

SECTION

# 11

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## **Other services**

**Dialysis**

**Hospice**

**Clinical laboratory**

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**Chart 11-1. Growth in the number of dialysis facilities slowed in 2020; most facilities are for profit and freestanding**

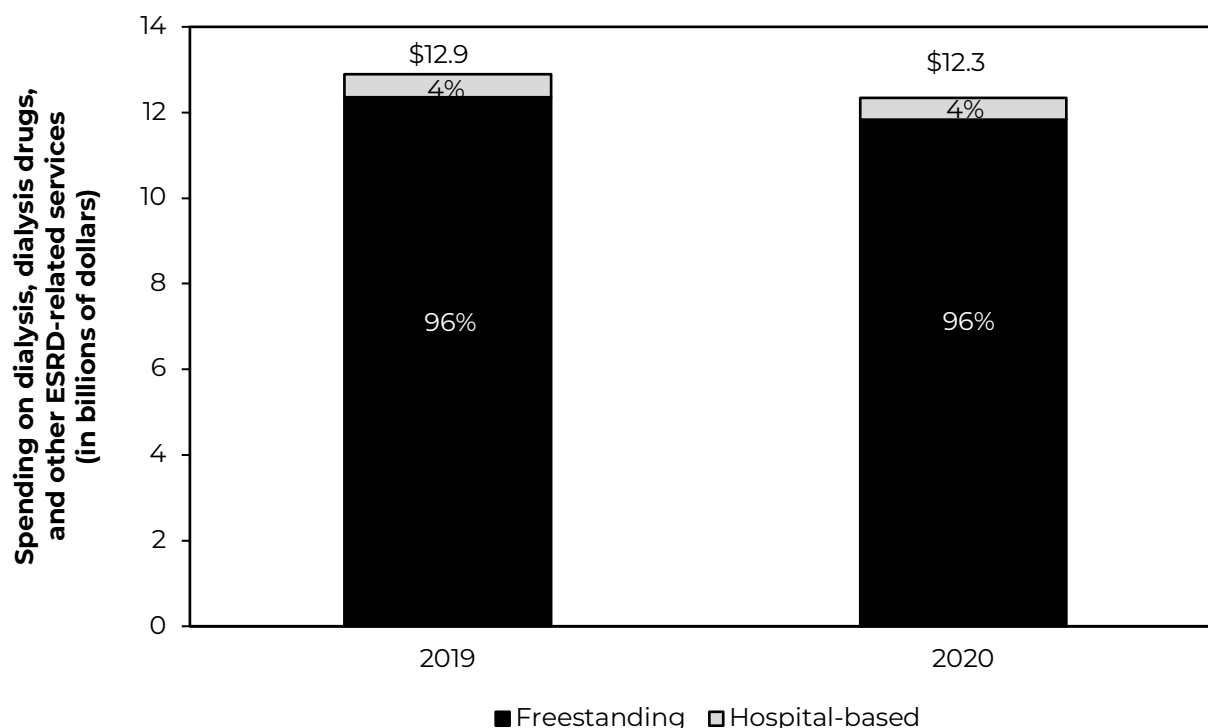
	2020	Average annual percent change	
		2015–2019	2019–2020
Total number of:			
Dialysis facilities	7,800	4%	1%
Hemodialysis stations	135,900	4	1
Mean number of			
hemodialysis stations per facility	18	-0.1	-0.1
<u>Share of total facilities</u>			
Hospital based	5%	-3	-2
Freestanding	95	4	2
Urban	84	5	2
Rural, micropolitan	10	2	-1
Rural, adjacent to urban	4	2	-3
Rural, not adjacent to urban	2	0.4	-2
Frontier	0.4	1	-3
For profit	89	4	2
Nonprofit	11	2	-1

**Note:** “Nonprofit” includes facilities designated as either nonprofit or government. “Average annual percent change” is based on comparing 2015, 2019, and 2020 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 2015 and 2019, the number of facilities increased, on average, 4 percent per year, while between 2019 and 2020, the number of facilities increased on average by 1 percent. Likewise, facilities’ capacity to provide care—as measured by hemodialysis treatment stations—grew more slowly between 2019 and 2020 compared with growth from 2015 through 2019 (1 percent per year vs. 4 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 2019 and 2020 is also linked to facility size. Rural facilities are, on average, smaller than urban facilities. Also, compared with facilities that treated beneficiaries in 2019 and 2020, facilities that closed in 2019 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 2015, the number of freestanding and for-profit facilities increased, while hospital-based facilities decreased. Between 2015 and 2019, the number of freestanding and for-profit facilities each increased by 4 percent per year. The average size of a facility has remained relatively constant, averaging nearly 18 dialysis treatment stations per facility.

**Chart 11-2. Medicare spending for outpatient dialysis services furnished by freestanding and hospital-based dialysis facilities, 2019 and 2020**



**Note:** ESRD (end-stage renal disease).

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

- In 2020, total spending for dialysis, dialysis drugs, and ESRD-related clinical laboratory tests was \$12.3 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 separately paid before 2011.
- Six percent of total spending in 2020 consisted of payments for two calcimimetics paid under the ESRD PPS's transitional drug add-on payment adjustment (TDAPA) (data not shown); this policy pays providers according to the number of units of a drug and the drug's average sales price (ASP).
- Between 2019 and 2020, total ESRD expenditures decreased by 4 percent. The spending decline is partly attributable to the coronavirus pandemic, which resulted in slowing the initiation of dialysis by new patients and in excess mortality. Sadly, patients with ESRD are at increased risk for COVID-19-associated morbidity and mortality. Between 2019 and 2020, the number of FFS dialysis beneficiaries and the total number of treatments each declined by 3 percent (data not shown). A change in Medicare's TDAPA in 2020, from 106 percent of ASP to ASP with no percentage add-on, also contributed to the decline in spending.
- Freestanding dialysis facilities treated most dialysis beneficiaries and accounted for 96 percent of expenditures in 2019 and 2020.

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

	2009		2015		2019	
	Patients (thousands)	Percent	Patients (thousands)	Percent	Patients (thousands)	Percent
Total	573.6	100%	714.4	100%	809.1	100%
Dialysis	403.0	70	507.9	71	569.7	70
In-center hemodialysis	365.8	64	446.8	63	492.1	61
Home hemodialysis*	5.3	1	8.7	1	12.2	2
Peritoneal dialysis*	30.3	5	50.0	7	62.3	8
Unknown	1.7	0.3	2.3	0.3	3.1	0.4
Functioning graft and kidney transplant	170.6	30	206.5	29	239.4	30

**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., 2009, 2015, or 2019), 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 3.5 percent annually between 2009 and 2019.
- 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 undergo hemodialysis administered in a dialysis facility three times a week. Between 2009 and 2019, the total number of in-center hemodialysis patients grew on average by 3.0 percent annually, while the total number of peritoneal dialysis patients increased on average by 7.5 percent annually. Although a smaller proportion of all dialysis patients undergo home hemodialysis, the number of these patients grew on average by nearly 9 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 2019, 28 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 2019	Average annual percent change 2014–2019
Total (N = 809,103)	100%	3%
<b>Age (years)</b>		
0–17	1	1
18–44	14	1
45–64	42	2
65–79	34	5
80+	9	4
<b>Sex</b>		
Male	58	4
Female	42	3
<b>Race/ethnicity</b>		
White	43	3
Black	29	2
Native American	1	2
Asian American	6	6
Hispanic	19	5
<b>Underlying cause of ESRD</b>		
Diabetes	39	4
Hypertension	26	4
Glomerulonephritis	15	2
Other causes	20	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 2014 and 2019. 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, 2020

	Share of all FFS dialysis patients
<b>Age (years)</b>	
Under 45	10%
45–64	37
65–74	29
75–84	18
85+	6
<b>Sex</b>	
Male	57
Female	43
<b>Race</b>	
White	46
Black	35
All other	19
<b>Residence</b>	
Urban county	83
Rural county, micropolitan	10
Rural county, adjacent to urban	5
Rural county, not adjacent to urban	2
Frontier county	1
<b>Prescription drug coverage status</b>	
Enrolled in Part D plan	83*
LIS	57
<b>Dually eligible for Medicare and Medicaid</b>	51

**Note:** FFS (fee-for-service), LIS (low-income subsidy). Urban counties contain a core area with 50,000 or more people, rural micropolitan counties contain at least one cluster of at least 10,000 and fewer than 50,000 people, rural counties adjacent to urban areas do not have a city of 10,000 people in the county, and rural counties not adjacent to urban areas do not have a city of 10,000 people. Frontier counties are counties with 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 2020, 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 2020, 83 percent of FFS dialysis patients were enrolled in Part D plans.

**Chart 11-6. Aggregate margins varied by type of freestanding dialysis facility, 2020**

Type of facility	Share of freestanding dialysis treatments	Aggregate margin
All facilities	100%	2.7%
Urban	88	3.5
Rural	12	-1.5
Treatment volume (quintile)		
Lowest	7	-20.2
Second	13	-8.2
Third	18	0.3
Fourth	24	4.8
Highest	39	10.1

**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 separately paid 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. Our ESRD margin analysis relies on the cost data that freestanding dialysis facilities report on the cost reports that they submit to CMS. In 2019, there was an anomalous increase in non-ESRD drug costs compared with prior years. Consistent with our longstanding approach, non-ESRD drug costs are not included in the Commission's analysis of ESRD PPS costs incurred by freestanding dialysis facilities or in our calculation of the ESRD PPS margin. Components may not sum to 100 percent due to rounding.

**Source:** Compiled by MedPAC from 2020 cost reports and the 2020 institutional outpatient file from CMS.

- For 2020, the aggregate Medicare margin for dialysis-related services, including ESRD-related drugs and laboratory tests that were separately paid before 2011, was 2.7 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 2020 aggregate Medicare margin to 3.7 percent (data not shown).
- Between 2019 and 2020, the aggregate Medicare margin decreased (from 8.4 percent to 2.7 percent) due to increasing cost per treatment for all cost categories with the exception of erythropoietin-stimulating agents and labs and due to the transitional drug add-on payment adjustment declining from 106 percent of average sales price (ASP) to ASP without an add-on.
- 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, 2014–2019**

Outcome measure	2014	2018	2019
Share of in-center hemodialysis patients:			
Receiving adequate dialysis	97%	98%	98%
Dialyzed with an AV fistula	66	66	65
Share of peritoneal dialysis patients receiving adequate dialysis	91	92	91
Share of all dialysis patients managing anemia			
Mean hemoglobin <10 g/dL	27	29	30
Mean hemoglobin 10 to <12 g/dL	68	66	65
Mean hemoglobin ≥12 g/dL	5	5	5
Share of all dialysis patients wait-listed for a kidney	17.3	13.7	13.1
Renal transplant rate per 100 patient years	3.3	3.6	3.9
Annual mortality rate per 100 patient years*	16.7	16.4	16.0
Total hospital admissions per patient year*	1.7	1.7	1.7
Hospital days per patient year*	11.3	11.3	11.3

**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 dialysis care is mixed. Performance has improved on some measures, but performance on others remains unchanged or has declined.
- Between 2014 and 2019, overall adjusted mortality rates decreased from 16.7 percent to 16.0 percent. During this period, the proportion of hemodialysis patients receiving adequate dialysis remained high, and rates of hospitalization have held 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 2014 and 2019.
- Other measures suggest that improvements in dialysis quality are still needed. 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 2014 and 2019, the share of dialysis patients accepted on the kidney transplant waiting list declined from 17.3 to 13.1, and the renal transplant rate per 100 dialysis-patient years increased modestly from 3.3 to 3.9.

**Chart 11-8. Hospice spending and use increased in 2020**

	2010	2019	2020	Average annual change, 2010–2019	Change, 2019–2020
Medicare payments (in billions)	\$12.9	\$20.9	\$22.4	5.5%	7.4%
Beneficiaries in hospice (in millions)	1.15	1.61	1.72	3.8%	6.6%
Number of hospice days for all hospice beneficiaries (in millions)	81.6	121.8	127.8	4.6%	4.9%
Average length of stay among decedents (in days)	87.0	92.5	97.0	0.7%	4.8%
Median length of stay among decedents (in days)	18	18	18	0 days	0 days

**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. Total payments, number of hospice users, number of hospice days, and average length of stay displayed in the table are rounded; the percentage change for number of users and total spending is calculated using unrounded data.

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

- Total Medicare payments to hospices were about \$22.4 billion in 2020, about 7.4 percent higher than the prior year.
- The number of Medicare beneficiaries receiving hospice services, total number of days of hospice care, and average length of stay continued to grow in 2020.

**Chart 11-9. Number of Medicare decedents and number of decedents who used hospice grew substantially in 2020**

	2010	2017	2018	2019	2020	Average annual percent change 2010–2019	Percent change 2019–2020
Number of Medicare decedents (millions)	1.99	2.28	2.31	2.32	2.73	1.7%	17.6%
Number of Medicare decedents who used hospice (millions)	0.87	1.14	1.17	1.20	1.31	3.6	9.0
Share of decedents who used hospice	43.8%	49.8%	50.6%	51.6%	47.8%		

**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 2020, with the onset of the coronavirus pandemic, deaths among Medicare beneficiaries increased, as did hospice use among Medicare decedents. Between 2019 and 2020, deaths among Medicare beneficiaries increased by nearly 18 percent and the number of Medicare decedents who used hospice in their year of death increased by 9 percent.
- Because growth in deaths outpaced growth in the number of hospice users in 2020, the share of Medicare decedents using hospice declined between 2019 and 2020, from 51.6 percent to 47.8 percent.

**Chart 11-10. Share of decedents using hospice increased from 2010 to 2019 but declined in 2020 as growth in deaths outpaced growth in hospice use**

	Share of decedents using hospice			Average annual percentage point change 2010–2019	Percentage point change 2019–2020
	2010	2019	2020		
All	43.8%	51.6%	47.8%	0.9	–3.8
FFS beneficiaries	42.8	50.7	47.2	0.9	–3.5
MA beneficiaries	47.2	53.2	48.7	0.7	–4.5
Dual eligible	41.5	49.3	42.3	0.9	–7.0
Non-dual eligible	44.5	52.4	49.8	0.9	–2.6
<b>Age (years)</b>					
<65	25.7	29.5	26.5	0.4	–3.0
65–74	38.0	41.0	37.2	0.3	–3.8
75–84	44.8	52.2	48.3	0.8	–3.9
85+	50.2	62.7	59.0	1.4	–3.7
<b>Race/ethnicity</b>					
White	45.5	53.8	50.8	0.9	–3.0
Black	34.2	40.8	35.5	0.7	–5.3
Hispanic	36.7	42.7	33.3	0.7	–9.4
Asian American	30.0	39.8	36.1	1.1	–3.7
North American Native	31.0	38.5	33.5	0.8	–5.0
<b>Gender</b>					
Male	40.1	46.7	42.9	0.7	–3.8
Female	47.0	56.3	52.7	1.0	–3.6
<b>Residence</b>					
Urban county	45.6	52.8	48.8	0.8	–4.0
Rural county, micropolitan	39.2	49.7	46.7	1.2	–3.0
Rural county, adjacent to urban	39.0	49.5	46.1	1.2	–3.4
Rural county, nonadjacent to urban	33.8	43.8	40.6	1.1	–3.2
Frontier county	29.2	36.2	33.3	0.8	–2.9

**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 2020 is divided by the total number of beneficiaries in the group who died in 2020. “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 (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.

*(Chart continued next page)*

**Chart 11-10. Share of decedents using hospice increased from 2010 to 2019 but declined in 2020 as growth in deaths outpaced growth in hospice use (continued)**

- Between 2010 and 2019, the share of decedents using hospice grew across beneficiary groups. In 2020, the share of decedents using hospice declined across groups as growth in deaths outpaced growth in hospice use. While the *share* of decedents using hospice declined in 2020, the *number* of Medicare decedents receiving hospice care in each group increased in 2020 (data not shown).
- In 2020, 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**

	2010	2018	2019	2020
All hospices	3,498	4,639	4,840	5,058
For profit	1,958	3,234	3,436	3,680
Nonprofit	1,316	1,245	1,255	1,220
Government	224	159	148	147
Freestanding	2,401	3,701	3,936	4,178
Hospital based	609	453	429	415
Home health based	465	463	456	444
SNF based	23	22	19	19
Urban	2,485	3,760	3,976	4,196
Rural	950	872	859	850

**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).

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

- There were 5,058 Medicare-participating hospices in 2020. About 73 percent of them were for-profit hospices.
- The number of Medicare-participating hospices grew by more than 200 providers between 2019 and 2020 and has increased about 45 percent since 2010. For-profit hospices accounted for all of the net growth in providers between 2019 and 2020.
- Growth in the number of providers has occurred predominantly among freestanding providers. Between 2010 and 2020, the number of hospital-based providers declined substantially while the number of home health–based providers has oscillated over the period and declined in the last few years. 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 2.5 percent between 2018 and 2020. The number of providers located in rural areas is not necessarily an indicator of access to care. The share of rural decedents using hospice grew through 2019 (see Chart 11-10). In addition, the number of rural beneficiaries receiving hospice services increased in 2020 (data not shown).

## Chart 11-12. Hospice cases by primary diagnosis, 2020

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 2020, not just decedents. "Diagnosis" reflects primary diagnosis on the beneficiary's last hospice claim in 2020. 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 2020, 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 2020. An additional 3 percent of hospice patients had COVID-19 as a secondary diagnosis on their hospice claims in 2020 (data not shown).

**Chart 11-13. Hospice average length of stay among decedents increased in 2020**

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

**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 97.0 days in 2020, an increase from 2019 of over 4 days.
- There is wide variation in hospice length of stay. In 2020, hospice length of stay among decedents ranged from 2 days at the 10th percentile to 287 days at the 90th percentile.
- Between 2010 and 2020, growth in average length of stay among decedents has largely been the result of increases in length of stay for patients with the longest stays. Length of stay grew from 78 days to 87 days at the 75th percentile and from 242 days to 287 days at the 90th percentile.



**Chart 11-14. Hospice length of stay among decedents, by beneficiary and hospice characteristics, 2020**

	Average length of stay (in days)	Length-of-stay percentiles (in days)		
		10th	50th	90th
<b>Beneficiary</b>				
Diagnosis				
Cancer	53	3	16	129
Neurological	161	4	40	483
Heart/circulatory	109	2	19	324
COPD	135	3	32	403
Other	54	2	7	149
Site of service				
Home	90	3	23	244
Nursing facility	133	3	26	410
Assisted living facility	172	5	59	491
<b>Hospice</b>				
For profit	115	2	22	349
Nonprofit	73	3	13	206
Freestanding	97	2	17	288
Home health based	73	2	15	202
Hospital based	59	2	11	163

**Note:** COPD (chronic obstructive pulmonary disease). Length of stay is calculated for Medicare beneficiaries who died in 2020 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 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 11-15. Nearly 60 percent of Medicare hospice spending in 2020 was for patients with stays exceeding 180 days**

	Medicare hospice spending, 2020 (in billions)
All hospice users in 2019	\$22.4
Beneficiaries with LOS > 180 days	13.3
Days 1–180	4.2
Days 181–365	4.1
Days 366+	4.9
Beneficiaries with LOS ≤ 180 days	9.2

**Note:** LOS (length of stay). “LOS” reflects the beneficiary’s lifetime LOS as of the end of 2020 (or at the time of death or discharge in 2020 if the beneficiary was not enrolled in hospice at the end of 2020). All spending reflected in the chart occurred only in 2020. Break-out groups 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 historic claims data).

- In 2020, Medicare hospice spending on patients with stays exceeding 180 days was about \$13.3 billion, nearly 60 percent of all Medicare hospice spending that year.
- About \$4.9 billion, or nearly 22 percent, of Medicare hospice spending in 2020 was on hospice care for patients who had already received at least one year of hospice.

**Chart 11-16. Hospice Medicare aggregate margins, 2015–2019**

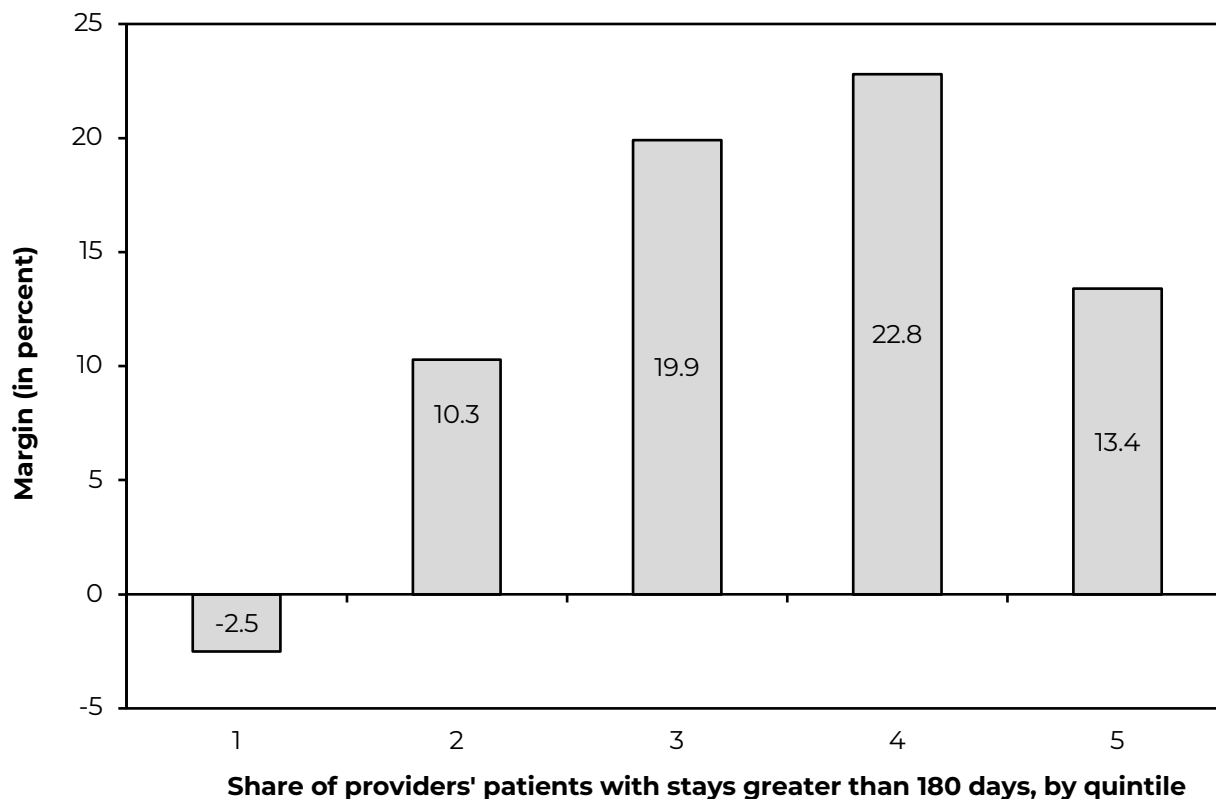
	Share of hospices (2019)	Medicare margin				
		2015	2016	2017	2018	2019
All	100%	9.9%	10.9%	12.5%	12.4%	13.4%
Freestanding	81	13.8	14.0	15.3	15.1	16.2
Home health based	9	3.3	6.2	8.1	8.4	9.6
Hospital based	9	-23.8	-16.7	-13.8	-16.5	-18.4
For profit	71	17.7	17.9	20.0	19.0	19.2
Nonprofit	26	0.1	2.2	2.5	3.8	6.0
Government	3	N/A	N/A	N/A	N/A	N/A
Urban	82	10.4	11.4	12.9	12.6	13.6
Rural	18	4.8	6.3	8.9	10.3	11.5
Below cap	81	9.9	10.7	12.6	12.5	13.8
Above cap	19	9.8	12.6	12.1	10.1	10.0
Above cap (including cap overpayments)	19	21.4	20.2	21.9	21.8	22.5

**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 13.4 percent in 2019, up from 12.4 percent in 2018.
- In 2019, freestanding hospices had higher margins (16.2 percent) than home health-based (9.6 percent) and hospital-based hospices (-18.4 percent).
- The 2019 margin among for-profit hospices was high at 19.2 percent. Nonprofit hospices as a group had a margin of 6.0 percent in 2019, but the subset of nonprofit hospices that were freestanding had a higher margin, 10.5 percent (latter figure not shown in chart).
- The aggregate 2019 margin was slightly higher for urban hospices (13.6 percent) than rural hospices (11.5 percent).
- Hospices that exceeded the cap (Medicare's aggregate average per beneficiary payment limit) had a 2019 margin of about 22.5 percent before the return of the cap overpayments.

**Chart 11-17. Medicare aggregate margins were higher among hospices with more long stays, 2019**



**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 22 percent in the second quintile; it was between 22 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 2019. Hospices in the lowest length-of-stay quintile had a margin of –2.5 percent compared with a 22.8 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 (22.8 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 22.5 percent before the return of overpayments (see Chart 11-16).

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

	2015	2016	2017	2018	2019
Share of hospices exceeding the cap	12.3%	12.7%	14.0%	16.3%	19.0%
Average payments over the cap per hospice exceeding the cap (in thousands)	\$316	\$295	\$273	\$334	\$384
Payments over the cap as a share of overall Medicare hospice spending in cap year	1.0%	1.0%	1.0%	1.3%	1.7%

**Note:** The aggregate cap statistics reflect the Commission’s estimates and may differ from the CMS claims processing contractors’. 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 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.

- The share of hospices exceeding the aggregate cap was 19.0 percent in 2019, up from 16.3 percent in 2018.
- On average, above-cap hospices exceeded the cap by about \$384,000 per provider in 2019, up from about \$334,000 per provider in 2018.
- Medicare payments over the cap represented 1.7 percent of total Medicare hospice spending in 2019.

**Chart 11-19. Hospice live-discharge rates, 2018–2020**

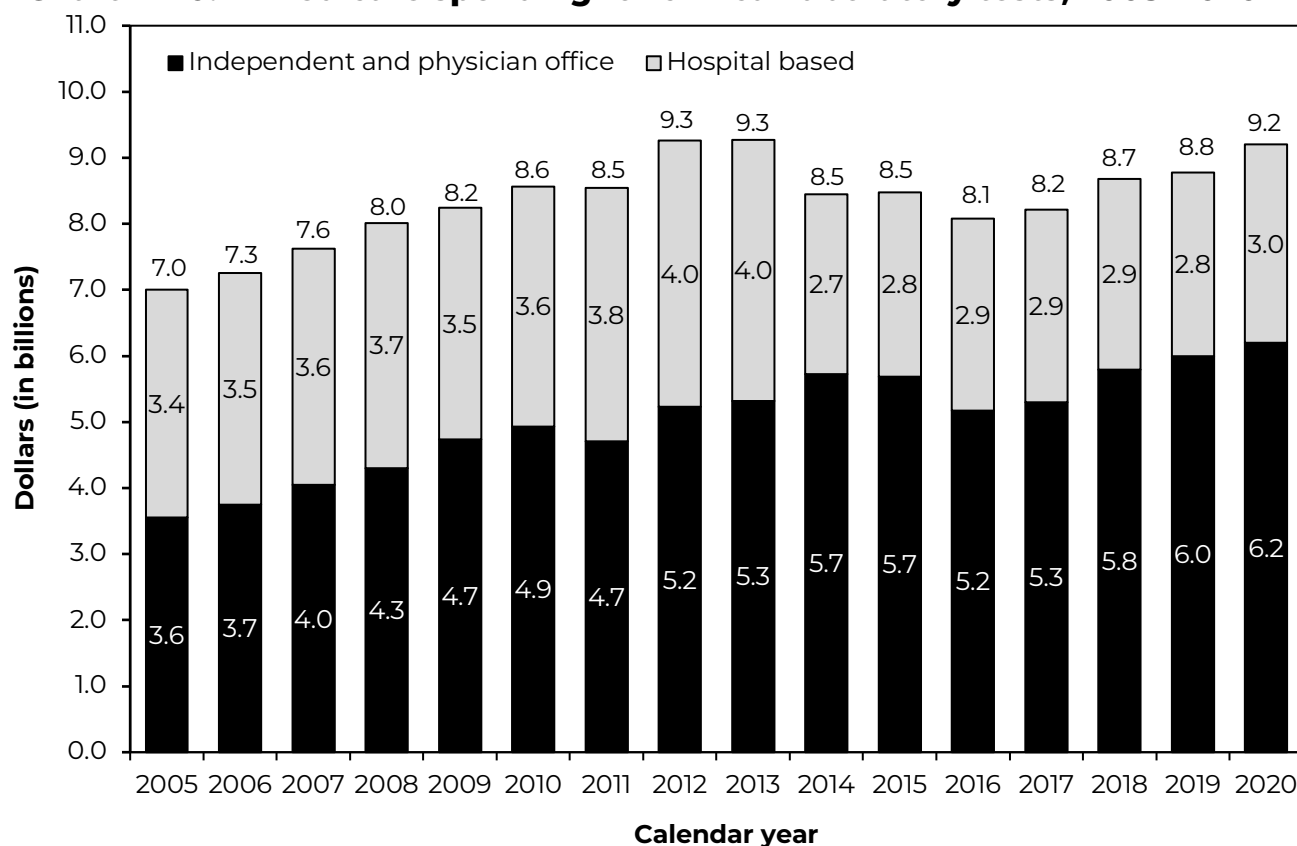
	2018	2019	2020
Live discharges as a share of all discharges, by reason for live discharge			
All live discharges	17.0%	17.4%	15.4%
No longer terminally ill	6.3	6.5	5.6
Beneficiary revocation	6.6	6.5	5.7
Transfer hospice providers	2.2	2.3	2.2
Move out of service area	1.6	1.7	1.6
Discharge for cause	0.3	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	8.5	8.6	7.5
25th percentile	12.0	12.3	10.9
50th percentile	17.9	18.9	16.9
75th percentile	27.8	29.5	26.6
90th percentile	42.5	46.6	43.3

**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 2020, the overall live-discharge rate declined from 17.4 percent to 15.4 percent, which contrasts with the prior period from 2017 to 2019 when the live discharge rate increased modestly from 16.7 percent to 17.4 percent (2017 data not shown). The decline in live-discharge rates in 2020 may reflect the effect of the pandemic and the higher beneficiary mortality rates during 2020.
- The most common reasons for live discharge were the beneficiary revoking the hospice benefit and the beneficiary no longer being terminally ill, accounting for 5.7 percent and 5.6 percent, respectively, of all discharges in 2020. 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 in excess of 43 percent in 2020.
- Small hospices as a group have substantially higher live-discharge rates than larger hospices. In 2020, the aggregate live-discharge rate was 42 percent for hospices with 30 or fewer discharges, in contrast to a 15 percent aggregate live discharge rate for all hospices (data for small hospices not shown).

**Chart 11-20. Medicare spending for clinical laboratory tests, 2005–2020**



**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 2020, Medicare spending for laboratory tests grew by an average of 3.9 percent per year.

