSP), a program of Accountable Care Organizations (ACOs) launched in 2012, which now covers almost 30% of the total FFS Medicare population.³² An MSSP ACO's reward is determined by both cost savings and meeting performance standards on over 30 quality measures, which incentivizes providers to adopt FRI prevention guidelines through three mechanisms. First, MSSP ACOs have a direct incentive to increase fall risk screenings through a specific fall risk screening quality measure (ACO13). Second, there are two quality measures for hospital and SNF readmissions (ACO8, ACO35), which indirectly incentivize providers to increase fall and osteoporosis screenings to prevent FRI-related readmissions, as previous research has demonstrated an association between fall screening interventions and reduced readmission rates.³³ Third, MSSP ACOs have an indirect incentive to increase screenings because healthcare utilization from FRIs is often resource intensive and costly, and the MSSP rewards cost-efficiency.

We chose osteoporosis screening, which is not directly incentivized by the MSSP's quality measurement, to serve as a comparator outcome to gauge whether the MSSP is leading to broad improvements in FRI prevention services or only impacting measured FRI prevention services. Early studies of Medicare's ACO pilot program (PGPD) found significant improvements in preventive services for diabetes, hypertension, coronary artery disease, and cancer, while more recent evaluations of the MSSP have found modest or no improvement in such preventive screenings.³⁴⁻³⁹ However, despite the high prevalence of falls and fractures among older adults,

no research studies have evaluated the impact of Medicare ACOs on fall and fracture prevention services. To that end, we conducted a difference-in-differences (DiD) analysis using Medicare claims to evaluate whether Medicare fee-for-service patients who are attributed to MSSP ACOs have higher fall and osteoporosis screening rates as compared to similar Medicare fee-for-service patients who are not attributed to MSSP ACOs.

Methods

Study Population

The study cohort started with all community-dwelling adults aged 65 years and older who were enrolled in Medicare Parts A and B for at least one month and who were included in the Medicare 20% random sample of beneficiaries for which we have Part B carrier claims between 2010 and 2018, because the screenings are largely performed in the office setting and billed in the carrier file claims.. Due to computational constraints, we selected a random 25% sample of this data, which lead to a study sample that is approximately 5% of the Medicare population. We excluded individuals who had ever enrolled in Medicare Advantage (MA), as the MSSP only applies to traditional fee-for-service Medicare beneficiaries. To improve the comparability of the treatment and control groups, we also excluded beneficiaries who did not have any office visits for primary care services, as primary care services are the main attribution mechanism for MSSP ACOs. We used the Medicare Master Beneficiary Summary File (MBSF) to select the Medicare beneficiaries who met our inclusion and exclusion criteria for each year between 2010 to 2018. The MBSF includes data on individual enrollment, MA participation,

dual eligibility, Part D coverage, age, race, sex, date of death, mailing address ZIP code, and indicators for over sixty of the most common comorbidities for all Medicare beneficiaries from the Chronic Conditions Warehouse (CCW) file.

Outcome Variables: Fall Risk and Osteoporosis Screenings

To construct the fall risk screening outcome in the same way that it is constructed by CMS, for each year from 2010 to 2018, we used the carrier file claims of beneficiaries in the Medicare 20% random sample to create an indicator variable of the patient being screened for future fall risk. The outcome variable equaled 1 if the claim contained one of the Current Procedural Terminology (CPT) codes that were used to bill for fall risk screening during the study period (see Table 1). We followed the exact same procedure to construct the osteoporosis screening variable, using the CPT, Healthcare Common Procedure Coding System (HCPCS), International Classification of Diseases, Ninth Revision (ICD-9), or International Classification of Diseases, Tenth Revision (ICD-10) codes that were used to bill for osteoporosis screening during the study period (see Table 1). Some of these codes are specific in indicating which screening procedure was performed (e.g., ICD-9 Code 88.98 for “bone mineral density studies”), while other codes are non-specific (e.g., ICD-9 code V82.81 for “encounter for screening for osteoporosis”).

Treatment Variable: ACO Attribution

We analyzed the cohort of ACOs in the MSSP ACO 2015 performance year. In order to use the difference-in-differences approach to evaluate the performance of the 2015 ACOs, we constructed an algorithm based on the official CMS MSSP ACO attribution methodology to

identify which beneficiaries would have been attributed to this group of 2015 ACO providers in other calendar years. For each calendar year, beneficiaries were assigned to the TIN (or combined TINs in an ACO) which provided the plurality of allowed charges for CMS-qualified primary care services. The list of HCPCS/CPT codes that qualify as primary care services and the list of eligible specialist providers are provided in the CMS MSSP attribution rules.⁴⁰

Beneficiaries who were attributed to an ACO TIN thus comprise the ACO group (i.e., treatment group) and beneficiaries who were attributed to a non-ACO TIN thus comprise the non-ACO group (i.e., control group). Using this approach, in the pre-2015 period, the patients in the treatment group are patients who would have been assigned to a 2015 MSSP ACO if that cohort of ACOs had existed in the pre-2015 time period.

Analytic Approach

The MSSP ACO 2015 beneficiaries include individuals that may have started their ACO attribution as far back as 2012, as new ACOs joined the MSSP program each year starting in 2012. The usual two-way fixed effect (TWFE) DiD model can yield biased estimates in this type of design with staggered entry of the treatment group.⁴¹ Therefore, to estimate the causal effect of MSSP ACOs on fall risk and osteoporosis screenings, we used the Callaway and Sant'Anna doubly robust method to estimate group-time average treatment effects on the treated ATT(g, t), with the not-yet-treated units as controls, and aggregate to an overall effect using cohort- and period-size weights. Standard errors were clustered at the beneficiary level.

$$Y_{it} = \alpha_i + \lambda_t + X'_{it}\gamma + \sum_{\ell \neq -1} \beta_{\ell} \mathbf{1}\{t - G_i = \ell\} + \varepsilon_{it}$$

The variable Y_{it} represents the screening outcome for beneficiary i in year t . The model includes patient characteristics (X_{it}), unit fixed effects (α_i), year fixed effects (λ_t), and an error term (ϵ_{it}) that is assumed to be uncorrelated with other unobserved determinants of the outcomes. G_i represents the first treatment time (cohort) for unit i and β_ℓ represents the effect at event time ℓ . With this design, the quasi-causal effects are identified by comparing the pre-period and post-period change in the outcome for beneficiaries aligned with MSSP ACOs to the pre-period and post-period change in the outcome for beneficiaries not aligned with MSSP ACOs. The key assumption needed for the DiD approach to identify the average treatment effect on the treated is the parallel trends assumption. This states that the outcomes for the two groups (ACO vs. non-ACO) must have similar trajectories in the pre-period years before the introduction of the MSSP ACO cohort under analysis. In other words, the changes in outcomes for the control group represent the counterfactual changes in outcomes that the treatment group would have had in the absence of the treatment. We examined this assumption visually by graphing the outcomes over the study period and statistically using an event study. The Callaway and Sant'Anna models offer additional safeguards by relaxing the usual (unconditional) parallel trend assumption and only requiring instead that it holds conditional on X , i.e., for treated and controls with similar observed characteristics X .

Pre- and Post-Intervention Time Periods

Our study required a staggered entry approach for the treatment group. Because MSSP ACOs first entered the market in 2012, some of the patients in the treatment and control groups could have been assigned to an MSSP ACO in the pre-2015 time period in 2012, 2013, or 2014. As such, treatment group beneficiaries who were first assigned to an MSSP ACO in 2012 had a

post-intervention time period beginning in 2012. Likewise, the post-intervention time period began in 2013 for treatment group beneficiaries who were first assigned to an MSSP ACO in 2013, the post-intervention time period began in 2014 for treatment group beneficiaries who were first assigned to an MSSP ACO in 2014, and the post-intervention time period began in 2015 for treatment group beneficiaries who were first assigned to an MSSP ACO in 2015 or beyond. We excluded any control group beneficiaries who were assigned to an MSSP ACO in 2012, 2013 or 2014, which are those beneficiaries who were being treated by MSSP ACO providers who were not in the 2015 performance year but in earlier performance years. Including these beneficiaries in the control group would have biased our results towards the null, as these beneficiaries would be experiencing potential MSSP treatment effects while in the control group. Our control group included not-yet-treated beneficiaries. For example, treatment group beneficiaries who were first attributed to the MSSP in 2014 could be used as control beneficiaries in 2013 for the cohort of beneficiaries who were first attributed in 2013.

Heterogeneous Treatment Effects

We also evaluated whether ACOs with higher baseline fall risk screening rates prior to the introduction of the MSSP (2010 – 2011) had greater increases in fall risk and osteoporosis screening rates as compared to ACOs with lower baseline screening rates. We also conducted several other subgroup analyses to evaluate whether the impacts of the MSSP varied by the following patient characteristics: age, sex, and predicted baseline level of fall risk. In our previous work, we created a fall risk prediction model to generate a risk score that measures each patient's risk of experiencing an FRI. This fall risk prediction model is based on over 120 well-validated risk factors for falls. We used this model to stratify beneficiaries into terciles of

baseline fall risk to assess whether MSSP ACOs were doing a better job of targeting preventive services towards high-risk patients.

Sensitivity Analyses

We also conducted two sensitivity analyses to assess the robustness of our findings to different compositions of the treatment and control groups. First, we excluded counties that had less than 1% of their beneficiaries attributed to an ACO during the study period. In theory, by restricting the control group to only include counties with ACO penetration, this could eliminate from the non-ACO control group counties that have very different unobservable characteristics as revealed by the lack of ACO penetration in those counties. Second, we also conducted a sensitivity analysis of the attribution methodology used to attribute patients to the MSSP. As described previously, we initially used the official CMS attribution algorithm that assigns beneficiaries to the TIN (or combined TINs in an ACO) which provided the plurality of allowed charges for CMS-qualified primary care services. In the sensitivity analyses, rather than aggregating each beneficiary's primary care service claims of all TINs in an ACO, we aggregated claims of all NPIs in the ACO. The rationale for this NPI-attribution approach is that ACO TINs may not have been in place before 2012 when MSSP ACOs were introduced or the TIN included a very different number of physicians in different years, or those TINs were used by physicians for a subset of their patients than after they joined the ACO. That hinders our ability to find comparable pre-ACO cohorts for our DiD analyses. As such, this study provides new insights about how employing different attribution methodologies may impact the findings of the study.

Addressing Selection Bias

Selection into the MSSP is voluntary, creating two potential selection channels:

(1) provider-level selection (entry or exit of entire organizations/TINs or clinicians) and
(2) beneficiary-level selection (changes in which patients are attributed over time, potentially differential by cost or risk). To mitigate composition changes from organizational restructuring and billing TIN changes, our primary analysis uses an intention-to-treat (ITT) design anchored at the TIN level. We fix the roster of TINs belonging to the 2015 MSSP ACO cohort and classify all beneficiaries attributed to those TINs as “treated”. To address potential clinician-level selection bias, we used this same ITT approach with the NPI attribution algorithm described in the above “Sensitivity Analysis” paragraph. Holding these clinicians stable over time prevents the regression coefficients from being impacted by providers entering or exiting the MSSP. Overall, the TIN- and NPI-anchored ITT approach prevents treatment status from mechanically changing when clinicians move across TINs or when ACOs reconfigure billing entities, and it guards against strategic billing of high-cost or high-risk patients to non-ACO TINs used by those ACO providers. We also summarize pre-post beneficiary characteristics by ACO status and attribution approach in Appendix Tables 1 through 4 and interpret treatment effects in light of these composition trends.

Results

Baseline Characteristics

The analysis included a total of 10,676,150 Medicare beneficiaries, with 8,119,748 beneficiaries not attributed to an ACO and 2,186,797 attributed to an ACO. There were 388 ACOs that were part of the MSSP in the 2015 performance year. Table 2 presents summary statistics for both the whole study sample and separately for the non-ACO group and the ACO group. Among the whole study sample from 2011-2018, the percentage of beneficiaries who were screened for future fall risk was 6.5% and the percentage of beneficiaries who were screened for osteoporosis was 8.5%. Over the whole study period, the ACO group had higher rates of both fall risk screening and osteoporosis screening (10.1%, 10.7%) as compared to the non-ACO group (5.7%, 8.1%), and these differences were statistically significant at the $\alpha = 0.001$ confidence level. There was a statistically significant difference ($p=0.000$) in the mean beneficiary age among the non-ACO Group (75.02) and the ACO group (74.76), but the difference was minimal (0.26). The racial composition of the two groups was slightly different. The ACO group had a higher percentage of Non-Hispanic White beneficiaries (84.9% vs. 82.3%), while the non-ACO group had a greater percentage of beneficiaries who identified as Black, Hispanic, Asian/Pacific Islander, or American Indian/Alaska Native. The sex composition of the two groups was also different, with the ACO group having a higher percentage of females (+2.3%) and a lower percentage of males (-2.3%) as compared to the non-ACO group. This difference was also statistically significant at $\alpha = 0.001$. Additionally, the mean number of months per year of dual eligibility was higher in the non-ACO Group (1.31)

compared to the ACO group (1.06), and this difference was statistically significant at $\alpha = 0.001$. Finally, the mean number of chronic conditions was statistically significantly higher in the ACO Group (5.35) as compared to the non-ACO group (4.66) ($p=0.000$).

Beneficiary Composition Changes Over Time

Beneficiary composition changes over time, from 2011 to 2018 (2010 is a baseline characteristic year), are presented in Appendix Tables 1 through 4 for both the ACO-attributed beneficiaries and the non-ACO beneficiaries, using both the TIN and NPI attribution methodologies. Across ACO-attributed beneficiaries, mean age decreased slightly using the TIN attribution (75.22 to 74.93) and the NPI attribution (75.24 to 74.93). The mean number of chronic conditions increased for both the TIN (5.13 to 5.45) and NPI (5.13 to 5.47) attributions. Comparable shifts occurred among non-ACO beneficiaries, with the mean age decreasing for both the TIN (74.91 to 74.62) and NPI (74.90 to 74.62) attributions, and the mean number of chronic conditions increasing for both the TIN (4.47 to 4.85) and NPI (4.45 to 4.83) attributions. Obesity prevalence nearly doubled in both groups (ACO TIN 6.4% to 12.7%; non-ACO TIN 5.7% to 11.4%). Taken together, these patterns suggest broad secular changes in comorbidity and documentation rather than a systematic shift toward healthier ACO cohorts.

Assessment of the Parallel Trends Assumption

As mentioned previously, the validity of the difference-in-difference approach rests on the assumption that the fall risk and osteoporosis screening rates for the two groups (ACO vs. non-ACO) would have had similar trajectories over the study time period absent any treatment effect. To examine the parallel trends assumption, we graphed the unadjusted outcomes for the

ACO group and non-ACO group from 2010 to 2018 to inspect the pre-intervention trends in the mean fall risk and osteoporosis screening rates (see Figures 1a through 1h). Because the pre-intervention and post-intervention time periods were different depending on when the beneficiary was first attributed to an MSSP ACO, we created a separate parallel trends graph for each of the four groups of beneficiaries with different pre-intervention and post-intervention time periods (see “Pre- and Post-Intervention Time Periods” in the Methods section for detailed explanation). For each graph, we added a vertical line to indicate the year in which the pre-intervention time period ends, and the post-intervention time period begins. All of the graphs show that the pre-intervention trends in the mean percentage of beneficiaries screened for fall risk and osteoporosis look approximately parallel during the pre-intervention time periods. We also used the post estimation feature of the Callaway and Sant’Anna Stata package to generate event studies for each of the regressions. These are provided at the end of the Appendix, under the title, “Event Study Tables.”

Difference-in-Differences Regression Analyses

Full Sample

Table 3 presents the results from the main difference-in-differences regression analyses, which used the TIN-based attribution methodology. The adjusted regression coefficient for the full sample is 0.0342 (95% CI 0.0288 to 0.0396) for fall risk screenings. This implies that the change in the mean percentage of beneficiaries screened for future fall risk in the ACO group from the pre-contract period to the post-contract period is 3.42 percentage points higher than the corresponding change in the non-ACO group. This finding is both statistically significant

($p=0.000$) and clinically significant, as 3.42 percentage points represents a 96% increase from the ACO group's pre-contract average fall risk screening rate of 3.57%. The full sample adjusted regression coefficient for osteoporosis screenings was 0.0020 (95% CI -0.0035 to 0.0076) with an associated p -value of 0.473, which implies that the MSSP was not associated with any change in the osteoporosis screening rate.

Subgroup Analyses

The MSSP had a slightly greater impact on increasing fall risk screening among males (3.41 pps, $p=0.000$) as compared to females (3.24 pps, $p=0.000$). There were also heterogeneous treatment effects observed by age group, with younger MSSP beneficiaries experiencing a greater increase in fall risk screening rates as compared to older beneficiaries. Those aged 65-74 experienced a 3.89 pp increase ($p=0.000$), those aged 75-84 experienced a 3.15 pp increase ($p=0.000$), and those aged 85 and older experienced a 2.41 pp increase ($p=0.000$). Interestingly, beneficiaries in the middle tercile of baseline predicted fall risk experienced the greatest increase in the fall risk screening rate (3.87 pps, $p=0.000$), as compared to beneficiaries in the low fall risk group (3.77 pps, $p=0.000$) and the highest fall risk group (3.43 pps, $p=0.000$). ACOs in the middle tercile of baseline pre-MSSP fall risk screening rates on average had the greatest increase in fall risk screening rates (4.65 pps, $p=0.000$). ACOs in the highest baseline fall screening rate group had an average increase in the fall risk screening rate of 3.77 pps ($p=0.000$), whereas the lowest group had an average increase of 1.15 pps ($p=0.028$). For most of the subgroup analyses, we continued to observe no statistically significant impact of the MSSP on osteoporosis screening rates. However, we did find that we found that for beneficiaries aged 85 and older, the ACO group's change in the mean osteoporosis screening rate was about

1.54 percentage points ($p=0.021$) lower than the corresponding change in the non-ACO group. This represents a 25% reduction from this group's baseline osteoporosis screening rate.

Sensitivity Analyses

Table 3 includes the results for the first sensitivity analysis, which excluded counties with little to no ACO penetration. We found that MSSP ACOs were associated with a 3.41 percentage point increase in the fall risk screening rate ($p=0.000$) and were not associated with any statistically significant changes in the osteoporosis screening rates. Table 4 presents the results for the second sensitivity analysis, which used the NPI-based attribution methodology. For the fall risk screening outcome, for the full sample and for the subgroup analyses for males, females, and excluding low-ACO penetration counties, almost all of the regression coefficients from the NPI-based attribution methodology were all about 7% to 8% larger in magnitude with similar p-values. Most of the regression results for the osteoporosis screening rates remained largely insignificant after applying the NPI-based attribution methodology. The results from the NPI-based attribution were consistent with the TIN-based attribution in finding that the MSSP was associated with a minor reduction in osteoporosis screening for beneficiaries who were 85 and old, with a 1.41 percentage point reduction ($p=0.027$) for this group, representing about a 23% decrease from this group's baseline osteoporosis screening rate after adjusting for patient characteristics.

Discussion

Overall Results

The objective of this study was to evaluate the effect of MSSP ACO attribution on changes in screening for future fall risk and osteoporosis among older adults. In each year during the pre-intervention time period, fall risk screening rates and osteoporosis screening rates were slightly higher for beneficiaries associated with the ACO group compared to beneficiaries associated with the non-ACO group, but the trends were approximately parallel, which supported the application of the difference-in-difference research design. During the post-intervention period, MSSP ACO attribution was associated with a 3.42 percentage point increase in the fall risk screening rate and no statistically significant change in the osteoporosis screening rate after adjusting for patient characteristics. These overall findings are noteworthy for two reasons. First, the ACO group's relative increase in fall risk screening rates provides evidence that providers within MSSP ACOs respond strongly when there are direct financial incentives tied to specific process quality measures. Secondly, the fact that the MSSP was not associated with any statistically significant change in osteoporosis screening rates suggest that providers within MSSP ACOs may only be improving clinical practice in areas by which they are specifically assessed, such as the fall risk screening quality measure (ACO13).

Subgroup Analyses

The subgroup analyses for the fall risk screening rate demonstrated several interesting findings. First, we found that the MSSP's impact on fall risk screening was greater among males, as compared to females, and among younger beneficiaries (aged 65-74) as compared to older

beneficiaries (age 75 and older), and among the lower and middle baseline fall risk groups as compared to the higher fall risk group. Both females and older adults have a greater risk of falling. Our findings demonstrate that the MSSP may have incentivized ACO providers to expand their fall risk screenings to lower risk older adults who were previously being missed by the system, rather than only targeting adults with higher fall risk factors. To be clear, the high risk groups are still being screened at higher rates both before and after ACO attribution. It is just the relative pre/post change that is greater among the low risk groups. This could be considered a positive outcome, if we consider that the AGS clinical practice guidelines recommend that every adult aged 65 and older should be screened for fall risk each year, regardless of risk factors. Second, we found that ACOs with a higher average pre-MSSP fall risk screening rate had a greater post-contract increase in the fall risk screening rate as compared to ACOs with a lower pre-contract rate. Two previous studies have found that MSSP ACOs that reported prior experience with quality measurement and improvement initiatives had greater improvements in disease prevention scores and were more likely to achieve shared savings.^{42,43} Our study provides further evidence that ACOs with more pre-contract experience with quality measurements appear to have a great capacity for improvement.

Sensitivity Analyses

Our finding that the MSSP was associated with an increase in the fall risk screening rate was robust to several sensitivity checks. Excluding counties with little to no ACO penetration, in an attempt to make the treatment and control groups more comparable in unobservable characteristics, did not meaningfully change the regression results. In our second sensitivity analysis, we observed stronger results for the full sample using the NPI-based attribution

algorithm, with the fall risk screening rate regression coefficient remaining statistically significant and increasing by about 7% in magnitude. This finding suggests that the TIN-based attribution algorithm actually biases treatment effects towards the null. The results of the NPI-based attribution algorithm suggest that the MSSP led to a minor reduction in the osteoporosis screening rates among ACO-attributed beneficiaries who were older (85+)— about a 23% reduction from the baseline average screening rate. This finding leads to concerns that the MSSP may lead to an unintended substitution effect in clinical practice. If providers are constrained in the amount of time that they have during evaluation and management visits with patients, they may prioritize prevention services for which their performance is measured over services that are not tracked by the MSSP. This type of unintended substitution or “crowding out” effect has been a reported result of several other value-based care programs in Medicare.⁴⁴⁻⁴⁸

General Limitations

This study is subject to several limitations. This study focused on the impact of the MSSP, and thus these findings may not be generalizable to other types of ACOs with differing structures and contracts, such as those managed by Medicaid or commercial insurers. Additionally, because the outcome variables were constructed through diagnosis and procedure codes used for billing in Medicare claims, this study is subject to some outcome misclassification bias due to errors in the coding. However, there is no reason to believe that these errors would be differential with respect to ACO status, and thus these errors would only bias our results towards the null.

Potential Selection Bias

As previously discussed in our Methods section, because participation in the MSSP is voluntary and both provider and beneficiary composition can change over time, this creates the potential for time-varying selection for which parallel trends in pre-period outcomes do not resolve. Recent work shows that selection and strategic participation can influence measured MSSP performance.^{38,49,50} Our ITT design anchored at the TIN and NPI reduces bias from clinic and clinician-level churn in the MSSP, but cannot fully address potential beneficiary-level selection. In the context of our research question, it is not fully clear how favorable beneficiary-level selection could affect the screening outcomes, as it is still uncertain as to whether healthier or sicker patients would be more likely to get screened. In theory, because MSSP attribution and quality efforts often flow through the Annual Wellness Visit (AWV), which includes a health risk assessment with potential fall risk questions, ACOs could preferentially engage beneficiaries who are easier to schedule and more likely to attend appointments (e.g., healthier, already connected to primary care) and complete the fall risk screening quality measure (ACO13) during those visits.⁵¹ In our study, we observed a greater relative increase in the group of patients who were in the middle tercile of the baseline fall risk score, as compared to the bottom and top terciles. Additionally, we generally observed similar compositional changes in both the ACO and non-ACO groups over time. At the same time, modest differential shifts in specific conditions could still introduce bias. Given this uncertainty, our findings should be interpreted within the context of this uncertainty, and could reflect genuine improvements in clinical practice, selective attribution, or increased AWV-driven capture of healthier patients.

Conclusions

In conclusion, our findings show that MSSP ACO participation produced a clinically meaningful 3.42 percentage point (96%) increase in fall risk screening among FFS Medicare beneficiaries but had no corresponding improvement – and in some subgroups a modest decline – in osteoporosis screening. These results illustrate both the power and the limits of financial incentives that are tied to process-based quality measures. When a preventive service is financially incentivized, ACOs improve performance as expected, but this focus can come at the expense of no improvements in other important evidence-based clinical services. To address this issue, CMS policymakers designing value-based contracts should consider the following strategies: (1) Broaden quality measure portfolios to encompass complementary services that share common clinical pathways; and (2) Monitor for the potential crowd-out of unmeasured but evidence-based beneficial care. For practitioners, our results should serve as a reminder of the importance of integrating comprehensive fall-prevention workflows – screening, risk-factor management, and bone-health assessment – into routine primary care, even when only a subset is tied to performance payment. Future reforms that align incentives across settings and reward bundled preventive packages, rather than single measures, are likely to yield the greatest population-level gains in fall-related injury prevention. Alternatively, eliminating process-based quality measures and only including outcome-based quality measures (e.g., 30-day readmission rates) may prevent substitution and allow providers the flexibility to decide which type of care is likely to benefit each individual patient the most. Policymakers should continue to consider whether process- or outcome-based quality measures are more susceptible to gaming and unintended consequences.

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CHAPTER 2 – TABLES & FIGURES

Table 1: Diagnostic and Procedure Codes used to Construct Screening Variables

Category	Fall Risk Screening Codes
CPT II	1100F, 1101F, 3288F
Category	Osteoporosis Screening Codes
CPT II	76977, 77078, 77079, 77080, 77081, 77082, 77083, 77085, 78350, 78351, 0028T
HCPCS	G0130, G9769
ICD-9	V8281, 8898
ICD-10	Z13820, BP48ZZ1, BP49ZZ1, BP4GZZ1, BP4HZZ1, BP4LZZ1, BP4MZZ1, BP4NZZ1, BP4PZZ1, BQ00ZZ1, BQ01ZZ1, BQ03ZZ1, BQ04ZZ1, BR00ZZ1, BR07ZZ1, BR09ZZ1, BR0GZZ1

Table 2: Study Sample Characteristics

	All Beneficiaries (N=10,676,150)	ACO Group (N=2,186,797)	Non-ACO Group (N=8,119,748)	Group Difference
<u>Demographic Characteristics</u>				
Age, mean (SD)	74.70 (7.79)	75.02 (7.64)	74.76 (7.82)	P<0.001
Sex, No. (%)				P<0.001
Male	43.6%	41.6%	43.9%	
Female	56.4%	58.4%	56.1%	
Race, No. (%)				P<0.001
Non-Hispanic White	82.6%	84.9%	82.3%	
Black (Or African American)	7.4%	6.8%	7.5%	
Hispanic	5.3%	4.1%	5.4%	
Asian/Pacific Islander	2.6%	2.4%	2.6%	
American Indian / Alaska Native	0.4%	0.1%	0.5%	
Unknown	1.0%	1.0%	0.9%	
Other	0.8%	0.7%	0.8%	
State Buy-in Coverage (total months), mean (SD)	1.18 (3.52)	1.01 (3.281)	1.26 (3.621)	P<0.001
Dual Eligible Months, mean (SD)	1.24 (3.59)	1.06 (3.34)	1.31 (3.67)	P<0.001
<u>Healthcare Utilization (Baseline)</u>				
Acute Inpatient Stays, mean (SD)	0.21 (0.64)	0.23 (0.65)	0.21 (0.64)	P<0.001
Anesthesia Events, mean (SD)	0.41 (1.03)	0.47 (1.09)	0.40 (1.02)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.21 (0.86)	0.25 (0.90)	0.21 (0.86)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.17)	0.07 (1.15)	0.07 (1.19)	P=0.116
Durable Medical Equipment Events, mean (SD)	2.27 (6.22)	2.46 (6.39)	2.26 (6.24)	P<0.001
Evaluation & Management Events, mean (SD)	4.48 (12.43)	4.98 (12.45)	4.42 (12.49)	P<0.001
Home Health Visits, mean (SD)	2.84 (16.64)	2.81 (16.70)	2.90 (16.77)	P<0.001
Hospital Outpatient Visits, mean (SD)	5.75 (14.75)	6.19 (14.90)	5.76 (14.83)	P<0.001

Hospice Stays, mean (SD)	0.01 (0.09)	0.00 (0.06)	0.01 (0.10)	P<0.001
Imaging Events, mean (SD)	3.78 (5.68)	4.27 (5.80)	3.74 (5.67)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.14 (0.51)	0.15 (0.53)	0.14 (0.51)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.02 (0.14)	0.02 (0.14)	0.01 (0.14)	P<0.001
Other Procedures Events, mean (SD)	6.15 (14.99)	7.08 (15.79)	6.03 (14.88)	P<0.001
Other Part B Carrier Events, mean (SD)	1.63 (8.39)	1.89 (8.68)	1.58 (8.36)	P<0.001
MD Office Part B Events, mean (SD)	7.41 (7.81)	8.57 (7.83)	7.26 (7.79)	P<0.001
Part B Drug Events, mean (SD)	2.75 (6.50)	3.12 (6.64)	2.72 (6.51)	P<0.001
Part D Events, mean (SD)	19.09 (28.85)	20.64 (28.42)	19.12 (29.14)	P<0.001
Hospital Readmissions, mean (SD)	0.03 (0.25)	0.03 (0.25)	0.03 (0.25)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.04 (0.27)	0.05 (0.27)	0.04 (0.27)	P<0.001
Tests Events, mean (SD)	13.07 (18.67)	14.93 (18.79)	12.85 (18.70)	P<0.001
<u>Assistive Devices and Equipment</u>				
Diabetic Footwear, No. (%)	2,236 (0.0%)	595 (0.0%)	1,641 (0.0%)	P<0.001
Walking Aids, No. (%)	545 (0.0%)	142 (0.0%)	403 (0.0%)	P=0.002
Hospital Beds, No. (%)	14 (0.0%)	0 (0.0%)	14 (0.0%)	P=0.036
Wheelchair, No. (%)	30 (0.0%)	5 (0.0%)	25 (0.0%)	P=0.569
<u>Clinical Conditions</u>				
ESRD, No. (%)	0.6%	0.6%	0.6%	P=0.005
Abnormal Gait, No. (%)	5.9%	6.7%	5.9%	P<0.001
Orthostatic Hypotension, No. (%)	0.8%	0.9%	0.8%	P<0.001
Sarcopenia, No. (%)	0.5%	0.5%	0.5%	P<0.001
Weight Loss, No. (%)	1.8%	1.9%	1.8%	P<0.001
Weight Gain, No. (%)	0.3%	0.3%	0.3%	P<0.001
Underweight, No. (%)	0.1%	0.1%	0.1%	P<0.001

Overweight, No. (%)	0.3%	0.4%	0.3%	P<0.001
Parkinson, No. (%)	1.2%	1.3%	1.2%	P<0.001
Incontinence, No. (%)	3.7%	4.1%	3.6%	P<0.001
Dizziness Vertigo, No. (%)	6.7%	7.5%	6.7%	P<0.001
Cognitive Impairment, No. (%)	1.0%	1.1%	1.0%	P<0.001
Restless Leg Syndrome, No. (%)	0.8%	0.9%	0.8%	P<0.001
Movement Disorders, No. (%)	1.3%	1.5%	1.3%	P<0.001
Melanoma, No. (%)	1.5%	1.7%	1.5%	P<0.001
Bladder Cancer, No. (%)	1.1%	1.2%	1.0%	P<0.001
Kidney Cancer, No. (%)	0.5%	0.6%	0.5%	P<0.001
Pancreatic Cancer, No. (%)	0.1%	0.1%	0.1%	P=0.010
Other Cancer, No. (%)	9.9%	11.2%	9.8%	P<0.001
Alzheimer's Disease, No. (%)	3.0%	3.0%	3.1%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, No. (%)	7.7%	7.8%	7.8%	P=0.361
Acute Myocardial Infarction, No. (%)	0.7%	0.7%	0.7%	P<0.001
Anemia, No. (%)	20.1%	21.8%	20.1%	P<0.001
Asthma, No. (%)	4.6%	5.2%	4.5%	P<0.001
Atrial Fibrillation, No. (%)	8.2%	9.3%	8.0%	P<0.001
Breast Cancer, No. (%)	3.2%	3.8%	3.1%	P<0.001
Colorectal Cancer, No. (%)	1.2%	1.3%	1.2%	P<0.001
Endometrial Cancer, No. (%)	0.3%	0.4%	0.3%	P<0.001
Lung Cancer, No. (%)	0.8%	0.9%	0.8%	P<0.001
Prostate Cancer, No. (%)	3.4%	3.9%	3.4%	P<0.001
Cataract, No. (%)	20.4%	22.8%	20.2%	P<0.001
Heart Failure, No. (%)	12.1%	12.7%	12.2%	P<0.001
Chronic Kidney Disease, No. (%)	15.5%	17.6%	15.3%	P<0.001
Chronic Obstructive Pulmonary Disease, No. (%)	9.7%	10.4%	9.7%	P<0.001

Depression, No. (%)	11.4%	13.0%	11.2%	P<0.001
Diabetes, No. (%)	25.5%	27.9%	25.3%	P<0.001
Glaucoma, No. (%)	10.4%	12.0%	10.2%	P<0.001
Hip/Pelvic Fracture, No. (%)	0.6%	0.6%	0.6%	P=0.086
Hyperlipidemia, No. (%)	47.2%	54.7%	46.2%	P<0.001
Benign Prostatic Hyperplasia, No. (%)	6.7%	7.7%	6.6%	P<0.001
Hypertension, No. (%)	56.2%	63.1%	55.6%	P<0.001
Hypothyroidism, No. (%)	14.3%	16.2%	14.1%	P<0.001
Ischemic Heart Disease, No. (%)	27.5%	30.2%	27.3%	P<0.001
Osteoporosis, No. (%)	6.6%	7.7%	6.5%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, No. (%)	29.5%	32.9%	29.3%	P<0.001
Stroke / Transient Ischemic Attack, No. (%)	3.2%	3.5%	3.1%	P<0.001
ADHD & Other Conduct Disorders, No. (%)	0.2%	0.3%	0.2%	P<0.001
Anxiety Disorders, No. (%)	9.1%	10.2%	9.0%	P<0.001
Autism Spectrum Disorders, No. (%)	0.0%	0.0%	0.0%	P=0.209
Bipolar Disorder, No. (%)	1.1%	1.2%	1.1%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, No. (%)	0.3%	0.3%	0.2%	P<0.001
Cerebral Palsy, No. (%)	0.1%	0.1%	0.1%	P=0.055
Cystic Fibrosis & other Metabolic Developmental Disorders, No. (%)	0.5%	0.5%	0.5%	P<0.001
Depression, No. (%)	10.5%	11.9%	10.3%	P<0.001
Epilepsy, No. (%)	1.2%	1.3%	1.2%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, No. (%)	10.2%	11.4%	10.1%	P<0.001
Deafness & Hearing Impairment, No. (%)	4.4%	5.1%	4.3%	P<0.001
Viral Hepatitis (General), No. (%)	0.6%	0.6%	0.6%	P<0.001
HIV/AIDS, No. (%)	0.1%	0.1%	0.1%	P=0.733
Intellectual Disabilities & Related Conditions, No. (%)	0.2%	0.2%	0.2%	P<0.001

Learning Disabilities, No. (%)	0.0%	0.0%	0.0%	P=0.002
Leukemias & Lymphomas, No. (%)	1.4%	1.6%	1.3%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), No. (%)	2.7%	3.0%	2.7%	P<0.001
Migraine & Other Chronic Headache, No. (%)	1.4%	1.7%	1.4%	P<0.001
Mobility Impairments, No. (%)	1.5%	1.6%	1.6%	P=0.005
Multiple Sclerosis & Transverse Myelitis, No. (%)	0.3%	0.3%	0.3%	P<0.001
Muscular Dystrophy, No. (%)	0.0%	0.0%	0.0%	P=0.445
Obesity, No. (%)	8.9%	10.7%	8.6%	P<0.001
Other Developmental Delays, No. (%)	0.0%	0.0%	0.0%	P=0.183
Personality Disorders, No. (%)	0.3%	0.3%	0.3%	P<0.001
Post-Traumatic Stress Disorder, No. (%)	0.3%	0.3%	0.3%	P<0.001
Peripheral Vascular Disease, No. (%)	10.2%	11.4%	10.0%	P<0.001
Schizophrenia, No. (%)	0.4%	0.4%	0.4%	P<0.001
Schizophrenia & Other Psychotic Disorders, No. (%)	1.3%	1.3%	1.4%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, No. (%)	0.1%	0.1%	0.1%	P=0.042
Spinal Cord Injury, No. (%)	0.2%	0.3%	0.2%	P=0.001
Tobacco Use Disorders, No. (%)	4.7%	4.9%	4.7%	P<0.001
Pressure Ulcers & Chronic Ulcers, No. (%)	3.1%	3.3%	3.2%	P<0.001
Blindness & Visual Impairment, No. (%)	0.6%	0.6%	0.6%	P=0.013
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	4.63 (3.89)	5.35 (3.52)	4.66 (3.71)	P<0.001
<u>Screenings</u>				
Fall Risk Screening, No. (%)	6.5%	10.1%	5.7%	P<0.001
Osteoporosis Screening, No. (%)	8.5%	10.7%	8.1%	P<0.001
Fall in the Previous Calendar Year (ECO Method), No. (%)	4.2%	4.4%	4.2%	P<0.001

Fall in the Previous Calendar Year (ECDC Method), No. (%)	11.7%	12.6%	11.6%	P<0.001
Fall in the Previous Calendar Year (AUR Method), No. (%)	5.4%	5.7%	5.4%	P<0.001

Figure 1a: Parallel Trends – Fall Risk Screening Rates (benes whose post started in 2012)

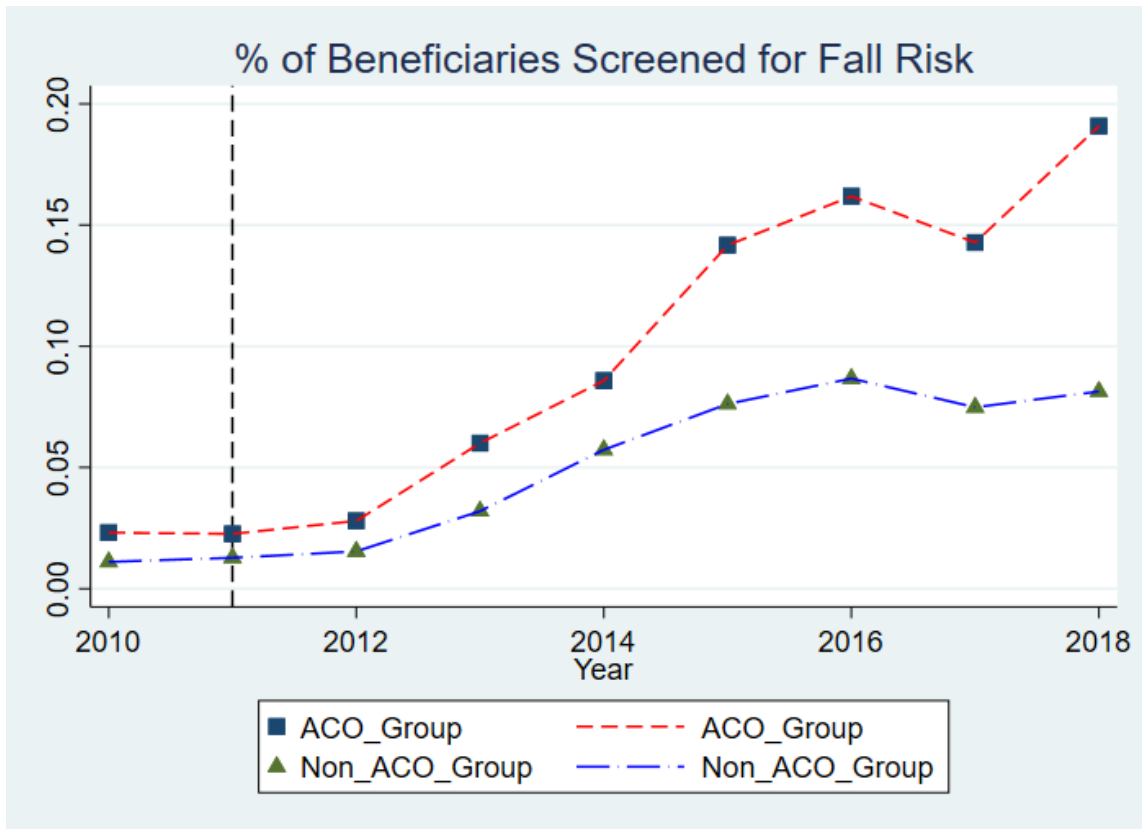


Figure 1b: Parallel Trends – Fall Risk Screening Rates (benes whose post started in 2013)

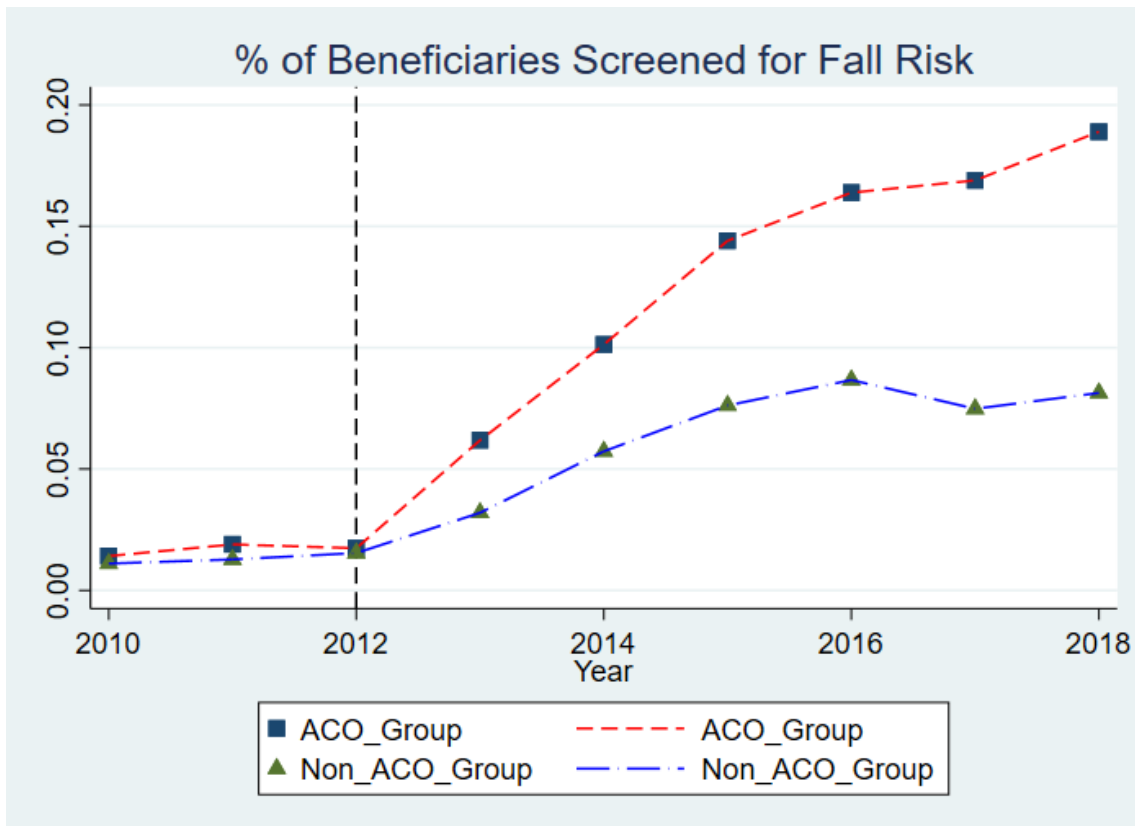


Figure 1c: Parallel Trends – Fall Risk Screening Rates (benes whose post started in 2014)

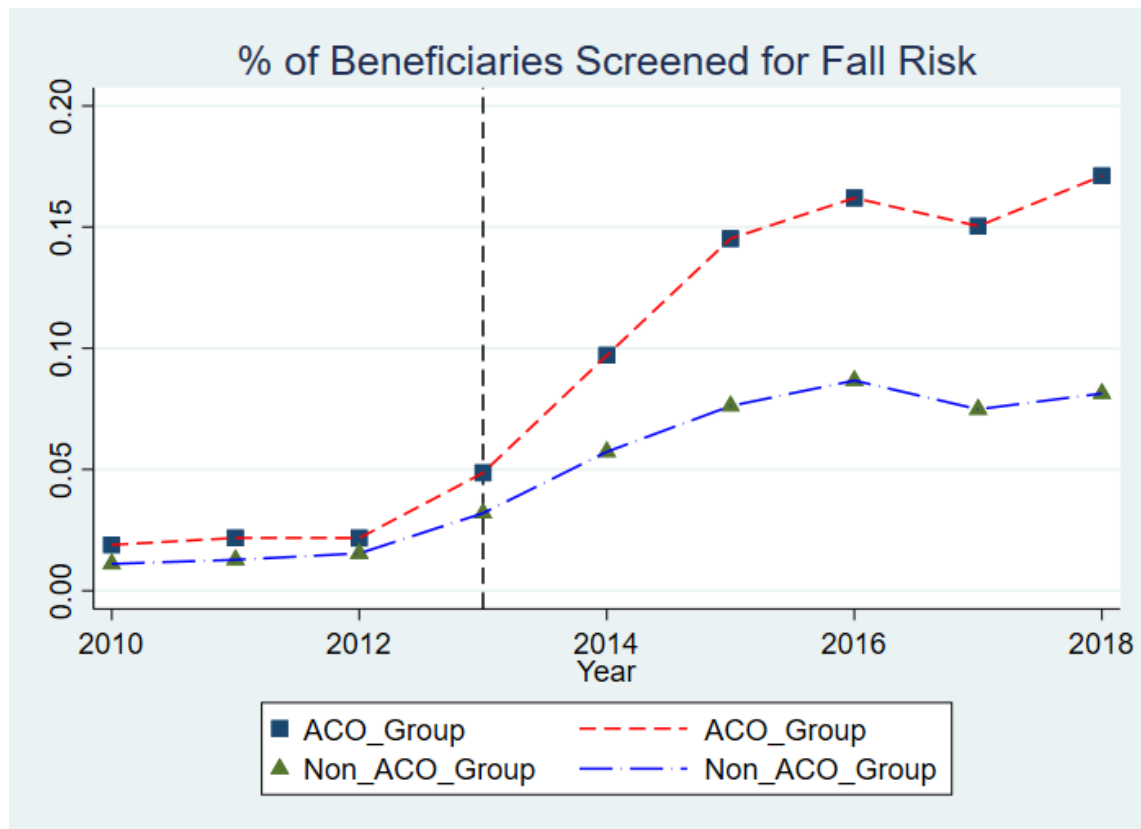


Figure 1d: Parallel Trends – Fall Risk Screening Rates (benes whose post started in 2015)

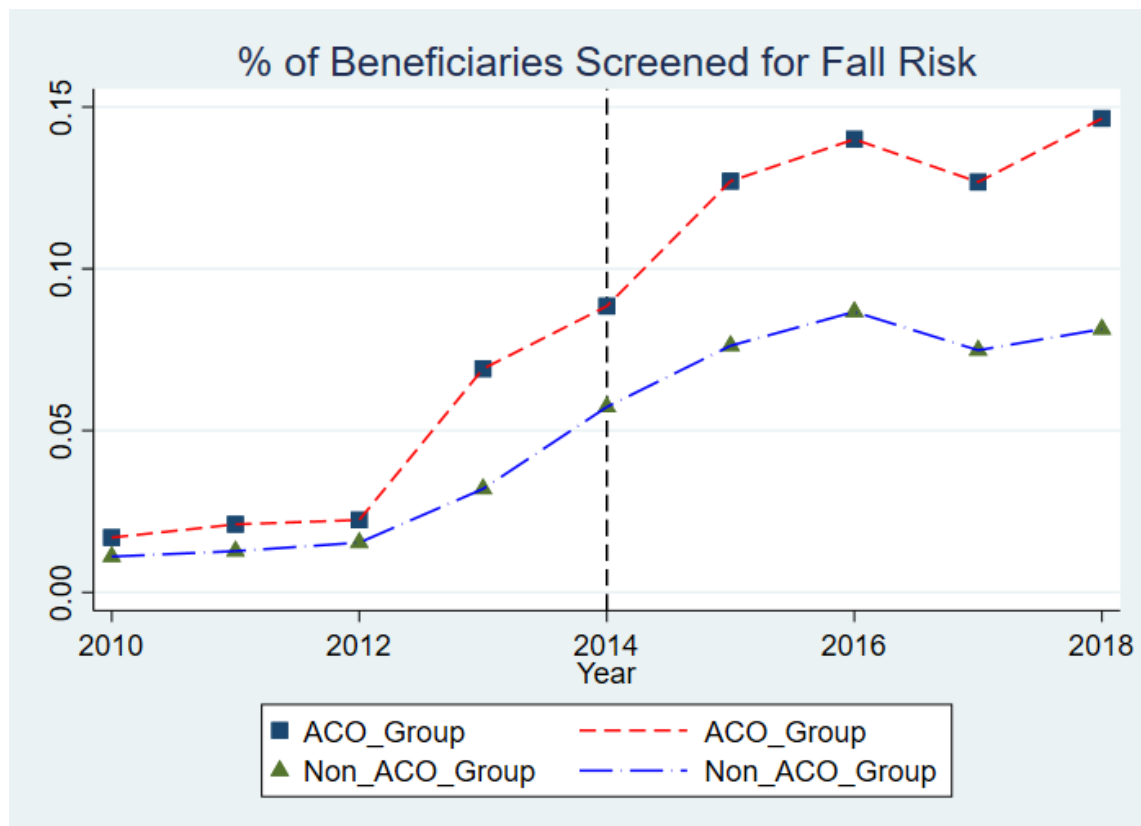


Figure 1e: Parallel Trends – Osteoporosis Screening (benes whose post started in 2012)

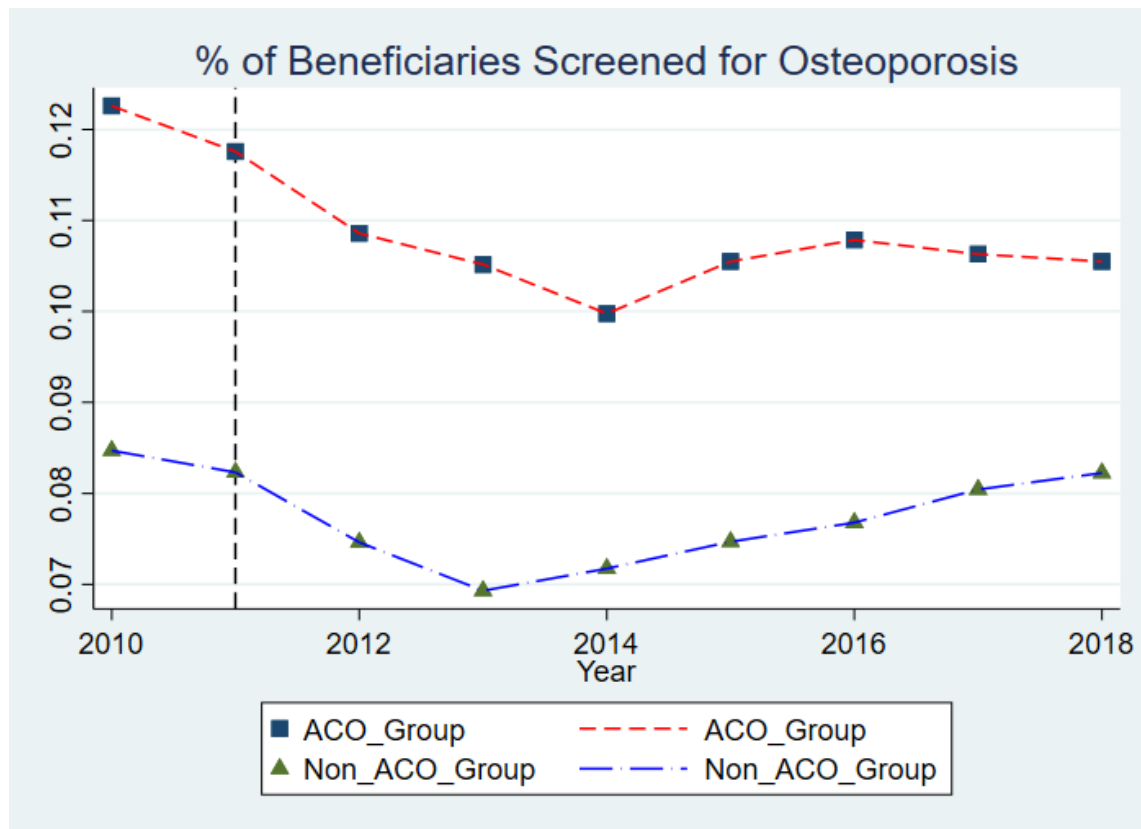


Figure 1f: Parallel Trends – Osteoporosis Screening (benes whose post started in 2013)

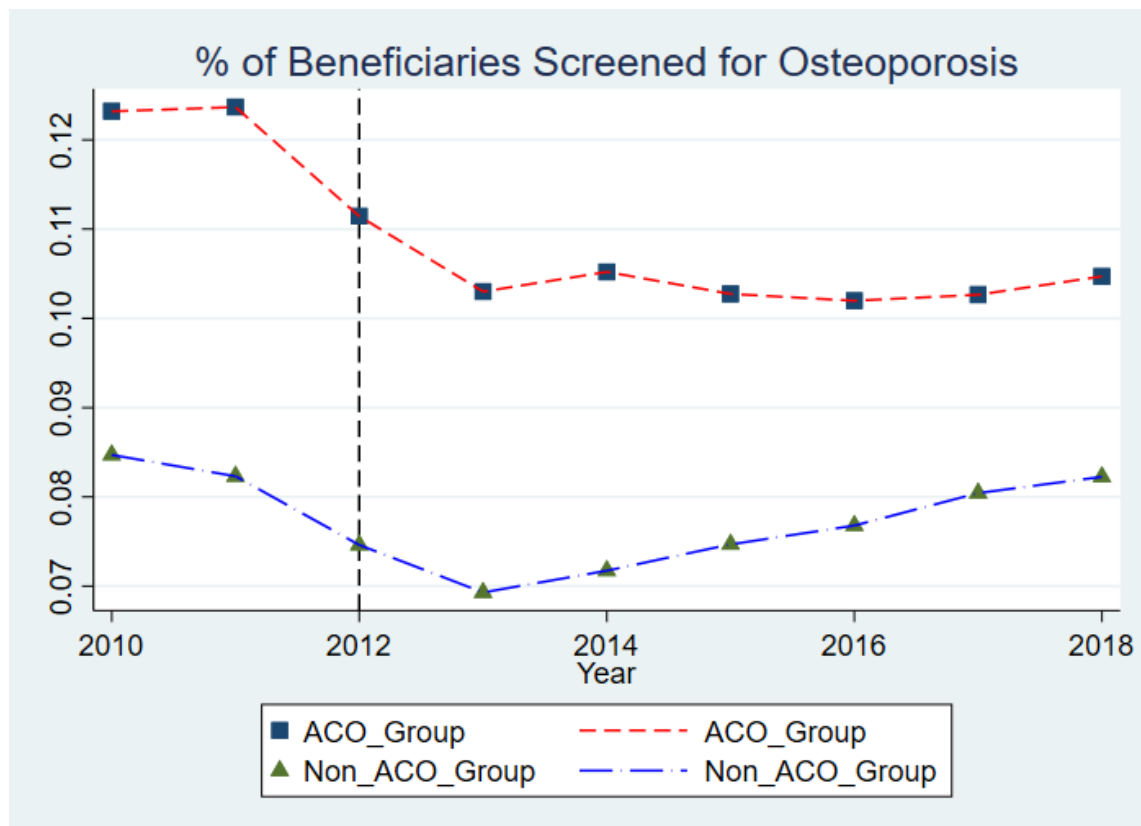


Figure 1g: Parallel Trends – Osteoporosis Screening (benes whose post started in 2014)

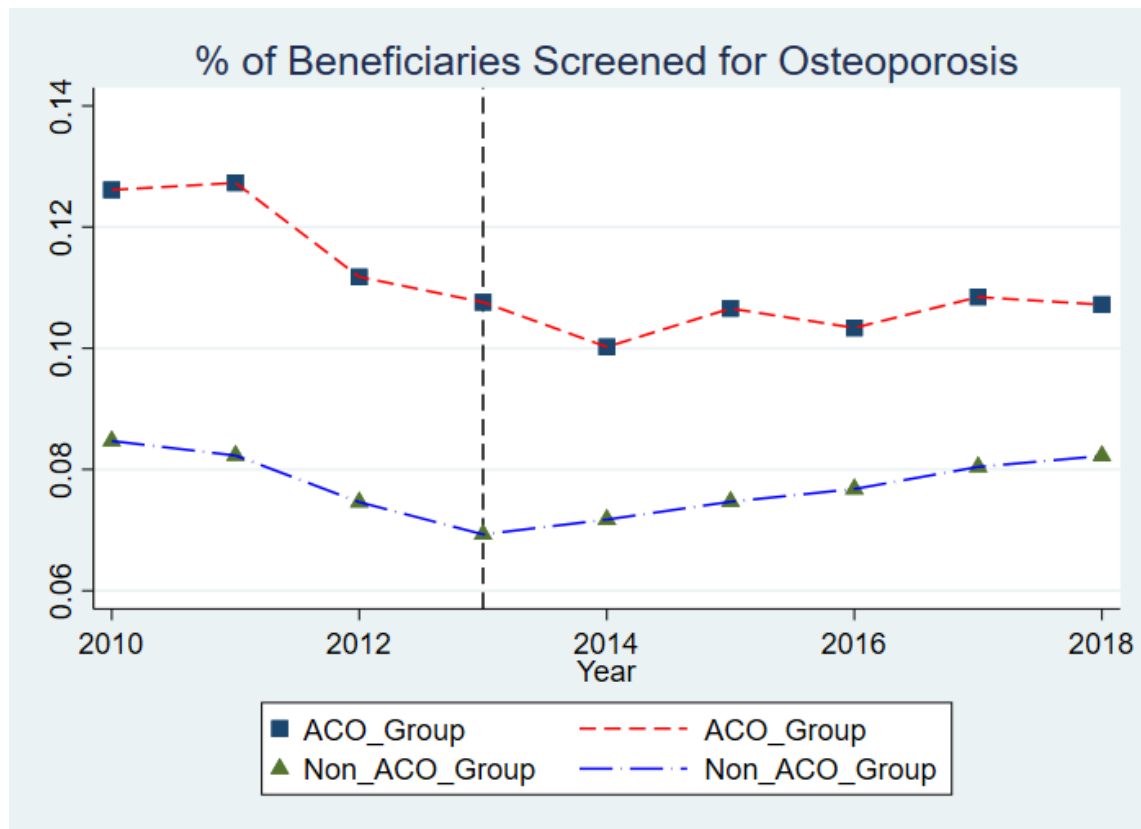


Figure 1h: Parallel Trends – Osteoporosis Screening (benes whose post started in 2015)

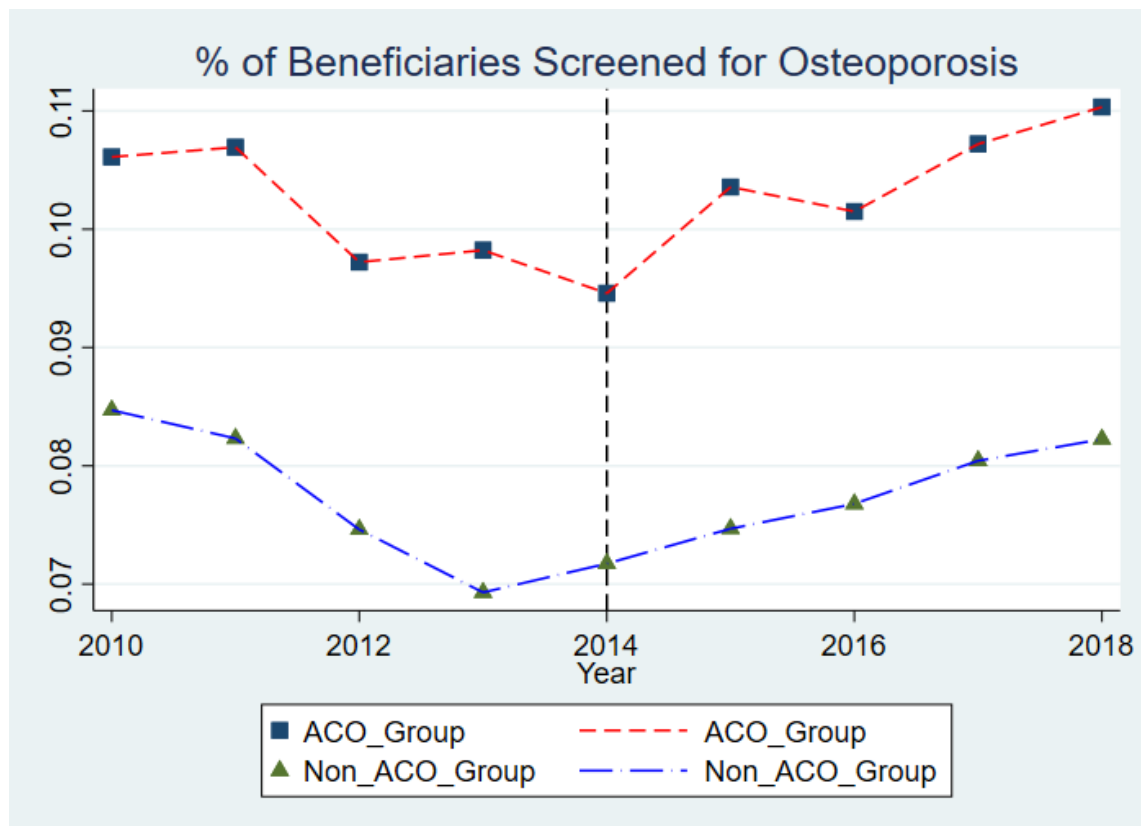


Table 3: DiD Regression Results – TIN-based Attribution Methodology

	Fall Risk Screenings (adjusted)		
	Base Mean [†]	DiD Coefficient	P-Value
Total Community Dwelling Sample	3.57%	0.034163***	0.000
Male	3.27%	0.034117***	0.000
Female	3.66%	0.032389***	0.000
Age Group 65-74	3.33%	0.038907***	0.000
Age Group 75-84	3.73%	0.031478***	0.000
Age Group 85+	3.54%	0.024137***	0.000
Fall Risk Group - Low	2.65%	0.037676***	0.000
Fall Risk Group - Mid	3.89%	0.038732***	0.000
Fall Risk Group - High	5.28%	0.034326***	0.000
Baseline ACO Fall Risk Screening Group - Low	1.28%	0.011461**	0.028
Baseline ACO Fall Risk Screening Group - Mid	3.35%	0.046504***	0.000
Baseline ACO Fall Risk Screening Group - High	4.91%	0.037689***	0.000
Excluding Counties w/ Little or No ACO Penetration	3.50%	0.034146***	0.000

*p<0.10; **p<0.05; ***p<0.01

[†]Base Mean = average pre-year mean for the ACO group.

	Osteoporosis Screenings (adjusted)		
	Base Mean [†]	DiD Coefficient	P-Value
Total Community Dwelling Sample	10.73%	0.002033	0.473
Male	2.34%	-0.000048	0.983
Female	15.94%	0.002933	0.519
Age Group 65-74	11.81%	0.004086	0.336
Age Group 75-84	10.61%	0.001175	0.807
Age Group 85+	6.06%	-0.01543**	0.021
Fall Risk Group - Low	8.82%	0.007292	0.133
Fall Risk Group - Mid	11.37%	0.000884	0.851
Fall Risk Group - High	10.05%	-0.00417	0.385
Baseline ACO Fall Risk Screening Group - Low	9.80%	-0.00335	0.566
Baseline ACO Fall Risk Screening Group - Mid	10.40%	0.003879	0.423
Baseline ACO Fall Risk Screening Group - High	10.77%	-0.00062	0.886
Excluding Counties w/ Little or No ACO Penetration	10.40%	0.001996	0.481

*p<0.10; **p<0.05; ***p<0.01

[†]Base Mean = average pre-year mean for the ACO group.

Table 4: DiD Regression Results – NPI-based Attribution Methodology

	Fall Risk Screenings (adjusted)		
	Base Mean [†]	DiD Coefficient	P-Value
Total Community Dwelling Sample	3.51%	0.036623***	0.000
Male	3.21%	0.036679***	0.000
Female	3.62%	0.035037***	0.000
Age Group 65-74	3.28%	0.002599***	0.000
Age Group 75-84	3.67%	0.001310***	0.000
Age Group 85+	3.49%	-0.014064**	0.027
Fall Risk Group - Low	2.59%	0.004346	0.363
Fall Risk Group - Mid	3.80%	-0.000152	0.973
Fall Risk Group - High	5.27%	-0.005298	0.263
Baseline ACO Fall Risk Screening Group - Low	1.40%	-0.001118	0.849
Baseline ACO Fall Risk Screening Group - Mid	3.15%	0.002009	0.664
Baseline ACO Fall Risk Screening Group - High	4.73%	-0.001353	0.749
Excluding Counties w/ Little or No ACO Penetration	3.45%	0.036603***	0.000

*p<0.10; **p<0.05; ***p<0.01

[†]Base Mean = average pre-year mean for the ACO group.

	Osteoporosis Screenings (adjusted)		
	Base Mean [†]	DiD Coefficient	P-Value
Total Community Dwelling Sample	10.84%	0.001461	0.598
Male	2.37%	0.000770	0.721
Female	16.08%	0.001369	0.758
Age Group 65-74	11.95%	0.002599	0.534
Age Group 75-84	10.71%	0.001310	0.780
Age Group 85+	6.12%	-0.014064**	0.027
Fall Risk Group - Low	8.87%	0.004346	0.363
Fall Risk Group - Mid	11.44%	-0.000152	0.973
Fall Risk Group - High	10.12%	-0.005298	0.263
Baseline ACO Fall Risk Screening Group - Low	10.04%	-0.001118	0.849
Baseline ACO Fall Risk Screening Group - Mid	10.39%	0.002009	0.664
Baseline ACO Fall Risk Screening Group - High	10.84%	-0.001353	0.749
Excluding Counties w/ Little or No ACO Penetration	10.51%	0.001431	0.606

*p<0.10; **p<0.05; ***p<0.01

[†]Base Mean = average pre-year mean for the ACO group.

CHAPTER 2 – APPENDIX

Appendix Table 1: ACO Beneficiary Composition Changes over Time (TIN Attribution)

	PRE PERIOD (N=677,409)	POST PERIOD (N=1,509,388)	Group Difference
<u>Demographic Characteristics</u>			
Age, mean (SD)	75.22 (7.64)	74.93 (7.64)	P<0.001
Sex, (%)			P<0.001
Male	41.2%	41.7%	
Female	58.8%	58.3%	
Race, (%)			P<0.001
Non-Hispanic White	85.7%	84.6%	
Black (Or African American)	6.9%	6.7%	
Hispanic	4.1%	4.1%	
Asian/Pacific Islander	2.1%	2.6%	
American Indian / Alaska Native	0.2%	0.1%	
Unknown	0.3%	1.2%	
Other	0.6%	0.7%	
State Buy-in Coverage (total months), mean (SD)	1.12 (3.44)	0.96 (3.21)	P<0.001
Dual Eligible Months, mean (SD)	1.20 (3.52)	1.00 (3.26)	P<0.001
<u>Healthcare Utilization (Baseline)</u>			
Acute Inpatient Stays, mean (SD)	0.25 (0.68)	0.22 (0.63)	P<0.001
Anesthesia Events, mean (SD)	0.45 (1.06)	0.48 (1.10)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.26 (0.97)	0.24 (0.86)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.09)	0.07 (1.18)	P=0.002
Durable Medical Equipment Events, mean (SD)	2.72 (6.79)	2.35 (6.20)	P<0.001
Evaluation & Management Events, mean (SD)	4.99 (12.46)	4.98 (12.44)	P=0.404

Home Health Visits, mean (SD)	3.29 (20.20)	2.59 (14.86)	P<0.001
Hospital Outpatient Visits, mean (SD)	6.15 (14.49)	6.21 (15.08)	P=0.007
Hospice Stays, mean (SD)	0.00 (0.07)	0.00 (0.06)	P<0.001
Imaging Events, mean (SD)	4.42 (6.00)	4.20 (5.70)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.16 (0.55)	0.15 (0.52)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.02 (0.15)	0.01 (0.14)	P<0.001
Other Procedures Events, mean (SD)	6.60 (15.45)	7.29 (15.93)	P<0.001
Other Part B Carrier Events, mean (SD)	1.72 (8.45)	1.97 (8.78)	P<0.001
MD Office Part B Events, mean (SD)	8.48 (7.79)	8.61 (7.85)	P<0.001
Part B Drug Events, mean (SD)	3.08 (6.98)	3.13 (6.48)	P<0.001
Part D Events, mean (SD)	19.14 (29.35)	21.31 (27.96)	P<0.001
Hospital Readmissions, mean (SD)	0.04 (0.27)	0.03 (0.24)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.05 (0.28)	0.04 (0.27)	P<0.001
Tests Events, mean (SD)	15.19 (19.17)	14.82 (18.61)	P<0.001
<u>Assistive Devices and Equipment</u>			
Diabetic Footwear, No. (%)	275 (0.0%)	320 (0.0%)	P<0.001
Walking Aids, No. (%)	69 (0.0%)	73 (0.0%)	P<0.001
Hospital Beds, No. (%)	0 (0.0%)	0 (0.0%)	
Wheelchair, No. (%)	2 (0.0%)	3 (0.0%)	P=0.663
<u>Clinical Conditions</u>			
ESRD, (%)	0.5%	0.6%	P<0.001
Abnormal Gait, (%)	6.1%	7.0%	P<0.001
Orthostatic Hypotension, (%)	0.9%	0.9%	P=0.185
Sarcopenia, (%)	0.8%	0.4%	P<0.001
Weight Loss, (%)	2.1%	1.8%	P<0.001

Weight Gain, (%)	0.3%	0.3%	P=0.095
Underweight, (%)	0.1%	0.1%	P<0.001
Overweight, (%)	0.2%	0.5%	P<0.001
Parkinson, (%)	1.3%	1.3%	P=0.027
Incontinence, (%)	4.2%	4.1%	P<0.001
Dizziness Vertigo, (%)	7.6%	7.4%	P<0.001
Cognitive Impairment, (%)	0.9%	1.2%	P<0.001
Restless Leg Syndrome, (%)	0.8%	0.9%	P<0.001
Movement Disorders, (%)	1.2%	1.6%	P<0.001
Melanoma, (%)	1.1%	2.0%	P<0.001
Bladder Cancer, (%)	1.2%	1.2%	P=0.281
Kidney Cancer, (%)	0.6%	0.6%	P<0.001
Pancreatic Cancer, (%)	0.1%	0.1%	P=0.137
Other Cancer, (%)	11.8%	10.9%	P<0.001
Alzheimer's Disease, (%)	3.5%	2.8%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, (%)	8.1%	7.6%	P<0.001
Acute Myocardial Infarction, (%)	0.7%	0.7%	P=0.002
Anemia, (%)	22.7%	21.5%	P<0.001
Asthma, (%)	4.5%	5.4%	P<0.001
Atrial Fibrillation, (%)	9.2%	9.4%	P<0.001
Breast Cancer, (%)	3.6%	3.8%	P<0.001
Colorectal Cancer, (%)	1.4%	1.3%	P<0.001
Endometrial Cancer, (%)	0.3%	0.4%	P<0.001
Lung Cancer, (%)	0.9%	0.9%	P=0.004
Prostate Cancer, (%)	4.0%	3.9%	P=0.705
Cataract, (%)	24.0%	22.3%	P<0.001
Heart Failure, (%)	13.6%	12.3%	P<0.001

Chronic Kidney Disease, (%)	14.5%	19.0%	P<0.001
Chronic Obstructive Pulmonary Disease, (%)	10.5%	10.3%	P<0.001
Depression, (%)	11.7%	13.6%	P<0.001
Diabetes, (%)	28.1%	27.8%	P<0.001
Glaucoma, (%)	12.6%	11.7%	P<0.001
Hip/Pelvic Fracture, (%)	0.6%	0.6%	P<0.001
Hyperlipidemia, (%)	54.4%	54.8%	P<0.001
Benign Prostatic Hyperplasia, (%)	7.2%	8.0%	P<0.001
Hypertension, (%)	63.3%	62.9%	P<0.001
Hypothyroidism, (%)	15.3%	16.6%	P<0.001
Ischemic Heart Disease, (%)	32.1%	29.3%	P<0.001
Osteoporosis, (%)	8.0%	7.5%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, (%)	31.7%	33.5%	P<0.001
Stroke / Transient Ischemic Attack, (%)	3.6%	3.4%	P<0.001
ADHD & Other Conduct Disorders, (%)	0.2%	0.3%	P<0.001
Anxiety Disorders, (%)	7.8%	11.3%	P<0.001
Autism Spectrum Disorders, (%)	0.0%	0.0%	P<0.001
Bipolar Disorder, (%)	1.0%	1.2%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, (%)	0.3%	0.3%	P=0.108
Cerebral Palsy, (%)	0.1%	0.1%	P=0.834
Cystic Fibrosis & other Metabolic Developmental Disorders, (%)	0.4%	0.5%	P<0.001
Depression, (%)	10.7%	12.4%	P<0.001
Epilepsy, (%)	1.2%	1.3%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, (%)	8.1%	12.8%	P<0.001
Deafness & Hearing Impairment, (%)	4.3%	5.5%	P<0.001
Viral Hepatitis (General), (%)	0.5%	0.7%	P<0.001
HIV/AIDS, (%)	0.1%	0.1%	P=0.003

Intellectual Disabilities & Related Conditions, (%)	0.2%	0.2%	P<0.001
Learning Disabilities, (%)	0.0%	0.1%	P<0.001
Leukemias & Lymphomas, (%)	1.4%	1.6%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), (%)	2.6%	3.2%	P<0.001
Migraine & Other Chronic Headache, (%)	1.2%	1.9%	P<0.001
Mobility Impairments, (%)	1.6%	1.6%	P=0.023
Multiple Sclerosis & Transverse Myelitis, (%)	0.3%	0.3%	P<0.001
Muscular Dystrophy, (%)	0.0%	0.0%	P=0.320
Obesity, (%)	6.4%	12.7%	P<0.001
Other Developmental Delays, (%)	0.0%	0.0%	P<0.001
Personality Disorders, (%)	0.1%	0.4%	P<0.001
Post-Traumatic Stress Disorder, (%)	0.2%	0.3%	P<0.001
Peripheral Vascular Disease, (%)	11.4%	11.4%	P=0.934
Schizophrenia, (%)	0.4%	0.4%	P=0.035
Schizophrenia & Other Psychotic Disorders, (%)	1.4%	1.2%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, (%)	0.1%	0.1%	P=0.380
Spinal Cord Injury, (%)	0.2%	0.3%	P<0.001
Tobacco Use Disorders, (%)	4.4%	5.2%	P<0.001
Pressure Ulcers & Chronic Ulcers, (%)	3.5%	3.2%	P<0.001
Blindness & Visual Impairment, (%)	0.8%	0.5%	P<0.001
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	5.13 (3.40)	5.45 (3.58)	P<0.001
Screenings			
Fall Risk Screening, (%)	4.2%	12.7%	P<0.001
Osteoporosis Screening, (%)	10.6%	10.8%	P<0.001
Fall in the Previous Calendar Year (ECO Method), (%)	4.6%	4.4%	P<0.001
Fall in the Previous Calendar Year (ECDC Method), (%)	15.2%	11.4%	P<0.001

Fall in the Previous Calendar Year (AUR Method), (%)	6.2%	5.5%	P<0.001
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Appendix Table 2: ACO Beneficiary Composition Changes over Time (NPI Attribution)

	PRE PERIOD (N=770,010)	POST PERIOD (N=1,575,052)	Group Difference
<u>Demographic Characteristics</u>			
Age, mean (SD)	75.24 (7.65)	74.93 (7.65)	P<0.001
Sex, (%)			P<0.001
Male	41.1%	41.7%	
Female	58.9%	58.3%	
Race, (%)			P<0.001
Non-Hispanic White	85.7%	84.4%	
Black (Or African American)	6.9%	6.8%	
Hispanic	4.1%	4.1%	
Asian/Pacific Islander	2.1%	2.6%	
American Indian / Alaska Native	0.2%	0.1%	
Unknown	0.3%	1.3%	
Other	0.6%	0.7%	
State Buy-in Coverage (total months), mean (SD)	1.08 (3.39)	0.95 (3.19)	P<0.001
Dual Eligible Months, mean (SD)	1.15 (3.46)	0.99 (3.25)	P<0.001
<u>Healthcare Utilization (Baseline)</u>			
Acute Inpatient Stays, mean (SD)	0.25 (0.68)	0.22 (0.63)	P<0.001
Anesthesia Events, mean (SD)	0.45 (1.06)	0.48 (1.11)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.27 (0.98)	0.25 (0.87)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.10)	0.07 (1.20)	P<0.001
Durable Medical Equipment Events, mean (SD)	2.69 (6.74)	2.34 (6.19)	P<0.001
Evaluation & Management Events, mean (SD)	5.02 (12.57)	5.05 (12.64)	P=0.127
Home Health Visits, mean (SD)	3.27 (20.00)	2.63 (14.91)	P<0.001
Hospital Outpatient Visits, mean (SD)	5.91 (14.26)	6.11 (15.04)	P<0.001

Hospice Stays, mean (SD)	0.00 (0.07)	0.00 (0.06)	P<0.001
Imaging Events, mean (SD)	4.42 (6.00)	4.21 (5.72)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.16 (0.55)	0.15 (0.52)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.02 (0.15)	0.01 (0.14)	P<0.001
Other Procedures Events, mean (SD)	6.74 (16.11)	7.38 (16.11)	P<0.001
Other Part B Carrier Events, mean (SD)	1.68 (8.33)	1.95 (8.77)	P<0.001
MD Office Part B Events, mean (SD)	8.64 (7.85)	8.69 (7.88)	P<0.001
Part B Drug Events, mean (SD)	3.10 (6.97)	3.15 (6.48)	P<0.001
Part D Events, mean (SD)	18.78 (28.99)	21.29 (27.97)	P<0.001
Hospital Readmissions, mean (SD)	0.04 (0.27)	0.03 (0.24)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.05 (0.28)	0.04 (0.27)	P<0.001
Tests Events, mean (SD)	15.41 (19.34)	14.97 (18.70)	P<0.001
<u>Assistive Devices and Equipment</u>			
Diabetic Footwear, No. (%)	313 (0.0%)	340 (0.0%)	P<0.001
Walking Aids, No. (%)	77 (0.0%)	73 (0.0%)	P<0.001
Hospital Beds, No. (%)	0 (0.0%)	0 (0.0%)	
Wheelchair, No. (%)	2 (0.0%)	5 (0.0%)	P=0.810
<u>Clinical Conditions</u>			
ESRD, (%)	0.5%	0.6%	P<0.001
Abnormal Gait, (%)	6.1%	7.1%	P<0.001
Orthostatic Hypotension, (%)	0.8%	0.9%	P=0.008
Sarcopenia, (%)	0.7%	0.4%	P<0.001
Weight Loss, (%)	2.1%	1.8%	P<0.001
Weight Gain, (%)	0.3%	0.3%	P=0.548
Underweight, (%)	0.0%	0.1%	P<0.001

Overweight, (%)	0.2%	0.5%	P<0.001
Parkinson, (%)	1.3%	1.3%	P=0.010
Incontinence, (%)	4.2%	4.1%	P=0.003
Dizziness Vertigo, (%)	7.6%	7.4%	P<0.001
Cognitive Impairment, (%)	0.9%	1.2%	P<0.001
Restless Leg Syndrome, (%)	0.7%	0.9%	P<0.001
Movement Disorders, (%)	1.2%	1.6%	P<0.001
Melanoma, (%)	1.1%	2.0%	P<0.001
Bladder Cancer, (%)	1.2%	1.2%	P=0.377
Kidney Cancer, (%)	0.6%	0.6%	P<0.001
Pancreatic Cancer, (%)	0.1%	0.1%	P=0.049
Other Cancer, (%)	11.8%	10.8%	P<0.001
Alzheimer's Disease, (%)	3.5%	2.9%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, (%)	8.2%	7.7%	P<0.001
Acute Myocardial Infarction, (%)	0.7%	0.7%	P=0.035
Anemia, (%)	22.8%	21.6%	P<0.001
Asthma, (%)	4.5%	5.5%	P<0.001
Atrial Fibrillation, (%)	9.2%	9.4%	P<0.001
Breast Cancer, (%)	3.6%	3.8%	P<0.001
Colorectal Cancer, (%)	1.4%	1.3%	P<0.001
Endometrial Cancer, (%)	0.3%	0.4%	P<0.001
Lung Cancer, (%)	0.9%	0.9%	P<0.001
Prostate Cancer, (%)	4.0%	3.9%	P=0.763
Cataract, (%)	24.0%	22.3%	P<0.001
Heart Failure, (%)	13.5%	12.3%	P<0.001
Chronic Kidney Disease, (%)	14.3%	19.1%	P<0.001
Chronic Obstructive Pulmonary Disease, (%)	10.4%	10.3%	P=0.005

Depression, (%)	11.5%	13.6%	P<0.001
Diabetes, (%)	28.1%	27.9%	P<0.001
Glaucoma, (%)	12.7%	11.7%	P<0.001
Hip/Pelvic Fracture, (%)	0.6%	0.6%	P<0.001
Hyperlipidemia, (%)	54.5%	54.9%	P<0.001
Benign Prostatic Hyperplasia, (%)	7.2%	8.0%	P<0.001
Hypertension, (%)	63.4%	63.0%	P<0.001
Hypothyroidism, (%)	15.3%	16.7%	P<0.001
Ischemic Heart Disease, (%)	32.1%	29.3%	P<0.001
Osteoporosis, (%)	8.0%	7.5%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, (%)	31.7%	33.6%	P<0.001
Stroke / Transient Ischemic Attack, (%)	3.6%	3.4%	P<0.001
ADHD & Other Conduct Disorders, (%)	0.2%	0.3%	P<0.001
Anxiety Disorders, (%)	7.7%	11.3%	P<0.001
Autism Spectrum Disorders, (%)	0.0%	0.0%	P<0.001
Bipolar Disorder, (%)	1.0%	1.2%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, (%)	0.3%	0.3%	P=0.011
Cerebral Palsy, (%)	0.1%	0.1%	P=0.430
Cystic Fibrosis & other Metabolic Developmental Disorders, (%)	0.4%	0.5%	P<0.001
Depression, (%)	10.6%	12.4%	P<0.001
Epilepsy, (%)	1.2%	1.3%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, (%)	8.0%	13.0%	P<0.001
Deafness & Hearing Impairment, (%)	4.3%	5.6%	P<0.001
Viral Hepatitis (General), (%)	0.5%	0.7%	P<0.001
HIV/AIDS, (%)	0.1%	0.1%	P<0.001
Intellectual Disabilities & Related Conditions, (%)	0.2%	0.2%	P<0.001
Learning Disabilities, (%)	0.0%	0.1%	P<0.001

Leukemias & Lymphomas, (%)	1.4%	1.6%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), (%)	2.6%	3.2%	P<0.001
Migraine & Other Chronic Headache, (%)	1.2%	1.9%	P<0.001
Mobility Impairments, (%)	1.6%	1.6%	P=0.601
Multiple Sclerosis & Transverse Myelitis, (%)	0.3%	0.3%	P<0.001
Muscular Dystrophy, (%)	0.0%	0.0%	P=0.326
Obesity, (%)	6.3%	12.8%	P<0.001
Other Developmental Delays, (%)	0.0%	0.0%	P<0.001
Personality Disorders, (%)	0.1%	0.5%	P<0.001
Post-Traumatic Stress Disorder, (%)	0.2%	0.3%	P<0.001
Peripheral Vascular Disease, (%)	11.4%	11.5%	P=0.490
Schizophrenia, (%)	0.4%	0.4%	P=0.583
Schizophrenia & Other Psychotic Disorders, (%)	1.4%	1.2%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, (%)	0.1%	0.1%	P=0.466
Spinal Cord Injury, (%)	0.2%	0.3%	P<0.001
Tobacco Use Disorders, (%)	4.3%	5.2%	P<0.001
Pressure Ulcers & Chronic Ulcers, (%)	3.5%	3.3%	P<0.001
Blindness & Visual Impairment, (%)	0.8%	0.5%	P<0.001
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	5.13 (3.40)	5.47 (3.59)	P<0.001
<u>Screenings</u>			
Fall Risk Screening, (%)	4.2%	12.8%	P<0.001
Osteoporosis Screening, (%)	10.6%	10.8%	P<0.001
Fall in the Previous Calendar Year (ECO Method), (%)	4.6%	4.4%	P<0.001
Fall in the Previous Calendar Year (ECDC Method), (%)	15.2%	11.3%	P<0.001
Fall in the Previous Calendar Year (AUR Method), (%)	6.2%	5.5%	P<0.001

Appendix Table 3: Non-ACO Beneficiary Composition Changes over Time (TIN Attribution)

	PRE PERIOD (N=3,986,893)	POST PERIOD (N=4,132,855)	Group Difference
<u>Demographic Characteristics</u>			
Age, mean (SD)	74.91 (7.83)	74.62 (7.80)	P<0.001
Sex, (%)			P<0.001
Male	43.5%	44.3%	
Female	56.5%	55.7%	
Race, (%)			P<0.001
Non-Hispanic White	82.9%	81.7%	
Black (Or African American)	7.5%	7.4%	
Hispanic	5.4%	5.4%	
Asian/Pacific Islander	2.5%	2.7%	
American Indian / Alaska Native	0.5%	0.5%	
Unknown	0.5%	1.4%	
Other	0.8%	0.8%	
State Buy-in Coverage (total months), mean (SD)	1.30 (3.67)	1.22 (3.57)	P<0.001
Dual Eligible Months, mean (SD)	1.35 (3.72)	1.26 (3.61)	P<0.001
<u>Healthcare Utilization (Baseline)</u>			
Acute Inpatient Stays, mean (SD)	0.22 (0.65)	0.20 (0.62)	P<0.001
Anesthesia Events, mean (SD)	0.39 (1.00)	0.42 (1.05)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.22 (0.91)	0.20 (0.81)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.18)	0.08 (1.19)	P<0.001
Durable Medical Equipment Events, mean (SD)	2.41 (6.46)	2.13 (6.01)	P<0.001
Evaluation & Management Events, mean (SD)	4.36 (12.23)	4.49 (12.73)	P<0.001
Home Health Visits, mean (SD)	3.03 (18.04)	2.77 (15.44)	P<0.001
Hospital Outpatient Visits, mean (SD)	5.54 (14.39)	5.97 (15.24)	P<0.001

Hospice Stays, mean (SD)	0.01 (0.10)	0.01 (0.10)	P<0.001
Imaging Events, mean (SD)	3.79 (5.78)	3.68 (5.55)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.14 (0.52)	0.14 (0.51)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.01 (0.14)	0.01 (0.14)	P=0.063
Other Procedures Events, mean (SD)	5.76 (14.93)	6.29 (14.83)	P<0.001
Other Part B Carrier Events, mean (SD)	1.53 (8.56)	1.64 (8.17)	P<0.001
MD Office Part B Events, mean (SD)	7.25 (7.78)	7.27 (7.80)	P<0.001
Part B Drug Events, mean (SD)	2.71 (6.78)	2.73 (6.24)	P<0.001
Part D Events, mean (SD)	17.95 (29.27)	20.26 (28.97)	P<0.001
Hospital Readmissions, mean (SD)	0.03 (0.26)	0.03 (0.24)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.04 (0.27)	0.04 (0.27)	P=0.210
Tests Events, mean (SD)	13.10 (19.06)	12.60 (18.33)	P<0.001
<u>Assistive Devices and Equipment</u>			
Diabetic Footwear, No. (%)	1,140 (0.0%)	501 (0.0%)	P<0.001
Walking Aids, No. (%)	288 (0.0%)	115 (0.0%)	P<0.001
Hospital Beds, No. (%)	8 (0.0%)	6 (0.0%)	P=0.547
Wheelchair, No. (%)	18 (0.0%)	7 (0.0%)	P=0.022
<u>Clinical Conditions</u>			
ESRD, (%)	0.6%	0.6%	P<0.001
Abnormal Gait, (%)	5.2%	6.5%	P<0.001
Orthostatic Hypotension, (%)	0.8%	0.8%	P<0.001
Sarcopenia, (%)	0.6%	0.3%	P<0.001
Weight Loss, (%)	1.9%	1.7%	P<0.001
Weight Gain, (%)	0.3%	0.3%	P=0.627
Underweight, (%)	0.0%	0.1%	P<0.001

Overweight, (%)	0.2%	0.5%	P<0.001
Parkinson, (%)	1.1%	1.2%	P<0.001
Incontinence, (%)	3.6%	3.7%	P<0.001
Dizziness Vertigo, (%)	6.7%	6.6%	P<0.001
Cognitive Impairment, (%)	0.9%	1.2%	P<0.001
Restless Leg Syndrome, (%)	0.6%	0.9%	P<0.001
Movement Disorders, (%)	1.0%	1.6%	P<0.001
Melanoma, (%)	0.9%	2.0%	P<0.001
Bladder Cancer, (%)	1.0%	1.0%	P=0.427
Kidney Cancer, (%)	0.5%	0.5%	P<0.001
Pancreatic Cancer, (%)	0.1%	0.1%	P<0.001
Other Cancer, (%)	10.3%	9.3%	P<0.001
Alzheimer's Disease, (%)	3.3%	2.9%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, (%)	7.7%	7.8%	P<0.001
Acute Myocardial Infarction, (%)	0.7%	0.7%	P=0.002
Anemia, (%)	20.7%	19.4%	P<0.001
Asthma, (%)	4.0%	5.0%	P<0.001
Atrial Fibrillation, (%)	7.9%	8.2%	P<0.001
Breast Cancer, (%)	3.1%	3.2%	P<0.001
Colorectal Cancer, (%)	1.2%	1.1%	P<0.001
Endometrial Cancer, (%)	0.3%	0.3%	P<0.001
Lung Cancer, (%)	0.8%	0.8%	P<0.001
Prostate Cancer, (%)	3.4%	3.3%	P<0.001
Cataract, (%)	20.9%	19.5%	P<0.001
Heart Failure, (%)	12.7%	11.7%	P<0.001
Chronic Kidney Disease, (%)	12.8%	17.6%	P<0.001
Chronic Obstructive Pulmonary Disease, (%)	9.7%	9.8%	P<0.001

Depression, (%)	10.1%	12.3%	P<0.001
Diabetes, (%)	25.3%	25.4%	P=0.002
Glaucoma, (%)	10.7%	9.7%	P<0.001
Hip/Pelvic Fracture, (%)	0.6%	0.6%	P<0.001
Hyperlipidemia, (%)	46.2%	46.3%	P<0.001
Benign Prostatic Hyperplasia, (%)	6.2%	7.0%	P<0.001
Hypertension, (%)	55.5%	55.6%	P=0.011
Hypothyroidism, (%)	13.4%	14.8%	P<0.001
Ischemic Heart Disease, (%)	28.4%	26.2%	P<0.001
Osteoporosis, (%)	6.7%	6.3%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, (%)	28.1%	30.4%	P<0.001
Stroke / Transient Ischemic Attack, (%)	3.2%	3.1%	P=0.019
ADHD & Other Conduct Disorders, (%)	0.2%	0.3%	P<0.001
Anxiety Disorders, (%)	7.1%	10.8%	P<0.001
Autism Spectrum Disorders, (%)	0.0%	0.0%	P<0.001
Bipolar Disorder, (%)	0.9%	1.2%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, (%)	0.2%	0.3%	P<0.001
Cerebral Palsy, (%)	0.1%	0.1%	P<0.001
Cystic Fibrosis & other Metabolic Developmental Disorders, (%)	0.4%	0.5%	P<0.001
Depression, (%)	9.3%	11.3%	P<0.001
Epilepsy, (%)	1.1%	1.3%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, (%)	7.5%	12.7%	P<0.001
Deafness & Hearing Impairment, (%)	3.8%	4.9%	P<0.001
Viral Hepatitis (General), (%)	0.5%	0.7%	P<0.001
HIV/AIDS, (%)	0.1%	0.1%	P<0.001
Intellectual Disabilities & Related Conditions, (%)	0.2%	0.2%	P<0.001
Learning Disabilities, (%)	0.0%	0.1%	P<0.001

Leukemias & Lymphomas, (%)	1.2%	1.4%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), (%)	2.3%	3.0%	P<0.001
Migraine & Other Chronic Headache, (%)	1.0%	1.8%	P<0.001
Mobility Impairments, (%)	1.5%	1.6%	P<0.001
Multiple Sclerosis & Transverse Myelitis, (%)	0.2%	0.3%	P<0.001
Muscular Dystrophy, (%)	0.0%	0.0%	P=0.015
Obesity, (%)	5.7%	11.4%	P<0.001
Other Developmental Delays, (%)	0.0%	0.0%	P<0.001
Personality Disorders, (%)	0.1%	0.5%	P<0.001
Post-Traumatic Stress Disorder, (%)	0.2%	0.4%	P<0.001
Peripheral Vascular Disease, (%)	10.0%	10.1%	P<0.001
Schizophrenia, (%)	0.4%	0.4%	P<0.001
Schizophrenia & Other Psychotic Disorders, (%)	1.4%	1.3%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, (%)	0.1%	0.1%	P<0.001
Spinal Cord Injury, (%)	0.1%	0.3%	P<0.001
Tobacco Use Disorders, (%)	4.2%	5.3%	P<0.001
Pressure Ulcers & Chronic Ulcers, (%)	3.2%	3.1%	P<0.001
Blindness & Visual Impairment, (%)	0.7%	0.5%	P<0.001
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	4.47 (3.57)	4.85 (3.82)	P<0.001
<u>Screenings</u>			
Fall Risk Screening, (%)	3.1%	8.3%	P<0.001
Osteoporosis Screening, (%)	7.9%	8.2%	P<0.001
Fall in the Previous Calendar Year (ECO Method), (%)	4.1%	4.4%	P<0.001
Fall in the Previous Calendar Year (ECDC Method), (%)	13.5%	9.8%	P<0.001
Fall in the Previous Calendar Year (AUR Method), (%)	5.6%	5.2%	P<0.001

Appendix Table 4: Non-ACO Beneficiary Composition Changes over Time (NPI Attribution)

	PRE PERIOD (N=3,893,943)	POST PERIOD (N=4,068,173)	Group Difference
<u>Demographic Characteristics</u>			
Age, mean (SD)	74.90 (7.83)	74.62 (7.80)	P<0.001
Sex, (%)			P<0.001
Male	43.6%	44.3%	
Female	56.4%	55.7%	
Race, (%)			P<0.001
Non-Hispanic White	82.8%	81.8%	
Black (Or African American)	7.6%	7.4%	
Hispanic	5.4%	5.5%	
Asian/Pacific Islander	2.5%	2.7%	
American Indian / Alaska Native	0.5%	0.6%	
Unknown	0.5%	1.4%	
Other	0.8%	0.8%	
State Buy-in Coverage (total months), mean (SD)	1.31 (3.69)	1.23 (3.58)	P<0.001
Dual Eligible Months, mean (SD)	1.37 (3.73)	1.27 (3.62)	P<0.001
<u>Healthcare Utilization (Baseline)</u>			
Acute Inpatient Stays, mean (SD)	0.22 (0.65)	0.20 (0.62)	P<0.001
Anesthesia Events, mean (SD)	0.38 (0.99)	0.42 (1.05)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.21 (0.91)	0.20 (0.80)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.18)	0.08 (1.18)	P<0.001
Durable Medical Equipment Events, mean (SD)	2.41 (6.46)	2.12 (6.01)	P<0.001
Evaluation & Management Events, mean (SD)	4.34 (12.20)	4.46 (12.67)	P<0.001
Home Health Visits, mean (SD)	3.02 (18.03)	2.76 (15.41)	P<0.001
Hospital Outpatient Visits, mean (SD)	5.58 (14.43)	5.99 (15.25)	P<0.001

Hospice Stays, mean (SD)	0.01 (0.10)	0.01 (0.10)	P<0.001
Imaging Events, mean (SD)	3.78 (5.77)	3.67 (5.55)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.14 (0.52)	0.14 (0.51)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.01 (0.14)	0.01 (0.14)	P=0.025
Other Procedures Events, mean (SD)	5.71 (14.77)	6.25 (14.75)	P<0.001
Other Part B Carrier Events, mean (SD)	1.53 (8.59)	1.64 (8.17)	P<0.001
MD Office Part B Events, mean (SD)	7.18 (7.75)	7.23 (7.78)	P<0.001
Part B Drug Events, mean (SD)	2.69 (6.77)	2.71 (6.24)	P<0.001
Part D Events, mean (SD)	17.99 (29.34)	20.23 (28.97)	P<0.001
Hospital Readmissions, mean (SD)	0.03 (0.26)	0.03 (0.24)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.04 (0.27)	0.04 (0.27)	P=0.040
Tests Events, mean (SD)	13.01 (19.01)	12.52 (18.30)	P<0.001
<u>Assistive Devices and Equipment</u>			
Diabetic Footwear, No. (%)	1,102 (0.0%)	482 (0.0%)	P<0.001
Walking Aids, No. (%)	280 (0.0%)	115 (0.0%)	P<0.001
Hospital Beds, No. (%)	8 (0.0%)	6 (0.0%)	P=0.538
Wheelchair, No. (%)	18 (0.0%)	6 (0.0%)	P=0.011
<u>Clinical Conditions</u>			
ESRD, (%)	0.6%	0.6%	P<0.001
Abnormal Gait, (%)	5.2%	6.5%	P<0.001
Orthostatic Hypotension, (%)	0.8%	0.8%	P<0.001
Sarcopenia, (%)	0.7%	0.3%	P<0.001
Weight Loss, (%)	1.9%	1.7%	P<0.001
Weight Gain, (%)	0.3%	0.3%	P=0.982
Underweight, (%)	0.0%	0.1%	P<0.001

Overweight, (%)	0.2%	0.5%	P<0.001
Parkinson, (%)	1.1%	1.2%	P<0.001
Incontinence, (%)	3.6%	3.7%	P<0.001
Dizziness Vertigo, (%)	6.7%	6.6%	P<0.001
Cognitive Impairment, (%)	0.9%	1.2%	P<0.001
Restless Leg Syndrome, (%)	0.6%	0.9%	P<0.001
Movement Disorders, (%)	1.0%	1.6%	P<0.001
Melanoma, (%)	0.9%	2.0%	P<0.001
Bladder Cancer, (%)	1.0%	1.0%	P=0.546
Kidney Cancer, (%)	0.5%	0.5%	P<0.001
Pancreatic Cancer, (%)	0.1%	0.1%	P<0.001
Other Cancer, (%)	10.2%	9.3%	P<0.001
Alzheimer's Disease, (%)	3.3%	2.9%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, (%)	7.7%	7.8%	P=0.035
Acute Myocardial Infarction, (%)	0.7%	0.7%	P=0.006
Anemia, (%)	20.6%	19.4%	P<0.001
Asthma, (%)	3.9%	5.0%	P<0.001
Atrial Fibrillation, (%)	7.8%	8.1%	P<0.001
Breast Cancer, (%)	3.0%	3.2%	P<0.001
Colorectal Cancer, (%)	1.2%	1.1%	P<0.001
Endometrial Cancer, (%)	0.3%	0.3%	P<0.001
Lung Cancer, (%)	0.8%	0.8%	P<0.001
Prostate Cancer, (%)	3.4%	3.3%	P<0.001
Cataract, (%)	20.9%	19.5%	P<0.001
Heart Failure, (%)	12.7%	11.7%	P<0.001
Chronic Kidney Disease, (%)	12.8%	17.6%	P<0.001
Chronic Obstructive Pulmonary Disease, (%)	9.7%	9.8%	P<0.001

Depression, (%)	10.1%	12.3%	P<0.001
Diabetes, (%)	25.2%	25.3%	P=0.002
Glaucoma, (%)	10.7%	9.6%	P<0.001
Hip/Pelvic Fracture, (%)	0.6%	0.6%	P<0.001
Hyperlipidemia, (%)	45.9%	46.1%	P<0.001
Benign Prostatic Hyperplasia, (%)	6.2%	7.0%	P<0.001
Hypertension, (%)	55.3%	55.5%	P<0.001
Hypothyroidism, (%)	13.4%	14.7%	P<0.001
Ischemic Heart Disease, (%)	28.4%	26.2%	P<0.001
Osteoporosis, (%)	6.6%	6.2%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, (%)	28.0%	30.3%	P<0.001
Stroke / Transient Ischemic Attack, (%)	3.1%	3.1%	P=0.005
ADHD & Other Conduct Disorders, (%)	0.2%	0.3%	P<0.001
Anxiety Disorders, (%)	7.1%	10.8%	P<0.001
Autism Spectrum Disorders, (%)	0.0%	0.0%	P<0.001
Bipolar Disorder, (%)	0.9%	1.2%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, (%)	0.2%	0.3%	P<0.001
Cerebral Palsy, (%)	0.1%	0.1%	P<0.001
Cystic Fibrosis & other Metabolic Developmental Disorders, (%)	0.4%	0.5%	P<0.001
Depression, (%)	9.3%	11.3%	P<0.001
Epilepsy, (%)	1.1%	1.3%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, (%)	7.5%	12.6%	P<0.001
Deafness & Hearing Impairment, (%)	3.8%	4.9%	P<0.001
Viral Hepatitis (General), (%)	0.5%	0.7%	P<0.001
HIV/AIDS, (%)	0.1%	0.1%	P<0.001
Intellectual Disabilities & Related Conditions, (%)	0.2%	0.2%	P<0.001
Learning Disabilities, (%)	0.0%	0.1%	P<0.001

Leukemias & Lymphomas, (%)	1.2%	1.4%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), (%)	2.3%	3.0%	P<0.001
Migraine & Other Chronic Headache, (%)	1.0%	1.7%	P<0.001
Mobility Impairments, (%)	1.5%	1.6%	P<0.001
Multiple Sclerosis & Transverse Myelitis, (%)	0.2%	0.3%	P<0.001
Muscular Dystrophy, (%)	0.0%	0.0%	P=0.014
Obesity, (%)	5.7%	11.4%	P<0.001
Other Developmental Delays, (%)	0.0%	0.0%	P<0.001
Personality Disorders, (%)	0.1%	0.5%	P<0.001
Post-Traumatic Stress Disorder, (%)	0.2%	0.4%	P<0.001
Peripheral Vascular Disease, (%)	10.0%	10.0%	P<0.001
Schizophrenia, (%)	0.4%	0.4%	P<0.001
Schizophrenia & Other Psychotic Disorders, (%)	1.4%	1.3%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, (%)	0.1%	0.1%	P<0.001
Spinal Cord Injury, (%)	0.1%	0.3%	P<0.001
Tobacco Use Disorders, (%)	4.2%	5.3%	P<0.001
Pressure Ulcers & Chronic Ulcers, (%)	3.2%	3.1%	P<0.001
Blindness & Visual Impairment, (%)	0.7%	0.5%	P<0.001
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	4.45 (3.57)	4.83 (3.82)	P<0.001
<u>Screenings</u>			
Fall Risk Screening, (%)	3.0%	8.1%	P<0.001
Osteoporosis Screening, (%)	7.8%	8.2%	P<0.001
Fall in the Previous Calendar Year (ECO Method), (%)	4.1%	4.3%	P<0.001
Fall in the Previous Calendar Year (ECDC Method), (%)	13.5%	9.8%	P<0.001
Fall in the Previous Calendar Year (AUR Method), (%)	5.6%	5.2%	P<0.001

Event Study Tables

csdid_event_NPI_fall_risk_screening_excluding_low_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0029	0.0009	3.2233	0.0013	0.0011	0.0046
Post_Avg	0.0590	0.0027	22.1540	0.0000	0.0538	0.0642
Tm3	-0.0027	0.0020	-1.4005	0.1614	-0.0066	0.0011
Tm2	0.0146	0.0022	6.6503	0.0000	0.0103	0.0189
Tm1	-0.0033	0.0025	-1.3065	0.1914	-0.0082	0.0016
Tm0	0.0170	0.0021	8.0474	0.0000	0.0128	0.0211
Tp1	0.0284	0.0032	8.8451	0.0000	0.0221	0.0347
Tp2	0.0394	0.0037	10.6345	0.0000	0.0321	0.0467
Tp3	0.0573	0.0043	13.4066	0.0000	0.0489	0.0657
Tp4	0.0788	0.0039	20.0732	0.0000	0.0711	0.0865
Tp5	0.0828	0.0056	14.8866	0.0000	0.0719	0.0937
Tp6	0.1091	0.0103	10.6190	0.0000	0.0890	0.1293

csdid_event_NPI_fall_risk_screening_age_65_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0030	0.0012	2.5225	0.0117	0.0007	0.0054
Post_Avg	0.0587	0.0042	14.0554	0.0000	0.0505	0.0668
Tm3	-0.0021	0.0027	-0.7920	0.4283	-0.0073	0.0031
Tm2	0.0152	0.0030	5.0756	0.0000	0.0093	0.0211
Tm1	-0.0040	0.0035	-1.1671	0.2432	-0.0108	0.0027
Tm0	0.0196	0.0028	6.9441	0.0000	0.0141	0.0251
Tp1	0.0333	0.0044	7.6386	0.0000	0.0248	0.0419
Tp2	0.0446	0.0050	8.9001	0.0000	0.0347	0.0544
Tp3	0.0662	0.0058	11.4160	0.0000	0.0548	0.0775
Tp4	0.0879	0.0063	14.0512	0.0000	0.0756	0.1002
Tp5	0.0765	0.0091	8.3916	0.0000	0.0587	0.0944
Tp6	0.0826	0.0199	4.1508	0.0000	0.0436	0.1215

csdid_event_NPI_fall_risk_screening_age_75_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0038	0.0016	2.3982	0.0165	0.0007	0.0070
Post_Avg	0.0546	0.0043	12.6174	0.0000	0.0461	0.0631
Tm3	-0.0019	0.0033	-0.5774	0.5637	-0.0084	0.0046
Tm2	0.0166	0.0039	4.2836	0.0000	0.0090	0.0242
Tm1	-0.0032	0.0044	-0.7285	0.4663	-0.0119	0.0054
Tm0	0.0158	0.0037	4.2252	0.0000	0.0085	0.0232
Tp1	0.0213	0.0057	3.7207	0.0002	0.0101	0.0326
Tp2	0.0311	0.0065	4.8013	0.0000	0.0184	0.0437
Tp3	0.0491	0.0073	6.7427	0.0000	0.0348	0.0633
Tp4	0.0737	0.0061	12.0512	0.0000	0.0617	0.0857
Tp5	0.0820	0.0084	9.7844	0.0000	0.0655	0.0984
Tp6	0.1091	0.0146	7.4869	0.0000	0.0805	0.1376

csdid_event_NPI_fall_risk_screening_age_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0028	0.0032	0.8881	0.3745	-0.0034	0.0090
Post_Avg	0.0569	0.0065	8.7270	0.0000	0.0441	0.0696
Tm3	-0.0082	0.0062	-1.3177	0.1876	-0.0204	0.0040
Tm2	0.0103	0.0059	1.7344	0.0828	-0.0013	0.0220
Tm1	0.0063	0.0072	0.8766	0.3807	-0.0078	0.0204
Tm0	0.0059	0.0072	0.8218	0.4112	-0.0082	0.0200
Tp1	0.0305	0.0072	4.2084	0.0000	0.0163	0.0447
Tp2	0.0380	0.0119	3.1927	0.0014	0.0147	0.0614
Tp3	0.0384	0.0112	3.4176	0.0006	0.0164	0.0604
Tp4	0.0586	0.0119	4.9295	0.0000	0.0353	0.0818
Tp5	0.0903	0.0131	6.8756	0.0000	0.0645	0.1160
Tp6	0.1364	0.0228	5.9828	0.0000	0.0917	0.1811

csdid_event_NPI_fall_risk_screening_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0023	0.0012	1.9716	0.0487	0.0000	0.0047
Post_Avg	0.0567	0.0036	15.8168	0.0000	0.0496	0.0637
Tm3	-0.0012	0.0027	-0.4428	0.6579	-0.0064	0.0040
Tm2	0.0150	0.0029	5.0996	0.0000	0.0092	0.0208
Tm1	-0.0068	0.0033	-2.0539	0.0400	-0.0134	-0.0003
Tm0	0.0172	0.0028	6.0456	0.0000	0.0116	0.0228
Tp1	0.0278	0.0043	6.4186	0.0000	0.0193	0.0363
Tp2	0.0367	0.0051	7.1891	0.0000	0.0267	0.0467
Tp3	0.0536	0.0060	8.9764	0.0000	0.0419	0.0654
Tp4	0.0760	0.0051	14.8030	0.0000	0.0659	0.0861
Tp5	0.0800	0.0074	10.8537	0.0000	0.0656	0.0945

Tp6	0.1052	0.0136	7.7522	0.0000	0.0786	0.1319
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csdid_event_NPI_fall_risk_screening_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0036	0.0014	2.6835	0.0073	0.0010	0.0063
Post_Avg	0.0550	0.0044	12.5354	0.0000	0.0464	0.0636
Tm3	-0.0048	0.0029	-1.6556	0.0978	-0.0104	0.0009
Tm2	0.0141	0.0033	4.2865	0.0000	0.0077	0.0206
Tm1	0.0015	0.0038	0.4033	0.6867	-0.0059	0.0090
Tm0	0.0165	0.0031	5.2699	0.0000	0.0104	0.0227
Tp1	0.0301	0.0048	6.2282	0.0000	0.0206	0.0396
Tp2	0.0426	0.0059	7.2016	0.0000	0.0310	0.0542
Tp3	0.0616	0.0061	10.0270	0.0000	0.0496	0.0736
Tp4	0.0716	0.0073	9.8071	0.0000	0.0573	0.0860
Tp5	0.0505	0.0127	3.9909	0.0001	0.0257	0.0753
Tp6	0.1120	0.0161	6.9356	0.0000	0.0804	0.1437

csdid_event_NPI_fall_risk_screening

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0029	0.0009	3.2313	0.0012	0.0011	0.0046
Post_Avg	0.0590	0.0027	22.1653	0.0000	0.0538	0.0642
Tm3	-0.0027	0.0020	-1.3982	0.1621	-0.0066	0.0011
Tm2	0.0146	0.0022	6.6561	0.0000	0.0103	0.0189
Tm1	-0.0033	0.0025	-1.3050	0.1919	-0.0082	0.0016
Tm0	0.0170	0.0021	8.0515	0.0000	0.0128	0.0211
Tp1	0.0285	0.0032	8.8603	0.0000	0.0222	0.0348
Tp2	0.0394	0.0037	10.6417	0.0000	0.0322	0.0467
Tp3	0.0573	0.0043	13.4181	0.0000	0.0489	0.0657
Tp4	0.0788	0.0039	20.0789	0.0000	0.0711	0.0865
Tp5	0.0828	0.0056	14.8901	0.0000	0.0719	0.0937
Tp6	0.1092	0.0103	10.6219	0.0000	0.0890	0.1293

csdid_event_NPI_fall_risk_screening_low_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0071	0.0014	5.2698	0.0000	0.0045	0.0098
Post_Avg	0.0646	0.0050	12.7872	0.0000	0.0547	0.0745
Tm3	0.0012	0.0029	0.4125	0.6800	-0.0045	0.0069
Tm2	0.0164	0.0034	4.8810	0.0000	0.0098	0.0230
Tm1	0.0038	0.0040	0.9498	0.3422	-0.0041	0.0117
Tm0	0.0179	0.0035	5.1980	0.0000	0.0112	0.0247
Tp1	0.0363	0.0053	6.8424	0.0000	0.0259	0.0467
Tp2	0.0439	0.0055	7.9737	0.0000	0.0331	0.0547
Tp3	0.0645	0.0057	11.3694	0.0000	0.0534	0.0757
Tp4	0.0902	0.0079	11.3540	0.0000	0.0746	0.1057
Tp5	0.1004	0.0134	7.5109	0.0000	0.0742	0.1266

Tp6	0.0988	0.0237	4.1720	0.0000	0.0524	0.1452
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csdid_event_NPI_fall_risk_screening_middle_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0018	0.0014	1.3144	0.1887	-0.0009	0.0046
Post_Avg	0.0658	0.0037	17.9823	0.0000	0.0586	0.0730
Tm3	-0.0040	0.0031	-1.2751	0.2023	-0.0100	0.0021
Tm2	0.0135	0.0035	3.8458	0.0001	0.0066	0.0203
Tm1	-0.0040	0.0040	-1.0145	0.3103	-0.0118	0.0038
Tm0	0.0215	0.0033	6.5151	0.0000	0.0151	0.0280
Tp1	0.0291	0.0049	5.8824	0.0000	0.0194	0.0388
Tp2	0.0442	0.0051	8.7034	0.0000	0.0343	0.0542
Tp3	0.0634	0.0052	12.2325	0.0000	0.0533	0.0736
Tp4	0.0898	0.0056	16.0657	0.0000	0.0788	0.1007
Tp5	0.0924	0.0077	12.0253	0.0000	0.0774	0.1075
Tp6	0.1201	0.0140	8.5981	0.0000	0.0927	0.1474

csdid_event_NPI_fall_risk_screening_high_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0030	0.0018	1.6562	0.0977	-0.0006	0.0067
Post_Avg	0.0611	0.0042	14.4550	0.0000	0.0528	0.0694
Tm3	-0.0051	0.0044	-1.1678	0.2429	-0.0136	0.0034
Tm2	0.0175	0.0047	3.7593	0.0002	0.0084	0.0266
Tm1	-0.0033	0.0050	-0.6485	0.5166	-0.0132	0.0066
Tm0	0.0136	0.0041	3.2938	0.0010	0.0055	0.0217
Tp1	0.0294	0.0059	4.9513	0.0000	0.0178	0.0411
Tp2	0.0377	0.0061	6.2158	0.0000	0.0258	0.0495
Tp3	0.0534	0.0062	8.6130	0.0000	0.0412	0.0655
Tp4	0.0784	0.0062	12.7396	0.0000	0.0664	0.0905
Tp5	0.0988	0.0081	12.2499	0.0000	0.0830	0.1146
Tp6	0.1165	0.0137	8.5053	0.0000	0.0896	0.1433

csdid_event_NPI_fall_risk_screening_low_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0071	0.0014	4.9955	0.0000	0.0043	0.0099
Post_Avg	0.0396	0.0060	6.6229	0.0000	0.0279	0.0514
Tm3	-0.0012	0.0019	-0.6433	0.5200	-0.0050	0.0025
Tm2	0.0102	0.0030	3.4387	0.0006	0.0044	0.0160
Tm1	0.0124	0.0043	2.8546	0.0043	0.0039	0.0209
Tm0	0.0019	0.0041	0.4710	0.6376	-0.0062	0.0101
Tp1	-0.0020	0.0069	-0.2916	0.7706	-0.0156	0.0115
Tp2	0.0039	0.0076	0.5087	0.6109	-0.0110	0.0187
Tp3	0.0083	0.0090	0.9268	0.3540	-0.0092	0.0258
Tp4	0.0481	0.0073	6.6145	0.0000	0.0338	0.0623

Tp5	0.0726	0.0110	6.5776	0.0000	0.0509	0.0942
Tp6	0.1447	0.0289	5.0134	0.0000	0.0881	0.2012

csdid_event_NPI_fall_risk_screening_middle_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0072	0.0014	5.3623	0.0000	0.0046	0.0099
Post_Avg	0.0653	0.0044	14.7569	0.0000	0.0567	0.0740
Tm3	-0.0024	0.0024	-0.9949	0.3198	-0.0071	0.0023
Tm2	0.0388	0.0036	10.8430	0.0000	0.0318	0.0458
Tm1	-0.0147	0.0043	-3.4113	0.0006	-0.0231	-0.0063
Tm0	0.0183	0.0035	5.2487	0.0000	0.0115	0.0252
Tp1	0.0319	0.0050	6.3797	0.0000	0.0221	0.0417
Tp2	0.0516	0.0059	8.8060	0.0000	0.0401	0.0631
Tp3	0.0682	0.0064	10.6659	0.0000	0.0556	0.0807
Tp4	0.0943	0.0071	13.3090	0.0000	0.0804	0.1082
Tp5	0.0928	0.0103	8.9839	0.0000	0.0726	0.1131
Tp6	0.1003	0.0189	5.3095	0.0000	0.0632	0.1373

csdid_event_NPI_fall_risk_screening_high_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0012	0.0016	-0.7492	0.4537	-0.0043	0.0019
Post_Avg	0.0640	0.0041	15.7838	0.0000	0.0561	0.0720
Tm3	-0.0025	0.0039	-0.6493	0.5162	-0.0101	0.0051
Tm2	-0.0001	0.0039	-0.0307	0.9755	-0.0077	0.0075
Tm1	-0.0009	0.0042	-0.2285	0.8192	-0.0091	0.0072
Tm0	0.0211	0.0033	6.3656	0.0000	0.0146	0.0276
Tp1	0.0375	0.0050	7.4450	0.0000	0.0277	0.0474
Tp2	0.0448	0.0058	7.7634	0.0000	0.0335	0.0561
Tp3	0.0664	0.0070	9.4935	0.0000	0.0527	0.0801
Tp4	0.0797	0.0060	13.1714	0.0000	0.0678	0.0915
Tp5	0.0792	0.0082	9.6433	0.0000	0.0631	0.0953
Tp6	0.1195	0.0144	8.3152	0.0000	0.0914	0.1477

csdid_event_NPI_osteoporosis_screening_excluding_low_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0016	0.0015	-1.0460	0.2956	-0.0045	0.0014
Post_Avg	0.0017	0.0030	0.5759	0.5647	-0.0041	0.0076
Tm3	-0.0019	0.0042	-0.4427	0.6580	-0.0102	0.0064
Tm2	0.0024	0.0037	0.6518	0.5145	-0.0048	0.0095
Tm1	-0.0052	0.0034	-1.4990	0.1339	-0.0119	0.0016
Tm0	0.0003	0.0025	0.1017	0.9190	-0.0047	0.0052
Tp1	0.0004	0.0032	0.1261	0.8997	-0.0058	0.0066
Tp2	0.0026	0.0036	0.7334	0.4633	-0.0044	0.0096
Tp3	0.0031	0.0040	0.7763	0.4376	-0.0048	0.0111

Tp4	0.0031	0.0043	0.7219	0.4703	-0.0053	0.0114
Tp5	-0.0014	0.0062	-0.2321	0.8164	-0.0135	0.0107
Tp6	0.0040	0.0101	0.3990	0.6899	-0.0158	0.0238

csdid_event_NPI_osteoporosis_screening_age_65_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0010	0.0021	-0.4655	0.6416	-0.0051	0.0032
Post_Avg	0.0029	0.0049	0.5960	0.5511	-0.0066	0.0124
Tm3	-0.0009	0.0060	-0.1435	0.8859	-0.0125	0.0108
Tm2	0.0026	0.0053	0.4929	0.6221	-0.0077	0.0129
Tm1	-0.0047	0.0050	-0.9335	0.3506	-0.0145	0.0052
Tm0	0.0017	0.0037	0.4612	0.6446	-0.0056	0.0091
Tp1	0.0005	0.0047	0.1006	0.9198	-0.0088	0.0097
Tp2	0.0047	0.0053	0.8852	0.3761	-0.0057	0.0152
Tp3	0.0030	0.0062	0.4788	0.6321	-0.0092	0.0151
Tp4	0.0103	0.0070	1.4638	0.1432	-0.0035	0.0241
Tp5	-0.0002	0.0104	-0.0192	0.9847	-0.0205	0.0201
Tp6	0.0003	0.0198	0.0131	0.9896	-0.0385	0.0390

csdid_event_NPI_osteoporosis_screening_age_75_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0020	0.0025	-0.7672	0.4430	-0.0070	0.0030
Post_Avg	0.0032	0.0048	0.6622	0.5078	-0.0063	0.0127
Tm3	0.0036	0.0072	0.5010	0.6164	-0.0105	0.0177
Tm2	0.0007	0.0062	0.1155	0.9080	-0.0114	0.0128
Tm1	-0.0102	0.0059	-1.7422	0.0815	-0.0217	0.0013
Tm0	0.0021	0.0043	0.4874	0.6260	-0.0063	0.0105
Tp1	-0.0003	0.0055	-0.0547	0.9563	-0.0110	0.0104
Tp2	0.0013	0.0061	0.2095	0.8341	-0.0107	0.0132
Tp3	0.0006	0.0069	0.0812	0.9353	-0.0129	0.0140
Tp4	-0.0004	0.0066	-0.0607	0.9516	-0.0133	0.0125
Tp5	0.0067	0.0096	0.7001	0.4838	-0.0121	0.0255
Tp6	0.0125	0.0148	0.8478	0.3966	-0.0164	0.0415

csdid_event_NPI_osteoporosis_screening_age_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0002	0.0046	0.0355	0.9717	-0.0089	0.0093
Post_Avg	-0.0293	0.0083	-3.5234	0.0004	-0.0455	-0.0130
Tm3	-0.0227	0.0104	-2.1887	0.0286	-0.0431	-0.0024
Tm2	0.0111	0.0085	1.3150	0.1885	-0.0055	0.0277
Tm1	0.0121	0.0109	1.1154	0.2647	-0.0092	0.0334
Tm0	-0.0091	0.0066	-1.3856	0.1659	-0.0220	0.0038
Tp1	-0.0164	0.0083	-1.9691	0.0489	-0.0326	-0.0001
Tp2	-0.0049	0.0083	-0.5889	0.5560	-0.0211	0.0114

Tp3	-0.0403	0.0129	-3.1152	0.0018	-0.0657	-0.0149
Tp4	-0.0385	0.0132	-2.9171	0.0035	-0.0643	-0.0126
Tp5	-0.0427	0.0137	-3.1199	0.0018	-0.0696	-0.0159
Tp6	-0.0530	0.0209	-2.5402	0.0111	-0.0939	-0.0121

csdid_event_NPI_osteoporosis_screening_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0021	0.0024	-0.9022	0.3670	-0.0068	0.0025
Post_Avg	0.0026	0.0048	0.5572	0.5774	-0.0067	0.0120
Tm3	-0.0025	0.0067	-0.3647	0.7153	-0.0157	0.0108
Tm2	0.0023	0.0058	0.3958	0.6922	-0.0091	0.0137
Tm1	-0.0063	0.0056	-1.1277	0.2594	-0.0172	0.0046
Tm0	-0.0015	0.0040	-0.3697	0.7116	-0.0094	0.0064
Tp1	0.0004	0.0051	0.0827	0.9341	-0.0096	0.0105
Tp2	0.0037	0.0057	0.6482	0.5168	-0.0075	0.0149
Tp3	0.0050	0.0064	0.7728	0.4396	-0.0076	0.0176
Tp4	0.0025	0.0068	0.3666	0.7139	-0.0109	0.0159
Tp5	-0.0065	0.0097	-0.6650	0.5060	-0.0255	0.0126
Tp6	0.0149	0.0161	0.9257	0.3546	-0.0166	0.0463

csdid_event_NPI_osteoporosis_screening_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0011	0.0011	-1.0043	0.3152	-0.0034	0.0011
Post_Avg	-0.0030	0.0028	-1.0970	0.2726	-0.0085	0.0024
Tm3	-0.0011	0.0032	-0.3574	0.7208	-0.0074	0.0051
Tm2	0.0017	0.0028	0.5887	0.5561	-0.0039	0.0072
Tm1	-0.0039	0.0026	-1.5311	0.1257	-0.0090	0.0011
Tm0	0.0022	0.0019	1.1940	0.2325	-0.0014	0.0059
Tp1	0.0003	0.0025	0.1229	0.9022	-0.0046	0.0052
Tp2	0.0012	0.0029	0.4271	0.6693	-0.0044	0.0068
Tp3	-0.0003	0.0031	-0.1063	0.9154	-0.0064	0.0057
Tp4	0.0012	0.0037	0.3193	0.7495	-0.0061	0.0085
Tp5	-0.0066	0.0082	-0.8042	0.4213	-0.0226	0.0095
Tp6	-0.0193	0.0078	-2.4717	0.0134	-0.0346	-0.0040

csdid_event_NPI_osteoporosis_screening

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0016	0.0015	-1.0504	0.2935	-0.0045	0.0014
Post_Avg	0.0017	0.0030	0.5823	0.5604	-0.0041	0.0076
Tm3	-0.0019	0.0042	-0.4386	0.6610	-0.0102	0.0065
Tm2	0.0024	0.0037	0.6476	0.5172	-0.0048	0.0095
Tm1	-0.0052	0.0034	-1.5054	0.1322	-0.0119	0.0016
Tm0	0.0003	0.0025	0.1137	0.9095	-0.0047	0.0052
Tp1	0.0004	0.0032	0.1318	0.8952	-0.0058	0.0067
Tp2	0.0026	0.0036	0.7422	0.4580	-0.0043	0.0096

Tp3	0.0032	0.0040	0.7893	0.4299	-0.0047	0.0111
Tp4	0.0031	0.0043	0.7245	0.4688	-0.0053	0.0114
Tp5	-0.0014	0.0062	-0.2342	0.8148	-0.0136	0.0107
Tp6	0.0040	0.0101	0.3994	0.6896	-0.0158	0.0238

csdid_event_NPI_osteoporosis_screening_low_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0040	0.0025	-1.6125	0.1069	-0.0089	0.0009
Post_Avg	-0.0008	0.0054	-0.1520	0.8792	-0.0114	0.0097
Tm3	-0.0099	0.0069	-1.4310	0.1524	-0.0235	0.0037
Tm2	0.0048	0.0063	0.7596	0.4475	-0.0075	0.0171
Tm1	-0.0069	0.0061	-1.1321	0.2576	-0.0188	0.0050
Tm0	0.0036	0.0045	0.8062	0.4201	-0.0052	0.0124
Tp1	0.0043	0.0057	0.7630	0.4455	-0.0068	0.0155
Tp2	0.0071	0.0059	1.2022	0.2293	-0.0045	0.0186
Tp3	0.0045	0.0060	0.7519	0.4521	-0.0072	0.0162
Tp4	0.0073	0.0083	0.8803	0.3787	-0.0090	0.0236
Tp5	-0.0049	0.0128	-0.3858	0.6997	-0.0300	0.0201
Tp6	-0.0276	0.0195	-1.4166	0.1566	-0.0659	0.0106

csdid_event_NPI_osteoporosis_screening_middle_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0007	0.0025	-0.2888	0.7727	-0.0056	0.0042
Post_Avg	-0.0029	0.0048	-0.5990	0.5492	-0.0122	0.0065
Tm3	0.0044	0.0072	0.6078	0.5433	-0.0097	0.0184
Tm2	-0.0016	0.0063	-0.2549	0.7988	-0.0138	0.0107
Tm1	-0.0049	0.0060	-0.8224	0.4108	-0.0166	0.0068
Tm0	-0.0010	0.0044	-0.2351	0.8141	-0.0097	0.0076
Tp1	-0.0027	0.0054	-0.5071	0.6121	-0.0134	0.0079
Tp2	0.0028	0.0056	0.4964	0.6196	-0.0081	0.0137
Tp3	0.0041	0.0056	0.7204	0.4713	-0.0070	0.0151
Tp4	-0.0043	0.0068	-0.6324	0.5272	-0.0175	0.0090
Tp5	-0.0154	0.0093	-1.6510	0.0987	-0.0336	0.0029
Tp6	-0.0034	0.0149	-0.2261	0.8211	-0.0326	0.0259

csdid_event_NPI_osteoporosis_screening_high_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0143	0.0029	-5.0003	0.0000	-0.0199	-0.0087
Post_Avg	-0.0127	0.0049	-2.6066	0.0091	-0.0223	-0.0032
Tm3	-0.0203	0.0085	-2.3999	0.0164	-0.0370	-0.0037
Tm2	-0.0122	0.0070	-1.7411	0.0817	-0.0260	0.0015
Tm1	-0.0103	0.0063	-1.6344	0.1022	-0.0227	0.0021
Tm0	-0.0069	0.0046	-1.5249	0.1273	-0.0159	0.0020
Tp1	-0.0033	0.0056	-0.5923	0.5536	-0.0143	0.0076

Tp2	-0.0036	0.0057	-0.6401	0.5221	-0.0148	0.0075
Tp3	0.0010	0.0058	0.1756	0.8606	-0.0103	0.0124
Tp4	-0.0205	0.0066	-3.0961	0.0020	-0.0334	-0.0075
Tp5	-0.0178	0.0091	-1.9475	0.0515	-0.0357	0.0001
Tp6	-0.0380	0.0140	-2.7120	0.0067	-0.0655	-0.0105

csdid_event_NPI_osteoporosis_screening_low_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0008	0.0033	0.2362	0.8133	-0.0056	0.0071
Post_Avg	-0.0002	0.0065	-0.0278	0.9779	-0.0130	0.0126
Tm3	0.0072	0.0090	0.8008	0.4232	-0.0104	0.0248
Tm2	-0.0058	0.0076	-0.7670	0.4431	-0.0206	0.0090
Tm1	0.0009	0.0072	0.1275	0.8985	-0.0132	0.0150
Tm0	-0.0042	0.0054	-0.7822	0.4341	-0.0149	0.0064
Tp1	-0.0031	0.0071	-0.4354	0.6632	-0.0170	0.0108
Tp2	-0.0025	0.0077	-0.3250	0.7452	-0.0175	0.0125
Tp3	0.0072	0.0082	0.8771	0.3804	-0.0088	0.0232
Tp4	-0.0013	0.0087	-0.1514	0.8797	-0.0184	0.0158
Tp5	0.0082	0.0123	0.6663	0.5052	-0.0160	0.0324
Tp6	-0.0055	0.0262	-0.2103	0.8334	-0.0569	0.0459

csdid_event_NPI_osteoporosis_screening_middle_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0040	0.0025	-1.6148	0.1064	-0.0088	0.0009
Post_Avg	0.0039	0.0055	0.7034	0.4818	-0.0069	0.0147
Tm3	-0.0062	0.0070	-0.8801	0.3788	-0.0200	0.0076
Tm2	0.0043	0.0061	0.7105	0.4774	-0.0076	0.0163
Tm1	-0.0101	0.0057	-1.7607	0.0783	-0.0213	0.0011
Tm0	0.0034	0.0042	0.8028	0.4221	-0.0049	0.0117
Tp1	0.0003	0.0053	0.0598	0.9523	-0.0101	0.0107
Tp2	0.0022	0.0059	0.3725	0.7095	-0.0094	0.0138
Tp3	-0.0005	0.0066	-0.0787	0.9373	-0.0134	0.0124
Tp4	0.0112	0.0077	1.4554	0.1455	-0.0039	0.0263
Tp5	-0.0051	0.0117	-0.4333	0.6648	-0.0280	0.0179
Tp6	0.0156	0.0212	0.7348	0.4625	-0.0260	0.0572

csdid_event_NPI_osteoporosis_screening_high_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0008	0.0023	0.3477	0.7281	-0.0037	0.0053
Post_Avg	-0.0015	0.0044	-0.3331	0.7390	-0.0101	0.0072
Tm3	0.0005	0.0064	0.0796	0.9366	-0.0121	0.0131
Tm2	0.0061	0.0056	1.0913	0.2751	-0.0049	0.0171
Tm1	-0.0043	0.0054	-0.7920	0.4283	-0.0148	0.0063
Tm0	-0.0032	0.0039	-0.8327	0.4050	-0.0108	0.0044
Tp1	-0.0009	0.0048	-0.1798	0.8573	-0.0103	0.0086

Tp2	0.0012	0.0054	0.2234	0.8232	-0.0094	0.0119
Tp3	-0.0004	0.0062	-0.0682	0.9456	-0.0126	0.0118
Tp4	-0.0025	0.0064	-0.3836	0.7013	-0.0150	0.0101
Tp5	-0.0072	0.0095	-0.7574	0.4488	-0.0257	0.0114
Tp6	0.0026	0.0133	0.1993	0.8420	-0.0234	0.0287

csdid_event_TIN_fall_risk_screening_excluding_low_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0028	0.0009	2.9891	0.0028	0.0010	0.0046
Post_Avg	0.0577	0.0028	20.9494	0.0000	0.0523	0.0631
Tm3	-0.0043	0.0021	-2.0806	0.0375	-0.0084	-0.0003
Tm2	0.0157	0.0023	6.8661	0.0000	0.0112	0.0202
Tm1	-0.0030	0.0026	-1.1526	0.2491	-0.0080	0.0021
Tm0	0.0161	0.0022	7.3760	0.0000	0.0118	0.0204
Tp1	0.0266	0.0033	7.9702	0.0000	0.0201	0.0332
Tp2	0.0355	0.0038	9.2975	0.0000	0.0280	0.0430
Tp3	0.0537	0.0043	12.3710	0.0000	0.0452	0.0622
Tp4	0.0795	0.0041	19.6226	0.0000	0.0716	0.0875
Tp5	0.0836	0.0058	14.5355	0.0000	0.0724	0.0949
Tp6	0.1088	0.0108	10.0984	0.0000	0.0877	0.1299

csdid_event_TIN_fall_risk_screening_age_65_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0026	0.0013	2.0720	0.0383	0.0001	0.0051
Post_Avg	0.0582	0.0043	13.4502	0.0000	0.0497	0.0667
Tm3	-0.0040	0.0029	-1.4073	0.1593	-0.0096	0.0016
Tm2	0.0165	0.0031	5.2633	0.0000	0.0103	0.0226
Tm1	-0.0046	0.0036	-1.2994	0.1938	-0.0116	0.0024
Tm0	0.0193	0.0029	6.6187	0.0000	0.0136	0.0250
Tp1	0.0325	0.0045	7.2086	0.0000	0.0237	0.0414
Tp2	0.0421	0.0051	8.2633	0.0000	0.0321	0.0521
Tp3	0.0628	0.0059	10.7201	0.0000	0.0513	0.0743
Tp4	0.0884	0.0066	13.4386	0.0000	0.0755	0.1013
Tp5	0.0785	0.0096	8.1956	0.0000	0.0597	0.0973
Tp6	0.0839	0.0208	4.0346	0.0001	0.0431	0.1246

csdid_event_TIN_fall_risk_screening_age_75_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0038	0.0017	2.2740	0.0230	0.0005	0.0071
Post_Avg	0.0549	0.0045	12.3373	0.0000	0.0462	0.0637
Tm3	-0.0032	0.0035	-0.9105	0.3625	-0.0100	0.0037
Tm2	0.0167	0.0040	4.1508	0.0000	0.0088	0.0245
Tm1	-0.0021	0.0045	-0.4652	0.6418	-0.0110	0.0068
Tm0	0.0160	0.0038	4.1641	0.0000	0.0084	0.0235

Tp1	0.0215	0.0058	3.6822	0.0002	0.0101	0.0330
Tp2	0.0293	0.0066	4.4246	0.0000	0.0163	0.0422
Tp3	0.0478	0.0074	6.4553	0.0000	0.0333	0.0623
Tp4	0.0742	0.0063	11.7513	0.0000	0.0618	0.0865
Tp5	0.0821	0.0087	9.3876	0.0000	0.0650	0.0993
Tp6	0.1137	0.0154	7.4055	0.0000	0.0836	0.1438

csdid_event_TIN_fall_risk_screening_age_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0010	0.0032	0.2982	0.7655	-0.0054	0.0073
Post_Avg	0.0576	0.0065	8.7995	0.0000	0.0448	0.0704
Tm3	-0.0100	0.0067	-1.4944	0.1351	-0.0232	0.0031
Tm2	0.0130	0.0061	2.1197	0.0340	0.0010	0.0250
Tm1	-0.0001	0.0072	-0.0095	0.9925	-0.0143	0.0141
Tm0	0.0036	0.0076	0.4758	0.6342	-0.0112	0.0184
Tp1	0.0333	0.0072	4.6303	0.0000	0.0192	0.0475
Tp2	0.0249	0.0111	2.2350	0.0254	0.0031	0.0467
Tp3	0.0435	0.0110	3.9651	0.0001	0.0220	0.0650
Tp4	0.0664	0.0118	5.6096	0.0000	0.0432	0.0896
Tp5	0.0975	0.0133	7.3503	0.0000	0.0715	0.1235
Tp6	0.1339	0.0247	5.4241	0.0000	0.0855	0.1823

csdid_event_TIN_fall_risk_screening_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0024	0.0012	1.9185	0.0550	-0.0001	0.0048
Post_Avg	0.0560	0.0037	15.1878	0.0000	0.0488	0.0632
Tm3	-0.0026	0.0029	-0.9065	0.3647	-0.0082	0.0030
Tm2	0.0159	0.0030	5.2264	0.0000	0.0100	0.0219
Tm1	-0.0062	0.0034	-1.8015	0.0716	-0.0130	0.0005
Tm0	0.0163	0.0029	5.5392	0.0000	0.0105	0.0221
Tp1	0.0254	0.0045	5.6425	0.0000	0.0166	0.0343
Tp2	0.0323	0.0052	6.1893	0.0000	0.0221	0.0426
Tp3	0.0495	0.0060	8.1922	0.0000	0.0376	0.0613
Tp4	0.0772	0.0053	14.6082	0.0000	0.0668	0.0876
Tp5	0.0818	0.0076	10.7387	0.0000	0.0669	0.0967
Tp6	0.1096	0.0142	7.7243	0.0000	0.0818	0.1374

csdid_event_TIN_fall_risk_screening_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0033	0.0014	2.3271	0.0200	0.0005	0.0061
Post_Avg	0.0528	0.0046	11.5818	0.0000	0.0438	0.0617
Tm3	-0.0064	0.0030	-2.1267	0.0334	-0.0123	-0.0005
Tm2	0.0155	0.0035	4.4871	0.0000	0.0087	0.0222
Tm1	0.0008	0.0039	0.2149	0.8298	-0.0068	0.0085
Tm0	0.0155	0.0032	4.7739	0.0000	0.0091	0.0219

Tp1	0.0289	0.0050	5.7855	0.0000	0.0191	0.0387
Tp2	0.0385	0.0061	6.3066	0.0000	0.0265	0.0504
Tp3	0.0584	0.0062	9.3566	0.0000	0.0462	0.0706
Tp4	0.0685	0.0076	9.0193	0.0000	0.0536	0.0834
Tp5	0.0468	0.0130	3.5973	0.0003	0.0213	0.0723
Tp6	0.1127	0.0170	6.6438	0.0000	0.0795	0.1460

csdid_event_TIN_fall_risk_screening

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0028	0.0009	2.9964	0.0027	0.0010	0.0046
Post_Avg	0.0577	0.0028	20.9594	0.0000	0.0523	0.0631
Tm3	-0.0043	0.0021	-2.0782	0.0377	-0.0084	-0.0002
Tm2	0.0157	0.0023	6.8709	0.0000	0.0112	0.0202
Tm1	-0.0030	0.0026	-1.1512	0.2497	-0.0080	0.0021
Tm0	0.0161	0.0022	7.3790	0.0000	0.0118	0.0204
Tp1	0.0267	0.0033	7.9837	0.0000	0.0201	0.0332
Tp2	0.0355	0.0038	9.3029	0.0000	0.0280	0.0430
Tp3	0.0537	0.0043	12.3799	0.0000	0.0452	0.0622
Tp4	0.0796	0.0041	19.6283	0.0000	0.0716	0.0875
Tp5	0.0837	0.0058	14.5391	0.0000	0.0724	0.0949
Tp6	0.1088	0.0108	10.1013	0.0000	0.0877	0.1299

csdid_event_TIN_fall_risk_screening_low_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0074	0.0014	5.2291	0.0000	0.0046	0.0102
Post_Avg	0.0639	0.0053	12.0994	0.0000	0.0535	0.0742
Tm3	0.0004	0.0031	0.1273	0.8987	-0.0056	0.0064
Tm2	0.0180	0.0035	5.1641	0.0000	0.0112	0.0249
Tm1	0.0038	0.0042	0.8999	0.3682	-0.0044	0.0120
Tm0	0.0171	0.0036	4.7848	0.0000	0.0101	0.0242
Tp1	0.0350	0.0055	6.3443	0.0000	0.0242	0.0458
Tp2	0.0410	0.0057	7.1506	0.0000	0.0298	0.0523
Tp3	0.0611	0.0059	10.3543	0.0000	0.0495	0.0727
Tp4	0.0897	0.0083	10.7913	0.0000	0.0734	0.1059
Tp5	0.1029	0.0141	7.3045	0.0000	0.0753	0.1306
Tp6	0.1003	0.0248	4.0533	0.0001	0.0518	0.1489

csdid_event_TIN_fall_risk_screening_middle_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0019	0.0015	1.3075	0.1911	-0.0010	0.0048
Post_Avg	0.0645	0.0038	16.8039	0.0000	0.0569	0.0720
Tm3	-0.0053	0.0034	-1.5741	0.1155	-0.0119	0.0013
Tm2	0.0152	0.0037	4.1129	0.0000	0.0080	0.0224
Tm1	-0.0042	0.0041	-1.0062	0.3143	-0.0122	0.0039

Tm0	0.0204	0.0034	5.9266	0.0000	0.0136	0.0271
Tp1	0.0275	0.0052	5.3093	0.0000	0.0173	0.0376
Tp2	0.0399	0.0053	7.4937	0.0000	0.0295	0.0504
Tp3	0.0587	0.0054	10.8073	0.0000	0.0481	0.0694
Tp4	0.0891	0.0058	15.4389	0.0000	0.0778	0.1005
Tp5	0.0919	0.0080	11.5221	0.0000	0.0762	0.1075
Tp6	0.1237	0.0149	8.3261	0.0000	0.0946	0.1528

csdid_event_TIN_fall_risk_screening_high_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0021	0.0019	1.0929	0.2745	-0.0017	0.0058
Post_Avg	0.0616	0.0043	14.1699	0.0000	0.0531	0.0701
Tm3	-0.0078	0.0046	-1.7031	0.0885	-0.0168	0.0012
Tm2	0.0169	0.0047	3.5533	0.0004	0.0076	0.0261
Tm1	-0.0028	0.0051	-0.5383	0.5904	-0.0128	0.0073
Tm0	0.0137	0.0042	3.2532	0.0011	0.0054	0.0219
Tp1	0.0288	0.0061	4.7246	0.0000	0.0169	0.0408
Tp2	0.0345	0.0062	5.5368	0.0000	0.0223	0.0467
Tp3	0.0497	0.0064	7.8053	0.0000	0.0372	0.0622
Tp4	0.0809	0.0063	12.9251	0.0000	0.0686	0.0931
Tp5	0.1019	0.0083	12.3050	0.0000	0.0856	0.1181
Tp6	0.1216	0.0145	8.3915	0.0000	0.0932	0.1501

csdid_event_TIN_fall_risk_screening_low_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0052	0.0014	3.8156	0.0001	0.0025	0.0078
Post_Avg	0.0440	0.0057	7.7422	0.0000	0.0329	0.0552
Tm3	-0.0020	0.0018	-1.0849	0.2779	-0.0056	0.0016
Tm2	0.0040	0.0025	1.5698	0.1165	-0.0010	0.0089
Tm1	0.0135	0.0041	3.3215	0.0009	0.0055	0.0215
Tm0	0.0033	0.0039	0.8508	0.3949	-0.0043	0.0110
Tp1	0.0030	0.0065	0.4554	0.6488	-0.0098	0.0157
Tp2	0.0114	0.0073	1.5731	0.1157	-0.0028	0.0257
Tp3	0.0127	0.0088	1.4487	0.1474	-0.0045	0.0299
Tp4	0.0470	0.0081	5.8187	0.0000	0.0312	0.0629
Tp5	0.0794	0.0112	7.0862	0.0000	0.0575	0.1014
Tp6	0.1513	0.0269	5.6151	0.0000	0.0985	0.2041

csdid_event_TIN_fall_risk_screening_middle_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0088	0.0014	6.2608	0.0000	0.0061	0.0116
Post_Avg	0.0673	0.0046	14.4790	0.0000	0.0582	0.0764
Tm3	-0.0008	0.0025	-0.3303	0.7412	-0.0058	0.0041
Tm2	0.0461	0.0039	11.9106	0.0000	0.0385	0.0536
Tm1	-0.0188	0.0045	-4.2002	0.0000	-0.0276	-0.0100

Tm0	0.0222	0.0036	6.1360	0.0000	0.0151	0.0293
Tp1	0.0400	0.0053	7.5461	0.0000	0.0296	0.0503
Tp2	0.0508	0.0059	8.5407	0.0000	0.0391	0.0625
Tp3	0.0741	0.0065	11.3692	0.0000	0.0613	0.0869
Tp4	0.0929	0.0072	12.8831	0.0000	0.0788	0.1071
Tp5	0.0967	0.0108	8.9621	0.0000	0.0756	0.1179
Tp6	0.0942	0.0204	4.6267	0.0000	0.0543	0.1341

csdid_event_TIN_fall_risk_screening_high_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0021	0.0017	-1.2022	0.2293	-0.0055	0.0013
Post_Avg	0.0603	0.0042	14.3050	0.0000	0.0520	0.0686
Tm3	-0.0064	0.0043	-1.4816	0.1384	-0.0148	0.0021
Tm2	-0.0008	0.0042	-0.2012	0.8405	-0.0091	0.0074
Tm1	0.0009	0.0044	0.2120	0.8321	-0.0077	0.0096
Tm0	0.0177	0.0035	5.0444	0.0000	0.0108	0.0245
Tp1	0.0284	0.0053	5.3682	0.0000	0.0180	0.0387
Tp2	0.0417	0.0060	6.9980	0.0000	0.0300	0.0534
Tp3	0.0606	0.0069	8.7857	0.0000	0.0471	0.0741
Tp4	0.0811	0.0063	12.8580	0.0000	0.0688	0.0935
Tp5	0.0750	0.0086	8.7482	0.0000	0.0582	0.0918
Tp6	0.1177	0.0153	7.7044	0.0000	0.0878	0.1477

csdid_event_TIN_osteoporosis_screening_excluding_low_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0021	0.0016	-1.3659	0.1720	-0.0052	0.0009
Post_Avg	0.0026	0.0031	0.8526	0.3939	-0.0034	0.0086
Tm3	-0.0032	0.0045	-0.7215	0.4706	-0.0120	0.0056
Tm2	0.0013	0.0038	0.3361	0.7368	-0.0061	0.0087
Tm1	-0.0044	0.0035	-1.2505	0.2111	-0.0113	0.0025
Tm0	0.0010	0.0026	0.3769	0.7063	-0.0041	0.0060
Tp1	0.0012	0.0033	0.3673	0.7134	-0.0052	0.0076
Tp2	0.0031	0.0036	0.8647	0.3872	-0.0040	0.0102
Tp3	0.0028	0.0041	0.6766	0.4986	-0.0053	0.0108
Tp4	0.0045	0.0044	1.0291	0.3034	-0.0041	0.0130
Tp5	0.0032	0.0063	0.5065	0.6125	-0.0092	0.0156
Tp6	0.0025	0.0105	0.2404	0.8100	-0.0181	0.0232

csdid_event_TIN_osteoporosis_screening_age_65_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0016	0.0022	-0.7346	0.4626	-0.0059	0.0027
Post_Avg	0.0038	0.0050	0.7551	0.4502	-0.0060	0.0135
Tm3	-0.0023	0.0063	-0.3663	0.7141	-0.0147	0.0101
Tm2	0.0023	0.0054	0.4241	0.6715	-0.0083	0.0129

Tm1	-0.0048	0.0051	-0.9491	0.3426	-0.0148	0.0052
Tm0	0.0033	0.0038	0.8745	0.3819	-0.0041	0.0108
Tp1	0.0027	0.0048	0.5564	0.5779	-0.0068	0.0122
Tp2	0.0064	0.0054	1.1792	0.2383	-0.0042	0.0171
Tp3	0.0035	0.0063	0.5502	0.5822	-0.0089	0.0158
Tp4	0.0104	0.0072	1.4483	0.1475	-0.0037	0.0246
Tp5	0.0068	0.0107	0.6346	0.5257	-0.0142	0.0278
Tp6	-0.0068	0.0206	-0.3312	0.7405	-0.0471	0.0335

csdid_event_TIN_osteoporosis_screening_age_75_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0035	0.0027	-1.2963	0.1949	-0.0087	0.0018
Post_Avg	0.0042	0.0049	0.8523	0.3941	-0.0054	0.0138
Tm3	0.0013	0.0076	0.1741	0.8617	-0.0137	0.0163
Tm2	-0.0025	0.0064	-0.3928	0.6945	-0.0151	0.0101
Tm1	-0.0092	0.0060	-1.5415	0.1232	-0.0209	0.0025
Tm0	0.0014	0.0044	0.3136	0.7538	-0.0073	0.0100
Tp1	0.0000	0.0056	0.0083	0.9934	-0.0109	0.0110
Tp2	0.0010	0.0062	0.1587	0.8739	-0.0113	0.0132
Tp3	-0.0001	0.0070	-0.0077	0.9939	-0.0137	0.0136
Tp4	0.0006	0.0067	0.0863	0.9312	-0.0125	0.0137
Tp5	0.0119	0.0096	1.2317	0.2181	-0.0070	0.0308
Tp6	0.0145	0.0152	0.9514	0.3414	-0.0154	0.0444

csdid_event_TIN_osteoporosis_screening_age_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0030	0.0048	0.6277	0.5302	-0.0064	0.0125
Post_Avg	-0.0281	0.0085	-3.3245	0.0009	-0.0447	-0.0115
Tm3	-0.0211	0.0108	-1.9595	0.0501	-0.0423	0.0000
Tm2	0.0137	0.0088	1.5552	0.1199	-0.0036	0.0309
Tm1	0.0165	0.0110	1.5008	0.1334	-0.0051	0.0381
Tm0	-0.0116	0.0071	-1.6461	0.0998	-0.0255	0.0022
Tp1	-0.0150	0.0084	-1.7784	0.0753	-0.0315	0.0015
Tp2	-0.0080	0.0087	-0.9114	0.3621	-0.0251	0.0092
Tp3	-0.0396	0.0134	-2.9589	0.0031	-0.0658	-0.0134
Tp4	-0.0372	0.0138	-2.7041	0.0068	-0.0642	-0.0102
Tp5	-0.0415	0.0140	-2.9644	0.0030	-0.0689	-0.0140
Tp6	-0.0440	0.0214	-2.0611	0.0393	-0.0859	-0.0022

csdid_event_TIN_osteoporosis_screening_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0034	0.0025	-1.3783	0.1681	-0.0083	0.0015
Post_Avg	0.0053	0.0049	1.0836	0.2785	-0.0043	0.0148
Tm3	-0.0048	0.0072	-0.6644	0.5064	-0.0188	0.0093
Tm2	0.0005	0.0060	0.0862	0.9313	-0.0113	0.0124

Tm1	-0.0061	0.0057	-1.0671	0.2859	-0.0173	0.0051
Tm0	0.0001	0.0041	0.0223	0.9822	-0.0080	0.0082
Tp1	0.0024	0.0053	0.4570	0.6477	-0.0080	0.0128
Tp2	0.0053	0.0059	0.9049	0.3655	-0.0062	0.0168
Tp3	0.0053	0.0066	0.8013	0.4230	-0.0076	0.0181
Tp4	0.0052	0.0070	0.7415	0.4584	-0.0085	0.0189
Tp5	0.0013	0.0100	0.1337	0.8936	-0.0182	0.0209
Tp6	0.0174	0.0167	1.0363	0.3000	-0.0155	0.0502

csdid_event_TIN_osteoporosis_screening_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0011	0.0012	-0.9347	0.3499	-0.0034	0.0012
Post_Avg	-0.0046	0.0029	-1.6244	0.1043	-0.0102	0.0010
Tm3	-0.0018	0.0034	-0.5202	0.6029	-0.0084	0.0049
Tm2	0.0016	0.0030	0.5312	0.5953	-0.0042	0.0074
Tm1	-0.0031	0.0027	-1.1804	0.2378	-0.0083	0.0021
Tm0	0.0017	0.0019	0.8535	0.3934	-0.0021	0.0054
Tp1	-0.0005	0.0026	-0.1928	0.8471	-0.0055	0.0045
Tp2	0.0004	0.0030	0.1304	0.8962	-0.0054	0.0062
Tp3	-0.0014	0.0032	-0.4398	0.6601	-0.0077	0.0049
Tp4	-0.0002	0.0038	-0.0596	0.9525	-0.0077	0.0072
Tp5	-0.0095	0.0082	-1.1555	0.2479	-0.0255	0.0066
Tp6	-0.0229	0.0083	-2.7605	0.0058	-0.0392	-0.0066

csdid_event_TIN_osteoporosis_screening

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0021	0.0016	-1.3714	0.1702	-0.0052	0.0009
Post_Avg	0.0026	0.0031	0.8604	0.3896	-0.0034	0.0087
Tm3	-0.0032	0.0045	-0.7177	0.4730	-0.0120	0.0056
Tm2	0.0013	0.0038	0.3311	0.7406	-0.0062	0.0087
Tm1	-0.0044	0.0035	-1.2574	0.2086	-0.0113	0.0025
Tm0	0.0010	0.0026	0.3897	0.6968	-0.0041	0.0061
Tp1	0.0012	0.0033	0.3748	0.7078	-0.0052	0.0077
Tp2	0.0032	0.0036	0.8760	0.3810	-0.0039	0.0103
Tp3	0.0028	0.0041	0.6931	0.4882	-0.0052	0.0109
Tp4	0.0045	0.0044	1.0318	0.3022	-0.0040	0.0131
Tp5	0.0032	0.0063	0.5042	0.6142	-0.0092	0.0156
Tp6	0.0025	0.0105	0.2408	0.8097	-0.0181	0.0232

csdid_event_TIN_osteoporosis_screening_low_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0060	0.0026	-2.3094	0.0209	-0.0112	-0.0009
Post_Avg	-0.0003	0.0054	-0.0493	0.9607	-0.0109	0.0104
Tm3	-0.0122	0.0074	-1.6400	0.1010	-0.0267	0.0024

Tm2	0.0012	0.0065	0.1800	0.8572	-0.0116	0.0139
Tm1	-0.0071	0.0062	-1.1499	0.2502	-0.0192	0.0050
Tm0	0.0063	0.0046	1.3899	0.1646	-0.0026	0.0153
Tp1	0.0087	0.0058	1.5000	0.1336	-0.0027	0.0200
Tp2	0.0102	0.0060	1.6976	0.0896	-0.0016	0.0219
Tp3	0.0077	0.0061	1.2688	0.2045	-0.0042	0.0196
Tp4	0.0072	0.0085	0.8439	0.3987	-0.0095	0.0239
Tp5	-0.0094	0.0129	-0.7319	0.4642	-0.0347	0.0158
Tp6	-0.0325	0.0194	-1.6732	0.0943	-0.0706	0.0056

csdid_event_TIN_osteoporosis_screening_middle_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0002	0.0026	-0.0757	0.9397	-0.0053	0.0049
Post_Avg	-0.0020	0.0049	-0.4029	0.6870	-0.0116	0.0076
Tm3	0.0042	0.0076	0.5559	0.5783	-0.0106	0.0190
Tm2	-0.0008	0.0065	-0.1228	0.9023	-0.0135	0.0119
Tm1	-0.0040	0.0061	-0.6523	0.5142	-0.0160	0.0080
Tm0	-0.0001	0.0045	-0.0263	0.9790	-0.0089	0.0087
Tp1	-0.0010	0.0056	-0.1780	0.8587	-0.0119	0.0099
Tp2	0.0038	0.0057	0.6683	0.5040	-0.0074	0.0151
Tp3	0.0041	0.0058	0.7072	0.4795	-0.0073	0.0155
Tp4	-0.0020	0.0069	-0.2852	0.7755	-0.0156	0.0116
Tp5	-0.0103	0.0096	-1.0751	0.2823	-0.0291	0.0085
Tp6	-0.0084	0.0155	-0.5388	0.5901	-0.0387	0.0220

csdid_event_TIN_osteoporosis_screening_high_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0143	0.0030	-4.7692	0.0000	-0.0202	-0.0084
Post_Avg	-0.0108	0.0050	-2.1568	0.0310	-0.0206	-0.0010
Tm3	-0.0224	0.0090	-2.5037	0.0123	-0.0400	-0.0049
Tm2	-0.0127	0.0072	-1.7498	0.0802	-0.0268	0.0015
Tm1	-0.0079	0.0064	-1.2281	0.2194	-0.0205	0.0047
Tm0	-0.0063	0.0046	-1.3530	0.1760	-0.0153	0.0028
Tp1	-0.0026	0.0057	-0.4568	0.6478	-0.0137	0.0085
Tp2	-0.0024	0.0058	-0.4146	0.6784	-0.0137	0.0089
Tp3	0.0025	0.0059	0.4185	0.6755	-0.0091	0.0140
Tp4	-0.0190	0.0068	-2.8174	0.0048	-0.0323	-0.0058
Tp5	-0.0125	0.0094	-1.3343	0.1821	-0.0309	0.0059
Tp6	-0.0352	0.0147	-2.3913	0.0168	-0.0640	-0.0063

csdid_event_TIN_osteoporosis_screening_low_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0017	0.0033	0.5289	0.5969	-0.0047	0.0081
Post_Avg	-0.0017	0.0064	-0.2636	0.7921	-0.0142	0.0108

Tm3	0.0090	0.0092	0.9783	0.3279	-0.0090	0.0269
Tm2	-0.0001	0.0077	-0.0168	0.9866	-0.0152	0.0150
Tm1	-0.0037	0.0072	-0.5109	0.6094	-0.0177	0.0104
Tm0	-0.0041	0.0053	-0.7783	0.4364	-0.0144	0.0062
Tp1	-0.0052	0.0070	-0.7502	0.4531	-0.0189	0.0084
Tp2	-0.0052	0.0076	-0.6789	0.4972	-0.0200	0.0097
Tp3	-0.0004	0.0083	-0.0467	0.9628	-0.0166	0.0158
Tp4	0.0021	0.0090	0.2318	0.8167	-0.0156	0.0198
Tp5	0.0050	0.0123	0.4073	0.6838	-0.0190	0.0290
Tp6	-0.0040	0.0246	-0.1637	0.8700	-0.0522	0.0441

csdid_event_TIN_osteoporosis_screening_middle_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0055	0.0026	-2.1090	0.0349	-0.0106	-0.0004
Post_Avg	0.0057	0.0056	1.0107	0.3122	-0.0053	0.0167
Tm3	-0.0128	0.0074	-1.7265	0.0843	-0.0273	0.0017
Tm2	0.0036	0.0062	0.5735	0.5663	-0.0086	0.0158
Tm1	-0.0072	0.0058	-1.2439	0.2135	-0.0186	0.0042
Tm0	0.0046	0.0044	1.0619	0.2883	-0.0039	0.0132
Tp1	0.0022	0.0056	0.3970	0.6914	-0.0087	0.0131
Tp2	0.0038	0.0061	0.6176	0.5368	-0.0082	0.0158
Tp3	0.0022	0.0069	0.3227	0.7469	-0.0113	0.0158
Tp4	0.0149	0.0076	1.9607	0.0499	0.0000	0.0297
Tp5	-0.0011	0.0116	-0.0956	0.9238	-0.0239	0.0217
Tp6	0.0132	0.0222	0.5970	0.5505	-0.0302	0.0567

csdid_event_TIN_osteoporosis_screening_high_aco_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0005	0.0024	-0.2167	0.8285	-0.0053	0.0042
Post_Avg	0.0007	0.0046	0.1444	0.8852	-0.0084	0.0097
Tm3	-0.0005	0.0069	-0.0754	0.9399	-0.0141	0.0131
Tm2	-0.0004	0.0060	-0.0607	0.9516	-0.0121	0.0113
Tm1	-0.0007	0.0056	-0.1241	0.9012	-0.0117	0.0103
Tm0	-0.0023	0.0041	-0.5721	0.5673	-0.0103	0.0057
Tp1	0.0001	0.0050	0.0154	0.9877	-0.0097	0.0098
Tp2	0.0022	0.0055	0.3965	0.6917	-0.0086	0.0129
Tp3	-0.0015	0.0062	-0.2460	0.8057	-0.0137	0.0107
Tp4	-0.0008	0.0068	-0.1196	0.9048	-0.0142	0.0126
Tp5	-0.0007	0.0102	-0.0696	0.9445	-0.0207	0.0193
Tp6	0.0078	0.0145	0.5409	0.5885	-0.0205	0.0361

Chapter 3:

The Impact of the Medicare Shared Savings Program on Falls among Older Adults

Abstract

Introduction: Falls are the leading cause of injury among older adults in the U.S., often resulting in disability, institutionalization, and death. Our work from Chapter 2 suggests that the MSSP incentivizes fall risk screenings, but the program’s effect on falls remains uncertain. In this study, we examined the relationship between the MSSP and fall-related healthcare encounters among community-dwelling FFS Medicare beneficiaries.

Methods: We constructed a retrospective cohort from a random 5% sample of community-dwelling FFS Medicare beneficiaries aged ≥ 65 from 2011-2018. Falls were identified using the ECDC fall algorithm across inpatient, SNF, HHA, outpatient, ER, and observation settings. Treatment was attribution to the 2015 MSSP ACO cohort using CMS’s TIN-based assignment, with “not-yet-treated” beneficiaries serving as controls. We estimated effects using the Callaway and Sant’Anna staggered difference-in-differences approach with doubly robust estimation and beneficiary-clustered standard errors to account for staggered entry into the MSSP starting in 2012. We examined heterogeneity by age, sex, baseline fall risk tercile, and ACOs’ pre-MSSP fall risk screening levels. Sensitivity analyses excluded counties with low ACO penetration and utilized an NPI-based attribution.

Results: The cohort included 10,676,150 beneficiaries (8.12M non-ACO; 2.19M ACO; 388 ACOs). MSSP attribution was associated with higher fall-related inpatient admissions ($ATT \approx 0.0047$; 95%

CI:0.0022-0.0073) and higher fall-related SNF admissions (ATT $\approx$ 0.0016; 95% CI:0.0005-0.0027), with no meaningful association for ER, outpatient, observation, or HHA encounters. In subgroup analyses, increases were concentrated among females, younger (65-74) and middle-aged (75-84) groups, and beneficiaries with the highest baseline fall risk score. ACOs with lower pre-MSSP fall risk screening exhibited larger increases in fall-related inpatient, SNF, and HHA encounters. Results were robust to excluding low ACO penetration counties and were directionally and statistically similar using the NPI-based attribution methodology.

Conclusions: Together with our Chapter 2 results, these findings suggest that increases in fall risk screenings have not translated into short-term reductions in fall-related healthcare encounters for MSSP-attributed beneficiaries. To reduce falls among older adults, policymakers should consider: (1) Complementing process-based quality measures with outcome-based measures, such as fall-related hospitalization rates; and (2) Supporting the implementation of multifactorial fall risk interventions to convert fall risk screenings into true risk reduction.

Introduction

Falls are the primary cause of injuries among older adults in the U.S.¹ and place a substantial financial strain on our healthcare system. Each year, approximately 1 in 4 older adults reports experiencing a fall.² Almost half of these falls result in an injury and about 37% of older adults who experience a fall report experiencing an injury that necessitated medical attention or impaired their activity for at least one day.^{3,4} Fall-related injuries (FRIs) pose a significant threat to older adults' quality of life, with the consequences ranging from depression,

decreased overall functional ability, and chronic pain, to fractures, traumatic brain injury, and death.⁵⁻⁸ For instance, 14% to 36% of older adults who experience a hip fracture – one of the most common fall-related injuries – die within one year of the fracture,^{9,10} and survivors of hip fracture have a shorter life expectancy.¹¹ Additionally, more than 50% of hip fractures among community-dwelling older adults result in a nursing home admission and require rehabilitation for more than a year.¹² Only 40% of hip fracture survivors fully regain their pre-fracture level of functional ability.¹³ All of this leads to an estimated \$80 billion dollars in annual spending on non-fatal falls in the U.S., with the majority of these costs covered by Medicare.¹⁴ This problem is being exacerbated by rapid growth in the aging population. The number of Americans aged 65 and older is projected to almost double from 56 million in 2023 to 95 million by 2060, and this age group's share of the total population will rise from 16.8% to 23%.¹⁵ With the continued aging of the population, it is estimated that fall-related costs will increase to about \$101 billion by 2030.¹⁶

Despite the high prevalence of FRIs, they are not an inevitable result of aging. The prevalence of FRIs among older adults could be significantly reduced through the use of evidence-based preventive measures. A substantial amount of research shows that multifactorial fall interventions can significantly reduce fall risk for older adults.¹⁷⁻²² In fact, one systematic review found that a combination of fall risk screening by a healthcare provider, treatment of risk factors, and appropriate follow-up interventions reduced the rate of falls by 24%.²³ Consequently, the American Geriatrics Society and British Geriatrics Society (AGS/BGS) guidelines recommend annual fall risk screenings for all adults aged 65 and older.²⁴ Despite this strong evidence, FRI prevention measures are implemented at rates far below those

recommended by the AGS.²⁵⁻²⁸ For example, research in primary care settings has shown that fewer than one-third of patients who had a fall were later provided with a fall risk assessment and treatment plan.^{29,30} In two studies, clinicians cited the lack of reimbursement for fall risk screening and limited awareness of fall prevention guidelines as key reasons for this failure.^{26,31} Given this low uptake by clinicians, it is essential to identify policies that encourage healthcare providers to adopt clinical guidelines for preventing falls and fall-related injuries among older adults.

One policy that has the potential to reduce falls among older adults is the Medicare Shared Savings Program (MSSP), which launched the first Accountable Care Organizations (ACOs) in 2012 and now covers nearly 30% of the total fee-for-service (FFS) Medicare population. An MSSP ACO's reward from CMS is based on both cost savings and meeting performance standards across dozens of quality measures, encouraging providers to adopt fall prevention guidelines through three functions. First, MSSP ACOs are directly incentivized to increase fall risk screenings through a specific quality measure for fall risk screening (ACO13). Second, two quality measures related to hospital and skilled nursing facility (SNF) readmissions (ACO8, ACO35) indirectly motivate providers to adopt fall prevention guidelines with the goals of reducing FRI-related readmissions, as previous research has demonstrated an association between fall screening interventions and reduced readmission rates.³² Third, the MSSP indirectly incentivizes providers to increase screenings because the MSSP rewards cost-efficiency, and FRI-related healthcare utilization is often costly and resource intensive. One study evaluated the impact of the MSSP on hip fractures, and found that after accounting for nonrandom exit of clinicians, the MSSP was not associated with any reductions in hip fractures.

However, while hip fractures are often the results of falls, there are many other fall-related injuries outside of hip fractures that can be influenced by preventive screening care. To address this literature gap, we conducted a difference-in-differences (DiD) analysis using Medicare claims data to assess whether FFS Medicare patients attributed to MSSP ACOs have lower rates of falls as compared to those not attributed to MSSP ACOs.

Methods

Study Population

The study cohort started with all community-dwelling adults aged 65 years and older who were enrolled in Medicare Parts A and B for at least one month and who were included in the Medicare 20% random sample of beneficiaries for which we have Part B carrier claims between 2010 and 2018. Due to computational constraints, we selected a random 25% sample of this data, which lead to a study sample that is approximately 5% of the Medicare population. We excluded individuals who had ever enrolled in Medicare Advantage (MA), as the MSSP only applies to traditional FFS Medicare beneficiaries. To improve the comparability of the treatment and control groups, we also excluded beneficiaries who did not have any office visits for primary care services, as primary care services are the main attribution mechanism for MSSP ACOs. To select the study population, we used the Medicare Master Beneficiary Summary File (MBSF) to obtain a list of Medicare beneficiaries and their characteristics for each year from 2010 to 2018. The MBSF contains data on individual level enrollment, demographics, date of death, MA participation, Part D coverage, dual eligibility, mailing address ZIP code, and indicators for more

than sixty of the most important comorbidities for all Medicare beneficiaries through the Chronic Conditions Warehouse (CCW) file. We also used the Cost and Use segment of the MBSF to obtain a summary of utilization and total annual payments for services such as physician visits, hospital stays, dialysis, emergency room visits, imaging, Part B/D drugs, and more.

Outcome Variable: Fall-Related Injuries

Using FFS Medicare claims, we identified fall-related healthcare encounters with the previously validated “ECDC” fall identification algorithm. In addition to using the standard set of ICD-9 and ICD-10 external cause of injury codes to identify falls (ECO method), the ECDC approach classifies FRIs based on an expanded set of diagnosis codes for injuries commonly resulting from falls, such as fractures, dislocations, sprains/strains, head injuries, and contusions. In theory, when a patient presents with an injury that was precipitated by a fall, this should be recorded in their claim with the appropriate ICD-9 or ICD-10 external cause of injury codes which signify which type of fall caused the injury (e.g., E881.0: fall from ladder). However, previous studies have estimated that only about 66% to 85% of claims using E-codes are in agreement with patient medical records,³³⁻³⁵ and several other studies have discussed how this low sensitivity may lead to underestimates when using only ICD-9 E-codes to identify fall-related injuries (FRIs).^{36,37} The ICD-9 code ECDC algorithm was described in detail in previous work by Hoffman et al.,³⁷ and we translated this algorithm into an ICD-10 code algorithm for all observations occurring on or after October 1, 2015. We used this algorithm to identify fall-related encounters within inpatient claims, skilled nursing facility (SNF) claims, home health agency (HHA) claims, outpatient claims, and carrier file claims. Appendix Table 1 provides the ICD-9 and ICD-10 codes used for this algorithm.

Treatment Variable: ACO Attribution

We analyzed the cohort of ACOs in the MSSP ACO 2015 performance year. In order to use the difference-in-differences approach to evaluate the performance of the 2015 ACOs, we constructed an algorithm based on the official CMS MSSP ACO attribution methodology to identify which beneficiaries would have been attributed to this group of 2015 ACO providers in other calendar years. For each calendar year, beneficiaries were assigned to the TIN (or combined TINs in an ACO) which provided the plurality of allowed charges for CMS-qualified primary care services. The list of HCPCS/CPT codes that qualify as primary care services and the list of eligible specialist providers are provided in the CMS MSSP attribution rules.³⁸

Beneficiaries who were attributed to an ACO TIN thus comprise the ACO group (i.e., treatment group) and beneficiaries who were attributed to a non-ACO TIN thus comprise the non-ACO group (i.e., control group). Using this approach, in the pre-2015 period, the patients in the treatment group are patients who would have been assigned to a 2015 MSSP ACO if that cohort of ACOs had existed in the pre-2015 time period.

Analytic Approach

The MSSP ACO 2015 beneficiaries include individuals that may have started their ACO attribution as far back as 2012, as new ACOs joined the MSSP program each year starting in 2012. The usual two-way fixed effect (TWFE) DiD model can yield biased estimates in this type of design with staggered entry of the treatment group.³⁹ Therefore, to estimate the causal effect of MSSP ACOs on fall risk and osteoporosis screenings, we used the Callaway and Sant'Anna doubly robust method to estimate group-time average treatment effects on the treated ATT(g,

t), with the not-yet-treated units as controls, and aggregate to an overall effect using cohort- and period-size weights. Standard errors were clustered at the beneficiary level.

$$Y_{it} = \alpha_i + \lambda_t + X'_{it}\gamma + \sum_{\ell \neq -1} \beta_{\ell} \mathbf{1}\{t - G_i = \ell\} + \varepsilon_{it}$$

The variable Y_{it} represents the screening outcome for beneficiary i in year t . The model includes patient characteristics (X_{it}), unit fixed effects (α_i), year fixed effects (λ_t), and an error term (ε_{it}) that is assumed to be uncorrelated with other unobserved determinants of the outcomes. G_i represents the first treatment time (cohort) for unit i and β_{ℓ} represents the effect at event time ℓ . With this design, the quasi-causal effects are identified by comparing the pre-period and post-period change in the outcome for beneficiaries aligned with MSSP ACOs to the pre-period and post-period change in the outcome for beneficiaries not aligned with MSSP ACOs. The key assumption needed for the DiD approach to identify the average treatment effect on the treated is the parallel trends assumption. This states that the outcomes for the two groups (ACO vs. non-ACO) must have similar trajectories in the pre-period years before the introduction of the MSSP ACO cohort under analysis. In other words, the changes in outcomes for the control group represent the counterfactual changes in outcomes that the treatment group would have had in the absence of the treatment. We examined this assumption visually by graphing the outcomes over the study period and statistically using an event study. The Callaway and Sant'Anna models offer additional safeguards by relaxing the usual (unconditional) parallel trend assumption and only requiring instead that it holds conditional on X , i.e., for treated and controls with similar observed characteristics X .

Pre- and Post-Intervention Time Periods

Our study required a staggered entry approach for the treatment group. Because MSSP ACOs first entered the market in 2012, some of the patients in the treatment and control groups could have been assigned to an MSSP ACO in the pre-2015 time period in 2012, 2013, or 2014. As such, treatment group beneficiaries who were first assigned to an MSSP ACO in 2012 had a post-intervention time period beginning in 2012. Likewise, the post-intervention time period began in 2013 for treatment group beneficiaries who were first assigned to an MSSP ACO in 2013, the post-intervention time period began in 2014 for treatment group beneficiaries who were first assigned to an MSSP ACO in 2014, and the post-intervention time period began in 2015 for treatment group beneficiaries who were first assigned to an MSSP ACO in 2015 or beyond. We excluded any control group beneficiaries who were assigned to an MSSP ACO in 2012, 2013 or 2014, which are those beneficiaries who were being treated by MSSP ACO providers who were not in the 2015 performance year but in earlier performance years. Including these beneficiaries in the control group would have biased our results towards the null, as these beneficiaries would be experiencing potential MSSP treatment effects while in the control group. Our control group included not-yet-treated beneficiaries. For example, treatment group beneficiaries who were first attributed to the MSSP in 2014 could be used as control beneficiaries in 2013 for the cohort of beneficiaries who were first attributed in 2013.

Heterogeneous Treatment Effects

We also evaluated whether ACOs with higher baseline fall risk screening rates prior to the introduction of the MSSP (2010 – 2011) had greater reductions in fall-related healthcare

encounters as compared to ACOs with lower baseline screening rates. We also conducted several other subgroup analyses to evaluate whether the impacts of the MSSP varied by the following patient characteristics: age, sex, and predicted baseline level of fall risk. In our previous work, we created a fall risk prediction model to generate a risk score that measures each patient's risk of experiencing an FRI. This fall risk prediction model is based on over 120 well-validated risk factors for falls. We used this model to stratify beneficiaries into terciles of baseline fall risk to assess whether MSSP ACOs were doing a better job of targeting preventive services towards high-risk patients.

Sensitivity Analyses

We also conducted two sensitivity analyses to assess the robustness of our findings to different compositions of the treatment and control groups. First, we excluded counties that had less than 1% of their beneficiaries attributed to an ACO during the study period. In theory, by restricting the control group to only include counties with ACO penetration, this could eliminate from the non-ACO control group counties that have very different unobservable characteristics as revealed by the lack of ACO penetration in those counties. Second, we also conducted a sensitivity analysis of the attribution methodology used to attribute patients to the MSSP. As described previously, we initially used the official CMS attribution algorithm that assigns beneficiaries to the TIN (or combined TINs in an ACO) which provided the plurality of allowed charges for CMS-qualified primary care services. In the sensitivity analyses, rather than aggregating each beneficiary's primary care service claims of all TINs in an ACO, we aggregated claims of all NPIs in the ACO. The rationale for this NPI-attribution approach is that ACO TINs may not have been in place before 2012 when MSSP ACOs were introduced or the TIN included a

very different number of physicians in different years, or those TINs were used by physicians for a subset of their patients than after they joined the ACO. That hinders our ability to find comparable pre-ACO cohorts for our DiD analyses. As such, this study provides new insights about how employing different attribution methodologies may impact the findings of the study.

Addressing Selection Bias

Selection into the MSSP is voluntary, creating two potential selection channels: (1) provider-level selection (entry or exit of entire organizations/TINs or clinicians) and (2) beneficiary-level selection (changes in which patients are attributed over time, potentially differential by cost or risk). To mitigate composition changes from organizational restructuring and billing TIN changes, our primary analysis uses an intention-to-treat (ITT) design anchored at the TIN level. We fix the roster of TINs belonging to the 2015 MSSP ACO cohort and classify all beneficiaries attributed to those TINs as “treated”. To address potential clinician-level selection bias, we used this same ITT approach with the NPI attribution algorithm described in the above “Sensitivity Analysis” paragraph. Holding these clinicians stable over time prevents the regression coefficients from being impacted by providers entering or exiting the MSSP. Overall, the TIN- and NPI-anchored ITT approach prevents treatment status from mechanically changing when clinicians move across TINs or when ACOs reconfigure billing entities, and it guards against strategic billing of high-cost or high-risk patients to non-ACO TINs used by those ACO providers. We also summarize pre-post beneficiary characteristics by ACO status and attribution approach in Appendix Tables 2 through 5 and interpret treatment effects in light of these composition trends.

Results

Baseline Characteristics

The analysis included a total of 10,676,150 Medicare beneficiaries, with 8,119,748 beneficiaries not attributed to an ACO and 2,186,797 attributed to an ACO. There were 388 ACOs that were part of the MSSP in the 2015 performance year. Table 1 presents summary statistics for both the whole study sample and separately for the non-ACO group and the ACO group. Among the whole study sample from 2011-2018, the percentage of beneficiaries who were screened for future fall risk was 6.5% and the percentage of beneficiaries who were screened for osteoporosis was 8.5%. Over the whole study period, the ACO group had higher rates of both fall risk screening and osteoporosis screening (10.1%, 10.7%) as compared to the non-ACO group (5.7%, 8.1%), and these differences were statistically significant at the $\alpha = 0.001$ confidence level. There was a statistically significant difference ($p=0.000$) in the mean beneficiary age among the non-ACO Group (75.02) and the ACO group (74.76), but the difference was minimal (0.26). The racial composition of the two groups was slightly different. The ACO group had a higher percentage of Non-Hispanic White beneficiaries (84.9% vs. 82.3%), while the non-ACO group had a greater percentage of beneficiaries who identified as Black, Hispanic, Asian/Pacific Islander, or American Indian/Alaska Native. The sex composition of the two groups was also different, with the ACO group having a higher percentage of females (+2.3%) and a lower percentage of males (-2.3%) as compared to the non-ACO group. This difference was also statistically significant at $\alpha = 0.001$. Additionally, the mean number of months per year of dual eligibility was higher in the non-ACO Group (1.31)

compared to the ACO group (1.06), and this difference was statistically significant at $\alpha = 0.001$. Finally, the mean number of chronic conditions was statistically significantly higher in the ACO Group (5.35) as compared to the non-ACO group (4.66) ($p=0.000$).

Beneficiary Composition Changes Over Time

Beneficiary composition changes over time are presented in Appendix Tables 2 through 5 for both the ACO-attributed beneficiaries and the non-ACO beneficiaries, using both the TIN and NPI attribution methodologies. Across ACO-attributed beneficiaries, mean age decreased slightly using the TIN attribution (75.22 to 74.93) and the NPI attribution (75.24 to 74.93). The mean number of chronic conditions increased for both the TIN (5.13 to 5.45) and NPI (5.13 to 5.47) attributions. Comparable shifts occurred among non-ACO beneficiaries, with the mean age decreasing for both the TIN (74.91 to 74.62) and NPI (74.90 to 74.62) attributions, and the mean number of chronic conditions increasing for both the TIN (4.47 to 4.85) and NPI (4.45 to 4.83) attributions. Obesity prevalence nearly doubled in both groups (ACO TIN 6.4% to 12.7%; non-ACO TIN 5.7% to 11.4%). Taken together, these patterns suggest broad secular changes in comorbidity and documentation rather than a systematic shift toward healthier ACO cohorts.

Assessment of the Parallel Trends Assumption

As mentioned previously, the validity of the difference-in-differences approach rests on the assumption that the fall-related healthcare encounter outcomes for the two groups (ACO vs. non-ACO) would have had similar trajectories over the study time period absent any treatment effect. To examine the parallel trends assumption, we graphed the unadjusted outcomes for the ACO group and non-ACO group from 2010 to 2018 to inspect the pre-intervention trends in the

mean fall-related healthcare encounter rates (see Figures 1 through 24 in the Appendix).

Because the pre-intervention and post-intervention time periods were different depending on when the beneficiary was first attributed to an MSSP ACO, we created a separate parallel trends graph for each of the four groups of beneficiaries with different pre-intervention and post-intervention time periods (see “Treatment Variable: ACO Attribution” in the Methods section for detailed explanation). For each graph, we added a vertical line to indicate the year in which the pre-intervention time period ends and the post-intervention time period begins. All of the graphs show that the pre-intervention trends look approximately parallel during the pre-intervention time periods. We also used the post estimation feature of the Callaway and Sant’Anna Stata package to generate event studies for each of the regressions. These are provided at the end of the Appendix, under the title, “Event Study Tables.”

Difference-in-Differences Regression Analyses

Full Sample

Table 2 presents the results from the main difference-in-differences regression analyses, which used the TIN-based attribution methodology. The ATT for the full community-dwelling sample was 0.0047 (95% CI 0.0022 to 0.0073) for the binary fall-related inpatient admission outcome using the ECDC algorithm. This implies that the change in the mean percentage of beneficiaries who had any fall-related inpatient admission in the ACO group from the pre-contract period to the post-contract period was 0.47 percentage points higher than the corresponding change in the non-ACO group. This finding is both statistically significant ($p=0.000$) and clinically significant, as it represents a 21.76% increase from the ACO group’s pre-

contract average fall-related inpatient admission rate. For the full sample, we did not observe any statistically significant associations between the MSSP and fall-related healthcare encounters in the ER, outpatient, or observation stay settings. In the post-acute care setting, the MSSP was associated with a 0.16 percentage point (95% CI 0.0005 to 0.0027) increase in the fall-related SNF admission rate, which equates to a 22.07% increase from the ACO group's pre-contract average fall-related SNF admission rate. The MSSP was not associated with any changes in the fall-related HHA visit.

Subgroup Analyses

ACO-attributed females had statistically significant increases in fall-related inpatient admissions (0.65 pp, $p=0.000$) and fall-related SNF admissions (0.18 pp, $p=0.046$), while there were no statistically significant changes in fall-related healthcare encounters observed among males. There were also heterogeneous treatment effects observed by age group, with MSSP beneficiaries in the lower- and middle-aged group experiencing a greater increase in fall-related healthcare encounters as compared to the oldest beneficiaries. None of the regression coefficients for beneficiaries in the oldest age group (85+) were statistically significant. We observed significant increases in fall-related inpatient admissions (0.27 pp, $p=0.058$) and fall-related HHA visits (0.09 pp, $p=0.055$) among the youngest age group. We also observed significant increases in fall-related inpatient admissions (0.72 pp, $p=0.001$) and fall-related SNF admissions (0.26 pp, $p=0.005$) among the middle age group. Beneficiaries with the highest baseline predicted fall risk experienced an increase in fall-related inpatient admissions (1.13 pp, $p=0.000$) and SNF admissions (0.37 pp, $p=0.012$), while no effects were observed for the low and middle baseline fall risk groups. Finally, we also found that beneficiaries who were

attributed to ACOs with lower baseline pre-MSSP fall risk screening rates generally had greater increases in fall-related inpatient, SNF and HHA encounters as compared to beneficiaries in the middle and high ACO screening groups.

Sensitivity Analyses

Table 2 includes the results for the first sensitivity analysis. Excluding counties with little to no ACO penetration did not change the results in any meaningful way, as the regression results for this sensitivity analysis were almost identical to the original results for the full sample. Table 3 presents the results for the second sensitivity analysis, which used the NPI-based attribution methodology. For the total sample and all of the subgroup analyses, the NPI-based regression coefficients were similar in terms of the direction of the treatment effect, the size of the coefficients, and their statistical significance. We did not observe any noticeable pattern of differences between the results of the two attribution algorithms.

Discussion

Overall Results Summary

Using the Callaway and Santa'Anna staggered difference-in-differences design which accounts for variation in treatment timing, we found that attribution to an MSSP ACO was associated with higher rates of fall-related inpatient admissions and SNF admissions, and observed no meaningful association between the MSSP and fall-related healthcare utilization in the emergency department, observation stay, home health, or outpatient settings. In our

previous work from Chapter 2, using the same staggered DiD methodology, we found that the MSSP was associated with increased fall risk screening rates. There are several potential explanations for these contrasting findings.

Potential Explanations

First, ACO providers may have already been conducting higher rates of fall risk screening than what was observed in Medicare claims prior to the MSSP. Evidence suggests that medical systems may not prioritize coding services with low reimbursement rates unless there is some additional financial incentive, such as a CMS-imposed quality metric. Similarly, studies on the Hospital Readmissions Reduction Program and Medicare Advantage have demonstrated significant upcoding practices following policy implementation, without true underlying changes in comorbidities.^{40,41} If the observed increase in fall risk screenings among ACO beneficiaries is indeed only a reflection of more thorough coding of services that were already occurring, it would not be unexpected to observe no reductions in fall-related healthcare utilization. Second, if MSSP ACOs are actually increasing the rate of fall risk screenings relative to non-ACO providers, they may not be targeting these screenings toward those patients for which the screening will have a short-term impact on fall-related healthcare utilization. While fall risk screening is recommended for all older adults age 65 and older, low risk beneficiaries who are getting screened at a young age may not experience their first fall for decades, and our study period only includes several post-treatment follow-up years. In fact in Chapter 2, we did observe a greater relative increase in fall risk screening among beneficiaries with lower risk scores and lower fall risk attributes (e.g., males, younger age). Finally, fall risk screenings in and of themselves have no benefit if they are not coupled with appropriate multifactorial interventions

(e.g., physical therapy, medication reconciliation, home hazard mitigation, etc.). If screenings increased but interventions were unchanged, true fall injury risk may not decrease, while at the same time, documentation of FRIs could rise as high-risk patients are identified and managed more intensively.

Positioning within the MSSP Quality Literature

Evidence of MSSP effects on outcome quality measures remains mixed. After accounting for nonrandom clinician exit, Markovitz et al. found no improvements in spending or quality attributable to the MSSP, highlighting selection dynamics that can inflate estimates that do not account for selection bias.⁴² Similarly, among ischemic stroke patients, Kaufman et al. reported no association between MSSP and 30-day readmissions or mortality.⁴³ In contrast, other studies have documented modest reductions in readmissions under the MSSP.^{44,45} Moreover, McWilliams et al., showed that MSSP savings were not strongly tied to reductions in preventable hospitalizations, underscoring that financial performance has not consistently translated into better outcome measures.⁴⁶ Against this backdrop, our findings of greater fall-related inpatient and SNF admission in spite of higher fall risk screening rates, are consistent with a body of work suggesting that process measures may improve more readily than hard health outcomes in the MSSP.

General Limitations

Our results generally remained robust to several different sensitivity analyses, including the exclusion of counties with little to no ACO penetration and the application of an alternative attribution algorithm. Nevertheless, our study is subject to several limitations. This study

focused on the impact of the MSSP, and thus these findings may not be generalizable to other types of ACOs with differing structures and contracts, such as those managed by Medicaid or commercial insurers. Additionally, because the outcome variables were constructed through diagnosis and procedure codes used for billing in Medicare claims, this study is subject to some outcome misclassification bias due to errors in the coding. However, there is no reason to believe that these errors would be differential with respect to ACO status, and thus these errors would only bias our results towards the null. Finally, in our claims-based analysis, falls or fall injuries that do not generate a Medicare claim (e.g., managed entirely in the home) are not captured in our study. Thus, it is important to keep in mind that the falls in our study are a measure of fall-related encounters in different healthcare settings, and they would be an underreporting of the true incidence of falls.

Potential Selection Bias

As previously discussed in our Methods section, because participation in the MSSP is voluntary and both provider and beneficiary composition can change over time, this creates the potential for time-varying selection for which parallel trends in pre-period outcomes do not resolve. Recent work shows that selection and strategic participation can influence measured MSSP performance.^{42,53,54} Our ITT design anchored at the TIN and NPI reduces bias from clinic and clinician-level churn in the MSSP, but cannot fully address potential beneficiary-level selection. In theory, because MSSP attribution and quality efforts often flow through the Annual Wellness Visit (AWV), which includes a health risk assessment with potential fall risk questions, ACOs could preferentially engage beneficiaries who are healthier and have fewer fall risk factors to increase their likelihood of ACO attribution.⁵⁵ If this is in fact occurring, then we would expect

to observe even greater increases in fall-related healthcare utilization in the absence of beneficiary-level selection. However, in our study, we generally observed similar compositional changes in both the ACO and non-ACO groups over time. At the same time, modest differential shifts in specific conditions could still introduce bias. Given these considerations, our findings should be interpreted within the context of this uncertainty.

Conclusions

Using a staggered difference-in-differences design, MSSP attribution was associated with higher rates of fall-related inpatient and SNF admissions, with no detectable association with the emergency room, observation stay, home health, or outpatient settings. Together with Chapter 2's finding of increased fall risk screening, the evidence suggests that ACO participation may have improved process adherence but has not produced measurable reductions in fall-related healthcare utilization over the observed study period. In terms of policy implications, CMS should consider the tradeoffs of aligning incentives towards process quality measures versus using outcome quality measures. If fall reduction is a goal, they may want to consider introducing an outcome-based quality measure, such as fall-related hospital admission rates, in conjunction with the fall risk screening quality measure. Overall, reducing falls among community-dwelling older adults will likely require more hands-on support for the implementation of multifactorial fall risk interventions rather than process quality measurement alone.

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CHAPTER 3 – TABLES

Table 1: Study Sample Characteristics

	All Beneficiaries (N=10,676,150)	ACO Group (N=2,186,797)	Non-ACO Group (N=8,119,748)	Group Difference
<u>Demographic Characteristics</u>				
Age, mean (SD)	74.70 (7.79)	75.02 (7.64)	74.76 (7.82)	P<0.001
Sex, No. (%)				P<0.001
Male	43.6%	41.6%	43.9%	
Female	56.4%	58.4%	56.1%	
Race, No. (%)				P<0.001
Non-Hispanic White	82.6%	84.9%	82.3%	
Black (Or African American)	7.4%	6.8%	7.5%	
Hispanic	5.3%	4.1%	5.4%	
Asian/Pacific Islander	2.6%	2.4%	2.6%	
American Indian / Alaska Native	0.4%	0.1%	0.5%	
Unknown	1.0%	1.0%	0.9%	
Other	0.8%	0.7%	0.8%	
State Buy-in Coverage (total months), mean (SD)	1.18 (3.52)	1.01 (3.281)	1.26 (3.621)	P<0.001
Dual Eligible Months, mean (SD)	1.24 (3.59)	1.06 (3.34)	1.31 (3.67)	P<0.001
<u>Healthcare Utilization (Baseline)</u>				
Acute Inpatient Stays, mean (SD)	0.21 (0.64)	0.23 (0.65)	0.21 (0.64)	P<0.001
Anesthesia Events, mean (SD)	0.41 (1.03)	0.47 (1.09)	0.40 (1.02)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.21 (0.86)	0.25 (0.90)	0.21 (0.86)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.17)	0.07 (1.15)	0.07 (1.19)	P=0.116
Durable Medical Equipment Events, mean (SD)	2.27 (6.22)	2.46 (6.39)	2.26 (6.24)	P<0.001

Evaluation & Management Events, mean (SD)	4.48 (12.43)	4.98 (12.45)	4.42 (12.49)	P<0.001
Home Health Visits, mean (SD)	2.84 (16.64)	2.81 (16.70)	2.90 (16.77)	P<0.001
Hospital Outpatient Visits, mean (SD)	5.75 (14.75)	6.19 (14.90)	5.76 (14.83)	P<0.001
Hospice Stays, mean (SD)	0.01 (0.09)	0.00 (0.06)	0.01 (0.10)	P<0.001
Imaging Events, mean (SD)	3.78 (5.68)	4.27 (5.80)	3.74 (5.67)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.14 (0.51)	0.15 (0.53)	0.14 (0.51)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.02 (0.14)	0.02 (0.14)	0.01 (0.14)	P<0.001
Other Procedures Events, mean (SD)	6.15 (14.99)	7.08 (15.79)	6.03 (14.88)	P<0.001
Other Part B Carrier Events, mean (SD)	1.63 (8.39)	1.89 (8.68)	1.58 (8.36)	P<0.001
MD Office Part B Events, mean (SD)	7.41 (7.81)	8.57 (7.83)	7.26 (7.79)	P<0.001
Part B Drug Events, mean (SD)	2.75 (6.50)	3.12 (6.64)	2.72 (6.51)	P<0.001
Part D Events, mean (SD)	19.09 (28.85)	20.64 (28.42)	19.12 (29.14)	P<0.001
Hospital Readmissions, mean (SD)	0.03 (0.25)	0.03 (0.25)	0.03 (0.25)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.04 (0.27)	0.05 (0.27)	0.04 (0.27)	P<0.001
Tests Events, mean (SD)	13.07 (18.67)	14.93 (18.79)	12.85 (18.70)	P<0.001
<u>Assistive Devices and Equipment</u>				
Diabetic Footwear, No. (%)	2,236 (0.0%)	595 (0.0%)	1,641 (0.0%)	P<0.001
Walking Aids, No. (%)	545 (0.0%)	142 (0.0%)	403 (0.0%)	P=0.002
Hospital Beds, No. (%)	14 (0.0%)	0 (0.0%)	14 (0.0%)	P=0.036
Wheelchair, No. (%)	30 (0.0%)	5 (0.0%)	25 (0.0%)	P=0.569
<u>Clinical Conditions</u>				
ESRD, No. (%)	0.6%	0.6%	0.6%	P=0.005
Abnormal Gait, No. (%)	5.9%	6.7%	5.9%	P<0.001
Orthostatic Hypotension, No. (%)	0.8%	0.9%	0.8%	P<0.001
Sarcopenia, No. (%)	0.5%	0.5%	0.5%	P<0.001

Weight Loss, No. (%)	1.8%	1.9%	1.8%	P<0.001
Weight Gain, No. (%)	0.3%	0.3%	0.3%	P<0.001
Underweight, No. (%)	0.1%	0.1%	0.1%	P<0.001
Overweight, No. (%)	0.3%	0.4%	0.3%	P<0.001
Parkinson, No. (%)	1.2%	1.3%	1.2%	P<0.001
Incontinence, No. (%)	3.7%	4.1%	3.6%	P<0.001
Dizziness Vertigo, No. (%)	6.7%	7.5%	6.7%	P<0.001
Cognitive Impairment, No. (%)	1.0%	1.1%	1.0%	P<0.001
Restless Leg Syndrome, No. (%)	0.8%	0.9%	0.8%	P<0.001
Movement Disorders, No. (%)	1.3%	1.5%	1.3%	P<0.001
Melanoma, No. (%)	1.5%	1.7%	1.5%	P<0.001
Bladder Cancer, No. (%)	1.1%	1.2%	1.0%	P<0.001
Kidney Cancer, No. (%)	0.5%	0.6%	0.5%	P<0.001
Pancreatic Cancer, No. (%)	0.1%	0.1%	0.1%	P=0.010
Other Cancer, No. (%)	9.9%	11.2%	9.8%	P<0.001
Alzheimer's Disease, No. (%)	3.0%	3.0%	3.1%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, No. (%)	7.7%	7.8%	7.8%	P=0.361
Acute Myocardial Infarction, No. (%)	0.7%	0.7%	0.7%	P<0.001
Anemia, No. (%)	20.1%	21.8%	20.1%	P<0.001
Asthma, No. (%)	4.6%	5.2%	4.5%	P<0.001
Atrial Fibrillation, No. (%)	8.2%	9.3%	8.0%	P<0.001
Breast Cancer, No. (%)	3.2%	3.8%	3.1%	P<0.001
Colorectal Cancer, No. (%)	1.2%	1.3%	1.2%	P<0.001
Endometrial Cancer, No. (%)	0.3%	0.4%	0.3%	P<0.001
Lung Cancer, No. (%)	0.8%	0.9%	0.8%	P<0.001
Prostate Cancer, No. (%)	3.4%	3.9%	3.4%	P<0.001
Cataract, No. (%)	20.4%	22.8%	20.2%	P<0.001

Heart Failure, No. (%)	12.1%	12.7%	12.2%	P<0.001
Chronic Kidney Disease, No. (%)	15.5%	17.6%	15.3%	P<0.001
Chronic Obstructive Pulmonary Disease, No. (%)	9.7%	10.4%	9.7%	P<0.001
Depression, No. (%)	11.4%	13.0%	11.2%	P<0.001
Diabetes, No. (%)	25.5%	27.9%	25.3%	P<0.001
Glaucoma, No. (%)	10.4%	12.0%	10.2%	P<0.001
Hip/Pelvic Fracture, No. (%)	0.6%	0.6%	0.6%	P=0.086
Hyperlipidemia, No. (%)	47.2%	54.7%	46.2%	P<0.001
Benign Prostatic Hyperplasia, No. (%)	6.7%	7.7%	6.6%	P<0.001
Hypertension, No. (%)	56.2%	63.1%	55.6%	P<0.001
Hypothyroidism, No. (%)	14.3%	16.2%	14.1%	P<0.001
Ischemic Heart Disease, No. (%)	27.5%	30.2%	27.3%	P<0.001
Osteoporosis, No. (%)	6.6%	7.7%	6.5%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, No. (%)	29.5%	32.9%	29.3%	P<0.001
Stroke / Transient Ischemic Attack, No. (%)	3.2%	3.5%	3.1%	P<0.001
ADHD & Other Conduct Disorders, No. (%)	0.2%	0.3%	0.2%	P<0.001
Anxiety Disorders, No. (%)	9.1%	10.2%	9.0%	P<0.001
Autism Spectrum Disorders, No. (%)	0.0%	0.0%	0.0%	P=0.209
Bipolar Disorder, No. (%)	1.1%	1.2%	1.1%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, No. (%)	0.3%	0.3%	0.2%	P<0.001
Cerebral Palsy, No. (%)	0.1%	0.1%	0.1%	P=0.055
Cystic Fibrosis & other Metabolic Developmental Disorders, No. (%)	0.5%	0.5%	0.5%	P<0.001
Depression, No. (%)	10.5%	11.9%	10.3%	P<0.001
Epilepsy, No. (%)	1.2%	1.3%	1.2%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, No. (%)	10.2%	11.4%	10.1%	P<0.001

Deafness & Hearing Impairment, No. (%)	4.4%	5.1%	4.3%	P<0.001
Viral Hepatitis (General), No. (%)	0.6%	0.6%	0.6%	P<0.001
HIV/AIDS, No. (%)	0.1%	0.1%	0.1%	P=0.733
Intellectual Disabilities & Related Conditions, No. (%)	0.2%	0.2%	0.2%	P<0.001
Learning Disabilities, No. (%)	0.0%	0.0%	0.0%	P=0.002
Leukemias & Lymphomas, No. (%)	1.4%	1.6%	1.3%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), No. (%)	2.7%	3.0%	2.7%	P<0.001
Migraine & Other Chronic Headache, No. (%)	1.4%	1.7%	1.4%	P<0.001
Mobility Impairments, No. (%)	1.5%	1.6%	1.6%	P=0.005
Multiple Sclerosis & Transverse Myelitis, No. (%)	0.3%	0.3%	0.3%	P<0.001
Muscular Dystrophy, No. (%)	0.0%	0.0%	0.0%	P=0.445
Obesity, No. (%)	8.9%	10.7%	8.6%	P<0.001
Other Developmental Delays, No. (%)	0.0%	0.0%	0.0%	P=0.183
Personality Disorders, No. (%)	0.3%	0.3%	0.3%	P<0.001
Post-Traumatic Stress Disorder, No. (%)	0.3%	0.3%	0.3%	P<0.001
Peripheral Vascular Disease, No. (%)	10.2%	11.4%	10.0%	P<0.001
Schizophrenia, No. (%)	0.4%	0.4%	0.4%	P<0.001
Schizophrenia & Other Psychotic Disorders, No. (%)	1.3%	1.3%	1.4%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, No. (%)	0.1%	0.1%	0.1%	P=0.042
Spinal Cord Injury, No. (%)	0.2%	0.3%	0.2%	P=0.001
Tobacco Use Disorders, No. (%)	4.7%	4.9%	4.7%	P<0.001
Pressure Ulcers & Chronic Ulcers, No. (%)	3.1%	3.3%	3.2%	P<0.001
Blindness & Visual Impairment, No. (%)	0.6%	0.6%	0.6%	P=0.013
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	4.63 (3.89)	5.35 (3.52)	4.66 (3.71)	P<0.001

<u>Screenings</u>				
Fall Risk Screening, No. (%)	6.5%	10.1%	5.7%	P<0.001
Osteoporosis Screening, No. (%)	8.5%	10.7%	8.1%	P<0.001
Fall in the Previous Calendar Year (ECO Method), No. (%)	4.2%	4.4%	4.2%	P<0.001
Fall in the Previous Calendar Year (ECDC Method), No. (%)	11.7%	12.6%	11.6%	P<0.001
Fall in the Previous Calendar Year (AUR Method), No. (%)	5.4%	5.7%	5.4%	P<0.001

Table 2: DiD Regression Results (TIN-based Attribution)

		Inpatient	Outpatient	ER	Observation Stays	SNF	HHA
Total Sample of Community Dwelling Older Adults	DiD Coefficient	0.47%	-0.06%	0.12%	-0.01%	0.16%	0.05%
	P-Value	0.000	0.789	0.521	0.850	0.005	0.443
	Base Mean	2.75%	7.07%	4.76%	0.39%	0.71%	0.52%
	Clinical Significance	21.76%	-0.88%	2.58%	-3.08%	22.07%	9.03%
Male	DiD Coefficient	0.18%	0.21%	0.25%	0.10%	0.04%	0.08%
	P-Value	0.410	0.526	0.357	0.150	0.666	0.204
	Base Mean	2.17%	5.58%	3.70%	0.29%	0.43%	0.32%
	Clinical Significance	8.31%	3.83%	6.73%	34.87%	9.22%	26.30%
Female	DiD Coefficient	0.65%	-0.25%	0.10%	-0.03%	0.18%	0.05%
	P-Value	0.000	0.439	0.702	0.738	0.046	0.615
	Base Mean	3.15%	8.10%	5.49%	0.46%	0.90%	0.66%
	Clinical Significance	20.57%	-3.10%	1.86%	-6.75%	19.61%	7.56%
Age Group 65-74	DiD Coefficient	0.27%	-0.03%	0.19%	0.05%	-0.01%	0.09%
	P-Value	0.058	0.910	0.388	0.386	0.897	0.055
	Base Mean	1.26%	4.83%	2.92%	0.18%	0.21%	0.21%
	Clinical Significance	21.72%	-0.68%	6.39%	26.06%	-4.35%	41.91%
Age Group 75-84	DiD Coefficient	0.72%	-0.20%	-0.15%	0.00%	0.26%	0.10%
	P-Value	0.001	0.632	0.664	0.989	0.005	0.336
	Base Mean	2.94%	7.48%	5.02%	0.41%	0.74%	0.56%
	Clinical Significance	24.38%	-2.64%	-3.00%	0.39%	35.62%	16.97%
Age Group 85+	DiD Coefficient	0.64%	0.63%	1.19%	-0.45%	0.21%	-0.42%
	P-Value	0.259	0.412	0.076	0.108	0.446	0.223
	Base Mean	6.58%	12.55%	9.39%	0.95%	2.04%	1.32%
	Clinical Significance	9.70%	5.00%	12.62%	-47.30%	10.29%	-31.72%
Fall Risk Group - Low	DiD Coefficient	0.12%	0.00%	0.03%	-0.04%	-0.03%	-0.02%
	P-Value	0.288	0.998	0.883	0.543	0.540	0.744
	Base Mean	0.10%	1.28%	0.70%	0.03%	0.00%	0.01%
	Clinical Significance	126.35%	-0.05%	3.76%	-137.83%	-912.26%	-209.11%
Fall Risk Group - Mid	DiD Coefficient	0.25%	-0.45%	-0.03%	-0.06%	0.05%	0.07%
	P-Value	0.105	0.128	0.900	0.416	0.440	0.217
	Base Mean	0.44%	2.96%	1.76%	0.08%	0.03%	0.08%
	Clinical Significance	57.38%	-15.23%	-1.58%	-73.44%	159.35%	85.70%
Fall Risk Group - High	DiD Coefficient	1.13%	0.49%	0.58%	0.21%	0.37%	0.10%
	P-Value	0.000	0.332	0.188	0.131	0.012	0.542
	Base Mean	7.01%	13.77%	9.74%	1.00%	1.87%	1.34%
	Clinical Significance	16.13%	3.59%	5.92%	21.03%	19.85%	7.31%
Screening Group - Low	DiD Coefficient	0.60%	-0.02%	-0.26%	-0.07%	0.27%	0.17%
	P-Value	0.016	0.961	0.513	0.569	0.002	0.058
	Base Mean	2.73%	7.55%	4.99%	0.42%	0.74%	0.47%
	Clinical Significance	21.95%	-0.31%	-5.14%	-16.38%	35.88%	36.81%
	DiD Coefficient	0.55%	0.13%	0.23%	-0.06%	0.29%	0.06%

Screening Group - Mid	P-Value	0.007	0.747	0.462	0.592	0.000	0.542
	Base Mean	2.75%	6.98%	4.81%	0.40%	0.67%	0.57%
	Clinical Significance	20.05%	1.81%	4.86%	-15.04%	43.61%	11.18%
Screening Group - High	DiD Coefficient	0.43%	0.26%	0.53%	0.06%	0.00%	0.02%
	P-Value	0.040	0.434	0.053	0.409	0.969	0.844
	Base Mean	2.77%	6.87%	4.59%	0.37%	0.73%	0.51%
	Clinical Significance	15.45%	3.81%	11.51%	17.63%	0.63%	3.88%
Excluding Counties w/ Little ACO Penetration	DiD Coefficient	0.48%	-0.02%	0.15%	0.00%	0.15%	0.05%
	P-Value	0.000	0.933	0.445	0.955	0.013	0.420
	Base Mean	2.75%	7.07%	4.76%	0.39%	0.71%	0.52%
	Clinical Significance	17.34%	-0.28%	3.10%	-0.92%	20.88%	9.87%

Table 3: DiD Regression Results (NPI-based Attribution)

		Inpatient	Outpatient	ER	Observation Stays	SNF	HHA
Total Sample of Community Dwelling Older Adults	DiD Coefficient	0.47%	-0.05%	0.15%	0.01%	0.16%	0.03%
	P-Value	0.000	0.832	0.435	0.839	0.003	0.614
	Base Mean	2.47%	6.64%	4.45%	0.36%	0.56%	0.52%
	Clinical Significance	18.99%	-0.73%	3.30%	3.39%	29.42%	5.94%
Male	DiD Coefficient	0.19%	0.23%	0.25%	0.10%	0.05%	0.06%
	P-Value	0.391	0.476	0.349	0.152	0.615	0.404
	Base Mean	2.18%	5.38%	3.65%	0.28%	0.45%	0.32%
	Clinical Significance	8.59%	4.34%	6.84%	35.92%	10.09%	18.86%
Female	DiD Coefficient	0.64%	-0.27%	0.14%	0.01%	0.21%	0.03%
	P-Value	0.000	0.398	0.591	0.925	0.008	0.768
	Base Mean	3.16%	7.84%	5.41%	0.45%	0.91%	0.66%
	Clinical Significance	20.15%	-3.42%	2.60%	1.79%	23.40%	4.32%
Age Group 65-74	DiD Coefficient	0.30%	-0.12%	0.09%	0.06%	0.01%	0.06%
	P-Value	0.036	0.683	0.680	0.203	0.896	0.221
	Base Mean	1.25%	4.64%	2.87%	0.17%	0.21%	0.21%
	Clinical Significance	23.77%	-2.52%	3.13%	36.72%	4.05%	28.94%
Age Group 75-84	DiD Coefficient	0.60%	-0.02%	0.02%	0.04%	0.28%	0.06%
	P-Value	0.005	0.963	0.957	0.737	0.000	0.542
	Base Mean	2.96%	7.25%	4.96%	0.41%	0.75%	0.56%
	Clinical Significance	20.19%	-0.25%	0.36%	9.06%	37.46%	11.15%
Age Group 85+	DiD Coefficient	0.61%	0.08%	0.94%	-0.48%	0.20%	-0.35%
	P-Value	0.376	0.927	0.148	0.073	0.468	0.302
	Base Mean	6.59%	12.14%	9.23%	0.92%	2.07%	1.32%
	Clinical Significance	9.22%	0.63%	10.22%	-52.09%	9.60%	-26.22%
Fall Risk Group - Low	DiD Coefficient	0.16%	0.17%	0.07%	-0.03%	-0.03%	-0.01%
	P-Value	0.142	0.413	0.696	0.591	0.600	0.835
	Base Mean	0.10%	1.18%	0.67%	0.02%	0.00%	0.01%
	Clinical Significance	156.86%	14.58%	9.77%	-121.54%	-826.59%	-119.05%
Fall Risk Group - Mid	DiD Coefficient	0.21%	-0.50%	0.03%	-0.04%	0.06%	0.08%
	P-Value	0.179	0.083	0.878	0.521	0.291	0.146
	Base Mean	0.43%	2.79%	1.71%	0.08%	0.03%	0.08%
	Clinical Significance	48.28%	-17.83%	1.91%	-56.83%	193.90%	98.64%
Fall Risk Group - High	DiD Coefficient	1.15%	0.70%	0.76%	0.25%	0.39%	0.03%
	P-Value	0.000	0.154	0.071	0.055	0.006	0.862
	Base Mean	7.03%	13.30%	9.55%	0.97%	1.89%	1.34%
	Clinical Significance	16.30%	5.27%	7.98%	25.67%	20.53%	2.13%
Screening Group - Low	DiD Coefficient	0.49%	-0.10%	0.04%	-0.10%	0.22%	0.00%
	P-Value	0.073	0.833	0.919	0.478	0.031	0.996
	Base Mean	2.66%	6.99%	4.77%	0.38%	0.71%	0.50%

	Clinical Significance	18.31%	-1.42%	0.82%	-25.52%	30.51%	-0.13%
Screening Group - Mid	DiD Coefficient	0.53%	0.27%	0.37%	0.06%	0.21%	0.02%
	P-Value	0.010	0.471	0.225	0.506	0.010	0.854
	Base Mean	2.76%	6.93%	4.80%	0.41%	0.69%	0.55%
	Clinical Significance	19.10%	3.89%	7.61%	14.15%	30.08%	3.65%
Screening Group - High	DiD Coefficient	0.45%	-0.07%	0.29%	0.01%	0.04%	0.07%
	P-Value	0.034	0.836	0.305	0.884	0.719	0.462
	Base Mean	2.82%	6.70%	4.57%	0.36%	0.75%	0.52%
	Clinical Significance	15.98%	-1.08%	6.37%	3.81%	5.51%	12.69%
Excluding Counties w/ Little ACO Penetration	DiD Coefficient	0.47%	0.00%	0.17%	0.03%	0.16%	0.03%
	P-Value	0.000	0.991	0.368	0.674	0.005	0.645
	Base Mean	2.77%	6.84%	4.69%	0.38%	0.72%	0.52%
	Clinical Significance	16.98%	-0.04%	3.65%	6.52%	22.45%	5.65%

CHAPTER 3 – APPENDIX

Appendix Table 1

Method	ICD-9 Codes	ICD-10 Codes
ECO E-Code Only	E880.0, E880.1, E880.9, E881.0, E881.1, E882, E884.0, E884.1, E884.2, E884.3, E884.4, E884.5, E884.6, E884.9, E885.0, E885.1, E885.2, E885.3, E885.4, E885.9, E888.0, E888.1, E888.8, E888.9 ➔ Flag as fall if diagnosis code occurs anywhere in the claim (primary, secondary, etc.)	V00.111A, V00.121A, V00.131A, V00.141A, V00.151A, V00.181A, V00.211A, V00.221A, V00.281A, V00.311A, V00.321A, V00.381A, V00.811A, V00.821A, V00.831A, V00.841A, V00.891A, V93.31XA, W00.0XXA, W00.1XXA, W00.2XXA, W00.9XXA, W01.0XXA, W01.10XA, W01.110A, W01.111A, W01.118A, W01.119A, W01.190A, W01.198A, W05.0XXA, W05.1XXA, W05.2XXA, W06.XXXA, W07.XXXA, W08.XXXA, W09.0XXA, W09.1XXA, W09.2XXA, W09.8XXA, W10.0XXA, W10.1XXA, W10.2XXA, W10.8XXA, W10.9XXA, W11.XXXA, W12.XXXA, W13.0XXA, W13.1XXA, W13.2XXA, W13.3XXA, W13.4XXA, W13.8XXA, W13.9XXA, W14.XXXA, W15.XXXA, W17.4XXA, W17.81XA, W17.82XA, W17.89XA, W18.00XA, W18.01XA, W18.02XA, W18.09XA, W18.11XA, W18.12XA, W18.2XXA, W18.30XA, W18.31XA, W18.39XA, W19.XXXA ➔ Flag as fall if diagnosis code occurs anywhere in the claim (primary, secondary, etc.)
ECDC E-Code & Broad Diagnostic Code	- E880.0, E880.1, E880.9, E881.0, E881.1, E882, E884.0, E884.1, E884.2, E884.3, E884.4, E884.5, E884.6, E884.9, E885.0, E885.1, E885.2, E885.3, E885.4, E885.9, E888.0, E888.1, E888.8, E888.9 800, 8000, 80000, 80001, 80002, 80003, 80004, 80005, 80006, 80009, 8001, 80010, 80011, 80012, 80013, 80014, 80015, 80016, 80019, 8002, 80020, 80021, 80022, 80023, 80024, 80025, 80026, 80029, 8003, 80030, 80031, 80032, 80033, 80034, 80035, 80036, 80039, 8004, 80040, 80041, 80042, 80043, 80044, 80045, 80046, 80049, 8005, 80050, 80051, 80052, 80053, 80054, 80055, 80056, 80059, 8006, 80060, 80061, 80062, 80063, 80064, 80065, 80066, 80069, 8007, 80070, 80071, 80072, 80073, 80074, 80075, 80076, 80079, 8008, 80080, 80081, 80082, 80083, 80084, 80085, 80086, 80089, 8009, 80090, 80091, 80092, 80093, 80094, 80095, 80096,	- V00.111A, V00.121A, V00.131A, V00.141A, V00.151A, V00.181A, V00.211A, V00.221A, V00.281A, V00.311A, V00.321A, V00.381A, V00.811A, V00.821A, V00.831A, V00.841A, V00.891A, V93.31XA, W00.0XXA, W00.1XXA, W00.2XXA, W00.9XXA, W01.0XXA, W01.10XA, W01.110A, W01.111A, W01.118A, W01.119A, W01.190A, W01.198A, W05.0XXA, W05.1XXA, W05.2XXA, W06.XXXA, W07.XXXA, W08.XXXA, W09.0XXA, W09.1XXA, W09.2XXA, W09.8XXA, W10.0XXA, W10.1XXA, W10.2XXA, W10.8XXA, W10.9XXA, W11.XXXA, W12.XXXA, W13.0XXA, W13.1XXA, W13.2XXA, W13.3XXA, W13.4XXA, W13.8XXA, W13.9XXA, W14.XXXA, W15.XXXA, W17.4XXA, W17.81XA, W17.82XA, W17.89XA, W18.00XA, W18.01XA, W18.02XA, W18.09XA, W18.11XA, W18.12XA, W18.2XXA, W18.30XA, W18.31XA, W18.39XA, W19.XXXA - S12000A, S12000B, S12001A, S12001B, S1201XA, S1201XB, S1202XA, S1202XB, S12030A, S12030B, S12031A, S12031B, S12040A, S12040B, S12041A, S12041B, S12090A, S12090B, S12091A, S12091B, S12100A, S12100B, S12101A, S12101B, S12110A, S12110B, S12111A, S12111B, S12112A, S12112B, S12120A, S12120B, S12121A, S12121B, S12130A, S12130B, S12131A, S12131B, S1214XA, S1214XB,

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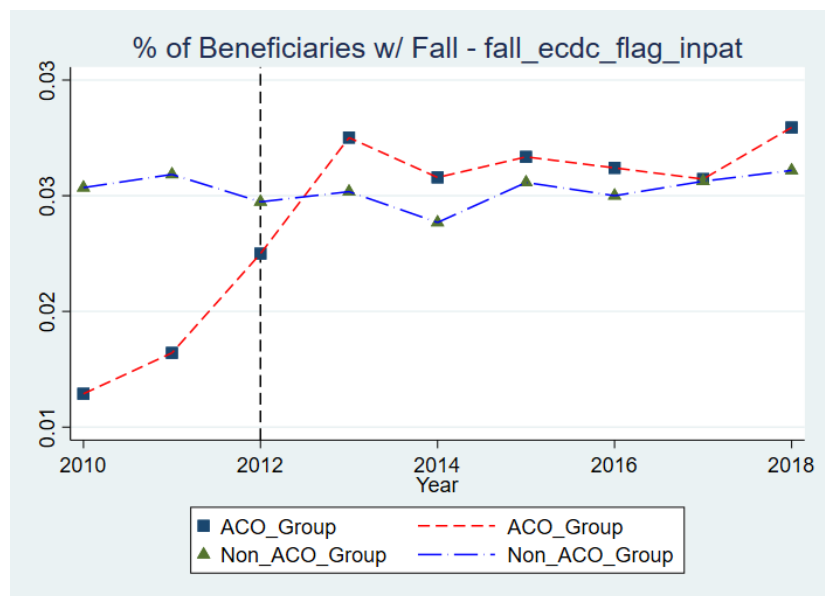
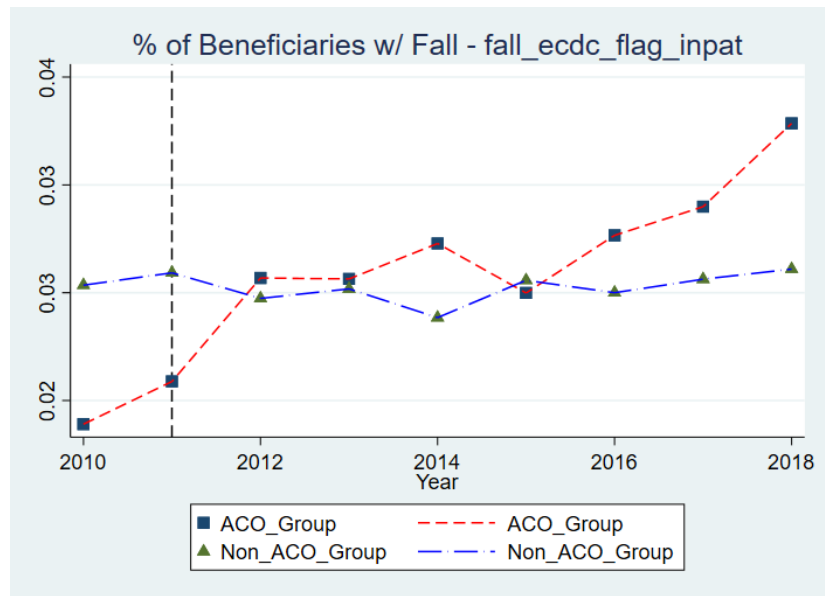
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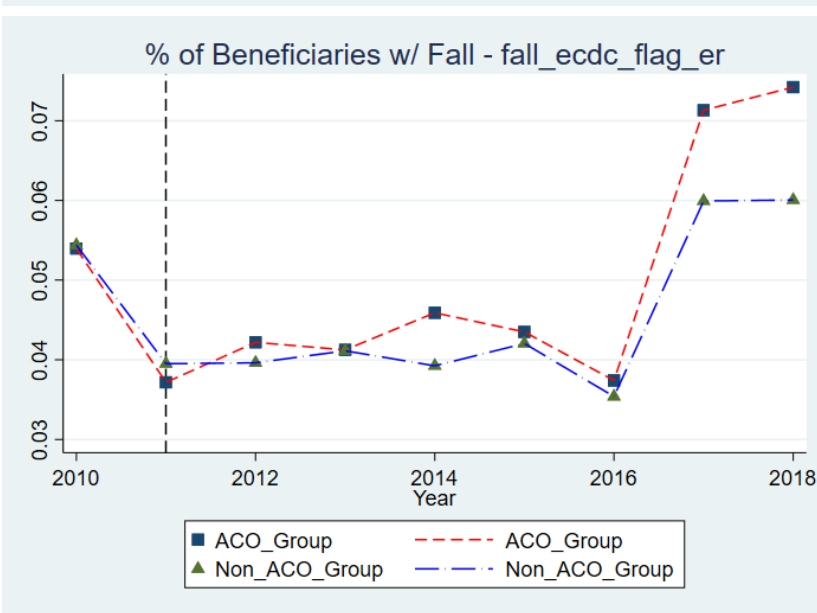
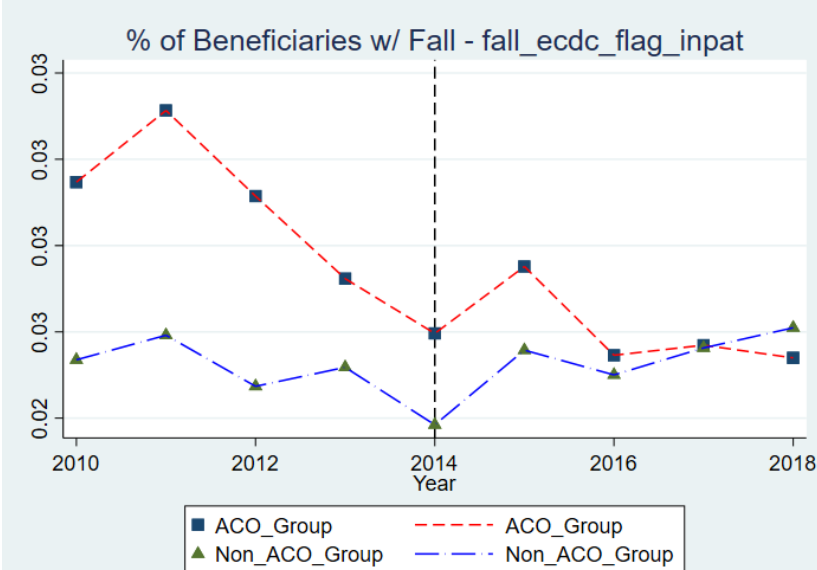
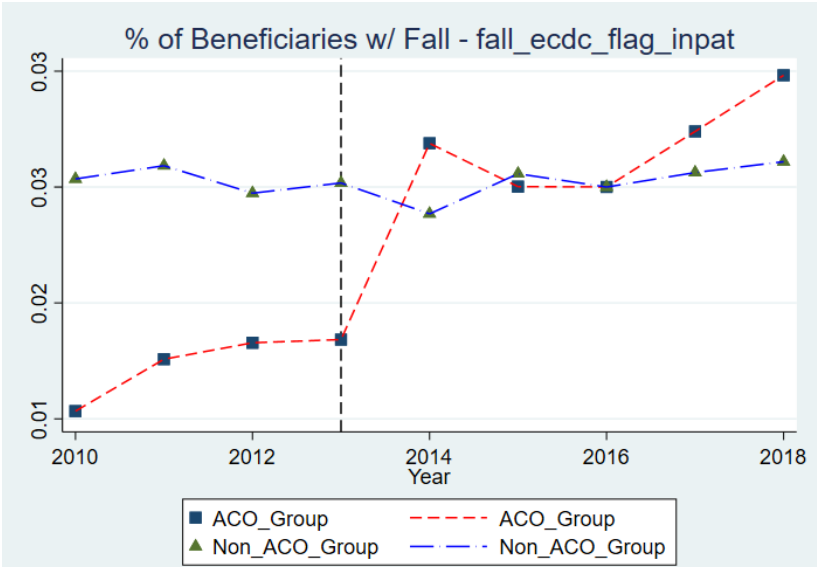
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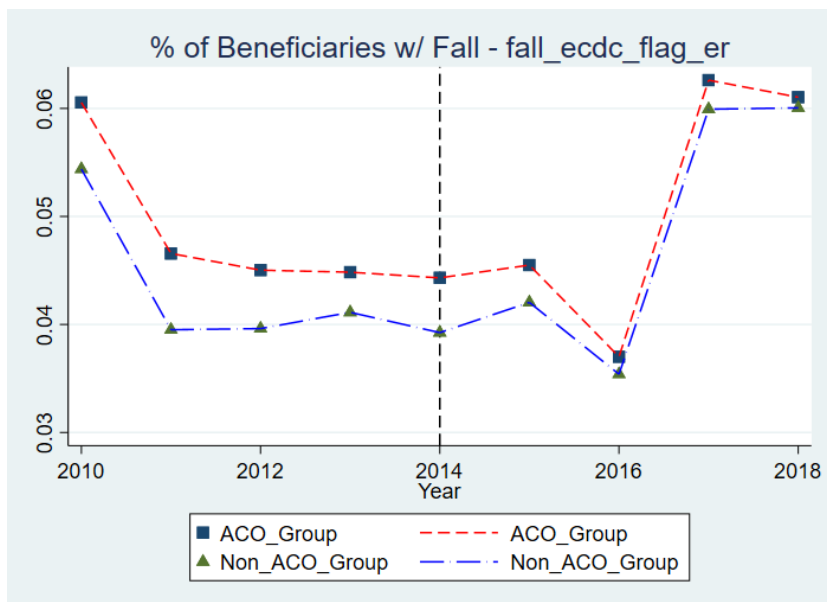
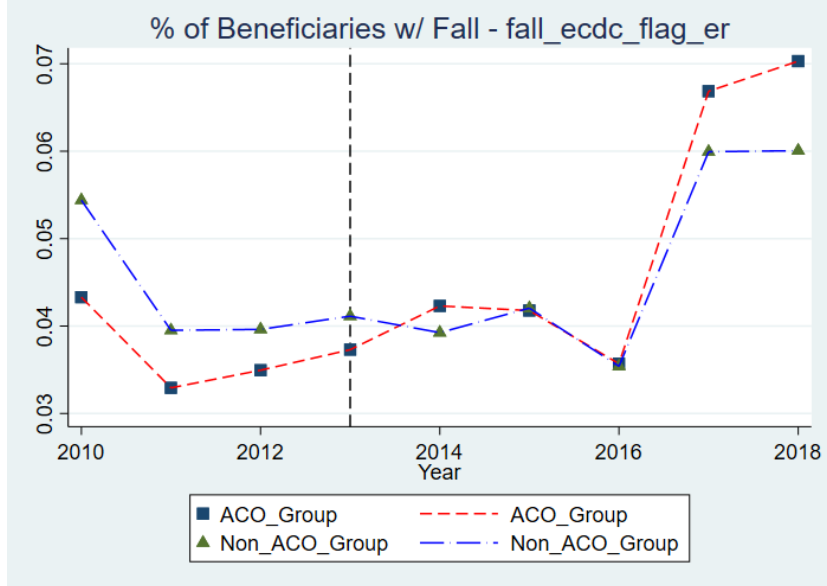
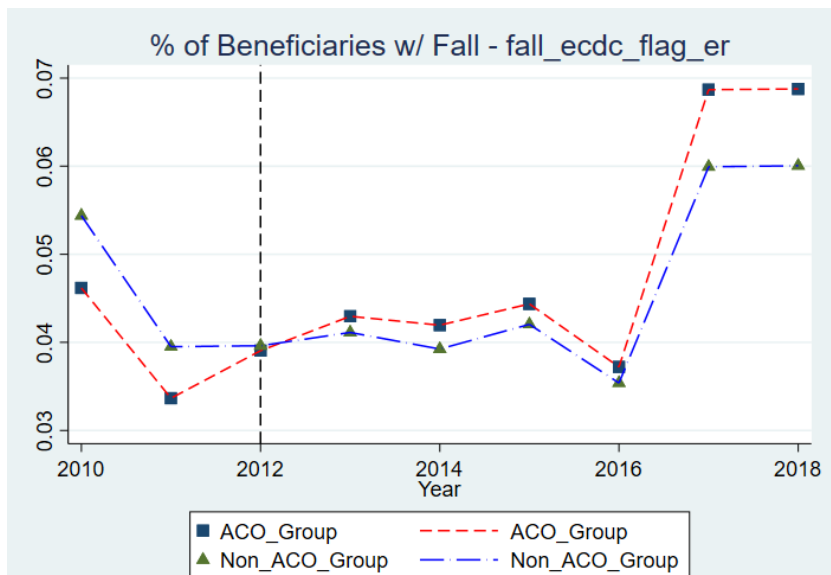
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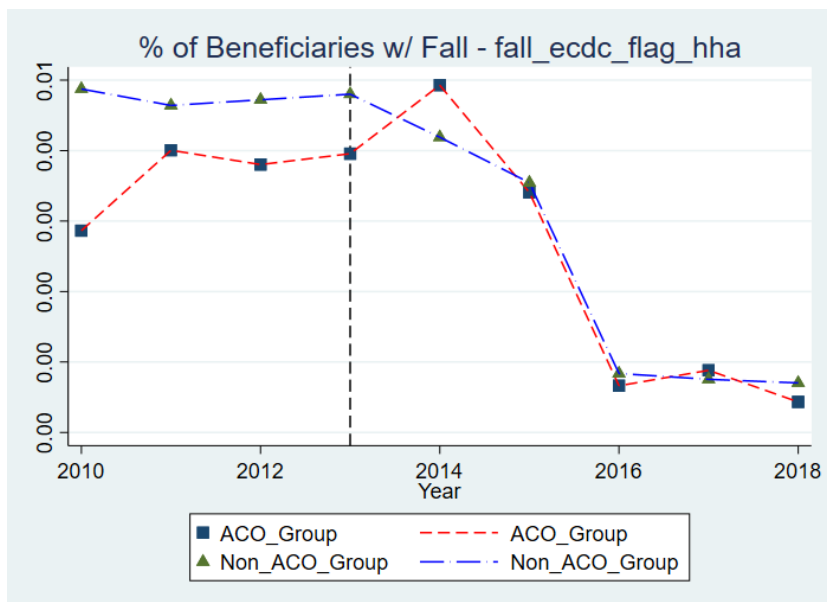
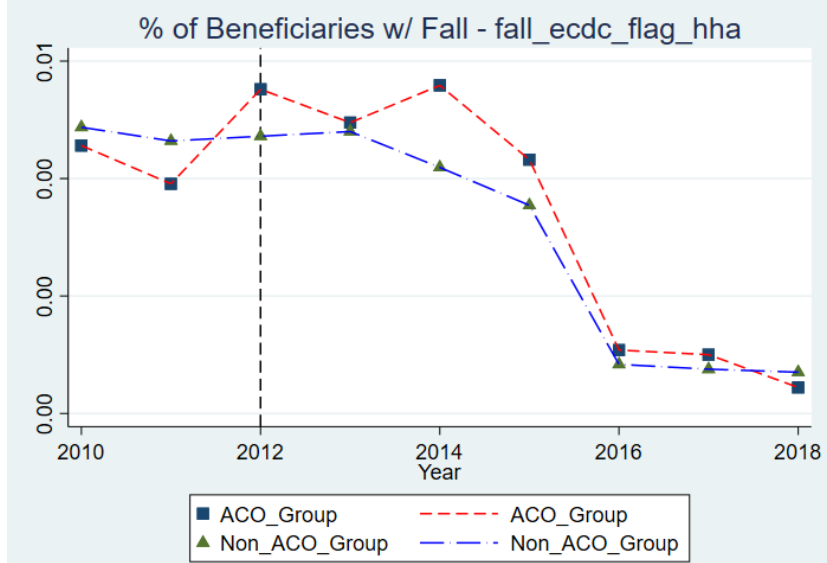
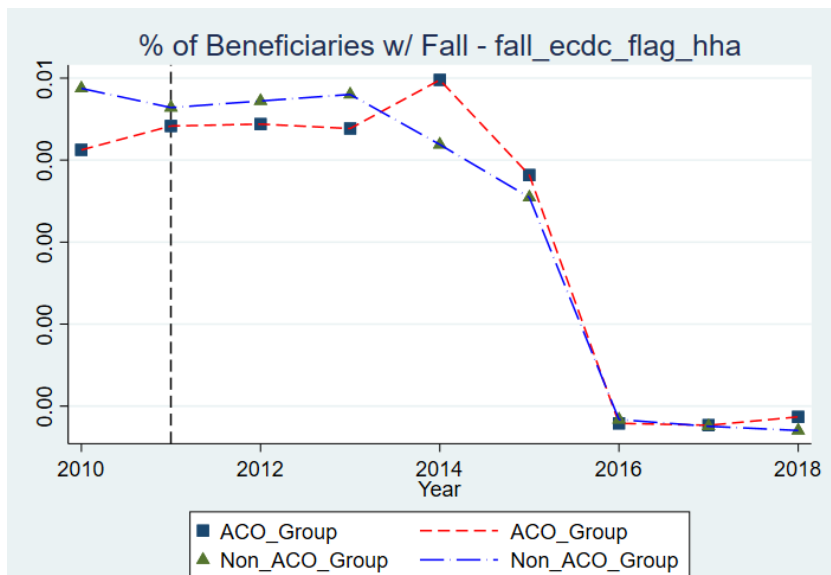
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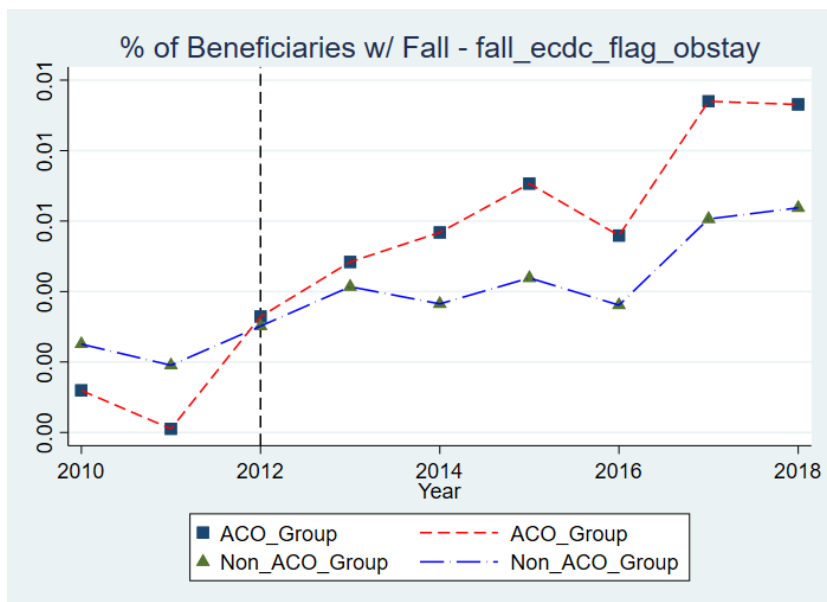
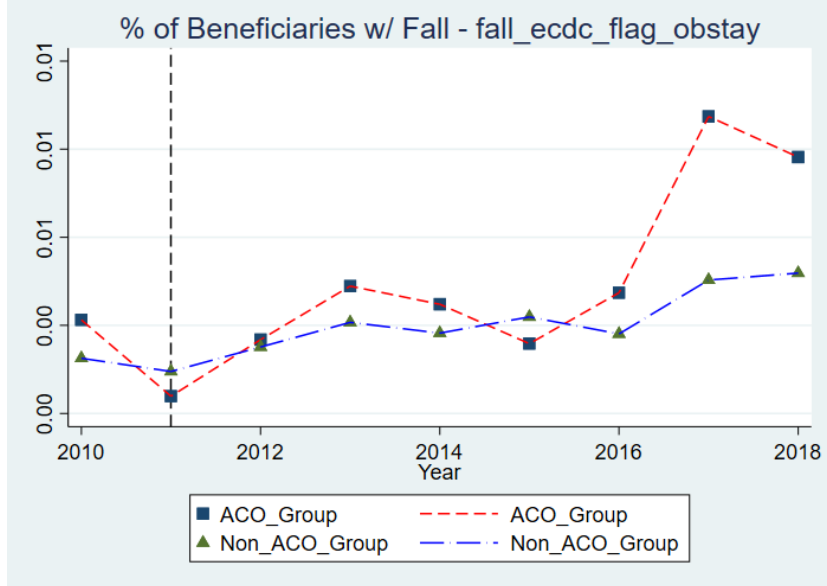
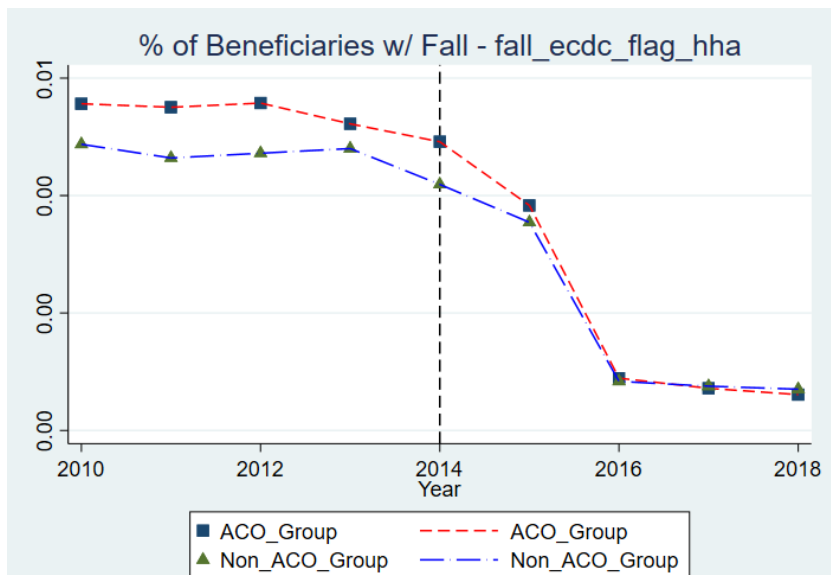
Appendix Figures 1 – 24: Parallel Trends Assessment

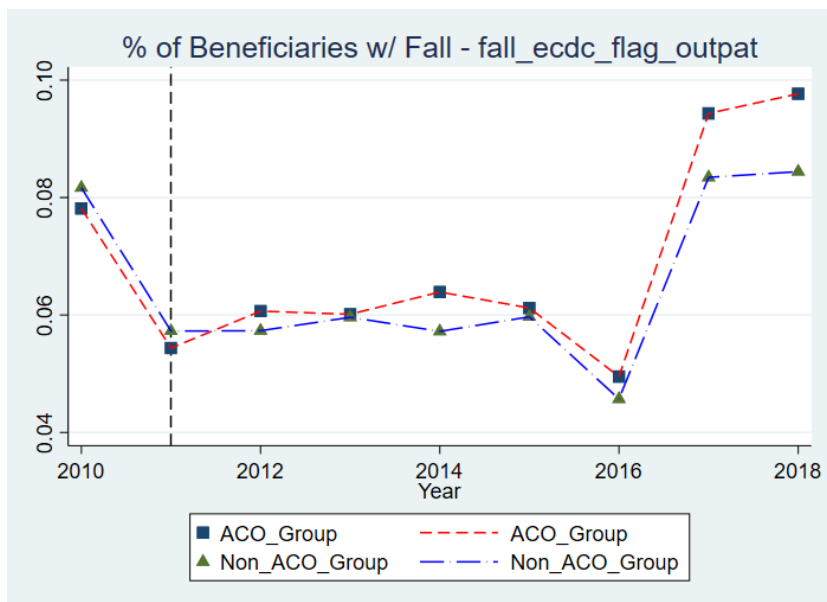
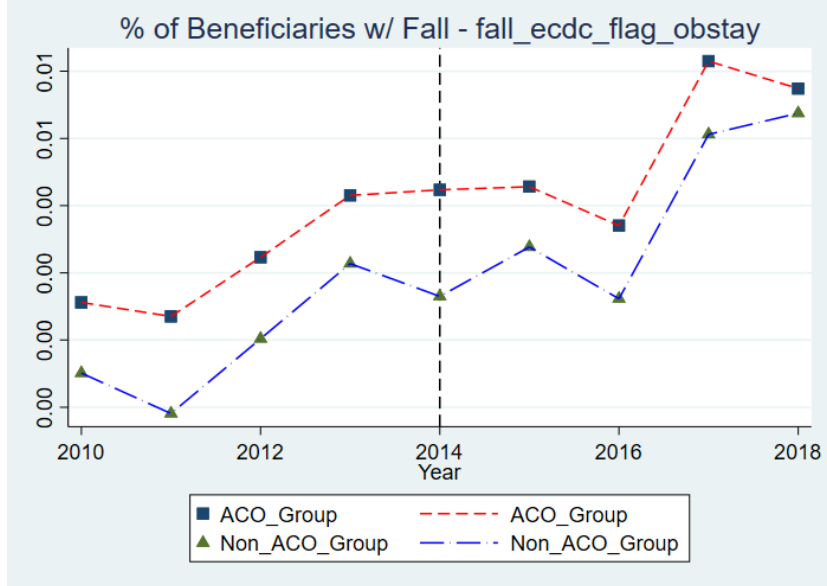
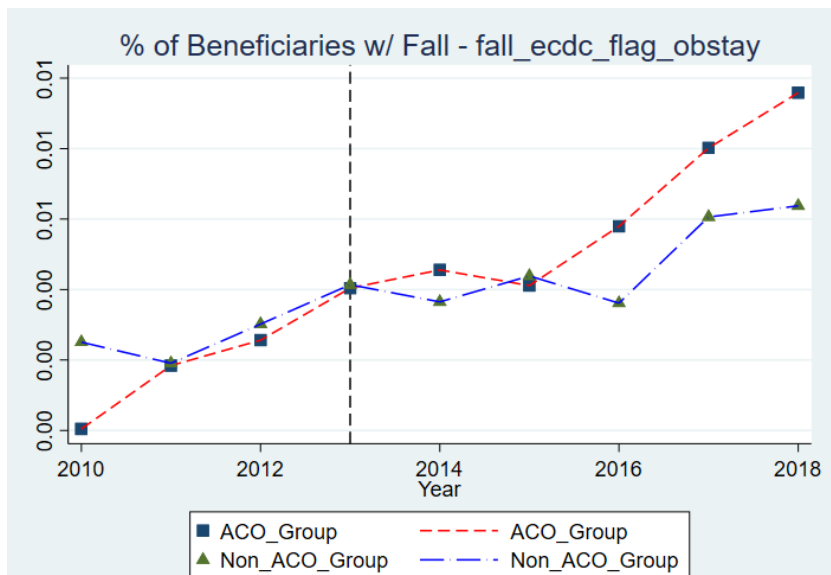


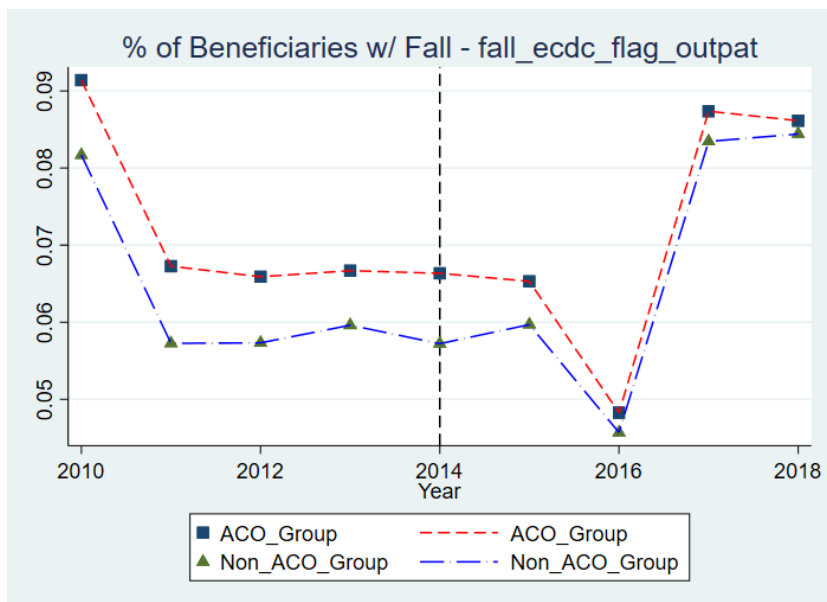
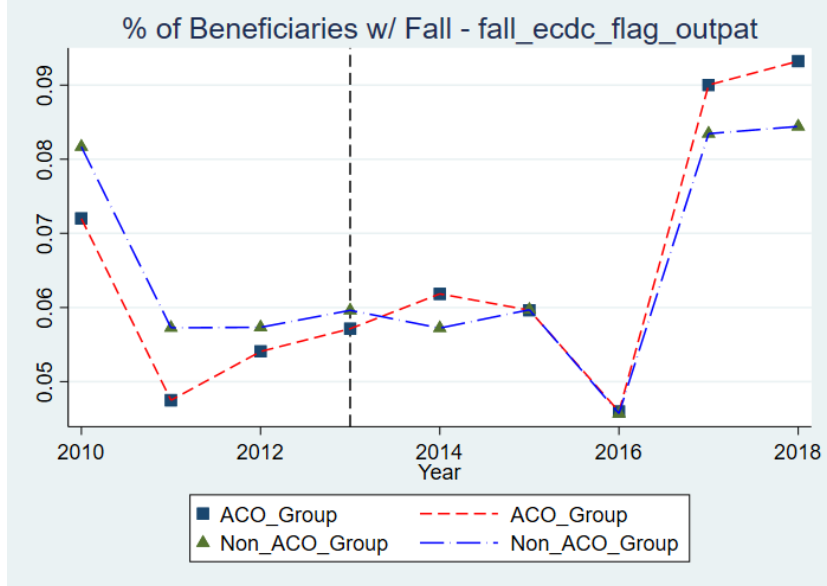
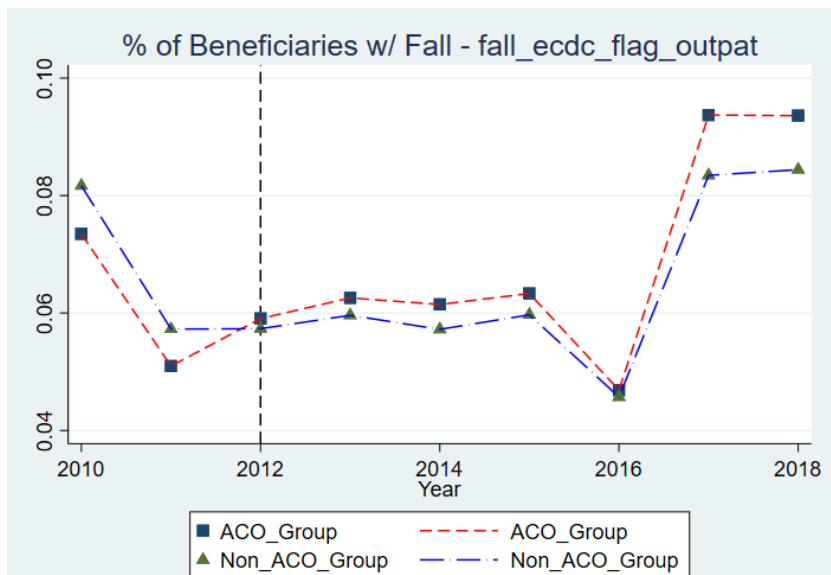


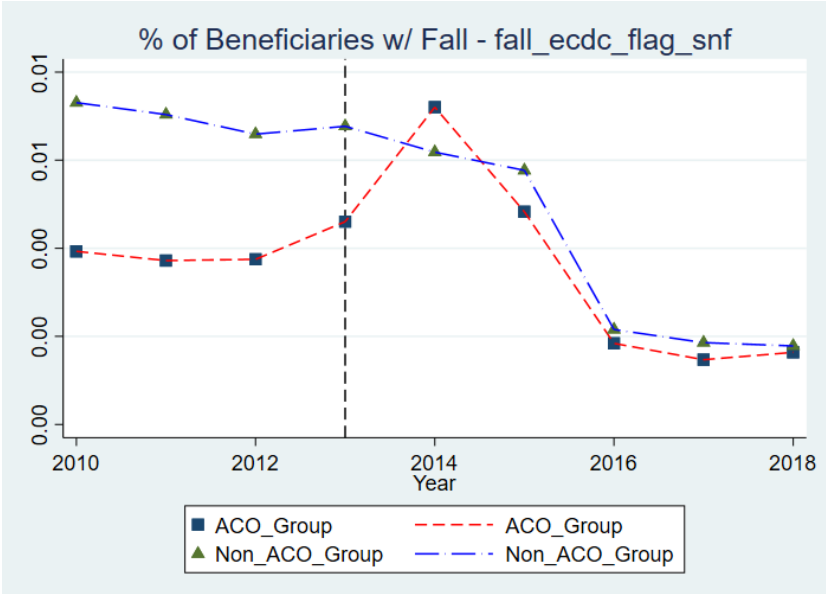
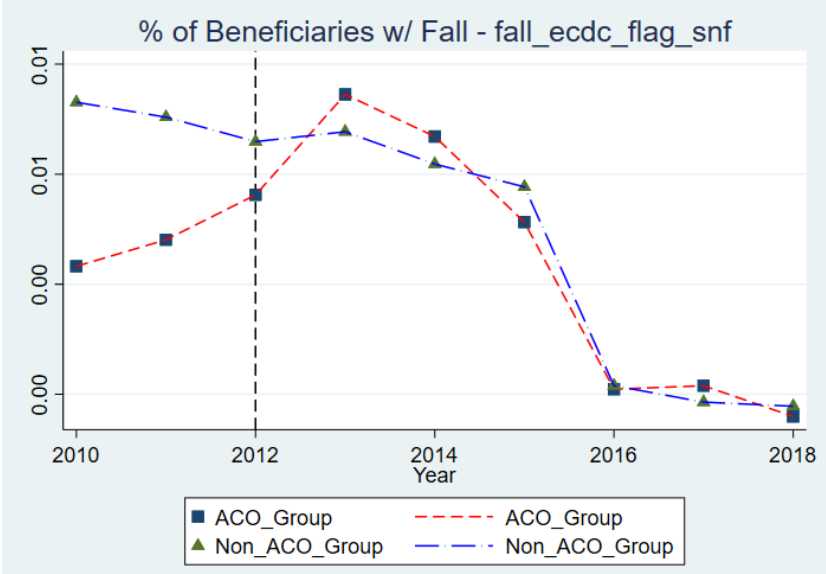
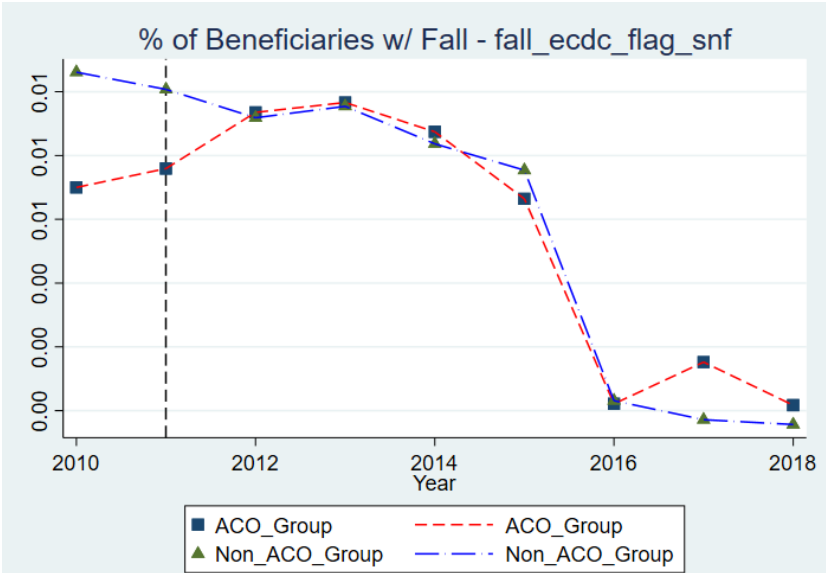


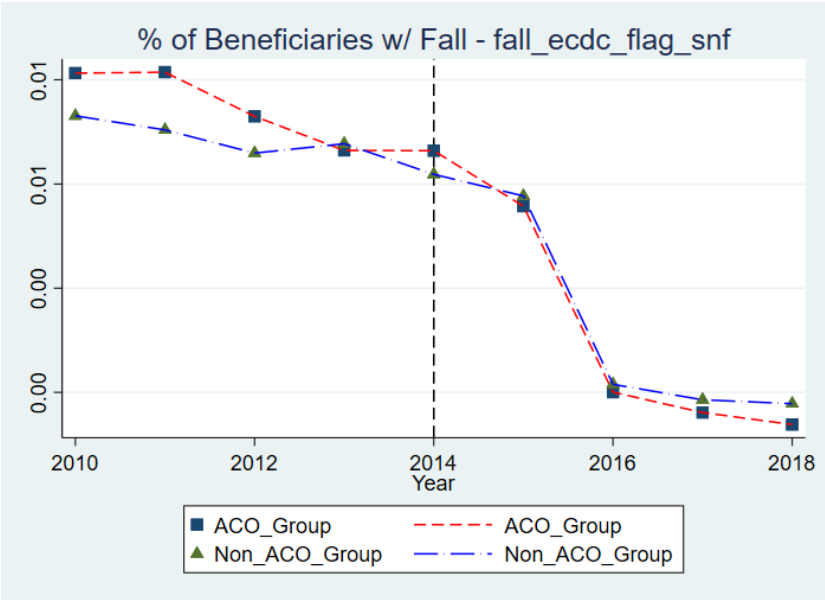












Appendix Table 2: ACO Beneficiary Composition Changes over Time (TIN Attribution)

	PRE PERIOD (N=677,409)	POST PERIOD (N=1,509,388)	Group Difference
<u>Demographic Characteristics</u>			
Age, mean (SD)	75.22 (7.64)	74.93 (7.64)	P<0.001
Sex, (%)			P<0.001
Male	41.2%	41.7%	
Female	58.8%	58.3%	
Race, (%)			P<0.001
Non-Hispanic White	85.7%	84.6%	
Black (Or African American)	6.9%	6.7%	
Hispanic	4.1%	4.1%	
Asian/Pacific Islander	2.1%	2.6%	
American Indian / Alaska Native	0.2%	0.1%	
Unknown	0.3%	1.2%	
Other	0.6%	0.7%	
State Buy-in Coverage (total months), mean (SD)	1.12 (3.44)	0.96 (3.21)	P<0.001
Dual Eligible Months, mean (SD)	1.20 (3.52)	1.00 (3.26)	P<0.001
<u>Healthcare Utilization (Baseline)</u>			
Acute Inpatient Stays, mean (SD)	0.25 (0.68)	0.22 (0.63)	P<0.001
Anesthesia Events, mean (SD)	0.45 (1.06)	0.48 (1.10)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.26 (0.97)	0.24 (0.86)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.09)	0.07 (1.18)	P=0.002
Durable Medical Equipment Events, mean (SD)	2.72 (6.79)	2.35 (6.20)	P<0.001
Evaluation & Management Events, mean (SD)	4.99 (12.46)	4.98 (12.44)	P=0.404
Home Health Visits, mean (SD)	3.29 (20.20)	2.59 (14.86)	P<0.001
Hospital Outpatient Visits, mean (SD)	6.15 (14.49)	6.21 (15.08)	P=0.007

Hospice Stays, mean (SD)	0.00 (0.07)	0.00 (0.06)	P<0.001
Imaging Events, mean (SD)	4.42 (6.00)	4.20 (5.70)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.16 (0.55)	0.15 (0.52)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.02 (0.15)	0.01 (0.14)	P<0.001
Other Procedures Events, mean (SD)	6.60 (15.45)	7.29 (15.93)	P<0.001
Other Part B Carrier Events, mean (SD)	1.72 (8.45)	1.97 (8.78)	P<0.001
MD Office Part B Events, mean (SD)	8.48 (7.79)	8.61 (7.85)	P<0.001
Part B Drug Events, mean (SD)	3.08 (6.98)	3.13 (6.48)	P<0.001
Part D Events, mean (SD)	19.14 (29.35)	21.31 (27.96)	P<0.001
Hospital Readmissions, mean (SD)	0.04 (0.27)	0.03 (0.24)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.05 (0.28)	0.04 (0.27)	P<0.001
Tests Events, mean (SD)	15.19 (19.17)	14.82 (18.61)	P<0.001
<u>Assistive Devices and Equipment</u>			
Diabetic Footwear, No. (%)	275 (0.0%)	320 (0.0%)	P<0.001
Walking Aids, No. (%)	69 (0.0%)	73 (0.0%)	P<0.001
Hospital Beds, No. (%)	0 (0.0%)	0 (0.0%)	
Wheelchair, No. (%)	2 (0.0%)	3 (0.0%)	P=0.663
<u>Clinical Conditions</u>			
ESRD, (%)	0.5%	0.6%	P<0.001
Abnormal Gait, (%)	6.1%	7.0%	P<0.001
Orthostatic Hypotension, (%)	0.9%	0.9%	P=0.185
Sarcopenia, (%)	0.8%	0.4%	P<0.001
Weight Loss, (%)	2.1%	1.8%	P<0.001
Weight Gain, (%)	0.3%	0.3%	P=0.095
Underweight, (%)	0.1%	0.1%	P<0.001

Overweight, (%)	0.2%	0.5%	P<0.001
Parkinson, (%)	1.3%	1.3%	P=0.027
Incontinence, (%)	4.2%	4.1%	P<0.001
Dizziness Vertigo, (%)	7.6%	7.4%	P<0.001
Cognitive Impairment, (%)	0.9%	1.2%	P<0.001
Restless Leg Syndrome, (%)	0.8%	0.9%	P<0.001
Movement Disorders, (%)	1.2%	1.6%	P<0.001
Melanoma, (%)	1.1%	2.0%	P<0.001
Bladder Cancer, (%)	1.2%	1.2%	P=0.281
Kidney Cancer, (%)	0.6%	0.6%	P<0.001
Pancreatic Cancer, (%)	0.1%	0.1%	P=0.137
Other Cancer, (%)	11.8%	10.9%	P<0.001
Alzheimer's Disease, (%)	3.5%	2.8%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, (%)	8.1%	7.6%	P<0.001
Acute Myocardial Infarction, (%)	0.7%	0.7%	P=0.002
Anemia, (%)	22.7%	21.5%	P<0.001
Asthma, (%)	4.5%	5.4%	P<0.001
Atrial Fibrillation, (%)	9.2%	9.4%	P<0.001
Breast Cancer, (%)	3.6%	3.8%	P<0.001
Colorectal Cancer, (%)	1.4%	1.3%	P<0.001
Endometrial Cancer, (%)	0.3%	0.4%	P<0.001
Lung Cancer, (%)	0.9%	0.9%	P=0.004
Prostate Cancer, (%)	4.0%	3.9%	P=0.705
Cataract, (%)	24.0%	22.3%	P<0.001
Heart Failure, (%)	13.6%	12.3%	P<0.001
Chronic Kidney Disease, (%)	14.5%	19.0%	P<0.001
Chronic Obstructive Pulmonary Disease, (%)	10.5%	10.3%	P<0.001

Depression, (%)	11.7%	13.6%	P<0.001
Diabetes, (%)	28.1%	27.8%	P<0.001
Glaucoma, (%)	12.6%	11.7%	P<0.001
Hip/Pelvic Fracture, (%)	0.6%	0.6%	P<0.001
Hyperlipidemia, (%)	54.4%	54.8%	P<0.001
Benign Prostatic Hyperplasia, (%)	7.2%	8.0%	P<0.001
Hypertension, (%)	63.3%	62.9%	P<0.001
Hypothyroidism, (%)	15.3%	16.6%	P<0.001
Ischemic Heart Disease, (%)	32.1%	29.3%	P<0.001
Osteoporosis, (%)	8.0%	7.5%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, (%)	31.7%	33.5%	P<0.001
Stroke / Transient Ischemic Attack, (%)	3.6%	3.4%	P<0.001
ADHD & Other Conduct Disorders, (%)	0.2%	0.3%	P<0.001
Anxiety Disorders, (%)	7.8%	11.3%	P<0.001
Autism Spectrum Disorders, (%)	0.0%	0.0%	P<0.001
Bipolar Disorder, (%)	1.0%	1.2%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, (%)	0.3%	0.3%	P=0.108
Cerebral Palsy, (%)	0.1%	0.1%	P=0.834
Cystic Fibrosis & other Metabolic Developmental Disorders, (%)	0.4%	0.5%	P<0.001
Depression, (%)	10.7%	12.4%	P<0.001
Epilepsy, (%)	1.2%	1.3%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, (%)	8.1%	12.8%	P<0.001
Deafness & Hearing Impairment, (%)	4.3%	5.5%	P<0.001
Viral Hepatitis (General), (%)	0.5%	0.7%	P<0.001
HIV/AIDS, (%)	0.1%	0.1%	P=0.003
Intellectual Disabilities & Related Conditions, (%)	0.2%	0.2%	P<0.001

Learning Disabilities, (%)	0.0%	0.1%	P<0.001
Leukemias & Lymphomas, (%)	1.4%	1.6%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), (%)	2.6%	3.2%	P<0.001
Migraine & Other Chronic Headache, (%)	1.2%	1.9%	P<0.001
Mobility Impairments, (%)	1.6%	1.6%	P=0.023
Multiple Sclerosis & Transverse Myelitis, (%)	0.3%	0.3%	P<0.001
Muscular Dystrophy, (%)	0.0%	0.0%	P=0.320
Obesity, (%)	6.4%	12.7%	P<0.001
Other Developmental Delays, (%)	0.0%	0.0%	P<0.001
Personality Disorders, (%)	0.1%	0.4%	P<0.001
Post-Traumatic Stress Disorder, (%)	0.2%	0.3%	P<0.001
Peripheral Vascular Disease, (%)	11.4%	11.4%	P=0.934
Schizophrenia, (%)	0.4%	0.4%	P=0.035
Schizophrenia & Other Psychotic Disorders, (%)	1.4%	1.2%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, (%)	0.1%	0.1%	P=0.380
Spinal Cord Injury, (%)	0.2%	0.3%	P<0.001
Tobacco Use Disorders, (%)	4.4%	5.2%	P<0.001
Pressure Ulcers & Chronic Ulcers, (%)	3.5%	3.2%	P<0.001
Blindness & Visual Impairment, (%)	0.8%	0.5%	P<0.001
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	5.13 (3.40)	5.45 (3.58)	P<0.001
<u>Screenings</u>			
Fall Risk Screening, (%)	4.2%	12.7%	P<0.001
Osteoporosis Screening, (%)	10.6%	10.8%	P<0.001
Fall in the Previous Calendar Year (ECO Method), (%)	4.6%	4.4%	P<0.001
Fall in the Previous Calendar Year (ECDC Method), (%)	15.2%	11.4%	P<0.001

Fall in the Previous Calendar Year (AUR Method), (%)	6.2%	5.5%	P<0.001
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Appendix Table 3: ACO Beneficiary Composition Changes over Time (NPI Attribution)

	PRE PERIOD (N=770,010)	POST PERIOD (N=1,575,052)	Group Difference
<u>Demographic Characteristics</u>			
Age, mean (SD)	75.24 (7.65)	74.93 (7.65)	P<0.001
Sex, (%)			P<0.001
Male	41.1%	41.7%	
Female	58.9%	58.3%	
Race, (%)			P<0.001
Non-Hispanic White	85.7%	84.4%	
Black (Or African American)	6.9%	6.8%	
Hispanic	4.1%	4.1%	
Asian/Pacific Islander	2.1%	2.6%	
American Indian / Alaska Native	0.2%	0.1%	
Unknown	0.3%	1.3%	
Other	0.6%	0.7%	
State Buy-in Coverage (total months), mean (SD)	1.08 (3.39)	0.95 (3.19)	P<0.001
Dual Eligible Months, mean (SD)	1.15 (3.46)	0.99 (3.25)	P<0.001
<u>Healthcare Utilization (Baseline)</u>			
Acute Inpatient Stays, mean (SD)	0.25 (0.68)	0.22 (0.63)	P<0.001
Anesthesia Events, mean (SD)	0.45 (1.06)	0.48 (1.11)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.27 (0.98)	0.25 (0.87)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.10)	0.07 (1.20)	P<0.001
Durable Medical Equipment Events, mean (SD)	2.69 (6.74)	2.34 (6.19)	P<0.001
Evaluation & Management Events, mean (SD)	5.02 (12.57)	5.05 (12.64)	P=0.127
Home Health Visits, mean (SD)	3.27 (20.00)	2.63 (14.91)	P<0.001
Hospital Outpatient Visits, mean (SD)	5.91 (14.26)	6.11 (15.04)	P<0.001

Hospice Stays, mean (SD)	0.00 (0.07)	0.00 (0.06)	P<0.001
Imaging Events, mean (SD)	4.42 (6.00)	4.21 (5.72)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.16 (0.55)	0.15 (0.52)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.02 (0.15)	0.01 (0.14)	P<0.001
Other Procedures Events, mean (SD)	6.74 (16.11)	7.38 (16.11)	P<0.001
Other Part B Carrier Events, mean (SD)	1.68 (8.33)	1.95 (8.77)	P<0.001
MD Office Part B Events, mean (SD)	8.64 (7.85)	8.69 (7.88)	P<0.001
Part B Drug Events, mean (SD)	3.10 (6.97)	3.15 (6.48)	P<0.001
Part D Events, mean (SD)	18.78 (28.99)	21.29 (27.97)	P<0.001
Hospital Readmissions, mean (SD)	0.04 (0.27)	0.03 (0.24)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.05 (0.28)	0.04 (0.27)	P<0.001
Tests Events, mean (SD)	15.41 (19.34)	14.97 (18.70)	P<0.001
<u>Assistive Devices and Equipment</u>			
Diabetic Footwear, No. (%)	313 (0.0%)	340 (0.0%)	P<0.001
Walking Aids, No. (%)	77 (0.0%)	73 (0.0%)	P<0.001
Hospital Beds, No. (%)	0 (0.0%)	0 (0.0%)	
Wheelchair, No. (%)	2 (0.0%)	5 (0.0%)	P=0.810
<u>Clinical Conditions</u>			
ESRD, (%)	0.5%	0.6%	P<0.001
Abnormal Gait, (%)	6.1%	7.1%	P<0.001
Orthostatic Hypotension, (%)	0.8%	0.9%	P=0.008
Sarcopenia, (%)	0.7%	0.4%	P<0.001
Weight Loss, (%)	2.1%	1.8%	P<0.001
Weight Gain, (%)	0.3%	0.3%	P=0.548
Underweight, (%)	0.0%	0.1%	P<0.001

Overweight, (%)	0.2%	0.5%	P<0.001
Parkinson, (%)	1.3%	1.3%	P=0.010
Incontinence, (%)	4.2%	4.1%	P=0.003
Dizziness Vertigo, (%)	7.6%	7.4%	P<0.001
Cognitive Impairment, (%)	0.9%	1.2%	P<0.001
Restless Leg Syndrome, (%)	0.7%	0.9%	P<0.001
Movement Disorders, (%)	1.2%	1.6%	P<0.001
Melanoma, (%)	1.1%	2.0%	P<0.001
Bladder Cancer, (%)	1.2%	1.2%	P=0.377
Kidney Cancer, (%)	0.6%	0.6%	P<0.001
Pancreatic Cancer, (%)	0.1%	0.1%	P=0.049
Other Cancer, (%)	11.8%	10.8%	P<0.001
Alzheimer's Disease, (%)	3.5%	2.9%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, (%)	8.2%	7.7%	P<0.001
Acute Myocardial Infarction, (%)	0.7%	0.7%	P=0.035
Anemia, (%)	22.8%	21.6%	P<0.001
Asthma, (%)	4.5%	5.5%	P<0.001
Atrial Fibrillation, (%)	9.2%	9.4%	P<0.001
Breast Cancer, (%)	3.6%	3.8%	P<0.001
Colorectal Cancer, (%)	1.4%	1.3%	P<0.001
Endometrial Cancer, (%)	0.3%	0.4%	P<0.001
Lung Cancer, (%)	0.9%	0.9%	P<0.001
Prostate Cancer, (%)	4.0%	3.9%	P=0.763
Cataract, (%)	24.0%	22.3%	P<0.001
Heart Failure, (%)	13.5%	12.3%	P<0.001
Chronic Kidney Disease, (%)	14.3%	19.1%	P<0.001
Chronic Obstructive Pulmonary Disease, (%)	10.4%	10.3%	P=0.005

Depression, (%)	11.5%	13.6%	P<0.001
Diabetes, (%)	28.1%	27.9%	P<0.001
Glaucoma, (%)	12.7%	11.7%	P<0.001
Hip/Pelvic Fracture, (%)	0.6%	0.6%	P<0.001
Hyperlipidemia, (%)	54.5%	54.9%	P<0.001
Benign Prostatic Hyperplasia, (%)	7.2%	8.0%	P<0.001
Hypertension, (%)	63.4%	63.0%	P<0.001
Hypothyroidism, (%)	15.3%	16.7%	P<0.001
Ischemic Heart Disease, (%)	32.1%	29.3%	P<0.001
Osteoporosis, (%)	8.0%	7.5%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, (%)	31.7%	33.6%	P<0.001
Stroke / Transient Ischemic Attack, (%)	3.6%	3.4%	P<0.001
ADHD & Other Conduct Disorders, (%)	0.2%	0.3%	P<0.001
Anxiety Disorders, (%)	7.7%	11.3%	P<0.001
Autism Spectrum Disorders, (%)	0.0%	0.0%	P<0.001
Bipolar Disorder, (%)	1.0%	1.2%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, (%)	0.3%	0.3%	P=0.011
Cerebral Palsy, (%)	0.1%	0.1%	P=0.430
Cystic Fibrosis & other Metabolic Developmental Disorders, (%)	0.4%	0.5%	P<0.001
Depression, (%)	10.6%	12.4%	P<0.001
Epilepsy, (%)	1.2%	1.3%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, (%)	8.0%	13.0%	P<0.001
Deafness & Hearing Impairment, (%)	4.3%	5.6%	P<0.001
Viral Hepatitis (General), (%)	0.5%	0.7%	P<0.001
HIV/AIDS, (%)	0.1%	0.1%	P<0.001
Intellectual Disabilities & Related Conditions, (%)	0.2%	0.2%	P<0.001

Learning Disabilities, (%)	0.0%	0.1%	P<0.001
Leukemias & Lymphomas, (%)	1.4%	1.6%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), (%)	2.6%	3.2%	P<0.001
Migraine & Other Chronic Headache, (%)	1.2%	1.9%	P<0.001
Mobility Impairments, (%)	1.6%	1.6%	P=0.601
Multiple Sclerosis & Transverse Myelitis, (%)	0.3%	0.3%	P<0.001
Muscular Dystrophy, (%)	0.0%	0.0%	P=0.326
Obesity, (%)	6.3%	12.8%	P<0.001
Other Developmental Delays, (%)	0.0%	0.0%	P<0.001
Personality Disorders, (%)	0.1%	0.5%	P<0.001
Post-Traumatic Stress Disorder, (%)	0.2%	0.3%	P<0.001
Peripheral Vascular Disease, (%)	11.4%	11.5%	P=0.490
Schizophrenia, (%)	0.4%	0.4%	P=0.583
Schizophrenia & Other Psychotic Disorders, (%)	1.4%	1.2%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, (%)	0.1%	0.1%	P=0.466
Spinal Cord Injury, (%)	0.2%	0.3%	P<0.001
Tobacco Use Disorders, (%)	4.3%	5.2%	P<0.001
Pressure Ulcers & Chronic Ulcers, (%)	3.5%	3.3%	P<0.001
Blindness & Visual Impairment, (%)	0.8%	0.5%	P<0.001
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	5.13 (3.40)	5.47 (3.59)	P<0.001
<u>Screenings</u>			
Fall Risk Screening, (%)	4.2%	12.8%	P<0.001
Osteoporosis Screening, (%)	10.6%	10.8%	P<0.001
Fall in the Previous Calendar Year (ECO Method), (%)	4.6%	4.4%	P<0.001
Fall in the Previous Calendar Year (ECDC Method), (%)	15.2%	11.3%	P<0.001

Fall in the Previous Calendar Year (AUR Method), (%)	6.2%	5.5%	P<0.001
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Appendix Table 4: Non-ACO Beneficiary Composition Changes over Time (TIN Attribution)

	PRE PERIOD (N=3,986,893)	POST PERIOD (N=4,132,855)	Group Difference
<u>Demographic Characteristics</u>			
Age, mean (SD)	74.91 (7.83)	74.62 (7.80)	P<0.001
Sex, (%)			P<0.001
Male	43.5%	44.3%	
Female	56.5%	55.7%	
Race, (%)			P<0.001
Non-Hispanic White	82.9%	81.7%	
Black (Or African American)	7.5%	7.4%	
Hispanic	5.4%	5.4%	
Asian/Pacific Islander	2.5%	2.7%	
American Indian / Alaska Native	0.5%	0.5%	
Unknown	0.5%	1.4%	
Other	0.8%	0.8%	
State Buy-in Coverage (total months), mean (SD)	1.30 (3.67)	1.22 (3.57)	P<0.001
Dual Eligible Months, mean (SD)	1.35 (3.72)	1.26 (3.61)	P<0.001
<u>Healthcare Utilization (Baseline)</u>			
Acute Inpatient Stays, mean (SD)	0.22 (0.65)	0.20 (0.62)	P<0.001
Anesthesia Events, mean (SD)	0.39 (1.00)	0.42 (1.05)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.22 (0.91)	0.20 (0.81)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.18)	0.08 (1.19)	P<0.001
Durable Medical Equipment Events, mean (SD)	2.41 (6.46)	2.13 (6.01)	P<0.001
Evaluation & Management Events, mean (SD)	4.36 (12.23)	4.49 (12.73)	P<0.001
Home Health Visits, mean (SD)	3.03 (18.04)	2.77 (15.44)	P<0.001
Hospital Outpatient Visits, mean (SD)	5.54 (14.39)	5.97 (15.24)	P<0.001

Hospice Stays, mean (SD)	0.01 (0.10)	0.01 (0.10)	P<0.001
Imaging Events, mean (SD)	3.79 (5.78)	3.68 (5.55)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.14 (0.52)	0.14 (0.51)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.01 (0.14)	0.01 (0.14)	P=0.063
Other Procedures Events, mean (SD)	5.76 (14.93)	6.29 (14.83)	P<0.001
Other Part B Carrier Events, mean (SD)	1.53 (8.56)	1.64 (8.17)	P<0.001
MD Office Part B Events, mean (SD)	7.25 (7.78)	7.27 (7.80)	P<0.001
Part B Drug Events, mean (SD)	2.71 (6.78)	2.73 (6.24)	P<0.001
Part D Events, mean (SD)	17.95 (29.27)	20.26 (28.97)	P<0.001
Hospital Readmissions, mean (SD)	0.03 (0.26)	0.03 (0.24)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.04 (0.27)	0.04 (0.27)	P=0.210
Tests Events, mean (SD)	13.10 (19.06)	12.60 (18.33)	P<0.001
<u>Assistive Devices and Equipment</u>			
Diabetic Footwear, No. (%)	1,140 (0.0%)	501 (0.0%)	P<0.001
Walking Aids, No. (%)	288 (0.0%)	115 (0.0%)	P<0.001
Hospital Beds, No. (%)	8 (0.0%)	6 (0.0%)	P=0.547
Wheelchair, No. (%)	18 (0.0%)	7 (0.0%)	P=0.022
<u>Clinical Conditions</u>			
ESRD, (%)	0.6%	0.6%	P<0.001
Abnormal Gait, (%)	5.2%	6.5%	P<0.001
Orthostatic Hypotension, (%)	0.8%	0.8%	P<0.001
Sarcopenia, (%)	0.6%	0.3%	P<0.001
Weight Loss, (%)	1.9%	1.7%	P<0.001
Weight Gain, (%)	0.3%	0.3%	P=0.627
Underweight, (%)	0.0%	0.1%	P<0.001

Overweight, (%)	0.2%	0.5%	P<0.001
Parkinson, (%)	1.1%	1.2%	P<0.001
Incontinence, (%)	3.6%	3.7%	P<0.001
Dizziness Vertigo, (%)	6.7%	6.6%	P<0.001
Cognitive Impairment, (%)	0.9%	1.2%	P<0.001
Restless Leg Syndrome, (%)	0.6%	0.9%	P<0.001
Movement Disorders, (%)	1.0%	1.6%	P<0.001
Melanoma, (%)	0.9%	2.0%	P<0.001
Bladder Cancer, (%)	1.0%	1.0%	P=0.427
Kidney Cancer, (%)	0.5%	0.5%	P<0.001
Pancreatic Cancer, (%)	0.1%	0.1%	P<0.001
Other Cancer, (%)	10.3%	9.3%	P<0.001
Alzheimer's Disease, (%)	3.3%	2.9%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, (%)	7.7%	7.8%	P<0.001
Acute Myocardial Infarction, (%)	0.7%	0.7%	P=0.002
Anemia, (%)	20.7%	19.4%	P<0.001
Asthma, (%)	4.0%	5.0%	P<0.001
Atrial Fibrillation, (%)	7.9%	8.2%	P<0.001
Breast Cancer, (%)	3.1%	3.2%	P<0.001
Colorectal Cancer, (%)	1.2%	1.1%	P<0.001
Endometrial Cancer, (%)	0.3%	0.3%	P<0.001
Lung Cancer, (%)	0.8%	0.8%	P<0.001
Prostate Cancer, (%)	3.4%	3.3%	P<0.001
Cataract, (%)	20.9%	19.5%	P<0.001
Heart Failure, (%)	12.7%	11.7%	P<0.001
Chronic Kidney Disease, (%)	12.8%	17.6%	P<0.001
Chronic Obstructive Pulmonary Disease, (%)	9.7%	9.8%	P<0.001

Depression, (%)	10.1%	12.3%	P<0.001
Diabetes, (%)	25.3%	25.4%	P=0.002
Glaucoma, (%)	10.7%	9.7%	P<0.001
Hip/Pelvic Fracture, (%)	0.6%	0.6%	P<0.001
Hyperlipidemia, (%)	46.2%	46.3%	P<0.001
Benign Prostatic Hyperplasia, (%)	6.2%	7.0%	P<0.001
Hypertension, (%)	55.5%	55.6%	P=0.011
Hypothyroidism, (%)	13.4%	14.8%	P<0.001
Ischemic Heart Disease, (%)	28.4%	26.2%	P<0.001
Osteoporosis, (%)	6.7%	6.3%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, (%)	28.1%	30.4%	P<0.001
Stroke / Transient Ischemic Attack, (%)	3.2%	3.1%	P=0.019
ADHD & Other Conduct Disorders, (%)	0.2%	0.3%	P<0.001
Anxiety Disorders, (%)	7.1%	10.8%	P<0.001
Autism Spectrum Disorders, (%)	0.0%	0.0%	P<0.001
Bipolar Disorder, (%)	0.9%	1.2%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, (%)	0.2%	0.3%	P<0.001
Cerebral Palsy, (%)	0.1%	0.1%	P<0.001
Cystic Fibrosis & other Metabolic Developmental Disorders, (%)	0.4%	0.5%	P<0.001
Depression, (%)	9.3%	11.3%	P<0.001
Epilepsy, (%)	1.1%	1.3%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, (%)	7.5%	12.7%	P<0.001
Deafness & Hearing Impairment, (%)	3.8%	4.9%	P<0.001
Viral Hepatitis (General), (%)	0.5%	0.7%	P<0.001
HIV/AIDS, (%)	0.1%	0.1%	P<0.001
Intellectual Disabilities & Related Conditions, (%)	0.2%	0.2%	P<0.001

Learning Disabilities, (%)	0.0%	0.1%	P<0.001
Leukemias & Lymphomas, (%)	1.2%	1.4%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), (%)	2.3%	3.0%	P<0.001
Migraine & Other Chronic Headache, (%)	1.0%	1.8%	P<0.001
Mobility Impairments, (%)	1.5%	1.6%	P<0.001
Multiple Sclerosis & Transverse Myelitis, (%)	0.2%	0.3%	P<0.001
Muscular Dystrophy, (%)	0.0%	0.0%	P=0.015
Obesity, (%)	5.7%	11.4%	P<0.001
Other Developmental Delays, (%)	0.0%	0.0%	P<0.001
Personality Disorders, (%)	0.1%	0.5%	P<0.001
Post-Traumatic Stress Disorder, (%)	0.2%	0.4%	P<0.001
Peripheral Vascular Disease, (%)	10.0%	10.1%	P<0.001
Schizophrenia, (%)	0.4%	0.4%	P<0.001
Schizophrenia & Other Psychotic Disorders, (%)	1.4%	1.3%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, (%)	0.1%	0.1%	P<0.001
Spinal Cord Injury, (%)	0.1%	0.3%	P<0.001
Tobacco Use Disorders, (%)	4.2%	5.3%	P<0.001
Pressure Ulcers & Chronic Ulcers, (%)	3.2%	3.1%	P<0.001
Blindness & Visual Impairment, (%)	0.7%	0.5%	P<0.001
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	4.47 (3.57)	4.85 (3.82)	P<0.001
<u>Screenings</u>			
Fall Risk Screening, (%)	3.1%	8.3%	P<0.001
Osteoporosis Screening, (%)	7.9%	8.2%	P<0.001
Fall in the Previous Calendar Year (ECO Method), (%)	4.1%	4.4%	P<0.001
Fall in the Previous Calendar Year (ECDC Method), (%)	13.5%	9.8%	P<0.001

Fall in the Previous Calendar Year (AUR Method), (%)	5.6%	5.2%	P<0.001
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Appendix Table 5: Non-ACO Beneficiary Composition Changes over Time (NPI Attribution)

	PRE PERIOD (N=3,893,943)	POST PERIOD (N=4,068,173)	Group Difference
<u>Demographic Characteristics</u>			
Age, mean (SD)	74.90 (7.83)	74.62 (7.80)	P<0.001
Sex, (%)			P<0.001
Male	43.6%	44.3%	
Female	56.4%	55.7%	
Race, (%)			P<0.001
Non-Hispanic White	82.8%	81.8%	
Black (Or African American)	7.6%	7.4%	
Hispanic	5.4%	5.5%	
Asian/Pacific Islander	2.5%	2.7%	
American Indian / Alaska Native	0.5%	0.6%	
Unknown	0.5%	1.4%	
Other	0.8%	0.8%	
State Buy-in Coverage (total months), mean (SD)	1.31 (3.69)	1.23 (3.58)	P<0.001
Dual Eligible Months, mean (SD)	1.37 (3.73)	1.27 (3.62)	P<0.001
<u>Healthcare Utilization (Baseline)</u>			
Acute Inpatient Stays, mean (SD)	0.22 (0.65)	0.20 (0.62)	P<0.001
Anesthesia Events, mean (SD)	0.38 (0.99)	0.42 (1.05)	P<0.001
Ambulatory Surgery Center Events, mean (SD)	0.21 (0.91)	0.20 (0.80)	P<0.001
Dialysis Events, mean (SD)	0.07 (1.18)	0.08 (1.18)	P<0.001
Durable Medical Equipment Events, mean (SD)	2.41 (6.46)	2.12 (6.01)	P<0.001
Evaluation & Management Events, mean (SD)	4.34 (12.20)	4.46 (12.67)	P<0.001
Home Health Visits, mean (SD)	3.02 (18.03)	2.76 (15.41)	P<0.001
Hospital Outpatient Visits, mean (SD)	5.58 (14.43)	5.99 (15.25)	P<0.001

Hospice Stays, mean (SD)	0.01 (0.10)	0.01 (0.10)	P<0.001
Imaging Events, mean (SD)	3.78 (5.77)	3.67 (5.55)	P<0.001
Inpatient Emergency Room Visits, mean (SD)	0.14 (0.52)	0.14 (0.51)	P<0.001
Other Inpatient Stays (Including Transfers), mean (SD)	0.01 (0.14)	0.01 (0.14)	P=0.025
Other Procedures Events, mean (SD)	5.71 (14.77)	6.25 (14.75)	P<0.001
Other Part B Carrier Events, mean (SD)	1.53 (8.59)	1.64 (8.17)	P<0.001
MD Office Part B Events, mean (SD)	7.18 (7.75)	7.23 (7.78)	P<0.001
Part B Drug Events, mean (SD)	2.69 (6.77)	2.71 (6.24)	P<0.001
Part D Events, mean (SD)	17.99 (29.34)	20.23 (28.97)	P<0.001
Hospital Readmissions, mean (SD)	0.03 (0.26)	0.03 (0.24)	P<0.001
Skilled Nursing Facility Stays, mean (SD)	0.04 (0.27)	0.04 (0.27)	P=0.040
Tests Events, mean (SD)	13.01 (19.01)	12.52 (18.30)	P<0.001
<u>Assistive Devices and Equipment</u>			
Diabetic Footwear, No. (%)	1,102 (0.0%)	482 (0.0%)	P<0.001
Walking Aids, No. (%)	280 (0.0%)	115 (0.0%)	P<0.001
Hospital Beds, No. (%)	8 (0.0%)	6 (0.0%)	P=0.538
Wheelchair, No. (%)	18 (0.0%)	6 (0.0%)	P=0.011
<u>Clinical Conditions</u>			
ESRD, (%)	0.6%	0.6%	P<0.001
Abnormal Gait, (%)	5.2%	6.5%	P<0.001
Orthostatic Hypotension, (%)	0.8%	0.8%	P<0.001
Sarcopenia, (%)	0.7%	0.3%	P<0.001
Weight Loss, (%)	1.9%	1.7%	P<0.001
Weight Gain, (%)	0.3%	0.3%	P=0.982
Underweight, (%)	0.0%	0.1%	P<0.001

Overweight, (%)	0.2%	0.5%	P<0.001
Parkinson, (%)	1.1%	1.2%	P<0.001
Incontinence, (%)	3.6%	3.7%	P<0.001
Dizziness Vertigo, (%)	6.7%	6.6%	P<0.001
Cognitive Impairment, (%)	0.9%	1.2%	P<0.001
Restless Leg Syndrome, (%)	0.6%	0.9%	P<0.001
Movement Disorders, (%)	1.0%	1.6%	P<0.001
Melanoma, (%)	0.9%	2.0%	P<0.001
Bladder Cancer, (%)	1.0%	1.0%	P=0.546
Kidney Cancer, (%)	0.5%	0.5%	P<0.001
Pancreatic Cancer, (%)	0.1%	0.1%	P<0.001
Other Cancer, (%)	10.2%	9.3%	P<0.001
Alzheimer's Disease, (%)	3.3%	2.9%	P<0.001
Alzheimer's Disease & Related Disorders or Senile Dementia, (%)	7.7%	7.8%	P=0.035
Acute Myocardial Infarction, (%)	0.7%	0.7%	P=0.006
Anemia, (%)	20.6%	19.4%	P<0.001
Asthma, (%)	3.9%	5.0%	P<0.001
Atrial Fibrillation, (%)	7.8%	8.1%	P<0.001
Breast Cancer, (%)	3.0%	3.2%	P<0.001
Colorectal Cancer, (%)	1.2%	1.1%	P<0.001
Endometrial Cancer, (%)	0.3%	0.3%	P<0.001
Lung Cancer, (%)	0.8%	0.8%	P<0.001
Prostate Cancer, (%)	3.4%	3.3%	P<0.001
Cataract, (%)	20.9%	19.5%	P<0.001
Heart Failure, (%)	12.7%	11.7%	P<0.001
Chronic Kidney Disease, (%)	12.8%	17.6%	P<0.001
Chronic Obstructive Pulmonary Disease, (%)	9.7%	9.8%	P<0.001

Depression, (%)	10.1%	12.3%	P<0.001
Diabetes, (%)	25.2%	25.3%	P=0.002
Glaucoma, (%)	10.7%	9.6%	P<0.001
Hip/Pelvic Fracture, (%)	0.6%	0.6%	P<0.001
Hyperlipidemia, (%)	45.9%	46.1%	P<0.001
Benign Prostatic Hyperplasia, (%)	6.2%	7.0%	P<0.001
Hypertension, (%)	55.3%	55.5%	P<0.001
Hypothyroidism, (%)	13.4%	14.7%	P<0.001
Ischemic Heart Disease, (%)	28.4%	26.2%	P<0.001
Osteoporosis, (%)	6.6%	6.2%	P<0.001
Rheumatoid Arthritis / Osteoarthritis, (%)	28.0%	30.3%	P<0.001
Stroke / Transient Ischemic Attack, (%)	3.1%	3.1%	P=0.005
ADHD & Other Conduct Disorders, (%)	0.2%	0.3%	P<0.001
Anxiety Disorders, (%)	7.1%	10.8%	P<0.001
Autism Spectrum Disorders, (%)	0.0%	0.0%	P<0.001
Bipolar Disorder, (%)	0.9%	1.2%	P<0.001
Traumatic Brain Injury & Nonpsychotic Mental Disorders due to Brain Damage, (%)	0.2%	0.3%	P<0.001
Cerebral Palsy, (%)	0.1%	0.1%	P<0.001
Cystic Fibrosis & other Metabolic Developmental Disorders, (%)	0.4%	0.5%	P<0.001
Depression, (%)	9.3%	11.3%	P<0.001
Epilepsy, (%)	1.1%	1.3%	P<0.001
Chronic Pain Fatigue & Fibromyalgia, (%)	7.5%	12.6%	P<0.001
Deafness & Hearing Impairment, (%)	3.8%	4.9%	P<0.001
Viral Hepatitis (General), (%)	0.5%	0.7%	P<0.001
HIV/AIDS, (%)	0.1%	0.1%	P<0.001
Intellectual Disabilities & Related Conditions, (%)	0.2%	0.2%	P<0.001

Learning Disabilities, (%)	0.0%	0.1%	P<0.001
Leukemias & Lymphomas, (%)	1.2%	1.4%	P<0.001
Liver Disease Cirrhosis & Other Liver Cond (Excl Hepatitis), (%)	2.3%	3.0%	P<0.001
Migraine & Other Chronic Headache, (%)	1.0%	1.7%	P<0.001
Mobility Impairments, (%)	1.5%	1.6%	P<0.001
Multiple Sclerosis & Transverse Myelitis, (%)	0.2%	0.3%	P<0.001
Muscular Dystrophy, (%)	0.0%	0.0%	P=0.014
Obesity, (%)	5.7%	11.4%	P<0.001
Other Developmental Delays, (%)	0.0%	0.0%	P<0.001
Personality Disorders, (%)	0.1%	0.5%	P<0.001
Post-Traumatic Stress Disorder, (%)	0.2%	0.4%	P<0.001
Peripheral Vascular Disease, (%)	10.0%	10.0%	P<0.001
Schizophrenia, (%)	0.4%	0.4%	P<0.001
Schizophrenia & Other Psychotic Disorders, (%)	1.4%	1.3%	P<0.001
Spina Bifida & Other Congenital Anomalies Nervous Sys, (%)	0.1%	0.1%	P<0.001
Spinal Cord Injury, (%)	0.1%	0.3%	P<0.001
Tobacco Use Disorders, (%)	4.2%	5.3%	P<0.001
Pressure Ulcers & Chronic Ulcers, (%)	3.2%	3.1%	P<0.001
Blindness & Visual Impairment, (%)	0.7%	0.5%	P<0.001
Number of Chronic Conditions (based on 60 CCW variables), mean (SD)	4.45 (3.57)	4.83 (3.82)	P<0.001
<u>Screenings</u>			
Fall Risk Screening, (%)	3.0%	8.1%	P<0.001
Osteoporosis Screening, (%)	7.8%	8.2%	P<0.001
Fall in the Previous Calendar Year (ECO Method), (%)	4.1%	4.3%	P<0.001
Fall in the Previous Calendar Year (ECDC Method), (%)	13.5%	9.8%	P<0.001

Fall in the Previous Calendar Year (AUR Method), (%)	5.6%	5.2%	P<0.001
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Event Study Tables

csdid_event_NPI_fall_ecdc_flag_er_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0008	0.0008	0.9713	0.3314	-0.0008	0.0024
Post_Avg	0.0015	0.0020	0.7224	0.4701	-0.0025	0.0054
Tm3	0.0023	0.0022	1.0625	0.2880	-0.0020	0.0066
Tm2	-0.0012	0.0020	-0.5750	0.5653	-0.0052	0.0028
Tm1	0.0013	0.0020	0.6261	0.5312	-0.0027	0.0052
Tm0	0.0025	0.0016	1.5287	0.1263	-0.0007	0.0057
Tp1	0.0012	0.0022	0.5341	0.5933	-0.0031	0.0054
Tp2	0.0022	0.0025	0.8981	0.3692	-0.0026	0.0071
Tp3	0.0010	0.0030	0.3493	0.7269	-0.0048	0.0069
Tp4	-0.0007	0.0030	-0.2527	0.8005	-0.0066	0.0051
Tp5	-0.0001	0.0043	-0.0302	0.9759	-0.0086	0.0084
Tp6	0.0042	0.0070	0.6039	0.5459	-0.0095	0.0179

csdid_event_NPI_fall_ecdc_flag_er_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0012	0.0009	-1.2825	0.1997	-0.0030	0.0006
Post_Avg	0.0022	0.0026	0.8139	0.4157	-0.0030	0.0073
Tm3	0.0004	0.0026	0.1527	0.8786	-0.0046	0.0054
Tm2	-0.0035	0.0024	-1.4832	0.1380	-0.0081	0.0011
Tm1	-0.0005	0.0022	-0.2278	0.8198	-0.0048	0.0038
Tm0	0.0020	0.0017	1.1555	0.2479	-0.0014	0.0054
Tp1	0.0005	0.0024	0.1947	0.8456	-0.0042	0.0051
Tp2	0.0007	0.0029	0.2231	0.8235	-0.0051	0.0064
Tp3	-0.0014	0.0036	-0.3829	0.7018	-0.0084	0.0056
Tp4	0.0038	0.0036	1.0546	0.2916	-0.0033	0.0109
Tp5	0.0043	0.0058	0.7342	0.4629	-0.0072	0.0158
Tp6	0.0052	0.0121	0.4316	0.6661	-0.0184	0.0289

csdid_event_NPI_fall_ecdc_flag_er_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0013	0.0015	0.8847	0.3763	-0.0016	0.0042
Post_Avg	0.0019	0.0033	0.5714	0.5677	-0.0045	0.0082
Tm3	0.0027	0.0039	0.7059	0.4802	-0.0048	0.0103
Tm2	-0.0015	0.0036	-0.4275	0.6690	-0.0086	0.0055
Tm1	0.0028	0.0036	0.7738	0.4390	-0.0043	0.0098
Tm0	0.0023	0.0029	0.7847	0.4326	-0.0034	0.0080
Tp1	-0.0032	0.0039	-0.8142	0.4155	-0.0109	0.0045
Tp2	0.0008	0.0045	0.1722	0.8633	-0.0080	0.0096
Tp3	-0.0015	0.0051	-0.2906	0.7714	-0.0114	0.0084
Tp4	0.0001	0.0048	0.0311	0.9752	-0.0092	0.0095
Tp5	-0.0012	0.0067	-0.1735	0.8623	-0.0144	0.0120
Tp6	0.0157	0.0095	1.6432	0.1003	-0.0030	0.0343

csdid_event_NPI_fall_ecdc_flag_er_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0109	0.0042	2.5697	0.0102	0.0026	0.0192
Post_Avg	0.0055	0.0074	0.7458	0.4558	-0.0090	0.0201
Tm3	0.0171	0.0093	1.8497	0.0644	-0.0010	0.0353
Tm2	0.0020	0.0079	0.2535	0.7999	-0.0134	0.0174
Tm1	0.0135	0.0100	1.3583	0.1744	-0.0060	0.0331
Tm0	0.0092	0.0071	1.2884	0.1976	-0.0048	0.0232
Tp1	-0.0028	0.0086	-0.3213	0.7480	-0.0195	0.0140
Tp2	0.0193	0.0096	2.0003	0.0455	0.0004	0.0382
Tp3	-0.0100	0.0115	-0.8693	0.3847	-0.0326	0.0126
Tp4	-0.0011	0.0119	-0.0910	0.9275	-0.0245	0.0223
Tp5	0.0046	0.0133	0.3461	0.7293	-0.0215	0.0307
Tp6	0.0195	0.0209	0.9358	0.3494	-0.0214	0.0604

csdid_event_NPI_fall_ecdc_flag_er_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0008	0.0012	0.6933	0.4881	-0.0015	0.0031
Post_Avg	0.0008	0.0028	0.2800	0.7794	-0.0047	0.0063
Tm3	0.0036	0.0031	1.1692	0.2423	-0.0024	0.0096
Tm2	-0.0013	0.0029	-0.4367	0.6623	-0.0069	0.0044
Tm1	0.0001	0.0028	0.0278	0.9778	-0.0054	0.0056
Tm0	0.0026	0.0023	1.1543	0.2484	-0.0018	0.0071
Tp1	0.0009	0.0030	0.3164	0.7517	-0.0049	0.0068
Tp2	0.0018	0.0034	0.5356	0.5922	-0.0048	0.0084
Tp3	0.0006	0.0040	0.1629	0.8706	-0.0071	0.0084
Tp4	-0.0035	0.0040	-0.8655	0.3868	-0.0114	0.0044
Tp5	-0.0023	0.0061	-0.3797	0.7041	-0.0142	0.0096

Tp6	0.0052	0.0096	0.5437	0.5866	-0.0137	0.0241
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csdid_event_NPI_fall_ecdc_flag_er_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0006	0.0011	0.5656	0.5717	-0.0016	0.0029
Post_Avg	0.0025	0.0030	0.8383	0.4019	-0.0034	0.0085
Tm3	0.0005	0.0030	0.1773	0.8593	-0.0053	0.0064
Tm2	-0.0004	0.0027	-0.1569	0.8753	-0.0058	0.0049
Tm1	0.0018	0.0027	0.6733	0.5007	-0.0035	0.0072
Tm0	0.0032	0.0022	1.4582	0.1448	-0.0011	0.0076
Tp1	0.0024	0.0029	0.8140	0.4157	-0.0033	0.0081
Tp2	0.0028	0.0037	0.7623	0.4459	-0.0045	0.0102
Tp3	0.0009	0.0041	0.2060	0.8368	-0.0073	0.0090
Tp4	0.0039	0.0049	0.8062	0.4201	-0.0056	0.0135
Tp5	-0.0009	0.0090	-0.0950	0.9243	-0.0184	0.0167
Tp6	0.0054	0.0099	0.5463	0.5849	-0.0140	0.0249

csdid_event_NPI_fall_ecdc_flag_er

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0009	0.0008	1.1334	0.2570	-0.0007	0.0025
Post_Avg	0.0015	0.0021	0.7533	0.4513	-0.0025	0.0056
Tm3	0.0026	0.0022	1.2236	0.2211	-0.0016	0.0069
Tm2	-0.0012	0.0020	-0.5980	0.5498	-0.0052	0.0028
Tm1	0.0013	0.0020	0.6740	0.5003	-0.0026	0.0053
Tm0	0.0025	0.0016	1.5128	0.1303	-0.0007	0.0057
Tp1	0.0009	0.0021	0.4412	0.6590	-0.0033	0.0052
Tp2	0.0015	0.0025	0.5849	0.5586	-0.0034	0.0064
Tp3	0.0007	0.0029	0.2462	0.8055	-0.0049	0.0064
Tp4	-0.0006	0.0030	-0.1996	0.8418	-0.0065	0.0053
Tp5	-0.0008	0.0046	-0.1668	0.8675	-0.0098	0.0082
Tp6	0.0066	0.0073	0.9022	0.3669	-0.0077	0.0209

csdid_event_NPI_fall_ecdc_flag_er_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0004	0.0008	0.4338	0.6644	-0.0013	0.0020
Post_Avg	0.0004	0.0023	0.1908	0.8487	-0.0040	0.0048
Tm3	0.0009	0.0024	0.3696	0.7117	-0.0038	0.0055
Tm2	-0.0007	0.0021	-0.3351	0.7376	-0.0048	0.0034
Tm1	0.0009	0.0020	0.4513	0.6517	-0.0031	0.0049
Tm0	0.0004	0.0015	0.2285	0.8192	-0.0027	0.0034
Tp1	-0.0004	0.0019	-0.2076	0.8356	-0.0042	0.0034
Tp2	0.0016	0.0022	0.7629	0.4455	-0.0026	0.0059
Tp3	0.0015	0.0022	0.6821	0.4951	-0.0028	0.0059
Tp4	-0.0000	0.0033	-0.0023	0.9982	-0.0065	0.0065

Tp5	0.0017	0.0066	0.2518	0.8012	-0.0113	0.0146
Tp6	-0.0018	0.0100	-0.1763	0.8601	-0.0213	0.0178

csdid_event_NPI_fall_ecdc_flag_er_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0013	0.0011	1.2091	0.2266	-0.0008	0.0034
Post_Avg	0.0005	0.0023	0.2149	0.8298	-0.0040	0.0050
Tm3	0.0029	0.0030	0.9627	0.3357	-0.0030	0.0087
Tm2	-0.0005	0.0028	-0.1723	0.8632	-0.0059	0.0049
Tm1	0.0016	0.0027	0.5853	0.5584	-0.0036	0.0067
Tm0	0.0017	0.0020	0.8429	0.3993	-0.0022	0.0056
Tp1	-0.0002	0.0025	-0.0642	0.9488	-0.0051	0.0047
Tp2	0.0015	0.0027	0.5504	0.5821	-0.0038	0.0067
Tp3	-0.0017	0.0027	-0.6291	0.5293	-0.0070	0.0036
Tp4	-0.0028	0.0032	-0.8719	0.3833	-0.0091	0.0035
Tp5	-0.0059	0.0045	-1.2983	0.1942	-0.0148	0.0030
Tp6	0.0109	0.0086	1.2689	0.2045	-0.0059	0.0276

csdid_event_NPI_fall_ecdc_flag_er_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0024	0.0022	1.0756	0.2821	-0.0020	0.0068
Post_Avg	0.0065	0.0041	1.5584	0.1191	-0.0017	0.0146
Tm3	0.0060	0.0063	0.9573	0.3384	-0.0063	0.0183
Tm2	-0.0030	0.0055	-0.5411	0.5885	-0.0138	0.0078
Tm1	0.0042	0.0053	0.7896	0.4298	-0.0062	0.0145
Tm0	0.0102	0.0040	2.5814	0.0098	0.0025	0.0180
Tp1	0.0080	0.0051	1.5850	0.1130	-0.0019	0.0180
Tp2	0.0077	0.0052	1.4778	0.1395	-0.0025	0.0180
Tp3	0.0043	0.0053	0.8088	0.4186	-0.0061	0.0147
Tp4	0.0026	0.0058	0.4574	0.6474	-0.0086	0.0139
Tp5	0.0081	0.0082	0.9839	0.3252	-0.0080	0.0242
Tp6	0.0042	0.0119	0.3530	0.7241	-0.0191	0.0275

csdid_event_NPI_fall_ecdc_flag_er_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0004	0.0018	-0.2014	0.8404	-0.0039	0.0031
Post_Avg	0.0032	0.0049	0.6521	0.5143	-0.0064	0.0127
Tm3	-0.0012	0.0046	-0.2552	0.7985	-0.0101	0.0078
Tm2	-0.0009	0.0043	-0.2078	0.8354	-0.0092	0.0075
Tm1	0.0010	0.0041	0.2344	0.8147	-0.0071	0.0091
Tm0	0.0019	0.0034	0.5534	0.5800	-0.0048	0.0087
Tp1	0.0003	0.0045	0.0703	0.9439	-0.0086	0.0092
Tp2	-0.0021	0.0051	-0.4243	0.6713	-0.0121	0.0078
Tp3	-0.0008	0.0057	-0.1366	0.8914	-0.0120	0.0104

Tp4	0.0024	0.0064	0.3698	0.7115	-0.0101	0.0148
Tp5	-0.0029	0.0093	-0.3112	0.7557	-0.0211	0.0153
Tp6	0.0235	0.0230	1.0193	0.3081	-0.0217	0.0686

csdid_event_NPI_fall_ecdc_flag_er_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0020	0.0014	1.4830	0.1381	-0.0006	0.0046
Post_Avg	-0.0010	0.0037	-0.2658	0.7904	-0.0082	0.0062
Tm3	0.0080	0.0037	2.1779	0.0294	0.0008	0.0152
Tm2	-0.0023	0.0035	-0.6560	0.5119	-0.0092	0.0046
Tm1	0.0003	0.0034	0.0858	0.9317	-0.0063	0.0069
Tm0	0.0040	0.0026	1.5323	0.1255	-0.0011	0.0092
Tp1	0.0030	0.0034	0.8806	0.3785	-0.0037	0.0096
Tp2	0.0066	0.0039	1.6876	0.0915	-0.0011	0.0142
Tp3	0.0040	0.0045	0.9020	0.3671	-0.0047	0.0128
Tp4	-0.0035	0.0052	-0.6687	0.5037	-0.0137	0.0067
Tp5	-0.0088	0.0081	-1.0842	0.2783	-0.0248	0.0071
Tp6	-0.0122	0.0148	-0.8248	0.4095	-0.0411	0.0167

csdid_event_NPI_fall_ecdc_flag_er_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0013	-0.0465	0.9629	-0.0026	0.0025
Post_Avg	0.0023	0.0029	0.7972	0.4253	-0.0033	0.0079
Tm3	-0.0015	0.0032	-0.4719	0.6370	-0.0078	0.0047
Tm2	-0.0019	0.0031	-0.6030	0.5465	-0.0079	0.0042
Tm1	0.0032	0.0031	1.0165	0.3094	-0.0030	0.0094
Tm0	0.0024	0.0025	0.9517	0.3413	-0.0025	0.0073
Tp1	0.0026	0.0032	0.8145	0.4154	-0.0037	0.0089
Tp2	0.0038	0.0036	1.0701	0.2846	-0.0032	0.0108
Tp3	0.0040	0.0049	0.8076	0.4193	-0.0057	0.0136
Tp4	-0.0002	0.0044	-0.0461	0.9632	-0.0087	0.0083
Tp5	0.0051	0.0065	0.7779	0.4366	-0.0077	0.0179
Tp6	-0.0017	0.0084	-0.2068	0.8361	-0.0182	0.0147

csdid_event_NPI_fall_ecdc_flag_hha_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0000	0.0003	0.1428	0.8864	-0.0005	0.0006
Post_Avg	-0.0004	0.0007	-0.5142	0.6071	-0.0017	0.0010
Tm3	-0.0005	0.0007	-0.7114	0.4768	-0.0018	0.0009
Tm2	-0.0001	0.0007	-0.0787	0.9373	-0.0014	0.0013
Tm1	0.0007	0.0007	0.8980	0.3692	-0.0008	0.0021
Tm0	0.0003	0.0006	0.4120	0.6803	-0.0010	0.0015
Tp1	0.0003	0.0007	0.4482	0.6540	-0.0011	0.0018
Tp2	0.0006	0.0007	0.8540	0.3931	-0.0008	0.0020

Tp3	0.0008	0.0009	0.8935	0.3716	-0.0009	0.0025
Tp4	-0.0012	0.0011	-1.0414	0.2977	-0.0034	0.0010
Tp5	-0.0029	0.0017	-1.6779	0.0934	-0.0063	0.0005
Tp6	-0.0004	0.0014	-0.2783	0.7808	-0.0032	0.0024

csdid_event_NPI_fall_ecdc_flag_hha_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0003	0.0003	-1.0073	0.3138	-0.0008	0.0002
Post_Avg	0.0001	0.0006	0.1658	0.8683	-0.0010	0.0012
Tm3	-0.0009	0.0007	-1.3039	0.1923	-0.0022	0.0004
Tm2	0.0002	0.0006	0.4019	0.6878	-0.0009	0.0013
Tm1	-0.0001	0.0006	-0.1583	0.8742	-0.0014	0.0012
Tm0	0.0004	0.0005	0.7067	0.4798	-0.0007	0.0014
Tp1	0.0007	0.0006	1.0686	0.2852	-0.0005	0.0018
Tp2	0.0010	0.0005	1.8975	0.0578	-0.0000	0.0021
Tp3	0.0010	0.0006	1.7062	0.0880	-0.0001	0.0021
Tp4	-0.0005	0.0009	-0.5841	0.5591	-0.0022	0.0012
Tp5	-0.0025	0.0016	-1.5221	0.1280	-0.0056	0.0007
Tp6	0.0006	0.0007	0.7567	0.4492	-0.0009	0.0020

csdid_event_NPI_fall_ecdc_flag_hha_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0000	0.0005	0.0875	0.9303	-0.0009	0.0010
Post_Avg	0.0001	0.0011	0.0789	0.9371	-0.0020	0.0022
Tm3	0.0015	0.0013	1.1103	0.2669	-0.0011	0.0040
Tm2	-0.0000	0.0013	-0.0025	0.9980	-0.0025	0.0025
Tm1	-0.0013	0.0012	-1.0615	0.2885	-0.0038	0.0011
Tm0	0.0005	0.0009	0.5012	0.6162	-0.0014	0.0023
Tp1	0.0008	0.0012	0.6562	0.5117	-0.0016	0.0032
Tp2	0.0007	0.0012	0.5698	0.5688	-0.0017	0.0031
Tp3	0.0013	0.0014	0.9570	0.3386	-0.0014	0.0040
Tp4	-0.0012	0.0017	-0.7173	0.4732	-0.0044	0.0021
Tp5	0.0008	0.0019	0.4397	0.6602	-0.0029	0.0045
Tp6	-0.0023	0.0027	-0.8558	0.3921	-0.0077	0.0030

csdid_event_NPI_fall_ecdc_flag_hha_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0017	0.0020	0.8322	0.4053	-0.0023	0.0056
Post_Avg	-0.0039	0.0036	-1.0729	0.2833	-0.0110	0.0032
Tm3	-0.0036	0.0038	-0.9648	0.3346	-0.0110	0.0037
Tm2	-0.0026	0.0030	-0.8706	0.3840	-0.0086	0.0033
Tm1	0.0113	0.0050	2.2389	0.0252	0.0014	0.0212
Tm0	-0.0035	0.0037	-0.9436	0.3454	-0.0109	0.0038
Tp1	-0.0033	0.0042	-0.7835	0.4333	-0.0114	0.0049

Tp2	-0.0020	0.0040	-0.5061	0.6128	-0.0099	0.0058
Tp3	-0.0067	0.0059	-1.1470	0.2514	-0.0183	0.0048
Tp4	-0.0046	0.0063	-0.7278	0.4667	-0.0169	0.0077
Tp5	-0.0106	0.0065	-1.6356	0.1019	-0.0234	0.0021
Tp6	0.0034	0.0039	0.8639	0.3877	-0.0043	0.0111

csdid_event_NPI_fall_ecdc_flag_hha_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0000	0.0004	0.0316	0.9748	-0.0008	0.0008
Post_Avg	-0.0006	0.0010	-0.5828	0.5600	-0.0026	0.0014
Tm3	-0.0005	0.0010	-0.5116	0.6089	-0.0025	0.0015
Tm2	0.0002	0.0010	0.1558	0.8762	-0.0019	0.0022
Tm1	0.0004	0.0011	0.3545	0.7229	-0.0018	0.0026
Tm0	0.0004	0.0009	0.4832	0.6289	-0.0013	0.0022
Tp1	0.0005	0.0011	0.4872	0.6261	-0.0016	0.0027
Tp2	0.0004	0.0011	0.4155	0.6778	-0.0017	0.0026
Tp3	0.0006	0.0013	0.4277	0.6688	-0.0020	0.0032
Tp4	-0.0017	0.0016	-1.0477	0.2948	-0.0048	0.0015
Tp5	-0.0033	0.0023	-1.4168	0.1565	-0.0078	0.0013
Tp6	-0.0012	0.0021	-0.5725	0.5670	-0.0054	0.0030

csdid_event_NPI_fall_ecdc_flag_hha_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0002	0.0003	-0.4631	0.6433	-0.0008	0.0005
Post_Avg	0.0009	0.0007	1.1694	0.2422	-0.0006	0.0023
Tm3	-0.0005	0.0008	-0.5665	0.5711	-0.0021	0.0012
Tm2	-0.0005	0.0007	-0.6235	0.5330	-0.0019	0.0010
Tm1	0.0005	0.0008	0.5905	0.5548	-0.0011	0.0021
Tm0	0.0002	0.0007	0.2830	0.7772	-0.0012	0.0016
Tp1	0.0000	0.0010	0.0301	0.9760	-0.0019	0.0019
Tp2	0.0009	0.0009	1.0131	0.3110	-0.0009	0.0027
Tp3	0.0014	0.0009	1.5857	0.1128	-0.0003	0.0031
Tp4	0.0014	0.0009	1.6731	0.0943	-0.0002	0.0031
Tp5	0.0018	0.0017	1.0576	0.2902	-0.0015	0.0050
Tp6	0.0002	0.0018	0.1344	0.8931	-0.0033	0.0037

csdid_event_NPI_fall_ecdc_flag_hha

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0001	0.0003	0.3127	0.7545	-0.0005	0.0006
Post_Avg	-0.0003	0.0007	-0.4381	0.6613	-0.0016	0.0010
Tm3	-0.0003	0.0007	-0.4802	0.6311	-0.0017	0.0010
Tm2	-0.0001	0.0007	-0.1120	0.9108	-0.0014	0.0012
Tm1	0.0007	0.0007	0.9073	0.3642	-0.0008	0.0021
Tm0	0.0002	0.0006	0.3925	0.6947	-0.0010	0.0014

Tp1	0.0003	0.0007	0.4357	0.6630	-0.0011	0.0017
Tp2	0.0005	0.0007	0.7287	0.4662	-0.0008	0.0018
Tp3	0.0009	0.0007	1.2287	0.2192	-0.0005	0.0024
Tp4	-0.0010	0.0011	-0.9022	0.3670	-0.0032	0.0012
Tp5	-0.0029	0.0017	-1.6950	0.0901	-0.0063	0.0005
Tp6	-0.0001	0.0013	-0.0933	0.9257	-0.0027	0.0025

csdid_event_NPI_fall_ecdc_flag_hha_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0002	-0.6550	0.5125	-0.0004	0.0002
Post_Avg	-0.0001	0.0004	-0.2437	0.8075	-0.0009	0.0007
Tm3	-0.0007	0.0003	-2.6920	0.0071	-0.0012	-0.0002
Tm2	0.0005	0.0003	1.6085	0.1077	-0.0001	0.0011
Tm1	-0.0001	0.0005	-0.2623	0.7931	-0.0010	0.0008
Tm0	0.0001	0.0004	0.3164	0.7517	-0.0006	0.0009
Tp1	-0.0002	0.0006	-0.2628	0.7927	-0.0014	0.0011
Tp2	-0.0003	0.0007	-0.4126	0.6799	-0.0016	0.0010
Tp3	-0.0004	0.0007	-0.5950	0.5518	-0.0017	0.0009
Tp4	0.0003	0.0003	1.1085	0.2676	-0.0002	0.0008
Tp5	0.0002	0.0005	0.3696	0.7117	-0.0007	0.0011
Tp6	-0.0005	0.0009	-0.4982	0.6183	-0.0023	0.0014

csdid_event_NPI_fall_ecdc_flag_hha_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0003	-0.3833	0.7015	-0.0007	0.0005
Post_Avg	0.0007	0.0005	1.3374	0.1811	-0.0003	0.0017
Tm3	0.0002	0.0009	0.1906	0.8489	-0.0015	0.0018
Tm2	-0.0005	0.0008	-0.6609	0.5087	-0.0020	0.0010
Tm1	0.0000	0.0007	0.0034	0.9973	-0.0013	0.0013
Tm0	0.0010	0.0005	1.9571	0.0503	-0.0000	0.0019
Tp1	0.0007	0.0006	1.1699	0.2421	-0.0005	0.0019
Tp2	0.0005	0.0006	0.7931	0.4277	-0.0007	0.0017
Tp3	0.0007	0.0006	1.1747	0.2401	-0.0005	0.0019
Tp4	0.0008	0.0006	1.4054	0.1599	-0.0003	0.0019
Tp5	0.0005	0.0010	0.5215	0.6020	-0.0015	0.0026
Tp6	0.0005	0.0010	0.4782	0.6325	-0.0015	0.0025

csdid_event_NPI_fall_ecdc_flag_hha_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0010	0.0009	1.1511	0.2497	-0.0007	0.0028
Post_Avg	-0.0006	0.0016	-0.3777	0.7056	-0.0037	0.0025
Tm3	-0.0000	0.0024	-0.0011	0.9991	-0.0047	0.0047
Tm2	0.0003	0.0021	0.1400	0.8887	-0.0038	0.0044
Tm1	0.0028	0.0022	1.2616	0.2071	-0.0015	0.0071

Tm0	0.0002	0.0016	0.1008	0.9197	-0.0030	0.0034
Tp1	0.0008	0.0019	0.4538	0.6499	-0.0028	0.0045
Tp2	0.0006	0.0019	0.3032	0.7617	-0.0031	0.0042
Tp3	0.0007	0.0019	0.3857	0.6997	-0.0030	0.0044
Tp4	-0.0013	0.0021	-0.6402	0.5221	-0.0054	0.0028
Tp5	-0.0042	0.0030	-1.4327	0.1519	-0.0100	0.0016
Tp6	-0.0009	0.0031	-0.2885	0.7729	-0.0070	0.0052

csdid_event_NPI_fall_ecdc_flag_hha_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0006	-0.0994	0.9208	-0.0012	0.0011
Post_Avg	-0.0016	0.0015	-1.0429	0.2970	-0.0046	0.0014
Tm3	0.0008	0.0016	0.5447	0.5860	-0.0022	0.0039
Tm2	-0.0017	0.0013	-1.3715	0.1702	-0.0042	0.0007
Tm1	0.0007	0.0015	0.4954	0.6203	-0.0021	0.0036
Tm0	-0.0008	0.0013	-0.6194	0.5356	-0.0033	0.0017
Tp1	0.0009	0.0012	0.7340	0.4629	-0.0015	0.0033
Tp2	0.0010	0.0013	0.7840	0.4330	-0.0016	0.0036
Tp3	0.0011	0.0016	0.6904	0.4900	-0.0020	0.0041
Tp4	-0.0020	0.0022	-0.9295	0.3526	-0.0063	0.0022
Tp5	-0.0077	0.0041	-1.8999	0.0574	-0.0157	0.0002
Tp6	-0.0038	0.0040	-0.9484	0.3429	-0.0116	0.0040

csdid_event_NPI_fall_ecdc_flag_hha_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0005	-0.2367	0.8129	-0.0011	0.0008
Post_Avg	-0.0004	0.0012	-0.3364	0.7366	-0.0027	0.0019
Tm3	-0.0001	0.0012	-0.0676	0.9461	-0.0025	0.0023
Tm2	-0.0008	0.0013	-0.6253	0.5318	-0.0033	0.0017
Tm1	0.0005	0.0012	0.4370	0.6621	-0.0019	0.0029
Tm0	0.0003	0.0010	0.3162	0.7519	-0.0016	0.0022
Tp1	0.0003	0.0012	0.2550	0.7987	-0.0020	0.0026
Tp2	0.0006	0.0013	0.4317	0.6660	-0.0020	0.0031
Tp3	-0.0002	0.0016	-0.0957	0.9238	-0.0033	0.0029
Tp4	0.0007	0.0016	0.4564	0.6481	-0.0024	0.0039
Tp5	-0.0034	0.0027	-1.2654	0.2057	-0.0087	0.0019
Tp6	-0.0011	0.0028	-0.3894	0.6970	-0.0067	0.0045

csdid_event_NPI_fall_ecdc_flag_hha_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0003	0.0004	0.6503	0.5155	-0.0006	0.0011
Post_Avg	0.0005	0.0009	0.4971	0.6191	-0.0013	0.0022
Tm3	-0.0018	0.0008	-2.1260	0.0335	-0.0035	-0.0001
Tm2	0.0011	0.0009	1.2463	0.2126	-0.0006	0.0029

Tm1	0.0015	0.0012	1.2669	0.2052	-0.0008	0.0038
Tm0	0.0006	0.0009	0.6444	0.5193	-0.0012	0.0024
Tp1	0.0002	0.0011	0.1833	0.8546	-0.0020	0.0025
Tp2	0.0008	0.0010	0.8235	0.4102	-0.0011	0.0028
Tp3	0.0016	0.0011	1.4879	0.1368	-0.0005	0.0038
Tp4	-0.0014	0.0017	-0.8212	0.4115	-0.0046	0.0019
Tp5	-0.0009	0.0022	-0.4235	0.6720	-0.0052	0.0034
Tp6	0.0022	0.0013	1.6432	0.1003	-0.0004	0.0048

csdid_event_NPI_fall_ecdc_flag_inpat_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0014	0.0006	2.3401	0.0193	0.0002	0.0025
Post_Avg	0.0034	0.0015	2.2931	0.0218	0.0005	0.0062
Tm3	0.0013	0.0015	0.9057	0.3651	-0.0016	0.0042
Tm2	0.0017	0.0014	1.2020	0.2294	-0.0011	0.0046
Tm1	0.0010	0.0015	0.6773	0.4982	-0.0019	0.0039
Tm0	0.0050	0.0012	4.2583	0.0000	0.0027	0.0074
Tp1	0.0058	0.0016	3.7324	0.0002	0.0028	0.0089
Tp2	0.0058	0.0017	3.4120	0.0006	0.0025	0.0092
Tp3	0.0036	0.0020	1.7849	0.0743	-0.0004	0.0076
Tp4	-0.0000	0.0021	-0.0207	0.9835	-0.0042	0.0041
Tp5	-0.0013	0.0034	-0.3869	0.6989	-0.0079	0.0053
Tp6	0.0046	0.0046	0.9953	0.3196	-0.0044	0.0136

csdid_event_NPI_fall_ecdc_flag_inpat_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0008	0.0006	1.2632	0.2065	-0.0004	0.0020
Post_Avg	0.0033	0.0015	2.2681	0.0233	0.0004	0.0061
Tm3	0.0010	0.0016	0.6027	0.5467	-0.0022	0.0042
Tm2	0.0021	0.0016	1.3419	0.1796	-0.0010	0.0051
Tm1	-0.0007	0.0015	-0.4863	0.6267	-0.0037	0.0023
Tm0	0.0037	0.0011	3.3771	0.0007	0.0016	0.0059
Tp1	0.0019	0.0016	1.1691	0.2424	-0.0013	0.0050
Tp2	0.0033	0.0019	1.7367	0.0824	-0.0004	0.0071
Tp3	0.0024	0.0024	0.9961	0.3192	-0.0023	0.0070
Tp4	0.0033	0.0021	1.5679	0.1169	-0.0008	0.0073
Tp5	0.0005	0.0035	0.1357	0.8920	-0.0063	0.0073
Tp6	0.0080	0.0051	1.5781	0.1145	-0.0019	0.0179

csdid_event_NPI_fall_ecdc_flag_inpat_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0024	0.0010	2.2795	0.0226	0.0003	0.0044
Post_Avg	0.0052	0.0022	2.3105	0.0209	0.0008	0.0096
Tm3	0.0032	0.0026	1.2041	0.2286	-0.0020	0.0084

Tm2	0.0030	0.0026	1.1854	0.2359	-0.0020	0.0080
Tm1	0.0009	0.0026	0.3349	0.7377	-0.0042	0.0059
Tm0	0.0041	0.0020	2.0304	0.0423	0.0001	0.0080
TP1	0.0085	0.0026	3.3243	0.0009	0.0035	0.0135
TP2	0.0079	0.0027	2.9154	0.0036	0.0026	0.0132
TP3	0.0064	0.0031	2.0843	0.0371	0.0004	0.0125
TP4	0.0013	0.0032	0.3969	0.6914	-0.0050	0.0075
TP5	0.0053	0.0053	1.0164	0.3094	-0.0050	0.0157
TP6	0.0027	0.0062	0.4315	0.6661	-0.0095	0.0149

csdid_event_NPI_fall_ecdc_flag_inpat_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0055	0.0034	1.6067	0.1081	-0.0012	0.0121
Post_Avg	0.0008	0.0069	0.1134	0.9097	-0.0128	0.0143
Tm3	0.0001	0.0069	0.0160	0.9872	-0.0134	0.0136
Tm2	-0.0017	0.0061	-0.2818	0.7781	-0.0136	0.0102
Tm1	0.0180	0.0081	2.2159	0.0267	0.0021	0.0339
Tm0	0.0123	0.0058	2.1216	0.0339	0.0009	0.0236
TP1	0.0100	0.0073	1.3643	0.1725	-0.0043	0.0243
TP2	0.0021	0.0165	0.1246	0.9008	-0.0303	0.0344
TP3	-0.0058	0.0105	-0.5561	0.5782	-0.0264	0.0147
TP4	-0.0056	0.0108	-0.5156	0.6062	-0.0267	0.0156
TP5	-0.0109	0.0117	-0.9320	0.3513	-0.0338	0.0120
TP6	0.0035	0.0169	0.2088	0.8346	-0.0295	0.0366

csdid_event_NPI_fall_ecdc_flag_inpat_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0010	0.0008	1.1686	0.2426	-0.0006	0.0025
Post_Avg	0.0037	0.0020	1.8268	0.0677	-0.0003	0.0077
Tm3	0.0018	0.0021	0.8587	0.3905	-0.0023	0.0058
Tm2	0.0014	0.0021	0.6538	0.5132	-0.0027	0.0054
Tm1	-0.0003	0.0020	-0.1309	0.8959	-0.0043	0.0037
Tm0	0.0061	0.0016	3.8021	0.0001	0.0029	0.0092
TP1	0.0091	0.0020	4.5479	0.0000	0.0052	0.0130
TP2	0.0083	0.0022	3.8268	0.0001	0.0040	0.0125
TP3	0.0057	0.0025	2.2862	0.0222	0.0008	0.0106
TP4	-0.0019	0.0029	-0.6537	0.5133	-0.0076	0.0038
TP5	-0.0059	0.0047	-1.2429	0.2139	-0.0151	0.0034
TP6	0.0046	0.0067	0.6770	0.4984	-0.0086	0.0178

csdid_event_NPI_fall_ecdc_flag_inpat_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0016	0.0008	2.0963	0.0361	0.0001	0.0032
Post_Avg	0.0042	0.0021	2.0203	0.0434	0.0001	0.0083

Tm3	0.0007	0.0021	0.3603	0.7186	-0.0033	0.0048
Tm2	0.0027	0.0019	1.4430	0.1490	-0.0010	0.0064
Tm1	0.0014	0.0020	0.7413	0.4585	-0.0024	0.0053
Tm0	0.0043	0.0016	2.5852	0.0097	0.0010	0.0075
Tp1	0.0009	0.0025	0.3635	0.7162	-0.0039	0.0057
Tp2	0.0006	0.0031	0.1813	0.8561	-0.0055	0.0066
Tp3	-0.0013	0.0036	-0.3597	0.7191	-0.0083	0.0058
Tp4	0.0055	0.0035	1.5682	0.1168	-0.0014	0.0123
Tp5	0.0128	0.0056	2.2810	0.0225	0.0018	0.0237
Tp6	0.0067	0.0052	1.3048	0.1920	-0.0034	0.0168

csdid_event_NPI_fall_ecdc_flag_inpat

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0014	0.0006	2.4677	0.0136	0.0003	0.0026
Post_Avg	0.0034	0.0015	2.3187	0.0204	0.0005	0.0063
Tm3	0.0016	0.0015	1.0796	0.2803	-0.0013	0.0045
Tm2	0.0017	0.0014	1.1925	0.2331	-0.0011	0.0045
Tm1	0.0010	0.0015	0.6617	0.5082	-0.0019	0.0038
Tm0	0.0050	0.0012	4.2439	0.0000	0.0027	0.0073
Tp1	0.0057	0.0015	3.7084	0.0002	0.0027	0.0088
Tp2	0.0057	0.0017	3.4225	0.0006	0.0025	0.0090
Tp3	0.0038	0.0019	1.9872	0.0469	0.0001	0.0076
Tp4	-0.0005	0.0021	-0.2191	0.8265	-0.0046	0.0037
Tp5	-0.0003	0.0036	-0.0805	0.9358	-0.0073	0.0067
Tp6	0.0042	0.0047	0.9071	0.3643	-0.0049	0.0134

csdid_event_NPI_fall_ecdc_flag_inpat_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0000	0.0006	-0.0444	0.9646	-0.0011	0.0011
Post_Avg	0.0015	0.0012	1.2671	0.2051	-0.0008	0.0038
Tm3	-0.0006	0.0016	-0.3947	0.6931	-0.0039	0.0026
Tm2	0.0013	0.0014	0.8907	0.3731	-0.0015	0.0041
Tm1	-0.0007	0.0014	-0.5128	0.6081	-0.0034	0.0020
Tm0	0.0020	0.0010	2.0370	0.0417	0.0001	0.0040
Tp1	0.0015	0.0013	1.1282	0.2592	-0.0011	0.0040
Tp2	0.0006	0.0013	0.4622	0.6439	-0.0020	0.0032
Tp3	0.0017	0.0014	1.2489	0.2117	-0.0010	0.0044
Tp4	0.0026	0.0020	1.3431	0.1792	-0.0012	0.0065
Tp5	0.0002	0.0027	0.0827	0.9341	-0.0051	0.0055
Tp6	0.0017	0.0046	0.3758	0.7071	-0.0073	0.0107

csdid_event_NPI_fall_ecdc_flag_inpat_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0017	0.0007	2.2353	0.0254	0.0002	0.0031

Post_Avg	0.0028	0.0014	1.9454	0.0517	-0.0000	0.0055
Tm3	0.0027	0.0019	1.4117	0.1580	-0.0011	0.0066
Tm2	0.0016	0.0019	0.8572	0.3913	-0.0020	0.0052
Tm1	0.0007	0.0019	0.3546	0.7229	-0.0030	0.0043
Tm0	0.0036	0.0014	2.5377	0.0112	0.0008	0.0063
Tp1	0.0021	0.0019	1.1107	0.2667	-0.0016	0.0059
Tp2	0.0018	0.0020	0.8969	0.3698	-0.0021	0.0056
Tp3	-0.0003	0.0020	-0.1467	0.8834	-0.0042	0.0036
Tp4	0.0014	0.0018	0.7841	0.4330	-0.0021	0.0050
Tp5	0.0013	0.0028	0.4682	0.6396	-0.0041	0.0067
Tp6	0.0094	0.0042	2.2209	0.0264	0.0011	0.0177

csdid_event_NPI_fall_ecdc_flag_inpat_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0053	0.0016	3.2414	0.0012	0.0021	0.0085
Post_Avg	0.0091	0.0032	2.8767	0.0040	0.0029	0.0153
Tm3	0.0062	0.0044	1.4021	0.1609	-0.0025	0.0148
Tm2	0.0042	0.0040	1.0384	0.2991	-0.0037	0.0121
Tm1	0.0055	0.0040	1.3731	0.1697	-0.0023	0.0133
Tm0	0.0105	0.0030	3.5200	0.0004	0.0046	0.0163
Tp1	0.0162	0.0035	4.6111	0.0000	0.0093	0.0231
Tp2	0.0144	0.0036	4.0366	0.0001	0.0074	0.0214
Tp3	0.0096	0.0036	2.6544	0.0079	0.0025	0.0166
Tp4	0.0025	0.0046	0.5433	0.5869	-0.0065	0.0115
Tp5	-0.0011	0.0065	-0.1664	0.8679	-0.0137	0.0116
Tp6	0.0116	0.0094	1.2290	0.2191	-0.0069	0.0300

csdid_event_NPI_fall_ecdc_flag_inpat_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0024	0.0013	1.9064	0.0566	-0.0001	0.0049
Post_Avg	0.0024	0.0034	0.7197	0.4717	-0.0042	0.0091
Tm3	0.0038	0.0029	1.2960	0.1950	-0.0020	0.0096
Tm2	0.0026	0.0032	0.8196	0.4124	-0.0036	0.0088
Tm1	0.0008	0.0032	0.2484	0.8038	-0.0054	0.0070
Tm0	0.0055	0.0025	2.2389	0.0252	0.0007	0.0104
Tp1	0.0053	0.0032	1.6383	0.1014	-0.0010	0.0117
Tp2	0.0052	0.0035	1.5096	0.1311	-0.0016	0.0120
Tp3	0.0050	0.0040	1.2419	0.2143	-0.0029	0.0128
Tp4	0.0004	0.0045	0.0970	0.9227	-0.0084	0.0093
Tp5	-0.0005	0.0077	-0.0618	0.9507	-0.0156	0.0146
Tp6	-0.0039	0.0139	-0.2843	0.7762	-0.0312	0.0233

csdid_event_NPI_fall_ecdc_flag_inpat_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
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Pre_Avg	0.0018	0.0010	1.8245	0.0681	-0.0001	0.0036
Post_Avg	0.0024	0.0025	0.9423	0.3460	-0.0026	0.0073
Tm3	0.0014	0.0025	0.5698	0.5688	-0.0035	0.0064
Tm2	-0.0000	0.0023	-0.0158	0.9874	-0.0045	0.0044
Tm1	0.0038	0.0024	1.5820	0.1137	-0.0009	0.0086
Tm0	0.0060	0.0019	3.1860	0.0014	0.0023	0.0097
TP1	0.0064	0.0024	2.7116	0.0067	0.0018	0.0111
TP2	0.0066	0.0026	2.4888	0.0128	0.0014	0.0117
TP3	0.0043	0.0029	1.4804	0.1388	-0.0014	0.0100
TP4	-0.0017	0.0037	-0.4486	0.6537	-0.0090	0.0057
TP5	-0.0068	0.0065	-1.0327	0.3017	-0.0196	0.0061
TP6	0.0017	0.0094	0.1794	0.8577	-0.0168	0.0202

csdid_event_NPI_fall_ecdc_flag_inpat_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0002	0.0009	0.2839	0.7765	-0.0015	0.0019
Post_Avg	0.0037	0.0021	1.7181	0.0858	-0.0005	0.0078
Tm3	-0.0010	0.0021	-0.4921	0.6227	-0.0051	0.0031
Tm2	0.0033	0.0023	1.4487	0.1474	-0.0012	0.0078
Tm1	-0.0015	0.0022	-0.6967	0.4860	-0.0058	0.0028
Tm0	0.0054	0.0018	2.9785	0.0029	0.0018	0.0089
TP1	0.0056	0.0025	2.2285	0.0258	0.0007	0.0104
TP2	0.0049	0.0028	1.7908	0.0733	-0.0005	0.0104
TP3	0.0022	0.0034	0.6424	0.5206	-0.0044	0.0088
TP4	0.0034	0.0030	1.1527	0.2490	-0.0024	0.0093
TP5	0.0031	0.0046	0.6752	0.4995	-0.0058	0.0120
TP6	0.0011	0.0060	0.1830	0.8548	-0.0106	0.0128

csdid_event_NPI_fall_ecdc_flag_obstay_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0006	0.0003	2.3645	0.0181	0.0001	0.0011
Post_Avg	0.0004	0.0007	0.6515	0.5147	-0.0009	0.0018
Tm3	0.0013	0.0007	1.8253	0.0680	-0.0001	0.0026
Tm2	0.0001	0.0007	0.1139	0.9093	-0.0012	0.0014
Tm1	0.0004	0.0006	0.6743	0.5001	-0.0008	0.0017
Tm0	0.0002	0.0005	0.3043	0.7609	-0.0009	0.0012
TP1	0.0003	0.0007	0.4563	0.6482	-0.0011	0.0017
TP2	0.0004	0.0007	0.5409	0.5886	-0.0011	0.0019
TP3	0.0004	0.0008	0.5470	0.5844	-0.0011	0.0020
TP4	-0.0010	0.0010	-0.9752	0.3294	-0.0030	0.0010
TP5	-0.0014	0.0014	-1.0181	0.3086	-0.0041	0.0013
TP6	0.0042	0.0027	1.5205	0.1284	-0.0012	0.0095

csdid_event_NPI_fall_ecdc_flag_obstay_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0001	0.0002	0.4785	0.6323	-0.0004	0.0006
Post_Avg	0.0026	0.0010	2.6943	0.0071	0.0007	0.0046
Tm3	0.0003	0.0006	0.4796	0.6315	-0.0009	0.0016
Tm2	-0.0004	0.0006	-0.5895	0.5556	-0.0016	0.0008
Tm1	0.0004	0.0006	0.6791	0.4971	-0.0008	0.0016
Tm0	0.0005	0.0005	1.0852	0.2778	-0.0004	0.0014
Tp1	0.0004	0.0006	0.6625	0.5077	-0.0007	0.0015
Tp2	0.0007	0.0006	1.1990	0.2305	-0.0005	0.0020
Tp3	0.0007	0.0007	1.0407	0.2980	-0.0006	0.0021
Tp4	-0.0009	0.0011	-0.8848	0.3763	-0.0030	0.0011
Tp5	-0.0000	0.0008	-0.0048	0.9962	-0.0016	0.0016
Tp6	0.0171	0.0062	2.7427	0.0061	0.0049	0.0293

csdid_event_NPI_fall_ecdc_flag_obstay_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0004	0.0005	0.7794	0.4357	-0.0005	0.0013
Post_Avg	0.0008	0.0009	0.8348	0.4038	-0.0010	0.0026
Tm3	0.0010	0.0013	0.7994	0.4240	-0.0015	0.0036
Tm2	-0.0002	0.0012	-0.2042	0.8382	-0.0025	0.0020
Tm1	0.0003	0.0011	0.2659	0.7903	-0.0018	0.0024
Tm0	0.0009	0.0009	0.9727	0.3307	-0.0009	0.0027
Tp1	0.0003	0.0014	0.1877	0.8511	-0.0024	0.0029
Tp2	-0.0001	0.0015	-0.0819	0.9347	-0.0031	0.0028
Tp3	-0.0003	0.0016	-0.1610	0.8721	-0.0033	0.0028
Tp4	0.0006	0.0015	0.4045	0.6858	-0.0023	0.0036
Tp5	0.0011	0.0017	0.6341	0.5260	-0.0022	0.0044
Tp6	0.0029	0.0024	1.2189	0.2229	-0.0018	0.0076

csdid_event_NPI_fall_ecdc_flag_obstay_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0041	0.0016	2.5131	0.0120	0.0009	0.0072
Post_Avg	-0.0050	0.0035	-1.4352	0.1512	-0.0118	0.0018
Tm3	0.0075	0.0036	2.0577	0.0396	0.0004	0.0146
Tm2	0.0013	0.0032	0.4221	0.6729	-0.0049	0.0076
Tm1	0.0034	0.0042	0.7950	0.4266	-0.0049	0.0116
Tm0	-0.0065	0.0030	-2.2036	0.0276	-0.0123	-0.0007
Tp1	-0.0046	0.0037	-1.2549	0.2095	-0.0118	0.0026
Tp2	-0.0013	0.0030	-0.4267	0.6696	-0.0071	0.0045
Tp3	-0.0100	0.0053	-1.8623	0.0626	-0.0204	0.0005
Tp4	-0.0060	0.0053	-1.1373	0.2554	-0.0163	0.0043
Tp5	-0.0048	0.0067	-0.7064	0.4799	-0.0180	0.0084
Tp6	-0.0018	0.0088	-0.1989	0.8424	-0.0191	0.0156

csdid_event_NPI_fall_ecdc_flag_obstay_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0008	0.0004	2.1296	0.0332	0.0001	0.0015
Post_Avg	0.0010	0.0009	1.0568	0.2906	-0.0008	0.0028
Tm3	0.0020	0.0010	1.9350	0.0530	-0.0000	0.0041
Tm2	-0.0005	0.0009	-0.5262	0.5988	-0.0023	0.0013
Tm1	0.0008	0.0009	0.8345	0.4040	-0.0010	0.0025
Tm0	0.0003	0.0008	0.4308	0.6666	-0.0012	0.0018
Tp1	-0.0002	0.0010	-0.2246	0.8223	-0.0022	0.0017
Tp2	-0.0001	0.0011	-0.1183	0.9059	-0.0023	0.0020
Tp3	-0.0003	0.0012	-0.2460	0.8057	-0.0026	0.0020
Tp4	0.0002	0.0014	0.1305	0.8962	-0.0026	0.0029
Tp5	0.0011	0.0019	0.5893	0.5556	-0.0026	0.0048
Tp6	0.0059	0.0034	1.7157	0.0862	-0.0008	0.0126

csdid_event_NPI_fall_ecdc_flag_obstay_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0003	0.0003	0.8206	0.4119	-0.0004	0.0009
Post_Avg	0.0011	0.0011	1.0615	0.2885	-0.0010	0.0032
Tm3	0.0004	0.0008	0.5263	0.5987	-0.0012	0.0020
Tm2	0.0009	0.0009	1.0249	0.3054	-0.0008	0.0026
Tm1	-0.0005	0.0009	-0.6355	0.5251	-0.0022	0.0011
Tm0	0.0006	0.0006	0.9530	0.3406	-0.0006	0.0018
Tp1	0.0014	0.0008	1.7533	0.0795	-0.0002	0.0030
Tp2	0.0011	0.0010	1.1359	0.2560	-0.0008	0.0030
Tp3	0.0014	0.0010	1.3712	0.1703	-0.0006	0.0033
Tp4	-0.0001	0.0018	-0.0621	0.9505	-0.0035	0.0033
Tp5	-0.0026	0.0023	-1.1339	0.2568	-0.0071	0.0019
Tp6	0.0061	0.0050	1.2217	0.2218	-0.0037	0.0159

csdid_event_NPI_fall_ecdc_flag_obstay

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0006	0.0002	2.4010	0.0164	0.0001	0.0011
Post_Avg	0.0004	0.0007	0.6414	0.5213	-0.0009	0.0018
Tm3	0.0013	0.0007	1.8939	0.0582	-0.0000	0.0027
Tm2	0.0001	0.0007	0.0872	0.9305	-0.0012	0.0014
Tm1	0.0004	0.0006	0.6613	0.5084	-0.0008	0.0017
Tm0	0.0001	0.0005	0.2659	0.7903	-0.0009	0.0012
Tp1	0.0002	0.0007	0.3404	0.7335	-0.0012	0.0016
Tp2	0.0001	0.0008	0.1623	0.8710	-0.0014	0.0016
Tp3	0.0001	0.0008	0.1501	0.8807	-0.0015	0.0017
Tp4	-0.0009	0.0011	-0.8708	0.3839	-0.0030	0.0011
Tp5	-0.0013	0.0014	-0.9005	0.3679	-0.0040	0.0015
Tp6	0.0047	0.0029	1.6352	0.1020	-0.0009	0.0102

csdid_event_NPI_fall_ecdc_flag_obstay_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0000	0.0002	-0.2110	0.8329	-0.0005	0.0004
Post_Avg	0.0005	0.0010	0.5620	0.5741	-0.0013	0.0024
Tm3	-0.0006	0.0003	-2.2844	0.0223	-0.0012	-0.0001
Tm2	-0.0002	0.0005	-0.4676	0.6401	-0.0011	0.0007
Tm1	0.0007	0.0006	1.2543	0.2097	-0.0004	0.0018
Tm0	-0.0002	0.0005	-0.5291	0.5968	-0.0012	0.0007
Tp1	-0.0006	0.0006	-0.9018	0.3672	-0.0019	0.0007
Tp2	0.0000	0.0007	0.0442	0.9647	-0.0013	0.0014
Tp3	-0.0005	0.0007	-0.6862	0.4926	-0.0019	0.0009
Tp4	-0.0010	0.0004	-2.3074	0.0210	-0.0019	-0.0002
Tp5	-0.0017	0.0008	-2.1098	0.0349	-0.0033	-0.0001
Tp6	0.0078	0.0060	1.2940	0.1957	-0.0040	0.0197

csdid_event_NPI_fall_ecdc_flag_obstay_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0007	0.0003	2.0633	0.0391	0.0000	0.0013
Post_Avg	0.0000	0.0007	0.0715	0.9430	-0.0013	0.0014
Tm3	0.0008	0.0009	0.9090	0.3633	-0.0009	0.0026
Tm2	0.0002	0.0008	0.2043	0.8381	-0.0014	0.0017
Tm1	0.0011	0.0009	1.2127	0.2253	-0.0007	0.0028
Tm0	-0.0003	0.0007	-0.4321	0.6657	-0.0016	0.0010
Tp1	-0.0004	0.0008	-0.5567	0.5777	-0.0020	0.0011
Tp2	-0.0004	0.0008	-0.4823	0.6296	-0.0020	0.0012
Tp3	-0.0006	0.0008	-0.7595	0.4476	-0.0023	0.0010
Tp4	-0.0014	0.0010	-1.4396	0.1500	-0.0032	0.0005
Tp5	-0.0016	0.0011	-1.4151	0.1570	-0.0039	0.0006
Tp6	0.0051	0.0027	1.8728	0.0611	-0.0002	0.0104

csdid_event_NPI_fall_ecdc_flag_obstay_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0008	0.0007	1.2734	0.2029	-0.0005	0.0021
Post_Avg	0.0025	0.0014	1.8298	0.0673	-0.0002	0.0052
Tm3	0.0035	0.0021	1.6568	0.0976	-0.0006	0.0075
Tm2	0.0001	0.0019	0.0441	0.9648	-0.0037	0.0038
Tm1	-0.0010	0.0017	-0.6022	0.5470	-0.0043	0.0023
Tm0	0.0024	0.0012	1.9233	0.0544	-0.0000	0.0048
Tp1	0.0032	0.0016	2.0525	0.0401	0.0001	0.0063
Tp2	0.0023	0.0016	1.4244	0.1543	-0.0009	0.0054
Tp3	0.0020	0.0016	1.2474	0.2123	-0.0012	0.0052
Tp4	0.0030	0.0019	1.5457	0.1222	-0.0008	0.0067
Tp5	0.0033	0.0031	1.0789	0.2806	-0.0027	0.0094

Tp6	0.0012	0.0041	0.2953	0.7677	-0.0069	0.0093
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csdid_event_NPI_fall_ecdc_flag_obstay_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0000	0.0005	-0.0363	0.9710	-0.0010	0.0010
Post_Avg	-0.0015	0.0019	-0.7975	0.4252	-0.0053	0.0022
Tm3	-0.0003	0.0013	-0.2124	0.8318	-0.0027	0.0022
Tm2	0.0011	0.0014	0.7711	0.4406	-0.0016	0.0037
Tm1	-0.0008	0.0012	-0.6951	0.4870	-0.0032	0.0015
Tm0	0.0005	0.0010	0.5274	0.5979	-0.0015	0.0026
Tp1	-0.0003	0.0015	-0.1947	0.8456	-0.0032	0.0026
Tp2	-0.0022	0.0019	-1.1439	0.2527	-0.0060	0.0016
Tp3	-0.0032	0.0022	-1.4925	0.1356	-0.0075	0.0010
Tp4	0.0000	0.0023	0.0089	0.9929	-0.0045	0.0045
Tp5	-0.0026	0.0034	-0.7519	0.4521	-0.0093	0.0041
Tp6	-0.0030	0.0088	-0.3416	0.7326	-0.0201	0.0142

csdid_event_NPI_fall_ecdc_flag_obstay_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0007	0.0004	1.6945	0.0902	-0.0001	0.0016
Post_Avg	0.0004	0.0013	0.3329	0.7392	-0.0022	0.0031
Tm3	0.0030	0.0014	2.1977	0.0280	0.0003	0.0058
Tm2	-0.0013	0.0011	-1.1364	0.2558	-0.0036	0.0009
Tm1	0.0005	0.0010	0.4535	0.6502	-0.0015	0.0024
Tm0	0.0003	0.0009	0.3740	0.7084	-0.0014	0.0020
Tp1	0.0007	0.0010	0.6998	0.4841	-0.0013	0.0027
Tp2	0.0010	0.0011	0.8737	0.3823	-0.0012	0.0031
Tp3	0.0012	0.0010	1.1325	0.2574	-0.0009	0.0032
Tp4	-0.0025	0.0019	-1.3069	0.1912	-0.0062	0.0012
Tp5	-0.0014	0.0026	-0.5266	0.5985	-0.0065	0.0037
Tp6	0.0038	0.0061	0.6234	0.5330	-0.0081	0.0157

csdid_event_NPI_fall_ecdc_flag_obstay_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0009	0.0004	2.1773	0.0295	0.0001	0.0017
Post_Avg	0.0003	0.0009	0.2966	0.7668	-0.0015	0.0020
Tm3	0.0008	0.0010	0.7898	0.4297	-0.0012	0.0027
Tm2	0.0010	0.0010	0.9724	0.3309	-0.0010	0.0030
Tm1	0.0009	0.0012	0.7837	0.4332	-0.0014	0.0032
Tm0	-0.0002	0.0009	-0.2420	0.8088	-0.0019	0.0015
Tp1	-0.0003	0.0012	-0.2312	0.8172	-0.0027	0.0021
Tp2	0.0005	0.0012	0.4131	0.6795	-0.0018	0.0028
Tp3	0.0009	0.0013	0.7337	0.4631	-0.0016	0.0035
Tp4	-0.0001	0.0013	-0.0678	0.9459	-0.0027	0.0025
Tp5	-0.0016	0.0018	-0.9100	0.3628	-0.0051	0.0019

Tp6	0.0026	0.0027	0.9745	0.3298	-0.0026	0.0079
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csdid_event_NPI_fall_ecdc_flag_output_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0019	0.0010	1.8912	0.0586	-0.0001	0.0038
Post_Avg	0.0010	0.0024	0.4151	0.6781	-0.0037	0.0057
Tm3	0.0006	0.0026	0.2359	0.8135	-0.0046	0.0058
Tm2	0.0012	0.0025	0.5061	0.6128	-0.0036	0.0060
Tm1	0.0038	0.0024	1.5557	0.1198	-0.0010	0.0086
Tm0	0.0005	0.0020	0.2408	0.8097	-0.0034	0.0043
Tp1	-0.0002	0.0026	-0.0941	0.9250	-0.0053	0.0048
Tp2	-0.0003	0.0030	-0.0894	0.9288	-0.0061	0.0056
Tp3	-0.0006	0.0037	-0.1627	0.8708	-0.0079	0.0067
Tp4	-0.0015	0.0035	-0.4296	0.6675	-0.0084	0.0054
Tp5	0.0006	0.0051	0.1254	0.9002	-0.0094	0.0107
Tp6	0.0085	0.0081	1.0554	0.2912	-0.0073	0.0243

csdid_event_NPI_fall_ecdc_flag_output_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0012	-0.0787	0.9373	-0.0025	0.0023
Post_Avg	0.0025	0.0033	0.7816	0.4345	-0.0038	0.0089
Tm3	-0.0009	0.0032	-0.2936	0.7690	-0.0073	0.0054
Tm2	-0.0000	0.0030	-0.0099	0.9921	-0.0059	0.0058
Tm1	0.0007	0.0029	0.2346	0.8145	-0.0051	0.0064
Tm0	0.0001	0.0023	0.0599	0.9522	-0.0044	0.0047
Tp1	-0.0019	0.0031	-0.6083	0.5430	-0.0080	0.0042
Tp2	-0.0030	0.0039	-0.7801	0.4353	-0.0106	0.0046
Tp3	-0.0037	0.0047	-0.7914	0.4287	-0.0129	0.0055
Tp4	0.0074	0.0046	1.6090	0.1076	-0.0016	0.0164
Tp5	0.0077	0.0073	1.0602	0.2891	-0.0065	0.0219
Tp6	0.0112	0.0139	0.8061	0.4202	-0.0161	0.0386

csdid_event_NPI_fall_ecdc_flag_output_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0015	0.0018	0.8201	0.4122	-0.0020	0.0050
Post_Avg	0.0025	0.0038	0.6429	0.5203	-0.0051	0.0100
Tm3	-0.0018	0.0047	-0.3961	0.6920	-0.0110	0.0073
Tm2	0.0019	0.0043	0.4370	0.6621	-0.0065	0.0103
Tm1	0.0044	0.0043	1.0261	0.3049	-0.0040	0.0128
Tm0	0.0009	0.0034	0.2668	0.7896	-0.0058	0.0076
Tp1	-0.0028	0.0046	-0.6023	0.5470	-0.0118	0.0063
Tp2	0.0013	0.0052	0.2545	0.7991	-0.0089	0.0116
Tp3	-0.0018	0.0060	-0.2982	0.7655	-0.0136	0.0100
Tp4	-0.0017	0.0056	-0.3031	0.7618	-0.0126	0.0092
Tp5	-0.0028	0.0080	-0.3489	0.7271	-0.0184	0.0129

Tp6	0.0241	0.0111	2.1664	0.0303	0.0023	0.0459
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csdid_event_NPI_fall_ecdc_flag_outpat_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0128	0.0048	2.6840	0.0073	0.0035	0.0222
Post_Avg	-0.0006	0.0085	-0.0725	0.9422	-0.0173	0.0161
Tm3	0.0209	0.0105	1.9911	0.0465	0.0003	0.0415
Tm2	-0.0018	0.0090	-0.2007	0.8410	-0.0195	0.0159
Tm1	0.0193	0.0113	1.7070	0.0878	-0.0029	0.0415
Tm0	0.0038	0.0082	0.4638	0.6428	-0.0123	0.0200
Tp1	-0.0034	0.0097	-0.3560	0.7218	-0.0224	0.0155
Tp2	-0.0001	0.0167	-0.0069	0.9945	-0.0328	0.0326
Tp3	-0.0084	0.0129	-0.6497	0.5159	-0.0337	0.0169
Tp4	-0.0058	0.0133	-0.4400	0.6600	-0.0318	0.0201
Tp5	-0.0025	0.0147	-0.1671	0.8673	-0.0313	0.0264
Tp6	0.0121	0.0231	0.5237	0.6005	-0.0332	0.0574

csdid_event_NPI_fall_ecdc_flag_outpat_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0029	0.0014	2.0647	0.0390	0.0001	0.0056
Post_Avg	-0.0018	0.0033	-0.5389	0.5899	-0.0084	0.0048
Tm3	0.0019	0.0037	0.5103	0.6098	-0.0053	0.0091
Tm2	0.0009	0.0034	0.2628	0.7927	-0.0058	0.0076
Tm1	0.0059	0.0034	1.7064	0.0879	-0.0009	0.0126
Tm0	-0.0016	0.0028	-0.5667	0.5709	-0.0070	0.0039
Tp1	-0.0029	0.0036	-0.8017	0.4227	-0.0099	0.0042
Tp2	-0.0030	0.0041	-0.7386	0.4601	-0.0111	0.0050
Tp3	-0.0039	0.0049	-0.7983	0.4247	-0.0135	0.0057
Tp4	-0.0050	0.0048	-1.0258	0.3050	-0.0144	0.0045
Tp5	-0.0044	0.0072	-0.6142	0.5391	-0.0185	0.0097
Tp6	0.0081	0.0111	0.7322	0.4640	-0.0136	0.0299

csdid_event_NPI_fall_ecdc_flag_outpat_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0003	0.0014	0.1923	0.8475	-0.0025	0.0030
Post_Avg	0.0026	0.0036	0.7279	0.4667	-0.0045	0.0097
Tm3	-0.0009	0.0037	-0.2412	0.8094	-0.0082	0.0064
Tm2	0.0019	0.0034	0.5586	0.5764	-0.0048	0.0086
Tm1	-0.0002	0.0033	-0.0575	0.9541	-0.0067	0.0063
Tm0	0.0037	0.0027	1.4022	0.1608	-0.0015	0.0090
Tp1	0.0030	0.0035	0.8651	0.3870	-0.0039	0.0100
Tp2	0.0010	0.0046	0.2055	0.8372	-0.0082	0.0101
Tp3	0.0001	0.0052	0.0133	0.9894	-0.0101	0.0103
Tp4	0.0051	0.0057	0.9033	0.3664	-0.0060	0.0162
Tp5	-0.0000	0.0105	-0.0045	0.9964	-0.0206	0.0205

Tp6	0.0056	0.0114	0.4873	0.6261	-0.0168	0.0279
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csdid_event_NPI_fall_ecdc_flag_outputpat

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0020	0.0010	1.9852	0.0471	0.0000	0.0039
Post_Avg	0.0006	0.0024	0.2648	0.7911	-0.0041	0.0054
Tm3	0.0009	0.0026	0.3457	0.7295	-0.0042	0.0061
Tm2	0.0011	0.0024	0.4634	0.6431	-0.0037	0.0059
Tm1	0.0039	0.0024	1.5885	0.1122	-0.0009	0.0086
Tm0	0.0004	0.0020	0.2210	0.8251	-0.0034	0.0043
Tp1	-0.0006	0.0026	-0.2222	0.8242	-0.0056	0.0045
Tp2	-0.0014	0.0030	-0.4532	0.6504	-0.0073	0.0046
Tp3	-0.0013	0.0036	-0.3660	0.7144	-0.0084	0.0058
Tp4	-0.0018	0.0036	-0.5031	0.6149	-0.0088	0.0052
Tp5	-0.0003	0.0053	-0.0519	0.9586	-0.0107	0.0102
Tp6	0.0094	0.0083	1.1260	0.2602	-0.0070	0.0258

csdid_event_NPI_fall_ecdc_flag_outputpat_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0006	0.0011	0.5229	0.6010	-0.0016	0.0028
Post_Avg	0.0006	0.0028	0.2023	0.8397	-0.0049	0.0060
Tm3	0.0003	0.0030	0.0917	0.9270	-0.0057	0.0062
Tm2	0.0008	0.0028	0.2992	0.7648	-0.0046	0.0063
Tm1	0.0006	0.0027	0.2304	0.8177	-0.0047	0.0060
Tm0	0.0008	0.0020	0.3973	0.6911	-0.0032	0.0048
Tp1	-0.0000	0.0024	-0.0096	0.9924	-0.0048	0.0047
Tp2	0.0037	0.0027	1.3909	0.1643	-0.0015	0.0090
Tp3	0.0038	0.0028	1.3874	0.1653	-0.0016	0.0093
Tp4	0.0016	0.0044	0.3700	0.7114	-0.0070	0.0103
Tp5	0.0008	0.0080	0.1045	0.9168	-0.0149	0.0165
Tp6	-0.0069	0.0119	-0.5841	0.5592	-0.0302	0.0163

csdid_event_NPI_fall_ecdc_flag_outputpat_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0033	0.0014	2.3862	0.0170	0.0006	0.0061
Post_Avg	-0.0033	0.0029	-1.1305	0.2583	-0.0091	0.0024
Tm3	0.0003	0.0037	0.0697	0.9445	-0.0071	0.0076
Tm2	0.0030	0.0034	0.8803	0.3787	-0.0037	0.0098
Tm1	0.0067	0.0035	1.9170	0.0552	-0.0001	0.0135
Tm0	-0.0026	0.0027	-0.9725	0.3308	-0.0078	0.0026
Tp1	-0.0059	0.0034	-1.7424	0.0814	-0.0126	0.0007
Tp2	-0.0054	0.0036	-1.4849	0.1376	-0.0124	0.0017
Tp3	-0.0082	0.0037	-2.2372	0.0253	-0.0154	-0.0010
Tp4	-0.0057	0.0040	-1.3981	0.1621	-0.0136	0.0023
Tp5	-0.0064	0.0060	-1.0525	0.2926	-0.0182	0.0055

Tp6	0.0108	0.0101	1.0747	0.2825	-0.0089	0.0306
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csdid_event_NPI_fall_ecdc_flag_outpat_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0039	0.0026	1.5074	0.1317	-0.0012	0.0091
Post_Avg	0.0071	0.0048	1.4883	0.1367	-0.0023	0.0165
Tm3	0.0051	0.0075	0.6869	0.4922	-0.0095	0.0198
Tm2	-0.0008	0.0064	-0.1266	0.8992	-0.0134	0.0118
Tm1	0.0075	0.0062	1.2121	0.2255	-0.0046	0.0196
Tm0	0.0089	0.0046	1.9178	0.0551	-0.0002	0.0180
Tp1	0.0094	0.0059	1.6033	0.1089	-0.0021	0.0210
Tp2	0.0061	0.0061	1.0129	0.3111	-0.0057	0.0180
Tp3	0.0035	0.0062	0.5717	0.5675	-0.0086	0.0156
Tp4	0.0026	0.0067	0.3898	0.6967	-0.0105	0.0156
Tp5	0.0056	0.0093	0.6030	0.5465	-0.0126	0.0237
Tp6	0.0138	0.0136	1.0077	0.3136	-0.0130	0.0405

csdid_event_NPI_fall_ecdc_flag_outpat_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0015	0.0022	-0.6816	0.4955	-0.0058	0.0028
Post_Avg	0.0045	0.0056	0.8101	0.4179	-0.0064	0.0154
Tm3	-0.0074	0.0056	-1.3197	0.1869	-0.0183	0.0036
Tm2	0.0018	0.0052	0.3406	0.7334	-0.0084	0.0120
Tm1	0.0011	0.0051	0.2167	0.8284	-0.0089	0.0111
Tm0	0.0006	0.0041	0.1510	0.8800	-0.0075	0.0087
Tp1	-0.0018	0.0056	-0.3126	0.7546	-0.0128	0.0093
Tp2	-0.0048	0.0063	-0.7746	0.4386	-0.0171	0.0074
Tp3	-0.0031	0.0071	-0.4380	0.6614	-0.0170	0.0108
Tp4	0.0062	0.0074	0.8305	0.4062	-0.0084	0.0207
Tp5	0.0050	0.0111	0.4462	0.6554	-0.0168	0.0267
Tp6	0.0295	0.0247	1.1926	0.2330	-0.0190	0.0780

csdid_event_NPI_fall_ecdc_flag_outpat_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0024	0.0017	1.4633	0.1434	-0.0008	0.0057
Post_Avg	-0.0016	0.0044	-0.3734	0.7089	-0.0103	0.0070
Tm3	0.0055	0.0044	1.2295	0.2189	-0.0032	0.0142
Tm2	-0.0014	0.0041	-0.3468	0.7287	-0.0095	0.0067
Tm1	0.0032	0.0041	0.7904	0.4293	-0.0047	0.0112
Tm0	0.0033	0.0032	1.0153	0.3100	-0.0031	0.0097
Tp1	0.0036	0.0041	0.8740	0.3821	-0.0045	0.0117
Tp2	0.0041	0.0049	0.8503	0.3951	-0.0054	0.0137
Tp3	0.0023	0.0056	0.4068	0.6842	-0.0087	0.0132
Tp4	-0.0049	0.0064	-0.7768	0.4373	-0.0174	0.0075
Tp5	-0.0040	0.0103	-0.3895	0.6969	-0.0243	0.0162

Tp6	-0.0158	0.0184	-0.8591	0.3903	-0.0520	0.0203
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csdid_event_NPI_fall_ecdc_flag_output_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0023	0.0015	1.4840	0.1378	-0.0007	0.0053
Post_Avg	-0.0009	0.0035	-0.2605	0.7945	-0.0077	0.0059
Tm3	-0.0010	0.0039	-0.2657	0.7905	-0.0087	0.0066
Tm2	0.0025	0.0037	0.6616	0.5082	-0.0049	0.0098
Tm1	0.0054	0.0038	1.4109	0.1583	-0.0021	0.0130
Tm0	-0.0014	0.0030	-0.4541	0.6498	-0.0073	0.0045
Tp1	-0.0009	0.0039	-0.2358	0.8136	-0.0086	0.0067
Tp2	-0.0005	0.0044	-0.1076	0.9143	-0.0091	0.0081
Tp3	0.0008	0.0066	0.1279	0.8982	-0.0122	0.0139
Tp4	-0.0034	0.0051	-0.6567	0.5114	-0.0134	0.0067
Tp5	0.0008	0.0075	0.1124	0.9105	-0.0138	0.0155
Tp6	-0.0019	0.0103	-0.1871	0.8516	-0.0221	0.0183

csdid_event_NPI_fall_ecdc_flag_snf_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0000	0.0003	0.0764	0.9391	-0.0005	0.0005
Post_Avg	0.0018	0.0006	2.9596	0.0031	0.0006	0.0029
Tm3	-0.0004	0.0006	-0.6147	0.5387	-0.0016	0.0008
Tm2	0.0006	0.0006	0.8943	0.3711	-0.0007	0.0018
Tm1	-0.0001	0.0006	-0.1951	0.8454	-0.0014	0.0011
Tm0	0.0015	0.0005	2.8323	0.0046	0.0005	0.0026
Tp1	0.0014	0.0007	2.1835	0.0290	0.0001	0.0027
Tp2	0.0013	0.0007	1.8154	0.0695	-0.0001	0.0027
Tp3	0.0021	0.0008	2.5401	0.0111	0.0005	0.0037
Tp4	0.0018	0.0008	2.2158	0.0267	0.0002	0.0034
Tp5	0.0033	0.0011	3.0538	0.0023	0.0012	0.0054
Tp6	0.0009	0.0017	0.5655	0.5717	-0.0023	0.0042

csdid_event_NPI_fall_ecdc_flag_snf_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0000	0.0002	0.0320	0.9745	-0.0005	0.0005
Post_Avg	0.0001	0.0005	0.1566	0.8756	-0.0009	0.0011
Tm3	-0.0011	0.0004	-2.5713	0.0101	-0.0020	-0.0003
Tm2	0.0009	0.0006	1.5851	0.1129	-0.0002	0.0020
Tm1	0.0003	0.0006	0.4127	0.6798	-0.0010	0.0015
Tm0	0.0005	0.0005	1.0687	0.2852	-0.0004	0.0015
Tp1	0.0002	0.0007	0.3131	0.7542	-0.0011	0.0015
Tp2	-0.0003	0.0009	-0.3765	0.7066	-0.0022	0.0015
Tp3	-0.0004	0.0011	-0.3360	0.7369	-0.0024	0.0017
Tp4	-0.0001	0.0009	-0.1348	0.8928	-0.0018	0.0016
Tp5	0.0005	0.0007	0.6966	0.4860	-0.0008	0.0017

Tp6	0.0002	0.0012	0.1619	0.8714	-0.0022	0.0026
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csdid_event_NPI_fall_ecdc_flag_snf_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0001	0.0004	0.1218	0.9031	-0.0008	0.0009
Post_Avg	0.0028	0.0008	3.3992	0.0007	0.0012	0.0045
Tm3	0.0020	0.0012	1.6745	0.0940	-0.0003	0.0044
Tm2	-0.0001	0.0012	-0.0814	0.9351	-0.0024	0.0022
Tm1	-0.0018	0.0010	-1.8466	0.0648	-0.0037	0.0001
Tm0	0.0023	0.0008	2.9968	0.0027	0.0008	0.0037
Tp1	0.0029	0.0008	3.8795	0.0001	0.0014	0.0044
Tp2	0.0027	0.0009	3.0094	0.0026	0.0009	0.0045
Tp3	0.0037	0.0010	3.7214	0.0002	0.0018	0.0057
Tp4	0.0024	0.0010	2.3164	0.0205	0.0004	0.0044
Tp5	0.0049	0.0018	2.7750	0.0055	0.0014	0.0084
Tp6	0.0009	0.0023	0.3834	0.7014	-0.0036	0.0053

csdid_event_NPI_fall_ecdc_flag_snf_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0002	0.0016	-0.1151	0.9083	-0.0033	0.0029
Post_Avg	0.0022	0.0030	0.7463	0.4555	-0.0036	0.0080
Tm3	-0.0039	0.0030	-1.2983	0.1942	-0.0098	0.0020
Tm2	0.0008	0.0027	0.2967	0.7667	-0.0046	0.0062
Tm1	0.0026	0.0039	0.6585	0.5102	-0.0050	0.0102
Tm0	0.0015	0.0032	0.4757	0.6343	-0.0048	0.0079
Tp1	0.0033	0.0034	0.9581	0.3380	-0.0034	0.0099
Tp2	0.0017	0.0036	0.4830	0.6291	-0.0053	0.0087
Tp3	0.0040	0.0048	0.8338	0.4044	-0.0054	0.0133
Tp4	0.0034	0.0042	0.8036	0.4217	-0.0049	0.0117
Tp5	0.0031	0.0040	0.7803	0.4352	-0.0047	0.0110
Tp6	-0.0016	0.0069	-0.2283	0.8194	-0.0151	0.0119

csdid_event_NPI_fall_ecdc_flag_snf_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0000	0.0004	-0.1035	0.9176	-0.0008	0.0007
Post_Avg	0.0019	0.0009	2.1426	0.0321	0.0002	0.0037
Tm3	-0.0003	0.0009	-0.3153	0.7525	-0.0021	0.0015
Tm2	0.0006	0.0010	0.6339	0.5262	-0.0013	0.0025
Tm1	-0.0004	0.0009	-0.4526	0.6508	-0.0023	0.0014
Tm0	0.0020	0.0008	2.6298	0.0085	0.0005	0.0035
Tp1	0.0024	0.0009	2.7039	0.0069	0.0006	0.0041
Tp2	0.0019	0.0010	1.9196	0.0549	-0.0000	0.0038
Tp3	0.0025	0.0012	2.1667	0.0303	0.0002	0.0048
Tp4	0.0015	0.0013	1.2006	0.2299	-0.0010	0.0040
Tp5	0.0033	0.0017	1.9218	0.0546	-0.0001	0.0067

Tp6	-0.0001	0.0026	-0.0572	0.9544	-0.0051	0.0049
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csdid_event_NPI_fall_ecdc_flag_snf_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0002	0.0003	0.7346	0.4626	-0.0004	0.0009
Post_Avg	0.0008	0.0008	1.0520	0.2928	-0.0007	0.0024
Tm3	-0.0001	0.0008	-0.0957	0.9237	-0.0016	0.0015
Tm2	0.0006	0.0006	1.0321	0.3020	-0.0006	0.0018
Tm1	0.0002	0.0008	0.2117	0.8323	-0.0014	0.0017
Tm0	0.0006	0.0007	0.8072	0.4196	-0.0009	0.0021
Tp1	-0.0001	0.0010	-0.1390	0.8894	-0.0022	0.0019
Tp2	0.0003	0.0013	0.2099	0.8338	-0.0023	0.0028
Tp3	0.0009	0.0013	0.6503	0.5155	-0.0017	0.0035
Tp4	0.0001	0.0013	0.0550	0.9562	-0.0024	0.0025
Tp5	0.0024	0.0016	1.5685	0.1168	-0.0006	0.0055
Tp6	0.0018	0.0016	1.0776	0.2812	-0.0015	0.0050

csdid_event_NPI_fall_ecdc_flag_snf

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0000	0.0003	0.1731	0.8626	-0.0004	0.0005
Post_Avg	0.0018	0.0006	3.0131	0.0026	0.0006	0.0029
Tm3	-0.0003	0.0006	-0.4932	0.6218	-0.0015	0.0009
Tm2	0.0005	0.0006	0.8704	0.3841	-0.0007	0.0017
Tm1	-0.0001	0.0006	-0.1703	0.8648	-0.0014	0.0011
Tm0	0.0015	0.0005	2.8061	0.0050	0.0005	0.0026
Tp1	0.0014	0.0006	2.2432	0.0249	0.0002	0.0027
Tp2	0.0015	0.0007	2.2738	0.0230	0.0002	0.0028
Tp3	0.0020	0.0008	2.6750	0.0075	0.0005	0.0035
Tp4	0.0017	0.0008	2.1364	0.0326	0.0001	0.0032
Tp5	0.0032	0.0011	2.8659	0.0042	0.0010	0.0055
Tp6	0.0009	0.0017	0.5428	0.5873	-0.0024	0.0042

csdid_event_NPI_fall_ecdc_flag_snf_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0000	0.0002	0.1129	0.9101	-0.0004	0.0004
Post_Avg	-0.0001	0.0004	-0.3873	0.6985	-0.0009	0.0006
Tm3	-0.0004	0.0003	-1.4644	0.1431	-0.0010	0.0001
Tm2	0.0001	0.0003	0.4752	0.6346	-0.0004	0.0007
Tm1	0.0004	0.0005	0.6760	0.4991	-0.0007	0.0014
Tm0	0.0001	0.0004	0.2296	0.8184	-0.0007	0.0009
Tp1	-0.0006	0.0006	-0.9028	0.3666	-0.0018	0.0007
Tp2	-0.0005	0.0007	-0.8176	0.4136	-0.0018	0.0008
Tp3	-0.0005	0.0007	-0.7511	0.4526	-0.0018	0.0008
Tp4	0.0001	0.0003	0.2681	0.7886	-0.0005	0.0007
Tp5	-0.0001	0.0006	-0.1977	0.8433	-0.0012	0.0010

Tp6	0.0005	0.0001	5.2705	0.0000	0.0003	0.0007
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csdid_event_NPI_fall_ecdc_flag_snf_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0004	0.0003	1.3047	0.1920	-0.0002	0.0010
Post_Avg	0.0011	0.0005	2.2067	0.0273	0.0001	0.0020
Tm3	0.0007	0.0008	0.8498	0.3954	-0.0009	0.0022
Tm2	0.0001	0.0007	0.1790	0.8580	-0.0012	0.0015
Tm1	0.0004	0.0008	0.4788	0.6321	-0.0011	0.0018
Tm0	0.0007	0.0006	1.1529	0.2490	-0.0005	0.0018
Tp1	0.0009	0.0007	1.2321	0.2179	-0.0005	0.0023
Tp2	0.0005	0.0007	0.6550	0.5125	-0.0009	0.0019
Tp3	0.0002	0.0007	0.3188	0.7499	-0.0012	0.0016
Tp4	0.0005	0.0006	0.7781	0.4365	-0.0008	0.0017
Tp5	0.0017	0.0009	1.9127	0.0558	-0.0000	0.0034
Tp6	0.0031	0.0012	2.5330	0.0113	0.0007	0.0055

csdid_event_NPI_fall_ecdc_flag_snf_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0006	0.0008	0.7596	0.4475	-0.0009	0.0021
Post_Avg	0.0032	0.0015	2.1457	0.0319	0.0003	0.0061
Tm3	-0.0003	0.0020	-0.1585	0.8741	-0.0043	0.0036
Tm2	0.0020	0.0019	1.0557	0.2911	-0.0017	0.0057
Tm1	0.0001	0.0018	0.0378	0.9699	-0.0036	0.0037
Tm0	0.0040	0.0014	2.8655	0.0042	0.0013	0.0068
Tp1	0.0038	0.0017	2.2924	0.0219	0.0006	0.0070
Tp2	0.0035	0.0017	2.1141	0.0345	0.0003	0.0068
Tp3	0.0043	0.0017	2.5641	0.0103	0.0010	0.0076
Tp4	0.0039	0.0019	2.0813	0.0374	0.0002	0.0076
Tp5	0.0039	0.0025	1.5190	0.1288	-0.0011	0.0089
Tp6	-0.0012	0.0039	-0.3058	0.7598	-0.0088	0.0064

csdid_event_NPI_fall_ecdc_flag_snf_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0004	0.0006	-0.7449	0.4563	-0.0015	0.0007
Post_Avg	0.0022	0.0012	1.8946	0.0581	-0.0001	0.0046
Tm3	-0.0015	0.0010	-1.4379	0.1505	-0.0035	0.0005
Tm2	-0.0005	0.0014	-0.3478	0.7280	-0.0032	0.0022
Tm1	0.0007	0.0013	0.5628	0.5736	-0.0018	0.0032
Tm0	0.0016	0.0010	1.5369	0.1243	-0.0004	0.0037
Tp1	0.0020	0.0012	1.7085	0.0875	-0.0003	0.0043
Tp2	0.0020	0.0012	1.6553	0.0979	-0.0004	0.0043
Tp3	0.0034	0.0012	2.7094	0.0067	0.0009	0.0058
Tp4	0.0018	0.0015	1.1846	0.2362	-0.0012	0.0047
Tp5	0.0065	0.0031	2.0905	0.0366	0.0004	0.0125

Tp6	-0.0014	0.0036	-0.4033	0.6867	-0.0084	0.0055
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csdid_event_NPI_fall_ecdc_flag_snf_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0004	0.0004	1.0318	0.3022	-0.0004	0.0012
Post_Avg	0.0024	0.0009	2.5293	0.0114	0.0005	0.0042
Tm3	0.0014	0.0012	1.2123	0.2254	-0.0009	0.0038
Tm2	0.0009	0.0010	0.8916	0.3726	-0.0011	0.0030
Tm1	-0.0011	0.0011	-1.0397	0.2985	-0.0033	0.0010
Tm0	0.0013	0.0008	1.5825	0.1135	-0.0003	0.0030
Tp1	0.0027	0.0009	3.0831	0.0020	0.0010	0.0044
Tp2	0.0021	0.0010	2.1143	0.0345	0.0002	0.0040
Tp3	0.0029	0.0009	3.0881	0.0020	0.0010	0.0047
Tp4	0.0003	0.0016	0.1604	0.8726	-0.0030	0.0035
Tp5	0.0035	0.0017	2.0183	0.0436	0.0001	0.0068
Tp6	0.0038	0.0036	1.0291	0.3034	-0.0034	0.0109

csdid_event_NPI_fall_ecdc_flag_snf_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0001	0.0004	0.1320	0.8950	-0.0007	0.0008
Post_Avg	0.0007	0.0010	0.7270	0.4672	-0.0012	0.0027
Tm3	-0.0016	0.0007	-2.2257	0.0260	-0.0031	-0.0002
Tm2	0.0013	0.0010	1.4034	0.1605	-0.0005	0.0032
Tm1	0.0004	0.0010	0.4415	0.6588	-0.0015	0.0024
Tm0	0.0011	0.0010	1.0820	0.2793	-0.0009	0.0030
Tp1	-0.0006	0.0014	-0.4021	0.6876	-0.0033	0.0022
Tp2	-0.0004	0.0015	-0.2827	0.7774	-0.0033	0.0025
Tp3	0.0004	0.0017	0.2287	0.8191	-0.0030	0.0038
Tp4	0.0024	0.0011	2.2088	0.0272	0.0003	0.0045
Tp5	0.0028	0.0015	1.8075	0.0707	-0.0002	0.0058
Tp6	-0.0005	0.0020	-0.2690	0.7879	-0.0045	0.0034

csdid_event_TIN_fall_ecdc_flag_er_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0014	0.0009	1.6404	0.1009	-0.0003	0.0031
Post_Avg	0.0014	0.0021	0.6598	0.5094	-0.0027	0.0055
Tm3	0.0038	0.0023	1.6425	0.1005	-0.0007	0.0084
Tm2	-0.0016	0.0022	-0.7663	0.4435	-0.0059	0.0026
Tm1	0.0021	0.0021	1.0090	0.3130	-0.0020	0.0062
Tm0	0.0022	0.0017	1.2852	0.1987	-0.0012	0.0056
Tp1	0.0008	0.0022	0.3680	0.7128	-0.0035	0.0051
Tp2	0.0025	0.0025	1.0110	0.3120	-0.0024	0.0074
Tp3	0.0008	0.0029	0.2788	0.7804	-0.0049	0.0065
Tp4	-0.0034	0.0031	-1.0998	0.2714	-0.0094	0.0026
Tp5	-0.0004	0.0045	-0.0935	0.9255	-0.0093	0.0085

Tp6	0.0071	0.0074	0.9612	0.3364	-0.0074	0.0216
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csdid_event_TIN_fall_ecdc_flag_er_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0003	0.0010	-0.3447	0.7303	-0.0023	0.0016
Post_Avg	0.0026	0.0027	0.9793	0.3274	-0.0026	0.0079
Tm3	0.0026	0.0028	0.9228	0.3561	-0.0029	0.0081
Tm2	-0.0042	0.0025	-1.6742	0.0941	-0.0091	0.0007
Tm1	0.0005	0.0023	0.2318	0.8167	-0.0040	0.0050
Tm0	0.0024	0.0018	1.3358	0.1816	-0.0011	0.0059
Tp1	0.0016	0.0023	0.6772	0.4983	-0.0030	0.0061
Tp2	0.0019	0.0029	0.6557	0.5120	-0.0038	0.0077
Tp3	0.0010	0.0036	0.2828	0.7773	-0.0060	0.0080
Tp4	0.0009	0.0038	0.2297	0.8183	-0.0065	0.0083
Tp5	0.0037	0.0061	0.6040	0.5458	-0.0083	0.0158
Tp6	0.0070	0.0124	0.5665	0.5710	-0.0173	0.0313

csdid_event_TIN_fall_ecdc_flag_er_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0023	0.0016	1.4458	0.1482	-0.0008	0.0054
Post_Avg	0.0004	0.0034	0.1175	0.9065	-0.0062	0.0070
Tm3	0.0045	0.0041	1.1005	0.2711	-0.0035	0.0126
Tm2	-0.0027	0.0038	-0.7147	0.4748	-0.0101	0.0047
Tm1	0.0051	0.0038	1.3384	0.1808	-0.0024	0.0125
Tm0	0.0005	0.0031	0.1468	0.8833	-0.0056	0.0065
Tp1	-0.0047	0.0041	-1.1665	0.2434	-0.0127	0.0032
Tp2	-0.0003	0.0046	-0.0547	0.9564	-0.0093	0.0088
Tp3	-0.0029	0.0052	-0.5689	0.5694	-0.0131	0.0072
Tp4	-0.0062	0.0049	-1.2431	0.2138	-0.0158	0.0035
Tp5	-0.0024	0.0071	-0.3429	0.7317	-0.0164	0.0115
Tp6	0.0189	0.0101	1.8739	0.0609	-0.0009	0.0386

csdid_event_TIN_fall_ecdc_flag_er_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0086	0.0044	1.9372	0.0527	-0.0001	0.0173
Post_Avg	0.0086	0.0075	1.1456	0.2520	-0.0061	0.0234
Tm3	0.0139	0.0096	1.4546	0.1458	-0.0048	0.0326
Tm2	0.0060	0.0083	0.7149	0.4747	-0.0104	0.0223
Tm1	0.0059	0.0106	0.5629	0.5735	-0.0148	0.0267
Tm0	0.0116	0.0074	1.5580	0.1192	-0.0030	0.0262
Tp1	0.0024	0.0087	0.2817	0.7782	-0.0145	0.0194
Tp2	0.0199	0.0097	2.0602	0.0394	0.0010	0.0388
Tp3	-0.0041	0.0120	-0.3442	0.7307	-0.0275	0.0193
Tp4	0.0041	0.0120	0.3393	0.7344	-0.0194	0.0276
Tp5	0.0071	0.0136	0.5205	0.6027	-0.0196	0.0338

Tp6	0.0194	0.0219	0.8839	0.3767	-0.0236	0.0623
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csdid_event_TIN_fall_ecdc_flag_er_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0019	0.0012	1.5252	0.1272	-0.0005	0.0043
Post_Avg	0.0001	0.0029	0.0515	0.9589	-0.0055	0.0058
Tm3	0.0063	0.0033	1.9128	0.0558	-0.0002	0.0128
Tm2	-0.0019	0.0031	-0.6043	0.5457	-0.0079	0.0042
Tm1	0.0011	0.0030	0.3875	0.6984	-0.0046	0.0069
Tm0	0.0021	0.0024	0.8820	0.3778	-0.0026	0.0068
Tp1	0.0006	0.0030	0.1936	0.8465	-0.0054	0.0066
Tp2	0.0023	0.0034	0.6682	0.5040	-0.0045	0.0091
Tp3	0.0004	0.0040	0.0890	0.9291	-0.0075	0.0082
Tp4	-0.0082	0.0042	-1.9604	0.0499	-0.0163	-0.0000
Tp5	-0.0016	0.0064	-0.2559	0.7980	-0.0142	0.0109
Tp6	0.0055	0.0101	0.5458	0.5852	-0.0142	0.0252

csdid_event_TIN_fall_ecdc_flag_er_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0010	0.0012	0.8191	0.4127	-0.0014	0.0033
Post_Avg	0.0043	0.0031	1.4022	0.1609	-0.0017	0.0103
Tm3	0.0005	0.0031	0.1438	0.8857	-0.0057	0.0066
Tm2	-0.0006	0.0029	-0.2248	0.8221	-0.0063	0.0050
Tm1	0.0032	0.0028	1.1126	0.2659	-0.0024	0.0087
Tm0	0.0030	0.0023	1.3016	0.1930	-0.0015	0.0075
Tp1	0.0017	0.0030	0.5755	0.5649	-0.0041	0.0075
Tp2	0.0032	0.0038	0.8401	0.4009	-0.0042	0.0106
Tp3	0.0009	0.0042	0.2018	0.8401	-0.0074	0.0091
Tp4	0.0049	0.0050	0.9676	0.3332	-0.0050	0.0147
Tp5	0.0045	0.0089	0.5043	0.6141	-0.0130	0.0219
Tp6	0.0119	0.0104	1.1476	0.2512	-0.0084	0.0323

csdid_event_TIN_fall_ecdc_flag_er

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0015	0.0009	1.7485	0.0804	-0.0002	0.0032
Post_Avg	0.0015	0.0021	0.6988	0.4847	-0.0027	0.0056
Tm3	0.0041	0.0023	1.7739	0.0761	-0.0004	0.0086
Tm2	-0.0017	0.0021	-0.8137	0.4158	-0.0060	0.0025
Tm1	0.0022	0.0021	1.0460	0.2956	-0.0019	0.0063
Tm0	0.0022	0.0017	1.2764	0.2018	-0.0012	0.0055
Tp1	0.0006	0.0022	0.2676	0.7890	-0.0037	0.0049
Tp2	0.0019	0.0025	0.7475	0.4547	-0.0031	0.0069
Tp3	0.0004	0.0029	0.1295	0.8969	-0.0052	0.0060
Tp4	-0.0032	0.0031	-1.0216	0.3070	-0.0093	0.0029
Tp5	-0.0018	0.0048	-0.3715	0.7103	-0.0111	0.0076

Tp6	0.0103	0.0077	1.3303	0.1834	-0.0049	0.0254
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csdid_event_TIN_fall_ecdc_flag_er_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0005	0.0009	0.5358	0.5921	-0.0013	0.0023
Post_Avg	0.0000	0.0023	0.0025	0.9980	-0.0045	0.0045
Tm3	0.0025	0.0027	0.9149	0.3602	-0.0028	0.0077
Tm2	-0.0019	0.0023	-0.8363	0.4030	-0.0063	0.0025
Tm1	0.0009	0.0022	0.4238	0.6717	-0.0033	0.0051
Tm0	0.0003	0.0016	0.2032	0.8390	-0.0029	0.0035
Tp1	-0.0012	0.0021	-0.5682	0.5699	-0.0053	0.0029
Tp2	0.0009	0.0023	0.3829	0.7018	-0.0036	0.0054
Tp3	0.0011	0.0024	0.4443	0.6568	-0.0036	0.0057
Tp4	0.0008	0.0035	0.2194	0.8263	-0.0061	0.0076
Tp5	0.0019	0.0068	0.2721	0.7856	-0.0115	0.0152
Tp6	-0.0037	0.0097	-0.3785	0.7050	-0.0226	0.0153

csdid_event_TIN_fall_ecdc_flag_er_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0017	0.0012	1.4828	0.1381	-0.0006	0.0040
Post_Avg	0.0002	0.0024	0.0978	0.9221	-0.0045	0.0050
Tm3	0.0036	0.0032	1.1331	0.2572	-0.0026	0.0098
Tm2	-0.0021	0.0029	-0.7210	0.4709	-0.0078	0.0036
Tm1	0.0036	0.0028	1.3098	0.1903	-0.0018	0.0091
Tm0	0.0011	0.0021	0.5081	0.6114	-0.0031	0.0052
Tp1	-0.0009	0.0026	-0.3582	0.7202	-0.0060	0.0042
Tp2	0.0010	0.0028	0.3511	0.7255	-0.0045	0.0065
Tp3	-0.0019	0.0028	-0.6818	0.4953	-0.0075	0.0036
Tp4	-0.0072	0.0033	-2.1665	0.0303	-0.0137	-0.0007
Tp5	-0.0039	0.0049	-0.7983	0.4247	-0.0135	0.0057
Tp6	0.0136	0.0091	1.4862	0.1372	-0.0043	0.0315

csdid_event_TIN_fall_ecdc_flag_er_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0035	0.0023	1.5187	0.1288	-0.0010	0.0081
Post_Avg	0.0048	0.0043	1.1246	0.2608	-0.0036	0.0132
Tm3	0.0084	0.0066	1.2647	0.2060	-0.0046	0.0214
Tm2	-0.0020	0.0058	-0.3426	0.7319	-0.0133	0.0094
Tm1	0.0042	0.0055	0.7762	0.4376	-0.0065	0.0150
Tm0	0.0094	0.0041	2.2955	0.0217	0.0014	0.0174
Tp1	0.0054	0.0053	1.0280	0.3040	-0.0049	0.0157
Tp2	0.0059	0.0054	1.0847	0.2781	-0.0048	0.0165
Tp3	0.0012	0.0055	0.2266	0.8207	-0.0096	0.0121
Tp4	0.0002	0.0059	0.0340	0.9729	-0.0113	0.0117
Tp5	0.0050	0.0085	0.5905	0.5548	-0.0116	0.0217

Tp6	0.0066	0.0125	0.5293	0.5966	-0.0179	0.0311
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csdid_event_TIN_fall_ecdc_flag_er_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0015	0.0018	0.8270	0.4082	-0.0021	0.0051
Post_Avg	0.0005	0.0049	0.0954	0.9240	-0.0092	0.0101
Tm3	0.0035	0.0048	0.7306	0.4650	-0.0059	0.0130
Tm2	-0.0004	0.0044	-0.0975	0.9223	-0.0091	0.0082
Tm1	0.0015	0.0043	0.3462	0.7292	-0.0069	0.0099
Tm0	0.0007	0.0035	0.2129	0.8314	-0.0060	0.0075
Tp1	-0.0042	0.0046	-0.9272	0.3538	-0.0132	0.0047
Tp2	-0.0055	0.0051	-1.0814	0.2795	-0.0156	0.0045
Tp3	-0.0058	0.0059	-0.9744	0.3298	-0.0174	0.0058
Tp4	0.0028	0.0064	0.4334	0.6648	-0.0098	0.0154
Tp5	-0.0099	0.0096	-1.0261	0.3048	-0.0288	0.0090
Tp6	0.0252	0.0229	1.0986	0.2719	-0.0198	0.0702

csdid_event_TIN_fall_ecdc_flag_er_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0027	0.0014	1.9018	0.0572	-0.0001	0.0056
Post_Avg	0.0001	0.0038	0.0253	0.9798	-0.0074	0.0076
Tm3	0.0089	0.0039	2.2759	0.0229	0.0012	0.0166
Tm2	-0.0032	0.0036	-0.8968	0.3698	-0.0102	0.0038
Tm1	0.0025	0.0034	0.7405	0.4590	-0.0042	0.0093
Tm0	0.0027	0.0028	0.9565	0.3388	-0.0028	0.0081
Tp1	0.0013	0.0036	0.3794	0.7044	-0.0056	0.0083
Tp2	0.0058	0.0041	1.4005	0.1614	-0.0023	0.0139
Tp3	0.0021	0.0049	0.4214	0.6735	-0.0075	0.0117
Tp4	-0.0090	0.0053	-1.7177	0.0858	-0.0194	0.0013
Tp5	-0.0003	0.0083	-0.0316	0.9748	-0.0166	0.0160
Tp6	-0.0019	0.0161	-0.1166	0.9072	-0.0334	0.0296

csdid_event_TIN_fall_ecdc_flag_er_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0005	0.0014	-0.3767	0.7064	-0.0032	0.0022
Post_Avg	0.0034	0.0029	1.1629	0.2449	-0.0023	0.0091
Tm3	-0.0008	0.0035	-0.2174	0.8279	-0.0076	0.0060
Tm2	-0.0025	0.0033	-0.7552	0.4501	-0.0091	0.0040
Tm1	0.0017	0.0032	0.5353	0.5924	-0.0046	0.0081
Tm0	0.0043	0.0025	1.6950	0.0901	-0.0007	0.0093
Tp1	0.0051	0.0031	1.6338	0.1023	-0.0010	0.0113
Tp2	0.0073	0.0035	2.0821	0.0373	0.0004	0.0141
Tp3	0.0070	0.0042	1.6696	0.0950	-0.0012	0.0152
Tp4	0.0009	0.0045	0.1937	0.8464	-0.0079	0.0097
Tp5	0.0046	0.0069	0.6606	0.5088	-0.0090	0.0182

Tp6	-0.0055	0.0089	-0.6219	0.5340	-0.0230	0.0119
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csdid_event_TIN_fall_ecdc_flag_hha_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0001	0.0003	0.3570	0.7211	-0.0005	0.0007
Post_Avg	-0.0001	0.0007	-0.0810	0.9354	-0.0014	0.0013
Tm3	-0.0005	0.0007	-0.6488	0.5165	-0.0019	0.0010
Tm2	0.0001	0.0007	0.1893	0.8499	-0.0012	0.0015
Tm1	0.0007	0.0008	0.8747	0.3817	-0.0008	0.0022
Tm0	0.0004	0.0006	0.7067	0.4797	-0.0008	0.0017
Tp1	0.0006	0.0007	0.8332	0.4047	-0.0008	0.0020
Tp2	0.0007	0.0007	0.9854	0.3244	-0.0007	0.0021
Tp3	0.0011	0.0008	1.3823	0.1669	-0.0005	0.0028
Tp4	-0.0012	0.0012	-0.9989	0.3178	-0.0034	0.0011
Tp5	-0.0032	0.0018	-1.7881	0.0738	-0.0067	0.0003
Tp6	0.0011	0.0012	0.9238	0.3556	-0.0012	0.0034

csdid_event_TIN_fall_ecdc_flag_hha_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0003	0.0003	-0.9963	0.3191	-0.0008	0.0003
Post_Avg	0.0002	0.0006	0.3801	0.7038	-0.0009	0.0013
Tm3	-0.0008	0.0008	-0.9948	0.3198	-0.0023	0.0007
Tm2	-0.0000	0.0006	-0.0261	0.9792	-0.0011	0.0011
Tm1	-0.0000	0.0006	-0.0143	0.9886	-0.0012	0.0012
Tm0	0.0007	0.0005	1.3179	0.1875	-0.0003	0.0017
Tp1	0.0008	0.0006	1.3079	0.1909	-0.0004	0.0020
Tp2	0.0012	0.0005	2.4498	0.0143	0.0002	0.0022
Tp3	0.0015	0.0004	3.4811	0.0005	0.0007	0.0024
Tp4	-0.0004	0.0009	-0.4007	0.6886	-0.0021	0.0014
Tp5	-0.0024	0.0017	-1.4643	0.1431	-0.0057	0.0008
Tp6	0.0001	0.0010	0.0872	0.9305	-0.0018	0.0020

csdid_event_TIN_fall_ecdc_flag_hha_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0003	0.0005	0.5836	0.5595	-0.0007	0.0013
Post_Avg	0.0006	0.0010	0.5966	0.5507	-0.0014	0.0026
Tm3	0.0022	0.0015	1.4592	0.1445	-0.0007	0.0051
Tm2	0.0003	0.0013	0.1989	0.8423	-0.0023	0.0028
Tm1	-0.0015	0.0013	-1.1916	0.2334	-0.0040	0.0010
Tm0	0.0006	0.0009	0.6697	0.5030	-0.0012	0.0025
Tp1	0.0011	0.0012	0.9536	0.3403	-0.0012	0.0034
Tp2	0.0011	0.0012	0.8815	0.3780	-0.0013	0.0034
Tp3	0.0019	0.0013	1.4634	0.1434	-0.0006	0.0044
Tp4	-0.0010	0.0017	-0.5899	0.5552	-0.0043	0.0023
Tp5	0.0009	0.0019	0.4771	0.6333	-0.0028	0.0046

Tp6	-0.0003	0.0025	-0.1254	0.9002	-0.0051	0.0045
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csdid_event_TIN_fall_ecdc_flag_hha_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0017	0.0022	0.7841	0.4330	-0.0025	0.0059
Post_Avg	-0.0054	0.0039	-1.3904	0.1644	-0.0129	0.0022
Tm3	-0.0059	0.0038	-1.5670	0.1171	-0.0133	0.0015
Tm2	-0.0010	0.0032	-0.3095	0.7569	-0.0072	0.0052
Tm1	0.0120	0.0054	2.1988	0.0279	0.0013	0.0226
Tm0	-0.0037	0.0038	-0.9810	0.3266	-0.0112	0.0037
Tp1	-0.0034	0.0044	-0.7814	0.4346	-0.0119	0.0051
Tp2	-0.0022	0.0038	-0.5770	0.5639	-0.0097	0.0053
Tp3	-0.0100	0.0061	-1.6218	0.1048	-0.0220	0.0021
Tp4	-0.0102	0.0073	-1.4087	0.1589	-0.0245	0.0040
Tp5	-0.0161	0.0074	-2.1712	0.0299	-0.0307	-0.0016
Tp6	0.0081	0.0025	3.1692	0.0015	0.0031	0.0131

csdid_event_TIN_fall_ecdc_flag_hha_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0001	0.0004	0.2984	0.7654	-0.0007	0.0010
Post_Avg	-0.0001	0.0010	-0.0809	0.9355	-0.0020	0.0019
Tm3	-0.0006	0.0011	-0.5488	0.5832	-0.0027	0.0015
Tm2	0.0005	0.0011	0.4867	0.6264	-0.0016	0.0026
Tm1	0.0005	0.0011	0.4139	0.6789	-0.0018	0.0027
Tm0	0.0008	0.0009	0.8505	0.3950	-0.0010	0.0026
Tp1	0.0008	0.0011	0.7302	0.4653	-0.0014	0.0030
Tp2	0.0004	0.0011	0.3633	0.7164	-0.0018	0.0026
Tp3	0.0006	0.0014	0.4061	0.6847	-0.0021	0.0032
Tp4	-0.0014	0.0016	-0.8312	0.4059	-0.0046	0.0019
Tp5	-0.0029	0.0023	-1.2563	0.2090	-0.0075	0.0016
Tp6	0.0012	0.0018	0.6532	0.5136	-0.0023	0.0047

csdid_event_TIN_fall_ecdc_flag_hha_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0002	0.0003	-0.4556	0.6487	-0.0008	0.0005
Post_Avg	0.0010	0.0007	1.5605	0.1186	-0.0003	0.0024
Tm3	-0.0003	0.0010	-0.2959	0.7673	-0.0022	0.0016
Tm2	-0.0005	0.0008	-0.6681	0.5041	-0.0020	0.0010
Tm1	0.0003	0.0008	0.3898	0.6967	-0.0013	0.0019
Tm0	0.0003	0.0007	0.3474	0.7283	-0.0012	0.0017
Tp1	0.0003	0.0009	0.3061	0.7595	-0.0016	0.0021
Tp2	0.0012	0.0008	1.4916	0.1358	-0.0004	0.0028
Tp3	0.0020	0.0007	2.8360	0.0046	0.0006	0.0033
Tp4	0.0014	0.0008	1.6686	0.0952	-0.0002	0.0031
Tp5	0.0020	0.0017	1.1328	0.2573	-0.0014	0.0054

Tp6	0.0002	0.0015	0.1406	0.8882	-0.0028	0.0032
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csdid_event_TIN_fall_ecdc_flag_hha

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0002	0.0003	0.5181	0.6044	-0.0004	0.0007
Post_Avg	-0.0000	0.0007	-0.0596	0.9524	-0.0014	0.0013
Tm3	-0.0003	0.0007	-0.4144	0.6785	-0.0018	0.0011
Tm2	0.0001	0.0007	0.1603	0.8727	-0.0012	0.0015
Tm1	0.0007	0.0008	0.8648	0.3872	-0.0008	0.0021
Tm0	0.0004	0.0006	0.6936	0.4879	-0.0008	0.0017
Tp1	0.0006	0.0007	0.7796	0.4356	-0.0008	0.0020
Tp2	0.0005	0.0007	0.7662	0.4435	-0.0008	0.0019
Tp3	0.0011	0.0008	1.4442	0.1487	-0.0004	0.0026
Tp4	-0.0010	0.0012	-0.8236	0.4102	-0.0032	0.0013
Tp5	-0.0031	0.0018	-1.7614	0.0782	-0.0066	0.0004
Tp6	0.0012	0.0011	1.0553	0.2913	-0.0010	0.0034

csdid_event_TIN_fall_ecdc_flag_hha_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0002	-0.3796	0.7043	-0.0004	0.0003
Post_Avg	-0.0002	0.0005	-0.3690	0.7121	-0.0011	0.0007
Tm3	-0.0008	0.0003	-2.5475	0.0108	-0.0013	-0.0002
Tm2	0.0005	0.0003	1.6313	0.1028	-0.0001	0.0012
Tm1	0.0000	0.0005	0.0460	0.9633	-0.0009	0.0010
Tm0	0.0001	0.0004	0.1456	0.8843	-0.0007	0.0009
Tp1	-0.0003	0.0007	-0.3868	0.6989	-0.0016	0.0011
Tp2	-0.0004	0.0007	-0.5292	0.5966	-0.0018	0.0010
Tp3	-0.0005	0.0007	-0.6382	0.5234	-0.0019	0.0009
Tp4	0.0003	0.0003	0.9599	0.3371	-0.0003	0.0008
Tp5	0.0001	0.0005	0.2799	0.7796	-0.0008	0.0011
Tp6	-0.0005	0.0010	-0.5325	0.5944	-0.0025	0.0014

csdid_event_TIN_fall_ecdc_flag_hha_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0003	-0.2091	0.8343	-0.0007	0.0005
Post_Avg	0.0006	0.0005	1.1553	0.2480	-0.0004	0.0017
Tm3	0.0003	0.0009	0.3649	0.7152	-0.0015	0.0022
Tm2	-0.0010	0.0007	-1.3031	0.1925	-0.0024	0.0005
Tm1	0.0004	0.0007	0.6186	0.5362	-0.0009	0.0018
Tm0	0.0009	0.0005	1.7989	0.0720	-0.0001	0.0020
Tp1	0.0006	0.0007	0.9662	0.3339	-0.0006	0.0019
Tp2	0.0003	0.0007	0.5239	0.6004	-0.0009	0.0016
Tp3	0.0006	0.0007	0.9641	0.3350	-0.0007	0.0020
Tp4	0.0008	0.0006	1.3004	0.1935	-0.0004	0.0020
Tp5	0.0005	0.0011	0.4929	0.6221	-0.0016	0.0027

Tp6	0.0005	0.0011	0.4214	0.6735	-0.0017	0.0026
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csdid_event_TIN_fall_ecdc_flag_hha_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0011	0.0009	1.2420	0.2142	-0.0007	0.0030
Post_Avg	0.0001	0.0016	0.0428	0.9658	-0.0030	0.0031
Tm3	-0.0000	0.0025	-0.0173	0.9862	-0.0050	0.0049
Tm2	0.0015	0.0022	0.6840	0.4940	-0.0028	0.0058
Tm1	0.0020	0.0023	0.8747	0.3818	-0.0025	0.0065
Tm0	0.0007	0.0016	0.4249	0.6709	-0.0025	0.0039
Tp1	0.0017	0.0018	0.9276	0.3536	-0.0019	0.0052
Tp2	0.0014	0.0018	0.7917	0.4286	-0.0021	0.0050
Tp3	0.0017	0.0018	0.9073	0.3642	-0.0019	0.0052
Tp4	-0.0015	0.0022	-0.7032	0.4819	-0.0057	0.0027
Tp5	-0.0046	0.0030	-1.4924	0.1356	-0.0105	0.0014
Tp6	0.0011	0.0030	0.3649	0.7151	-0.0047	0.0069

csdid_event_TIN_fall_ecdc_flag_hha_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0002	0.0006	0.2927	0.7698	-0.0009	0.0013
Post_Avg	0.0007	0.0012	0.5704	0.5684	-0.0016	0.0029
Tm3	0.0023	0.0016	1.4410	0.1496	-0.0008	0.0054
Tm2	-0.0016	0.0014	-1.1379	0.2551	-0.0043	0.0011
Tm1	-0.0002	0.0014	-0.1724	0.8631	-0.0029	0.0024
Tm0	0.0013	0.0010	1.3052	0.1918	-0.0007	0.0033
Tp1	0.0024	0.0010	2.4864	0.0129	0.0005	0.0043
Tp2	0.0019	0.0011	1.8097	0.0703	-0.0002	0.0040
Tp3	0.0030	0.0010	2.9838	0.0028	0.0010	0.0049
Tp4	-0.0005	0.0017	-0.3037	0.7613	-0.0038	0.0028
Tp5	-0.0043	0.0031	-1.4223	0.1549	-0.0103	0.0016
Tp6	0.0009	0.0030	0.2963	0.7670	-0.0050	0.0068

csdid_event_TIN_fall_ecdc_flag_hha_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0001	0.0005	0.1067	0.9150	-0.0009	0.0011
Post_Avg	0.0004	0.0011	0.3635	0.7162	-0.0017	0.0025
Tm3	0.0008	0.0014	0.5386	0.5902	-0.0020	0.0036
Tm2	-0.0011	0.0012	-0.8733	0.3825	-0.0035	0.0013
Tm1	0.0005	0.0012	0.3997	0.6894	-0.0019	0.0028
Tm0	0.0004	0.0010	0.3651	0.7151	-0.0016	0.0024
Tp1	0.0005	0.0012	0.4674	0.6402	-0.0017	0.0028
Tp2	0.0011	0.0011	0.9765	0.3288	-0.0011	0.0033
Tp3	0.0010	0.0016	0.6104	0.5416	-0.0021	0.0040
Tp4	0.0008	0.0017	0.4777	0.6329	-0.0025	0.0041
Tp5	-0.0023	0.0027	-0.8563	0.3918	-0.0076	0.0030

Tp6	0.0013	0.0021	0.6039	0.5459	-0.0029	0.0055
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csdid_event_TIN_fall_ecdc_flag_hha_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0002	0.0005	0.4728	0.6363	-0.0007	0.0011
Post_Avg	-0.0004	0.0010	-0.4074	0.6837	-0.0025	0.0016
Tm3	-0.0028	0.0008	-3.4455	0.0006	-0.0044	-0.0012
Tm2	0.0019	0.0009	1.9969	0.0458	0.0000	0.0037
Tm1	0.0016	0.0013	1.2128	0.2252	-0.0010	0.0041
Tm0	0.0002	0.0010	0.2245	0.8223	-0.0018	0.0023
Tp1	-0.0000	0.0012	-0.0247	0.9803	-0.0025	0.0024
Tp2	0.0004	0.0011	0.3324	0.7396	-0.0019	0.0026
Tp3	0.0013	0.0012	1.0607	0.2888	-0.0011	0.0036
Tp4	-0.0025	0.0018	-1.3375	0.1811	-0.0060	0.0011
Tp5	-0.0044	0.0027	-1.6530	0.0983	-0.0096	0.0008
Tp6	0.0021	0.0014	1.4224	0.1549	-0.0008	0.0049

csdid_event_TIN_fall_ecdc_flag_inpat_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0014	0.0006	2.2538	0.0242	0.0002	0.0025
Post_Avg	0.0030	0.0015	1.9715	0.0487	0.0000	0.0059
Tm3	0.0013	0.0016	0.8328	0.4050	-0.0018	0.0044
Tm2	0.0020	0.0015	1.3021	0.1929	-0.0010	0.0049
Tm1	0.0008	0.0015	0.5484	0.5834	-0.0021	0.0038
Tm0	0.0055	0.0012	4.5643	0.0000	0.0031	0.0079
Tp1	0.0058	0.0016	3.7237	0.0002	0.0027	0.0089
Tp2	0.0055	0.0017	3.2470	0.0012	0.0022	0.0088
Tp3	0.0037	0.0020	1.8585	0.0631	-0.0002	0.0076
Tp4	-0.0002	0.0022	-0.0964	0.9232	-0.0045	0.0041
Tp5	-0.0024	0.0035	-0.6828	0.4947	-0.0092	0.0044
Tp6	0.0029	0.0049	0.5915	0.5542	-0.0067	0.0124

csdid_event_TIN_fall_ecdc_flag_inpat_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0007	0.0006	1.0714	0.2840	-0.0006	0.0020
Post_Avg	0.0031	0.0015	2.0439	0.0410	0.0001	0.0061
Tm3	0.0017	0.0018	0.9206	0.3573	-0.0019	0.0052
Tm2	0.0005	0.0016	0.3101	0.7565	-0.0026	0.0036
Tm1	-0.0001	0.0015	-0.0590	0.9529	-0.0031	0.0029
Tm0	0.0040	0.0011	3.5744	0.0004	0.0018	0.0062
Tp1	0.0014	0.0016	0.8832	0.3771	-0.0018	0.0046
Tp2	0.0029	0.0020	1.4517	0.1466	-0.0010	0.0067
Tp3	0.0016	0.0024	0.6801	0.4964	-0.0031	0.0064
Tp4	0.0026	0.0022	1.1715	0.2414	-0.0017	0.0068
Tp5	-0.0001	0.0036	-0.0364	0.9710	-0.0073	0.0070

Tp6	0.0095	0.0056	1.6896	0.0911	-0.0015	0.0205
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csdid_event_TIN_fall_ecdc_flag_inpat_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0023	0.0011	2.1821	0.0291	0.0002	0.0044
Post_Avg	0.0061	0.0023	2.6400	0.0083	0.0016	0.0106
Tm3	0.0029	0.0028	1.0474	0.2949	-0.0025	0.0083
Tm2	0.0046	0.0026	1.7473	0.0806	-0.0006	0.0098
Tm1	-0.0005	0.0026	-0.1996	0.8418	-0.0056	0.0046
Tm0	0.0054	0.0020	2.6846	0.0073	0.0015	0.0093
Tp1	0.0100	0.0024	4.1000	0.0000	0.0052	0.0148
Tp2	0.0089	0.0026	3.4071	0.0007	0.0038	0.0140
Tp3	0.0079	0.0030	2.5856	0.0097	0.0019	0.0138
Tp4	0.0018	0.0033	0.5352	0.5925	-0.0047	0.0082
Tp5	0.0045	0.0055	0.8154	0.4149	-0.0063	0.0154
Tp6	0.0043	0.0068	0.6239	0.5327	-0.0091	0.0176

csdid_event_TIN_fall_ecdc_flag_inpat_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0055	0.0035	1.5648	0.1176	-0.0014	0.0125
Post_Avg	-0.0008	0.0069	-0.1157	0.9079	-0.0143	0.0127
Tm3	-0.0031	0.0073	-0.4239	0.6716	-0.0173	0.0111
Tm2	0.0023	0.0064	0.3649	0.7152	-0.0101	0.0148
Tm1	0.0174	0.0084	2.0601	0.0394	0.0008	0.0339
Tm0	0.0116	0.0060	1.9367	0.0528	-0.0001	0.0234
Tp1	0.0102	0.0075	1.3625	0.1730	-0.0045	0.0248
Tp2	0.0056	0.0083	0.6772	0.4983	-0.0106	0.0219
Tp3	-0.0082	0.0107	-0.7675	0.4428	-0.0291	0.0127
Tp4	-0.0087	0.0112	-0.7728	0.4396	-0.0307	0.0134
Tp5	-0.0170	0.0121	-1.4025	0.1608	-0.0406	0.0067
Tp6	0.0009	0.0182	0.0473	0.9623	-0.0349	0.0366

csdid_event_TIN_fall_ecdc_flag_inpat_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0010	0.0009	1.1230	0.2614	-0.0007	0.0026
Post_Avg	0.0032	0.0021	1.5297	0.1261	-0.0009	0.0073
Tm3	0.0013	0.0022	0.5985	0.5495	-0.0030	0.0056
Tm2	0.0030	0.0022	1.3859	0.1658	-0.0013	0.0073
Tm1	-0.0015	0.0021	-0.6866	0.4923	-0.0056	0.0027
Tm0	0.0065	0.0016	3.9761	0.0001	0.0033	0.0097
Tp1	0.0092	0.0020	4.6299	0.0000	0.0053	0.0131
Tp2	0.0080	0.0021	3.8224	0.0001	0.0039	0.0121
Tp3	0.0059	0.0024	2.4152	0.0157	0.0011	0.0107
Tp4	-0.0021	0.0030	-0.7034	0.4818	-0.0080	0.0038
Tp5	-0.0080	0.0048	-1.6454	0.0999	-0.0175	0.0015

Tp6	0.0029	0.0073	0.4012	0.6883	-0.0114	0.0173
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csdid_event_TIN_fall_ecdc_flag_inpat_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0017	0.0008	2.1484	0.0317	0.0002	0.0033
Post_Avg	0.0045	0.0021	2.1071	0.0351	0.0003	0.0086
Tm3	0.0016	0.0022	0.7379	0.4606	-0.0027	0.0060
Tm2	0.0005	0.0019	0.2694	0.7876	-0.0032	0.0043
Tm1	0.0030	0.0019	1.5685	0.1168	-0.0008	0.0069
Tm0	0.0045	0.0017	2.7266	0.0064	0.0013	0.0078
Tp1	0.0006	0.0025	0.2262	0.8211	-0.0043	0.0054
Tp2	-0.0000	0.0031	-0.0094	0.9925	-0.0062	0.0061
Tp3	-0.0015	0.0036	-0.4053	0.6853	-0.0085	0.0056
Tp4	0.0050	0.0036	1.3763	0.1687	-0.0021	0.0121
Tp5	0.0148	0.0059	2.4918	0.0127	0.0032	0.0264
Tp6	0.0078	0.0054	1.4597	0.1444	-0.0027	0.0183

csdid_event_TIN_fall_ecdc_flag_inpat

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0014	0.0006	2.3999	0.0164	0.0003	0.0026
Post_Avg	0.0031	0.0015	2.0333	0.0420	0.0001	0.0060
Tm3	0.0016	0.0016	1.0312	0.3024	-0.0014	0.0047
Tm2	0.0019	0.0015	1.2828	0.1996	-0.0010	0.0049
Tm1	0.0008	0.0015	0.5384	0.5903	-0.0021	0.0037
Tm0	0.0055	0.0012	4.5558	0.0000	0.0031	0.0079
Tp1	0.0057	0.0015	3.6833	0.0002	0.0027	0.0087
Tp2	0.0053	0.0017	3.1802	0.0015	0.0020	0.0085
Tp3	0.0037	0.0019	1.9854	0.0471	0.0000	0.0074
Tp4	-0.0006	0.0022	-0.2549	0.7988	-0.0049	0.0037
Tp5	-0.0015	0.0037	-0.3976	0.6909	-0.0087	0.0058
Tp6	0.0033	0.0050	0.6635	0.5070	-0.0065	0.0131

csdid_event_TIN_fall_ecdc_flag_inpat_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0000	0.0006	-0.0381	0.9696	-0.0012	0.0011
Post_Avg	0.0013	0.0013	0.9509	0.3416	-0.0013	0.0038
Tm3	-0.0005	0.0017	-0.2713	0.7862	-0.0039	0.0029
Tm2	0.0000	0.0014	0.0239	0.9809	-0.0028	0.0028
Tm1	0.0004	0.0014	0.2703	0.7869	-0.0023	0.0031
Tm0	0.0017	0.0011	1.6626	0.0964	-0.0003	0.0038
Tp1	0.0010	0.0014	0.7523	0.4519	-0.0017	0.0037
Tp2	0.0003	0.0014	0.2027	0.8393	-0.0025	0.0031
Tp3	0.0011	0.0015	0.7811	0.4347	-0.0017	0.0040
Tp4	0.0019	0.0021	0.9408	0.3468	-0.0021	0.0060
Tp5	0.0019	0.0036	0.5234	0.6007	-0.0051	0.0088

Tp6	0.0008	0.0051	0.1507	0.8802	-0.0091	0.0107
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csdid_event_TIN_fall_ecdc_flag_inpat_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0015	0.0008	1.9233	0.0544	-0.0000	0.0030
Post_Avg	0.0031	0.0014	2.1765	0.0295	0.0003	0.0060
Tm3	0.0032	0.0020	1.5642	0.1178	-0.0008	0.0072
Tm2	0.0011	0.0019	0.5481	0.5837	-0.0027	0.0048
Tm1	0.0002	0.0019	0.1130	0.9100	-0.0035	0.0040
Tm0	0.0043	0.0014	3.0504	0.0023	0.0015	0.0071
Tp1	0.0022	0.0019	1.1294	0.2587	-0.0016	0.0060
Tp2	0.0020	0.0020	1.0080	0.3135	-0.0019	0.0059
Tp3	0.0002	0.0020	0.0902	0.9281	-0.0038	0.0041
Tp4	0.0019	0.0019	1.0302	0.3029	-0.0017	0.0055
Tp5	0.0014	0.0028	0.5063	0.6126	-0.0041	0.0070
Tp6	0.0099	0.0044	2.2359	0.0254	0.0012	0.0187

csdid_event_TIN_fall_ecdc_flag_inpat_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0050	0.0017	2.9740	0.0029	0.0017	0.0084
Post_Avg	0.0088	0.0033	2.6953	0.0070	0.0024	0.0152
Tm3	0.0046	0.0047	0.9860	0.3241	-0.0046	0.0138
Tm2	0.0063	0.0042	1.4955	0.1348	-0.0020	0.0146
Tm1	0.0042	0.0041	1.0351	0.3006	-0.0038	0.0122
Tm0	0.0114	0.0030	3.7828	0.0002	0.0055	0.0173
Tp1	0.0162	0.0036	4.5421	0.0000	0.0092	0.0232
Tp2	0.0131	0.0036	3.6314	0.0003	0.0060	0.0202
Tp3	0.0090	0.0036	2.4652	0.0137	0.0018	0.0162
Tp4	0.0022	0.0047	0.4683	0.6396	-0.0070	0.0113
Tp5	-0.0054	0.0066	-0.8281	0.4076	-0.0183	0.0074
Tp6	0.0150	0.0101	1.4801	0.1388	-0.0049	0.0349

csdid_event_TIN_fall_ecdc_flag_inpat_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0021	0.0012	1.6980	0.0895	-0.0003	0.0046
Post_Avg	0.0010	0.0032	0.3209	0.7483	-0.0053	0.0073
Tm3	0.0024	0.0031	0.7713	0.4406	-0.0036	0.0083
Tm2	0.0038	0.0031	1.2352	0.2168	-0.0022	0.0099
Tm1	0.0002	0.0031	0.0583	0.9535	-0.0058	0.0062
Tm0	0.0084	0.0022	3.7670	0.0002	0.0040	0.0128
Tp1	0.0058	0.0030	1.9273	0.0539	-0.0001	0.0118
Tp2	0.0050	0.0033	1.5312	0.1257	-0.0014	0.0115
Tp3	0.0053	0.0038	1.4084	0.1590	-0.0021	0.0128
Tp4	0.0027	0.0045	0.5903	0.5550	-0.0062	0.0116
Tp5	-0.0016	0.0076	-0.2181	0.8274	-0.0164	0.0132

Tp6	-0.0184	0.0128	-1.4396	0.1500	-0.0435	0.0067
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csdid_event_TIN_fall_ecdc_flag_inpat_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0023	0.0010	2.3058	0.0211	0.0003	0.0042
Post_Avg	0.0023	0.0025	0.9267	0.3541	-0.0026	0.0073
Tm3	0.0038	0.0027	1.4240	0.1545	-0.0014	0.0091
Tm2	-0.0003	0.0024	-0.1202	0.9043	-0.0049	0.0044
Tm1	0.0033	0.0024	1.3707	0.1705	-0.0014	0.0080
Tm0	0.0053	0.0019	2.7168	0.0066	0.0015	0.0090
Tp1	0.0072	0.0023	3.1612	0.0016	0.0027	0.0117
Tp2	0.0075	0.0025	2.9757	0.0029	0.0026	0.0125
Tp3	0.0057	0.0030	1.9106	0.0561	-0.0001	0.0116
Tp4	-0.0041	0.0038	-1.0859	0.2775	-0.0115	0.0033
Tp5	-0.0099	0.0068	-1.4687	0.1419	-0.0232	0.0033
Tp6	0.0047	0.0091	0.5167	0.6054	-0.0131	0.0225

csdid_event_TIN_fall_ecdc_flag_inpat_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0000	0.0009	0.0148	0.9882	-0.0018	0.0019
Post_Avg	0.0029	0.0022	1.3020	0.1929	-0.0015	0.0073
Tm3	-0.0018	0.0023	-0.7954	0.4264	-0.0064	0.0027
Tm2	0.0039	0.0025	1.5765	0.1149	-0.0010	0.0088
Tm1	-0.0020	0.0023	-0.8739	0.3822	-0.0066	0.0025
Tm0	0.0052	0.0019	2.7263	0.0064	0.0015	0.0089
Tp1	0.0055	0.0024	2.2565	0.0240	0.0007	0.0102
Tp2	0.0043	0.0027	1.6128	0.1068	-0.0009	0.0096
Tp3	0.0024	0.0031	0.7607	0.4469	-0.0037	0.0084
Tp4	0.0035	0.0032	1.0948	0.2736	-0.0028	0.0098
Tp5	-0.0004	0.0050	-0.0793	0.9368	-0.0101	0.0093
Tp6	-0.0002	0.0066	-0.0299	0.9762	-0.0132	0.0128

csdid_event_TIN_fall_ecdc_flag_obstay_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0006	0.0003	2.3342	0.0196	0.0001	0.0011
Post_Avg	0.0003	0.0007	0.4932	0.6219	-0.0010	0.0017
Tm3	0.0009	0.0007	1.2014	0.2296	-0.0005	0.0022
Tm2	0.0004	0.0007	0.6337	0.5263	-0.0009	0.0018
Tm1	0.0006	0.0007	0.8051	0.4208	-0.0008	0.0019
Tm0	-0.0000	0.0006	-0.0500	0.9601	-0.0012	0.0011
Tp1	0.0001	0.0008	0.0769	0.9387	-0.0014	0.0016
Tp2	0.0000	0.0008	0.0049	0.9961	-0.0015	0.0015
Tp3	-0.0000	0.0009	-0.0107	0.9915	-0.0017	0.0017
Tp4	-0.0012	0.0011	-1.1071	0.2682	-0.0032	0.0009
Tp5	-0.0015	0.0014	-1.1013	0.2708	-0.0043	0.0012

Tp6	0.0051	0.0028	1.8389	0.0659	-0.0003	0.0105
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csdid_event_TIN_fall_ecdc_flag_obstay_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0002	0.0003	0.6874	0.4918	-0.0003	0.0007
Post_Avg	0.0022	0.0009	2.3146	0.0206	0.0003	0.0040
Tm3	0.0002	0.0007	0.2744	0.7838	-0.0012	0.0016
Tm2	-0.0003	0.0007	-0.5206	0.6026	-0.0016	0.0009
Tm1	0.0007	0.0006	1.0894	0.2760	-0.0006	0.0020
Tm0	0.0004	0.0005	0.8375	0.4023	-0.0006	0.0014
Tp1	0.0002	0.0006	0.3692	0.7120	-0.0010	0.0014
Tp2	0.0005	0.0007	0.8247	0.4095	-0.0007	0.0018
Tp3	0.0005	0.0007	0.7220	0.4703	-0.0009	0.0020
Tp4	-0.0010	0.0012	-0.8645	0.3873	-0.0033	0.0013
Tp5	-0.0006	0.0011	-0.5745	0.5656	-0.0028	0.0015
Tp6	0.0152	0.0057	2.6545	0.0079	0.0040	0.0264

csdid_event_TIN_fall_ecdc_flag_obstay_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0003	0.0005	0.6870	0.4921	-0.0006	0.0013
Post_Avg	0.0005	0.0010	0.4882	0.6254	-0.0014	0.0024
Tm3	0.0011	0.0014	0.7944	0.4270	-0.0016	0.0038
Tm2	-0.0007	0.0012	-0.5619	0.5742	-0.0030	0.0017
Tm1	0.0006	0.0011	0.5248	0.5997	-0.0016	0.0028
Tm0	0.0006	0.0010	0.5883	0.5563	-0.0014	0.0025
Tp1	-0.0001	0.0015	-0.0633	0.9495	-0.0029	0.0028
Tp2	-0.0007	0.0016	-0.4643	0.6424	-0.0039	0.0024
Tp3	-0.0005	0.0017	-0.2782	0.7808	-0.0037	0.0028
Tp4	0.0002	0.0016	0.1187	0.9055	-0.0029	0.0032
Tp5	0.0006	0.0017	0.3776	0.7057	-0.0027	0.0040
Tp6	0.0032	0.0026	1.2380	0.2157	-0.0019	0.0083

csdid_event_TIN_fall_ecdc_flag_obstay_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0037	0.0016	2.2538	0.0242	0.0005	0.0069
Post_Avg	-0.0042	0.0033	-1.2690	0.2045	-0.0106	0.0023
Tm3	0.0037	0.0033	1.1310	0.2581	-0.0027	0.0101
Tm2	0.0043	0.0033	1.3137	0.1889	-0.0021	0.0108
Tm1	0.0031	0.0044	0.7110	0.4771	-0.0055	0.0117
Tm0	-0.0062	0.0032	-1.9486	0.0513	-0.0125	0.0000
Tp1	-0.0020	0.0036	-0.5719	0.5674	-0.0090	0.0049
Tp2	-0.0020	0.0034	-0.6015	0.5475	-0.0086	0.0046
Tp3	-0.0072	0.0052	-1.3927	0.1637	-0.0173	0.0029
Tp4	-0.0073	0.0054	-1.3363	0.1814	-0.0179	0.0034
Tp5	-0.0034	0.0068	-0.4981	0.6184	-0.0167	0.0099

Tp6	-0.0010	0.0083	-0.1218	0.9031	-0.0174	0.0153
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csdid_event_TIN_fall_ecdc_flag_obstay_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0007	0.0004	1.9961	0.0459	0.0000	0.0015
Post_Avg	0.0009	0.0009	0.9743	0.3299	-0.0009	0.0028
Tm3	0.0014	0.0011	1.2840	0.1991	-0.0007	0.0035
Tm2	0.0001	0.0010	0.0567	0.9547	-0.0019	0.0020
Tm1	0.0008	0.0009	0.8429	0.3993	-0.0011	0.0026
Tm0	0.0001	0.0008	0.1712	0.8640	-0.0015	0.0017
Tp1	-0.0006	0.0011	-0.5637	0.5730	-0.0028	0.0016
Tp2	-0.0007	0.0012	-0.5702	0.5685	-0.0030	0.0016
Tp3	-0.0012	0.0013	-0.8944	0.3711	-0.0037	0.0014
Tp4	0.0001	0.0014	0.1027	0.9182	-0.0026	0.0029
Tp5	0.0017	0.0018	0.9370	0.3487	-0.0019	0.0052
Tp6	0.0069	0.0035	1.9566	0.0504	-0.0000	0.0138

csdid_event_TIN_fall_ecdc_flag_obstay_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0003	0.0003	0.8462	0.3975	-0.0004	0.0009
Post_Avg	0.0016	0.0011	1.5358	0.1246	-0.0004	0.0037
Tm3	0.0003	0.0008	0.4044	0.6859	-0.0013	0.0019
Tm2	0.0009	0.0009	0.9946	0.3199	-0.0009	0.0028
Tm1	-0.0004	0.0009	-0.4675	0.6402	-0.0022	0.0013
Tm0	0.0005	0.0007	0.6906	0.4898	-0.0008	0.0018
Tp1	0.0013	0.0008	1.6404	0.1009	-0.0003	0.0030
Tp2	0.0011	0.0010	1.1599	0.2461	-0.0008	0.0030
Tp3	0.0014	0.0010	1.4264	0.1538	-0.0005	0.0033
Tp4	0.0008	0.0018	0.4294	0.6677	-0.0028	0.0043
Tp5	-0.0011	0.0023	-0.5013	0.6161	-0.0056	0.0033
Tp6	0.0074	0.0052	1.4027	0.1607	-0.0029	0.0177

csdid_event_TIN_fall_ecdc_flag_obstay

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0006	0.0003	2.3643	0.0181	0.0001	0.0011
Post_Avg	0.0003	0.0007	0.4674	0.6402	-0.0010	0.0017
Tm3	0.0009	0.0007	1.2716	0.2035	-0.0005	0.0023
Tm2	0.0004	0.0007	0.6045	0.5455	-0.0009	0.0018
Tm1	0.0005	0.0007	0.7910	0.4289	-0.0008	0.0019
Tm0	-0.0000	0.0006	-0.0689	0.9451	-0.0012	0.0011
Tp1	-0.0000	0.0008	-0.0114	0.9909	-0.0015	0.0015
Tp2	-0.0002	0.0008	-0.2722	0.7855	-0.0018	0.0014
Tp3	-0.0002	0.0009	-0.2198	0.8260	-0.0019	0.0015
Tp4	-0.0010	0.0011	-0.9298	0.3525	-0.0032	0.0011
Tp5	-0.0014	0.0014	-1.0138	0.3107	-0.0042	0.0014

Tp6	0.0052	0.0028	1.8603	0.0628	-0.0003	0.0107
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csdid_event_TIN_fall_ecdc_flag_obstay_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0000	0.0002	-0.0779	0.9379	-0.0005	0.0005
Post_Avg	0.0006	0.0010	0.5696	0.5689	-0.0014	0.0026
Tm3	-0.0006	0.0003	-1.9793	0.0478	-0.0011	-0.0000
Tm2	-0.0002	0.0005	-0.4810	0.6305	-0.0012	0.0007
Tm1	0.0008	0.0006	1.2593	0.2079	-0.0004	0.0019
Tm0	-0.0003	0.0005	-0.5643	0.5725	-0.0013	0.0007
Tp1	-0.0007	0.0007	-0.9896	0.3224	-0.0021	0.0007
Tp2	-0.0001	0.0007	-0.0770	0.9386	-0.0015	0.0014
Tp3	-0.0006	0.0008	-0.7523	0.4519	-0.0020	0.0009
Tp4	-0.0010	0.0005	-2.2428	0.0249	-0.0020	-0.0001
Tp5	-0.0018	0.0009	-2.0499	0.0404	-0.0034	-0.0001
Tp6	0.0085	0.0065	1.3094	0.1904	-0.0042	0.0213

csdid_event_TIN_fall_ecdc_flag_obstay_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0006	0.0004	1.8080	0.0706	-0.0001	0.0014
Post_Avg	-0.0002	0.0007	-0.2527	0.8005	-0.0016	0.0012
Tm3	0.0008	0.0010	0.8287	0.4073	-0.0011	0.0028
Tm2	-0.0003	0.0008	-0.3521	0.7248	-0.0019	0.0013
Tm1	0.0014	0.0009	1.5375	0.1242	-0.0004	0.0032
Tm0	-0.0004	0.0007	-0.5093	0.6105	-0.0018	0.0010
Tp1	-0.0006	0.0009	-0.6967	0.4860	-0.0023	0.0011
Tp2	-0.0008	0.0009	-0.8584	0.3907	-0.0025	0.0010
Tp3	-0.0007	0.0009	-0.8037	0.4216	-0.0025	0.0010
Tp4	-0.0016	0.0010	-1.5831	0.1134	-0.0035	0.0004
Tp5	-0.0016	0.0012	-1.3568	0.1748	-0.0040	0.0007
Tp6	0.0044	0.0027	1.6095	0.1075	-0.0010	0.0098

csdid_event_TIN_fall_ecdc_flag_obstay_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0009	0.0007	1.3680	0.1713	-0.0004	0.0023
Post_Avg	0.0021	0.0014	1.5385	0.1239	-0.0006	0.0049
Tm3	0.0020	0.0020	0.9717	0.3312	-0.0020	0.0059
Tm2	0.0019	0.0020	0.9569	0.3386	-0.0020	0.0057
Tm1	-0.0010	0.0018	-0.5862	0.5577	-0.0046	0.0025
Tm0	0.0022	0.0013	1.6919	0.0907	-0.0003	0.0047
Tp1	0.0029	0.0017	1.7067	0.0879	-0.0004	0.0062
Tp2	0.0017	0.0017	0.9756	0.3292	-0.0017	0.0051
Tp3	0.0013	0.0018	0.7504	0.4530	-0.0021	0.0048
Tp4	0.0029	0.0020	1.4749	0.1402	-0.0009	0.0067
Tp5	0.0031	0.0031	0.9775	0.3283	-0.0031	0.0092

Tp6	0.0009	0.0040	0.2245	0.8224	-0.0070	0.0088
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csdid_event_TIN_fall_ecdc_flag_obstay_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0000	0.0006	0.0009	0.9993	-0.0011	0.0011
Post_Avg	-0.0012	0.0018	-0.6423	0.5207	-0.0047	0.0024
Tm3	-0.0005	0.0014	-0.3592	0.7194	-0.0033	0.0023
Tm2	0.0019	0.0016	1.1855	0.2358	-0.0012	0.0049
Tm1	-0.0014	0.0014	-0.9864	0.3239	-0.0040	0.0013
Tm0	0.0003	0.0010	0.3033	0.7616	-0.0016	0.0022
Tp1	0.0006	0.0013	0.4360	0.6629	-0.0020	0.0031
Tp2	-0.0016	0.0017	-0.9249	0.3550	-0.0049	0.0018
Tp3	-0.0028	0.0019	-1.5091	0.1313	-0.0065	0.0009
Tp4	0.0002	0.0022	0.0762	0.9392	-0.0042	0.0046
Tp5	-0.0033	0.0033	-1.0203	0.3076	-0.0098	0.0031
Tp6	-0.0014	0.0086	-0.1690	0.8658	-0.0182	0.0153

csdid_event_TIN_fall_ecdc_flag_obstay_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0008	0.0004	1.8986	0.0576	-0.0000	0.0016
Post_Avg	-0.0004	0.0014	-0.2882	0.7732	-0.0031	0.0023
Tm3	0.0025	0.0013	1.9968	0.0458	0.0000	0.0050
Tm2	-0.0012	0.0011	-1.0988	0.2719	-0.0033	0.0009
Tm1	0.0011	0.0010	1.0277	0.3041	-0.0010	0.0031
Tm0	-0.0003	0.0010	-0.3140	0.7535	-0.0022	0.0016
Tp1	-0.0007	0.0013	-0.5826	0.5602	-0.0032	0.0017
Tp2	-0.0003	0.0014	-0.2170	0.8282	-0.0031	0.0025
Tp3	-0.0009	0.0016	-0.5785	0.5629	-0.0041	0.0022
Tp4	-0.0026	0.0019	-1.3758	0.1689	-0.0062	0.0011
Tp5	-0.0013	0.0028	-0.4812	0.6304	-0.0068	0.0041
Tp6	0.0034	0.0058	0.5881	0.5564	-0.0080	0.0148

csdid_event_TIN_fall_ecdc_flag_obstay_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0007	0.0004	1.5832	0.1134	-0.0002	0.0015
Post_Avg	0.0008	0.0008	1.0348	0.3008	-0.0008	0.0024
Tm3	0.0000	0.0010	0.0450	0.9641	-0.0019	0.0020
Tm2	0.0014	0.0011	1.2890	0.1974	-0.0008	0.0036
Tm1	0.0005	0.0012	0.4084	0.6830	-0.0018	0.0027
Tm0	0.0004	0.0008	0.4552	0.6489	-0.0012	0.0019
Tp1	0.0004	0.0010	0.3896	0.6969	-0.0016	0.0024
Tp2	0.0008	0.0009	0.9013	0.3674	-0.0010	0.0027
Tp3	0.0014	0.0010	1.4250	0.1541	-0.0005	0.0032
Tp4	0.0000	0.0014	0.0301	0.9760	-0.0026	0.0027
Tp5	-0.0007	0.0017	-0.4126	0.6799	-0.0040	0.0026

Tp6	0.0036	0.0031	1.1472	0.2513	-0.0025	0.0097
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csdid_event_TIN_fall_ecdc_flag_output_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0021	0.0011	1.9616	0.0498	0.0000	0.0042
Post_Avg	0.0009	0.0025	0.3548	0.7227	-0.0040	0.0058
Tm3	0.0014	0.0028	0.5054	0.6133	-0.0041	0.0070
Tm2	0.0015	0.0026	0.5669	0.5708	-0.0036	0.0066
Tm1	0.0033	0.0026	1.2965	0.1948	-0.0017	0.0083
Tm0	0.0006	0.0021	0.3116	0.7553	-0.0034	0.0047
Tp1	-0.0010	0.0026	-0.3720	0.7099	-0.0062	0.0042
Tp2	0.0002	0.0031	0.0764	0.9391	-0.0058	0.0062
Tp3	-0.0009	0.0036	-0.2392	0.8110	-0.0080	0.0062
Tp4	-0.0053	0.0036	-1.4571	0.1451	-0.0124	0.0018
Tp5	0.0006	0.0054	0.1023	0.9185	-0.0101	0.0112
Tp6	0.0119	0.0086	1.3928	0.1637	-0.0049	0.0287

csdid_event_TIN_fall_ecdc_flag_output_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0003	0.0013	0.1920	0.8478	-0.0023	0.0028
Post_Avg	0.0030	0.0034	0.8779	0.3800	-0.0037	0.0097
Tm3	-0.0004	0.0035	-0.1230	0.9021	-0.0074	0.0065
Tm2	0.0003	0.0032	0.0957	0.9237	-0.0059	0.0065
Tm1	0.0009	0.0031	0.2849	0.7757	-0.0052	0.0070
Tm0	0.0007	0.0024	0.2996	0.7645	-0.0040	0.0054
Tp1	-0.0012	0.0031	-0.3705	0.7110	-0.0073	0.0050
Tp2	-0.0020	0.0039	-0.4983	0.6182	-0.0097	0.0057
Tp3	-0.0017	0.0047	-0.3525	0.7245	-0.0109	0.0076
Tp4	0.0029	0.0048	0.6097	0.5421	-0.0065	0.0124
Tp5	0.0100	0.0079	1.2604	0.2075	-0.0055	0.0255
Tp6	0.0120	0.0146	0.8250	0.4094	-0.0166	0.0407

csdid_event_TIN_fall_ecdc_flag_output_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0018	0.0019	0.9415	0.3464	-0.0020	0.0056
Post_Avg	0.0005	0.0040	0.1115	0.9112	-0.0075	0.0084
Tm3	0.0007	0.0050	0.1428	0.8865	-0.0091	0.0106
Tm2	-0.0005	0.0045	-0.1204	0.9042	-0.0094	0.0083
Tm1	0.0053	0.0045	1.1623	0.2451	-0.0036	0.0141
Tm0	-0.0005	0.0036	-0.1452	0.8846	-0.0076	0.0065
Tp1	-0.0046	0.0048	-0.9693	0.3324	-0.0140	0.0047
Tp2	0.0006	0.0055	0.1089	0.9132	-0.0102	0.0114
Tp3	-0.0037	0.0063	-0.5836	0.5595	-0.0161	0.0087
Tp4	-0.0102	0.0058	-1.7686	0.0770	-0.0215	0.0011
Tp5	-0.0050	0.0085	-0.5832	0.5598	-0.0216	0.0117

Tp6	0.0265	0.0118	2.2559	0.0241	0.0035	0.0496
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csdid_event_TIN_fall_ecdc_flag_outpat_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0115	0.0050	2.2802	0.0226	0.0016	0.0214
Post_Avg	0.0036	0.0085	0.4255	0.6705	-0.0131	0.0203
Tm3	0.0150	0.0110	1.3659	0.1720	-0.0065	0.0366
Tm2	0.0077	0.0095	0.8059	0.4203	-0.0110	0.0264
Tm1	0.0119	0.0120	0.9910	0.3217	-0.0116	0.0353
Tm0	0.0082	0.0085	0.9603	0.3369	-0.0085	0.0249
Tp1	-0.0015	0.0098	-0.1485	0.8820	-0.0207	0.0178
Tp2	0.0092	0.0113	0.8081	0.4191	-0.0131	0.0314
Tp3	-0.0033	0.0133	-0.2509	0.8019	-0.0295	0.0228
Tp4	0.0006	0.0136	0.0463	0.9630	-0.0260	0.0273
Tp5	-0.0004	0.0151	-0.0231	0.9815	-0.0300	0.0293
Tp6	0.0126	0.0247	0.5082	0.6113	-0.0359	0.0611

csdid_event_TIN_fall_ecdc_flag_outpat_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0034	0.0015	2.3042	0.0212	0.0005	0.0063
Post_Avg	-0.0021	0.0035	-0.5954	0.5516	-0.0088	0.0047
Tm3	0.0041	0.0040	1.0197	0.3079	-0.0037	0.0119
Tm2	0.0016	0.0036	0.4463	0.6554	-0.0055	0.0088
Tm1	0.0046	0.0036	1.2665	0.2053	-0.0025	0.0116
Tm0	-0.0013	0.0029	-0.4407	0.6594	-0.0069	0.0044
Tp1	-0.0029	0.0037	-0.7870	0.4313	-0.0102	0.0043
Tp2	-0.0018	0.0042	-0.4302	0.6671	-0.0100	0.0064
Tp3	-0.0036	0.0049	-0.7352	0.4622	-0.0131	0.0060
Tp4	-0.0111	0.0050	-2.2256	0.0260	-0.0208	-0.0013
Tp5	-0.0043	0.0075	-0.5674	0.5704	-0.0190	0.0105
Tp6	0.0105	0.0117	0.8981	0.3691	-0.0124	0.0334

csdid_event_TIN_fall_ecdc_flag_outpat_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0004	0.0015	0.2652	0.7909	-0.0025	0.0033
Post_Avg	0.0043	0.0037	1.1422	0.2534	-0.0031	0.0116
Tm3	-0.0016	0.0040	-0.3954	0.6925	-0.0094	0.0062
Tm2	0.0014	0.0036	0.3795	0.7043	-0.0057	0.0084
Tm1	0.0014	0.0035	0.3999	0.6892	-0.0055	0.0083
Tm0	0.0037	0.0028	1.3252	0.1851	-0.0018	0.0091
Tp1	0.0014	0.0036	0.3764	0.7066	-0.0057	0.0084
Tp2	0.0015	0.0048	0.3187	0.7500	-0.0078	0.0109
Tp3	-0.0004	0.0054	-0.0700	0.9442	-0.0109	0.0101
Tp4	0.0049	0.0059	0.8303	0.4064	-0.0067	0.0165
Tp5	0.0102	0.0110	0.9239	0.3555	-0.0114	0.0317

Tp6	0.0087	0.0120	0.7232	0.4695	-0.0148	0.0322
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csdid_event_TIN_fall_ecdc_flag_output

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0022	0.0011	2.0393	0.0414	0.0001	0.0042
Post_Avg	0.0006	0.0025	0.2243	0.8225	-0.0044	0.0055
Tm3	0.0017	0.0028	0.6146	0.5388	-0.0038	0.0073
Tm2	0.0013	0.0026	0.5099	0.6101	-0.0038	0.0064
Tm1	0.0034	0.0026	1.3248	0.1852	-0.0016	0.0084
Tm0	0.0006	0.0021	0.3061	0.7596	-0.0034	0.0047
Tp1	-0.0013	0.0026	-0.5020	0.6157	-0.0065	0.0038
Tp2	-0.0008	0.0031	-0.2430	0.8080	-0.0068	0.0053
Tp3	-0.0016	0.0036	-0.4579	0.6471	-0.0086	0.0053
Tp4	-0.0053	0.0037	-1.4321	0.1521	-0.0125	0.0019
Tp5	-0.0009	0.0056	-0.1621	0.8712	-0.0120	0.0101
Tp6	0.0132	0.0089	1.4920	0.1357	-0.0041	0.0306

csdid_event_TIN_fall_ecdc_flag_output_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0007	0.0012	0.5780	0.5632	-0.0017	0.0031
Post_Avg	-0.0010	0.0029	-0.3564	0.7215	-0.0068	0.0047
Tm3	0.0002	0.0034	0.0461	0.9633	-0.0065	0.0068
Tm2	0.0013	0.0030	0.4184	0.6757	-0.0046	0.0071
Tm1	0.0007	0.0030	0.2334	0.8155	-0.0051	0.0065
Tm0	-0.0000	0.0022	-0.0204	0.9838	-0.0043	0.0043
Tp1	-0.0027	0.0027	-0.9779	0.3281	-0.0080	0.0027
Tp2	0.0013	0.0030	0.4433	0.6575	-0.0045	0.0072
Tp3	0.0017	0.0031	0.5660	0.5714	-0.0043	0.0078
Tp4	0.0012	0.0047	0.2467	0.8051	-0.0080	0.0103
Tp5	0.0023	0.0087	0.2620	0.7933	-0.0147	0.0192
Tp6	-0.0111	0.0120	-0.9245	0.3552	-0.0346	0.0124

csdid_event_TIN_fall_ecdc_flag_output_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0031	0.0015	2.0716	0.0383	0.0002	0.0060
Post_Avg	-0.0029	0.0031	-0.9383	0.3481	-0.0089	0.0031
Tm3	0.0003	0.0040	0.0759	0.9395	-0.0076	0.0082
Tm2	0.0013	0.0036	0.3603	0.7186	-0.0058	0.0084
Tm1	0.0076	0.0036	2.0955	0.0361	0.0005	0.0148
Tm0	-0.0020	0.0028	-0.7070	0.4796	-0.0074	0.0035
Tp1	-0.0059	0.0035	-1.6794	0.0931	-0.0127	0.0010
Tp2	-0.0046	0.0037	-1.2411	0.2146	-0.0119	0.0027
Tp3	-0.0071	0.0038	-1.8868	0.0592	-0.0145	0.0003
Tp4	-0.0104	0.0042	-2.4740	0.0134	-0.0186	-0.0022
Tp5	-0.0046	0.0064	-0.7117	0.4767	-0.0172	0.0080

Tp6	0.0143	0.0108	1.3330	0.1825	-0.0067	0.0354
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csdid_event_TIN_fall_ecdc_flag_output_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0051	0.0028	1.8621	0.0626	-0.0003	0.0106
Post_Avg	0.0047	0.0050	0.9520	0.3411	-0.0050	0.0145
Tm3	0.0088	0.0080	1.0916	0.2750	-0.0070	0.0245
Tm2	0.0018	0.0068	0.2574	0.7968	-0.0116	0.0151
Tm1	0.0049	0.0064	0.7612	0.4465	-0.0077	0.0175
Tm0	0.0085	0.0048	1.7629	0.0779	-0.0009	0.0179
Tp1	0.0058	0.0061	0.9592	0.3375	-0.0061	0.0178
Tp2	0.0041	0.0063	0.6589	0.5100	-0.0082	0.0165
Tp3	0.0005	0.0064	0.0844	0.9328	-0.0120	0.0131
Tp4	-0.0021	0.0068	-0.3140	0.7535	-0.0155	0.0113
Tp5	0.0020	0.0096	0.2061	0.8367	-0.0168	0.0208
Tp6	0.0144	0.0145	0.9935	0.3205	-0.0140	0.0427

csdid_event_TIN_fall_ecdc_flag_output_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0000	0.0023	-0.0213	0.9830	-0.0045	0.0044
Post_Avg	0.0034	0.0057	0.5901	0.5552	-0.0079	0.0147
Tm3	-0.0014	0.0061	-0.2349	0.8143	-0.0134	0.0105
Tm2	-0.0009	0.0054	-0.1648	0.8691	-0.0115	0.0097
Tm1	0.0022	0.0052	0.4161	0.6773	-0.0081	0.0124
Tm0	0.0031	0.0041	0.7547	0.4504	-0.0049	0.0111
Tp1	-0.0026	0.0054	-0.4856	0.6272	-0.0132	0.0080
Tp2	-0.0029	0.0062	-0.4595	0.6459	-0.0150	0.0093
Tp3	-0.0025	0.0072	-0.3469	0.7286	-0.0167	0.0117
Tp4	0.0011	0.0075	0.1528	0.8785	-0.0135	0.0158
Tp5	-0.0062	0.0115	-0.5442	0.5863	-0.0287	0.0163
Tp6	0.0338	0.0259	1.3033	0.1925	-0.0170	0.0845

csdid_event_TIN_fall_ecdc_flag_output_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0030	0.0018	1.7272	0.0841	-0.0004	0.0065
Post_Avg	-0.0005	0.0046	-0.1045	0.9168	-0.0094	0.0085
Tm3	0.0065	0.0047	1.3948	0.1631	-0.0027	0.0157
Tm2	-0.0013	0.0043	-0.3023	0.7624	-0.0097	0.0071
Tm1	0.0038	0.0042	0.9156	0.3599	-0.0044	0.0120
Tm0	0.0013	0.0034	0.3693	0.7119	-0.0054	0.0079
Tp1	0.0013	0.0043	0.2994	0.7646	-0.0071	0.0097
Tp2	0.0037	0.0051	0.7311	0.4647	-0.0062	0.0136
Tp3	0.0007	0.0059	0.1220	0.9029	-0.0109	0.0124
Tp4	-0.0085	0.0064	-1.3269	0.1845	-0.0210	0.0040
Tp5	0.0047	0.0106	0.4419	0.6586	-0.0161	0.0255

Tp6	-0.0065	0.0199	-0.3286	0.7424	-0.0456	0.0325
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csdid_event_TIN_fall_ecdc_flag_output_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0014	0.0016	0.8412	0.4003	-0.0018	0.0046
Post_Avg	0.0005	0.0035	0.1337	0.8936	-0.0064	0.0074
Tm3	-0.0022	0.0042	-0.5147	0.6068	-0.0105	0.0061
Tm2	0.0047	0.0041	1.1511	0.2497	-0.0033	0.0127
Tm1	0.0016	0.0040	0.4074	0.6838	-0.0062	0.0095
Tm0	0.0019	0.0031	0.6289	0.5294	-0.0041	0.0079
Tp1	0.0027	0.0038	0.7053	0.4806	-0.0048	0.0101
Tp2	0.0039	0.0043	0.8966	0.3699	-0.0046	0.0124
Tp3	0.0048	0.0053	0.9073	0.3642	-0.0056	0.0153
Tp4	-0.0038	0.0053	-0.7170	0.4734	-0.0142	0.0066
Tp5	0.0018	0.0079	0.2253	0.8217	-0.0137	0.0173
Tp6	-0.0080	0.0111	-0.7225	0.4700	-0.0297	0.0137

csdid_event_TIN_fall_ecdc_flag_snf_aco_penetration

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0003	-0.2440	0.8073	-0.0006	0.0005
Post_Avg	0.0016	0.0006	2.6233	0.0087	0.0004	0.0028
Tm3	-0.0006	0.0006	-0.9207	0.3572	-0.0018	0.0007
Tm2	0.0006	0.0006	0.9020	0.3671	-0.0007	0.0019
Tm1	-0.0002	0.0007	-0.2970	0.7665	-0.0015	0.0011
Tm0	0.0014	0.0006	2.4910	0.0127	0.0003	0.0025
Tp1	0.0013	0.0007	1.9454	0.0517	-0.0000	0.0027
Tp2	0.0012	0.0008	1.5973	0.1102	-0.0003	0.0027
Tp3	0.0018	0.0009	2.1213	0.0339	0.0001	0.0035
Tp4	0.0018	0.0008	2.1902	0.0285	0.0002	0.0034
Tp5	0.0034	0.0011	3.0696	0.0021	0.0012	0.0055
Tp6	0.0003	0.0016	0.1882	0.8507	-0.0029	0.0035

csdid_event_TIN_fall_ecdc_flag_snf_age_group_65_to_74

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0001	0.0003	0.1902	0.8492	-0.0005	0.0006
Post_Avg	-0.0000	0.0006	-0.0492	0.9608	-0.0011	0.0011
Tm3	-0.0012	0.0005	-2.3170	0.0205	-0.0021	-0.0002
Tm2	0.0006	0.0006	1.0345	0.3009	-0.0005	0.0017
Tm1	0.0007	0.0007	1.1039	0.2696	-0.0006	0.0020
Tm0	0.0004	0.0005	0.7857	0.4320	-0.0006	0.0015
Tp1	-0.0000	0.0007	-0.0655	0.9478	-0.0015	0.0014
Tp2	-0.0006	0.0010	-0.5604	0.5752	-0.0025	0.0014
Tp3	-0.0006	0.0012	-0.5299	0.5962	-0.0029	0.0017
Tp4	-0.0002	0.0009	-0.2280	0.8196	-0.0021	0.0016
Tp5	0.0004	0.0007	0.6221	0.5339	-0.0009	0.0018

Tp6	0.0004	0.0013	0.3057	0.7598	-0.0021	0.0029
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csdid_event_TIN_fall_ecdc_flag_snf_age_group_75_to_84

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0004	-0.1294	0.8970	-0.0009	0.0008
Post_Avg	0.0026	0.0010	2.7555	0.0059	0.0008	0.0045
Tm3	0.0015	0.0013	1.1762	0.2395	-0.0010	0.0039
Tm2	0.0003	0.0012	0.2423	0.8085	-0.0021	0.0027
Tm1	-0.0019	0.0010	-1.8899	0.0588	-0.0040	0.0001
Tm0	0.0020	0.0009	2.3468	0.0189	0.0003	0.0037
Tp1	0.0028	0.0010	2.7716	0.0056	0.0008	0.0048
Tp2	0.0028	0.0012	2.3333	0.0196	0.0005	0.0052
Tp3	0.0034	0.0015	2.1893	0.0286	0.0004	0.0064
Tp4	0.0023	0.0011	2.0951	0.0362	0.0001	0.0044
Tp5	0.0047	0.0018	2.6078	0.0091	0.0012	0.0083
Tp6	0.0005	0.0024	0.2052	0.8374	-0.0043	0.0053

csdid_event_TIN_fall_ecdc_flag_snf_age_group_85+

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0006	0.0017	-0.3616	0.7177	-0.0039	0.0027
Post_Avg	0.0019	0.0030	0.6495	0.5160	-0.0039	0.0077
Tm3	-0.0036	0.0032	-1.1293	0.2588	-0.0099	0.0027
Tm2	0.0009	0.0031	0.2925	0.7699	-0.0052	0.0070
Tm1	0.0009	0.0041	0.2207	0.8253	-0.0072	0.0090
Tm0	0.0017	0.0033	0.5233	0.6007	-0.0047	0.0082
Tp1	0.0051	0.0034	1.4887	0.1366	-0.0016	0.0118
Tp2	0.0015	0.0036	0.4051	0.6854	-0.0057	0.0086
Tp3	0.0043	0.0045	0.9558	0.3392	-0.0045	0.0132
Tp4	0.0035	0.0047	0.7422	0.4580	-0.0057	0.0127
Tp5	0.0023	0.0043	0.5455	0.5854	-0.0060	0.0107
Tp6	-0.0050	0.0067	-0.7442	0.4568	-0.0180	0.0081

csdid_event_TIN_fall_ecdc_flag_snf_female

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0001	0.0004	-0.2551	0.7987	-0.0009	0.0007
Post_Avg	0.0017	0.0009	1.7824	0.0747	-0.0002	0.0035
Tm3	-0.0006	0.0010	-0.5779	0.5634	-0.0025	0.0014
Tm2	0.0007	0.0010	0.6887	0.4910	-0.0012	0.0026
Tm1	-0.0004	0.0010	-0.4270	0.6694	-0.0023	0.0015
Tm0	0.0018	0.0008	2.2298	0.0258	0.0002	0.0034
Tp1	0.0020	0.0010	2.1288	0.0333	0.0002	0.0039
Tp2	0.0014	0.0011	1.2871	0.1981	-0.0007	0.0035
Tp3	0.0017	0.0013	1.3332	0.1825	-0.0008	0.0042
Tp4	0.0018	0.0013	1.3763	0.1687	-0.0008	0.0043
Tp5	0.0038	0.0018	2.1648	0.0304	0.0004	0.0073

Tp6	-0.0009	0.0026	-0.3398	0.7340	-0.0059	0.0042
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csdid_event_TIN_fall_ecdc_flag_snf_male

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0001	0.0004	0.3940	0.6935	-0.0006	0.0008
Post_Avg	0.0007	0.0008	0.8604	0.3896	-0.0009	0.0024
Tm3	-0.0001	0.0009	-0.1171	0.9068	-0.0018	0.0016
Tm2	0.0005	0.0007	0.6648	0.5062	-0.0009	0.0018
Tm1	0.0001	0.0008	0.0732	0.9416	-0.0016	0.0017
Tm0	0.0003	0.0008	0.4487	0.6536	-0.0012	0.0019
Tp1	-0.0003	0.0011	-0.2675	0.7891	-0.0024	0.0018
Tp2	0.0003	0.0014	0.2546	0.7990	-0.0023	0.0030
Tp3	0.0012	0.0014	0.9038	0.3661	-0.0014	0.0039
Tp4	-0.0003	0.0013	-0.2508	0.8019	-0.0029	0.0022
Tp5	0.0022	0.0016	1.3298	0.1836	-0.0010	0.0054
Tp6	0.0016	0.0018	0.9057	0.3651	-0.0019	0.0050

csdid_event_TIN_fall_ecdc_flag_snf

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0000	0.0003	-0.1331	0.8941	-0.0006	0.0005
Post_Avg	0.0016	0.0006	2.7069	0.0068	0.0004	0.0028
Tm3	-0.0005	0.0006	-0.7801	0.4353	-0.0017	0.0007
Tm2	0.0006	0.0006	0.8873	0.3749	-0.0007	0.0018
Tm1	-0.0002	0.0007	-0.2807	0.7790	-0.0015	0.0011
Tm0	0.0014	0.0006	2.5006	0.0124	0.0003	0.0025
Tp1	0.0014	0.0007	2.0621	0.0392	0.0001	0.0027
Tp2	0.0015	0.0007	2.2345	0.0255	0.0002	0.0028
Tp3	0.0020	0.0008	2.5767	0.0100	0.0005	0.0036
Tp4	0.0017	0.0008	2.0377	0.0416	0.0001	0.0033
Tp5	0.0030	0.0011	2.6760	0.0075	0.0008	0.0052
Tp6	0.0004	0.0017	0.2212	0.8249	-0.0029	0.0037

csdid_event_TIN_fall_ecdc_flag_snf_low_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0000	0.0002	-0.1188	0.9054	-0.0005	0.0004
Post_Avg	-0.0002	0.0004	-0.5039	0.6143	-0.0010	0.0006
Tm3	-0.0006	0.0003	-1.6475	0.0995	-0.0012	0.0001
Tm2	0.0001	0.0003	0.3788	0.7049	-0.0005	0.0008
Tm1	0.0004	0.0006	0.6361	0.5247	-0.0007	0.0014
Tm0	0.0000	0.0005	0.0912	0.9273	-0.0008	0.0009
Tp1	-0.0006	0.0007	-0.9359	0.3493	-0.0020	0.0007
Tp2	-0.0006	0.0007	-0.9009	0.3676	-0.0020	0.0008
Tp3	-0.0006	0.0007	-0.8368	0.4027	-0.0020	0.0008
Tp4	0.0001	0.0003	0.2078	0.8353	-0.0006	0.0007
Tp5	-0.0002	0.0006	-0.2552	0.7986	-0.0013	0.0010

Tp6	0.0005	0.0001	5.1058	0.0000	0.0003	0.0007
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csdid_event_TIN_fall_ecdc_flag_snf_middle_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0003	0.0003	0.9669	0.3336	-0.0003	0.0009
Post_Avg	0.0010	0.0005	1.9187	0.0550	-0.0000	0.0020
Tm3	0.0003	0.0007	0.4156	0.6777	-0.0011	0.0017
Tm2	0.0001	0.0007	0.1337	0.8936	-0.0013	0.0015
Tm1	0.0005	0.0008	0.6445	0.5193	-0.0010	0.0021
Tm0	0.0006	0.0006	0.9851	0.3246	-0.0006	0.0018
Tp1	0.0007	0.0008	0.8838	0.3768	-0.0008	0.0022
Tp2	0.0003	0.0008	0.4223	0.6728	-0.0012	0.0018
Tp3	-0.0000	0.0008	-0.0172	0.9863	-0.0015	0.0015
Tp4	0.0005	0.0007	0.6779	0.4978	-0.0009	0.0018
Tp5	0.0017	0.0009	1.8677	0.0618	-0.0001	0.0036
Tp6	0.0032	0.0014	2.3564	0.0185	0.0005	0.0059

csdid_event_TIN_fall_ecdc_flag_snf_high_fall_risk_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0003	0.0008	0.3808	0.7033	-0.0013	0.0019
Post_Avg	0.0030	0.0015	1.9767	0.0481	0.0000	0.0060
Tm3	-0.0007	0.0022	-0.3100	0.7566	-0.0049	0.0036
Tm2	0.0021	0.0020	1.0483	0.2945	-0.0018	0.0060
Tm1	-0.0005	0.0019	-0.2633	0.7923	-0.0042	0.0032
Tm0	0.0039	0.0014	2.7118	0.0067	0.0011	0.0067
Tp1	0.0037	0.0017	2.1471	0.0318	0.0003	0.0071
Tp2	0.0032	0.0017	1.8243	0.0681	-0.0002	0.0066
Tp3	0.0040	0.0018	2.2939	0.0218	0.0006	0.0075
Tp4	0.0044	0.0019	2.3648	0.0180	0.0008	0.0081
Tp5	0.0039	0.0025	1.5486	0.1215	-0.0010	0.0088
Tp6	-0.0021	0.0040	-0.5278	0.5976	-0.0100	0.0057

csdid_event_TIN_fall_ecdc_flag_snf_low_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0004	0.0006	-0.6567	0.5114	-0.0015	0.0008
Post_Avg	0.0022	0.0012	1.7524	0.0797	-0.0003	0.0046
Tm3	-0.0021	0.0013	-1.6540	0.0981	-0.0046	0.0004
Tm2	0.0012	0.0014	0.8342	0.4041	-0.0016	0.0040
Tm1	-0.0002	0.0013	-0.1759	0.8604	-0.0028	0.0023
Tm0	0.0021	0.0010	2.2163	0.0267	0.0002	0.0040
Tp1	0.0026	0.0010	2.5975	0.0094	0.0006	0.0046
Tp2	0.0027	0.0010	2.6732	0.0075	0.0007	0.0047
Tp3	0.0038	0.0010	3.8438	0.0001	0.0019	0.0058
Tp4	0.0024	0.0015	1.6216	0.1049	-0.0005	0.0053
Tp5	0.0052	0.0032	1.6456	0.0998	-0.0010	0.0115

Tp6	-0.0038	0.0040	-0.9363	0.3491	-0.0117	0.0041
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csdid_event_TIN_fall_ecdc_flag_snf_middle_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	0.0002	0.0004	0.4597	0.6458	-0.0006	0.0010
Post_Avg	0.0034	0.0007	4.6846	0.0000	0.0020	0.0048
Tm3	0.0013	0.0011	1.2604	0.2075	-0.0007	0.0034
Tm2	-0.0002	0.0010	-0.2486	0.8037	-0.0022	0.0017
Tm1	-0.0006	0.0011	-0.5173	0.6049	-0.0026	0.0015
Tm0	0.0019	0.0008	2.4366	0.0148	0.0004	0.0034
Tp1	0.0035	0.0008	4.4072	0.0000	0.0019	0.0051
Tp2	0.0033	0.0008	4.3817	0.0000	0.0018	0.0048
Tp3	0.0038	0.0010	4.0251	0.0001	0.0020	0.0057
Tp4	0.0013	0.0015	0.8336	0.4045	-0.0017	0.0043
Tp5	0.0039	0.0017	2.2296	0.0258	0.0005	0.0073
Tp6	0.0061	0.0021	2.8706	0.0041	0.0019	0.0103

csdid_event_TIN_fall_ecdc_flag_snf_high_aco_fall_screening_group

	Coefficient	Standard Error	Z	P-Value	95% Confidence Interval	
Pre_Avg	-0.0002	0.0004	-0.4763	0.6338	-0.0010	0.0006
Post_Avg	0.0004	0.0010	0.4094	0.6822	-0.0016	0.0024
Tm3	-0.0020	0.0008	-2.4639	0.0137	-0.0036	-0.0004
Tm2	0.0014	0.0010	1.3871	0.1654	-0.0006	0.0035
Tm1	-0.0000	0.0010	-0.0418	0.9667	-0.0021	0.0020
Tm0	0.0008	0.0010	0.7670	0.4431	-0.0012	0.0027
Tp1	-0.0008	0.0014	-0.5566	0.5778	-0.0036	0.0020
Tp2	-0.0009	0.0015	-0.5744	0.5657	-0.0038	0.0021
Tp3	-0.0003	0.0017	-0.1763	0.8600	-0.0036	0.0030
Tp4	0.0021	0.0012	1.7155	0.0862	-0.0003	0.0045
Tp5	0.0033	0.0015	2.2471	0.0246	0.0004	0.0061
Tp6	-0.0013	0.0022	-0.5709	0.5680	-0.0056	0.0030