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| **Appendix 1a: Sensitivity analysis: associations between HIT-post discharge and HIT-treatment services and total Medicare payments and acute inpatient Medicare payments\_the number of telehealth services hospitals provided** |
|   | Total Medicare Payments | Acute Inpatient Medicare Payments |
|   | Coefficient | 95% CI | P-value | Coefficient | 95% CI | P-value |
| The number of telehealth services adopted | 0.017 | 0.015 | 0.019 | <0.001 | 0.028 | 0.026 | 0.031 | <0.001 |
| Black | 0.063 | 0.048 | 0.078 | <0.001 | 0.056 | 0.039 | 0.074 | <0.001 |
| Hispanic | 0.025 | 0.003 | 0.046 | 0.027 | 0.078 | 0.051 | 0.104 | <0.001 |
| The number of telehealth services adopted \* Black | -0.028 | -0.035 | -0.021 | <0.001 | -0.027 | -0.035 | -0.019 | <0.001 |
| The number of telehealth services adopted \* Hispanic | -0.013 | -0.023 | -0.003 | 0.014 | -0.012 | -0.025 | 0.001 | 0.077 |
| Note: All the other covariates presented in table 3 were controlled for in this regression. |
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| **Appendix 1b: Sensitivity analysis: associations between HIT-post discharge and HIT-treatment services and total Medicare payments and acute inpatient Medicare payments\_any telehealth services hospitals provided** |
|   | Total Medicare Payments | Acute Inpatient Medicare Payments |
|   | Coefficient | 95% CI | P-value | Coefficient | 95% CI | P-value |
| Any hospital-based telehealth services | 0.048 | 0.041 | 0.054 | <0.001 | 0.077 | 0.070 | 0.085 | <0.001 |
| Black | 0.064 | 0.047 | 0.081 | <0.001 | 0.051 | 0.030 | 0.071 | <0.001 |
| Hispanic | 0.029 | 0.004 | 0.054 | 0.023 | 0.085 | 0.055 | 0.114 | <0.001 |
| Any hospital-based telehealth services \* Black | -0.072 | -0.093 | -0.050 | <0.001 | -0.058 | -0.084 | -0.032 | <0.001 |
| Any hospital-based telehealth services \* Hispanic | -0.038 | -0.070 | -0.006 | 0.020 | -0.040 | -0.078 | -0.001 | 0.046 |
| Note: All the other covariates presented in table 3 were controlled for in this regression. |
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| **Appendix 1c: Sensitivity analysis: associations between HIT-post discharge and HIT-treatment services and total Medicare payments and acute inpatient Medicare payments\_cross-tabulation of telehealth post-discharge and of telehealth treatment services hospitals provided** |
|   | Total Medicare Payments | Acute Inpatient Medicare Payments |
|   | Coefficient | 95% CI | P-value | Coefficient | 95% CI | P-value |
| Post-discharge + Treatment services | 0.051 | 0.028 | 0.074 | <0.001 | 0.055 | 0.026 | 0.083 | <0.001 |
| Post-discharge but no Treatment services | 0.033 | 0.021 | 0.044 | <0.001 | 0.049 | 0.035 | 0.062 | <0.001 |
| No post-discharge but with Treatment services | 0.001 | -0.018 | 0.020 | 0.922 | 0.014 | -0.008 | 0.036 | 0.222 |
| Black | 0.037 | 0.025 | 0.050 | 0.000 | 0.032 | 0.018 | 0.046 | <0.001 |
| Hispanic | 0.014 | -0.004 | 0.032 | 0.117 | 0.065 | 0.044 | 0.087 | <0.001 |
| Post-discharge + Treatment \* Black | -0.116 | -0.202 | -0.029 | 0.009 | -0.070 | -0.177 | 0.036 | 0.197 |
| Post-discharge but no Treatment \* Black | -0.117 | -0.156 | -0.079 | <0.001 | -0.134 | -0.178 | -0.091 | <0.001 |
| No post-discharge but with Treatment \* Black | -0.140 | -0.200 | -0.080 | <0.001 | -0.127 | -0.197 | -0.057 | <0.001 |
| Post-discharge + Treatment \* Hispanic | -0.013 | -0.155 | 0.128 | 0.852 | 0.027 | -0.187 | 0.241 | 0.803 |
| Post-discharge but no Treatment \* Hispanic | -0.011 | -0.064 | 0.042 | 0.679 | 0.010 | -0.057 | 0.077 | 0.772 |
| No post-discharge but with Treatment \* Hispanic | -0.178 | -0.254 | -0.101 | <0.001 | -0.150 | -0.238 | -0.063 | 0.001 |
| Note: All the other covariates presented in table 3 were controlled for in this regression. |

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| **Appendix 2: Associations between HIT-post discharge and HIT-treatment and total Medicare payments and acute inpatient Medicare payments, regression results with ADI** |  |  |  |  |
|   | Total Medicare Payments | Acute Inpatient Medicare Payments |  |  |  |  |
|   | Coef | P | Coef | p |  |  |  |  |
| telehealth-post discharge services | 0.032 | <0.001 | 0.046 | <0.001 |  |  |  |  |
| telehealth-treatment services | 0.007 | 0.397 | 0.01 | 0.28 |  |  |  |  |
| Black | 0.037 | <0.001 | 0.037 | <0.001 |  |  |  |  |
| Hispanic | 0.007 | 0.433 | 0.067 | <0.001 |  |  |  |  |
| telehealth-post discharge services \* Black | -0.097 | <0.001 | -0.064 | <0.001 |  |  |  |  |
| telehealth-treatment services \* Black | -0.092 | <0.001 | -0.101 | 0.038 |  |  |  |  |
| telehealth-post discharge services \* Hispanic | 0.021 | 0.412 | 0.044 | 0.195 |  |  |  |  |
| telehealth- treatment services \* Hispanic | -0.131 | <0.001 | -0.101 | 0.042 |  |  |  |  |
| Age 65-74 | reference |  |  |  |  |
| Age 75-84 | -0.17 | <0.001 | -0.247 | <0.001 |  |  |  |  |
| Age 85 and up | -0.317 | <0.001 | -0.461 | <0.001 |  |  |  |  |
| female | -0.084 | <0.001 | -0.129 | <0.001 |  |  |  |  |
| depression | 0.141 | <0.001 | 0.028 | <0.001 |  |  |  |  |
| AMI | 0.227 | <0.001 | 0.452 | <0.001 |  |  |  |  |
| asthma | 0.073 | <0.001 | 0.057 | <0.001 |  |  |  |  |
| heart failure | 0.305 | <0.001 | 0.364 | <0.001 |  |  |  |  |
| COPD | 0.138 | <0.001 | 0.155 | <0.001 |  |  |  |  |
| diabetes | 0.091 | <0.001 | 0.035 | <0.001 |  |  |  |  |
| hyperlipidemia | 0.052 | <0.001 | 0.08 | <0.001 |  |  |  |  |
| hypertension | 0.104 | <0.001 | 0.091 | <0.001 |  |  |  |  |
| Teaching hospital | reference |  |  |  |  |
| Non teaching hospital | -0.249 | <0.001 | -0.396 | <0.001 |  |  |  |  |
| For profit hospitals | ref |   |   |   |  |  |  |  |
| Non for profit | -0.117 | <0.001 | -0.049 | <0.001 |  |  |  |  |
| Government | -0.102 | <0.001 | -0.012 | 0.107 |  |  |  |  |
| Bed-size <200 | reference |  |  |  |  |
| Bed-size (>200) | 0.033 | <0.001 | 0.085 | <0.001 |  |  |  |  |
| Metropolitan area | reference |  |  |  |  |
| Rural area | -0.009 | 0.221 | 0.03 | 0.001 |  |  |  |  |
| Micropolitan area | -0.005 | 0.266 | 0.054 | <0.001 |  |  |  |  |
| ADI\_ 25th percentile | reference |  |  |  |  |
| ADI\_25-75th percentile | -0.047 | <0.001 | -0.009 | 0.056 |  |  |  |  |

NOTE:

* ADI: the Area Deprivation Index
* Data source: the linked datasets of 2017 Centers for Medicare and Medicaid Services Medicare 100% inpatient claims data, Medicare Beneficiary Summary File, American Hospital Annual Survey, American Community Survey, and the Area Health Resource File.
* This study focused on community-dwelling Medicare fee-for-service beneficiaries who had a diagnosis of Alzheimer’s disease and related dementias (ADRD) that were aged 65 and older and had at least one hospital visit in 2017. Elderly with Medicare Advantage or dual eligibilities were not included. ADRD was defined using the CMS chronic conditions data warehouse codes. Non-Hispanic White (White), Black, and Hispanic patients with ADRD are reported where non-Hispanic Whites were used as the reference group.

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| **Appendix 3: Sensitivity analysis: associations between HIT-post discharge and HIT-treatment and total Medicare payments and acute inpatient Medicare payments clustering effect within states** |
|   | Total Medicare Payments | Acute Inpatient Medicare Payments |
|   | Coef | 95% CI | P | Coef | 95% CI | p |
| telehealth-post discharge services | 0.034 | 0.007 | 0.061 | 0.012 | 0.048 | 0.010 | 0.086 | 0.013 |
| telehealth-treatment services | 0.007 | -0.036 | 0.051 | 0.738 | 0.011 | -0.047 | 0.069 | 0.713 |
| Black | 0.036 | 0.015 | 0.057 | 0.001 | 0.030 | 0.007 | 0.053 | 0.011 |
| Hispanic | 0.012 | -0.015 | 0.038 | 0.388 | 0.063 | 0.036 | 0.090 | <0.001 |
| telehealth-post discharge services \* Black | -0.098 | -0.136 | -0.060 | <0.001 | -0.108 | -0.163 | -0.054 | <0.001 |
| telehealth- treatment services \* Black | -0.098 | -0.168 | -0.029 | 0.006 | -0.068 | -0.168 | 0.032 | 0.181 |
| telehealth-post discharge services \* Hispanic | 0.012 | -0.050 | 0.075 | 0.696 | 0.032 | -0.024 | 0.088 | 0.261 |
| telehealth- treatment services \* Hispanic | -0.121 | -0.237 | -0.006 | 0.039 | -0.095 | -0.284 | 0.093 | 0.322 |
| Note: All the other covariates presented in table 3 were controlled for in this regression. |
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