**Preliminary Exhibits for “COVID-19 Treatment in Medicare 2022”**

**NOTE**: These exhibits are still somewhat crude because we haven’t tried to polish them up yet.

**Figure 1**: Trends in COVID-19 Treatment

mab = any mAb, molnup = molnupiravir, nirmat = Paxlovid (nirmatrelvir-ritonavir), remdes = remdesivir

**Appendix Figure**: Percentage of COVID-19 Treatment Doses with Any U07.1 Diagnosis within 10 Days

**Table 1**: Patterns in COVID-19 Diagnosis and Hospitalization, 2022

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Any COVID-19 Diagnosis** | **Inpatient Admission for Covid** | | | |
|  | N | Per 100 Benes | Per 100 Benes | Adjusted Coefficients | | |
| Total Benes | 20,025,492 |  | 0.98 |  | 95% CI | |
| **Structural Factors** |  |  |  |  |  |  |
| Race |  |  |  |  |  |  |
| White | 16,330,827 | 18.5 | 0.95 | ref |  |  |
| Black | 1,294,707 | 16.7 | 1.38 | 0.11 | 0.07 | 0.15 |
| Asian | 614,753 | 19.0 | 0.78 | -0.34 | -0.42 | -0.26 |
| Other | 743,367 | 18.7 | 0.70 | -0.03 | -0.07 | 0.01 |
| Hispanic | 1,041,838 | 18.5 | 1.21 | -0.15 | -0.22 | -0.07 |
| Rurality |  |  |  |  |  |  |
| Urban | 15,365,012 | 19.1 | 0.98 | ref |  |  |
| Rural | 4,660,480 | 16.2 | 0.96 | -0.16 | -0.20 | -0.12 |
| Medicaid Status |  |  |  |  |  |  |
| Duals | 4,397,195 | 19.0 | 1.53 | 0.53 | 0.48 | 0.57 |
| Non-Duals | 15,628,297 | 18.3 | 0.82 | ref |  |  |
| Original Eligibility Reason |  |  |  |  |  |  |
| Age | 16,062,706 | 18.6 | 0.88 | ref |  |  |
| Disability | 3,852,335 | 17.6 | 1.25 | 0.54 | 0.51 | 0.57 |
| ESRD | 110,451 | 29.6 | 4.81 | 4.17 | 4.01 | 4.33 |
| Nursing Home Status |  |  |  |  |  |  |
| Community | 18,782,690 | 17.1 | 0.71 | -- | -- | -- |
| Nursing Home Residence | 1,242,802 | 39.4 | 4.96 | -- | -- | -- |
| Post-Acute Care | 923,282 | 44.0 | 6.18 | -- | -- | -- |
| Long-Term Care | 319,520 | 26.1 | 1.43 | -- | -- | -- |
| **Controls** |  |  |  |  |  |  |
| Age |  |  |  |  |  |  |
| <40 | 497,196 | 12.8 | 0.51 | -1.25 | -1.30 | -1.20 |
| 40-49 | 455,987 | 15.3 | 0.79 | -1.11 | -1.16 | -1.05 |
| 50-59 | 781,997 | 16.7 | 1.10 | -0.82 | -0.86 | -0.77 |
| 60-64 | 648,580 | 17.6 | 1.26 | -0.47 | -0.51 | -0.43 |
| 65-69 | 5,048,563 | 17.5 | 0.50 | ref |  |  |
| 70-74 | 4,832,238 | 18.6 | 0.66 | 0.05 | 0.04 | 0.07 |
| 75-79 | 3,423,795 | 19.3 | 0.99 | 0.24 | 0.22 | 0.26 |
| 80-84 | 2,208,765 | 19.5 | 1.50 | 0.63 | 0.60 | 0.67 |
| 85-89 | 1,264,730 | 20.1 | 2.06 | 1.12 | 1.06 | 1.18 |
| 90+ | 863,641 | 21.4 | 2.61 | 1.64 | 1.53 | 1.75 |
| Sex |  |  |  |  |  |  |
| Female | 11,380,534 | 18.9 | 0.91 | -0.17 | -0.18 | -0.16 |
| Male | 8,644,958 | 17.8 | 1.06 | ref |  |  |
| CCW count |  |  |  |  |  |  |
| No info | 976,492 |  | 0.43 | 0.05 | 0.03 | 0.06 |
| 0 | 2,553,079 | 14.2 | 0.34 | ref |  |  |
| 1-3 | 3,803,980 | 14.9 | 0.31 | 0.02 | 0.01 | 0.03 |
| 4-5 | 3,553,994 | 17.1 | 0.47 | 0.04 | 0.02 | 0.05 |
| 6+ | 10,114,439 | 21.3 | 1.56 | 0.64 | 0.61 | 0.66 |
| Vaccination Doses |  |  |  |  |  |  |
| 0 or Not Observed | 5,224,934 | 16.5 | 1.57 | ref |  |  |
| 1-2 | 2,453,323 | 19.6 | 1.48 | -0.31 | -0.33 | -0.28 |
| 3+ | 12,347,235 | 19.1 | 0.62 | -1.08 | -1.11 | -1.04 |

**Table 2**: Patterns in COVID-19 Treatment, 2022

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Received Any COVID-19 Therapy** | | | |
|  | N | Per 100 Benes | Adjusted Coefficients (95% CI) | | |
| Total Benes | 20,025,492 | 5.96 |  |  | |
| **Structural Factors** |  |  |  |  |  |
| Race |  |  |  |  |  |
| White | 16,330,827 | 6.27 | ref |  |  |
| Black | 1,294,707 | 2.95 | -2.14 | -2.31 | -1.96 |
| Asian | 614,753 | 6.15 | 0.35 | -0.10 | 0.81 |
| Other | 743,367 | 6.71 | 0.58 | 0.47 | 0.69 |
| Hispanic | 1,041,838 | 4.20 | -0.69 | -0.96 | -0.41 |
| Rurality |  |  |  |  |  |
| Urban | 15,365,012 | 6.21 | ref |  |  |
| Rural | 4,660,480 | 5.15 | -0.76 | -1.00 | -0.53 |
| Medicaid Status |  |  |  |  |  |
| Duals | 4,397,195 | 3.21 | -2.11 | -2.28 | -1.94 |
| Non-Duals | 15,628,297 | 6.73 | ref |  |  |
| Original Eligibility Reason |  |  |  |  |  |
| Age | 16,062,706 | 6.46 | ref |  |  |
| Disability | 3,852,335 | 3.89 | -1.03 | -1.12 | -0.95 |
| ESRD | 110,451 | 4.87 | -0.30 | -0.59 | -0.01 |
| Nursing Home Status |  |  |  |  |  |
| Community | 18,782,690 | 6.09 | ref |  |  |
| Nursing Home Residence | 1,242,802 | 4.04 | -1.15 | -1.31 | -0.99 |
| Post-Acute Care | 923,282 | 4.23 | -- | -- | -- |
| Long-Term Care | 319,520 | 3.48 | -- | -- | -- |
| **Controls** |  |  |  |  |  |
| Age |  |  |  |  |  |
| <40 | 497,196 | 2.12 | -0.18 | -0.32 | -0.05 |
| 40-49 | 455,987 | 2.99 | -0.16 | -0.29 | -0.02 |
| 50-59 | 781,997 | 3.44 | -0.39 | -0.51 | -0.27 |
| 60-64 | 648,580 | 3.97 | -0.49 | -0.59 | -0.39 |
| 65-69 | 5,048,563 | 6.32 | ref |  |  |
| 70-74 | 4,832,238 | 6.74 | -0.32 | -0.36 | -0.27 |
| 75-79 | 3,423,795 | 6.56 | -0.78 | -0.86 | -0.70 |
| 80-84 | 2,208,765 | 6.08 | -1.30 | -1.40 | -1.20 |
| 85-89 | 1,264,730 | 5.61 | -1.64 | -1.75 | -1.53 |
| 90+ | 863,641 | 4.88 | -2.08 | -2.22 | -1.94 |
| Sex |  |  |  |  |  |
| Female | 11,380,534 | 6.00 | 0.16 | 0.12 | 0.19 |
| Male | 8,644,958 | 5.91 | ref |  |  |
| CCW count |  |  |  |  |  |
| No info | 976,492 | 5.62 | 0.76 | 0.69 | 0.83 |
| 0 | 2,553,079 | 4.95 | ref |  |  |
| 1-3 | 3,803,980 | 5.42 | 0.52 | 0.47 | 0.57 |
| 4-5 | 3,553,994 | 6.28 | 1.08 | 1.02 | 1.15 |
| 6+ | 10,114,439 | 6.31 | 1.64 | 1.54 | 1.74 |
| Vaccination Doses |  |  |  |  |  |
| 0 or Not Observed | 5,224,934 | 3.99 | ref |  |  |
| 1-2 | 2,453,323 | 4.79 | 0.50 | 0.43 | 0.57 |
| 3+ | 12,347,235 | 7.03 | 1.96 | 1.84 | 2.09 |

**Table 3**: Structural Factors in Adjusted Models for Receipt of Any COVID-19 Treatment, 2022

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Model 1:** | | **Model 2:** | | **Model 3:** | | **Model 4:** | |
|  | **Adjusted by** | | **Adjusted by** | | **Adjusted by** | | **Adjusted by** | |
|  | **Structural Factors Only** | | **Clinical Risk Factors** | | **Clinical Risk Factors +** | | **Clinical Risk Factors +** | |
|  |  | | (age, sex, comorbidity count, vaccination, drug interactions) | | **Hospital Referral Regions** | | **Primary Care Practices** | |
|  |  | |  | |  | |  | |
|  | Mean Rate | Coef. | 95% CI | Coef. | 95% CI | Coef. | 95% CI | Coef. | 95% CI |
| **Race** |  |  |  |  |  |  |  |  |  |
| White (ref) | 6.27 | ref |  | ref |  | ref |  | ref |  |
| Black | 2.95 | -2.24 | (-2.43, -2.04) | -2.14 | (-2.31, -1.96) | -2.32 | (-2.51, -2.14) | -1.41 | (-1.52, -1.3) |
| Asian | 6.15 | 0.527 | (0.0327, 1.02) | 0.354 | (-0.104, 0.812) | -0.0275 | (-0.308, 0.252) | 0.35 | (0.196, 0.505) |
| Other race | 6.71 | 0.653 | (0.536, 0.771) | 0.58 | (0.467, 0.692) | 0.465 | (0.358, 0.571) | 0.309 | (0.233, 0.384) |
| Hispanic | 4.20 | -0.876 | (-1.16, -0.595) | -0.685 | (-0.962, -0.407) | -0.974 | (-1.29, -0.66) | -0.732 | (-0.847, -0.618) |
| **Geography** |  |  |  |  |  |  |  |  |  |
| Urban (ref) | 6.21 | ref |  | ref |  | ref |  | ref |  |
| Rural | 5.15 | -1.07 | (-1.33, -0.804) | -0.762 | (-0.997, -0.528) | -0.573 | (-0.702, -0.444) | -1.2 | (-1.59, -0.812) |
| **Dual Status** |  |  |  |  |  |  |  |  |  |
| Non-Medicaid (ref) | 3.21 | ref |  | ref |  | ref |  | ref |  |
| Medicaid | 6.73 | -2.7 | (-2.85, -2.54) | -2.11 | (-2.28, -1.94) | -2.24 | (-2.44, -2.05) | -1.44 | (-1.54, -1.33) |
| **OREC** |  |  |  |  |  |  |  |  |  |
| Age (ref) | 6.46 | ref |  | ref |  | ref |  | ref |  |
| Disability | 3.89 | -0.844 | (-0.941, -0.748) | -1.03 | (-1.12, -0.945) | -1.02 | (-1.09, -0.95) | -0.555 | (-0.603, -0.507) |
| ESRD | 4.87 | 0.468 | (0.2, 0.736) | -0.299 | (-0.586, -0.0113) | -0.239 | (-0.529, 0.051) | -2.96 | (-3.18, -2.75) |
| **Nursing Home** |  |  |  |  |  |  |  |  |  |
| Community (ref) | 6.09 | ref |  | ref |  | ref |  | ref |  |
| Nursing home | 4.04 | -0.946 | (-1.13, -0.764) | -1.15 | (-1.31, -0.985) | -1.14 | (-1.28, -1) | -4.42 | (-4.59, -4.24) |
|  |  |  |  |  |  |  |  |  |  |
| N |  | 20,025,490 |  | 20,025,490 |  | 20,025,490 |  | 20,025,490 |  |
| Adj. R2 |  | 0.005 |  | 0.008 |  | 0.011 |  | 0.189 |  |
| Fixed Effects |  | -- |  | -- |  | 306 |  | 100,325 |  |

**Figure 2**: Unadjusted Receipt of COVID-19 Treatment by Structural Characteristics and COVID-19 Mortality Risk Quintile, 2022

**Figure 3**: COVID-19 Treatment vs. COVID-19 Admission Rates per 100 Benes, HRR-Level