

SECTION

11

Other services

Dialysis

Hospice

Clinical laboratory

Chart 11-1 Number and capacity of freestanding and for-profit dialysis organizations increased, but growth rate was low between 2021 and 2022

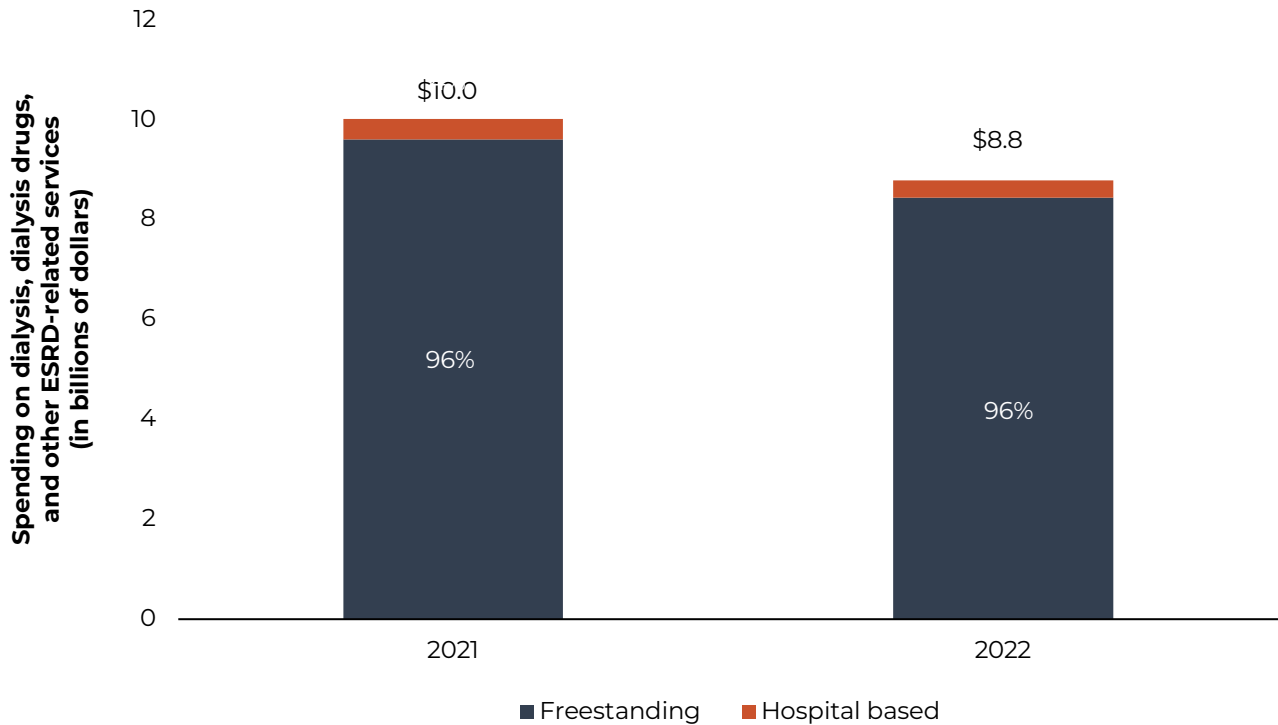
	2022	Average annual percent change	
		2018–2021	2021–2022
Total number of:			
Dialysis facilities	7,865	2%	–0.2%
Hemodialysis stations	138,100	2	0.1
Mean number of hemodialysis stations per facility	18	0	0.3
	Share of total facilities		
Hospital based	5%	–1	–5
Freestanding	95	2	0.1
Urban	84	2	0.1
Rural, micropolitan	10	0.3	0
Rural, adjacent to urban	4	–0.3	–2
Rural, not adjacent to urban	2	–2	–2
Frontier	0.4	0	0
For profit	89	2	0.2
Nonprofit	11	–1	–2

Note: “Nonprofit” includes facilities designated as either nonprofit or government facilities. “Average annual percent change” is based on comparing 2018, 2021, and 2022 end-of-year files. Provider location reflects the county where the provider is located, in one of four categories (urban, micropolitan, rural adjacent to urban, or rural nonadjacent to urban) based on an aggregation of the Urban Influence Codes. Frontier counties have six or fewer people per square mile. Components may not sum to totals due to rounding.

Source: Compiled by MedPAC from the institutional outpatient claims files and the Dialysis Compare files from CMS.

- > Between 2018 and 2021, the number of facilities increased, on average, 2 percent per year, while between 2021 and 2022, the number of facilities declined by 0.2 percent. Facilities’ capacity to provide care—as measured by hemodialysis treatment stations—grew more slowly between 2021 and 2022 compared with growth from 2018 through 2021 (0.1 percent per year vs. 2 percent per year, respectively).
- > The recent decline in the total number of dialysis facilities may be attributable to factors such as (1) the decline in the rate of new end-stage renal disease (ESRD) cases and excess mortality of persons with ESRD due to the coronavirus pandemic; (2) the growing trend toward home dialysis; and (3) efforts by some dialysis providers to optimize their facilities’ capacity utilization.
- > The decline in rural capacity between 2021 and 2022 (data not shown) is also linked to facility size. Small dialysis facilities have been more likely to close, and rural facilities are, on average, smaller than urban facilities. The Commission’s recommendation to replace the current low-volume payment adjustment and rural adjustment with a single low-volume and isolated adjustment would better protect isolated low-volume rural facilities that are necessary for beneficiary access.
- > Between 2018 and 2021, the number of freestanding and for-profit facilities each increased by 2 percent per year. Hospital-based and nonprofit facilities have declined. The average size of a facility has remained relatively constant at 18 dialysis treatment stations per facility.

Chart 11-2 FFS Medicare spending for outpatient dialysis services furnished by freestanding and hospital-based dialysis facilities, 2021 and 2022



Note: FFS (fee-for-service), ESRD (end-stage renal disease). Dollar amounts are nominal figures, not adjusted for inflation.

Source: Compiled by MedPAC from the institutional outpatient claims files from CMS.

- > In 2022, total FFS Medicare spending for dialysis, dialysis drugs, and ESRD-related clinical laboratory tests was \$8.8 billion. Medicare paid all facilities under a prospective payment system that includes in the payment bundle certain dialysis drugs and ESRD-related clinical laboratory tests that were paid separately before 2011.
- > Between 2021 and 2022, total FFS ESRD expenditures decreased by 12 percent on a nominal basis. The spending decline is due in large part to the increasing enrollment of dialysis beneficiaries in Medicare Advantage plans beginning in 2021. Specifically, between 2021 and 2022, the total number of FFS beneficiaries on dialysis and FFS treatments declined by 13 percent and 14 percent, respectively (data not shown).
- > Freestanding dialysis facilities treated most dialysis beneficiaries and accounted for 96 percent of expenditures in 2021 and 2022.

Chart 11-3 The ESRD population is growing, and most patients with ESRD undergo dialysis

	2011		2021		2011–2021
	Patients (thousands)	Share of patients	Patients (thousands)	Share of patients	Average annual percent change
Total	615.2	100%	808.5	100%	3%
Dialysis	432.4	70	556.5	69	3
In-center hemodialysis	388.3	63	462.5	57	2
Home hemodialysis*	6.4	1	12.6	2	7
Peritoneal dialysis**	36.2	6	66.2	8	6
Other dialysis***	1.5	0.3	15.2	2	26
Functioning graft and kidney transplant	182.8	30	252.0	31	3

Note: ESRD (end-stage renal disease). Totals may not equal the sum of components due to rounding. Data include both Medicare (fee-for-service and Medicare Advantage) and non-Medicare patients. The “functioning graft and kidney transplant” category includes patients who had a functioning graft at the start of the year in question (i.e., 2011 or 2021) or received a transplant during the year in question.

*Home dialysis methods.

**“Peritoneal dialysis” refers to patients receiving either continuous ambulatory peritoneal dialysis or continuous cyclic peritoneal dialysis.

***“Other dialysis” includes other types of peritoneal dialysis methods and uncertain dialysis. U.S. Renal Data System suppressed the specific 2021 values for other types of peritoneal dialysis and for uncertain dialysis due to insufficient sample size.

Source: Compiled by MedPAC from the U.S. Renal Data System.

> People with ESRD require either dialysis or a kidney transplant to live. The total number of patients with ESRD increased on average by 3 percent per year between 2011 and 2021. However, between 2020 and 2021, the growth rate of the total number of patients with ESRD declined to 0.4 percent (data not shown).

> In hemodialysis, a patient’s blood flows through a machine with a special filter that removes wastes and extra fluids. In peritoneal dialysis, the patient’s blood is cleansed by using the lining of their abdomen as a filter. Peritoneal dialysis is the most common form of home dialysis.

> In 2021, most people with ESRD (57 percent) underwent hemodialysis administered in a dialysis facility (usually three times a week). Between 2011 and 2021, the total number of in-center hemodialysis patients grew on average by 2 percent annually, while the total number of peritoneal dialysis patients increased on average by 6 percent annually. Although a smaller proportion of all dialysis patients undergo home hemodialysis, the number of these patients grew on average by 7 percent per year during this period.

> Patients with functioning grafts have had a successful kidney transplant. Patients undergoing a kidney transplant may receive either a living or deceased donor’s kidney. In 2021, 23 percent of transplanted kidneys were from living donors, and the remainder were from cadaver donors (data not shown).

Chart 11-4 Asian Americans and Hispanics are among the fastest-growing segments of the ESRD population

	Share of total in 2021	Average annual percent change 2016–2021
Total (N = 808,536)	100%	2%
Age (years)		
0–17	1	1
18–44	14	1
45–64	42	1
65–79	34	3
80+	9	3
Sex		
Male	58	2
Female	42	2
Race/ethnicity		
White	43	1
Black	29	1
Native American	1	4
Asian American	7	5
Hispanic	19	4
Underlying cause of ESRD		
Diabetes	38	1
Hypertension	27	3
Glomerulonephritis	14	1
Other causes	21	3

Note: ESRD (end-stage renal disease). Totals may not equal the sum of the components due to rounding. ESRD patients include those who undergo maintenance dialysis and those who have a functioning kidney transplant. Data include both Medicare (fee-for-service and Medicare Advantage) and non-Medicare patients.

Source: Compiled by MedPAC from the U.S. Renal Data System.

> Among all patients with ESRD (including those who are not covered by Medicare), nearly 43 percent are over age 65. About 43 percent are White.

> Diabetes is the most common cause of renal failure.

> The number of patients with ESRD increased by 2 percent annually between 2016 and 2021. In 2021, among the fastest-growing groups were individuals of Native American, Asian, and Hispanic origins and individuals aged 65 and older.

Chart 11-5 Characteristics of Medicare fee-for-service dialysis patients, 2022

	Share of all FFS dialysis patients
Age (years)	
Under 45	10%
45–64	34
64–74	29
75–84	20
85+	7
Sex	
Male	57
Female	43
Race	
White	48
Black	31
Hispanic	8
Asian	5
All other	8
Residence	
Urban county	84
Rural county, micropolitan	9
Rural county, adjacent to urban	5
Rural county, not adjacent to urban	2
Frontier county	1
Prescription drug coverage status	
Enrolled in Part D plan	81
LIS	53
Dually eligible for Medicare and Medicaid	49

Note: FFS (fee-for-service), LIS (low-income subsidy). “Residence” reflects the beneficiary’s county of residence in one of four categories (urban, micropolitan, rural adjacent to urban, or rural nonadjacent to urban) based on an aggregation of the Urban Influence Codes. Frontier counties have six or fewer people per square mile. Components may not sum to 100 percent due to rounding.
*Data do not account for FFS beneficiaries with other sources of creditable coverage.

Source: MedPAC analysis of dialysis claims files and denominator files from CMS.

- > Compared with all Medicare beneficiaries (see Chart 2-5), FFS beneficiaries on dialysis are disproportionately younger and Black.
- > In 2022, about 16 percent of FFS beneficiaries on dialysis resided in a rural county.
- > In 2022, 81 percent of FFS beneficiaries on dialysis were enrolled in Part D plans. In addition, 7 percent of FFS beneficiaries on dialysis had either obtained drug coverage through employer-sponsored plans that received Medicare’s retiree drug subsidy or they had creditable drug coverage from other sources; 12 percent of FFS beneficiaries on dialysis had no coverage or coverage less generous than Part D (data not shown).
- > About half of all beneficiaries on dialysis were dually eligible for Medicare and Medicaid services.

Chart 11-6 Aggregate FFS margins varied by type of freestanding dialysis facility, 2022

Type of facility	Share of freestanding dialysis treatments	Aggregate margin
All facilities	100%	-1.1%
Urban	88	0.4
Rural	12	-4.5
Treatment volume (quintile)		
Lowest	7	-24.1
Second	13	-13.4
Third	18	-5.0
Fourth	24	1.6
Highest	39	7.4

Note: FFS (fee-for-service). Pandemic-related federal relief funds are not accounted for in this table's data. Margins include payments and costs for dialysis services commonly provided under treatment, including injectable drugs and laboratory tests that were paid separately before 2011. The Commission's longstanding approach to calculating the Medicare end-stage renal disease (ESRD) prospective payment system (PPS) margin uses only Medicare-allowable costs for ESRD services. Such an approach is consistent with the methods we use to calculate the Medicare margin for other fee-for-service sectors. Treatment-volume components do not sum to 100 percent due to rounding.

Source: Compiled by MedPAC from cost reports and claims submitted by freestanding dialysis facilities to CMS and the Dialysis Compare database.

- > For 2022, the aggregate FFS Medicare margin for dialysis-related services, including ESRD-related drugs and laboratory tests that were paid separately before 2011, was -1.1 percent.
- > Between 2021 and 2022, the aggregate FFS Medicare margin decreased (from 2.3 percent to -1.1 percent (2021 data not shown)). This decline is partly attributable to growth in labor and capital costs, which both increased by 7 percent between 2021 and 2022, well above the historical average. In addition, both FFS treatment volume and total treatment volume declined between 2021 and 2022.
- > Generally, freestanding dialysis facilities' margins vary by the size of the facility; facilities with greater treatment volume have higher margins on average. Differences in capacity and treatment volume explain some of the differences in the margins of urban facilities versus rural facilities. Urban facilities are larger on average than rural facilities with respect to the number of in-center hemodialysis treatment stations and Medicare treatments provided. Some rural facilities have benefited from the ESRD PPS's low-volume adjustment.

Chart 11-7 Dialysis quality of care: Some measures show progress, others need improvement, 2016–2021

Outcome measure	2016	2020	2021
Share of in-center hemodialysis patients:			
Receiving adequate dialysis	98%	98%	97%
Dialyzed with an AV fistula	64	62	61
Share of peritoneal dialysis patients receiving adequate dialysis	93	91	91
Share of all dialysis patients managing anemia			
Mean hemoglobin < 10 g/dL	29	30	31
Mean hemoglobin 10 to <12 g/dL	66	65	63
Mean hemoglobin ≥ 12 g/dL	5	5	6
Share of all dialysis patients wait-listed for a kidney	15.3	12.8	12.3
Renal transplant rate per 100 patient years	3.4	3.7	4.1
Annual mortality rate per 100 patient years*	16.6	18.9	18.9
Total hospital admissions per patient year*	1.7	1.6	1.6
Hospital days per patient year*	11.2	11.1	11.4

Note: AV (arteriovenous), g/dL (grams per deciliter [of blood]). The rate per patient year is calculated by dividing the total number of events by the fraction of the year that patients were followed. Analysis of data on dialysis adequacy is based on measures used by CMS in its ESRD [End-Stage Renal Disease] Quality Incentive Program. The U.S. Renal Data System (USRDS) adjusts hospitalization and mortality measures by age, gender, race, and primary diagnosis of ESRD.

*Lower values suggest higher quality.

Source: All measures except for share of patients receiving adequate dialysis and anemia management were compiled by MedPAC using data from the USRDS. Measure of share of patients receiving adequate dialysis and anemia management was compiled by MedPAC using data from CMS’s 100 percent institutional outpatient files.

> Changes in the available quality of care measures are challenging to interpret due to the effects of the coronavirus pandemic on many of our quality measures. Sadly, patients with ESRD are at increased risk for COVID-19–associated morbidity and mortality.

> Between 2016 and 2021, anemia management and dialysis adequacy remained relatively steady.

> All hemodialysis patients require vascular access—the site on the patient’s body where blood is removed and returned during dialysis. Use of arteriovenous fistulas, considered the best type of vascular access, declined between 2016 and 2021. Although the reasons for the changes in 2020 and 2021 are uncertain, the coronavirus pandemic was likely a factor.

> Mortality rates increased during 2020 and 2021 due to COVID-19 and possibly due to patient avoidance of health care for other illnesses, such as stroke (data not shown). The decline in all-cause admissions in 2020 and 2021 was also likely linked to the pandemic.

> We report access to kidney transplantation because it is widely believed to be the best treatment option for individuals with ESRD. Between 2016 and 2021, the share of dialysis patients accepted on the kidney transplant waiting list declined from 15.3 to 12.3, while the renal transplant rate per 100 dialysis-patient years increased from 3.4 to 4.1.

Chart 11-8 Hospice use increased in 2022

	2010	2019	2021	2022	Average annual change 2010–2021	Change 2021–2022
Medicare payments (in billions)	\$12.9	\$20.9	\$23.1*	\$23.7*	5.4%*	2.7%*
Beneficiaries in hospice (in millions)	1.15	1.61	1.71*	1.72*	3.7*	0.4*
Number of hospice days for all hospice beneficiaries (in millions)	81.6	121.8	127.6*	130.2*	4.2*	2.0*

Note: Total payments, number of hospice users, and number of hospice days displayed in the table are rounded; the percentage change in these figures is calculated using unrounded data. Dollar amounts are nominal figures, not adjusted for inflation.

*These estimates are based on Medicare-paid hospice claims, which exclude hospice care paid for by Medicare Advantage (MA) plans participating in the Center for Medicare & Medicaid Innovation hospice MA value-based insurance design hospice model beginning in 2021. According to CMS evaluation reports, 9,630 MA beneficiaries in 2021 and 19,065 MA beneficiaries in 2022 received hospice paid for by MA plans (Eibner, C., D. Khodyakov, E. A. Taylor, et al. 2023. Evaluation of phase II of the Medicare Advantage value-based insurance design model test: First three years of implementation (2020–2022). Report prepared for the Centers for Medicare & Medicaid Services, Center for Medicare & Medicaid Innovation: RAND Health Care. <https://www.cms.gov/priorities/innovation/data-and-reports/2023/vbid-2nd-eval-report>; Khodyakov, D., C. Eibner, E. A. Taylor, et al. 2022. Evaluation of phase II of the Medicare Advantage value-based insurance design model test: First two years of implementation (2020–2021). Report prepared for the Center for Medicare and Medicaid Innovation, Centers for Medicare & Medicaid Services. Santa Monica, CA: RAND Health Care. <https://innovation.cms.gov/data-and-reports/2022/vbid-1st-report-2022>.)

Source: MedPAC analysis of the Common Medicare Enrollment file and hospice claims data from CMS.

> Total Medicare payments to hospices were about \$23.7 billion in 2022, about 2.7 percent higher on a nominal basis than the prior year.

> The number of Medicare beneficiaries receiving hospice services and the total number of days of hospice care increased in 2022.

Chart 11-9 The share of decedents using hospice increased in 2022 after declining in 2020 and 2021 due to the pandemic

	2010	2019	2021	2022	Average annual percent change 2010–2019	Average annual percent change 2019–2021	Percent change 2021–2022
Number of Medicare decedents (millions)	1.99	2.32	2.73	2.64	1.7%	8.4%	–3.5%
Number of Medicare decedents who used hospice (millions)	0.87	1.20	1.29	1.30	3.6	3.9	0.2
Share of decedents who used hospice	43.8%	51.6%	47.3%	49.1%			

Note: The "number of Medicare decedents who used hospice" reflects hospice use in the last calendar year of life. Analysis excludes beneficiaries without Medicare Part A because hospice is a Part A benefit. Yearly figures presented in the table are rounded, but figures in the percent change columns were calculated using unrounded data.

Source: MedPAC analysis of data from the Common Medicare Enrollment file and hospice claims data from CMS.

- > In 2022, the share of decedents using hospice increased to 49.1 percent as deaths declined 3.5 percent, and the number of decedents using hospice increased 0.2 percent between 2021 and 2022.
- > The 2022 increase in the hospice use rate followed a decline in hospice use rates in 2020 and 2021. That decline reflected the effects of the pandemic since elderly people who die of COVID-19, similar to those who die of pneumonia and influenza, have been much more likely to die in the hospital and less likely to die at home or in a nursing facility than elderly people who die of other illnesses (data not shown).
- > Prior to the pandemic, hospice use rates among decedents increased substantially, rising from 43.8 percent in 2010 to 51.6 percent in 2019.

Chart 11-10 Share of decedents using hospice increased in 2022 among all beneficiary groups

	Share of decedents using hospice				Average annual percentage point change 2010–2021	Percentage point change 2021–2022
	2010	2019	2021	2022		
All	43.8%	51.6%	47.3%	49.1%	0.3	1.8
FFS beneficiaries	42.8	50.7	47.2	49.1	0.4	1.9
MA beneficiaries	47.2	53.2	47.4	49.2	0.0	1.8
Dual eligible	41.5	49.3	42.1	44.2	0.1	2.1
Non-dual eligible	44.5	52.4	49.2	50.9	0.4	1.7
Age (years)						
<65	25.7	29.5	25.0	26.6	-0.1	1.6
65–74	38.0	41.0	35.8	37.7	-0.2	1.9
75–84	44.8	52.2	47.9	49.4	0.3	1.5
85+	50.2	62.7	60.8	61.8	1.0	1.0
Race/ethnicity						
White	45.5	53.8	50.0	51.6	0.4	1.6
Black	34.2	40.8	35.6	37.4	0.1	1.8
Hispanic	36.7	42.7	34.2	38.3	-0.2	4.1
Asian American	30.0	39.8	36.2	38.1	0.6	1.9
North American Native	31.0	38.5	33.8	37.1	0.3	3.3
Gender						
Male	40.1	46.7	42.1	43.8	0.2	1.7
Female	47.0	56.3	52.5	54.3	0.5	1.8
Beneficiary location						
Urban county	45.6	52.8	48.5	50.2	0.3	1.7
Rural county, micropolitan	39.2	49.7	45.1	47.2	0.5	2.1
Rural county, adjacent to urban	39.0	49.5	44.9	47.8	0.5	2.9
Rural county, nonadjacent to urban	33.8	43.8	39.9	42.1	0.6	2.2
Frontier county	29.2	36.2	33.0	35.2	0.3	2.2

Note: FFS (fee-for-service), MA (Medicare Advantage). For each demographic group, the share of decedents who used hospice is calculated as follows: The number of beneficiaries in the group who both died and received hospice in a given year is divided by the total number of beneficiaries in the group who died in that year. Prior to 2021, the “MA beneficiaries” group received hospice paid for by the FFS program; beginning in 2021, most individuals in the “MA beneficiaries” group received hospice paid for by FFS, but a small number received hospice paid for by their MA plan under the MA value-based insurance design model. “Beneficiary location” reflects the beneficiary’s county of residence in one of four categories (urban, micropolitan, rural adjacent to urban, or rural nonadjacent to urban) based on an aggregation of the Urban Influence Codes (UICs). This chart uses the 2013 UIC definitions. The frontier category is defined as population density less than or equal to six people per square mile and overlaps the beneficiary county of residence categories. Analysis excludes beneficiaries without Medicare Part A because hospice is a Part A benefit.

Source: MedPAC analysis of data from the Common Medicare Enrollment file and hospice claims data from CMS.

- > In 2022, hospice use rates among decedents increased among all beneficiary groups examined.
- > In 2022, hospice use continued to vary by demographic and beneficiary characteristics. Medicare decedents who were older, White, female, living in an urban area, or were not dual eligible were more likely to use hospice than their respective counterparts.

Chart 11-11 Number of hospice visits for beneficiaries receiving routine home care, 2019–2022

	2019	2020	2021	2022
Average number of visits per week				
All visits	4.3	3.6	3.8	3.9
Nurse visits	1.8	1.6	1.7	1.7
Aide visits	2.2	1.7	1.8	1.8
Social worker visits	0.3	0.2	0.3	0.3
Average length per visit (number of 15-minute increments)				
All visits	4.0	4.0	3.9	3.8
Nurse visits	3.8	3.8	3.7	3.6
Aide visits	4.2	4.3	4.1	4.0
Social worker visits	3.5	3.4	3.3	3.2
Average visit time per week (number of 15-minute increments)				
All visits	17.2	14.1	14.6	14.5
Nurse visits	7.0	6.2	6.3	6.2
Aide visits	9.1	7.2	7.4	7.4
Social worker visits	1.1	0.7	0.9	0.9

Note: Data are for patients receiving the hospice routine home care level of care. Average visits per week are calculated by computing average visits per day (total number of visits / total number of routine home care days) and multiplying by 7. “Visits” refers to in-person visits only. Nurse visits include both registered nurse and licensed practical nurse visits. Components of visits may not sum to total visits due to rounding.

Source: MedPAC analysis of 100 percent hospice claims standard analytic file data from CMS.

- > In 2022, hospice enrollees received on average 3.9 visits per week, with nurse, aide, and social worker visits accounting for 1.7 visits, 1.8 visits, and 0.3 visits per week on average, respectively.
- > The average length of hospice visits in 2022 was about 50 minutes to an hour, depending on type of visit (i.e., 3.2 to 4.0 fifteen-minute increments).
- > Overall, the average amount of visit time hospice patients received per week in 2022 was about 3.6 hours (14.5 fifteen-minute increments). On average, hospice patients received 1.5 hours of nurse visits, 1.9 hours of aide visits, and 0.2 hours of social worker visits per week.
- > The average number of visits per week increased in 2021 and 2022, although it remained below the prepandemic 2019 level (the largest difference between 2019 and 2022 was in the number of aide visits). The average length of each hospice visit declined from 2020 to 2022. As a result, average visit time per week remained below the 2019 level.

Chart 11-12 Number of Medicare-participating hospices increased due to growth in for-profit hospices, 2018–2022

	2018	2021	2022*
All hospices	4,639	5,358	5,899
For profit	3,234	4,008	4,414
Nonprofit	1,245	1,195	1,169
Government	159	143	141
Freestanding	3,701	4,511	4,919
Hospital based	453	396	383
Home health based	463	434	421
SNF based	22	17	17
Urban	3,762	4,505	5,006
Rural	871	845	827

Note: SNF (skilled nursing facility). Some categories do not sum to their total because of missing data for some providers. The rural and urban definitions in this chart are based on updated definitions of the core-based statistical areas (which rely on data from the 2010 census). Type of hospice reflects the type of cost report filed (a hospice files a freestanding hospice cost report, or the hospice is included in the cost report of a hospital, home health agency, or skilled nursing facility).

*In 2022, data on ownership status, type of hospice, and urban/rural location are missing for more providers than usual due to a temporary pause in CMS's updating of the Provider of Services file data for hospices in 2022. While the total number of hospices providing care to Medicare beneficiaries in 2022 (5,899) is not affected by this issue, the table may understate the number of hospices in any ownership, hospice type, or urban/rural subgroup in 2022.

Source: MedPAC analysis of Medicare cost reports, Provider of Services file, and the 100 percent standard analytic file of hospice claims from CMS.

- > There were 5,899 Medicare-participating hospices in 2022, up 10 percent from 2021 and 27 percent since 2018.
- > An issue of data availability in 2022 affects our estimates of the number of providers by ownership status, type of hospice, and urban/rural location. The number of hospices in any ownership, hospice type, or urban/rural subgroup may be understated in 2022.
- > In 2022, the number of for-profit hospices grew by at least 10 percent. Between 2021 and 2022, the number of hospices with nonprofit ownership or government ownership appeared to decline, continuing the downward trend observed from 2018 to 2021.
- > The number of freestanding providers increased at least 9 percent in 2022. The number of home health–based and hospital-based hospices appeared to decline in 2022, while the number of SNF-based providers was unchanged. (A hospice's status as freestanding, hospital based, home health based, or SNF based reflects the type of cost report submitted by the provider and does not necessarily reflect the location of care.)
- > The number of hospices located in rural areas has declined in recent years, decreasing by about 1 percent per year between 2018 and 2021, and appears to have declined similarly in 2022. However, the number of providers located in rural areas is not necessarily an indicator of access to care because it does not capture the size of those hospice providers, their capacity to serve patients, or the size of their service area. Also, some urban hospices furnish services in rural areas. Indeed, despite the decline in the number of rural hospices since 2010 (data not shown), the share of rural decedents using hospice has grown overall since 2010 (see Chart 11-10).

Chart 11-13 Hospice cases by primary diagnosis, 2022

Diagnosis	Share of total cases
Alzheimer's, nervous system disorders, organic psychosis	25%
Cancer	23
Circulatory, except heart failure	22
Heart failure	8
Other	7
Respiratory disease	6
Chronic airway obstruction, NOS	4
Genitourinary disease	2
Digestive disease	2
COVID-19	1
All	100

Note: NOS (not otherwise specified). Cases include all patients who received hospice care in 2022, not just decedents. "Diagnosis" reflects primary diagnosis on the beneficiary's last hospice claim in 2022.

Source: MedPAC analysis of 100 percent hospice claims standard analytic file from CMS and the Medicare Beneficiary Database.

> In 2022, the most common primary diagnoses among Medicare hospice patients were neurological conditions (Alzheimer's disease, nervous system disorders, and organic psychosis accounted for 25 percent of cases), cancer (23 percent of cases), and circulatory conditions other than heart failure (22 percent of cases).

> About 1 percent of Medicare hospice patients had COVID-19 as their hospice primary diagnosis in 2022. An additional 4 percent of hospice patients had COVID-19 as a secondary diagnosis on their hospice claims in 2022 (data not shown).

Chart 11-14 Hospice average length of stay among decedents increased in 2022

Year	Average length of stay (in days)	Percentiles of length of stay (in days)				
		10th	25th	50th	75th	90th
2010	87.0	3	6	18	78	242
2017	89.3	2	5	18	80	251
2018	90.3	2	5	18	82	255
2019	92.5	2	5	18	85	266
2020	97.0	2	5	18	87	287
2021	92.1	2	5	17	79	264
2022	95.3	2	5	18	84	275

Note: Lifetime length of stay is calculated for decedents who were using hospice at the time of death or before death and reflects the total number of days the decedent was enrolled in the Medicare hospice benefit during their lifetime.

Source: MedPAC analysis of the Common Medicare Enrollment file and the Medicare Beneficiary Database from CMS.

- > The average length of stay among decedents was 95.3 days in 2022, up about 3 days from 2021. In 2022, the length of stays at the 50th percentile (the median) increased slightly to 18 days from 17 days in 2021.
- > Hospice lengths of stay vary broadly. In 2022, hospice length of stay among decedents ranged from 2 days at the 10th percentile to 275 days at the 90th percentile.
- > Between 2010 and 2022, growth in the average length of stay among decedents has been the result of increases in length of stay for patients with the longest stays. Length of stay grew from 242 days to 275 days at the 90th percentile.

Chart 11-15 Hospice length of stay among decedents, by beneficiary and hospice characteristics, 2022

	Average length of stay (in days)	Percentiles of lengths of stay (in days)		
		10th	50th	90th
Beneficiary				
Diagnosis				
Cancer	52	3	16	127
Neurological	159	4	41	476
Heart/circulatory	106	2	19	317
COPD	135	3	31	392
Other	55	2	7	145
Site of service				
Home	98	4	25	270
Nursing facility	109	3	22	322
Assisted living facility	165	5	55	474
Hospice				
For profit	114	3	23	336
Nonprofit	72	2	13	198
Freestanding	97	2	18	282
Home health based	74	2	15	203
Hospital based	60	2	11	160

Note: COPD (chronic obstructive pulmonary disease). Length of stay is calculated for Medicare beneficiaries who died in 2022 and used hospice that year and reflects the total number of days the decedent was enrolled in the Medicare hospice benefit during their lifetime. The location categories reflect where the beneficiary spent the largest share of their days while enrolled in hospice. “Diagnosis” reflects the primary diagnosis on the beneficiary’s last hospice claim.

Source: MedPAC analysis of 100 percent hospice claims standard analytic file data, Medicare Beneficiary Database, Medicare hospice cost reports, and Provider of Services file data from CMS.

- > Hospice average length of stay among decedents varies by both beneficiary and provider characteristics. Most of this variation reflects differences in length of stay among patients with the longest stays (i.e., at the 90th percentile). Length of stay varies much less for patients with shorter stays (i.e., at the 10th or 50th percentile).
- > Beneficiaries with neurological conditions and COPD have the longest stays, while beneficiaries with cancer have the shortest stays, on average.
- > For beneficiaries with a hospice primary diagnosis of COVID-19, median length of stay was 3 days and average length of stay was 26 days (data not shown).
- > Beneficiaries who receive hospice services in assisted living facilities have longer stays on average than beneficiaries who receive care at home or in a nursing facility.
- > For-profit and freestanding hospices have longer average lengths of stay than nonprofit and provider-based (home health–based and hospital-based) hospices.

Chart 11-16 Nearly 60 percent of Medicare hospice spending in 2022 was for patients with stays exceeding 180 days

	Medicare hospice spending, 2022 (in billions)
All hospice users in 2022	\$23.7
Beneficiaries with LOS > 180 days	14.1
Days 1–180	4.5
Days 181–365	4.3
Days 366+	5.3
Beneficiaries with LOS ≤ 180 days	9.6

Note: LOS (length of stay). “LOS” reflects the beneficiary’s lifetime LOS as of the end of 2022 (or at the time of death or discharge in 2022 if the beneficiary was not enrolled in hospice at the end of 2022). All spending reflected in the chart occurred only in 2022. Components do not sum to total because of rounding.

Source: MedPAC analysis of 100 percent hospice claims standard analytical file and an Acumen LLC data file on hospice lifetime length of stay (which is based on an analysis of historical claims data).

- > In 2022, Medicare hospice spending on patients with stays exceeding 180 days was about \$14.1 billion, nearly 60 percent of all Medicare hospice spending that year.
- > About \$5.3 billion, or about 22 percent, of Medicare hospice spending in 2022 was on hospice care for patients who had already received at least one year of hospice.

Chart 11-17 Hospice Medicare aggregate margins, 2017–2021

	Share of hospices (2021)	Medicare margin				
		2017	2018	2019	2020	2021
All	100%	12.5%	12.4%	13.4%	14.2%	13.3%
Freestanding	84	15.3	15.1	16.2	16.7	15.5
Home health based	7	8.1	8.4	9.7	11.2	10.9
Hospital based	8	-13.8	-16.5	-18.4	-18.2	-15.6
For profit	75	20.0	19.0	19.2	20.5	19.2
Nonprofit	22	2.5	3.8	6.1	5.8	5.2
Government	3	N/A	N/A	N/A	N/A	N/A
Urban	84	12.9	12.6	13.6	14.3	13.4
Rural	16	8.9	10.3	11.5	13.5	12.3
Below cap	81	12.6	12.6	13.8	14.8	14.0
Above cap	19	12.1	10.3	10.0	7.7	2.5
Above cap (including cap overpayments)	19	21.9	21.8	22.5	22.8	21.8
Share of stays > 180 days						
Lowest quintile	20	-4.5	-3.0	-2.5	-0.4	0.0
Second quintile	20	7.0	8.5	10.3	11.8	11.1
Third quintile	20	17.1	16.8	19.9	20.0	20.5
Fourth quintile	20	22.1	20.8	22.8	24.1	22.2
Highest quintile	20	17.8	17.6	13.4	13.4	9.7

Note: N/A (not available). Medicare aggregate margins for all provider categories exclude overpayments to above-cap hospices except where specifically indicated (providers whose payments exceed the Medicare hospice aggregate cap are required to repay the excess to Medicare.) Medicare aggregate margins are calculated based on Medicare-allowable, reimbursable costs. Margin by hospice ownership status is based on hospices' ownership designation from the Medicare cost report. The rural and urban definitions used in this chart are based on updated definitions of the core-based statistical areas (which rely on data from the 2010 census). Shares of hospices in the ownership category do not sum to 100 percent due to rounding.

Source: MedPAC analysis of Medicare hospice cost reports, 100 percent hospice claims standard analytic file, and Medicare Provider of Services data from CMS.

- > The fee-for-service aggregate Medicare margin was 13.3 percent in 2021, down slightly from 14.2 percent in 2020.
- > In 2021, freestanding hospices had higher margins (15.5 percent) than home health-based (10.9 percent) and hospital-based hospices (-15.6 percent).
- > The 2021 margin among for-profit hospices was high at 19.2 percent. Nonprofit hospices as a group had a margin of 5.2 percent in 2021, but the subset of nonprofit hospices that were freestanding had a higher margin, 8.5 percent (latter figure not shown).
- > The aggregate 2021 margin was slightly higher for urban hospices (13.4 percent) than rural hospices (12.3 percent).
- > Hospices that exceeded the cap (Medicare's aggregate average per beneficiary payment limit) had a 2021 margin of about 21.8 percent before and 2.5 percent after the return of the cap overpayments.
- > Hospices with more patients whose stays were longer than 180 days generally had higher margins in 2021. Hospices in the lowest length-of-stay quintile had a margin of 0.0 percent, compared with a 22.2 percent margin for hospices in the second-highest length-of-stay quintile. Margins were somewhat lower in the highest length-of-stay quintile (9.7 percent) because some hospices in the highest quintile exceeded Medicare's aggregate payment cap and were required to repay the overage.

Chart 11-18 Hospices that exceeded Medicare's annual payment cap, 2017–2021

	2017	2018	2019	2020	2021
Share of hospices exceeding the cap	14.0%	16.3%	19.0%	18.6%	18.9%
Average payments over the cap per hospice exceeding the cap (in thousands)	\$273	\$334	\$384	\$422	\$451
Payments over the cap as a share of overall Medicare hospice spending in cap year	1.0%	1.3%	1.7%	1.8%	2.0%

Note: The aggregate cap statistics reflect the Commission's estimates and may differ from CMS claims processing contractors' estimates. Our estimates assume all hospices use the proportional methodology and rely on claims data through 15 months after the end of each cap year. The claims processing contractors may reopen the hospice cap calculation for up to three years; the reopening process and timing vary across contractors. Spending in cap year 2017 reflects an 11-month period from November 1, 2016, to September 30, 2017. Beginning in 2018, the cap year is aligned with the federal fiscal year (October 1 to September 30 of the following year). Dollar amounts are nominal figures, not adjusted for inflation.

Source: MedPAC analysis of 100 percent hospice claims standard analytic file data, Medicare hospice cost reports, and Medicare Provider of Services file data from CMS.

- > An estimated 18.9 percent of hospices exceeded the aggregate cap in 2021, similar to the amount in 2020.
- > On average, above-cap hospices exceeded the cap by approximately \$451,000 per provider in 2021, up from about \$422,000 per provider in 2020.
- > Medicare payments over the cap represented 2.0 percent of total Medicare hospice spending in 2021.

Chart 11-19 Hospice live-discharge rates, 2020–2022

	2020	2021	2022
Live discharges as a share of all discharges, by reason for live discharge			
All live discharges	15.4%	17.2%	17.3%
No longer terminally ill	5.6	6.3	6.1
Beneficiary revocation	5.7	6.3	6.1
Transfer hospice providers	2.2	2.4	2.4
Move out of service area	1.6	2.0	2.3
Discharge for cause	0.3	0.3	0.3
Providers' overall rate of live discharge as a share of all discharges, by percentile (for providers with more than 30 discharges)			
10th percentile	7.5	8.5	8.3
25th percentile	10.9	12.5	12.2
50th percentile	16.9	19.1	19.2
75th percentile	26.6	30.2	29.9
90th percentile	43.3	50.0	49.9

Note: Percentages may not sum to totals due to rounding. "All discharges" includes patients discharged alive or deceased.

Source: MedPAC analysis of the 100 percent hospice claims standard analytical file, Medicare hospice cost reports, and Medicare Provider of Services file from CMS.

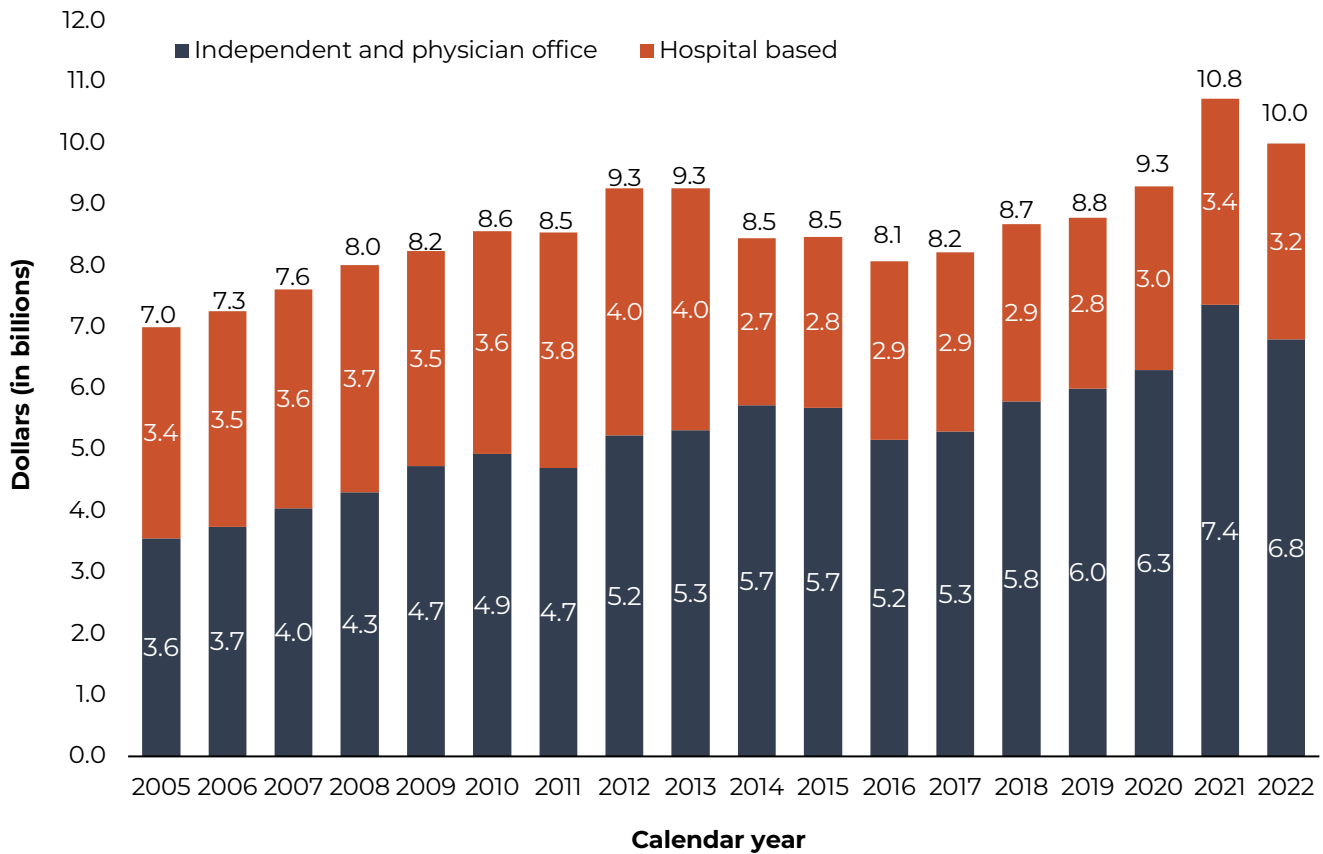
> In 2022, the overall live-discharge rate was 17.3 percent, similar to the rate in 2021.

> The most common reasons for live discharge were the beneficiary revoking the hospice benefit and the beneficiary no longer being terminally ill, each accounting for 6.1 percent of all discharges in 2022. Less frequent reasons for live discharges included a beneficiary transferring hospice providers, a beneficiary moving out of the service area, and a beneficiary being discharged for cause.

> Among providers with more than 30 discharges, 10 percent of providers had live-discharge rates of about 50 percent or more in 2022.

> Small hospices as a group have substantially higher live-discharge rates than larger hospices. In 2022, the aggregate live-discharge rate was 49 percent for hospices with 30 or fewer discharges, in contrast to a 17 percent aggregate live-discharge rate for all hospices (data for small hospices not shown).

Chart 11-20 Medicare spending for clinical laboratory tests, 2005–2022



Note: Spending is for services paid under the clinical laboratory fee schedule. Hospital-based services are furnished in laboratories owned or operated by hospitals. The components of each bar may not sum to the total at the top of each bar due to rounding. The spending data include only program payments; there is no beneficiary cost sharing for clinical laboratory tests. Dollar amounts are nominal figures, not adjusted for inflation.

Source: The annual report of the Boards of Trustees of the Medicare trust funds, 2015 and 2022.

- > Medicare spending for clinical laboratory tests in all settings grew by an average of 3.6 percent per year between 2005 and 2013 on a nominal basis.
- > From 2013 to 2014, Medicare spending for laboratory tests declined by about 9 percent because, beginning in 2014, many laboratory tests provided in hospital outpatient departments are no longer paid separately under the clinical laboratory fee schedule. Instead, many of these tests are packaged with their associated visits or procedures under the hospital outpatient prospective payment system.
- > Medicare spending for laboratory tests decreased by an average of 0.9 percent per year from 2014 to 2017.
- > Beginning in 2018, clinical laboratory fee schedule payment rates are based on private sector rates. From 2017 to 2019, Medicare spending for laboratory tests grew by an average of 5.2 percent per year.
- > Largely due to the COVID-19 public health emergency, lab spending increased in 2020 and 2021, then declined by 6.5 percent in 2022.