

## Dear Region Director:

This report is designed to provide a comparative summary of treatment patterns and patient outcomes for End Stage Renal Disease (ESRD) patients in this region, as compared to all patients in the United States. The statistics reported here include dialysis patients treated during 2018-2021 in the chronic dialysis facilities in this region and are based primarily on Medicare claims and data collected for CMS. Selected statistics from this profile are summarized below and region-to-region comparisons of key statistics are provided in the *Charts and Tables of Key Statistics by Region*.

Selected highlights for this Region are provided on the first few pages. For a complete description of the methods and data reported here please see the *Guide to the Region Profiles for FY 2023*. The Guide is available on the Dialysis Data website at [www.DialysisData.org](http://www.DialysisData.org). We hope this profile is of interest to you and is helpful in your survey efforts. We welcome your feedback on ways to improve future profiles.

## What's New This Year

As part of a continuing effort to improve the quality and relevance of this report for your region, the following changes have been incorporated into the Region Profile for FY 2023:

- All summaries for 2020 were updated to include EQRS data for the fourth quarter 2020 (October-December).
- All influenza vaccination summaries reported in Table 6 are now based on information submitted in EQRS and include non-Medicare patients. Summaries by insurance type were added.

## Data Limitations

The COVID Extraordinary Circumstances Exception (ECE) data policy from CMS restricts the use and availability of claims data from March-June 2020 and EQRS clinical data from January-June 2020. Table footnotes provide additional details of data availability for each measure in 2020.

## **Region Highlights**

**Patient Characteristics:** On December 31<sup>st</sup>, 2021, 16.7% of patients in this region were treated in a nursing home during the year, compared to 16.1% nationally. See **Table 1** for detailed summaries of all patients treated during 2018-2021 in this region.

Form CMS-2728 collected data from 11,890 incident patients in this region in 2021. **Table 2** describes certain important characteristics of these patients at the time of their first outpatient dialysis session, including patients' demographics, medical coverage, primary cause of ESRD, modality, pre-treatment nephrological care, transplant options, and vascular access type. In 2021, the average age of patients in this region at incidence was 64 years, compared to the national average of 64 years. Among the incident patients in this region in 2021, 89.8% were informed of their transplant options, compared to 90.9% nationally. Also in 2021, 15.6% of incident patients in this region were not under the care of a nephrologist prior to ESRD therapy, compared to 16.3% nationally.

**Mortality:** There were 9,763 deaths among the patients treated in this region during 2021, while 10,248 would be expected based on their age, race, ethnicity, sex, diabetes status, duration of ESRD, nursing home status, BMI and comorbidities at incidence, as well as state population death rates. The Standardized Mortality Ratio (SMR) of observed to expected deaths is 0.93, which is 7% lower than expected. Of the deaths in this region in 2021, 25% were preceded by withdrawal from dialysis, compared to the national average of 20%. See **Table 3** of this profile for more detailed mortality statistics during 2018-2021 in this region.

**First Year Mortality:** There were 1,910 deaths among the incident patients treated in this region during 2020, while 1,915 would be expected based on their age, race, ethnicity, sex, diabetes status, nursing home status, BMI and comorbidities at incidence, as well as state population death rates. The First Year Standardized Mortality Ratio (SMR) of observed to expected deaths is 0.96, which is 4% lower than expected. Of the deaths among incident patients in this region in 2020, 26% were preceded by withdrawal from dialysis, compared to the national average of 23%. See **Table 3** of this profile for more detailed first year mortality statistics during 2018-2020 in this region.

**Hospitalization:** The Standardized Hospitalization Ratio (SHR) of observed to expected hospital admissions for patients in this region during 2021 is 0.97, indicating that these patients had 3% fewer admissions than expected based on characteristics of patients treated in this region. The Standardized Readmission Ratio (SRR) of observed to expected hospital readmissions in this region during 2021 is 1.01, indicating that these patients had 1% more readmissions than expected. See **Table 4** of this profile for additional hospitalization statistics during 2018-2021 in this region.

**Transplantation:** 1,695 patients under age 75 in this region during 2021 received their first transplant, while 1,674 would be expected based on the age of these patients. The Standardized Transplantation Ratio (STR) of observed to expected number of patients transplanted for this region is 1.11, which is 11% higher than expected. See **Table 5** of this profile for additional transplantation statistics during 2018-2021 in this region.

**Kidney Transplant Waitlist for Prevalent Patients:** The 2021 age-adjusted percent waitlisted in this region is 18.4%, which is 1.2% higher than the national adjusted percentage. See **Table 5** of this profile for additional transplant waitlist statistics during 2018-2021 in this region.

**Kidney Transplant Waitlist for Incident Patients:** The 2020 Standardized Waitlist Ratio (SWR) in this region is 1.13, which is 13% more patients waitlisted or living donor transplants than expected in this region. See **Table 5** of this profile for additional transplant waitlist statistics during 2018-2020 in this region.

**Influenza Vaccination:** On December 31, 2021, 79% of all patients treated in this region were vaccinated against influenza between August 1 and December 31, 2021, compared to 78% nationally. This difference is statistically significant ( $p < 0.05$ ) and is unlikely to be due to random chance. See **Table 6** of this profile for more information about vaccinated patients during 2018-2021 in this region.

**Anemia Management:** In 2021, 22.7% of eligible hemodialysis patient-months in this region had a hemoglobin value below 10 g/dL, compared to 23.0% nationally. In 2021, 21.7% of eligible peritoneal dialysis patient-months had a hemoglobin value below 10 g/dL, compared to 22.0% nationally. See **Table 7** of this profile for additional anemia management statistics in this region during 2018-2021.

**Dialysis Adequacy:** Of the eligible hemodialysis patient-months in this region in 2021, 97% had a Kt/V  $\geq 1.2$ , compared to 97% nationally. Of the eligible peritoneal dialysis patient-months in this region in 2021, 92% had a Kt/V  $\geq 1.7$ , compared to 92% nationally. See **Table 8** of this profile for more information on dialysis during 2018-2021 in this region.

**Mineral Metabolism:** In 2021, 16% of eligible patient-months in this region had a serum phosphorus value  $>7.0$  mg/dL, compared to 16% nationally. Also in 2021, 1.2% of eligible patient-months in this region had a calcium uncorrected value  $>10.2$  mg/dL, compared to 1.2% nationally. See **Table 9** of this profile for more mineral metabolism summaries in this region during 2018-2021.

**Vascular Access:** In 2021, 13% of the incident hemodialysis patients in this region had an arteriovenous (AV) fistula in use, compared to 12% in the nation. This region's 2021 Standardized Fistula Rate (SFR) for prevalent patients is 62%, which is 2% higher than the national SFR. Of the prevalent patients receiving hemodialysis treatment in this region, the long-term catheter rate was 15%, compared to 15% nationally. See **Table 10** of this profile for additional information about vascular access in this region during 2018-2021.

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# Region Profile for FY 2023 for Dialysis Patients and Facilities

## REGION SAMPLE

The tables below provide updates of COVID-19 patient counts, deaths, and hospitalizations among Medicare dialysis patients (Table C1) and Medicare nursing home (NH) dialysis patients (Table C2) in 2020 and 2021 Q1-Q4. National averages for 2021 Q4 are reported for comparison.

**TABLE C1. COVID among Medicare Dialysis Patients, 2020-21** <sup>\*1</sup>

		This Region 2021					United States 2021
	Measure Name	2020	Q1: Jan-Mar	Q2: Apr-Jun	Q3: Jul-Sep	Q4: Oct-Dec	Q4: Oct-Dec
1	Medicare dialysis patients treated during the quarter (n)	54,312	43,516	42,967	42,509	41,052	406,304
2	Patients ever infected with COVID [prior to or during current quarter] (n)	6,177	6,641	6,130	6,880	7,533	74,613
	Patients ever infected with COVID (% of 1)	11.1	14.5	13.8	15.4	18.0	18.4
3	Patients initially infected with COVID in current quarter (n)	6,131	2,261	500	1,275	1,327	13,191
	Patients initially infected with COVID in current quarter (% of 1)	11.0	4.6	1.2	2.6	3.6	3.2
<b>Deaths among Medicare patients</b>							
4	Deaths (n)	9,087	2,440	1,890	2,108	2,153	21,537
5	Deaths among patients ever infected with COVID (n)	1,573	885	422	549	583	5,828
	Deaths among patients ever infected with COVID (% of 4)	16.5	32.6	20.7	23.6	26.6	27.1
<b>Hospitalizations <sup>*2</sup> among Medicare patients</b>							
6	Hospitalizations (n)	31,826	12,533	11,880	11,459	10,627	105,689
7	Hospitalizations among patients ever infected with COVID (n)	5,373	3,382	2,284	2,707	2,993	29,785
	Hospitalizations among patients ever infected with COVID (% of 6)	16.4	25.1	18.3	21.9	27.8	28.2

**TABLE C2. COVID among Medicare Dialysis Patients Treated in Nursing Home (NH) Facilities, 2020-21** <sup>\*1</sup>

		This Region 2021					United States 2021
	Measure Name	2020	Q1: Jan-Mar	Q2: Apr-Jun	Q3: Jul-Sep	Q4: Oct-Dec	Q4: Oct-Dec
1	Medicare NH dialysis patients treated during the quarter (n)	9,701	6,334	6,155	5,922	5,559	55,288
2	Patients ever infected with COVID [prior to or during current quarter] (n)	2,430	2,154	1,731	1,718	1,783	17,749
	Patients ever infected with COVID (% of 1)	23.9	31.9	26.5	27.1	30.7	32.1
3	Patients initially infected with COVID in current quarter (n)	2,410	615	119	258	293	2,925
	Patients initially infected with COVID in current quarter (% of 1)	23.7	8.6	1.8	3.8	5.4	5.3
<b>Deaths among Medicare NH patients</b>							
4	Deaths (n)	3,300	835	662	687	664	6,653
5	Deaths among patients ever infected with COVID (n)	752	362	197	207	219	2,186
	Deaths among patients ever infected with COVID (% of 4)	21.7	40.4	27.7	27.7	31.1	32.9
<b>Hospitalizations <sup>*2</sup> among Medicare NH patients</b>							
6	Hospitalizations (n)	8,294	3,311	3,075	2,909	2,643	26,340
7	Hospitalizations among patients ever infected with COVID (n)	2,191	1,252	836	865	942	9,400
	Hospitalizations among patients ever infected with COVID (% of 6)	25.2	35.2	25.3	27.5	34.5	35.7

[\*1] Includes patients with Medicare as primary insurer or with a Medicare Advantage plan. Table C2 includes patients who were treated in a nursing home at least one day during the quarter. See *Guide, Section XVII*.

[\*2] Hospitalization is defined as having at least one day in a hospital from Medicare inpatient claims during the reporting period.

Region Profile for FY 2023 for Dialysis Patients and Facilities  
REGION SAMPLE

**TABLE 1: Summaries for All Dialysis Patients Treated as of December 31<sup>st</sup> of each Year<sup>\*1</sup>, 2018-2021**

		This Region				United States
	Measure Name	2018	2019	2020	2021	2021
1a	Patients treated on 12/31 of year (n)	47,787	48,819	47,724	45,683	456,826
1b	Average age (years)	62.6	62.8	62.9	63.1	63.0
1c	Age (% of 1a; sums to 100%)					
	< 18	0.3	0.2	0.3	0.2	0.2
	18-64	51.6	50.7	50.4	49.4	50.2
	65+	48.1	49.1	49.3	50.4	49.6
1d	Female (% of 1a)	42.3	42.1	42.0	41.9	42.3
1e	Race (% of 1a; sums to 100%) <sup>*2</sup>					
	African American	28.5	28.3	28.6	28.6	34.7
	Asian/Pacific Islander	5.8	6.0	6.2	6.5	6.8
	Native American	1.8	1.9	1.9	1.9	1.2
	White	63.6	63.6	63.1	62.7	57.0
	Other/Unknown/Missing	0.2	0.2	0.2	0.3	0.3
1f	Ethnicity (% of 1a; sums to 100%)					
	Hispanic	17.2	17.3	17.5	17.6	19.3
	Non-Hispanic	82.7	82.6	82.4	82.3	80.5
	Unknown	0.1	0.1	0.1	0.2	0.2
1g	Cause of ESRD (% of 1a; sums to 100%)					
	Diabetes	46.5	46.9	46.4	45.8	45.6
	Hypertension	26.9	26.9	27.0	27.2	30.3
	Glomerulonephritis	11.6	11.2	11.0	10.7	9.5
	Other/Unknown	14.7	14.7	15.2	15.8	14.1
	Missing	0.3	0.3	0.4	0.5	0.6
1h	Average duration of ESRD (years)	4.9	4.9	5.0	5.0	5.0
1i	Years since start of ESRD (% of 1a; sums to 100%)					
	<1	16.3	16.5	16.0	16.9	16.7
	1-2	17.6	17.4	17.7	17.2	16.9
	2-3	14.0	14.0	13.9	13.9	13.8
	3-6	26.1	26.0	26.1	25.6	25.6
	6+	26.2	26.1	26.4	26.4	27.1
1j	Nursing facility patients <sup>*3</sup> (% of 1a)	16.0	15.9	12.9	16.7	16.1
1k	Modality (% of 1a; sums to 100%) <sup>*4</sup>					
	In-center hemodialysis	86.5	85.6	84.3	83.6	84.1
	Home hemodialysis	2.0	2.3	2.7	3.0	3.0
	Continuous ambulatory peritoneal dialysis	1.5	1.5	1.5	1.4	1.4
	Continuous cycling peritoneal dialysis	9.8	10.3	11.0	11.5	11.2
	Other modality	0.3	0.3	0.4	0.4	0.4

n/a = not applicable.

[\*1] See *Guide, Section IV*.

[\*2] 'Asian' includes Indian sub-continent. 'Native American' includes Alaskan Native. 'White' includes Middle Eastern and Arab.

[\*3] Includes patients who were treated at a nursing facility at any time during the year. The source of nursing facility history of patients is the Nursing Home Minimum Dataset.

[\*4] Other modality includes other dialysis, uncertain modality, and patients not on dialysis but still temporarily assigned to the facility (discontinued dialysis, recovered renal function, and lost to follow up).

Region Profile for FY 2023 for Dialysis Patients and Facilities  
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**TABLE 2: Characteristics of New Dialysis Patients <sup>\*1</sup>, 2018-2021 (Form CMS-2728)**

		This Region				United States
Measure Name		2018	2019	2020	2021	2021
<b>Patient Characteristics</b>						
2a	Total number of patients with forms (n)	12,120	12,310	11,855	11,890	118,896
2b	Age (average years [0-95]) <sup>*2</sup>	63.8	63.8	63.8	64.3	64.2
2c	Female (% of 2a)	41.2	41.2	41.0	41.3	42.1
2d	Race <sup>*3</sup> (% of 2a; sums to 100%)					
	African American	21.1	21.5	23.0	22.6	28.4
	Asian/Pacific Islander	5.5	5.7	6.0	6.2	6.3
	Native American	1.7	1.7	1.8	1.8	1.2
	White	71.6	70.9	68.9	69.0	63.8
	Other/Unknown/Missing	0.2	0.2	0.2	0.3	0.4
2e	Hispanic (% of 2a)	14.3	14.9	15.2	15.3	16.8
2f	Primary cause of ESRD (% of 2a; sums to 100%)					
	Diabetes	49.2	48.7	47.6	46.7	46.2
	Hypertension	27.0	26.4	26.7	27.3	30.4
	Glomerulonephritis	7.9	7.5	7.3	6.8	5.8
	Other/Missing	15.9	17.5	18.3	19.2	17.6
2g	Medical Coverage <sup>*4</sup> (% of 2a; sums to 100%)					
	Employer group only	12.5	12.5	12.6	11.7	11.5
	Medicare only	33.2	33.1	36.0	45.0	46.1
	Medicaid only	13.0	13.6	13.8	13.9	13.5
	Medicare and Medicaid only	12.4	11.9	11.1	7.7	7.5
	Medicare and Other	17.8	17.5	14.9	9.4	8.4
	Other/Unknown	7.6	7.8	8.2	9.3	9.2
	None	3.5	3.5	3.4	3.0	3.9
2h	Body Mass Index <sup>*5</sup> (Median; Weight/Height^2)					
	Male	28.2	28.2	28.1	28.2	28.1
	Female	29.2	29.1	29.3	29.2	29.1
2i	Employment <sup>*6</sup> (% of 2a)					
	Six months prior to ESRD treatment	36.8	37.7	37.4	36.1	34.6
	At first ESRD treatment	27.2	27.1	26.3	26.7	24.7
2j	Primary Modality (% of 2a; sums to 100%)					
	Hemodialysis	88.0	87.4	86.2	86.0	86.6
	CAPD/CCPD	12.0	12.6	13.8	14.0	13.4
	Other/Unknown/Missing	0.0	0.0	0.0	0.0	0.0
2k	Number of incident hemodialysis patients (n)	10,723	10,822	10,274	10,292	102,921
2l	Access used at first outpatient dialysis (% of 2k; sums to 100%)					
	Arteriovenous fistula	17.8	16.8	15.3	13.8	12.3
	Arteriovenous graft	3.0	2.9	2.6	2.5	2.4
	Catheter	79.0	80.0	81.9	83.5	85.0
	Other/Unknown/Missing	0.2	0.3	0.3	0.3	0.3
2m	Arteriovenous fistulae placed (% of 2k) <sup>*7</sup>	32.8	30.2	27.0	24.9	22.8

(continued)

Region Profile for FY 2023 for Dialysis Patients and Facilities  
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**TABLE 2 (continued): Characteristics of New Dialysis Patients<sup>\*1</sup>, 2018-2021 (Form CMS-2728)**

	Measure Name	This Region				United States
		2018	2019	2020	2021	2021
	<b>Average Lab Values Prior to Dialysis<sup>*2</sup></b>					
2n	Hemoglobin (g/dL [5-20])	9.4	9.4	9.4	9.4	9.4
2o	Serum Albumin (g/dL [0.8-6.0])	3.3	3.3	3.4	3.4	3.4
2p	Serum Creatinine (mg/dL [0-33])	6.3	6.3	6.4	6.4	6.4
2q	GFR (ml/min [0-30])	10.7	10.8	10.6	10.7	10.7
	<b>Care Prior to ESRD Therapy</b>					
2r	Received ESA prior to ESRD (% of 2a)	16.2	17.0	16.7	16.6	15.7
2s	Pre-ESRD nephrologist care (% of 2a; sums to 100%)					
	No	17.2	15.5	15.4	15.6	16.3
	Yes, <6 months	15.0	16.2	17.1	17.7	18.1
	Yes, 6-12 months	20.5	20.4	19.6	19.1	19.0
	Yes, >12 months	35.8	35.5	34.6	33.6	30.4
	Unknown	11.7	12.3	13.2	14.1	16.2
2t	Informed of transplant options (% of 2a)	86.4	82.7	82.8	89.8	90.9
2u	Patients not informed of transplant options (n)	1,452	1,971	1,899	1,080	10,803
2v	Reason not informed (% of 2u; may not sum to 100%) <sup>*8</sup>					
	Medically unfit	23.3	14.4	16.5	39.5	37.1
	Unsuitable due to age	22.0	13.7	9.5	0.0	0.0
	Psychologically unfit	2.6	1.5	1.0	0.0	0.0
	Patient declined information	1.5	1.1	1.2	8.0	8.2
	Patient has not been assessed	47.6	67.1	63.7	51.1	53.3
	<b>Comorbid Conditions</b>					
2w	Pre-existing Comorbidity (% yes of 2a)					
	Congestive heart failure	29.1	29.4	28.2	27.7	27.2
	Atherosclerotic heart disease <sup>*9</sup>	14.1	13.8	13.4	12.9	11.7
	Other cardiac disorder <sup>*9</sup>	20.8	21.5	21.0	21.7	21.0
	CVD, CVA, TIA	8.6	8.9	8.7	8.3	8.5
	Peripheral vascular disease	10.0	10.0	9.2	8.6	8.0
	History of hypertension	87.8	87.7	87.5	87.2	88.0
	Diabetes <sup>*9</sup>	64.1	63.9	63.6	63.6	64.3
	Diabetes on insulin	43.5	43.7	42.7	42.2	42.3
	COPD	9.4	9.4	9.0	8.6	8.4
	Current smoker	7.0	7.1	6.9	6.8	6.6
	Cancer	7.7	7.8	7.6	7.4	6.9
	Alcohol dependence	1.8	1.9	2.0	1.9	1.7
	Drug dependence	1.5	1.7	1.8	1.7	1.6
	Inability to ambulate	6.7	6.5	6.1	6.0	6.5
	Inability to transfer	3.5	3.2	3.2	3.2	3.5
2x	Average number of comorbid conditions	3.2	3.2	3.1	3.1	3.1

n/a= not applicable.

[\*1] See *Guide, Section V*.

[\*2] For continuous variables, all summaries are computed based only on responses in range indicated in brackets for the variable.

[\*3] 'Asian' includes Indian sub-continent. 'Native American' includes Alaskan Native. 'White' includes Middle Eastern and Arab.

[\*4] 'Medicare and Other' excludes patients with Medicare and Medicaid only. 'Other/Unknown' includes patients with unknown status and patients receiving medical benefits under other health insurance plans or plans that are not covered in the categories above.

[\*5] The median BMI is computed for adult patients at least 20 years old with height, weight, and BMI values in acceptable ranges. Acceptable range for height, weight, and BMI are 122-208cm, 32-318 kg and 10-55 respectively.

[\*6] Full-time, part-time, or student (% of 18-60 year olds).

[\*7] Includes all patients with AV fistulae, regardless of whether they recieved their hemodialysis treatments using their fistulae.

[\*8] Values may not sum to exactly 100% because of patients for which multiple reasons are selected, or when other or no reason is selected.

[\*9] 'Atherosclerotic heart disease' includes ischemic heart disease (coronary artery disease) and myocardial infarction. 'Other cardiac disorder' includes cardiac arrest, cardiac dysrhythmia, and pericarditis. 'Diabetes' includes patients with diabetes as the primary cause of ESRD.

Region Profile for FY 2023 for Dialysis Patients and Facilities  
REGION SAMPLE

**TABLE 3: Mortality Summary for All Dialysis Patients (2018-2021) ^ & New Dialysis Patients (2018-2020) \*1 ^**

		This Region				United States
Measure Name		2018	2019	2020 ^	2021	2021
<b>All Dialysis Patients</b>						
3a	Patients (n=number)	66,075	67,574	66,989	66,530	736,146
3b	Patient years (PY) at risk (n)	47,350	48,330	32,340	46,990	480,484
3c	Deaths (n)	8,213	8,286	6,648	9,763	102,478
3d	Expected deaths (n)	8,370	8,513	6,532	10,248	105,164
3e	Withdrawal from dialysis prior to death (% of 3c)	30.9	31.4	27.1	24.6	20.2
3f	Deaths due to infections (% of 3c)	11.5	10.9	11.3	10.8	9.9
3g	Deaths due to cardiac causes (% of 3c)	45.1	46.3	43.7	41.7	42.1
3h	Deaths due to liver disease (% of 3c)	1.5	1.6	1.4	1.3	1.2
3i	Dialysis unrelated deaths *2 (n; excluded from SMR)	54	57	40	53	536
3j	Standardized Mortality Ratio (SMR; 3c /3d )	0.96	0.95	0.99	0.93	0.97
3k	P-value *3	.	.	.	<0.01	n/a
<b>New Dialysis Patients</b>		<b>2018</b>	<b>2019 ^</b>	<b>2020 ^</b>		<b>2020 ^</b>
3l	Patients (n=number)	12,120	12,310	11,855		118,554
3m	Patient years (PY) at risk (n)	10,786	8,708	6,596		65,962
3n	Deaths (n)	2,131	1,744	1,910		19,103
3o	Expected deaths (n)	2,129	1,732	1,915		19,151
3p	Withdrawal from dialysis prior to death (% of 3n)	33.2	33.0	26.4		22.9
3q	Deaths due to infections (% of 3n)	10.2	9.9	10.1		9.3
3r	Deaths due to cardiac causes (% of 3n)	41.2	41.1	37.8		39.2
3s	Deaths due to liver disease (% of 3n)	2.7	3.0	2.3		2.1
3t	Standardized Mortality Ratio (SMR; 3n /3o )	0.97	0.98	0.96		0.99
3u	P-value *3	.	.	.		n/a

n/a = not applicable.

[^] Data from March through June 2020 are excluded from all calculations due to data exceptions.

[\*1] See *Guide, Section VI*.

[\*2] Defined as deaths due to street drugs and accidents unrelated to treatment.

[\*3] Ratios within the range 0.95 to 1.05 will not have a p-value. A p-value  $\geq 0.05$  indicates that the ratio is  $>1.05$  or  $<0.95$  plausibly due to random chance.



**TABLE 4: Hospitalization Summary for Medicare Dialysis Patients <sup>\*1</sup>, 2018-2021 <sup>^</sup>**

		This Region				United States
Measure Name		2018	2019	2020 <sup>^</sup>	2021	2021
<b>Medicare Dialysis Patients</b>						
4a	Medicare dialysis patients (n)	54,889	56,381	55,234	53,387	587,812
4b	Patient years (PY) at risk (n)	38,444	39,219	26,263	37,441	380,277
<b>Days Hospitalized Statistics</b>						
4c	Total days hospitalized (n)	431,880	433,280	298,180	410,699	4,362,793
4d	Expected days hospitalized (n)	445,887	448,600	309,516	424,930	4,341,747
4e	Standardized Hospitalization Ratio for Days (4c/4d)	0.93	0.92	0.92	0.93	1.00
4f	P-value <sup>*2</sup>	0.056	0.125	0.101	0.083	n/a
<b>Admission Statistics</b>						
4g	Total admissions (n)	59,640	60,169	39,413	52,961	544,949
4h	Expected total admissions (n)	60,049	60,621	39,697	53,366	545,027
4i	Standardized Hospitalization Ratio for Admissions (4g/4h)	0.97	0.96	0.96	0.97	0.99
4j	P-value <sup>*2</sup>	.	.	.	.	n/a
4k	Patients with septicemia (% of 4a)	12.7	12.4	13.2	12.4	12.0
4l	One day admissions (% of 4g)	9.7	9.6	9.1	8.8	8.6
4m	Average length of stay (days per admission)	7.1	7.0	7.5	7.6	8.0
4n	Admissions that originate in the ED (% of 4g)	81.9	82.3	83.3	84.1	85.6
<b>Emergency Department (ED) Statistics</b>						
4o	Total ED visits (n)	94,202	94,418	57,261	64,956	669,587
4p	Expected total ED visits (n)	95,144	95,522	58,082	66,125	672,416
4q	Standardized Hospitalization Ratio for ED (4n/4o)	0.97	0.97	0.97	0.97	0.99
4r	P-value <sup>*2</sup>	.	.	.	.	n/a
4s	Medicare <sup>*3</sup> dialysis patients with ED visit (%)	65.2	64.5	54.4	62.7	59.0
4t	ED visits that result in hospitalization (% of 4o)	42.3	42.2	44.1	44.3	45.9
<b>Readmission Statistics</b>						
4u	Index discharges (n)	54,491	53,824	29,504	45,143	451,431
4v	Total readmissions (n)	14,344	14,256	7,927	11,884	118,840
4w	Expected total readmissions (n)	13,849	13,759	7,586	11,458	114,581
4x	Standardized Readmission Ratio (SRR; 4v/4w)	1.01	1.01	1.02	1.01	1.03

n/a = not applicable.

[^] Data from March through June 2020 are excluded from all calculations due to data exceptions. Readmission Statistics are further limited to index discharges between January 1-30, 2020 and between July-December, 2020.

[\*1] The ED statistics include patients with Medicare as primary insurer and exclude patients with Medicare Advantage plans. All other summaries include patients with Medicare as primary insurer or with a Medicare Advantage plan; see *Guide, Section VII*.

[\*2] Ratios within the range 0.95 to 1.05 will not have a p-value. A p-value  $\geq 0.05$  indicates that the ratio is  $>1.05$  or  $<0.95$  plausibly due to random chance.

[\*3] Medicare Advantage patients are excluded from this summary.

**TABLE 5: Transplantation and Waitlist Summary for All Dialysis Patients (2018-2021<sup>^</sup>) & New Dialysis Patients (2018-2020<sup>^</sup>) under Age 75<sup>\*1</sup>**

		This Region				United States
Measure Name		2018	2019	2020 <sup>^</sup>	2021	2021
<b>Transplantation: All Transplants</b>						
5a	Eligible patients (n)	52,428	53,307	52,747	52,242	579,504
5b	Transplants (n)	1,666	1,832	1,249	1,905	19,246
<b>Transplantation: First Transplants</b>						
5c	Eligible patients (n)	48,765	49,626	49,132	48,738	538,613
5d	Patient years (PY) at risk (n)	35,110	35,652	23,693	34,563	353,559
5e	Actual 1st transplants <sup>*2</sup> (n)	1,476	1,625	1,115	1,695	17,106
5f	Expected 1st transplants (n)	1,450	1,609	1,114	1,674	17,137
5g	Standardized Transplantation Ratio (STR; 5e/5f)	1.16	1.15	1.12	1.11	0.99
5h	P-value <sup>*3</sup>	0.034	<0.01	0.034	0.023	n/a
<b>Waitlist: All Dialysis Patients</b>						
5i	Eligible patients (n)	52,180	53,195	50,435	50,604	506,042
5j	Patient-months at risk (n) <sup>*4</sup>	439,666	446,398	291,582	420,869	4,208,691
5k	Patient-months on the waitlist (% of 5j) <sup>*4</sup>	19.8	19.1	18.6	18.4	17.7
5l	Patient-months on the waitlist by subgroup (%) <sup>*4 *5</sup>					
	Age < 40	30.6	30.0	29.0	28.4	27.3
	Age 40-74	18.6	17.9	17.5	17.3	16.6
	Male	21.0	20.2	19.7	19.5	18.8
	Female	18.1	17.5	17.0	16.9	16.0
	African American	19.8	19.0	18.4	18.3	16.7
	Asian/Pacific Islander	29.0	27.7	26.6	26.1	25.9
	Native American	16.3	15.4	15.3	15.3	10.4
	White, Hispanic	20.5	19.6	18.9	18.4	19.0
	White, Non-Hispanic	19.2	18.4	18.0	17.8	16.8
	Other/Unknown race	22.1	21.9	19.3	18.5	17.7
	Diabetes	15.7	15.2	15.0	14.9	14.6
	Non-diabetes	23.5	22.5	21.7	21.4	20.3
	Previous kidney transplant	32.7	31.6	30.8	30.8	30.7
	No previous kidney transplant	18.7	18.0	17.6	17.4	16.7
	<2 years since start of ESRD	15.5	15.3	15.3	15.1	13.4
	2-4 years since start of ESRD	24.6	23.7	23.1	22.9	22.6
	5+ years since start of ESRD	20.0	18.7	18.0	17.8	17.9
5m	Age-adjusted percentage of patient-months waitlisted	19.7	18.9	18.4	18.4	17.2
<b>Waitlist: New Dialysis Patients</b>		<b>2018</b>	<b>2019<sup>^</sup></b>	<b>2020<sup>^</sup></b>		<b>2020<sup>^</sup></b>
5n	Eligible Patients (n)	7,800	7,937	7,559		75,588
5o	Patient-years (PY) at risk (n)	6,954	5,637	5,975		59,750
5p	First waitlist events (n) <sup>*6</sup>	763	572	611		6,111
5q	Expected 1st waitlist events (n) <sup>*6</sup>	726	588	632		6,318
5r	Standardized Waitlist Ratio (SWR; 5p/5q) <sup>*6</sup>	1.17	1.10	1.13		0.96
5s	P-value <sup>*3</sup>	0.133	0.071	0.071		n/a

n/a = not applicable.

[^] Data from March through June 2020 are excluded from all calculations due to data exceptions.

[\*1] See *Guide Section VIII (Transplantation) and Section IX (Waitlist)*.

[\*2] Among first transplants that occurred after the start of dialysis from 2018-2021, 3.9% of transplants in the U.S. were not included because the transplant occurred less than 91 days after the start of ESRD and 0.9% because the patient was not assigned to a facility at time of transplant.

[\*3] Ratios within the range 0.95 to 1.05 will not have a p-value. A p-value greater than or equal to 0.05 indicates that the standardized ratio is greater than 1.05 or less than 0.95 plausibly due to random chance.

[\*4] A patient may be counted up to 12 times per year.

[\*5] The waitlist percentage for each subgroup is calculated as a rate of waitlisted patient-months to patient-months at risk in each subgroup. A missing value indicates that there were no eligible patients in the subgroup.

[\*6] An event is defined as a waitlisting or living-donor transplant.

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**TABLE 6: Influenza Vaccination Summary All Dialysis Patients<sup>\*1</sup>, Flu Seasons during August 2018-December 2021<sup>^</sup>**

Measure Name		This Region				United States
		2018	2019 <sup>^</sup>	2020	2021	2021
6a	Eligible patients on 12/31 (n)	50,951	51,923	50,659	48,520	485,195
6b	Patients excluded due to medical contraindication (n)	428	464	505	497	4,973
<b>Full Flu Season (Aug. 1-Mar. 31 of following year)</b>						<b>2020</b>
6c	Patients vaccinated (% of 6a)	82.3	82.4	83.7		83.0
6d	P-value <sup>*2</sup> (for 6c compared to U.S. value) <sup>*3</sup>	<0.01	<0.01	<0.01		n/a
6e	Reason for no vaccination (% of 6a)					
	Declined vaccination	6.8	6.2	6.7		7.0
	Outside vaccination reported but no documentation	0.3	0.3	0.2		0.2
	Other reason or vaccine data not available	4.0	4.7	3.6		3.8
<b>Half Flu Season (Aug. 1-Dec. 31)</b>						<b>2021</b>
6f	Patients vaccinated (% of 6a)	81.6	81.4	83.3	79.4	78.2
6g	P-value <sup>*2</sup> (for 6f compared to U.S. value) <sup>*4</sup>	<0.01	<0.01	<0.01	0.031	n/a
6f	Patients vaccinated by subgroup (%) <sup>*5</sup>					
	Medicare	82.3	82.1	84.1	80.7	79.4
	Medicare Advantage	83.3	83.1	85.2	81.9	80.6
	Medicare as primary insurer	82.1	82.1	83.9	80.2	78.9
	Medicare as secondary insurer	81.4	80.7	83.3	79.2	77.5
	Non-Medicare	77.1	76.3	77.8	71.9	70.8
	Dual Medicare/Medicaid eligible	81.3	81.1	82.4	78.7	77.6
	Age < 18	80.8	77.6	80.5	67.2	68.1
	Age 18-39	76.3	76.0	75.6	68.9	67.3
	Age 40-64	80.6	80.1	81.8	77.4	76.2
	Age 65-74	82.8	82.6	84.8	81.5	80.5
	Age 75+	84.1	84.3	87.0	83.7	82.5
	Male	81.6	81.4	83.3	79.2	78.0
	Female	81.7	81.5	83.4	79.6	78.3
	African American	78.0	77.3	78.4	74.3	73.2
	Asian/Pacific Islander	83.7	83.8	87.1	82.5	82.9
	Native American	78.7	82.5	83.0	76.8	80.8
	White	83.1	83.1	85.2	81.3	80.5
	Other/unknown race	69.0	65.5	63.3	61.7	62.2
	Hispanic	83.8	83.4	85.5	81.7	81.6
	< 1 year since start of ESRD	75.1	74.6	76.5	69.9	68.1
	1-2 years since start of ESRD	82.5	82.3	84.2	80.5	79.1
	3+ years since start of ESRD	83.9	83.8	85.6	82.9	81.8

n/a = not applicable

[^] Data from January through March 2020 are excluded from all calculations due to data exceptions.

[\*1] All Dialysis Patients are those treated on December 31; see Guide, Section VIII.

[\*2] A p-value greater than or equal to 0.05 indicates that the difference between percent of patients vaccinated at the region and national percentage is plausibly due to random chance.

[\*3] Compared to the U.S. value for that year and time period (08/01-03/31): 81% (2018), 82% (2019), 83% (2020).

[\*4] Compared to the U.S. value for that year and time period (08/01-12/31): 81% (2018), 81% (2019), 83% (2020), 78% (2021).

[\*5] A missing value indicates that there were no eligible patients in the subgroup.

**TABLE 7: Anemia Management Summaries for Adult Dialysis Patients <sup>\*1</sup>, 2018-2021 <sup>^</sup>**

		This Region				United States
Measure Name		2018	2019	2020 <sup>^</sup>	2021	2021
<b>Hemoglobin and ESA for Adult Hemodialysis (HD) Patients</b>						
7a	Eligible HD patients (n)	51,954	52,891	46,701	51,372	507,953
7b	Eligible HD patient-months (n) <sup>*2</sup>	489,811	496,591	245,314	473,468	4,734,675
7c	Average hemoglobin <sup>*3</sup> (g/dL) (average of 7b)	10.8	10.8	10.8	10.8	10.7
7d	Hemoglobin categories (% of 7b; sums to 100%)					
	<10 g/dL	21.6	22.3	21.8	22.7	23.0
	10-<11 g/dL	34.7	35.0	33.6	34.1	34.3
	11-12 g/dL	29.5	29.1	29.4	28.5	28.4
	>12 g/dL	12.5	12.2	13.7	12.7	12.2
	Missing/Out of range	1.7	1.4	1.5	2.0	2.2
7e	ESA prescribed (% of 7b)	74.4	75.2	74.9	75.7	76.2
<b>Hemoglobin and ESA for Adult Peritoneal Dialysis (PD) Patients</b>						
7f	Eligible PD patients (n)	6,833	7,385	6,660	8,111	80,234
7g	Eligible PD patient-months (n) <sup>*2</sup>	55,970	59,830	32,335	64,879	648,786
7h	Average hemoglobin <sup>*3</sup> (g/dL) (average of 7g)	10.9	10.9	11.0	11.0	11.0
7i	Hemoglobin categories (% of 7g; sums to 100%)					
	<10 g/dL	23.0	23.1	22.0	21.7	22.0
	10-<11 g/dL	29.1	29.1	28.2	28.0	28.4
	11-12 g/dL	25.9	26.1	26.7	26.6	26.5
	>12 g/dL	18.9	18.8	20.3	20.6	19.7
	Missing/Out of range	3.0	2.8	2.8	3.2	3.3
7j	ESA prescribed (% of 7g)	56.0	55.5	54.7	53.8	54.6
<b>Standardized Transfusion Ratio (STrR)</b>		<b>2018</b>	<b>2019</b>	<b>2020 <sup>^</sup></b>	<b>2021</b>	<b>2021</b>
7k	Adult Medicare patients (n)	36,417	36,598	34,397	28,236	308,428
7l	Patient years (PY) at risk (n)	23,261	23,106	15,033	17,331	175,514
7m	Total transfusions (n)	7,522	7,166	5,026	5,885	61,640
7n	Expected total transfusions (n)	7,694	7,383	5,177	6,076	61,653
7o	Standardized Transfusion Ratio <sup>*4</sup>	0.92	0.92	0.91	0.92	0.99
7p	P-value <sup>*5</sup>	0.139	0.098	0.092	0.057	n/a

n/a = not applicable.

[<sup>^</sup>] Data from January through June 2020 are excluded from hemoglobin and ESA summaries and data from March through June 2020 are excluded from STrR calculations due to data exceptions.

[\*1] See *Guide, Section XI*. Transfusion summaries include adult Medicare Dialysis Patients only.

[\*2] Patients may be counted up to 12 times per year.

[\*3] Based on in-range values; see *Guide* for range values.

[\*4] Calculated as a ratio of observed transfusions to expected transfusions (7m to 7n); not shown if there are fewer than 10 patient-years at risk for transfusions.

[\*5] Ratios within the range 0.95 to 1.05 will not have a p-value. A p-value greater than or equal to 0.05 indicates that the standardized ratio is greater than 1.05 or less than 0.95 plausibly due to random chance.

**TABLE 8: Dialysis Adequacy Summaries for All Dialysis Patients <sup>\*1</sup>, 2018-2021 <sup>^</sup>**

		This Region				United States
Measure Name		2018	2019	2020 <sup>^</sup>	2021	2021
<b>Adult Hemodialysis (HD) Adequacy</b>						
8a	Eligible HD patients (n)	51,954	52,891	46,701	51,372	507,953
8b	Eligible HD patient-months (n) <sup>*2</sup>	489,811	496,591	245,314	473,468	4,734,675
8c	Average serum albumin (g/dL) (average of 8b)	3.8	4.2	3.9	3.9	3.9
8d	Serum albumin categories (% of 8b; sums to 100%)					
	< 3.0 g/dL	3.2	2.5	2.4	2.2	2.2
	3.0-<3.5 g/dL	12.8	10.4	10.0	9.1	9.0
	3.5-<4.0 g/dL	46.3	42.9	41.8	37.8	37.6
	>=4.0 g/dL	35.3	41.8	43.2	48.1	48.1
	Missing	2.4	2.3	2.5	2.9	3.1
8e	Ultrafiltration rate average <sup>*3</sup> (ml/kg/hr) (average of 8b)	7.6	7.5	7.6	7.6	7.7
8f	Ultrafiltration rate categories (% of 8b; sums to 100%)					
	<=13 (ml/kg/hr)	84.9	85.6	86.9	87.5	87.1
	>13 (ml/kg/hr)	8.1	7.5	7.6	7.4	7.7
	Missing/Out of range	7.0	7.0	5.5	5.1	5.2
8g	Eligible HD Kt/V patients (n) <sup>*4</sup>	49,828	51,040	44,119	43,310	429,966
8h	Eligible HD Kt/V patient-months (n) <sup>*2 *4</sup>	467,388	474,608	229,585	406,758	4,067,578
8i	Average Kt/V (average of 8h) <sup>*3 *4</sup>	1.6	1.7	1.6	1.6	1.6
8j	Kt/V categories (% of 8h; sums to 100%) <sup>*4</sup>					
	<1.2	1.9	1.5	1.5	1.5	1.5
	1.2-<1.8	71.5	69.9	70.1	70.8	71.7
	>=1.8	25.3	27.3	27.3	26.5	25.5
	Missing/Out of range	1.3	1.2	1.1	1.2	1.3
<b>Adult Peritoneal Dialysis (PD) Adequacy</b>						
8k	Eligible PD patients (n)	6,833	7,385	6,660	8,111	80,234
8l	Eligible PD patient-months (n) <sup>*2</sup>	55,970	59,830	32,335	64,879	648,786
8m	Average Weekly Kt/V (average of 8l) <sup>*3 *4</sup>	2.3	2.2	2.2	2.2	2.2
8n	Weekly Kt/V categories (% of 8l; sums to 100%) <sup>*4</sup>					
	<1.7	4.7	5.1	4.7	5.0	4.9
	1.7-<2.5	66.3	67.5	69.2	68.5	68.7
	>=2.5	25.3	23.9	23.4	23.8	23.5
	Missing/Out of range	3.7	3.5	2.7	2.8	2.9
8o	Average serum albumin (g/dL) (average of 8l)	3.5	3.6	3.6	3.7	3.7
8p	Serum Albumin Categories (% of 8l; sums to 100%)					
	< 3.0 g/dL	10.0	7.4	7.4	6.3	6.5
	3.0-<3.5 g/dL	29.2	24.6	24.1	21.5	21.8
	3.5-<4.0 g/dL	42.2	43.3	43.0	41.5	41.2
	>=4.0 g/dL	15.5	21.8	22.7	27.5	27.1
	Missing	3.0	2.8	2.9	3.1	3.3

(continued)

**TABLE 8 (continued): Dialysis Adequacy Summaries for All Dialysis Patients <sup>\*1</sup>, 2018-2021 <sup>^</sup>**

		This Region				United States
Measure Name		2018	2019	2020 <sup>^</sup>	2021	2021
<b>Pediatric Kt/V <sup>*4</sup></b>						
8q	Eligible Pediatric HD patients (n)	73	73	54	47	471
8r	Eligible Pediatric HD patient-months (n) <sup>*2</sup>	516	503	237	355	3,547
8s	Average Kt/V (average of 8r) <sup>*3</sup>	1.7	1.7	1.7	1.8	1.7
8t	Kt/V categories (% of 8r; sums to 100%)					
	<1.2	2.2	2.5	3.2	1.9	2.7
	1.2-<1.8	59.8	58.8	61.8	58.5	59.8
	>= 1.8	32.6	34.4	29.3	31.5	30.3
	Missing/Out of Range	5.4	4.4	5.6	8.1	7.1
8u	Eligible Pediatric PD Patients (n)	94	93	75	84	837
8v	Eligible Pediatric PD patient-months (n) <sup>*2</sup>	677	701	355	620	6,199
8w	Average Weekly Kt/V (average of 8v) <sup>*3</sup>	2.4	2.4	2.4	2.4	2.4
8x	Weekly Kt/V categories (% of 8v; sums to 100%)					
	<1.7	12.2	11.0	12.7	11.6	12.9
	1.7-<2.5	44.2	44.5	46.9	49.3	46.9
	>=2.5	27.2	26.8	31.7	32.4	31.7
	Missing/Out of Range	16.3	17.7	8.7	6.7	8.5

n/a = not applicable.

[^] Data from January through June 2020 are excluded due to data exceptions.

[\*1] See *Guide, Section XII*. Unless otherwise noted, all summaries are based on data reported in EQRS and the patient must be on HD (or PD) for the entire reporting month to be included in patient counts and summaries.

[\*2] Patients may be counted up to 12 times per year.

[\*3] Based on in-range values; see *Guide* for range values.

[\*4] Kt/V summaries are supplemented with Medicare claims if missing in EQRS. HD Kt/V summaries are restricted to patients who dialyze thrice weekly. See section of *Guide* titled *Determination of Thrice Weekly Dialysis* for more information. The most recent value over a 4-month period is selected for PD Kt/V. PD Kt/V values for 2020 were calculated for quarter 4 only due to data exceptions.

**TABLE 9: Mineral Metabolism Summaries for All Adult Dialysis Patients <sup>\*1</sup>, 2018-2021 <sup>^</sup>**

		This Region				United States
	Measure Name	2018	2019	2020 <sup>^</sup>	2021	2021
9a	Eligible adult patients (n) <sup>*2</sup>	57,475	58,807	52,688	57,866	571,816
9b	Eligible adult patient-months (n) <sup>*2 *3</sup>	546,871	557,675	278,330	539,740	5,397,395
9c	Average Phosphorus <sup>*4</sup> (mg/dL) (average <sup>*5</sup> )	5.3	5.4	5.5	5.5	5.5
9d	Phosphorus categories (% of 9b <sup>*5</sup> ; sums to 100%)					
	<3.5 mg/dL	8.1	7.6	7.4	6.9	7.0
	3.5-4.5 mg/dL	24.4	23.6	23.1	22.4	22.3
	4.6-5.5 mg/dL	30.1	30.1	29.6	29.2	29.2
	5.6-7.0 mg/dL	21.6	22.2	22.4	22.7	22.5
	>7.0 mg/dL	13.3	14.3	15.2	15.9	16.0
	Missing/Out of range	2.4	2.2	2.4	2.8	3.0
9e	Average Calcium Uncorrected <sup>*4</sup> (mg/dL) (average of 9b)	8.9	8.9	8.9	8.9	8.9
9f	Calcium Uncorrected categories (% of 9b; sums to 100%)					
	<8.4 mg/dL	17.6	19.6	20.2	18.7	18.4
	8.4-10.2 mg/dL	78.9	77.3	76.6	77.7	77.7
	>10.2 mg/dL	1.3	1.2	1.1	1.2	1.2
	Missing/Out of range	2.2	1.9	2.1	2.5	2.7
9g	Average uncorrected calcium > 10.2 mg/dL (%) <sup>*4 *6</sup>	1.6	1.3	1.7	1.8	1.9

n/a = not applicable.

[^] Includes data reported from July - December 2020 only due to data limitations.

[\*1] See *Guide, Section XIII*. Summaries are based on data reported in EQRS and the patient must be assigned to the facility the entire month to be included.

[\*2] Includes patients on ESRD more than 90 days who switch between HD and PD during the month and patients for whom modality is unknown.

[\*3] Patients may be counted up to 12 times per year.

[\*4] The acceptable range for calcium is 0.1 – 20 mg/dL. Values outside of this range are considered missing, which are counted towards the numerator.

[\*5] Eligible patients included in the phosphours summaries differ slightly from what is reported in 9b since it includes patient-months within the first 90 days of ESRD.

[\*6] Hypercalcemia is averaged from uncorrected serum or plasma calcium values over a rolling 3-month period. Eligible patients included in the hypercalcemia summary differs slightly from what is reported in 9b since patients must be 18 as of the first day of the 3-month period.

**TABLE 10: Vascular Access Information for all Adult Dialysis Patients and Access-Related Infection Summaries for all Medicare Patients<sup>\*1</sup>, 2018-2021<sup>^</sup>**

		This Region				United States
Measure Name		2018	2019	2020 <sup>^</sup>	2021	2021
<b>Vascular Access</b>						
10a	Prevalent adult hemodialysis (HD) patients <sup>*2</sup>	54,864	55,775	48,864	54,147	535,374
10b	Prevalent adult hemodialysis patient months <sup>*2 *3</sup>	510,898	518,177	254,661	493,739	4,937,387
10c	Vascular access type in use (% of 10b; sums to 100%)					
	Arteriovenous fistula	65.2	64.7	63.1	61.8	60.4
	Arteriovenous graft	16.6	16.6	16.1	15.8	17.1
	Catheter	16.6	17.5	19.5	20.4	20.5
	Other/Missing	1.5	1.3	1.3	2.0	2.1
10d	Standardized Fistula Rate (SFR) <sup>*4</sup>	65.4	64.9	63.5	61.9	59.9
10e	Long-Term Catheter Rate <sup>*5</sup>	11.8	12.3	14.4	15.3	15.5
<b>Vascular Access at First Treatment</b>						
10f	Incident adult hemodialysis patients (n)	10,790	10,584	5,533	10,548	105,480
10g	Vascular access type in use (% of 10f; sums to 100%)					
	Arteriovenous fistula	17.4	16.6	14.1	13.1	11.8
	Arteriovenous graft	3.5	3.3	3.0	2.7	2.7
	Catheter	76.7	78.2	80.4	79.9	81.1
	Other/Missing	2.4	1.9	2.5	4.2	4.3
10h	Arteriovenous fistulae in place <sup>*6</sup> (% of 10f)	19.0	17.6	14.8	13.8	12.3
<b>Infection: Peritoneal dialysis (PD)</b>		<b>2018</b>	<b>2019</b>	<b>2020<sup>^</sup></b>	<b>2021</b>	<b>2021</b>
10i	Eligible PD patients (n)	4,904	5,249	5,135	4,430	44,303
10j	Eligible PD patient-months <sup>*3</sup>	36,514	38,056	26,366	32,760	327,602
10k	PD catheter infection rate per 100 PD patient-months <sup>*7</sup>	2.5	2.5	2.5	2.6	2.6
10l	P-value <sup>*8</sup> of 10k (compared to U.S. value <sup>*9</sup> )	0.098	0.169	0.182	0.130	n/a

n/a = not applicable

[^] Data from January through June 2020 are excluded from vascular access summaries and data from March through June 2020 are excluded from infection summaries due to data exceptions.

[\*1] See *Guide, Section XIV*. Vascular Access type is based on data reported in CROWNWeb. For the prevalent summaries (rows 10a-10e), the patient must be assigned to the facility for the entire calendar month to be included. The PD infection summaries are based on Medicare Dialysis claims.

[\*2] Patient months with a catheter that have limited life expectancy, including under hospice care in the current reporting month, or with metastatic cancer, end stage liver disease, coma or anoxic brain injury in the past 12 months, were excluded.

[\*3] Patients may be counted up to 12 times per year.

[\*4] Includes patients with an autogenous arteriovenous (AV) fistula as the sole means of vascular access. SFR is calculated as an adjusted rate of AV fistula in use reported in 10c.

[\*5] Includes patients using a catheter continuously for three months or longer. Patients with other or missing access types (10c) are also counted as catheter in use in the numerator. Long-term catheter rate (10e) values in 2020 were calculated for quarter 4 only due to data limitations.

[\*6] Includes all patients with fistulae, regardless of whether or not they received their hemodialysis treatments using their fistulae.

[\*7] ICD-10 PD catheter infection code for PD patients is T8571XA.

[\*8] A p-value greater than or equal to 0.05 indicates the differences between the percent of patients with infection at the facility and national percentage is plausibly due to random change.

[\*9] Compared to U.S. value for that year: 2.48 (2018), 2.48 (2019), 2.55 (2020), and 2.64 (2021).



**TABLE 11: Comorbidities Reported on Inpatient Medicare Claims for Medicare Dialysis Patients Treated as of December 31<sup>st</sup> of Each Year<sup>\*1</sup>, 2018-2021**

		This Region				United States
Measure Name		2018	2019	2020	2021	2021
11a	Medicare dialysis patients on 12/31(n)	39,396	40,527	39,051	35,957	366,406
11b	Comorbidity (% yes of 11a)					
	<b>Infections</b>					
	AIDS/HIV positive	0.8	0.7	0.7	0.7	0.8
	Intravascular/implanted device-related <sup>*2</sup>	5.0	4.6	4.5	4.5	4.7
	Hepatitis B	0.5	0.5	0.4	0.4	0.4
	Hepatitis other	2.4	2.1	1.9	1.7	1.7
	Metastatic	1.5	1.4	1.4	1.4	1.4
	Pneumonia	4.2	5.1	3.5	3.1	3.2
	Tuberculosis	0.1	0.1	0.3	0.2	0.2
	Other	20.0	19.4	18.7	17.4	17.9
	<b>Cardiovascular</b>					
	Cardiac arrest	0.9	0.8	0.9	0.9	1.0
	Cardiac dysrhythmia	19.4	19.2	19.1	19.0	18.8
	Cerebrovascular disease	7.2	7.1	6.9	6.8	7.2
	Congestive heart failure	30.9	30.4	30.1	29.4	29.8
	Ischemic heart disease	27.7	27.1	26.4	25.7	25.9
	Myocardial infarction	6.4	6.6	7.2	7.4	7.4
	Peripheral vascular disease <sup>*3</sup>	16.9	16.8	16.7	16.5	16.9
	<b>Other</b>					
	Alcohol dependence	1.6	1.5	1.4	1.4	1.3
	Anemia	2.3	2.5	2.7	3.0	3.0
	Cancer	3.5	3.4	3.3	3.4	3.3
	Chronic obstructive pulmonary disease	16.4	16.0	14.9	14.1	14.0
	Diabetes	37.5	36.5	36.1	34.9	35.7
	Drug dependence	1.5	1.5	1.4	1.3	1.2
	Gastrointestinal tract bleeding	2.6	2.7	2.9	2.9	3.0
	Hyperparathyroidism	20.6	20.1	19.7	19.7	19.8
11c	Average number of comorbid conditions	2.3	2.3	2.2	2.2	2.2

n/a = not applicable.

[\*1] Based on patients with Medicare as primary insurer on 12/31 each year; See *Guide, Section XV*.

[\*2] This category includes bloodstream and other infections related to intravascular access and other implanted devices, not limited to dialysis access.

[\*3] Peripheral vascular disease includes venous, arterial and nonspecific peripheral vascular diseases.

**TABLE 12: Selected Summaries for Nursing Home (NH) Patients<sup>\*1</sup>, 2018-2021<sup>^</sup>**

		This Region				United States
Measure Name		2018	2019	2020	2021	2021
<b>Mortality summary for all NH dialysis patients<sup>*3</sup></b>						
12.3a	Patients (n=number)	12,629	12,830	11,020	13,497	134,965
12.3b	Patient years (PY) at risk (n)	7,876.1	7,964.3	4,456.4	8,381.9	83,819.0
12.3c	Deaths (n)	3,170	3,155	2,204	3,600	36,003
12.3d	Expected deaths (n)	2,611.1	2,638.6	1,733.4	3,430.8	34,307.7
12.3c/12.3b	Rate (deaths per 100 PYs at risk)	40.3	39.1	49.1	42.6	43.0
12.3j	SMR (deaths/expected deaths)	1.20	1.17	1.24	1.03	1.05
12.3e	Withdrawal from dialysis prior to death (% of 12.3c)	38.8	39.2	33.5	29.8	25.5
<b>Hospitalization summary for NH Medicare dialysis patients</b>						
12.4a	Medicare dialysis patients (n)	11,618	11,828	10,082	12,038	120,383
12.4b	Patient years (PY) at risk (n)	7,125.4	7,172.2	4,023.1	7,426.1	74,260.9
12.4g	Total admissions (n)	22,538	22,549	12,717	19,915	199,145
12.4h	Expected total admissions (n)	14,382.2	14,308.7	8,696.5	14,312.6	143,126.4
12.4g/12.4b	Rate (admissions per 100 PYs at risk)	307.1	304.8	303.7	258.4	268.2
12.4i	SHR (admissions/expected admissions)	1.52	1.53	1.42	1.35	1.39
Diagnoses associated with hospitalization (% of 12.4a)						
	Septicemia	25.5	24.7	26.3	21.9	22.9
	Acute myocardial infarction	10.5	10.8	12.0	11.4	11.4
	Congestive heart failure	48.2	48.0	48.4	44.7	45.2
	Cardiac dysrhythmia	35.7	35.5	36.1	33.5	33.5
	Cardiac arrest	3.7	3.5	4.3	4.2	4.6
<b>Comorbidities reported on Medicare claims</b>						
12.11a	Medicare dialysis patients on 12/31 (n)	6,669	6,789	5,341	6,459	64,594
12.11b	Comorbidity (% yes of 12.11a)					
<b>Infections</b>						
	AIDS/HIV positive	0.9	0.8	0.9	0.8	0.9
	Intravascular/implanted device-related <sup>*4</sup>	9.1	8.2	7.7	6.7	7.2
	Hepatitis B	0.9	0.8	0.8	0.6	0.7
	Hepatitis other	4.2	3.6	3.7	2.8	3.0
	Metastatic	3.9	3.8	4.1	3.3	3.3
	Pneumonia	10.6	12.0	9.5	7.3	7.4
	Tuberculosis	0.1	0.2	0.4	0.3	0.3
	Other	42.2	40.9	41.3	33.4	34.2
<b>Cardiovascular</b>						
	Cardiac arrest	2.2	2.0	2.2	1.9	2.1
	Cardiac dysrhythmia	39.3	38.6	39.0	35.1	35.1
	Cerebrovascular disease	17.6	16.8	17.6	15.5	16.4
	Congestive heart failure	55.9	54.8	55.5	48.8	49.5
	Ischemic heart disease	50.1	48.7	48.6	42.6	43.1
	Myocardial infarction	12.4	12.3	13.8	12.4	12.4
	Peripheral vascular disease <sup>*4</sup>	36.2	35.2	36.1	31.9	32.5

(continued)

**TABLE 12 (continued): Selected Summaries for Nursing Home (NH) Patients<sup>\*1</sup>, 2018-2021<sup>^</sup>**

Measure Name		This Region				United States
		2018	2019	2020	2021	2021
<b>Anemia<sup>*5</sup></b>						
12.7a	Eligible adult HD patients (n)	10,222	10,339	7,222	10,849	107,273
12.7b	Eligible adult HD patient-months (n) <sup>*2</sup>	85,877	86,520	34,762	90,464	904,637
12.7d	Hemoglobin (HD) < 10 g/dL (% of 12.7b)	28.8	29.7	28.8	28.3	28.8
12.7e	ESA prescribed (% of 12.7b)	78.8	79.6	79.5	79.3	79.5
12.7f	Eligible adult PD patients (n)	463	496	249	553	5,479
12.7g	Eligible adult PD patient-months (n) <sup>*2</sup>	2,849	3,033	918	3,334	33,344
12.7i	Hemoglobin (PD) < 10 g/dL (% of 7g)	29.8	29.8	28.5	26.0	26.4
12.7j	ESA prescribed (% of 7g)	58.9	58.3	57.2	54.9	55.1
<b>Dialysis Adequacy<sup>*5 *6</sup></b>						
12.8a	Eligible adult HD Kt/V patients (n)	9,860	10,056	6,923	9,253	91,828
12.8b	Eligible adult HD Kt/V patient-months (n) <sup>*2</sup>	82,451	83,579	33,091	77,485	774,854
12.8j	Kt/V (HD) < 1.2 (% of 12.8b)	2.4	2.0	2.1	1.9	2.0
12.8k	Eligible adult PD Kt/V patients (n)	463	496	167	553	5,479
12.8l	Eligible adult PD Kt/V patient-months (n) <sup>*2</sup>	2,849	3,033	395	3,334	33,344
12.8n	Kt/V (PD) < 1.7 (% of 12.8l)	8.0	8.8	9.2	8.3	8.6
<b>Vascular Access<sup>*5 *7</sup></b>						
12.10a	Prevalent adult hemodialysis patients (n)	10,935	11,018	7,510	11,418	112,893
12.10b	Prevalent adult hemodialysis patient months (n) <sup>*2</sup>	89,812	90,508	35,715	93,729	937,285
12.10c	Arteriovenous fistula in use (% of 12.10b)	55.0	54.4	51.7	52.6	50.2
12.10e	Long-Term Catheter Rate (LTCR)	16.8	17.4	10.4	20.6	21.4

n/a = not applicable; Kt/V: K = dialyzer clearance of urea; t = dialysis time; V = patient's total body water.

[^] For exclusions due to data exceptions, please refer to corresponding parent table.

[\*1] See Guide, Section XVI corresponding to the parent table in the DFR state profile.

[\*2] A patient may be counted up to 12 times per year.

[\*3] Deaths due to street drugs and accidents unrelated to treatment are excluded.

[\*4] Intravascular/implanted device-related category includes bloodstream and other infections related to intravascular access and other implanted devices, not limited to dialysis access. Peripheral vascular disease includes venous, arterial and nonspecific peripheral vascular diseases.

[\*5] Summaries are based on data reported in EQRS and the patient must be on HD (or PD) for the entire reporting month to be included in patient counts and summaries.

[\*6] Summaries are supplemented with Medicare claims if missing in EQRS. HD Kt/V summaries are restricted to patients who dialyze thrice weekly. The PD summaries use the most recent value over a 4-month look-back period.

[\*7] Patient months with a catheter that have limited life expectancy, including under hospice care in the current reporting month, or with metastatic cancer, end stage liver disease, coma or anoxic brain injury in the past 12 months, were excluded.