Barnett ML, Huskamp HA, Busch AB, Uscher-Pines L, Chaiyachati KH, Mehrotra A. Trends in outpatient telemedicine utilization among rural Medicare beneficiaries, 2010 to 2019. JAMA Health Forum. 2021;2(10):e213282. doi:10.1001/jamahealthforum.2021.3282

**eTable 1.** Characteristics of all rural Medicare beneficiaries with and without a telemedicine visit in 2010, 2015, and 2019  
**eFigure.** Trends in telemedicine visits for rural Medicare beneficiaries by patient characteristics, 2010 to 2019  
**eTable 2.** Proportion of mental health and nonmental health telemedicine visits by health care professional’s specialty, 2010 to 2019

This supplemental material has been provided by the authors to give readers additional information about their work.
### eTable 1. Characteristics of all rural Medicare beneficiaries with and without a telemedicine visit in 2010, 2015, and 2019

|                          | TM Users 2010 | TM Users 2015 | TM Users 2019 | Non-TM Users 2010 | Non-TM Users 2015 | Non-TM Users 2019 |
|--------------------------|---------------|---------------|---------------|-------------------|-------------------|-------------------|
| **Total**                | 17,214        | 47,463        | 91,483        | 10,161,464        | 10,454,543        | 10,329,920        |
| **Age**                  |               |               |               |                   |                   |                   |
| <65                      | 54.4          | 59.0          | 48.5          | 19.6              | 18.7              | 15.5              |
| 65-74                    | 20.3          | 21.6          | 28.5          | 42.3              | 45.9              | 49.1              |
| 75-84                    | 16.1          | 12.6          | 16.0          | 26.0              | 24.0              | 24.8              |
| 85+                      | 9.3           | 6.7           | 7.0           | 12.1              | 11.4              | 10.6              |
| **Race**                 |               |               |               |                   |                   |                   |
| Black                    | 7.3           | 7.6           | 7.1           | 6.6               | 6.4               | 5.8               |
| White                    | 82.8          | 82.7          | 83.6          | 88.0              | 86.8              | 86.6              |
| Other                    | 9.9           | 9.6           | 9.4           | 5.4               | 6.7               | 7.6               |
| **Sex**                  |               |               |               |                   |                   |                   |
| Male                     | 41.6          | 43.7          | 43.7          | 46.6              | 47.6              | 48.2              |
| Female                   | 58.4          | 56.3          | 56.3          | 53.4              | 52.4              | 51.8              |
| **Census Division**      |               |               |               |                   |                   |                   |
| New England              | 1.2           | 1.5           | 2.8           | 4.0               | 4.2               | 4.1               |
| Middle Atlantic          | 1.2           | 2.8           | 2.6           | 6.7               | 6.6               | 6.4               |
| East North Central       | 11.2          | 14.2          | 17.4          | 16.1              | 15.3              | 15.4              |
| West North Central       | 20.4          | 26.8          | 23.6          | 13.1              | 12.7              | 13.1              |
| South Atlantic           | 13.7          | 13.5          | 14.0          | 19.0              | 18.9              | 18.5              |
| East South Central       | 14.9          | 9.3           | 10.1          | 13.1              | 12.9              | 12.0              |
| West South Central       | 22.0          | 15.8          | 11.9          | 13.8              | 13.4              | 12.9              |
| Mountain                 | 10.5          | 8.8           | 8.9           | 6.6               | 7.4               | 8.2               |
| Pacific                  | 4.9           | 7.5           | 8.8           | 7.6               | 8.6               | 9.4               |
| **Medicare Eligibility** |               |               |               |                   |                   |                   |
| Age ≥65                  | 36.9          | 30.3          | 38.0          | 71.9              | 71.8              | 74.7              |
| Disability               | 62.5          | 69.0          | 61.4          | 27.4              | 27.6              | 24.8              |
| End Stage Renal Disease  | 0.6           | 0.6           | 0.7           | 0.7               | 0.6               | 0.6               |
| **Median ZIP Code Income** |             |               |               |                   |                   |                   |
| Less than 200% FPL       | 78.9          | 77.8          | 76.0          | 73.8              | 72.5              | 70.9              |
| Greater than 200% FPL    | 21.1          | 22.2          | 24.0          | 26.2              | 27.5              | 29.1              |
| **Medicaid Eligibility** |               |               |               |                   |                   |                   |
| Yes                      | 60.6          | 63.9          | 56.9          | 22.8              | 21.3              | 18.6              |
| No                       | 39.4          | 36.1          | 43.1          | 77.2              | 78.7              | 81.4              |

Data on race came from an imputed variable created by the Research Triangle Institute for Medicare. “Other” race includes Asian, American Indian, Pacific Islander and Hispanic patients.

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eFigure 1. Trends in telemedicine visits for rural Medicare beneficiaries by patient characteristics, 2010 to 2019

**Total Visits**

- **Race**
  - White
  - Black
  - Other Race

**Visits Per 1,000**

- **Reason for Medicare Eligibility**
  - Age ≥65
  - Disability
  - End Stage Renal Disease

- **ZIP Income Level**
  - ≥2 times Federal Poverty Limit
  - <2 times Federal Poverty Limit

- **Medicaid Eligibility**
  - Medicaid Eligible
  - Not Eligible
**eTable 2. Proportion of mental health and nonmental health telemedicine visits by health care professional’s specialty, 2010 to 2019**

|                      | Mental Health Telemedicine |                      | Non-Mental Health Telemedicine |                      |
|----------------------|---------------------------|----------------------|-------------------------------|----------------------|
|                      | 2010 (n=27,179)           | 2015 (n=108,291)     | 2019 (n=195,705)             | 2010 (n=15,429)     | 2015 (n=27,117)     | 2019 (n=62,274)     |
| Psychiatrist         | 71.2                      | 59.2                 | 41.0                          | 18.5                | 17.5                | 5.4                |
| PCP                  | 3.4                       | 1.2                  | 1.5                           | 19.7                | 16.2                | 17.3               |
| Non-MD Disciplines  |                           |                      |                               |                     |                     |                    |
| LICSW                | 0.8                       | 3.8                  | 8.6                           | 0.0                 | 0.7                 | 1.3                |
| Mental Health NP     | 7.0                       | 20.7                 | 27.0                          | 1.7                 | 4.5                 | 3.6                |
| Nurse Practitioner   | 4.3                       | 0.6                  | 3.7                           | 17.0                | 6.9                 | 15.8               |
| PA                   | 6.0                       | 0.8                  | 2.9                           | 1.8                 | 3.6                 | 4.1                |
| Psychologist         | 3.4                       | 13.3                 | 14.9                          | 0.2                 | 4.5                 | 5.5                |
| Other Specialties    |                           |                      |                               |                     |                     |                    |
| Cardiology           | 0.0                       | 0.0                  | 0.0                           | 3.7                 | 4.7                 | 4.0                |
| Endocrine            | 0.0                       | 0.0                  | 0.0                           | 2.2                 | 3.5                 | 3.9                |
| Heme-Onc             | 0.0                       | 0.0                  | 0.0                           | 3.2                 | 5.1                 | 4.9                |
| ID                   | 0.0                       | 0.0                  | 0.0                           | 3.1                 | 6.2                 | 3.6                |
| Nephrology           | 0.0                       | 0.0                  | 0.0                           | 2.3                 | 4.0                 | 5.2                |
| Neurology            | 0.0                       | 0.0                  | 0.0                           | 4.4                 | 4.3                 | 4.5                |
| Pulmonary            | 0.0                       | 0.0                  | 0.0                           | 3.0                 | 2.4                 | 3.1                |
| Sleep Medicine       | 0.0                       | 0.0                  | 0.0                           | 0.0                 | 3.6                 | 5.5                |
| Other Specialists    | 4.0                       | 0.4                  | 0.4                           | 19.1                | 12.4                | 12.2               |

Abbreviations: infectious disease (ID), licensed independent clinical social worker (LICSW), nurse practitioner (NP), physician assistant (PA), primary care physician (PCP)