Supplemental Online Content

Park S, Jung J, Burke RE, Larson EB. Trends in use of low-value care in traditional fee-for-service Medicare and Medicare Advantage. *JAMA Netw Open*. 2021;4(3):e211762. doi:10.1001/jamanetworkopen.2021.1762

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This supplemental material has been provided by the authors to give readers additional information about their work.
| Characteristic                              | 2006-07 OR (95% CI) | 2008-09 OR (95% CI) | 2010-11 OR (95% CI) | 2012-13 OR (95% CI) | 2014-15 OR (95% CI) |
|--------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Age                                        | REF                 | REF                 | REF                 | REF                 | REF                 |
| 65-69                                      | 0.96 (0.71 to 1.30) | 0.80 (0.77 to 0.84) | 0.89 (0.80 to 0.98) | 0.91 (0.80 to 1.04) | 0.91 (0.80 to 1.05) |
| 70-74                                      | 1.10 (0.80 to 1.51) | 0.54 (0.88 to 1.20) | 0.42 (1.08 to 1.35) | 1.24 (0.83 to 1.91) | 1.24 (0.83 to 1.91) |
| 75-79                                      | 1.05 (0.77 to 1.44) | 0.74 (0.94 to 0.70) | 0.65 (0.96 to 0.73) | 0.76 (0.69 to 0.86) | 0.86 (0.73 to 1.05) |
| >=80                                       | 1.17 (0.93 to 1.47) | 0.18 (1.21 to 0.98) | 0.07 (1.03 to 0.85) | 0.76 (1.16 to 0.96) | 1.25 (1.13 to 1.34) |
| Female                                     | REF                 | REF                 | REF                 | REF                 | REF                 |
| Hispanic                                   | 3.55 (2.25 to 5.61) | 0.60 (2.50 to 5.18) | 0.92 (1.51 to 2.99) | 0.70 (1.99 to 3.66) | 0.55 (1.97 to 3.63) |
| Non-Hispanic black                         | 1.22 (0.84 to 1.78) | 0.30 (1.75 to 2.35) | 0.97 (1.11 to 1.91) | 0.06 (0.99 to 1.60) | 0.59 (1.00 to 1.65) |
| Non-Hispanic Asian                         | 1.59 (0.97 to 2.60) | 0.06 (2.21 to 3.55) | 0.01 (0.83 to 2.24) | 0.09 (1.37 to 2.40) | 0.09 (1.14 to 2.71) |
| Non-Hispanic other or multiple             | 1.86 (0.82 to 4.23) | 0.13 (0.31 to 0.73) | 0.00 (1.20 to 0.58) | 0.62 (0.58 to 1.35) | 0.27 (0.14 to 0.52) |
| Married                                    | 1.08 (0.85 to 1.37) | 0.52 (0.89 to 0.72) | 0.27 (0.91 to 0.75) | 0.36 (1.01 to 1.22) | 0.94 (1.14 to 1.38) |
| Family income                              | REF                 | REF                 | REF                 | REF                 | REF                 |
| <200% FPL                                  | 1.09 (0.83 to 1.43) | 0.55 (1.21 to 0.95) | 0.12 (1.01 to 0.81) | 0.18 (0.91 to 1.00) | 0.85 (1.00 to 1.24) |
| 200-399% FPL                               | 0.81 (0.62 to 1.07) | 0.13 (0.92 to 0.72) | 0.52 (0.71 to 0.57) | 0.00 (0.60 to 0.48) | 0.55 (1.00 to 0.84) |
| >=400% FPL                                 | REF                 | REF                 | REF                 | REF                 | REF                 |
| US census regions                          | REF                 | REF                 | REF                 | REF                 | REF                 |
| Northeast                                  | 0.80 (0.55 to 1.16) | 0.22 (0.69 to 0.50) | 0.94 (0.44 to 0.79) | 0.65 (0.49 to 0.86) | 0.52 (0.50 to 0.84) |
| Midwest                                    | 0.79 (0.56 to 1.10) | 0.16 (0.70 to 0.53) | 0.94 (0.55 to 0.42) | 0.65 (0.50 to 0.84) | 0.60 (0.57 to 0.84) |
| West                                       | 5.83 (4.14 to 8.21) | 0.00 (3.08 to 2.27) | 0.17 (1.83 to 2.39) | 0.13 (1.63 to 2.16) | 0.14 (1.08 to 1.91) |
| Perceived health status                    | REF                 | REF                 | REF                 | REF                 | REF                 |
| Excellent, very good, or good              | 0.78 (0.57 to 1.06) | 0.11 (0.80 to 0.61) | 0.12 (0.80 to 0.61) | 0.96 (0.77 to 1.32) | 0.97 (0.75 to 1.26) |
| Poor or fair                               | 0.83 (0.61 to 1.06) | 0.12 (0.80 to 0.61) | 0.12 (0.80 to 0.61) | 0.96 (0.77 to 1.32) | 0.97 (0.75 to 1.26) |
| Perceived mental health status             | REF                 | REF                 | REF                 | REF                 | REF                 |
| Excellent, very good, or good              | 0.93 (0.61 to 1.42) | 0.73 (1.16 to 0.78) | 0.17 (0.73 to 1.73) | 0.83 (0.73 to 1.48) | 0.95 (0.72 to 1.42) |
| Poor or fair                               | 0.80 (0.57 to 1.14) | 0.22 (1.03 to 0.75) | 0.14 (0.85 to 0.75) | 0.71 (0.78 to 1.45) | 0.72 (0.92 to 1.69) |
| Limitation                                 | 0.99 (0.69 to 1.42) | 0.96 (1.05 to 0.73) | 0.72 (0.96 to 0.70) | 0.82 (0.93 to 0.69) | 0.64 (0.83 to 1.49) |

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| Chronic conditions | Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|
| Angina             |      | 1.56 | 1.00 | 2.42 | 0.051| 0.69 | 0.46 | 1.04 | 0.076| 1.10 | 0.76 | 1.61 | 0.611| 0.83 | 0.58 | 1.20 | 0.326| 0.77 | 0.53 | 1.13 | 0.178|
| Arthritis          |      | 1.23 | 0.97 | 1.55 | 0.087| 1.22 | 0.98 | 1.52 | 0.073| 0.89 | 0.73 | 1.09 | 0.263| 1.09 | 0.91 | 1.32 | 0.349| 1.18 | 0.97 | 1.44 | 0.100|
| Asthma             |      | 1.20 | 0.83 | 1.71 | 0.331| 0.63 | 0.44 | 0.91 | 0.015| 0.76 | 0.53 | 1.09 | 0.142| 0.77 | 0.57 | 1.05 | 0.102| 0.12 | 0.87 | 1.68 | 0.268|
| Coronary heart disease |    | 0.97 | 0.67 | 1.40 | 0.877| 0.96 | 0.70 | 1.33 | 0.826| 1.02 | 0.76 | 1.37 | 0.888| 1.07 | 0.81 | 1.41 | 0.645| 1.10 | 0.84 | 1.44 | 0.470|
| Diabetes           |      | 0.79 | 0.63 | 1.00 | 0.045| 1.13 | 0.91 | 1.41 | 0.254| 0.99 | 0.81 | 1.20 | 0.902| 1.16 | 0.96 | 1.41 | 0.117| 0.12 | 0.84 | 1.44 | 0.470|
| Emphysema          |      | 1.11 | 0.84 | 1.47 | 0.470| 1.18 | 0.91 | 1.52 | 0.205| 0.85 | 0.68 | 1.08 | 0.193| 1.14 | 0.92 | 1.42 | 0.219| 1.01 | 0.81 | 1.25 | 0.941|
| High cholesterol   |      | 0.69 | 0.38 | 1.25 | 0.221| 1.36 | 0.92 | 2.02 | 0.128| 1.13 | 0.77 | 1.64 | 0.531| 1.12 | 0.78 | 1.60 | 0.553| 0.98 | 0.68 | 1.42 | 0.905|
| High blood pressure|      | 0.94 | 0.74 | 1.18 | 0.583| 1.02 | 0.81 | 1.29 | 0.853| 1.14 | 0.92 | 1.41 | 0.239| 1.17 | 0.95 | 1.43 | 0.134| 0.81 | 0.66 | 0.99 | 0.045|
| MI                 |      | 0.96 | 0.63 | 1.48 | 0.866| 1.21 | 0.84 | 1.73 | 0.301| 1.04 | 0.74 | 1.45 | 0.831| 0.92 | 0.67 | 1.27 | 0.615| 0.87 | 0.63 | 1.19 | 0.383|
| Stroke             |      | 0.96 | 0.73 | 1.27 | 0.788| 0.93 | 0.72 | 1.20 | 0.568| 0.93 | 0.74 | 1.17 | 0.528| 0.83 | 0.67 | 1.02 | 0.075| 0.91 | 0.74 | 1.13 | 0.402|
| Other heart conditions |    | 1.15 | 0.80 | 1.65 | 0.450| 0.69 | 0.50 | 0.95 | 0.022| 1.09 | 0.81 | 1.45 | 0.585| 1.03 | 0.77 | 1.37 | 0.841| 1.14 | 0.87 | 1.50 | 0.354|
| Cancer             |      | 0.71 | 0.52 | 0.96 | 0.026| 1.00 | 0.79 | 1.28 | 0.991| 0.84 | 0.67 | 1.04 | 0.112| 0.84 | 0.68 | 1.02 | 0.084| 0.90 | 0.73 | 1.12 | 0.343|
| ADRD               |      | 0.64 | 0.34 | 1.21 | 0.173| 0.45 | 0.23 | 0.88 | 0.019| 0.96 | 0.58 | 1.57 | 0.863| 1.26 | 0.72 | 2.19 | 0.420| 0.76 | 0.43 | 1.35 | 0.352|

Abbreviations: TM, traditional Medicare; MA, Medicare Advantage; FPL, federal poverty level; MI, myocardial infarction; ADRD, Alzheimer's disease and related dementias.
**eTable 2.** Sample Characteristics by Period, 2006 to 2015

| Characteristic                          | 2006-07 | 2008-09 | 2010-11 | 2012-13 | 2014-15 |
|-----------------------------------------|---------|---------|---------|---------|---------|
| **Weighted % with IPTW**                |         |         |         |         |         |
| **US census regions**                   |         |         |         |         |         |
| Northeast                               | 18.3    | 18.3    | 17.7    | 17.4    | 16.0    | 15.9    | 17.2    | 17.5    |
| Midwest                                 | 22.9    | 22.7    | 23.4    | 24.4    | 25.6    | 26.1    | 25.3    | 26.2    | 23.1    | 22.9    |
| South                                   | 40.4    | 40.9    | 39.8    | 40.1    | 36.0    | 35.8    | 37.8    | 37.1    | 38.4    | 38.5    |
| West                                    | 18.5    | 18.2    | 19.1    | 19.1    | 20.7    | 20.6    | 20.9    | 20.8    | 21.2    | 21.1    |
| **Perceived health status**             |         |         |         |         |         |
| Excellent, very good, or good           | 78.4    | 78.5    | 78.8    | 81.7    | 81.8    | 82.9    | 83.8    | 81.6    | 81.8    |
| Poor or fair                            | 21.6    | 21.3    | 21.1    | 21.0    | 18.0    | 18.1    | 16.9    | 16.1    | 18.0    | 18.2    |
| **Perceived mental health status**      |         |         |         |         |         |
| Excellent, very good, or good           | 89.8    | 89.9    | 91.5    | 91.3    | 91.1    | 91.1    | 91.8    | 92.1    | 90.3    | 90.9    |
| Poor or fair                            | 10.2    | 9.8     | 8.3     | 8.6     | 8.7     | 8.8     | 8.0     | 7.8     | 9.4     | 9.1     |
| **Limitation**                          |         |         |         |         |         |
| Any                                     | 28.1    | 26.7    | 27.1    | 27.0    | 24.4    | 24.3    | 26.4    | 26.3    | 27.5    | 27.1    |
| Functional                              | 13.8    | 12.2    | 13.3    | 14.0    | 11.4    | 10.8    | 13.9    | 13.2    | 14.0    | 14.0    |
| Cognitive                               | 43.5    | 43.8    | 42.8    | 43.7    | 40.7    | 40.7    | 39.9    | 39.3    | 42.1    | 41.5    |
| Social                                  | 17.0    | 17.5    | 15.2    | 16.1    | 14.1    | 13.8    | 14.9    | 14.8    | 16.4    | 16.4    |
| **Chronic conditions**                  |         |         |         |         |         |
| Angina                                  | 8.1     | 7.7     | 9.3     | 9.2     | 8.1     | 8.0     | 7.5     | 7.3     | 7.9     | 8.3     |
| Arthritis                               | 54.7    | 55.7    | 61.3    | 60.5    | 60.6    | 59.7    | 59.8    | 60.1    | 60.6    | 61.1    |
| Asthma                                  | 10.0    | 8.5     | 7.2     | 6.9     | 8.5     | 8.6     | 8.6     | 8.3     | 9.0     | 10.1    |
| Coronary heart disease                  | 15.1    | 16.6    | 22.5    | 21.7    | 20.6    | 20.7    | 20.3    | 20.0    | 19.8    | 19.8    |
| Diabetes                                | 19.2    | 18.7    | 20.9    | 21.4    | 19.8    | 19.4    | 21.6    | 21.8    | 22.7    | 22.8    |
| Emphysema                               | 5.3     | 5.8     | 7.2     | 7.7     | 7.1     | 6.8     | 6.7     | 6.9     | 6.4     | 6.3     |
| High cholesterol                        | 57.4    | 57.9    | 63.2    | 63.4    | 64.0    | 64.2    | 65.4    | 65.2    | 65.4    | 65.8    |
| High blood pressure                     | 65.0    | 64.6    | 68.3    | 68.1    | 70.0    | 69.5    | 69.9    | 69.5    | 68.6    | 68.2    |
| MI                                      | 10.8    | 11.0    | 13.8    | 14.4    | 11.4    | 11.6    | 12.4    | 12.2    | 12.4    | 12.3    |
| Stroke                                  | 19.9    | 20.2    | 30.5    | 30.3    | 28.8    | 28.4    | 29.2    | 28.7    | 32.3    | 31.8    |
| Other heart conditions                  | 9.5     | 8.3     | 13.2    | 12.3    | 12.7    | 12.5    | 11.9    | 12.1    | 11.2    | 11.3    |
| Cancer                                  | 19.4    | 22.6    | 25.4    | 24.5    | 24.6    | 24.5    | 23.4    | 23.0    | 25.6    | 26.1    |
| ADRD                                    | 3.9     | 3.5     | 3.3     | 3.0     | 3.4     | 3.3     | 3.1     | 3.0     | 3.4     | 3.6     |

Abbreviations: TM, traditional Medicare; MA, Medicare Advantage; IPTW, inverse probability of treatment weighting; FPL, federal poverty level; MI, myocardial infarction; ADRD, Alzheimer’s disease and related dementias.

*a* We used the IPTW estimated for each time period (2006-07, 2008-09, 2010-11, 2012-13, and 2014-15).

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# Table 3. Odds Ratios From Logistic Regression of Use of Low-Value Care, 2006 to 2015

| Measure or composite | Odds ratio of receiving low-value care among MA enrollees relative to TM enrollees (95% CI) |
|----------------------|-----------------------------------------------------------------------------------------------|
| Low-value cancer screening composite | 1.1 (0.8 to 1.5) |
| Cervical cancer screening | 1.1 (0.7 to 1.6) |
| Colorectal cancer screening | 0.6 (0.3 to 1.2) |
| Prostate cancer screening | 1.8 (1.1 to 3.1) |
| Low-value antibiotic use composite | 1.1 (0.6 to 2.1) |
| Antibiotics for acute upper respiratory infection | 1.3 (0.6 to 2.4) |
| Antibiotics for influenza | 0.2 (0.0 to 1.7) |
| Low-value medications composite | 1.1 (0.8 to 1.5) |
| Anxiolytics, sedatives, and hypnotics | 0.8 (0.5 to 1.1) |
| Benzodiazepine for depression | 0.6 (0.3 to 1.4) |
| Opioid for headache | NA<sup>b</sup> |
| Opioid for back pain | 1.5 (0.7 to 3.0) |
| NSAID use for hypertension, heart failure, or kidney disease | 1.6 (1.0 to 2.6) |
| Low-value imaging composite | 1.9 (1.1 to 3.4) |
| MRI/CT for back pain | 1.0 (0.5 to 2.1) |
| Radiograph for back pain | 2.0 (1.1 to 3.8) |
| MRI/CT for headache | NA<sup>b</sup> |

Abbreviations: TM, traditional Medicare; MA, Medicare Advantage; NSAID, nonsteroidal anti-inflammatory drug; CT, computed tomography; MRI, magnetic resonance imaging.

<sup>a</sup> To account for differences in characteristics between TM and MA enrollees attributable to selection bias, we computed the inverse probability of treatment weighting (IPTW) as a propensity for enrolling in MA based on enrollee demographic, socioeconomic, and health status variables. To account for changes in the composition of TM and MA enrollees over time, we estimated the IPTW separately for each of the following four time periods (2006-07, 2008-09, 2010-11, 2012-13, and 2014-15). We then performed a logistic regression model after controlling all covariates described above as well as MA enrollment, time period (2006-07, 2008-09, 2010-11, 2012-13, and 2014-15), the interaction term between MA enrollment and time period, the interaction term between US census regions (Northeast, Midwest, South, and West) and time period, and the share of Medicare beneficiaries enrolled in MA plans by year and US census region and applied the IPTW. Findings for other covariates were not shown.

<sup>b</sup> There were less than five enrollees with use of low-value care.
### eTable 4. Subgroup Analyses of Use of Low-Value Care, 2006 to 2015

| Measure or composite                                                                 | Difference in use of low-value care among MA enrollees relative to TM enrollees, mean % (95% CI) |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|                                                                                    | Non-Hispanic white | Good perceived health (including excellent, very good, or good) | Poor perceived health (including poor or fair) | Family income less than 400% FPL | Family income higher than 400% FPL |
| Low-value cancer screening composite                                                | 0.2 (-1.9 to 2.4)  | 0.8 (-1.4 to 2.9)                                            | -0.2 (-4.2 to 3.8) | -0.1 (-2.2 to 2.0) | 1.7 (-1.9 to 5.3) |
| Cervical cancer screening                                                           | 0.7 (-1.4 to 2.9)  | 0.1 (-2.0 to 2.2)                                            | 2.1 (-1.5 to 5.8)  | -0.6 (-2.6 to 1.4) | 3.3 (-0.5 to 7.1)  |
| Colorectal cancer screening                                                         | -1.2 (-2.8 to 0.4) | -0.7 (-2.2 to 0.8)                                           | -1.7 (-5.4 to 2.1) | -0.9 (-2.6 to 0.7) | -1.2 (-4.0 to 1.7) |
| Prostate cancer screening                                                          | 0.2 (-4.5 to 4.8)  | 2.6 (-2.4 to 7.7)                                            | -5.2 (-11.9 to 1.4)| 2.4 (-2.6 to 7.4)  | -2.8 (-10.0 to 4.5) |
| Low-value antibiotic use composite                                                 | 1.5 (-3.8 to 6.8)  | 2.2 (-3.0 to 7.4)                                            | 3.4 (-6.7 to 13.5) | 2.0 (-4.0 to 8.0)  | 4.7 (-2.6 to 12.1) |
| Antibiotics for acute upper respiratory infection                                   | 2.0 (-3.9 to 7.8)  | 2.2 (-3.4 to 7.9)                                            | 7.6 (-3.3 to 18.4) | 2.8 (-3.8 to 9.4)  | 4.4 (-3.6 to 12.3) |
| Antibiotics for influenza                                                          | 1.5 (-7.3 to 10.3) | 3.0 (-5.3 to 11.4)                                           | 7.6 (-3.3 to 18.4) | 2.8 (-3.8 to 9.4)  | 4.4 (-3.6 to 12.3) |
| Low-value medications composite                                                   | 2.7 (0.8 to 4.5)   | 1.8 (0.1 to 3.5)                                             | 4.2 (-0.2 to 8.5)  | 2.2 (0.2 to 4.3)   | 2.2 (-0.4 to 4.9)  |
| Anxiolytics, sedatives, and hypnotics                                              | 0.7 (-0.7 to 2.1)  | 0.8 (-0.5 to 2.1)                                            | 0.5 (-2.5 to 3.4)  | 0.1 (-1.4 to 1.6)  | 1.6 (-0.4 to 3.5)  |
| Benzodiazepine for depression                                                     | 2.7 (-4.0 to 9.3)  | -1.0 (-8.2 to 6.1)                                           | 1.3 (-8.7 to 11.4) | -1.5 (-8.4 to 5.5) | 7.3 (-3.2 to 17.7) |
| Opioid for headache                                                               | NA⁹                   | NA⁹                                                        | NA⁹                                                        | NA⁹                      | NA⁹                      |
| Opioid for back pain                                                              | 1.0 (-2.7 to 4.6)   | 0.2 (-3.2 to 3.5)                                            | 4.4 (-3.8 to 12.6) | 6.2 (1.2 to 11.3)  | -4.5 (-8.8 to -0.3) |
| NSAID use for hypertension, heart failure, or kidney disease                      | 3.4 (1.5 to 5.3)    | 2.4 (0.6 to 4.1)                                             | 5.2 (1.1 to 9.2)   | 2.7 (0.7 to 4.7)   | 2.5 (-0.2 to 5.3)   |
| Low-value imaging composite                                                        | 2.3 (-2.3 to 7.0)   | -0.5 (-5.3 to 4.4)                                           | 9.7 (1.5 to 17.9)  | 3.3 (-2.0 to 8.6)  | -1.3 (-7.9 to 5.2)  |
| MRI/CT for back pain                                                              | 1.2 (-2.4 to 4.9)   | -1.1 (-4.9 to 2.7)                                           | 6.7 (-0.8 to 14.2) | 1.1 (-2.8 to 4.9)  | 0.5 (-5.1 to 6.0)   |
| Radiograph for back pain                                                          | 2.7 (-1.8 to 7.2)   | 1.7 (-2.9 to 6.3)                                            | 0.5 (-5.6 to 6.7)  | 3.2 (-1.9 to 8.3)  | -0.1 (-5.9 to 5.7)  |

Abbreviations: TM, traditional Medicare; MA, Medicare Advantage; FPL, federal poverty level; NSAID, nonsteroidal anti-inflammatory drug; CT, computed tomography; MRI, magnetic resonance imaging.

⁹To account for differences in characteristics between TM and MA enrollees attributable to selection bias, we computed the IPTW as a propensity for enrolling in MA based on enrollee demographic, socioeconomic, and health status variables. To account for changes in the composition of TM and MA enrollees over time, we estimated the IPTW separately for each of the following four time periods (2006-07, 2008-09, 2010-11, 2012-13, and 2014-15). We then performed a logistic regression model after controlling demographic socioeconomic variables as well as MA enrollment, time period (2006-07, 2008-09, 2010-11, 2012-13, and 2014-15), the interaction term between MA enrollment and time period, the interaction term between time period and US census regions, and census-level MA penetration and applied the IPTW. Next, we estimated the mean adjusted values of the outcomes for TM and MA enrollees. We examined the difference in these adjusted mean outcomes among MA enrollees relative to TM enrollees.

⁸There were less than five enrollees with use of low-value care.

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### eTable 5. Descriptive Statistics of Outcomes by Period, 2006 to 2015

| Outcome                                | 2006-07 | 2008-09 | 2010-11 | 2012-13 | 2014-15 |
|----------------------------------------|---------|---------|---------|---------|---------|
| Low-value cancer screening composite   | 2048    | 510     | 1654    | 772     | 1416    |
| Cervical cancer screening              | 1532    | 1222    | 1188    | 1086    | 794     |
| Colorectal cancer screening            | 1230    | 68      | 382     | 435     | 473     |
| Prostate cancer screening              | 516     | 2757    | 2799    | 2757    | 2799    |
| Low-value antibiotic use composite     | 397     | 335     | 130     | 307     | 406     |
| Respiratory infection                  | 366     | 300     | 120     | 310     | 310     |
| Antibiotics for influenza              | 39      | 44      | 12      | 29      | 29      |
| Low-value medications composite       | 2799    | 19      | 873     | 2149    | 2068    |
| Anxiolytics, sedatives, and hypnotics  | 2757    | 1230    | 2223    | 865     | 821     |
| Benzodiazepine for depression          | 237     | 198     | 429     | 197     | 217     |
| Opioid for headache                   | 92      | 43      | 18      | 53      | 27      |
| Opioid for back pain                   | 493     | 300     | 126     | 287     | 346     |
| NSAID use for hypertension, heart failure, or kidney disease | 1724    | 877     | 1543    | 1509    | 1395    |
| Low-value imaging composite            | 566     | 334     | 142     | 330     | 396     |
| MRI/CT for back pain                   | 493     | 300     | 126     | 287     | 346     |
| Radiograph for back pain               | 493     | 300     | 126     | 287     | 346     |
| MRI/CT for headache                    | 92      | 43      | 18      | 53      | 27      |

Abbreviations: TM, traditional Medicare; MA, Medicare Advantage; NSAID, nonsteroidal anti-inflammatory drug; CT, computed tomography; MRI, magnetic resonance imaging.
**eTable 6. Sample Size by Year**

| Year | TM  | MA  |
|------|-----|-----|
| 2006 | 1481 | 326 |
| 2007 | 1322 | 326 |
| 2008 | 1138 | 363 |
| 2009 | 1116 | 516 |
| 2010 | 1049 | 498 |
| 2011 | 1109 | 563 |
| 2012 | 1145 | 722 |
| 2013 | 934  | 672 |
| 2014 | 1108 | 589 |
| 2015 | 1275 | 589 |
| Total| 11677| 5164|

Abbreviations: TM, traditional Medicare; MA, Medicare Advantage.
**eFigure.** Propensity Scores Determination

Abbreviations: TM, traditional Medicare; MA, Medicare Advantage.