



Trella
HEALTH

SMARTER GROWTH.
HEALTHIER OUTCOMES.

Industry Trend Report

2019

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A LETTER FROM OUR CEO



Welcome to our first Industry Trend Report as Trella Health. We're excited to share the most recent national and state-level trends with you. Learn about the latest developments in Medicare beneficiaries, post-acute discharge instructions, admissions, utilization, and more.

In addition to publishing our first report as Trella, this edition includes an entirely new section on skilled nursing. We launched our solution for skilled nursing facilities (SNF) in Spring 2019 and are pleased to bring you an even more in-depth look at the post-acute care space.

For many metrics, we compared Q1 2019 data to Q1 2018 data, providing a year over year view. Some key takeaways from this report include:

- Medicare fee for service (FFS) beneficiaries declined by .4%, while Medicare Advantage beneficiaries increased by 7.7% year over year.*
- The percentage of episodes discharged from a hospital stay without post-acute care instructions dropped slightly from 48.9% to 47.8%.*
- Home health surpassed skilled nursing as the most likely post-acute referral destination, with 23.3% of inpatient discharges coded for home health compared to 21.1% referred to SNF. This is the first reporting period where home health was instructed at a higher rate than SNF.*
- Hospice average length of stay (ALOS) increased from 74.5 to 77.9 days over the past year. The additional 3.4 days represents a 5% longer stay and is the highest ALOS we've seen since reporting on the metric.*
- Skilled nursing admissions and utilization were down over the last four quarters, which could foreshadow further instability for SNF operators.*

Through reports like this one and our suite of software solutions, we strive to provide you with the most recent and complete market intelligence information. We hope this report continues to be a valuable resource for you, and we welcome your thoughts as we further enhance it.

Sincerely,

A handwritten signature in black ink that reads "Ian Ferlano". The signature is fluid and cursive, with a large, stylized "I" and "F".

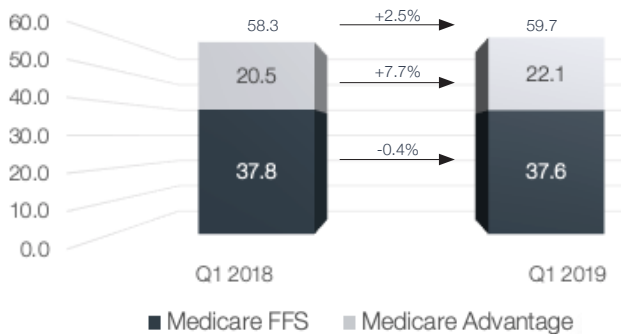
CEO, Trella Health
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MEDICARE BENEFICIARIES

From Q1 2018 to Q1 2019, the total number of Medicare beneficiaries grew by 1.4 million, an increase of 2.5%. Traditional Medicare enrollees declined by .4% while the number of Medicare Advantage (MA) enrollees grew by 7.7%.

By the end of Q1 2019, 37% of all Medicare beneficiaries, more than 22 million people, were enrolled in MA plans.

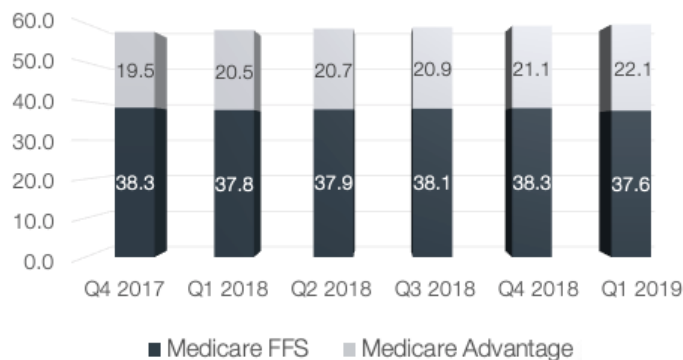
TOTAL U.S. MEDICARE BENEFICIARIES
YEAR OVER YEAR (MILLIONS)



Source: Medicare Enrollment Dashboard, Medicare and MA enrollees through Q1 2019.

For comparison, 35.2% of Medicare beneficiaries had MA coverage at the end of Q1 2018. MA enrollment has grown consistently over the past decade and is expected to continue as additional plans are made available. While the average Medicare beneficiary had 24 MA plans to choose from in 2019, they'll have 28 options in 2020.¹

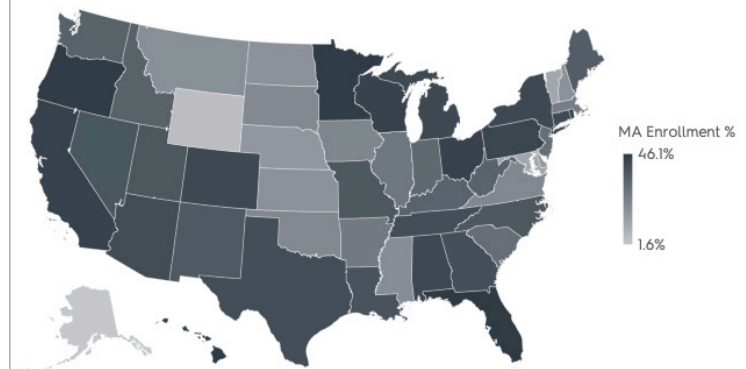
TOTAL U.S. MEDICARE BENEFICIARIES
QUARTERLY TREND (MILLIONS)



Source: Medicare Enrollment Dashboard, Medicare and MA enrollees through Q1 2019.

As much as MA enrollment has grown, market penetration rates vary significantly, with a high of 46.1% in Hawaii compared to just 1.5% in Alaska. At the end of Q1 2019, 17 states had MA market penetration rates of 40% or more. In 12 markets, less than 20% of beneficiaries were enrolled in MA at the end of the same period.

MEDICARE ADVANTAGE PENETRATION BY STATE
AS PERCENTAGE OF TOTAL MEDICARE BENEFICIARIES



Source: Medicare Enrollment Dashboard, Medicare and MA enrollees through Q1 2019.

¹ Kaiser Family Foundation, Medicare Advantage 2020 Spotlight: First Look

A market's overall number of Medicare beneficiaries could play a role in MA enrollment penetration. Aside from Illinois, the 10 states with the greatest number of Medicare beneficiaries had 37% or more enrollees signed up for MA plans. Conversely, eight of the 10 markets with the lowest total number of beneficiaries had MA penetration rates of 21.3% or below. The two exceptions were Hawaii and Rhode Island with rates of 46.1% and 45.7%, respectively.

LOWEST PERCENTAGE OF MEDICARE ADVANTAGE ENROLLEES BY MARKET		
National	59,707,515	37.0%
Market	Total Beneficiaries	Medicare Advantage %
AK	98,988	1.6%
WY	108,775	4.5%
VT	146,039	11.9%
MD	1,027,882	12.3%
DE	205,823	16.0%
NE	343,340	16.6%
NH	295,862	18.3%
ND	130,024	18.5%
KS	530,829	18.6%
DC	93,448	19.0%

HIGHEST PERCENTAGE OF MEDICARE ADVANTAGE ENROLLEES BY MARKET		
National	59,707,515	37.0%
Market	Total Beneficiaries	Medicare Advantage %
HI	271,380	46.1%
FL	4,498,993	46.0%
OR	854,900	45.7%
RI	219,099	45.7%
MN	1,013,544	45.6%
CA	6,222,691	43.8%
WI	1,162,489	43.5%
OH	2,323,927	43.5%
PA	2,715,301	42.6%
CO	901,852	41.9%

MEDICARE ADVANTAGE PENETRATION BY MARKET

Market	Q1 2019
HI	46.1%
FL	46.0%
OR	45.7%
RI	45.7%
MN	45.6%
CA	43.8%
WI	43.5%
OH	43.5%
PA	42.6%
CO	41.9%
AL	41.8%
MI	41.7%
NY	41.4%
CT	40.8%
AZ	40.6%
TN	40.0%
TX	40.0%

Market	Q1 2019
GA	39.5%
LA	38.2%
ME	37.7%
MD	37.4%
NC	37.0%
MO	37.0%
NM	36.4%
ME	35.2%
WA	33.9%
ID	33.9%
WV	33.6%
KY	33.5%
IN	31.7%
SC	29.8%
NJ	29.6%
IL	27.2%
AR	26.3%

Market	Q1 2019
MA	24.9%
IA	22.5%
VA	21.8%
OK	21.6%
SD	21.3%
MS	20.0%
MT	19.3%
DC	19.0%
KS	18.6%
ND	18.5%
NH	18.3%
NE	16.6%
DE	16.0%
MD	12.3%
VT	11.9%
WY	4.5%
AK	1.6%

POST-ACUTE DISCHARGE

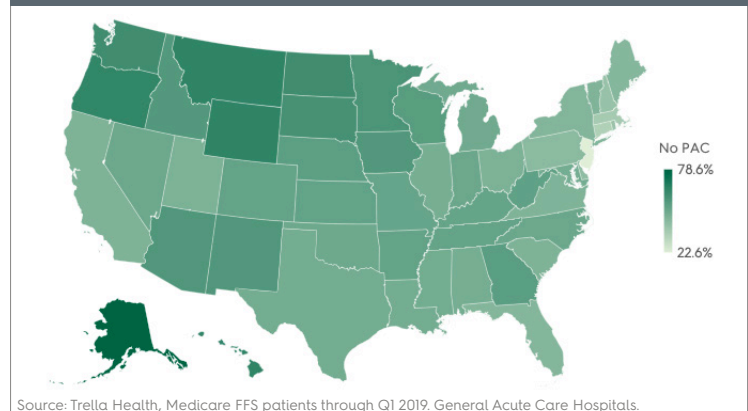
National Medicare post-acute care (PAC) discharge instructions were similar to what we reported in Q1 2018, with one notable exception. 48.9% of inpatient discharges were not coded for PAC in the Q1 2018 reporting period compared to 47.8% of discharges during the Q1 2019 reporting period, which represents a slight increase in post-acute care referrals year over year. Still, nearly half of inpatient episodes resulted in no PAC referrals, and patients were simply discharged home.

For patients who did receive PAC instructions, home health was the most likely referral destination, followed by skilled nursing facilities (SNF). 23.3% of episodes were discharged with home health instructions and 21.1% were referred to skilled nursing. Since we began tracking episode discharges in Q1 of 2018, this is the first time home health has been recommended at a higher rate than SNF. SNF was coded upon discharge in 21.8% of episodes compared to home health in 19.8% of episodes for the Q1 2018 reporting period. The decrease in SNF referrals reflects a broader trend within the industry. A lower percentage of inpatient discharges to skilled nursing and decreased SNF utilization over the past four quarters could portend continued challenges for SNF providers.

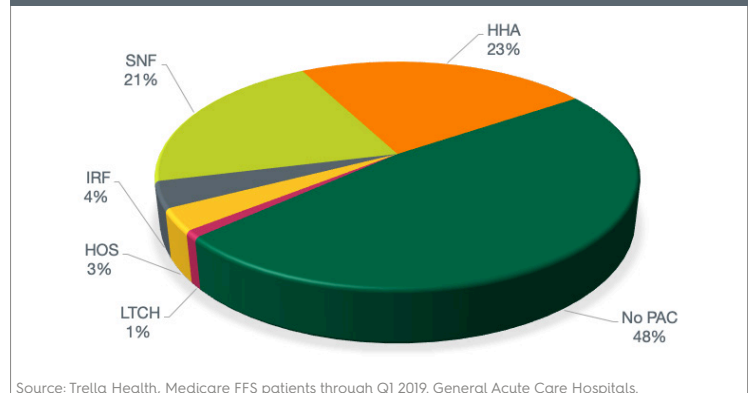
The tables below illustrate the states where patients were most and least likely to receive referrals for post-acute services following an inpatient stay. As we've seen in past reports, northeastern states and Florida coded the highest percentage of episodes for PAC while western and midwestern states referred less frequently. In 28 states, more than 50% of episodes lacked post-acute

instructions. Percentages are based on total episodes discharged rather than unique patient counts, meaning they include patients who had multiple inpatient stays during the reporting period.

PERCENTAGE OF INPATIENT DISCHARGES WITH NO PAC INSTRUCTIONS



NATIONAL POST-ACUTE DISCHARGE INSTRUCTIONS FROM HOSPITAL INPATIENT SETTING



INPATIENT DISCHARGE INSTRUCTIONS BY STATE

National	1.0%	3.1%	3.7%	23.3%	21.1%	47.8%
HIGHEST RATES OF PAC REFERRALS						
State	LTCH	IRF	HOS	HHA	SNF	No PAC
NJ	0.4%	2.2%	1.5%	59.4%	13.9%	22.6%
CT	0.6%	1.7%	3.0%	29.2%	30.9%	34.6%
MA	1.0%	4.4%	1.9%	31.8%	23.8%	37.0%
RI	0.2%	2.2%	3.2%	25.4%	29.1%	39.9%
NH	0.3%	4.9%	2.0%	30.7%	21.9%	40.2%
DE	0.3%	4.6%	5.0%	28.8%	18.8%	42.6%
PA	0.9%	5.5%	2.8%	25.1%	22.0%	43.7%
ME	0.5%	3.9%	3.1%	24.7%	22.8%	44.9%
FL	1.0%	3.6%	4.5%	24.7%	21.2%	45.1%
NY	0.2%	3.3%	2.2%	24.8%	23.9%	45.6%

INPATIENT DISCHARGE INSTRUCTIONS BY STATE

National	1.0%	3.1%	3.7%	23.3%	21.1%	47.8%
LOWEST RATES OF PAC REFERRALS						
State	LTCH	IRF	HOS	HHA	SNF	No PAC
AK	1.5%	1.5%	1.7%	9.8%	6.8%	78.6%
MT	0.7%	1.7%	2.9%	7.4%	21.6%	65.7%
WY	0.8%	3.0%	2.6%	8.4%	19.5%	65.7%
HI	0.0%	3.3%	4.0%	9.1%	18.1%	65.4%
OR	0.2%	0.8%	3.2%	12.3%	18.6%	64.9%
WA	0.4%	1.4%	3.2%	12.3%	21.0%	61.7%
ND	0.9%	1.3%	1.4%	8.4%	26.3%	61.7%
SD	0.6%	1.6%	2.7%	9.7%	25.3%	60.1%
MN	0.4%	1.5%	2.3%	11.7%	25.0%	59.1%
NM	0.9%	4.0%	3.3%	17.0%	17.1%	57.7%

INPATIENT DISCHARGE INSTRUCTIONS BY MARKET REFERENCE TABLE

	LTCH	IRF	HOS	HHA	SNF	No PAC
National	1.0%	3.1%	3.7%	23.3%	21.1%	47.8%
AK	1.5%	1.5%	1.7%	9.8%	6.8%	78.6%
AL	1.0%	4.8%	3.7%	23.9%	18.0%	48.6%
AR	1.2%	6.6%	4.0%	18.5%	16.5%	53.2%
AZ	0.6%	4.4%	3.8%	17.4%	16.1%	57.6%
CA	0.9%	2.4%	2.7%	22.5%	24.8%	46.6%
CO	0.7%	3.8%	2.9%	17.7%	21.7%	53.2%
CT	0.6%	1.7%	3.0%	29.2%	30.9%	34.6%
DC	1.0%	5.1%	2.3%	18.7%	17.5%	55.5%
DE	0.3%	4.6%	5.0%	28.8%	18.8%	42.6%
FL	1.0%	3.6%	4.5%	24.7%	21.2%	45.1%
GA	0.9%	3.9%	4.1%	19.2%	16.6%	55.3%
HI	0.0%	3.3%	4.0%	9.1%	18.1%	65.4%
IA	0.7%	2.1%	3.3%	12.3%	24.2%	57.4%
ID	0.8%	3.0%	2.9%	16.0%	20.3%	57.0%
IL	0.6%	3.3%	3.1%	19.0%	25.5%	48.5%
IN	0.9%	4.4%	3.1%	14.8%	25.6%	51.2%
KS	1.1%	4.5%	3.1%	14.7%	23.2%	53.5%
KY	0.9%	4.6%	3.1%	18.0%	20.8%	52.5%
LA	3.9%	5.1%	3.7%	23.2%	15.0%	49.1%
MA	1.0%	4.4%	1.9%	31.8%	23.8%	37.0%
MD	0.5%	3.9%	3.7%	19.7%	23.4%	48.8%
ME	0.5%	3.9%	3.1%	24.7%	22.8%	44.9%
MI	1.0%	3.0%	3.3%	21.3%	21.5%	50.0%
MN	0.4%	1.5%	2.3%	11.7%	25.0%	59.1%
MO	0.9%	4.3%	3.2%	18.5%	20.8%	52.3%
MS	2.1%	2.8%	3.7%	21.3%	20.9%	49.3%
MT	0.7%	1.7%	2.9%	7.4%	21.6%	65.7%
NC	0.5%	2.3%	3.5%	20.9%	21.5%	51.4%
ND	0.9%	1.3%	1.4%	8.4%	26.3%	61.7%
NE	1.6%	3.0%	2.3%	12.6%	25.7%	54.7%
NH	0.3%	4.9%	2.0%	30.7%	21.9%	40.2%
NJ	0.4%	2.2%	1.5%	59.4%	13.9%	22.6%
NM	0.9%	4.0%	3.3%	17.0%	17.1%	57.7%
NV	2.2%	7.6%	3.1%	21.9%	14.4%	50.9%
NY	0.2%	3.3%	2.2%	24.8%	23.9%	45.6%
OH	1.2%	3.4%	3.3%	20.7%	24.2%	47.1%
OK	2.6%	4.3%	3.3%	21.4%	17.8%	50.5%
OR	0.2%	0.8%	3.2%	12.3%	18.6%	64.9%
PA	0.9%	5.5%	2.8%	25.1%	22.0%	43.7%
RI	0.2%	2.2%	3.2%	25.4%	29.1%	39.9%
SC	0.8%	5.6%	4.0%	25.6%	17.3%	46.7%
SD	0.6%	1.6%	2.7%	9.7%	25.3%	60.1%
TN	0.7%	4.6%	3.0%	17.8%	20.9%	53.0%
TX	2.4%	6.6%	3.5%	20.7%	17.5%	49.2%
UT	1.0%	2.9%	2.7%	22.6%	23.5%	47.3%
VA	0.5%	3.3%	3.6%	25.7%	20.5%	46.4%
VT	0.0%	1.6%	1.4%	27.6%	23.3%	46.1%
WA	0.4%	1.4%	3.2%	12.3%	21.0%	61.7%
WI	0.5%	2.3%	3.7%	14.1%	23.5%	55.9%
WV	1.0%	4.1%	3.2%	21.6%	16.3%	53.8%
WY	0.8%	3.0%	2.6%	8.4%	19.5%	65.7%

HOSPICE

Hospice admissions grew 6.6% from Q4 of 2018 to Q1 of 2019, jumping from 339,987 to 363,285. When compared to Q1 of 2018, though, admissions rose by just .1%. While this difference in growth rates initially appears significant, a closer look at admission patterns provides context. Since Trella started tracking hospice admissions in 2017, we've observed a bump in admissions between the final quarter of one year and the first quarter of a new year, with quarter one consistently posting the highest counts. Quarter four admissions are slightly greater than those in quarter two while admissions drop off between quarters two and three. This seasonality matches what we've seen and heard anecdotally from hospice providers in the industry.

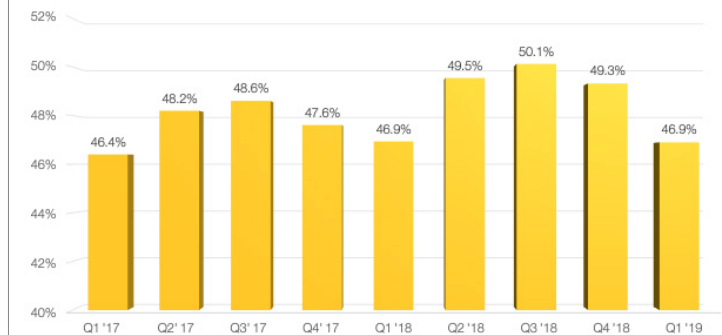
HOSPICE ADMISSIONS BY QUARTER (THOUSANDS)



Source: Trella Health, Medicare FFS hospice patients through Q1 2019.

In addition to looking at admissions trends to understand national hospice volume, another insightful metric is hospice utilization, which explains how often Medicare decedents elect hospice care towards the end of life. Trella calculates hospice utilization as the percentage of patients who - in a given year- were discharged from an inpatient stay, died, and had a hospice claim within six months prior to death, divided by all patients who were discharged from an inpatient facility and died during the same year. Since utilization is based on a one-year period, Q1 2019's hospice utilization rate reflects patients who died between Q2 2018 and Q1 2019. After surpassing 50% for the first time in Q3 of 2018, utilization dropped to 49.3% in Q4 of 2018 and to 46.9% in Q1 of 2019. In another example of hospice's seasonality, hospice utilization for Q1 2018 was

HOSPICE UTILIZATION BY QUARTER

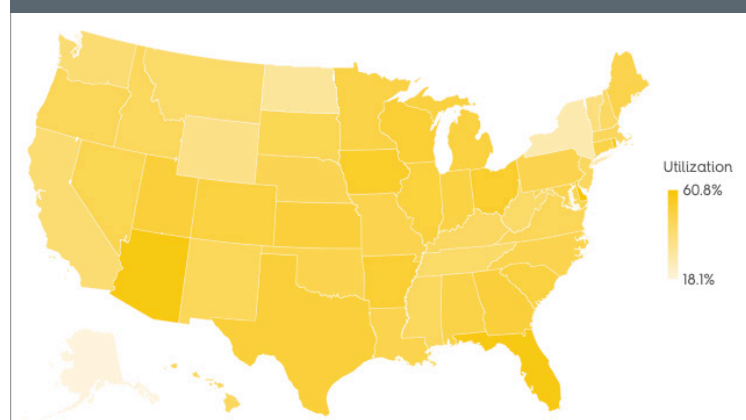


Source: Trella Health, Medicare FFS hospice patients through Q1 2019.

also 46.9%. The chart above illustrates the trend we have seen in recent annual cycles, with utilization peaking in quarter three and reaching its lowest point in quarter one.

While hospice utilization rates varied from a low of 18.1% in Alaska to a high of 60.8% in Delaware, 38 states were clustered between 40 and 52%. The median utilization rate was 46.9%, incidentally the same as the national average. From a market perspective, the top 10 hospice utilizers were more geographically diverse than those in the top 10 for post-acute referrals.

HOSPICE UTILIZATION BY MARKET



Source: Trella Health, Medicare FFS hospice patients through Q1 2019.

HOSPICE UTILIZATION BY MARKET

Market	Q1 2019	Market	Q1 2019
DE	60.8%	MO	46.9%
AZ	58.3%	OK	46.7%
FL	57.9%	NV	46.4%
RI	56.6%	NE	45.9%
IA	53.8%	SD	45.7%
OH	53.5%	OR	45.3%
AR	52.2%	VA	45.3%
WI	51.6%	NM	44.9%
UT	51.2%	ID	44.5%
TX	51.1%	MS	44.2%
KS	50.6%	MA	44.1%
GA	50.5%	HI	43.7%
IL	50.1%	NJ	43.5%
CO	49.9%	KY	43.3%
SC	49.9%	NH	43.0%
MI	49.7%	TN	42.0%
IN	48.9%	MT	41.8%
MN	48.6%	WV	41.6%
CT	48.1%	CA	39.9%
AL	48.0%	WA	39.7%
ME	47.8%	VT	37.4%
LA	47.4%	WY	35.2%
MD	47.3%	ND	31.8%
PA	47.1%	DC	30.6%
NC	47.0%	NY	27.5%
		AK	18.1%

HOSPICE AVERAGE LENGTH OF STAY BY MARKET

Market	Q1 2019	Market	Q1 2019
UT	105.4	NH	75.0
AL	104.0	VA	73.9
MS	97.9	NC	73.6
OK	91.1	MD	71.1
CA	91.0	PA	71.0
NM	90.8	IN	70.6
TX	90.8	NV	70.1
LA	89.2	ME	68.5
GA	87.8	NE	67.6
ID	86.1	OR	66.2
HI	86.0	WA	65.8
SC	85.3	IL	65.6
DE	84.2	NJ	64.0
CO	83.9	RI	63.7
AZ	83.0	AR	63.5
WI	80.6	MT	62.0
VT	80.0	WV	61.7
MN	78.9	ND	59.6
MO	78.4	IA	59.4
FL	77.7	KY	53.4
OH	77.3	NY	52.4
KS	76.2	CT	51.0
MI	76.0	AK	50.4
DC	75.9	SD	49.6
MA	75.5	WY	35.8
TN	75.0		

HOSPICE LENGTH OF STAY INSIGHTS

From Q1 2018 to Q1 2019, hospice average length of stay (ALOS) climbed from 74.5 to 77.9 days. The extra 3.5 days for stays in Q1 2019 represents a 5% increase in total ALOS over the past year. One contributing factor could be a higher incidence of patients with longer-term illnesses electing hospice care, a theory Trella plans to investigate. As you can see in the table below, three categories made up more than 75% of admissions over the past four quarters: circulatory diseases, neoplasms, and nervous system diseases. While neoplasms are generally associated with shorter lengths of stay, diseases impacting the nervous system such as Alzheimer's can cause slow deterioration in affected patients. In addition to diagnostic category, another factor leading to higher ALOS may be providers referring patients to hospice earlier in their course of illness.

TOTAL U.S. HOSPICE ALOS

77.9 DAYS AVERAGE LENGTH OF STAY

HOSPICE ADMISSIONS BY DIAGNOSTIC CATEGORY (Q2 2018 - Q1 2019)

Diagnostic Category - (from ICD-10-CM)	Percentage of Admissions
Diseases of the circulatory system	29.14%
Neoplasms	23.37%
Diseases of the nervous system	23.46%
Diseases of the respiratory system	11.21%
Endocrine, nutritional and metabolic diseases	2.96%
Diseases of the digestive system	2.52%
Diseases of the genitourinary system	2.36%
Sepsis	1.11%
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	0.59%
Diseases of the musculoskeletal system and connective tissue	0.35%
Certain infectious and parasitic diseases	0.28%

HOSPICE METRICS BY MARKET REFERENCE TABLE

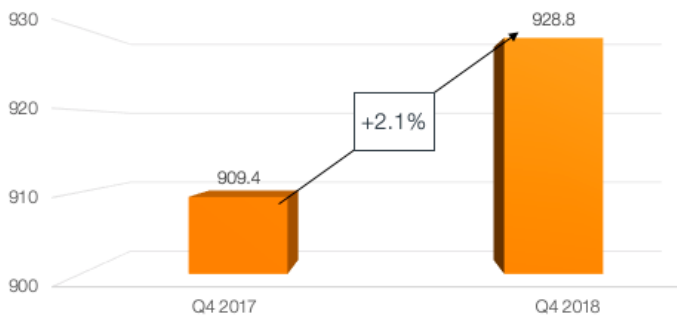
	Q1 2019 Admissions	Q1 '18 vs. Q1 '19 Change in Admissions	Hospice Utilization	Q1 2019 Hospice ALOS
National	363,285	0.1%	46.9%	79.9
AK	163	7.9%	18.1%	50.4
AL	7,738	3.2%	48.0%	104.0
AR	4,429	8.2%	52.2%	63.5
AZ	9,890	-0.5%	58.3%	83.0
CA	35,953	-0.8%	39.9%	91.0
CO	5,117	1.0%	49.9%	83.9
CT	3,916	5.0%	48.1%	51.0
DC	276	-23.1%	30.6%	75.9
DE	1,483	2.3%	60.8%	84.2
FL	31,918	0.0%	57.9%	77.7
GA	11,439	0.0%	50.5%	87.8
HI	1,335	-0.1%	43.7%	86.0
IA	4,563	-3.1%	53.8%	59.4
ID	2,010	-0.5%	44.5%	86.1
IL	12,606	-1.5%	50.1%	65.6
IN	8,351	1.8%	48.9%	70.6
KS	3,791	0.9%	50.6%	76.2
KY	4,881	-1.7%	43.3%	53.4
LA	5,743	-0.3%	47.4%	89.2
MA	7,525	5.1%	44.1%	75.5
MD	5,935	2.0%	47.3%	71.1
ME	1,912	12.0%	47.8%	68.5
MI	12,489	-3.4%	49.7%	76.0
MN	5,967	1.6%	48.6%	78.9
MO	8,093	-4.3%	46.9%	78.4
MS	4,064	-0.8%	44.2%	97.9
MT	1,202	5.8%	41.8%	62.0
NC	12,107	2.6%	47.0%	73.6
ND	683	13.5%	31.8%	59.6
NE	2,116	3.6%	45.9%	67.6
NH	1,437	6.6%	43.0%	75.0
NJ	8,738	11.3%	43.5%	64.0
NM	2,259	-1.5%	44.9%	90.8
NV	3,383	9.3%	46.4%	70.1
NY	11,021	-2.1%	27.5%	52.4
OH	17,560	0.3%	53.5%	77.3
OK	5,623	5.1%	46.7%	91.1
OR	4,761	-0.8%	45.3%	66.2
PA	16,835	-1.7%	47.1%	71.0
RI	1,546	-2.2%	56.6%	63.7
SC	7,117	0.2%	49.9%	85.3
SD	922	12.7%	45.7%	49.6
TN	8,201	1.5%	42.0%	75.0
TX	27,929	-2.0%	51.1%	90.8
UT	3,062	1.7%	51.2%	105.4
VA	8,340	5.9%	45.3%	73.9
VT	691	-3.1%	37.4%	80.0
WA	6,345	-0.4%	39.7%	65.8
WI	7,051	-6.0%	51.6%	80.6
WV	2,440	0.7%	41.6%	61.7
WY	329	-0.6%	35.2%	35.8

HOME HEALTH

Home health care's episodic nature leads to a delay in claims reporting compared to other post-acute care settings. Because CMS retroactively submits and updates home health claims for each quarter, they do not release 100% of home health claims at the same time as the rest of claims data. To promote more complete reporting, Trella waits to present home health information in the Industry Trend Report until a given quarter's claims have been adjusted. While our Market Intelligence and Marketscape solutions display more recent home health data, this section of our report trails by a quarter. For instance, in this edition, we present home health data through Q4 2018 rather than Q1 2019.

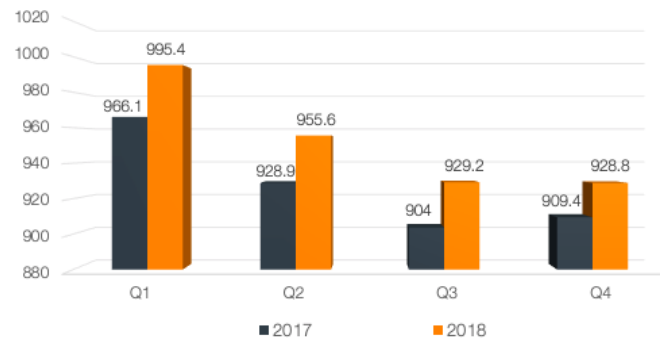
Home health admissions grew 2.1% year over year, from 909,427 in Q4 of 2017 to 928,774 in Q4 of 2018. Like hospice, home health admissions peak during the first quarter of the year and then dip in quarters two and three. Unlike hospice, admissions do not rise in quarter four; quarters three and four are relatively comparable. Should admissions increase by just .5% in Q1 of 2019, episodes would eclipse 1,000,000 for the first time.

TOTAL U.S. HOME HEALTH ADMISSIONS
(THOUSANDS)



Source: Trella Health, Medicare FFS home health patients through Q4 2018.

TOTAL U.S. HOME HEALTH ADMISSIONS
(THOUSANDS)



Source: Trella Health, Medicare FFS home health patients through Q4 2018.

Changes in home health admissions by market ranged from 18% growth in Utah to a 25% decline in D.C. Admission counts increased in 32 states year over year and decreased in 18 states, plus D.C. If you compare the 10 states with the highest admissions growth from Q4 2017 to Q4 2018, six were also in the top 10 for admissions growth from Q4 2016 to Q4 2017: UT, CA, NM, AZ, MN, and SD. Similarly, six of the 10 markets with the greatest declines in admissions from Q4 2017 to Q4 2018 were also in the bottom 10 for Q4 2016 to Q4 2017: CT, MI, AL, NH, TX, and NJ.

TOP 10: HOME HEALTH ADMISSIONS GROWTH

Market	Growth
UT	18%
CA	17%
NM	13%
VT	12%
AZ	11%
MN	11%
SC	11%
SD	10%
IL	9%
NE	9%

BOTTOM 10: HOME HEALTH ADMISSIONS DECLINES

Market	Decline
DC	25%
CT	11%
ME	10%
MI	9%
AL	9%
NH	7%
DE	7%
TX	7%
NY	7%
NJ	7%

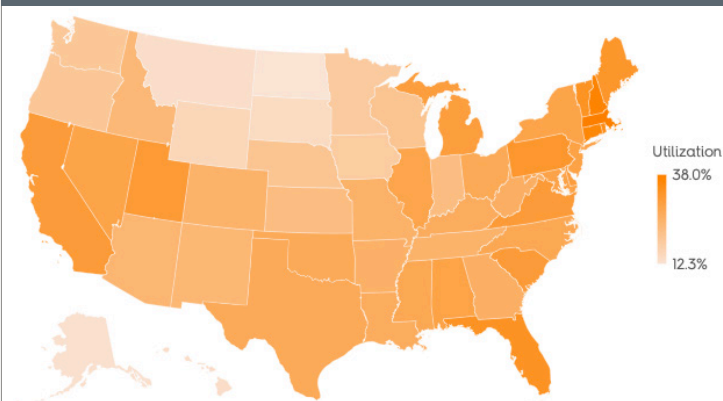
HOME HEALTH UTILIZATION

While admissions grew year over year, home health utilization decreased from 31.3% for the four-quarter period ending in Q4 2017 to 27.8% for the reporting period ending in Q4 2018. Utilization is defined as the number of patients discharged from an inpatient stay and subsequently admitted to home health during the most recent four quarters, divided by all inpatient discharges for the same four quarters. So, although the amount of home health admissions increased, a lower percentage of patients entered home health when compared to the total number of hospital discharges. At the state level, utilization rates ranged from a low of 12.3% in North Dakota to a high of 38% in Massachusetts with a median of 26.3%. Aside from California and Utah, the states with the highest utilization rates were all along the eastern seaboard. Conversely, western and midwestern states made up the markets with the lowest utilization rates.

HOME HEALTH UTILIZATION BY MARKET

Market	Q4 2018	Market	Q4 2018	Market	Q4 2018
MA	38.0%	NV	28.7%	NM	23.7%
NH	36.7%	NY	28.6%	DC	23.6%
CT	35.7%	IL	28.5%	ID	23.4%
RI	34.4%	MS	27.6%	KS	22.2%
FL	33.0%	NC	27.6%	IN	22.1%
VT	32.9%	OH	27.2%	WI	20.2%
ME	32.1%	OK	27.1%	NE	20.1%
PA	31.9%	TX	27.0%	OR	19.5%
UT	30.9%	KY	26.3%	WA	19.4%
CA	30.7%	LA	26.3%	MN	18.7%
SC	30.7%	WV	25.6%	IA	18.4%
VA	30.7%	GA	25.5%	WY	15.5%
DE	30.1%	AR	25.3%	SD	14.5%
MI	29.9%	MO	25.0%	HI	13.8%
AL	29.0%	CO	24.9%	MT	13.5%
NJ	29.0%	TN	24.8%	AK	13.0%
MD	28.8%	AZ	23.9%	ND	12.3%

HOME HEALTH UTILIZATION BY MARKET



Source: Trella Health, Medicare FFS home health patients through Q4 2018.

HIGHEST HOME HEALTH UTILIZERS

Market	Utilization
MA	38.0%
NH	36.7%
CT	35.7%
RI	34.4%
FL	33.0%
VT	32.9%
ME	32.1%
PA	31.9%
UT	30.9%
CA	30.7%

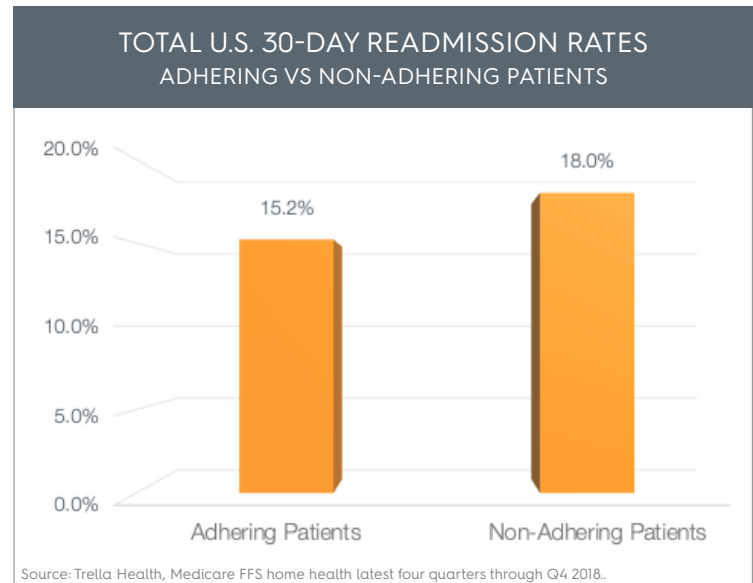
LOWEST HOME HEALTH UTILIZERS

Market	Utilization
ND	12.3%
AK	13.0%
MT	13.5%
HI	13.8%
SD	14.5%
WY	15.5%
IA	18.4%
MN	18.7%
WA	19.4%
OR	19.5%

HOME HEALTH ADHERENCE

The adherence rate for home health instructions nationwide was 59.8% for the most recent reporting period, ranging from a low of 42.1% in Hawaii to a high of 67% in New Hampshire. Note that adherence is calculated as the percentage of patients who receive home health instructions following an inpatient stay and start a new home health episode; this rate does not include patients resuming a previous episode of care. Other than Hawaii, D.C. was the only market with an adherence rate below 50% at 48.7%. Forty states fell between 56% and 64% and the median adherence rate was 59.2%. With more than four in 10 patients coded for home health not receiving services, there's a continued need to educate patients about the value of home health care.

Patients discharged with instructions for home health following an inpatient stay who followed orders remained less likely to be readmitted to the hospital than non-adhering patients. Adhering patients had a 30-day readmission rate of 15.2% compared to non-adhering patients' readmission rate of 18.0%. Higher readmission rates for non-adhering patients has been a consistent trend since Trella first measured the metric in 2017. Home health agencies can point to this trend when articulating the value of their organization and care setting to hospitals, as facilities face readmission penalties as part of value-based purchasing initiatives.



HOME HEALTH METRICS BY MARKET REFERENCE TABLE

	Q4 2018 Admissions	Q1 '18 vs. Q1 '19 Change in Admissions	Home Health Utilization	Home Health Adherence	30-Day Readmission Rate
National	928,774	2.1%	27.8%	59.8%	15.2%
AK	612	6.4%	13.0%	59.2%	12.7%
AL	17,505	-8.8%	29.0%	59.1%	15.9%
AR	9,980	5.2%	25.3%	61.6%	15.8%
AZ	12,957	11.1%	23.9%	61.1%	14.4%
CA	100,353	16.9%	30.7%	61.8%	14.5%
CO	10,118	5.6%	24.9%	59.4%	12.9%
CT	13,431	-11.3%	35.7%	56.6%	15.1%
DC	1,110	-24.7%	23.6%	48.7%	16.2%
DE	3,854	-7.3%	30.1%	59.2%	14.0%
FL	93,006	5.1%	33.0%	63.1%	15.1%
GA	22,949	5.1%	25.5%	57.2%	16.8%
HI	981	5.1%	13.8%	42.1%	15.6%
IA	6,132	-6.3%	18.4%	57.5%	15.9%
ID	3,869	-0.6%	23.4%	62.9%	11.5%
IL	45,448	9.3%	28.5%	61.8%	15.3%
IN	16,551	2.4%	22.1%	58.8%	16.1%
KS	8,341	8.8%	22.2%	62.2%	14.8%
KY	15,599	1.1%	26.3%	59.0%	16.5%
LA	14,317	-6.7%	26.3%	56.5%	15.1%
MA	34,299	8.8%	38.0%	61.1%	15.4%
MD	19,497	1.5%	28.8%	57.6%	14.4%
ME	4,976	-9.6%	32.1%	65.7%	14.0%
MI	36,995	-8.8%	29.9%	59.8%	16.3%
MN	11,966	10.8%	18.7%	54.5%	16.8%
MO	16,000	-3.0%	25.0%	63.5%	14.4%
MS	14,686	5.3%	27.6%	56.6%	16.0%
MT	1,617	-3.0%	13.5%	58.0%	13.4%
NC	29,372	1.8%	27.6%	60.5%	15.2%
ND	1,056	5.8%	12.3%	57.9%	17.8%
NE	4,705	8.9%	20.1%	61.7%	15.8%
NH	6,036	-7.5%	36.7%	67.0%	14.1%
NJ	25,761	-6.9%	29.0%	63.5%	14.5%
NM	4,416	13.4%	23.7%	60.1%	12.1%
NV	8,844	7.0%	28.7%	57.1%	15.7%
NY	43,049	-7.1%	28.6%	56.5%	16.8%
OH	32,917	1.8%	27.2%	56.6%	15.1%
OK	15,761	3.9%	27.1%	57.6%	12.7%
OR	6,133	-1.5%	19.5%	56.3%	14.2%
PA	39,596	-3.0%	31.9%	62.8%	16.2%
RI	3,477	-3.0%	34.4%	61.3%	15.1%
SC	17,597	10.6%	30.7%	62.9%	13.9%
SD	1,518	10.1%	14.5%	63.0%	14.6%
TN	19,103	1.4%	24.8%	56.5%	17.5%
TX	63,620	-7.3%	27.0%	55.0%	14.0%
UT	6,780	17.7%	30.9%	64.1%	9.9%
VA	28,065	7.1%	30.7%	61.9%	14.3%
VT	3,312	12.0%	32.9%	64.0%	12.8%
WA	12,648	4.1%	19.4%	55.9%	14.1%
WI	10,109	1.1%	20.2%	60.6%	15.5%
WV	6,728	-3.5%	25.6%	56.7%	18.2%
WY	1,022	2.1%	15.5%	51.5%	13.7%

PDGM

With the Patient-Driven Groupings Model (PDGM) taking effect in 2020, we are curious to see if and how the new payment methodology impacts therapy utilization. Agencies have been aware of PDGM since CMS first proposed the new model in July of 2018 and many have been preparing for well over a year. Since therapy volume will no longer be a reimbursement determinant, agencies that have focused on therapy almost exclusively could see material revenue declines, unless they increase nursing utilization.

For Q1 2018 to Q1 2019, average therapy visits per episode ranged from a low of 6.6 in Oklahoma to a high of 13.2 in Idaho with a national average of 9.3 and median of 10.2. The five states with the highest number of average therapy visits, ID, CO, MD, HI, and SD, all topped 12 visits while the five states with the lowest, OK, CA, LA, VT, and MS, had less than eight average therapy visits per episode.

For nursing visits per episode, the national average was 11, with a low of 6.3 in Hawaii, a high of 13.7 in Florida, and a median of 9.9. In addition to Florida, six states averaged more than 12 nursing visits per episode: CA, TX, ID, NY, CT, and UT. On the lower end, five states averaged 8.5 or fewer nursing visits per episode: HI, WA, MT, OR, and SD. Florida was the only state in the top 10 for both average nursing and therapy visits per episode while VT was the only state in the bottom 10 for both categories.

AVERAGE THERAPY AND NURSING VISITS PER EPISODE BY MARKET

Market	Therapy Visits per Episode	Nursing Visits per Episode
AK	8.7	9.0
AL	9.9	10.0
AR	9.4	11.0
AZ	10.7	9.8
CA	6.9	12.0
CO	12.6	9.2
CT	10.5	12.3
DC	9.8	10.1
DE	10.4	10.1
FL	11.3	13.7
GA	10.1	9.6
HI	12.1	6.3
IA	9.1	10.2
ID	13.2	12.2
IL	8.0	9.8
IN	10.4	9.6
KS	10.9	11.7

Market	Therapy Visits per Episode	Nursing Visits per Episode
KY	9.7	9.5
LA	7.2	10.7
MA	9.3	11.3
MD	12.2	9.6
ME	10.1	9.3
MI	10.5	8.9
MN	11.1	9.6
MO	10.7	9.5
MS	7.9	9.9
MT	10.1	8.0
NC	10.7	9.0
ND	10.2	9.4
NE	11.8	9.7
NH	10.2	10.0
NJ	9.4	9.9
NM	9.1	9.7
NV	8.2	11.9

Market	Therapy Visits per Episode	Nursing Visits per Episode
NY	8.2	12.3
OH	10.5	10.7
OK	6.6	11.3
OR	9.0	8.5
PA	9.9	11.2
RI	10.6	10.5
SC	10.3	8.9
SD	12.1	8.5
TN	10.7	9.7
TX	8.1	12.2
UT	10.8	13.6
VA	11.1	9.7
VT	7.7	9.2
WA	11.8	7.9
WI	9.6	10.3
WV	11.5	10.9
WY	9.7	11.2

Looking at episodes by clinical category, average therapy visits ranged from a low 2.9 for Complex Nursing to a high of 15.3 for Neuro Rehabilitation. Medication Management, Teaching, and Assessment (MMTA)-Respiratory and MS Rehab were the other clinical categories in the top three for therapy visits, with averages of 9.6 and 14.3, respectively. Given the conditions grouped into these categories, including Parkinson's disease, chronic obstructive pulmonary disease (COPD), and joint replacement surgery, the higher number of average therapy visits seems logical and may not fluctuate much with PDGM.

For average nursing visits, MS Rehab as a group had the lowest with 6.9 visits and MMTA-Endocrine had the highest with 18.7 visits. MMTA-Other and Wounds were the groups rounding out the top three for average nursing visits, with 12.8 and 17.5, respectively. With conditions such as type 2 diabetes (with and without chronic kidney disease); aftercare following circulatory system, digestive system, and neoplasm surgery; and ulcers, a higher number of average nursing visits is expected.

AVERAGE THERAPY AND NURSING VISITS PER EPISODE BY CLINICAL CATEGORY

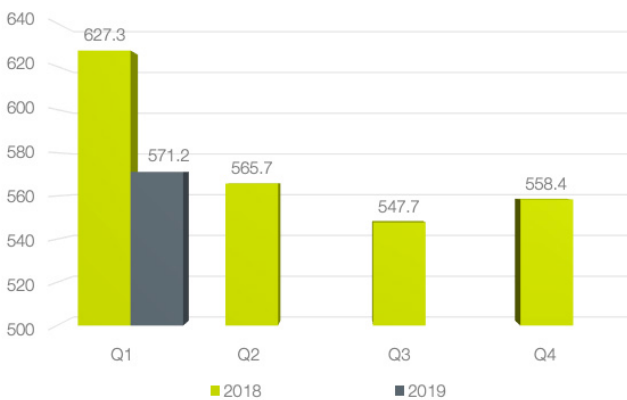
Clinical Category	Therapy Visits per Episode	Nursing Visits per Episode
Behavioral Health	7.2	8.7
Complex Nursing	2.9	8.9
MMTA- Aftercare	7.9	11.9
MMTA- Cardiac/Circulatory	7.5	11.1
MMTA- Endocrine	6.5	18.7
MMTA- GI/GU	7.7	10.3
MMTA- Infectious Disease	6.4	10.7
MMTA- Other	7.0	12.8
MMTA- Respiratory	9.6	10.9
MS Rehab	14.3	6.9
Neuro Rehab	15.3	7.2
Wounds	5.1	17.5
Total	9.3	11

SKILLED NURSING

Since Trella launched our Skilled Nursing Market Intelligence solution shortly after the most recent Industry Trend Report was published, this marks the first report with a skilled nursing section.

Unlike home health and hospice, skilled nursing facility (SNF) admissions declined year over year, decreasing 9% from 627,302 in Q1 2018 to 571,177 in Q1 2019. For 2018, admissions peaked during quarter one before dropping in both quarters two and three, a pattern similar to what we saw in home health and hospice. From quarter three's nadir, admissions spiked slightly in quarter four and then again heading into Q1 2019. At the market level, not a single state's admissions increased from Q1 2018. Five states, DE, AZ, NY, UT, and WY, declined less than 4%, with Wyoming decreasing the least at .8%. Conversely, admissions in five markets declined by roughly 14% or more: MN, DC, VT, NJ, and WI. Minnesota had the sharpest drop off, with admissions decreasing 26.8%.

TOTAL U.S. SNF ADMISSIONS BY QUARTER
(THOUSANDS)



Source: Trella Health, Medicare FFS skilled nursing patients through Q1 2019.

SNF utilization is calculated much like home health utilization, with the number of patients entering skilled nursing following an inpatient stay over the most recent four quarters divided by all inpatient discharges for the same four quarters. For the Q2 2018 to Q1 2019 reporting period, utilization dropped to 25.1% from 25.6% in the previous reporting period. Utilization rates ranged from a low of 7.4% in Alaska to a high of 33.5% in Connecticut with a median of 24.6%. States in the Midwest and along the east coast had the highest utilization rates, all above 28%: KS, MA, IA, IN, IL, MD, NE,

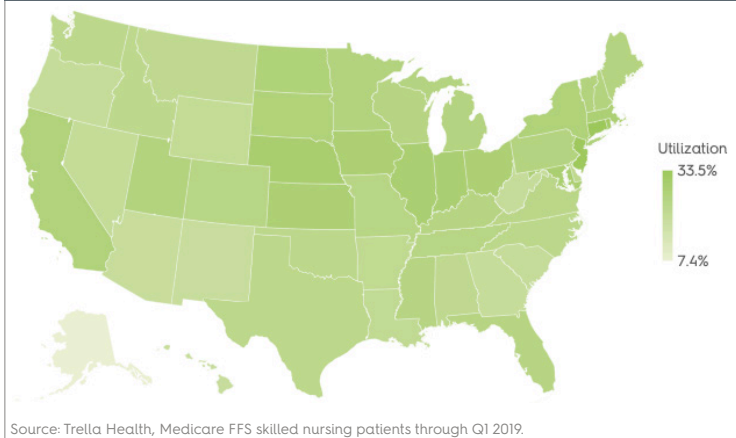
RI, NJ, and CT. Ten states had utilization rates lower than 21%: AK, HI, NM, AZ, GA, WV, OR, SC, NV, and WY. Note Alaska's rate of 7.4% is an outlier, with the second-lowest utilization rate at 19.2% in Hawaii.

The fact that both SNF admissions and utilization declined indicates fewer patients are being coded for skilled nursing and even fewer are using the care setting. SNFs have long faced challenges due to the high costs of maintaining brick and mortar facilities on thin margins. Negative publicity in recent years has hurt skilled nursing facilities' reputation and the industry's shift to the Patient-Driven Payment Model (PDPM) could materially impact reimbursement rates for SNFs that are already struggling.

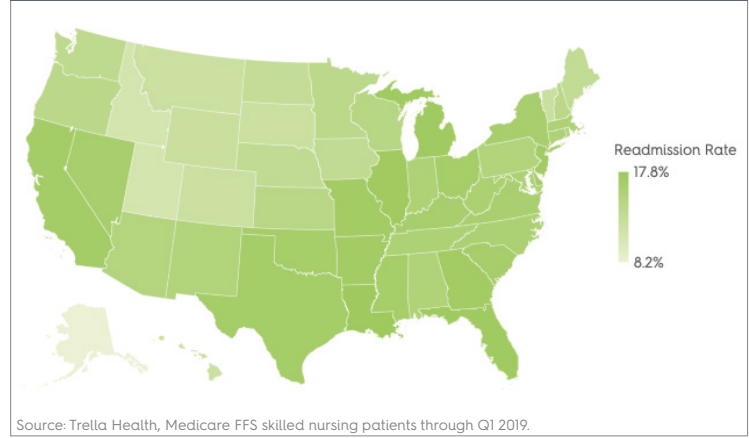
SNF UTILIZATION BY MARKET

Market	Utilization	Market	Utilization
AK	7.4%	MS	24.7%
AL	22.0%	MT	21.9%
AR	21.7%	NC	23.1%
AZ	19.4%	ND	27.1%
CA	26.6%	NE	29.2%
CO	24.3%	NH	25.8%
CT	33.5%	NJ	32.9%
DC	24.4%	NM	19.2%
DE	22.1%	NV	20.2%
FL	24.8%	NY	26.9%
GA	19.7%	OH	27.9%
HI	19.2%	OK	22.8%
IA	28.1%	OR	20.0%
ID	22.4%	PA	25.4%
IL	28.6%	RI	31.5%
IN	28.6%	SC	20.0%
KS	28.0%	SD	26.9%
KY	24.8%	TN	24.3%
LA	21.3%	TX	22.7%
MA	28.0%	UT	25.9%
MD	28.8%	VA	23.5%
ME	25.4%	VT	25.9%
MI	25.2%	WA	22.5%
MN	26.0%	WI	24.8%
MO	24.3%	WV	20.0%
		WY	20.7%

SNF UTILIZATION BY MARKET



30-DAY READMISSION RATE BY MARKET



SNF 30-day readmission rates calculate the percentage of a SNF's patients admitted to a short-term acute stay within 30 days of initial inpatient discharge. For the most recent reporting period, which looks back eight quarters, the national SNF 30-day readmission rate was 16.2% with a median of 15.8%. Rates ranged from a low of 8.2% in Alaska to a high of 17.8% in Louisiana. In addition to Alaska, ID, UT, HI, and MT made up the states with the five lowest readmission rates. Incidentally, Alaska and Hawaii were also in the bottom five for SNF utilization.

30-DAY READMISSION RATE BY MARKET

Market	Rate
AK	8.2%
AL	15.6%
AR	17.2%
AZ	15.2%
CA	17.0%
CO	12.5%
CT	15.8%
DC	15.5%
DE	17.2%
FL	17.5%
GA	17.2%
HI	12.2%
IA	13.5%
ID	11.2%
IL	17.6%
IN	15.8%
KS	14.5%

Market	Rate
KY	16.5%
LA	17.8%
MA	15.8%
MD	15.9%
ME	13.4%
MI	17.5%
MN	14.0%
MO	17.2%
MS	16.8%
MT	12.4%
NC	16.0%
ND	13.2%
NE	13.5%
NH	14.2%
NJ	17.3%
NM	15.4%
NV	16.6%

Market	Rate
NY	16.5%
OH	16.8%
OK	16.8%
OR	14.2%
PA	15.3%
RI	15.4%
SC	16.7%
SD	12.5%
TN	15.9%
TX	16.9%
UT	11.2%
VA	16.3%
VT	12.5%
WA	13.8%
WI	14.7%
WV	16.2%
WY	12.6%

For Q1 2019, average SNF Medicare days per stay ranged from a low of 22.3 in Arizona to a high of 56.9 in North Dakota with a national average of 31.8. Of the 10 markets with the shortest ALOS, Arizona was the only one also in the bottom 10 for utilization. Conversely, Connecticut was among the 10 states with the shortest ALOS but was number one in utilization. Wyoming was in the top 10 for longest ALOS but in the bottom 10 for utilization. Of the 10 states with the longest ALOS, Indiana and Iowa were also in the top 10 for utilization.

Looking at readmission rates compared to ALOS, Louisiana, Missouri, and Arkansas were in the top 10 for longest ALOS and highest readmission rate; this could indicate a patient population with more complex conditions or higher acuity than in other markets. In contrast, Idaho and Vermont were in the top 10 for both shortest ALOS and lowest readmission rate. Perhaps the patients utilizing skilled nursing in these states are less acute or are receiving skilled nursing care for more straight-forward conditions such as joint replacements.

TOP 10: SNF MEDICARE ALOS	
State	Medicare ALOS
ND	56.9
LA	53.2
MS	45.4
MO	42.9
AK	39.8
IN	39.7
AR	39.1
NE	38.6
IA	36.3
WY	35.9

BOTTOM 10: SNF MEDICARE ALOS	
State	Medicare ALOS
AZ	22.3
RI	24.1
ID	24.8
CT	24.9
MA	25.1
DE	25.4
NJ	25.4
DC	25.7
VT	26.2
OR	26.4

SKILLED NURSING METRICS BY MARKET REFERENCE TABLE

Market	Q1 2019 Admissions	SNF Utilization	SNF Utilization Prior Year	Utilization Change from Prior Year	Q1 2019 Medicare ALOS
National	571,177	25.1%	25.6%	-2.0%	31.8
AK	240	7.4%	6.9%	7.2%	39.8
AL	8,352	22.0%	23.3%	-5.6%	27.7
AR	6,295	21.7%	22.2%	-2.3%	39.1
AZ	7,710	19.4%	19.6%	-1.0%	22.3
CA	48,025	26.6%	26.7%	-0.4%	29.3
CO	6,328	24.3%	24.4%	-0.4%	28.5
CT	9,663	33.5%	34.2%	-2.0%	24.9
DC	773	24.4%	25.1%	-2.8%	25.7
DE	2,219	22.1%	22.7%	-2.6%	25.4
FL	43,941	24.8%	25.5%	-2.7%	29.5
GA	12,384	19.7%	20.1%	-2.0%	34.1
HI	893	19.2%	18.8%	2.1%	31.8
IA	7,844	28.1%	28.5%	-1.4%	36.3
ID	2,305	22.4%	22.7%	-1.3%	24.8
IL	29,180	28.6%	29.6%	-3.4%	32.7
IN	15,972	28.6%	29.2%	-2.1%	39.7
KS	8,211	28.0%	28.5%	-1.8%	33.7
KY	10,416	24.8%	25.5%	-2.7%	28.8
LA	8,187	21.3%	21.3%	0.0%	53.2
MA	18,163	28.0%	29.0%	-3.4%	25.1
MD	14,051	28.8%	29.0%	-0.7%	33.0
ME	2,778	25.4%	26.6%	-4.5%	27.0
MI	18,988	25.2%	25.6%	-1.6%	30.9
MN	9,317	26.0%	27.0%	-3.7%	29.0
MO	12,600	24.3%	24.5%	-0.8%	42.9
MS	7,437	24.7%	25.5%	-3.1%	45.4
MT	1,986	21.9%	22.8%	-3.9%	26.9
NC	16,818	23.1%	23.4%	-1.3%	28.8
ND	1,912	27.1%	27.6%	-1.8%	56.9
NE	5,024	29.2%	30.0%	-2.7%	38.6
NH	3,048	25.8%	27.4%	-5.8%	33.6
NJ	22,807	32.9%	33.4%	-1.5%	25.4
NM	2,224	19.2%	19.9%	-3.5%	26.4
NV	3,425	20.2%	20.6%	-1.9%	33.2
NY	35,977	26.9%	26.8%	0.4%	33.2
OH	24,243	27.9%	28.8%	-3.1%	32.0
OK	8,338	22.8%	23.0%	-0.9%	31.8
OR	4,091	20.0%	20.5%	-2.4%	26.4
PA	24,153	25.4%	26.0%	-2.3%	32.5
RI	2,047	31.5%	32.1%	-1.9%	24.1
SC	7,870	20.0%	20.5%	-2.4%	35.5
SD	2,328	26.9%	27.6%	-2.5%	33.1
TN	13,155	24.3%	24.6%	-1.2%	31.2
TX	35,134	22.7%	23.0%	-1.3%	32.8
UT	3,483	25.9%	26.1%	-0.8%	26.6
VA	16,051	23.5%	23.8%	-1.3%	32.1
VT	1,596	25.9%	26.7%	-3.0%	26.2
WA	9,382	22.5%	23.6%	-4.7%	32.4
WI	9,267	24.8%	25.5%	-2.7%	34.2
WV	3,393	20.0%	20.5%	-2.4%	28.8
WY	1,153	20.7%	20.4%	1.5%	35.9

YOUR BUSINESS MEANS SO MUCH TO SO MANY. LET'S MAKE IT THE BEST IT CAN BE.

There are patients who need your services—yet all too often they fail to get the critical, ongoing care they need once they leave their physician's clinic or hospital. This can adversely affect recovery, making post-acute care a key driver of avoidable healthcare costs.



By empowering Home Health, Hospice, and Skilled Nursing providers and their patient referral sources to connect and collaborate more effectively, we're paving the way for healthier, more cost-effective patient outcomes. And that's good for everyone.



GET THE WHOLE PICTURE.

Only Trella provides insights derived from complete Medicare Part A and Part B claims data, allowing you to fully understand referral patterns in your market. It's the most complete picture of care activity in your service area, with data that's updated quarterly.



DRIVE SMARTER SALES AND MARKETING EFFORTS.

- Identify the right referral sources for your organization
- Benchmark your performance and costs
- Optimize your sales plans
- Communicate your unique value proposition
- Educate providers
- Grow your business

HOW WE DO IT

As one of only a few companies in the country deemed 'Innovators' under the Centers for Medicare and Medicaid Services' Virtual Research Data Center Program, Trella Health has access to the complete Medicare Part A and Part B claims data. We analyze the most intricate components of more than 1.2 billion claims annually and present the relevant data insights to thousands of users to help them build high-performing care networks, serve more patients, and reduce the cost of care.

BE PART OF AN EXCITING VISION FOR THE FUTURE—ALREADY UNDERWAY.

By enabling everyone in the post-acute care space to work together more effectively, we believe we can optimize a critical sector of our healthcare system. Together, we can improve patient and business outcomes and reduce healthcare costs, but that's only the beginning. We believe that together we can ignite a whole new era of results-driven innovation.

Find us on social media for more industry data and updates.

