

SECTION

11

Other services

Dialysis

Hospice

Clinical laboratory

Chart 11-1 Growth in the number of dialysis facilities slowed in 2021; most facilities are for profit and freestanding

	2021	Average annual percent change	
		2017–2020	2020–2021
Total number of:			
Dialysis facilities	7,879	3%	2%
Hemodialysis stations	137,900	3	1
Mean number of hemodialysis stations per facility			
	18	0.4	0
Share of total facilities			
Hospital based	5%	-3	-1
Freestanding	95	3	2
Urban	84	4	2
Rural, micropolitan	10	1	1
Rural, adjacent to urban	4	0.2	0
Rural, not adjacent to urban	2	-2	0
Frontier	0.4	-1	3
For profit	89	3	2
Nonprofit	11	1	-1

Note: “Nonprofit” includes facilities designated as either nonprofit or government facilities. “Average annual percent change” is based on comparing 2017, 2020, and 2021 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, and 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.

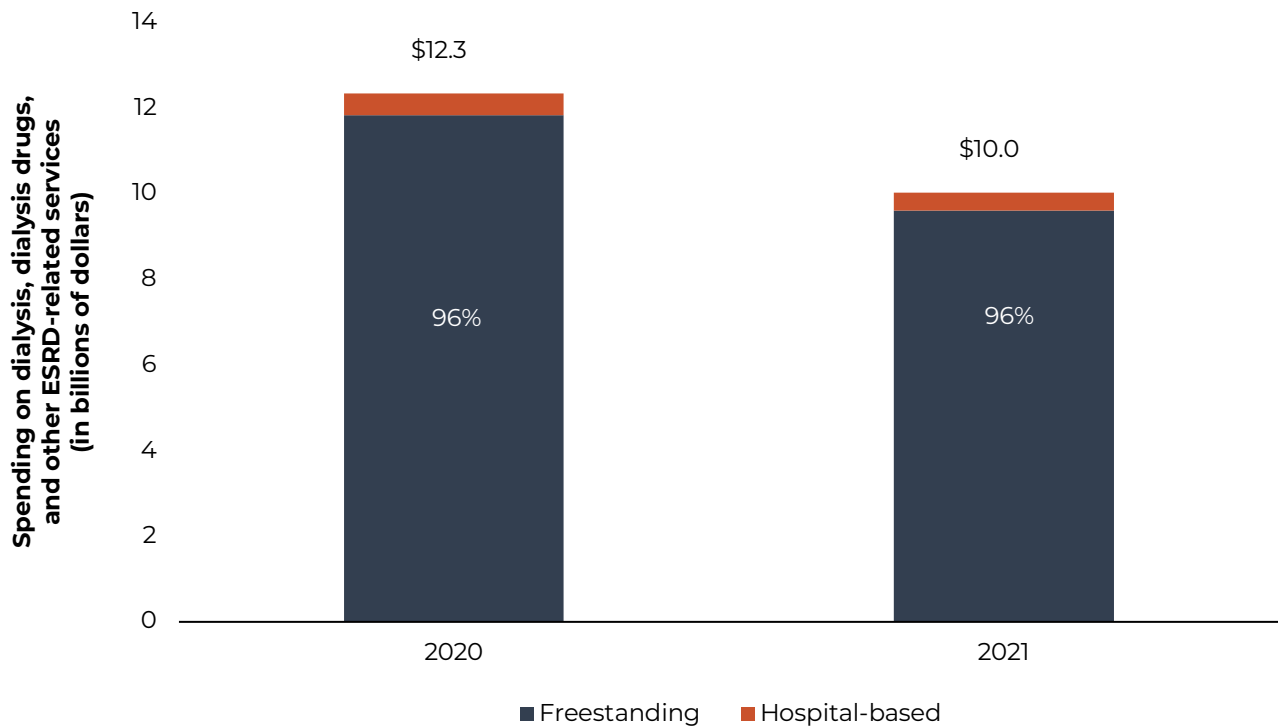
> Between 2017 and 2020, the number of facilities increased, on average, 3 percent per year, while between 2020 and 2021, the number of facilities increased on average by 2 percent. Likewise, facilities’ capacity to provide care—as measured by hemodialysis treatment stations—grew more slowly between 2020 and 2021 compared with growth from 2017 through 2020 (1 percent per year vs. 3 percent per year, respectively).

> The recent decline in the growth of the total number of dialysis facilities and in-center capacity is likely attributable in part to coronavirus pandemic–related restrictions that may have affected the development of new facilities in 2020. The decline may also be linked to the growing trend toward home dialysis under the end-stage renal disease prospective payment system and the Center for Medicare & Medicaid Innovation’s new model that aims to encourage greater use of home dialysis.

> The decline in rural capacity between 2020 and 2021 (data not shown) is also linked to facility size. Rural facilities are, on average, smaller than urban facilities. Also, compared with facilities that treated beneficiaries in 2020 and 2021, facilities that closed in 2020 were more likely to be small (as measured by the number of in-center hemodialysis treatment stations) (data not shown). 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.

> Since 2017, the number of freestanding and for-profit facilities increased, while hospital-based facilities decreased. Between 2017 and 2020, the number of freestanding and for-profit facilities increased by 3 percent and 1 percent per year, respectively. The average size of a facility has remained relatively constant, averaging between 17 and 18 dialysis treatment stations per facility.

Chart 11-2 Medicare spending for outpatient dialysis services furnished by freestanding and hospital-based dialysis facilities, 2020 and 2021



Note: FFS (fee-for-service), ESRD (end-stage renal disease).

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

- > In 2021, total FFS Medicare spending for dialysis, dialysis drugs, and ESRD-related clinical laboratory tests was \$10.0 billion. Medicare paid all facilities under a prospective payment system (PPS) that includes in the payment bundle certain dialysis drugs and ESRD-related clinical laboratory tests that were paid separately before 2011.
- > Between 2020 and 2021, total FFS ESRD expenditures decreased by 19 percent. The spending decline is due in large part to the increasing enrollment of dialysis beneficiaries in MA plans between 2020 and 2021. Specifically, between 2020 and 2021, the annual number of fee-for-service dialysis beneficiaries and treatments declined by 14 percent and 20 percent, respectively. In addition, the decline in spending could be linked to Medicare’s inclusion of calcimimetics in the ESRD PPS bundle in 2021. Payment on a per unit basis under a transitional drug add-on payment adjustment in 2020 likely did not promote their efficient prescription.
- > Freestanding dialysis facilities treated most dialysis beneficiaries and accounted for 96 percent of expenditures in 2020 and 2021.

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

	2010		2020		2010–2020
	Patients (thousands)	Share of patients	Patients (thousands)	Share of patients	Average annual percent change
Total	596.4	100%	807.9	100%	3%
Dialysis	419.4	70	562.1	70	3
In-center hemodialysis	379.1	64	480.5	59	2
Home hemodialysis*	5.9	1	11.9	1	7
Peritoneal dialysis*	32.9	6	65.4	8	7
Unknown	1.7	0.2	4.2	0.5	11
Functioning graft and kidney transplant	177.0	30	245.8	30	3

Note: ESRD (end-stage renal disease). Totals may not equal 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., 2010 or 2020), or who received a transplant during the year in question.
*Home dialysis methods.

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 ESRD patients increased on average by 3 percent per year between 2010 and 2020.

> 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.

> Most people with ESRD (70 percent) undergo hemodialysis administered in a dialysis facility three times a week. Between 2010 and 2020, 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 7 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 kidney or a cadaveric kidney donation. In 2020, 22 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 2020	Average annual percent change 2015–2020
Total (N = 807,920)	100%	3%
Age (years)		
0–17	1	1
18–44	14	1
45–64	42	2
65–79	34	4
80+	9	3
Sex		
Male	58	3
Female	42	2
Race/ethnicity		
White	43	2
Black	29	2
Native American	1	1
Asian American	7	5
Hispanic	19	4
Underlying cause of ESRD		
Diabetes	38	2
Hypertension	26	3
Glomerulonephritis	15	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 patients with ESRD, 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 3 percent annually between 2015 and 2020. Among the fastest-growing groups are patients between the ages of 65 and 79 and patients of Asian and Hispanic origins.

Chart 11-5 Characteristics of Medicare fee-for-service dialysis patients, 2021

	Share of all FFS dialysis patients
Age (years)	
Under 45	10%
45–64	35
64–74	29
75–84	19
85+	6
Sex	
Male	57
Female	43
Race	
White	47
Black	33
All other	20
Residence	
Urban county	83
Rural county, micropolitan	10
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	82
LIS	55
Dually eligible for Medicare and Medicaid	51

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, and 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 patients (see Chart 2-5), FFS dialysis patients are disproportionately younger and Black.
- > In 2021, about 17 percent of FFS dialysis patients resided in a rural county.
- > Half of all dialysis patients were dually eligible for Medicare and Medicaid services.
- > In 2021, 82 percent of FFS dialysis patients were enrolled in Part D plans.

Chart 11-6 Aggregate margins varied by type of freestanding dialysis facility, 2021

Type of facility	Share of freestanding dialysis treatments	Aggregate margin
All facilities	100%	2.3%
Urban	88	3.0
Rural	12	-1.4
Treatment volume (quintile)		
Lowest	7	-20.6
Second	13	-9.2
Third	18	-1.1
Fourth	24	4.5
Highest	39	10.3

Note: Pandemic-related federal relief funds are not accounted for in the data presented in this table. 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. Components may not sum to 100 percent due to rounding.

Source: Compiled by MedPAC from 2021 cost reports and the 2021 institutional outpatient file from CMS.

- > For 2021, the aggregate Medicare margin for dialysis-related services, including ESRD-related drugs and laboratory tests that were paid separately before 2011, was 2.3 percent.
- > Including a portion of the congressional pandemic relief funds (based on fee-for-service Medicare's share of 2019 all-payer operating revenue) in our aggregate Medicare margins would raise the 2021 aggregate Medicare margin to 2.7 percent (data not shown).
- > Between 2020 and 2021, the aggregate Medicare margin decreased (from 2.7 percent to 2.3 percent) due to increasing cost per treatment for all cost categories with the exception of ESRD drug costs (data not shown).
- > 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 observed between 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, 2015–2020

Outcome measure	2015	2019	2020
Share of in-center hemodialysis patients:			
Receiving adequate dialysis	97%	98%	98%
Dialyzed with an AV fistula	64	63	63
Share of peritoneal dialysis patients receiving adequate dialysis	92	91	91
Share of all dialysis patients managing anemia			
Mean hemoglobin <10 g/dL	28	30	30
Mean hemoglobin 10 to <12 g/dL	67	65	65
Mean hemoglobin ≥12 g/dL	5	5	5
Share of all dialysis patients wait-listed for a kidney	16.3	13.1	12.7
Renal transplant rate per 100 patient years	3.4	3.9	3.8
Annual mortality rate per 100 patient years*	16.8	16.0	18.7
Total hospital admissions per patient year*	1.7	1.7	1.6
Hospital days per patient year*	11.3	11.3	11.0

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 Quality Incentive Program. The U.S. Renal Data System (USRDS) adjusts hospitalization and mortality measures by age, gender, race, and primary diagnosis of end-stage renal disease.

*Lower values suggest higher quality.

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

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

> Mortality rates increased during 2020 due to COVID-19 and possibly due to patient avoidance of health care for other illnesses, such as stroke. The decline in all-cause admissions in 2020 is also likely linked to the pandemic.

> We look at access to kidney transplantation because it is widely believed to be the best treatment option for individuals with end-stage renal disease. Between 2019 and 2020, the share of dialysis patients accepted on the kidney transplant waiting list declined from 13.1 to 12.7, and the renal transplant rate per 100 dialysis-patient years decreased from 3.9 to 3.8. Each of these changes is likely linked to the pandemic.

> Other quality metrics 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, remained steady between 2015 and 2020. Similarly, anemia management and dialysis adequacy remained steady throughout the period.

Chart 11-8 Hospice use was stable in 2021

	2010	2019	2020	2021	Average annual change 2010–2020	Change 2020–2021
Medicare payments (in billions)	\$12.9	\$20.9	\$22.4	\$23.1*	5.5%	2.8%*
Beneficiaries in hospice (in millions)	1.15	1.61	1.72	1.71*	3.8	0.0*
Number of hospice days for all hospice beneficiaries (in millions)	81.6	121.8	127.8	127.6*	4.6	–0.1*

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.
 *These estimates are based on Medicare paid hospice claims, which exclude hospice care paid for by a small number of Medicare Advantage (MA) plans participating in the Center for Medicare & Medicaid Innovation hospice MA VBID hospice model beginning in 2021. A CMS contractor report stated that 9,630 MA beneficiaries received hospice services in 2021 under the MA value-based insurance design program (Khodyakov et al. 2022).

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

> Total Medicare payments to hospices were about \$23.1 billion in 2021, about 2.8 percent higher than the prior year.

> The number of Medicare beneficiaries receiving hospice services and total number of days of hospice care were stable in 2021.

Chart 11-9 After increasing from 2010 to 2019, the share of decedents using hospice declined in 2020 and 2021, reflecting the effects of the pandemic

	2010	2019	2020	2021	Average annual percent change 2010–2019	Percent change 2019–2020	Percent change 2020–2021
Number of Medicare decedents (millions)	1.99	2.32	2.73	2.73	1.7%	17.6%	–0.1%
Number of Medicare decedents who used hospice (millions)	0.87	1.20	1.31	1.29	3.6	9.0	–1.3
Share of decedents who used hospice	43.8%	51.6%	47.8%	47.3%			

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.

- > Due to the pandemic, over 2.7 million beneficiaries died each year in 2020 and 2021, an 18 percent increase in annual deaths compared with 2019.
- > In 2020, growth in deaths (18 percent) outpaced growth in the number of hospice users (9 percent), causing the share of Medicare decedents using hospice to decline from 51.6 percent to 47.8 percent between 2019 and 2020.
- > In 2021, the share of decedents using hospice declined slightly to 47.3 percent, as deaths declined 0.1 percent and the number of decedents using hospice declined 1.3 percent between 2020 and 2021.
- > The decline in hospice use rates in 2020 and 2021 reflects 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 declined overall in 2021 but increased for some beneficiary groups

	Share of decedents using hospice				Average annual percentage point change 2010–2020	Percentage point change 2020–2021
	2010	2019	2020	2021		
All	43.8%	51.6%	47.8%	47.3%	0.4	–0.5
FFS beneficiaries	42.8	50.7	47.2	47.2	0.4	–0.0
MA beneficiaries	47.2	53.2	48.7	47.4	0.2	–1.3
Dual eligible	41.5	49.3	42.3	42.1	0.1	–0.2
Non-dual eligible	44.5	52.4	49.8	49.2	0.5	–0.6
Age (years)						
<65	25.7	29.5	26.5	25.0	0.1	–1.5
65–74	38.0	41.0	37.3	35.8	–0.1	–1.5
75–84	44.8	52.2	48.3	47.8	0.4	–0.5
85+	50.2	62.7	59.0	60.8	0.9	1.8
Race/ethnicity						
White	45.5	53.8	50.8	50.0	0.5	–0.8
Black	34.2	40.8	35.5	35.6	0.1	0.1
Hispanic	36.7	42.7	33.2	34.3	–0.4	1.1
Asian American	30.0	39.8	36.0	36.3	0.6	0.3
North American Native	13.0	38.5	33.5	33.8	0.3	0.3
Gender						
Male	40.1	46.7	42.9	42.1	0.3	–0.8
Female	47.0	56.3	52.7	52.5	0.6	–0.2
Beneficiary location						
Urban county	45.6	52.8	48.8	48.5	0.3	–0.3
Rural county, micropolitan	39.2	49.7	46.8	45.1	0.8	–1.7
Rural county, adjacent to urban	39.0	49.5	46.1	44.9	0.7	–1.2
Rural county, nonadjacent to urban	33.8	43.8	40.7	39.8	0.7	–0.9
Frontier county	29.2	36.2	33.4	33.0	0.4	–0.4

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 equal to or less than 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.

> Although the overall rate of hospice use among decedents declined slightly in 2021, the pattern varied by beneficiary characteristics, with hospice use growing among some groups.

> In 2021, hospice use continued to vary by demographic and beneficiary characteristics. Medicare decedents who were not dual eligible, who were MA enrollees, older, White, female, or living in an urban area were more likely to use hospice than their respective counterparts.

Chart 11-11 Number of Medicare-participating hospices has increased due to growth in for-profit hospices

	2017	2020	2021
All hospices	4,488	5,058	5,358
For profit	3,101	3,691	4,008
Nonprofit	1,226	1,220	1,195
Government	161	146	143
Freestanding	3,525	4,189	4,511
Hospital based	470	413	396
Home health based	471	437	434
SNF based	22	19	17
Urban	3,605	4,196	4,505
Rural	878	853	845

Note: SNF (skilled nursing facility). Some categories do not sum to 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).

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

- > There were 5,358 Medicare-participating hospices in 2021. About 75 percent of them were for-profit hospices.
- > The number of Medicare-participating hospices grew by 300 providers between 2020 and 2021 and has increased about 20 percent since 2017. For-profit hospices accounted for all of the net growth in providers between 2020 and 2021.
- > Between 2017 and 2021, growth in the number of providers has occurred among freestanding providers, while the number of hospital-based and home health-based providers declined. The number of SNF-based providers is small and has changed little over the years. (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 the last several years, decreasing about 4 percent between 2017 and 2021. 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 11-12 Hospice cases by primary diagnosis, 2021

Diagnosis	Share of total cases
Alzheimer's, nervous system disorders, organic psychosis	24%
Cancer	24
Circulatory, except heart failure	21
Heart failure	8
Respiratory disease	6
Other	6
Chronic airway obstruction, NOS	4
Genitourinary disease	2
Digestive disease	2
COVID-19	2
All	100

Note: NOS (not otherwise specified). Cases include all patients who received hospice care in 2021, not just decedents. "Diagnosis" reflects primary diagnosis on the beneficiary's last hospice claim in 2021. Subgroups may not sum to 100 percent due to rounding.

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

> In 2021, the most common primary diagnoses among Medicare hospice patients were neurological conditions (Alzheimer's disease, nervous system disorders, and organic psychosis) and cancer (each accounted for 24 percent of cases), circulatory conditions other than heart failure (21 percent), and heart failure (8 percent).

> About 2 percent of Medicare hospice patients had COVID-19 as their hospice primary diagnosis in 2021. An additional 3 percent of hospice patients had COVID-19 as a secondary diagnosis on their hospice claims in 2021 (data not shown).

Chart 11-13 Hospice average length of stay among decedents decreased in 2021 to 2019 level

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

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 92.1 days in 2021, a decrease from 2020, but similar to the 2019 prepandemic level. In 2021, 50th percentile (median) length stay fell slightly to 17 days from 18 days in 2020.
- > There is wide variation in hospice length of stay. In 2021, hospice length of stay among decedents ranged from 2 days at the 10th percentile to 264 days at the 90th percentile.
- > Between 2010 and 2021, growth in 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 264 days at the 90th percentile.

Chart 11-14 Hospice length of stay among decedents, by beneficiary and hospice characteristics, 2021

	Average length of stay (in days)	Length-of-stay percentiles (in days)		
		10th	50th	90th
Beneficiary				
Diagnosis				
Cancer	51	3	16	125
Neurological	155	4	38	467
Heart/circulatory	104	2	18	313
COPD	140	3	32	424
Other	51	1	7	132
Site of service				
Home	95	3	24	260
Nursing facility	109	3	21	326
Assisted living facility	165	5	53	485
Hospice				
For profit	110	2	21	326
Nonprofit	71	2	13	192
Freestanding	94	2	17	272
Home health based	73	2	15	201
Hospital based	58	2	11	155

Note: COPD (chronic obstructive pulmonary disease). Length of stay is calculated for Medicare beneficiaries who died in 2021 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 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 22 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 11-15 Nearly 60 percent of Medicare hospice spending in 2021 was for patients with stays exceeding 180 days

	Medicare hospice spending, 2021 (in billions)
All hospice users in 2021	\$23.1
Beneficiaries with LOS > 180 days	13.6
Days 1–180	4.4
Days 181–365	4.1
Days 366+	5.0
Beneficiaries with LOS ≤ 180 days	9.4

Note: LOS (length of stay). “LOS” reflects the beneficiary’s lifetime LOS as of the end of 2021 (or at the time of death or discharge in 2021 if the beneficiary was not enrolled in hospice at the end of 2021). All spending reflected in the chart occurred only in 2021. 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 2021, Medicare hospice spending on patients with stays exceeding 180 days was about \$13.6 billion, nearly 60 percent of all Medicare hospice spending that year.
- > About \$5.0 billion, or nearly 22 percent, of Medicare hospice spending in 2021 was on hospice care for patients who had already received at least one year of hospice.

Chart 11-16 Hospice Medicare aggregate margins, 2016–2020

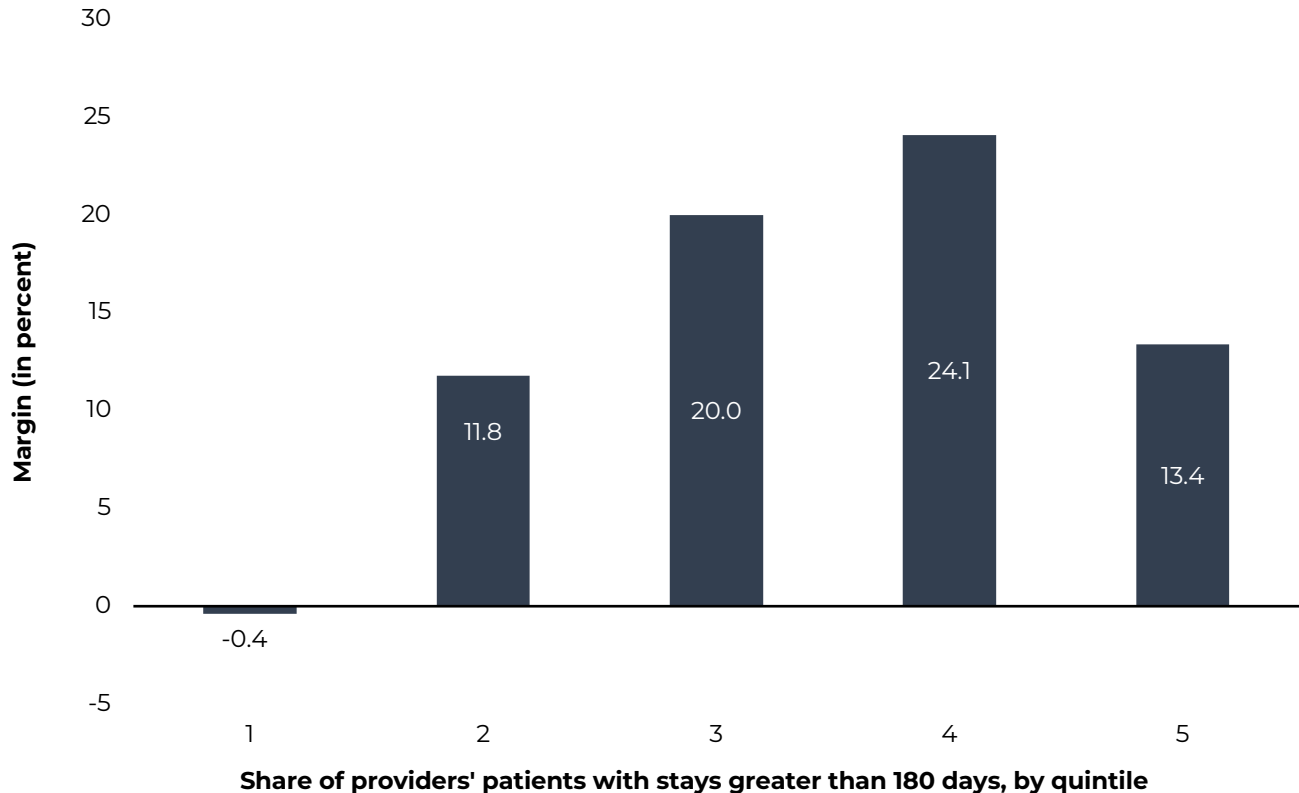
	Share of hospices (2020)	Medicare margin				
		2016	2017	2018	2019	2020
All	100%	10.9%	12.5%	12.4%	13.4%	14.2%
Freestanding	83	14.0	15.3	15.1	16.2	16.7
Home health based	9	6.2	8.1	8.4	9.6	11.2
Hospital based	8	-16.7	-13.8	-16.5	-18.4	-18.2
For profit	73	17.9	20.0	19.0	19.2	20.5
Nonprofit	24	2.2	2.5	3.8	6.0	5.8
Government	3	N/A	N/A	N/A	N/A	N/A
Urban	83	11.4	12.9	12.6	13.6	14.3
Rural	17	6.3	8.9	10.3	11.5	13.5
Below cap	81	10.7	12.6	12.5	13.8	14.8
Above cap	19	12.6	12.1	10.1	10.0	7.7
Above cap (including cap overpayments)	19	20.2	21.9	21.8	22.5	22.8

Note: N/A (not available). Medicare aggregate margins for all provider categories exclude overpayments to above-cap hospices except where specifically indicated. 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). Components may 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 aggregate Medicare margin was 14.2 percent in 2020, up from 13.4 percent in 2019.
- > In 2020, freestanding hospices had higher margins (16.7 percent) than home health–based (11.2 percent) and hospital-based hospices (–18.2 percent).
- > The 2020 margin among for-profit hospices was high at 20.5 percent. Nonprofit hospices as a group had a margin of 5.8 percent in 2020, but the subset of nonprofit hospices that were freestanding had a higher margin, 9.5 percent (latter figure not shown in chart).
- > The aggregate 2020 margin was slightly higher for urban hospices (14.3 percent) than rural hospices (13.5 percent).
- > Hospices that exceeded the cap (Medicare’s aggregate average per beneficiary payment limit) had a 2020 margin of about 22.8 percent before the return of the cap overpayments.

Chart 11-17 Medicare aggregate margins were higher among hospices with more long stays, 2020



Note: Medicare aggregate margins exclude overpayments to hospices that exceeded the cap on the average annual Medicare payment per beneficiary. Margins are calculated based on Medicare-allowable, reimbursable costs. For hospice providers in the lowest (first) quintile, the share of stays greater than 180 days was less than 15 percent; it was between 15 percent and 23 percent in the second quintile; it was between 23 percent and 29 percent in the third quintile; it was between 29 percent and 36 percent in the fourth quintile; and it was greater than 36 percent in the highest (fifth) quintile.

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

- > Medicare's per diem payment system for hospice has provided an incentive for longer lengths of stay.
- > Hospices with more patients who had stays greater than 180 days generally had higher margins in 2020. Hospices in the lowest length-of-stay quintile had a margin of -0.4 percent compared with a 24.1 percent margin for hospices in the second highest length-of-stay quintile.
- > Margins were somewhat lower in the highest length-of-stay quintile (13.4 percent) compared with the second highest quintile (24.1 percent) because some hospices in the highest quintile exceeded Medicare's aggregate payment cap and were required to repay the overage. Hospices exceeding the cap had a margin of about 22.8 percent before the return of overpayments (see Chart 11-16).

Chart 11-18 Hospices that exceeded Medicare’s annual payment cap, 2015–2019

	2016	2017	2018	2019	2020
Share of hospices exceeding the cap	12.7%	14.0%	16.3%	19.0%	18.6%
Average payments over the cap per hospice exceeding the cap (in thousands)	\$295	\$273	\$334	\$384	\$422
Payments over the cap as a share of overall Medicare hospice spending in cap year	1.0%	1.0%	1.3%	1.7%	1.8%

Note: The aggregate cap statistics reflect the Commission's estimates and may differ from the CMS claims processing contractors' calculations. Our estimates assume all hospices use the proportional methodology and rely on claims data through 15 months after the end of each cap year (except for 2016, which used 14 months). The claims processing contractors may reopen the hospice cap calculation for up to three years; the reopening process and timing may vary across contractors. To illustrate the potential effect of reopening, we re-estimated cap overpayments for 2017 using an additional 36 months of claims data (i.e., a 51-month run-out). With the additional 36 months of data, the estimated share of hospices exceeding the cap increased by just under 2 percentage points, the average payments over the cap per hospice exceeding the cap increased by roughly \$25,000, and payments over the cap as a share of overall Medicare hospice spending increased by 0.3 percentage point. Spending in cap year 2017 reflects an 11-month period from November 1, 2016, to September 30, 2017. For years before 2017, the cap year was defined as the period beginning November 1 and ending October 31 of the following year. Beginning in 2018, the cap year is aligned with the federal fiscal year (October 1 to September 30 of the following year).

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 18.6 percent of hospices exceeded the aggregate cap in 2020, similar to 2019.
- > On average, above-cap hospices exceeded the cap by approximately \$422,000 per provider in 2020, up from about \$384,000 per provider in 2019.
- > Medicare payments over the cap represented 1.8 percent of total Medicare hospice spending in 2020.

Chart 11-19 Hospice live-discharge rates, 2019–2021

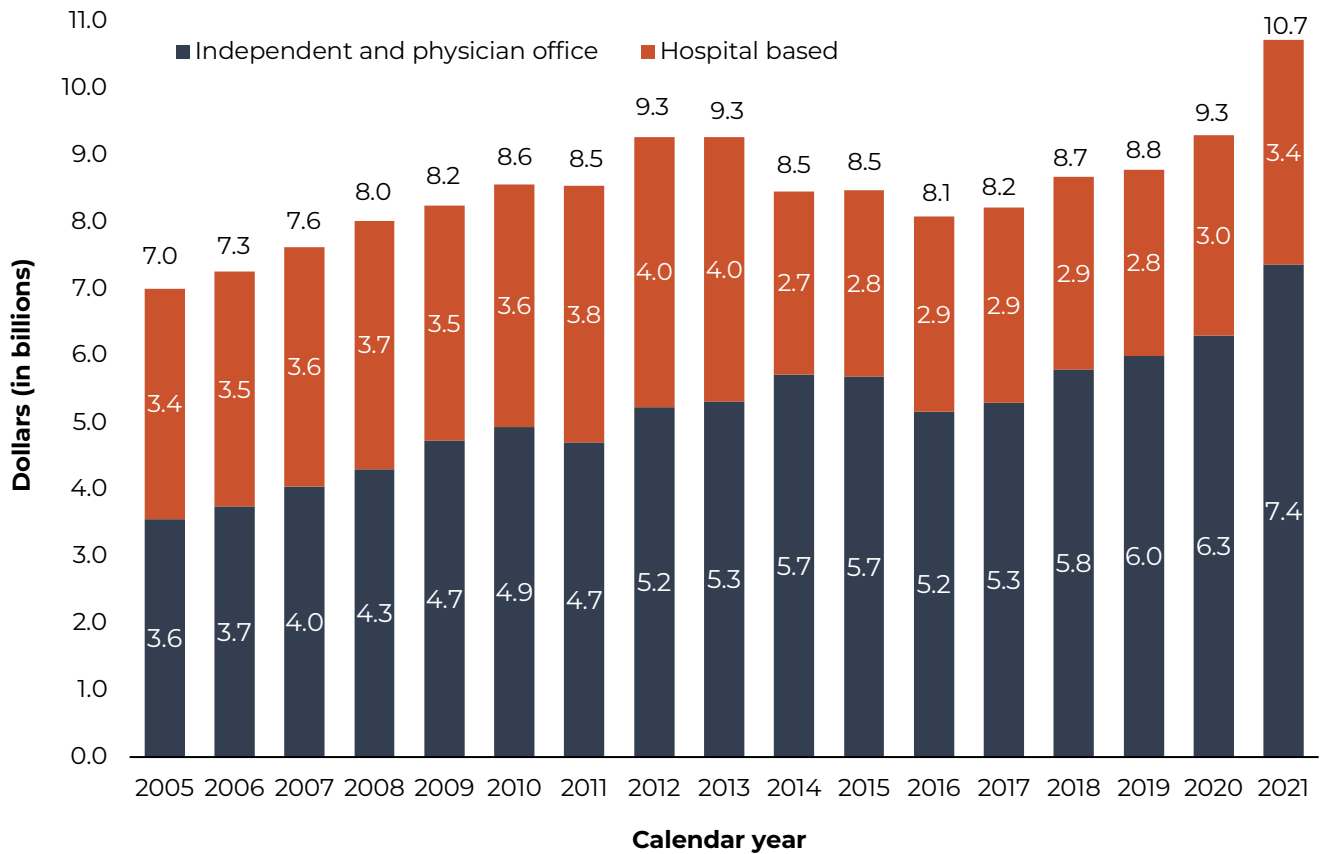
	2019	2020	2021
Live discharges as a share of all discharges, by reason for live discharge			
All live discharges	17.4%	15.4%	17.2%
No longer terminally ill	6.5	5.6	6.3
Beneficiary revocation	6.5	5.7	6.3
Transfer hospice providers	2.3	2.2	2.4
Move out of service area	1.7	1.6	2.0
Discharge for cause	0.3	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	8.6	7.5	8.5
25th percentile	12.3	10.9	12.5
50th percentile	18.9	16.9	19.1
75th percentile	29.5	26.6	30.2
90th percentile	46.6	43.3	50.0

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 2021, the overall live-discharge rate was 17.2 percent, an increase from 2020, but similar to 2019.
- > 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 6.3 percent of all discharges in 2021. 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 50 percent or more in 2021.
- > Small hospices as a group have substantially higher live-discharge rates than larger hospices. In 2021, the aggregate live-discharge rate was 47 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, 2005–2021



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.

Source: The annual report of the Boards of Trustees of the Medicare trust funds, 2015 and 2021.

- > Medicare spending for clinical laboratory tests in all settings grew by an average of 3.6 percent per year between 2005 and 2013.
- > 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 by 5.9 percent in 2020 and 15.3 percent in 2021.