

Supplemental Appendix 1. Service-Specific Medicare Spending Among Community-Living Older Adults with Disability, Stratified by Experience of Negative Consequences Due to Inadequate Support

Daily Activity Domain ¹	Users of Services with Non-Zero Spending,² (95% CI), %					
	Durable Medical Equipment	Clinician Services & Tests	Outpatient Services	Home Health	Skilled Nursing	Inpatient Services
Household Disability						
No negative consequences	36.9 (33.2, 40.6)	95.7 (94.5, 96.9)	76.8 (73.1, 80.6)	19.3 (16.8, 21.9)	7.8 (5.9, 9.6)	24.0 (21.0, 27.0)
Negative consequences	35.1 (27.5, 42.7)	97.3 (95.0, 99.6)	79.9 (74.2, 85.6)	20.9 (14.9, 27.0)	8.3 (4.5, 12.1)	21.4 (15.5, 27.4)
Mobility Disability						
No negative consequences	35.4 (31.6, 39.1)	95.4 (93.6, 97.2)	78.3 (74.4, 82.3)	18.2 (15.3, 21.0)	7.9 (5.8, 10.0)	23.2 (19.4, 27.0)
Negative consequences	44.7 (37.3, 52.1)	95.8 (93.1, 98.6)	79.0 (72.5, 85.4)	32.2 (26.2, 38.2)	10.9 (7.0, 14.9)	31.8 (25.1, 38.6)
Self-Care Disability						
No negative consequences	37.7 (33.5, 41.9)	95.7 (94.1, 97.4)	75.7 (71.4, 80.0)	21.6 (17.6, 25.6)	8.0 (6.0, 10.1)	26.5 (22.3, 30.7)
Negative consequences	50.1 (41.5, 58.6)	97.4 (95.1, 99.7)	83.2 (76.3, 90.0)	36.3 (28.9, 43.7)	16.6 (10.7, 22.4)	38.0 (29.0, 47.0)
	Median Spending Among Users of Services² (95% CI), \$					
Household Disability						
No negative consequences	246 (204, 288)	2113 (1963, 2263)	1016 (848, 1184)	4338 (3786, 4889)	14498 (10921, 18076)	10530 (9122, 11938)
Negative consequences	264 (118, 409)	2775 (2091, 3460)	1136 (748, 1524)	4123 (3024, 5222)	15524 (9412, 21636)	9766 (6217, 13315)
Mobility Disability						
No negative consequences	232 (195, 269)	2265 (1975, 2555)	1076 (889, 1264)	3765 (3304, 4225)	11590 (6673, 16507)	10689 (9167, 12212)
Negative consequences	271 (157, 385)	2475 (1976, 2974)	1273 (916, 1629)	4987 (3976, 5998)	16560 (10774, 22347)	10646 (8276, 13016)
Self-Care Disability						
No negative consequences	283 (217, 348)	2206 (1972, 2440)	963 (651, 1275)	4036 (3502, 4570)	13331 (8712, 17949)	10827 (8993, 12661)
Negative consequences	233 (94, 372)	2623 (2028, 3219)	1192 (838, 1547)	6360 (5242, 7479)	17444 (11985, 22904)	10026 (5445, 14606)

Source: National Health and Aging Trends Study, 2015; all estimates are weighted.

¹ Household activities include: laundry, shopping, meals, bills and banking for health or function; Mobility activities include: indoor and outdoor mobility and transferring from bed; Self-care activities include: eating, dressing, bathing, toileting.

² Medicare expenditures by service during 12 consecutive months following the 2015 in-person interview. Bottom panel is limited to participants with nonzero spending in each category. Clinician services and tests refer to carrier file. Hospice expenditures are excluded.

Supplemental Appendix 2. Medicare Spending Among Community-Living Older Adults with Disability in Carrying Out Household Activities for Health and Functioning Reasons *,†

	Quantile Regression Models (95% CI) ¶, \$		
	25%	50%	75%
Age in Years			
65-69	Ref	Ref	Ref
70-74	291 (-212, 795)	1560 (558, 2562)	2185 (-352, 4722)
75-79	693 (87, 1298)	1276 (101, 2451)	4031 (-996, 9059)
80-84	973 (308, 1638)	1845 (452, 3238)	2569 (-1030, 6168)
85-89	13 (-562, 587)	635 (-779, 2049)	2418 (-1912, 6749)
90+	466 (-273, 1205)	2282 (195, 4369)	9710 (3050, 16370)
Female gender	-46 (-406, 314)	208 (-808, 1223)	-1047 (-4003, 1909)
Race ‡			
Non-Hispanic White	Ref	Ref	Ref
Non-Hispanic Black	-430 (-919, 60)	-596 (-2116, 924)	599 (-3458, 4655)
Other	-167 (-850, 516)	-1113 (-2886, 660)	-4850 (-8128, -1571)
Supplemental payer			
Tricare	-250 (-694, 195)	331 (-875, 1537)	-927 (-4182, 2329)
Medigap	664 (200, 1129)	1923 (943, 2903)	2692 (-133, 5516)
Medicaid	379 (-201, 959)	2709 (736, 4682)	7165 (3181, 11149)
Self-rated health ‡			
Excellent /very good	Ref	Ref	Ref
Good	115 (-321, 550)	-37 (-1003, 929)	2690 (-222, 5601)
Fair/poor	601 (129, 1073)	1907 (762, 3051)	9057 (5786, 12328)
Probable dementia	-364 (-947, 219)	778 (-1948, 3504)	3150 (-1025, 7325)
No. chronic conditions §	336 (209, 462)	947 (547, 1347)	1820 (1079, 2560)
Negative Consequences	353 (-136, 842)	338 (-768, 1444)	363 (-2734, 3459)

Source: National Health and Aging Trends Study, 2015.

* Community-living Medicare beneficiaries ages 65+ surviving 12 months and enrolled in traditional Medicare (n= 3716).

† Household=laundry, shopping, meals, bills/banking

‡ <1% of observations with responses of "don't know", "refused", or "not ascertained"; categorized as "white" and "poor" self-rated health.

§ Self or proxy response to physician diagnosis for: hypertension, heart attack, diabetes, osteoporosis, heart disease, depression, cancer, emphysema-asthma-chronic obstructive pulmonary disease, arthritis, stroke, vision impairment, hearing impairment, hip fracture.

|| Differences for older adults with disability who did and did not report negative consequences due to insufficient help with household activities (n= 1,195 versus 243).

¶ Estimates reflect the adjusted difference in Medicare spending associated with each characteristic at a specified quantile of spending. Positive values reflect higher spending and negative values reflect lower spending while confidence intervals that overlap zero reflect differences that are not statistically significant. 95% confidence intervals are based on standard errors clustered at the primary sampling unit to account for the NHATS design.

Supplemental Appendix 3. Medicare Spending Among Community-Living Older Adults with Difficulty or Receiving Help with Mobility Disability *,†

	Quantile Regression Models (95% CI) ¶, \$		
	25%	50%	75%
Age in Years			
65-69	Ref	Ref	Ref
70-74	531 (-231, 1293)	2208 (527, 3889)	2121 (-2322, 6565)
75-79	1002 (144, 1859)	1841 (318, 3364)	2951 (-2574, 8476)
80-84	1045 (238, 1853)	2044 (17, 4071)	1223 (-3341, 5788)
85-89	484 (-230, 1198)	739 (-1090, 2568)	477 (-4136, 5089)
90+	1245 (255, 2235)	3470 (483, 6457)	8725 (1240, 16210)
Female gender	-445 (-948, 59)	-263 (-1464, 938)	-1827 (-5603, 1948)
Race §			
Non-Hispanic White	Ref	Ref	Ref
Non-Hispanic Black	-394 (-1002, 214)	-458 (-1942, 1025)	109 (-3528, 3745)
Other	-118 (-986, 751)	-806 (-2718, 1105)	-5738 (-10185, -1292)
Supplemental payer			
Tricare	-145 (-781, 491)	502 (-824, 1828)	-1371 (-5416, 2674)
Medigap	859 (406, 1312)	2120 (1114, 3127)	1561 (-1558, 4681)
Medicaid	547 (-180, 1275)	2390 (439, 4341)	6404 (1396, 11411)
Self-rated health ‡			
Excellent /very good	Ref	Ref	Ref
Good	82 (-564, 728)	122 (-1146, 1390)	2305 (-1504, 6113)
Fair/poor	754 (62, 1446)	1565 (218, 2912)	8686 (4783, 12589)
Probable dementia	-828 (-1547, -109)	1095 (-2454, 4644)	2515 (-1659, 6690)
No. chronic conditions §	358 (192, 524)	917 (422, 1411)	1752 (798, 2706)
Negative Consequences	212 (-371, 795)	2309 (208, 4409)	1570 (-2318, 5458)

Source: National Health and Aging Trends Study, 2015.

* Community-living Medicare beneficiaries ages 65+ surviving 12 months and enrolled in traditional Medicare (n= 3716).

† Mobility=indoor & outdoor, transferring from bed.

‡ <1% of observations with responses of "don't know", "refused", or "not ascertained"; categorized as "white" and "poor" self-rated health.

§ Self or proxy response to physician diagnosis for: hypertension, heart attack, diabetes, osteoporosis, heart disease, depression, cancer, emphysema-asthma-chronic obstructive pulmonary disease, arthritis, stroke, vision impairment, hearing impairment, hip fracture.

|| Differences for older adults with disability who did and did not report negative consequences due to insufficient help with mobility (n=894 versus 321).

¶ Estimates reflect the adjusted difference in Medicare spending associated with each characteristic at a specified quantile of spending. Positive values reflect higher spending and negative values reflect lower spending while confidence intervals that overlap zero reflect differences that are not statistically significant. 95% confidence intervals are based on standard errors clustered at the primary sampling unit to account for the NHATS design.

Supplemental Appendix 4. Medicare Spending Among Community-Living Older Adults with Difficulty or Receiving Help with Self-Care Activities *,†

	Quantile Regression Models (95% CI) ¶, \$		
	25%	50%	75%
Age in Years			
65-69	Ref	Ref	Ref
70-74	-98 (-984, 787)	-1204 (-3501, 1093)	-25 (-5009, 4960)
75-79	104 (-752, 961)	-1370 (-4005, 1265)	1079 (-7697, 9855)
80-84	161 (-800, 1122)	-1019 (-4030, 1993)	-1568 (-7097, 3961)
85-89	-57 (-955, 842)	-1297 (-4082, 1487)	-1664 (-6956, 3628)
90+	825 (-244, 1894)	1654 (-3069, 6378)	7000 (525, 13475)
Female gender	-252 (-901, 396)	-1037 (-2770, 696)	-956 (-6303, 4392)
Race ‡			
Non-Hispanic White	Ref	Ref	Ref
Non-Hispanic Black	-279 (-1028, 470)	-873 (-2681, 934)	-182 (-3796, 3433)
Other	-186 (-1265, 894)	-1006 (-3453, 1441)	-4156 (-10750, 2437)
Supplemental payer			
Tricare	-377 (-1231, 477)	-130 (-1989, 1729)	-998 (-6158, 4162)
Medigap	688 (51, 1325)	2146 (757, 3535)	962 (-3116, 5040)
Medicaid	647 (-238, 1531)	1705 (-451, 3862)	4135 (-531, 8800)
Self-rated health ‡			
Excellent /very good	Ref	Ref	Ref
Good	137 (-579, 852)	268 (-1032, 1568)	3626 (-1523, 8775)
Fair/poor	397 (-330, 1124)	1703 (7, 3398)	8036 (3530, 12542)
Probable dementia	-758 (-1474, -42)	285 (-2134, 2704)	3287 (-1066, 7639)
No. chronic conditions §	301 (138, 463)	1061 (425, 1696)	2002 (1046, 2958)
Negative Consequences	1460 (358, 2561)	3187 (432, 5942)	4797 (-1485, 11079)

Source: National Health and Aging Trends Study, 2015.

* Community-living Medicare beneficiaries ages 65+ surviving 12 months and enrolled in traditional Medicare (n= 3716).

† Self-care=eating, dressing, bathing, toileting.

‡ <1% of observations with responses of "don't know", "refused", or "not ascertained"; categorized as "white" and "poor" self-rated health.

§ Self or proxy response to physician diagnosis for: hypertension, heart attack, diabetes, osteoporosis, heart disease, depression, cancer, emphysema-asthma-chronic obstructive pulmonary disease, arthritis, stroke, vision impairment, hearing impairment, hip fracture.

|| Differences for older adults with disability who did and did not report negative consequences due to insufficient help with self-care activities (n=775 versus 206).

¶ Estimates reflect the adjusted difference in Medicare spending associated with each characteristic at a specified quantile of spending. Positive values reflect higher spending and negative values reflect lower spending while confidence intervals that overlap zero reflect differences that are not statistically significant. 95% confidence intervals are based on standard errors clustered at the primary sampling unit to account for the NHATS design.

Supplemental Appendix 5 Additional Medicare Spending Related to Experiencing Negative Consequences with Daily Activities Among Community-Living Older Adults with Disability Including Decedents

Medicare Spending by Activity Domain ^{*,†, ‡, §}	Quantile Regression (95% CI), \$		
	25%	50%	75%
Household Activities	225 (-264, 714)	-58 (-1189, 1072)	-4 (-3372, 3363)
Mobility Activities	265 (-321, 852)	1938 (51, 3824)	439 (-2690, 3568)
Self-Care Activities	1343 (251, 2436)	2215 (-197, 4627)	3732 (-2114, 9579)

Source: National Health and Aging Trends Study, 2015

* Community-living Medicare beneficiaries ages 65+ continuously enrolled in traditional Medicare (n= 3894).

† Household=laundry, shopping, meals, bills/banking; Mobility=indoor & outdoor, transferring from bed; Self-care=eating, dressing, bathing, toileting.

‡ Group differences for those with disability who did and did not report negative consequences due to insufficient help with household activities (n= 1,305 versus 257), mobility (n=961 versus 367), and self-care (n=850 versus 240).

§ Models adjust for older adults' age, gender, race, supplemental payer, self-rated health, number of chronic conditions, dementia status. 95% confidence intervals based on standard errors clustered at the primary sampling unit to account for the NHATS design.

Supplemental Appendix 6. Additional Medicare Spending Related to Experiencing Negative Consequences with Daily Activities Among Older Adults with Disability Living in the Community or a Residential Care Facility

Medicare Spending by Activity Domain ^{*,†, ‡, §}	Quantile Regression (95% CI)^{¶, §}		
	25%	50%	75%
Household Activities	177 (-302, 655)	-19 (-1057, 1019)	807 (-3288, 4903)
Mobility Activities	107 (-412, 626)	2598 (645, 4551)	2798 (-2472, 6068)
Self-Care Activities	1668 (510, 2826)	3095 (804, 5387)	7052 (1196, 12907)

Source: National Health and Aging Trends Study, 2015

* Medicare beneficiaries ages 65+ living in the community or a residential care facility who survive 12 months and continuously enrolled in traditional Medicare (n= 4,047).

† Household=laundry, shopping, meals, bills/banking; Mobility=indoor & outdoor, transferring from bed; Self-care=eating, dressing, bathing, toileting.

‡ Group differences for those with disability who did and did not report negative consequences due to insufficient help with household activities (n= 1,380 versus 268), mobility (n=999 versus 352), and self-care (n=872 versus 241).

§ Models adjust for older adults’ age, gender, race, supplemental payer, self-rated health, number of chronic conditions, probable dementia.

¶ Estimates reflect the adjusted difference in Medicare spending associated with each characteristic at the specified spending quantile. Positive values reflect higher spending and negative values reflect lower spending while confidence intervals that overlap zero reflect differences that are not statistically significant. 95% confidence intervals based on standard errors clustered at the primary sampling unit to account for the NHATS design.