

Home- and Community-Based Service Use Among Medicare-Medicaid Enrollees with Functional Limitations, 2007–2008

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Over the past three decades, Medicaid programs have expanded the provision of long-term services and supports (LTSS) through home- and community-based services (HCBS). As states have sought to make these services more accessible to a wider population, understanding the characteristics of the Medicare-Medicaid enrollees who use them has become increasingly important. However, Medicaid claims data alone yield little insight into the functional limitations of enrollees receiving HCBS. This issue brief draws on newly merged data from the Medicaid Analytic eXtract (MAX) and Medicare Current Beneficiary Survey (MCBS) from 2007–2008 to provide insight into enrollees' functional limitations, as measured by limitations in activities of daily living (ADL) and associated HCBS use. These limitations appear to be common among Medicare-Medicaid enrollees and affect both the percentage of enrollees who use HCBS and the cost associated with that care.

Introduction

Medicaid is the major public financing mechanism for long-term services and supports (LTSS). Since the inception of the Medicaid program in the mid-1960s, state Medicaid programs have sought to expand the provision of home- and community-based services (HCBS) as an alternative to institutional care (Kaiser Commission on Medicaid and the Uninsured 2012; Ruttner and Irvin 2013; Irvin 2013), and the use of HCBS has grown tremendously over the years. The percentage of LTSS spending accounted for by noninstitutional services has grown 1 to 3 percentage points each year from 1995 (18 percent) to 2009 (44 percent) (Eiken et al. 2011). The most recent data indicate that Medicaid programs spent nearly \$56 billion on HCBS in 2009 (Eiken et al. 2011).

One of the most important developments in the provision of LTSS was the establishment of the HCBS waiver program

About This Series

The MAX Medicaid policy issue brief series highlights the essential role MAX data can play in analyzing the Medicaid program. MAX is a set of annual, person-level data files on Medicaid eligibility, service utilization, and payments that are derived from state reporting of Medicaid eligibility and claims data into the Medicaid Statistical Information System (MSIS). MAX is an enhanced, research-friendly version of MSIS that includes final adjudicated claims based on the date of service, and data that have undergone additional quality checks and corrections. CMS produces MAX specifically for research purposes. For more information about MAX, please visit: <http://www.cms.gov/Research-Statistics-Data-and-Systems/Computer-Data-and-Systems/MedicaidDataSourcesGenInfo/MAX-GeneralInformation.html>.

under Section 1915(c) of the Social Security Act in 1981. The 1915(c) waiver made it possible for people with functional limitations who might otherwise be in an institution to receive LTSS in a home- or community-based setting (Borck et al. 2012). As the provision of HCBS has grown and efforts to rebalance LTSS toward HCBS have continued, the population of HCBS recipients has likewise evolved (Kaiser Commission on Medicaid and the Uninsured 2012; Ruttner and Irvin 2013). To better understand the use of HCBS and other LTSS arrangements among Medicare-Medicaid enrollees, we analyzed the newly merged Medicaid Analytic eXtract (MAX) and Medicare Current Beneficiary Survey (MCBS) data. Specifically, we sought to understand how use of these services is associated with users' functional status.

Methods

To analyze HCBS use and functional status among Medicare-Medicaid enrollees, we used the newly formed data set consisting of merged data from the MAX and MCBS files from 2007 and 2008.

MAX data are derived from the data that states submit quarterly to the Medicaid Statistical Information System (MSIS) regarding the eligibility of and claims paid for all their Medicaid enrollees. MAX was designed to facilitate research on Medicaid enrollment, service use, and expenditures. Information is arranged by calendar year and at the enrollee level. The MAX Person Summary file includes summary expenditure variables, such as total HCBS fee-for-service (FFS) costs, so as to minimize and sometimes eliminate the need to process data from individual claims.

The MCBS is a continuous, nationally representative survey of the Medicare population. It captures information on the aged and disabled who live in the community or in LTSS facilities. Besides collecting information on all medical services used by Medicare beneficiaries and their health insurance coverage, the MCBS collects information that enables researchers to look at factors that may impact service use and payment, such as health status (Centers for Medicare & Medicaid Services n.d.; Agency for Healthcare Research and Quality 2009). For our definition of functional limitation, we used data from the MCBS RIC2 file (containing survey information about people who live in the community) on respondents' need for assistance with six activities of daily living (ADLs).

The 2007 and 2008 MCBS data were merged with the existing MAX data to enable researchers to conduct studies of Medicare-Medicaid enrollees that would not be possible using either data source alone. The MCBS file contains self-reported health information that is not included in the MAX claims file, whereas the MAX file provides a more detailed and accurate assessment of Medicaid costs than is available through the MCBS.

Analysis Variables

People receive LTSS in institutional settings as well as home or community settings. We relied on Medicaid enrollment and claims records to measure the use of LTSS among Medicare-Medicaid enrollees. Although we cannot assess whether LTSS is paid for by private insurance, by Medicare, or out of pocket, the absence of this dimension is not a critical problem for our analysis because Medicaid covers the majority of LTSS provided (Kaiser 2012).

To identify use of LTSS, we used a combination of claims and enrollment information found in MAX records. We created four categories of LTSS service use: (1) received HCBS, (2) received

institutional care only, (3) total LTSS (received HCBS and/or institutional care), and (4) received no LTSS. To identify HCBS use, we looked at both Medicaid enrollment status and Medicaid FFS claims.¹ We considered anyone enrolled at any time during the year in a 1915(c) waiver to be an HCBS user. HCBS users in our analysis also included anyone who had a Medicaid FFS claim in at least one of the following categories: (1) any 1915(c) waiver service; (2) any nonwaiver personal assistance, home-based private duty nursing, adult day care, residential care, or rehabilitation for the aged or disabled; or (3) at least three consecutive months of nonwaiver home health services. To enhance our ability to detect HCBS, we augmented the national codes for identifying nonwaiver personal assistance with state-specific codes compiled in previous research (Ruttner and Irvin 2013). We defined institutional care use as having at least one Medicaid FFS claim for services received in a nursing facility, an intermediate care facility for the intellectually disabled, a mental hospital for the aged, or an inpatient psychiatric facility for those under the age of 21.

For this study, we assessed the use of LTSS by the presence and level of functional limitations. Although functional limitations are not captured in the MAX data, they are captured in the MCBS through a series of questions about a respondent's need for assistance with six ADLs: (1) bathing or showering, (2) dressing, (3) walking, (4) eating, (5) toileting, and (6) transferring. For each of these activities, the MCBS asks whether the respondent has a health or physical problem that makes it difficult to perform. Respondents were considered to have a limitation in an activity if they answered "yes" when asked (1) if they have a health or physical problem that makes it difficult to perform the activity or (2) if the reason that they do not perform the activity is due to a health or physical problem.

We wanted our definition of functional limitation to take into account that assistance with some ADLs indicates greater care needs—and greater likelihood of requiring LTSS—than assistance with others. Many have posited that there is a progression of activity loss leading to the need for LTSS (Travis and McAuley 1990). To look at this concept, we divided ADLs into two groups: early-loss ADLs and late-loss ADLs. The late-loss ADLs were defined by Mor et al. (2007) as bed mobility, eating, toileting, and transferring (information on bed mobility was not collected in the MCBS). For purposes of this study, we defined any non-late-loss ADL as an early-loss ADL. We also created a category titled "low care needs" to include the need for assistance in at least one ADL but not any of the late-loss ADLs (an approach similar to that of Mor et al. [2007]). Those who reported difficulty with at least one late-loss ADL were considered to have "higher care needs."

We ignored any information we had on the person's basis of Medicaid eligibility. Anyone in our sample aged 65 or over was considered eligible for Medicaid on the basis of being "aged," and all other respondents were considered eligible on the basis of being "disabled."

Sample Identification

Based on their income, some Medicare-Medicaid enrollees receive a restricted benefits package from Medicaid that covers only the cost of Medicare enrollment. Although matching these enrollees to respondents in the MCBS is possible, we excluded them from our analysis because our focus is on the use of Medicaid LTSS, and this group is not typically eligible for LTSS financed by Medicaid. Thus, our MAX-MCBS analysis file contained only those Medicare-Medicaid enrollees who were eligible for the full range of Medicaid benefits, known as full-benefit Medicare-Medicaid enrollees.²

We began by identifying all full-benefit Medicare-Medicaid enrollees in the MCBS who had a linked record with MAX in the same year. Our initial sample included 5,557 Medicare-Medicaid full-benefit enrollees who were enrolled in Medicaid and had responded to the MCBS in the same year (2,931 in 2007 and 2,626 in 2008). We then imposed several important exclusions on the data. Because we were investigating the link between functional limitations and the use of LTSS, we eliminated 1,345 MCBS respondents who did not provide information about their need for assistance with the six ADL measures. In addition, we excluded Medicaid enrollees from Maine because no Medicaid claims data were available from that state.

Medicare-Medicaid enrollees may receive care through the FFS system, through a comprehensive managed care (CMC) program, or through both if some services are not covered by the CMC program and are available only on an FFS basis. Because FFS claims and CMC encounter records are typically thought to differ in level of detail and quality, our methodology for identifying LTSS use relied on FFS data. In general, it is difficult to capture expenditures for specific services for CMC enrollees because their capitation payments are not dependent on service use. Instead, service use is captured through encounter data: claim records that contain utilization but not expenditure information. For Medicaid enrollees, states are not required to submit encounter data to MSIS, the data source for MAX, so the data may not be available for all CMC enrollees. In 2008, 14 of the 43 states with enrollees in CMCs did not submit encounter data (Borck et al. 2012). We therefore removed from our analysis 435 Medicare-Medicaid enrollees who were enrolled in a Medicaid CMC for at least one month. CMC includes health maintenance organizations (HMOs),

health insuring organizations (HIOs), and the Program of All-Inclusive Care for the Elderly (PACE). We did not exclude Medicare-Medicaid enrollees in the Medicare Advantage program, which is the Medicare managed care program, because the analysis did not assess Medicare use and expenditures.

In both the MCBS and MAX, the same individuals could appear in the data for both 2007 and 2008. The longitudinal aspect of the MCBS requires that MCBS participants be interviewed multiple times over a four-year period (Agency for Healthcare Research and Quality 2009), and many who enroll in Medicare and Medicaid are in both programs for multiple years. As a result, 1,146 enrollees appeared in both the 2007 and 2008 samples of respondents. To avoid the complexity associated with multiple observations for a single person, we kept only the 2008 data for these enrollees.

Our final analysis sample contained 2,631 respondents who were Medicare-Medicaid enrollees, eligible for the full range of Medicaid benefits, and had the potential to receive LTSS on a fee-for-service basis. This sample represents about 0.02 percent of the total population of Medicare-Medicaid enrollees, which stood at 8.9 million in 2007 (Kaiser Family Foundation 2011). Our final sample was younger than the average Medicare-Medicaid enrollee because its share of aged enrollees (47 percent) was lower than the share in the entire 2007 population of enrollees (61 percent) (Kaiser Family Foundation 2011). This difference between our sample and the overall population of Medicare-Medicaid enrollees may be due in part to the fact that our MCBS sample included only enrollees who live in the community and are not long-term nursing home residents.³

Analysis Approach

The goal of our analysis was to gain insight into HCBS use among Medicare-Medicaid enrollees and into the connection between HCBS use and functional limitations. In addition to assessing the types of service use, we measured the overall cost of HCBS to see how costs are associated with the severity of disability, as captured by the number and type of ADL limitations. HCBS costs reflect the amount paid from all FFS 1915(c) waiver service claims and selected nonwaiver service claims (personal care, home-based private duty nursing, adult day care, home health services, residential care, and rehabilitation for the aged and disabled). We calculated the average annual HCBS costs per Medicare-Medicaid enrollee who used HCBS, regardless of the length of Medicaid enrollment.

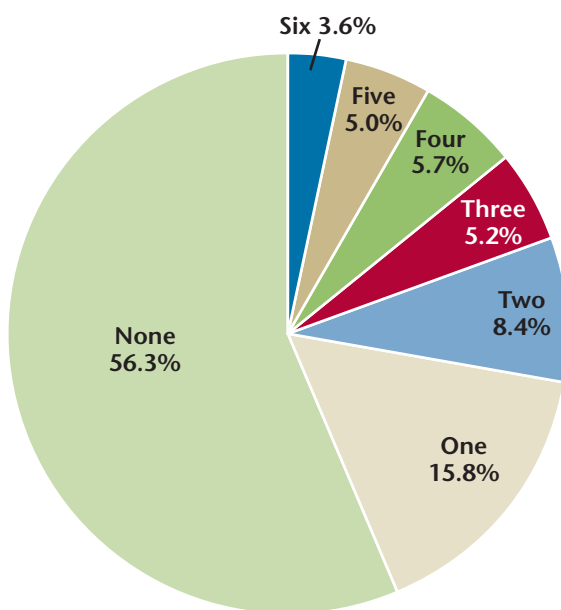
We pooled data from 2007 and 2008 to maximize our sample size and the power of our estimates. This seemed like a reasonable approach because we did not anticipate any large and statistically significant differences in costs or populations

between 2007 and 2008. However, this approach did make it difficult to select the appropriate MCBS weights. The MCBS sample weights are designed to create national estimates for the full MCBS sample for that year's survey only. Using the MCBS-provided weights, we ran the analysis with weights and without. Because there was little difference in the results (data not shown), we opted not to present the weighted analyses.

Results

Functional limitations appear to be common among Medicare-Medicaid enrollees in the analysis sample (Figure 1). Although 56 percent did not have a functional limitation, approximately 44 percent had at least one limitation, and nearly 20 percent had three or more limitations (Table 1). The most common limitation was walking, whereas the least common was the late-loss limitation of eating (Figure 2). Aged Medicare-Medicaid enrollees had higher rates of limitations than those eligible on the basis of disability (Figure 2). Among the aged, more than half had at least one limitation (54 percent, Table 2), and a quarter had three or more limitations; by comparison, about a third of those eligible on the basis of disability had one or more limitations, and only 14 percent had three or more (Table 3).

Figure 1. Percentage of Medicare-Medicaid Enrollees with Functional Limitations, by Number of ADL Limitations (MAX-MCBS 2007–2008)



Source: MAX-MCBS 2007–2008 data.

The majority of LTSS recipients used HCBS, and that use was affected by the presence and level of functional limitations. Typically, LTSS took the form of HCBS rather than institutional care, a finding that is consistent with a sample of Medicare-Medicaid enrollees who live in the community (Table 1). The 46 percent of Medicare-Medicaid enrollees who received any LTSS was composed of 44 percent who received HCBS, with or without institutional care, and 2 percent who received institutional care only. For those who reported no difficulties with any of the ADLs, 18 percent received HCBS. As the number of ADL limitations increased, the percentage of enrollees who used no LTSS decreased (from 81.5 percent among those reporting no difficulties to 21.3 percent for those with difficulties in all the ADLs); likewise, the percentage who used HCBS increased (from 18.2 percent to 77.7 percent). HCBS use increased incrementally as the number of ADLs increased (see Tables 1–3). Figure 3 shows that the percentage of enrollees with HCBS use was consistently higher among the aged than among the disabled.

Although the receipt of LTSS is affected by the presence and level of functional limitations, not all Medicare-Medicaid enrollees who had a functional limitation received Medicaid-financed LTSS (Table 1). As the number of limitations increases, the likelihood of receiving some type of LTSS generally increases as well. Among those with only one limitation, approximately 24 percent received some type of LTSS, compared to 76 percent who did not; among those with three or more limitations, nearly two-thirds received some type of LTSS, compared to about one-third who did not. Among the small group that has limitations in all six activities, 21 percent did not receive any Medicaid-financed LTSS (25 percent among the aged in this group and 17 percent among the non-elderly with disabilities), although individuals in this group may be receiving informal care from family and friends. The data do not indicate why these individuals are not receiving Medicaid-financed LTSS.

HCBS use varied by the type of ADL in which the enrollee reported limitations (Figure 4) and the overall level of care needs. The highest rates of HCBS use occurred among Medicare-Medicaid enrollees who reported difficulties with toileting, dressing, and bathing. Nearly 68 percent of enrollees who reported difficulties with toileting used HCBS (70 percent among the aged and 64 percent among the non-elderly with disabilities). Enrollees who reported difficulties in walking had the lowest level of HCBS use (45 percent). HCBS use was also more common for individuals who had a limitation in at least one late-loss ADL and had higher care needs compared to those who had a limitation in only the early-loss ADLs and had low care needs. More than half of the Medicare-Medicaid enrollees with higher care needs received HCBS, compared to about a third of those with low care needs (Table 1).

Table 1. HCBS Use Among All Medicare-Medicaid Enrollees, by ADL Category (MAX-MCBS 2007–2008)

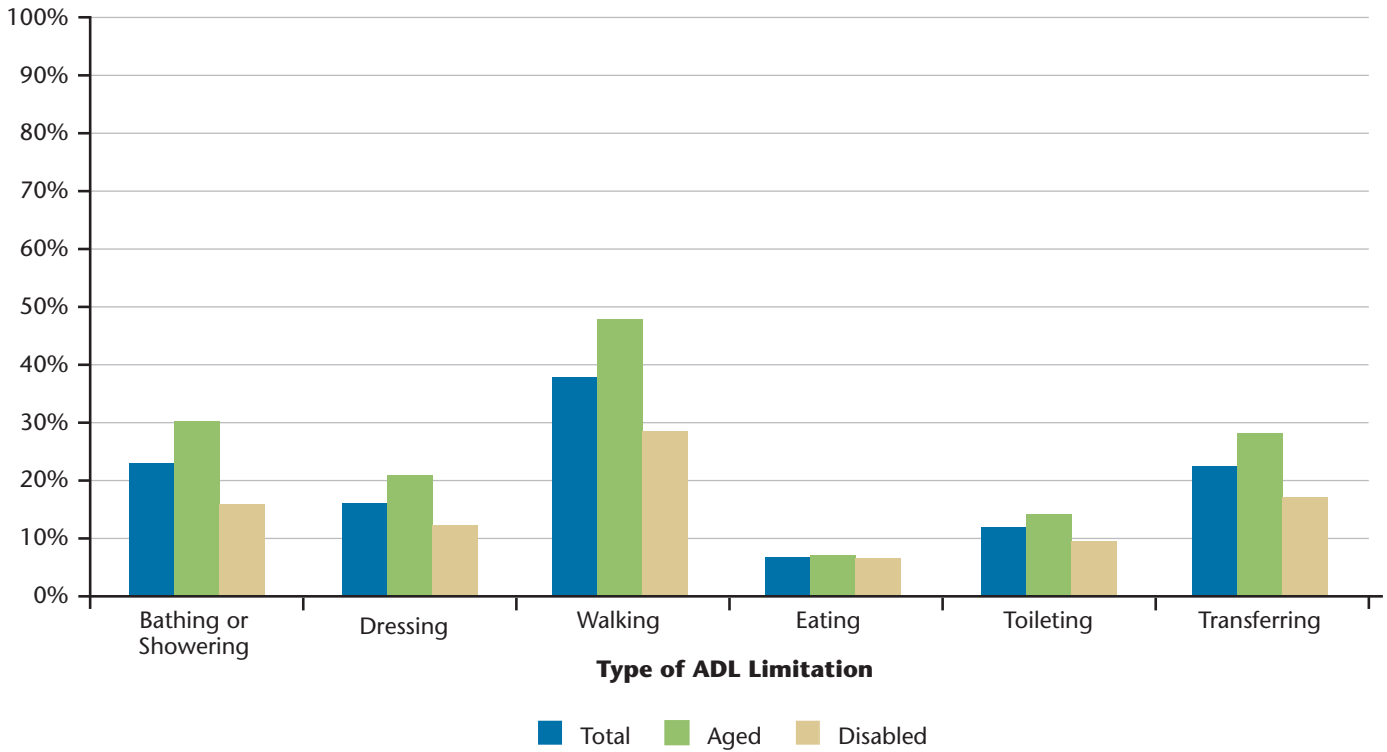
ADL Category	N	Percentage of Study Population	Percentage Who Received LTSS			Percentage Who Received No LTSS
			Received HCBS	Received Institutional Care Only	Total (any LTSS)	
Total Population	2,631	–	44.4	1.7	46.0	54.0
Type of ADL						
Early-Loss ADL						
Bathing or showering	602	22.9	64.8	1.8	66.6	33.4
Dressing	424	16.1	66.7	1.7	68.4	31.6
Walking	990	37.6	45.1	1.5	46.6	53.4
Late-Loss ADL						
Eating	180	6.8	60.6	1.1	61.7	38.3
Toileting	312	11.9	67.6	1.3	68.9	31.1
Transferring	589	22.4	53.0	2.0	55.0	45.0
Number of ADL Limitations						
None	1,480	56.3	18.2	0.3	18.5	81.5
One	415	15.8	22.2	1.7	23.9	76.1
Two	222	8.4	42.3	0.9	43.2	56.8
Three	138	5.2	52.2	2.9	55.1	44.9
Four	150	5.7	55.3	2.0	57.3	42.7
Five	132	5.0	73.5	1.5	75.0	25.0
Six	94	3.6	77.7	1.1	78.7	21.3
One or more	1,151	43.7	44.4	1.7	46.0	54.0
Three or more	514	19.5	63.2	1.9	65.2	34.8
Physical Care Needs						
No ADL limitations	1,480	56.3	18.2	0.3	18.5	81.5
Low care needs ^a	481	18.3	33.5	1.5	34.9	65.1
Higher care needs ^b	670	25.5	52.2	1.8	54.0	46.0

Source: MAX-MCBS 2007–2008 data.

^a “Low care needs” are defined as having limitations in one or more early-loss ADLs but no late-loss ADLs.

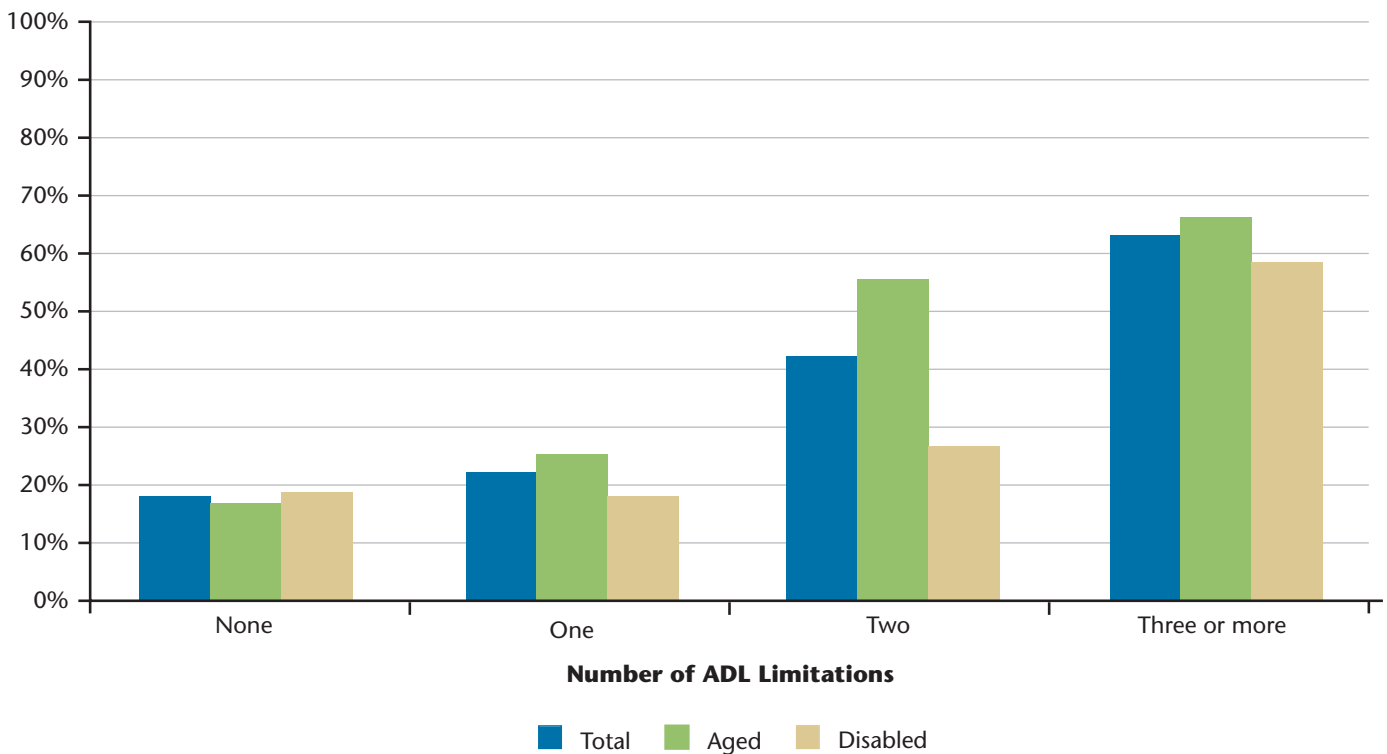
^b “Higher care needs” are defined as having limitations in one or more late-loss ADLs.

Figure 2. Percentage of Medicare-Medicaid Enrollees with Functional Limitations, by Type of ADL Limitation and Analysis Group (MAX-MCBS 2007–2008)



Source: MAX-MCBS 2007–2008 data.

Figure 3. Percentage of Medicare-Medicaid Enrollees with HCBS Use, by Number of ADL Limitations and Analysis Group (MAX-MCBS 2007–2008)



Source: MAX-MCBS 2007–2008 data.

Table 2. HCBS Use Among All Aged Medicare-Medicaid Enrollees, by ADL Category (MAX-MCBS 2007–2008)

ADL Category	N	Percentage of Study Population	Percentage Who Received LTSS			Percentage Who Received No LTSS
			Received HCBS	Received Institutional Care Only	Total (any LTSS)	
Total Population	1,234	–	50.3	2.6	52.9	47.1
Type of ADL						
Early-Loss ADL						
Bathing or showering	373	30.2	66.8	2.7	69.4	30.6
Dressing	254	20.6	68.5	2.8	71.3	28.7
Walking	592	48.0	51.2	2.2	53.4	46.6
Late-Loss ADL						
Eating	86	7.0	65.1	2.3	67.4	32.6
Toileting	177	14.3	70.1	2.3	72.3	27.7
Transferring	349	28.3	59.6	3.2	62.8	37.2
Number of ADL Limitations						
None	570	46.2	17.0	0.4	17.4	82.6
One	227	18.4	25.6	2.6	28.2	71.8
Two	121	9.8	55.4	1.7	57.0	43.0
Three	87	7.1	57.5	3.4	60.9	39.1
Four	97	7.9	63.9	3.1	67.0	33.0
Five	79	6.4	73.4	2.5	75.9	24.1
Six	53	4.3	73.6	1.9	75.5	24.5
One or more	664	53.8	50.3	2.6	52.9	47.1
Three or more	316	25.6	66.1	2.8	69.0	31.0
Physical Care Needs						
No ADL limitations	570	46.2	17.0	0.4	17.4	82.6
Low care needs ^a	283	22.9	38.2	2.1	40.3	59.7
Higher care needs ^b	381	30.9	59.3	2.9	62.2	37.8

Source: MAX-MCBS 2007–2008 data.

^a “Low care needs” are defined as having limitations in one or more early-loss ADLs but no late-loss ADLs.

^b “Higher care needs” are defined as having limitations in one or more late-loss ADLs.

Table 3. HCBS Use Among All Disabled Medicare-Medicaid Enrollees, by ADL Category (MAX-MCBS 2007–2008)

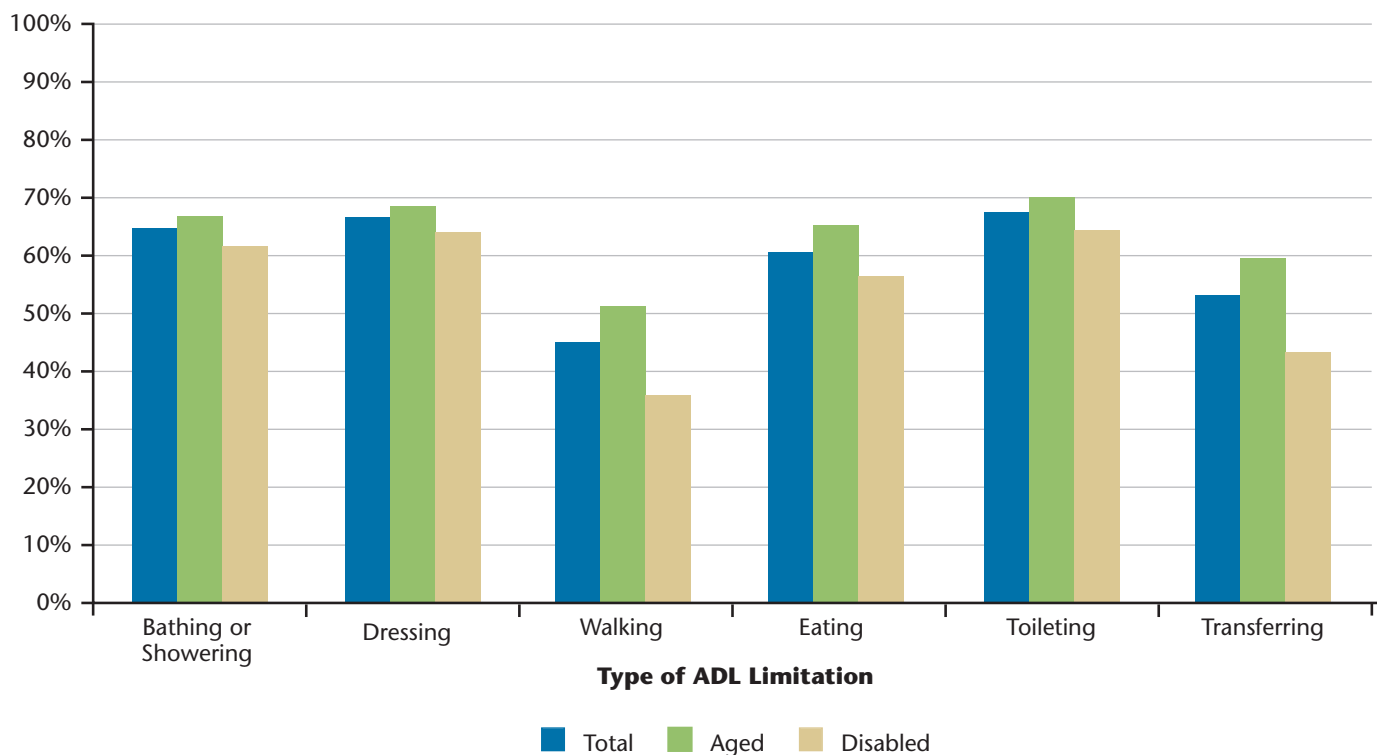
ADL Category	N	Percentage of Study Population	Percentage Who Received LTSS			Percentage Who Received No LTSS
			Received HCBS	Received Institutional Care Only	Total (any LTSS)	
Total Population	1,397	–	36.3	0.4	36.8	63.2
Type of ADL						
Early-Loss ADL						
Bathing or showering	229	16.4	61.6	0.4	62.0	38.0
Dressing	170	12.2	64.1	0.0	64.1	35.9
Walking	398	28.5	35.9	0.5	36.4	63.6
Late-Loss ADL						
Eating	94	6.7	56.4	0.0	56.4	43.6
Toileting	135	9.7	64.4	0.0	64.4	35.6
Transferring	240	17.2	43.3	0.4	43.8	56.3
Number of ADL Limitations						
None	910	65.1	18.9	0.3	19.2	80.8
One	188	13.5	18.1	0.5	18.6	81.4
Two	101	7.2	26.7	0.0	26.7	73.3
Three	51	3.7	43.1	2.0	45.1	54.9
Four	53	3.8	39.6	0.0	39.6	60.4
Five	53	3.8	73.6	0.0	73.6	26.4
Six	41	2.9	82.9	0.0	82.9	17.1
One or more	487	34.9	36.3	0.4	36.8	63.2
Three or more	198	14.2	58.6	0.5	59.1	40.9
Physical Care Needs						
No ADL limitations	910	65.1	18.9	0.3	19.2	80.8
Low care needs ^a	198	14.2	26.8	0.5	27.3	72.7
Higher care needs ^b	289	20.7	42.9	0.3	43.3	56.7

Source: MAX-MCBS 2007–2008 data.

^a “Low care needs” are defined as having limitations in one or more early-loss ADLs but no late-loss ADLs.

^b “Higher care needs” are defined as having limitations in one or more late-loss ADLs.

Figure 4. Percentage of Medicare-Medicaid Enrollees with HCBS Use, by Type of ADL Limitation and Analysis Group (MAX-MCBS 2007–2008)



Source: MAX-MCBS 2007–2008 data.

Table 4 shows the average annual costs of HCBS by ADL category among all Medicare-Medicaid enrollees with HCBS use. For those who reported difficulties in at least one ADL in 2007–2008 and used HCBS, the average annual cost for HCBS was \$17,484. Average annual HCBS costs varied considerably across the different subgroups of people with limitations, ranging from \$10,457 for an aged Medicare-Medicaid enrollee who reported limitations in two ADLs to \$36,679 for a Medicare-Medicaid enrollee with disabilities who reported limitations in all six ADLs. For all ADL groups, the average annual cost was higher among the younger beneficiaries, who were eligible for Medicare on the basis on disability, than for the aged group.

The average annual cost of HCBS varied by the number of ADL limitations and type of limitation. Among the younger enrollees with disabilities who received HCBS services, the average annual HCBS costs were higher for those who did not report an activity limitation (\$17,124) than for those with one ADL limitation (\$14,748). Otherwise, for all population groups, the average annual HCBS costs generally increased as the number of ADL limitations increased. The most costly groups were those with limitations in all six ADLs. The average annual HCBS cost for Medicare-Medicaid enrollees with higher care needs (\$18,733)

was about 25 percent higher than the annual cost for those with only low care needs (\$14,852). Although eating was the least often reported ADL limitation, users with this late-loss limitation had the highest annual HCBS costs (\$25,762) (Tables 1 and 4). Walking was the most prevalent ADL limitation and had the lowest annual average costs (\$17,182).

Discussion

Our analysis shows that physical functional limitations are prevalent among community-dwelling Medicare-Medicaid enrollees, with about 44 percent reporting difficulty with at least one ADL. Physical limitations were more prevalent among aged Medicare-Medicaid enrollees (54 percent reported difficulty with at least one ADL) than among those with disabilities (35 percent). The percentage of Medicare-Medicaid enrollees who used LTSS, particularly HCBS, increased incrementally as the number of functional limitations increased. However, physical functional limitation was not the sole determinant of LTSS use. Nearly 20 percent of those with no functional limitations used Medicaid-financed LTSS, and 21 percent of those with limitations in all six ADLs (bathing, dressing, walking, eating, toileting, and transferring) did not.

Table 4. Average Annual HCBS Costs Among Medicare-Medicaid Enrollees with HCBS Use, by ADL Category and Analysis Group (MAX-MCBS 2007–2008)

ADL Category	Total	Aged	Disabled
Total Population	\$16,375	\$13,587	\$19,915
Type of ADL			
Early-Loss ADL			
Bathing or showering	19,415	15,933	25,627
Dressing	21,801	17,837	28,204
Walking	17,182	15,282	21,293
Late-Loss ADL			
Eating	25,762	22,136	29,684
Toileting	22,339	19,261	26,880
Transferring	19,027	16,914	23,210
Number of ADL Limitations			
None	14,226	9,272	17,124
One	12,134	10,692	14,748
Two	14,627	10,457	24,731
Three	15,358	14,272	17,890
Four	16,623	16,372	17,413
Five	17,275	14,722	20,931
Six	31,365	26,891	36,679
One or more	17,484	14,837	22,573
Three or more	19,866	17,419	24,355
Physical Care Needs			
No ADL limitations	14,226	9,272	17,124
Low care needs ^a	14,852	11,288	22,478
Higher care needs ^b	18,733	16,611	22,613

Source: MAX-MCBS 2007–2008 data.

^a “Low care needs” are defined as having limitations in one or more early-loss ADLs but no late-loss ADLs.

^b “Higher care needs” are defined as having limitations in one or more late-loss ADLs.

HCBS use was prevalent among enrollees with functional limitations. The share of Medicare-Medicaid enrollees who used HCBS at least once during the year was 44 percent among enrollees with a limitation in at least one ADL, and 63 percent among enrollees with three or more ADL limitations. Among those with limitations in all six ADLs—nearly 4 percent of our sample—78 percent received HCBS. The ability of people with numerous physical limitations to remain in the community, along with the high percentage of people in this group making use of HCBS, is an encouraging indication of the expansion of these services.

In general, the use and cost of HCBS increased with the number of ADL limitations. Although this pattern of cost and HCBS use met our expectations, the results of the individual analyses did not. Dressing was considered an early-loss ADL and toileting was considered a late-loss ADL, but among Medicare-Medicaid enrollees using HCBS, the rate of service use for those with either kind of ADL limitation was nearly the same: approximately two-thirds. Higher care needs were defined as the presence of at least one late-loss ADL. Although the majority of people who had difficulties with at least one

ADL were considered to have higher care needs, 46 percent received no LTSS. As states continue to try to rebalance services to increase HCBS use, they should consider targeting those with higher care needs for retention in the community, both to prevent their entry into institutionalized care and to avoid the resulting financial impacts. It may be that ADL limitations, which have often been used to measure functional limitations in relation to nursing home admittance, are not the most accurate or relevant way to assess functional limitations as they relate to HCBS use.

HCBS use differed for aged Medicare-Medicaid enrollees and those with disabilities. Aged enrollees were more likely to use HCBS, but among HCBS users, younger enrollees with disabilities had higher per-person HCBS costs than the aged. The most costly group of HCBS users was the younger Medicare-Medicaid enrollees with disabilities who had limitations in all six ADLs. This group had nearly \$37,000 in average annual HCBS costs. ADL limitations measure physical impairment, but where disability is due to mental impairment or a developmental issue, there may be both less need for HCBS and higher HCBS costs when assistance is provided. It may also be that aged Medicare-Medicaid enrollees are more likely to be institutionalized than their nonaged counterparts because of their greater need for LTSS; in that case, the highest-cost aged enrollees would not be included in the community sample. Further research into the types of disabilities among Medicare-Medicaid enrollees, and into the types of HCBS services used by those with disabilities and the aged, could clarify the reasons for the differences in HCBS use and costs shown by the two population groups.

Limitations

We measured HCBS use and did not examine whether use of certain services was related to specific ADL limitations. Although difficulties in certain ADLs might be associated with the use of particular types of HCBS, it was not possible to evaluate the actual impact of a particular ADL limitation on HCBS use because many people have difficulties with more than one ADL. However, we did find similar distributions of LTSS use in most of the individual ADL analyses, with two exceptions: difficulties with walking and transferring were associated with lower HCBS use.

The ADL limitations captured in the MCBS are only one way of assessing physical functioning, and a different type of assessment might give different results from the ones produced by this study. There is no standard set of ADLs for assessing physical limitations—Wiener et al. (1990) found

more than 43 different published indexes that assessed ADLs in patients and populations—although most groupings include similar activities with slight variations. For example, the Katz Scale, one of the most common measures of functional ability, includes five of the ADLs measured in the MCBS, but includes continence, not walking, as a sixth ADL (Wiener et al. 1990). A different set of ADLs could affect the number of limitations identified among Medicare-Medicaid enrollees, as well as associated HCBS use.

In addition, our measure of functional limitation is somewhat imprecise. In the MCBS, enrollees were asked whether they had difficulty performing each of the ADLs, but the level of difficulty was not assessed. The level of difficulty could affect the need for LTSS. People having minimal difficulty might not require additional assistance—a possibility that could partly explain why so many enrollees with one or two limitations did not receive any Medicaid-financed LTSS. Future research that characterizes enrollees' level of difficulty in accomplishing each of the ADLs may yield additional insights.

Our estimates of Medicaid-financed LTSS use should be considered lower-bound estimates because our analysis underestimates the overall use of LTSS. The data available for the study necessarily required us to focus solely on Medicaid-financed LTSS. LTSS can also be financed through private insurance and, in select instances, Medicare. In addition, the MCBS data we used were collected from respondents living in the community, not in institutions, so we are missing an entire segment of the population who have limitations and use LTSS. If those living in institutions had been included, the estimates of those receiving institutional care would of course have been higher, and most likely some of the results linking functional limitations and LTSS use would have been different. Nevertheless, the MCBS sample provides for a reliable analysis of community-based LTSS.

Our analyses also do not provide reliable information for assessing LTSS use among Medicare-Medicaid enrollees in comprehensive managed care organizations. Our analyses relied on FFS Medicaid data, and it is not clear that what occurs within an FFS system adequately reflects what occurs in a managed care environment. We did not include enrollees who were enrolled in a CMC program at any time throughout the year because their Medicaid claims information would most likely have been incomplete and not comparable to the information available on FFS claims. However, some CMC plans, such as PACE, may provide HCBS. Thus, the information presented here may not reflect use and costs of Medicare-Medicaid enrollees in Medicaid managed care plans.

Finally, HCBS use and average cost may have been underestimated if our HCBS taxonomy was not able to identify a service as HCBS. Some states use different codes for HCBS offered through a state plan as opposed to a waiver. In those states, we may have missed HCBS services that were provided to a non-waiver enrollee if the state-specific service code for state plan services was different from the code the state uses for waiver services. However, our HCBS taxonomy is extensive (Centers for Medicare & Medicaid Services 2013), so we are confident that the majority of HCBS use was identified.

Conclusions

Using the MAX-MCBS data, we illustrated how the functional status of Medicare-Medicaid enrollees affects both the percentage who use HCBS and the cost associated with that care. Lower functional status results in higher levels of HCBS use and higher costs. HCBS use was consistently higher among Medicare-Medicaid enrollees aged 65 and older than among those with disabilities, but the average cost per HCBS user was lower for the aged. More research is needed to further explore the association between specific ADL limitations and the types of HCBS used.

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Endnotes

- ¹ We used both enrollment in 1915(c) waivers and 1915(c) waiver claims because, although the majority of states appear to report both waiver enrollment and waiver claims accurately, some states struggle with their reporting of waiver enrollment, and others struggle with their reporting of waiver claims.
- ² For more information about how the Medicaid enrollees and MAX respondents were matched, see Malsberger (2012).
- ³ Enrollees in our sample were not residing in an institution at the time of the MCBS but may experience institutional care at some point during the year.

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