Medicare Fee-For-Service Beneficiaries with Disabilities, by End Stage Renal Disease Status, 2014

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Introduction

According to 2014 data from the U.S. Census Bureau, American Community Survey (ACS), 12.6% of U.S. adults have disabilities.[1] Several studies have shown that adults with disabilities have poor health and poor outcomes.[2,3] Adults with disabilities are four times more likely to report their health to be fair or poor than people with no disabilities (40.3% vs 9.9%).[3] A subset of adults with disabilities also have End Stage Renal Disease (ESRD). ESRD is the last stage of chronic kidney disease (CKD), when the kidneys fail to function permanently. Similar to adults with disabilities, those with ESRD are at risk for poor outcomes. For example, compared with patients without renal disease, ESRD patients are at high risk for mortality, hospitalization and subsequent readmission to the hospital.[4] Readmission rates for ESRD patients are extremely high and are twice that of the general Medicare population.[3] Not only are the outcomes worse for Medicare beneficiaries with ESRD, but Medicare spending for ESRD is disproportionately high. Even though the ESRD population constitutes less than 1% of the Medicare population, between 2013 and 2014 Medicare Fee-for-Service (FFS) spending for beneficiaries with ESRD rose by 3.3%, from $31.8 billion to $32.8 billion, accounting for 7.2% of the overall Medicare paid claims costs.[5]

Currently, there is lack of information that describes people with disabilities who also have ESRD. Due to this gap in literature regarding this unique and vulnerable population, it is important to describe and study their characteristics and outcomes. A better understanding is crucial to increase their quality of life, have better outcomes, and decrease cost. Using data from the Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW), this report describes Medicare beneficiaries by disability and ESRD status. Disability was defined by using the Original Reason for Entitlement Code (OREC) which is determined after an individual has received Social Security Disability benefits for 24 months and is then reported to CMS. Data from the U.S. Census Bureau was used to report on the Federal Poverty Level.

Key Findings:

- 54.2% of the Medicare beneficiaries with disabilities and ESRD had six or more chronic conditions as compared to 20.5% of the beneficiaries with disabilities and without ESRD.

- Among the list of other chronic and disabling conditions, Peripheral Vascular Disease (PVD) and Pressure and Chronic Ulcers were significantly higher among Medicare beneficiaries with disabilities and ESRD (26.2% and 17.9%, respectively) compared to beneficiaries with disabilities and without ESRD (9.7% and 5.2%, respectively).

- Among hospitalized beneficiaries, the Medicare beneficiaries with disabilities and ESRD had higher rates of 30-day hospital readmissions (33.8%) and were high utilizers (32.8%) compared to beneficiaries with disabilities and without ESRD (17.3% and 19.9%, respectively).

Data Source: 2014 Medicare Chronic Conditions Data Warehouse (CCW), Centers for Medicare & Medicaid Services.

Table 1. Characteristics of Medicare FFS Beneficiaries with Disabilities, by ESRD Status (2014)

	With ESRD N (%)	Without ESRD N (%)	Total Disabled N (%)
Total Population	154,919	8,732,482	8,887,401
Age[1] (Mean ± SD)	54.3 ± 10.8	57.5 ± 13.5	57.5 ± 13.5
Age[1]			
< 45	29,613 (19.1)	1,464,205 (16.8)	1,493,818 (16.8)
45-54	41,036 (26.5)	1,700,113 (19.5)	1,741,149 (19.6)
55-64	57,645 (37.2)	2,836,249 (32.5)	2,893,894 (32.6)
65-74	24,941 (16.1)	1,971,544 (22.6)	1,996,485 (22.5)
75+	1,684 (1.1)	760,371 (8.7)	762,055 (8.6)
Sex[2]			
Female	61,154 (39.5)	4,190,490 (48.0)	4635751 (52.2)
Male	93,765 (60.5)	4,541,986 (52.0)	4251644 (47.8)
Race / Ethnicity[3]			
American Indian / Alaska Native	2,477 (1.6)	83,363 (1.0)	85,840 (1.0)
Asian / Pacific Islander	5,525 (3.6)	124,661 (1.4)	130,186 (1.5)
Black / African-American	61,744 (39.9)	1,522,503 (17.4)	1,584,247 (17.8)
Hispanic	24,657 (15.9)	699,169 (8.0)	723,826 (8.1)
White	57,828 (37.3)	6,179,354 (70.8)	6,237,182 (70.2)
Dual Status			
Full Benefit Dual	56,535 (36.5)	3,110,801 (35.6)	3,167,336 (35.6)
Poverty Level, %2,4			
Low (0.0 – 4.9%)	8,813 (5.8)	667,169 (7.9)	675,982 (7.8)
Medium (5.0 – 9.9%)	26,407 (17.4)	1,736,659 (20.5)	1,763,066 (20.4)
Medium-High (10.0 –	59,477 (39.3)	3,636,446 (42.9)	3,695,923 (42.8)
High (>=20%)	56,703 (37.5)	2,442,434 (28.8)	2,499,137 (28.9)
Urban Area[2,5]			
Metropolitan (> 50,000)	124,619 (80.6)	6,414,626 (73.6)	6,539,245 (73.7)
Micropolitan (10,000 – 50,000)	18,409 (11.9)	1,351,552 (15.5)	1,369,961 (15.4)
Rural (< 10,000)	11,544 (7.5)	949,522 (10.9)	961,066 (10.8)

1 Age is calculated based on the age of the Medicare beneficiary as of December 31, YYYY. If the beneficiary is deceased, the age is calculated based on age at time of death. Values are presented as mean ± standard deviation or frequency (percent).

2 Where category totals do not sum to the total sample, there may be a small number of 'unknowns'.

3 RTI Race code was used for analyses. Racial categories and American Indian/Alaska Native, Asian/Pacific Islander, Black / African American, and White are classified as non-Hispanic. Hispanic ethnicity includes all race categories.

4 Data from the U.S. Census Bureau, American Community Survey (ACS) – percent below federal poverty level by 5 digit ZCTA

5 Data from the Geographic Variation Database (GVDB) – rural / urban indicator based on Census Bureau Core-Based Statistical Areas (CBSAs).

Source: Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW), 2014

Note: The population is limited to Medicare Fee-for-Service (FFS) beneficiaries with both Parts A and B coverage at least one month during the full year. Beneficiaries who received Medicare Advantage during any of the months in 2014 were excluded.

Table 1 describes the characteristics of the Medicare FFS beneficiaries with disabilities (25.5 percent), comparing those with ESRD (1.7 percent) and without ESRD (98.3 percent). Over 80 percent of Medicare beneficiaries with disabilities and ESRD (82.8 percent) were non-elderly (less than 65 years old), compared to 68.8 percent without ESRD. Among male Medicare beneficiaries with disabilities, 60.5 percent were classified with ESRD, compared to 52 percent without ESRD. The percentage of White Medicare beneficiaries with disabilities and ESRD was lower (37.3 percent) than those without ESRD (70.8 percent). The distribution for all other racial/ethnic minorities was higher for Medicare beneficiaries with ESRD as compared to those without ESRD. A higher percentage of Medicare beneficiaries with ESRD live in high poverty (37.5 percent), compared to 28.8% of those without ESRD. Additionally, close to four out of five beneficiaries with ESRD, 80.6%, live in metropolitan areas compared to 73.6% of those without ESRD.
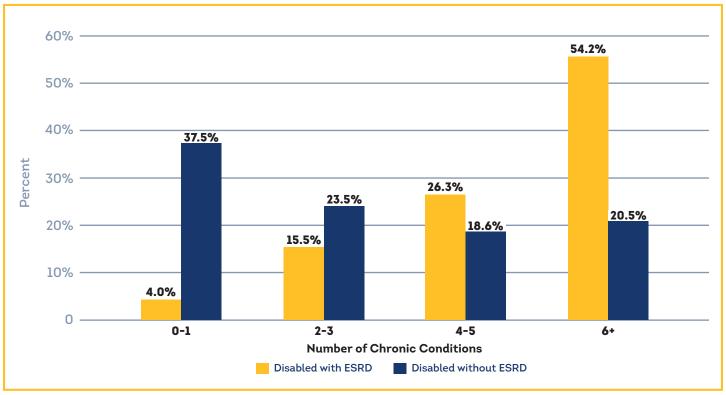
Table 2. Chronic Conditions of Medicare FFS Beneficiaries with Disabilities, by ESRD Status (2014)

	With ESRD N (%)	Without ESRD N (%)	Total Disabled N (%)
Total Population	154,919	8,732,482	8,887,401
Acute Myocardial Infarction	4,050 (2.6)	64,725 (0.7)	68,775 (0.8)
Acquired Hypothyroidism	20,669 (13.3)	1,036,592 (11.9)	1,057,261 (11.9)
Alzheimer's Disease	1,192 (0.8)	172,668 (2.0)	173,860 (2.0)
Alzheimer's Disease, Related Disorders, or Senile Dementia	8,210 (5.3)	568,628 (6.5)	576,838 (6.5)
Anemia	125,315 (80.9)	1,783,144 (20.4)	1,908,459 (21.5)
Asthma	11,051 (7.1)	654,625 (7.5)	665,676 (7.5)
Atrial Fibrillation	12,770 (8.2)	372,948 (4.3)	385,718 (4.3)
Benign Prostatic Hyperplasia	5,989 (3.9)	343,526 (3.9)	349,515 (3.9)
Cancer, Colorectal	1,190 (0.8)	73,709 (0.8)	74,899 (0.8)
Cancer, Endometrial	332 (0.2)	19,097 (0.2)	19,429 (0.2)
Cancer, Breast	1,720 (1.1)	151,750 (1.7)	153,470 (1.7)
Cancer, Lung	795 (0.5)	80,162 (0.9)	80,957 (0.9)
Cancer, Prostate	1,975 (1.3)	108,524 (1.2)	110,499 (1.2)
Cataract	15,146 (9.8)	773,655 (8.9)	788,801 (8.9)
Chronic Kidney Disease	146,590 (94.6)	1,258,662 (14.4)	1,405,252 (15.8)
Chronic Obstructive Pulmonary Disease	20,762 (13.4)	1,221,960 (14.0)	1,242,722 (14.0)
Depression	33,495 (21.6)	2,377,970 (27.2)	2,411,465 (27.1)
Diabetes	95,522 (61.7)	2,517,247 (28.8)	2,612,769 (29.4)
Glaucoma	10,400 (6.7)	429,027 (4.9)	439,427 (4.9)
Heart Failure	65,241 (42.1)	1,122,650 (12.9)	1,187,891 (13.4)
Hip/Pelvic Fracture	1,078 (0.7)	34,631 (0.4)	35,709 (0.4)
Hyperlipidemia	81,790 (52.8)	3,107,126 (35.6)	3,188,916 (35.9)
Hypertension	128,989 (83.3)	4,045,507 (46.3)	4,174,496 (47.0)
Ischemic Heart Disease	73,678 (47.6)	1,988,852 (22.8)	2,062,530 (23.2)
Osteoporosis	6,311 (4.1)	319,039 (3.7)	325,350 (3.7)
Rheumatoid Arthritis / Osteoarthritis	32,208 (20.8)	2,454,948 (28.1)	2,487,156 (28.0)
Stroke / Transient Ischemic Attack	8,959 (5.8)	301,842 (3.5)	310,801 (3.5)

Source: Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW), 2014

Note: Data are presented as frequency (percent). The population is limited to Medicare Fee-for-Service (FFS) beneficiaries with both Parts A and B coverage at least one month during the full year. Beneficiaries who received Medicare Advantage during any of the months in 2014 were excluded.

Table 2 shows the percent of chronic conditions for Medicare FFS beneficiaries with disabilities by ESRD status. The five most prevalent health conditions for Medicare beneficiaries with disabilities and ESRD are chronic kidney disease (94.6 percent), hypertension (83.3 percent), anemia (80.9 percent), diabetes (61.7 percent), and ischemic heart disease (47.6 percent). The five most prevalent health conditions for Medicare beneficiaries with disabilities and without ESRD are hypertension (46.3 percent), hyperlipidemia (35.6 percent), diabetes (28.8 percent), rheumatoid arthritis / osteoarthritis (28.1 percent), and depression (27.2 percent).

Figure 1. Percent of Medicare FFS Beneficiaries with Disabilities, by ESRD status and Number of Chronic Conditions (2014)

Source: Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW), 2014

Note: Population is limited to Medicare Fee-for-Service (FFS) beneficiaries with both Part A and B coverage at least one month during the full year. Beneficiaries who received Medicare Advantage during any of the months in 2014 were excluded.

As displayed in Figure 1, over half of the Medicare FFS beneficiaries with disabilities and ESRD have six or more chronic conditions compared to less than a quarter of the disabled Medicare FFS beneficiaries without ESRD. On the other hand, over one third of the beneficiaries with disabilities and without ESRD have 0-1 chronic conditions compared to less than 5 percent of the beneficiaries with ESRD.

Table 3. Characteristics of Medicare FFS Beneficiaries with Disabilities, by ESRD Status for those with six or more chronic conditions (2014)

	With ESRD N (%)	Without ESRD N (%)	Total Disabled N (%)
Total Population	83,974	1,786,852	1,870,826
Age[1]			
< 45	9,727 (11.6)	52,163 (2.9)	61.890 (3.3)
45-54	20,524 (24.4)	190,571 (10.7)	211,095 (11.3)
55-64	35,487 (42.3)	528,094 (29.6)	563,581 (30.1)
65-74	17,079 (20.3)	636,377 (35.6)	653,456 (34.9)
75+	1,157 (1.4)	379,647 (21.3)	380,804 (20.4)
Sex[2]			
Female	35,609 (42.4)	972,229 (54.4)	1,007,838 (53.9)
Male	48,365 (57.6)	814,623 (45.6)	862,988 (46.1)
Race / Ethnicity[3]			
American Indian / Alaska Native	1,424 (1.7)	14,666 (0.8)	16,090 (0.9)
Asian / Pacific Islander	2,482 (3.0)	18,217 (1.0)	20,699 (1.1)
Black / African-American	32,904 (39.2)	323,705 (18.1)	356,609 (19.1)
Hispanic	13,674 (16.3)	136,970 (7.7)	150,644 (8.1)
White	32,201 (38.4)	1,275,184 (71.4)	1,307,385 (69.9)

[1] Age is calculated based on the age of the Medicare beneficiary as of December 31, YYYY. If the beneficiary is deceased, the age is calculated based on age at time of death. Values are presented as mean ± standard deviation or frequency (percent).

[2] Where category totals do not sum to the total sample, there may be a small number of 'unknowns'.

[3] RTI Race code was used for analyses. Racial categories and American Indian/Alaska Native, Asian/Pacific Islander, Black / African American, and White are classified as non-Hispanic. Hispanic ethnicity includes all race categories.

Source: Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW), 2014

Note: The population is limited to Medicare Fee-for-Service (FFS) beneficiaries with both Parts A and B coverage at least one month during the full year. Beneficiaries who received Medicare Advantage during any of the months in 2014 were excluded.

Table 3 describes the characteristics of the Medicare FFS beneficiaries with disabilities by ESRD status for those with six or more chronic conditions. Of the beneficiaries with disabilities and ESRD, the majority are Black / African American (39.2%), 78.3% are less than 65 years of age and 57.6% are male. On the other hand, of those without ESRD, the majority are white (71.4%), 43.1% are less than 65 years of age, and 45.6% are male.

Table 4. Other Chronic and Disabling Conditions of Beneficiaries with Disabilities, by ESRD Status (2014)

	With ESRD N (%)	Without ESRD N (%)	Total Disabled N (%)
Total Population	154,919	8,732,482	8,887,401
Congenital and Developmental Conditions	4,737 (3.1)	636,412 (7.3)	641,149 (7.2)
Liver Conditions	30,062 (19.4)	593,078 (6.8)	623,140 (7.0)
Mental Health and Substance Use Conditions	60,753 (39.2)	4,018,865 (46.0)	4,079,618 (45.9)
Mobility Limitations and Chronic Pain Conditions	33,041 (21.3)	2,168,653 (24.8)	2,201,694 (24.8)
Neurological Conditions	14,924 (9.6)	920,090 (10.5)	935,014 (10.5)
Other Conditions*	76,946 (49.7)	2,580,614 (29.6)	2,657,560 (29.9)
Sensory – Blindness and Visual Impairment	7,560 (4.9)	92,888 (1.1)	100,448 (1.1)
Sensory – Deafness and Hearing Impairment	5,523 (3.6)	272,134 (3.1)	277,657 (3.1)
Human Immunodeficiency Virus and/ or Acquired Immunodeficiency Syndrome (HIV/AIDS)	3,205 (2.1)	102,950 (1.2)	106,155 (1.2)
Leukemias and Lymphomas	1,787 (1.2)	95,449 (1.1)	97,236 (1.1)
Obesity	37,865 (24.4)	1,463,039 (16.8)	1,500,904 (16.9)
Peripheral Vascular Disease (PVD)	40,535 (26.2)	846,917 (9.7)	887,452 (10.0)
Pressure and Chronic Ulcers	27,779 (17.9)	456,870 (5.2)	484,649 (5.5)

* The Subset of conditions under Other Conditions do not add up to the total for Other Conditions because one beneficiary can have more than one of the subset of conditions.

Source: Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW), 2014

Note: Data are presented as frequency (percent). The population is limited to Medicare Fee-for-Service (FFS) beneficiaries with both Parts A and B coverage at least one month during the full year. Beneficiaries who received Medicare Advantage during any of the months in 2014 were excluded.

As displayed in Table 4, differences were apparent in other chronic and disabling conditions when comparing the two groups. Peripheral Vascular Disease (PVD) and Pressure and Chronic Ulcers were significantly higher among disabled beneficiaries with ESRD (26.2 percent and 17.9 percent, respectively) compared to those without ESRD (9.7 percent and 5.2 percent, respectively).

Table 5. Outcomes comparing Medicare FFS Beneficiaries with Disabilities, by ESRD Status (2014)

	With ESRD N (%)	Without ESRD N (%)	Total Disabled N (%)
Mortality	13,381 (8.6)	298,777 (3.9)	312,158 (3.5)
Hospitalizations (all-cause)	74,979 (48.4)	1,632,365 (18.7)	1,707,344 (19.2)
High Utilizer Beneficiaries[1]	24,601 (32.8)	283,169 (17.3)	307,770 (18.0)
30-day Hospital Readmissions	25,327 (33.8)	325,472 (19.9)	350,799 (20.5)

[1] Three or more inpatient hospital admissions in a 12 month period

Source: Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW), 2014

Note: Data are presented as frequency (percent). The population is limited to Medicare Fee-for-Service (FFS) beneficiaries with both Parts A and B coverage at least one month during the full year. Beneficiaries who received Medicare Advantage during any of the months in 2014 were excluded.

Table 5 shows differences in outcomes for Medicare FFS beneficiaries with disabilities by ESRD status. The mortality rate is higher for Medicare beneficiaries with disabilities and ESRD (8.6 percent) than those without ESRD (3.9 percent). Nearly half of those with ESRD, 48.4percent, were hospitalized as compared to 18.7 percent of those without ESRD. Of those who were hospitalized, one out of three beneficiaries with ESRD (32.8 percent) were high utilizers, compared to 17.3 percent without ESRD. Similarly, of those hospitalized, one out of three beneficiaries with ESRD (33.8 percent) were readmitted to a hospital within 30 days as compared to 19.9 percent without ESRD.

Conclusion

This report highlights the varying health status of Medicare FFS beneficiaries with disabilities by ESRD status. Findings from this report show that Medicare FFS beneficiaries with ESRD are younger, predominantly male, and tend to be classified as a member of a racial/ethnic minority group. These initial findings show beneficiaries with disabilities and ESRD have a higher prevalence for certain disabling and/or chronic conditions and more than half have six or more chronic conditions. Additionally, Medicare FFS beneficiaries with disabilities experience worse outcomes, in particular, higher mortality and hospitalization rates than those without ESRD. Among Medicare FFS beneficiaries with disabilities who were hospitalized, those with ESRD had a higher percentage of 30-day hospital readmissions and a greater high utilization rate than those without ESRD.

These preliminary findings have addressed a gap in the literature regarding an important underserved population of Medicare beneficiaries. With the evidence presented in this report, key stakeholders, medical professionals and other federal and state partners can improve the quality of health care services delivered to this unique group of Medicare beneficiaries with disabilities and ESRD. Furthering our understanding on the health needs of Medicare beneficiaries with disabilities and ESRD will enable the development of targeted interventions to improve their health outcomes and reduce cost to Medicare.

Data Sources and Methods

The Centers for Medicare & Medicaid Services (CMS) Chronic Conditions Data Warehouse (CCW) Master Beneficiary Summary File (MBSF), the Chronic Conditions data, the CCW Cost and Use data, the Geographic Variation Database (GVDB) beneficiary file, and the hospital inpatient data were used for this analysis. The MBSF file was merged to all the other files using the Beneficiary Identification Number, which is the same for a single beneficiary across all CCW files. Chronic condition categories are based on claims data and the algorithms were developed by CMS.[6]

Calendar year 2014 data was used, specifically Medicare Fee-For-Service (FFS) beneficiaries with both Part A and B coverage at least one month during the full year. Beneficiaries who received Medicare Advantage during any of the months in 2014 were excluded. To determine the beneficiaries with disabilities and compare those with and without ESRD, the Original Reason for Entitlement Code (OREC) was used.

The poverty data was acquired from the U.S. Census Bureau, American Community Survey (ACS) data. The data was dowloaded from the Census website and merged to the CCW data at the Zip Code level. The poverty data contained the percent below the federal poverty level (FPL) by the Zip Code Tabulation Area (ZCTA). Categories of poverty level were created to reflect low, medium, medium-high, and high poverty. There were some beneficiaries with missing poverty levels since some Zip Codes could not be merged to ZCTA.

Basic descriptive data are reported such as number (percent) and mean ± standard deviation. Statistical Analysis System (SAS) Enterprise Guide 7 was used for data aggregation and analytics.

Limitations

This study presents prevalence of characteristics and outcomes using Medicare FFS claims data. Because claims data are primarily designed for billing purposes, there are limitations to the scope of analyses that can be performed with them. Additional research may be required to fully understand the underlying factors contributing to these outcomes with the use of multivariate analyses.

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