#### **HCAHPS PATIENT SURVEY ANALYSIS**



**TOP-BOX % CHANGE 2015 TO 2023** 

-1.41%

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**MIDDLE-BOX % CHANGE 2015 TO 2023** 

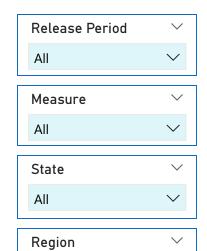
0.28%

**BOTTOM-BOX % CHANGE 2015 TO 2023** 

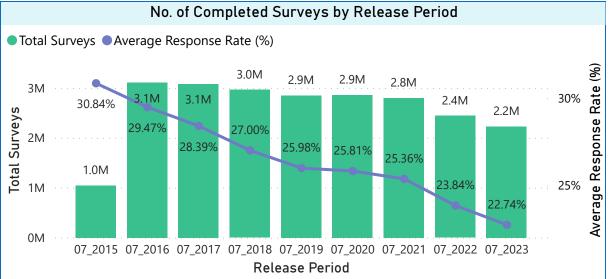
1.16%

**RESPONSE RATE CHANGE 2015 TO 2023** 

-8.10%



Αll



71.33% Avg Top-Box %

22.53%

Avg Middle-Box %

8.39%

**Avg Bottom-Box %** 

23M **Total Surveys**  4793

**No.of Facilities** 

26.61%

Avg Response Rate (%)

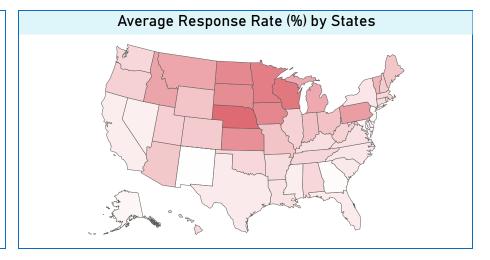
9

**Survey Questions** 

Regions

**States** 

Release Period	Total Surveys	Total Survey %	No.of Facilities	Avg Response Rate (%)	Avg Top- Box %	Avg Middle- Box %	Avg Bottom- Box %
07_2015	1047400	4.48%	4158	30.84%	70.83%	23.05%	8.42%
07_2016	3109282	13.30%	4187	29.47%	71.26%	22.86%	8.17%
07_2017	3082509	13.18%	4101	28.39%	71.67%	22.59%	8.00%
07_2018	2963426	12.67%	4124	27.00%	71.91%	22.31%	8.01%
07_2019	2851430	12.19%	4220	25.98%	71.83%	22.19%	8.21%
07_2020	2861601	12.24%	4214	25.81%	72.20%	21.93%	8.06%
07_2021	2799469	11.97%	4165	25.36%	72.24%	21.93%	8.02%
07_2022	2442853	10.45%	4124	23.84%	70.65%	22.54%	9.07%
07_2023	2228503	9.53%	4110	22.74%	69.42%	23.33%	9.59%
Total	23386473	100.00%	4793	26.61%	71.33%	22.53%	8.39%



## **Top-Box Rating Analysis**



91.0

Max Top-box %

42.0

Min Top-box %

71.33%

Avg Top-Box %

-1.41%

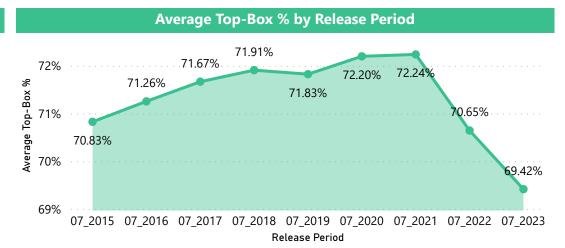
Diff % \_2015 to 2023

Release Period	~
ΔII	

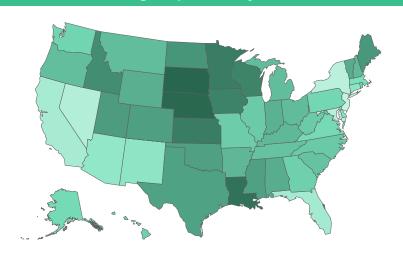
Region  $\checkmark$ 



Minimum Top-box % by States and Release Period										
State Name	07_2015	07_2016	07_2017	07_2018	07_2019	07_2020	07_2021	07_2022	07_2023	Total
Alabama	53.0	51.0	50.0	50.0	52.0	53.0	53.0	52.0	52.0	50.0
Alaska	49.0	52.0	49.0	50.0	53.0	51.0	49.0	50.0	49.0	49.0
Arizona	50.0	50.0	49.0	50.0	52.0	51.0	50.0	48.0	47.0	47.0
Arkansas	50.0	51.0	52.0	52.0	53.0	53.0	54.0	51.0	53.0	50.0
California	49.0	48.0	49.0	49.0	49.0	50.0	50.0	47.0	47.0	47.0
Colorado	55.0	55.0	54.0	56.0	56.0	56.0	56.0	55.0	55.0	54.0
Connecticut	50.0	51.0	51.0	51.0	52.0	54.0	52.0	49.0	48.0	48.0
Delaware	50.0	52.0	53.0	53.0	53.0	53.0	54.0	49.0	47.0	47.0
District of Columbia  Total	42.0	42.0 <b>42.0</b>	43.0	44.0 44.0	45.0 45.0	46.0	47.0 <b>47.0</b>	46.0	45.0 45.0	42.0 42.0







	Average	Top-box	% by Me	asure an	d Release	Period				
Measure	07_2015	07_2016	07_2017	07_2018	07_2019	07_2020	07_2021	07_2022	07_2023	Total
Care Transition	52.02%	52.38%	52.45%	52.90%	53.29%	53.75%	53.84%	52.14%	51.04%	52.65%
Cleanliness of Hospital Environment	73.57%	73.60%	74.35%	74.88%	75.24%	75.69%	75.61%	72.71%	71.73%	74.15%
Communication about Medicines	64.92%	64.84%	65.41%	65.69%	65.86%	66.12%	66.10%	63.02%	61.49%	64.83%
Communication with Doctors	81.67%	81.88%	81.96%	81.82%	81.31%	81.69%	81.86%	80.53%	79.67%	81.38%
Communication with Nurses	79.25%	79.78%	80.27%	80.43%	80.45%	81.00%	81.10%	79.98%	79.00%	80.14%
Discharge Information	86.22%	86.78%	87.35%	87.29%	86.98%	87.02%	87.08%	86.43%	85.67%	86.76%
Overall Hospital Rating	70.45%	71.36%	72.20%	72.71%	72.35%	72.69%	72.82%	71.86%	70.06%	71.83%
Quietness of Hospital Environment	61.16%	61.78%	62.02%	61.61%	61.12%	61.65%	61.65%	62.02%	61.08%	61.56%
Responsiveness of Hospital Staff	68.08%	68.84%	68.92%	69.65%	70.06%	70.33%	70.37%	66.92%	65.45%	68.74%
Willingness to Recommend the Hospital	70.94%	71.32%	71.75%	72.12%	71.59%	72.08%	71.96%	70.84%	68.98%	71.29%
Total	70.83%	71.26%	71.67%	71.91%	71.83%	<b>72.20</b> %	72.24%	70.65%	69.42%	71.33%

## **Middle-Box Rating Analysis**



49.0

Max Middle-box %

9.0

Min Middle-box %

22.53%

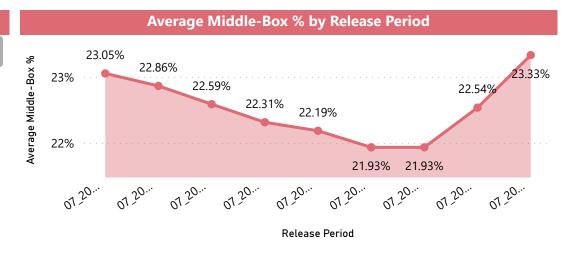
Avg Middle-Box %

0.28%

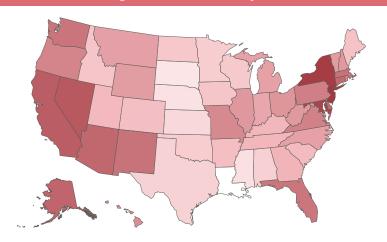
Diff %\_ 2015 to 2023

Release Period	~	Region	~	State	~
All	~	All	~	All	~

Minimum Middle-box % by States and Release Period											
State Name	07_2015	07_2016	07_2017	07_2018	07_2019	07_2020	07_2021	07_2022	07_2023	Total	
Alabama	11.0	11.0	11.0	12.0	12.0	11.0	11.0	12.0	13.0	11.0	
Alaska	15.0	15.0	16.0	15.0	16.0	14.0	13.0	17.0	15.0	13.0	
Arizona	17.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	18.0	17.0	
Arkansas	12.0	11.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	11.0	
California	16.0	16.0	16.0	16.0	17.0	16.0	16.0	17.0	17.0	16.0	
Colorado	15.0	15.0	14.0	15.0	14.0	13.0	13.0	14.0	15.0	13.0	
Connecticut	15.0	16.0	15.0	16.0	15.0	15.0	15.0	16.0	17.0	15.0	
Delaware	17.0	16.0	15.0	15.0	15.0	14.0	15.0	17.0	18.0	14.0	
Total	10.0	9.0	9.0	10.0	10.0	9.0	10.0	10.0	11.0	9.0	



#### **Average Middle-Box % by States**



#### Average Middle-box % by Measure and Release Period Measure 07 2015 07 2016 07 2017 07 2018 07 2019 07 2020 07 2021 07 2022 07 2023 **Total Care Transition** 42.12% 42.73% 42.40% 42.43% 42.16% 41.76% 41.39% 41.29% 41.98% 42.90% Cleanliness of Hospital Environment 17.31% 16.80% 16.88% 17.90% 18.45% **17.66%** 18.22% 18.24% 17.63% 17.53% Communication about Medicines 17.22% 17.49% 17.82% 17.61% 17.59% 17.57% 17.33% 18.14% 18.53% 17.70% 14.39% 15.10% **14.15%** Communication with Doctors 14.10% 14.10% 14.04% 13.92% 14.04% 13.86% 13.78% Communication with Nurses 16.08% 15.65% 15.47% 15.24% 14.88% 14.98% 15.43% 16.14% 15.58% 16.39% Overall Hospital Rating 20.90% 20.39% 21.73% 21.12% 20.51% 19.88% 19.82% 19.84% 19.71% 19.98% Quietness of Hospital Environment 29.24% 28.98% 28.90% 28.24% 28.88% 28.95% 29.47% 29.04% 28.94% 28.84% Responsiveness of Hospital Staff 24.16% 22.56% 23.24% 22.90% 22.82% 22.18% 21.51% 21.51% 21.55% 23.18% Willingness to Recommend the Hospital 23.12% 23.59% 24.92% 23.64% 24.14% 23.88% 23.47% 22.94% **Total** 23.05% 22.19% 23.33% 22.53% 22.86% 22.31% 21.93% 21.93% 22.54%

## **Bottom-Box Rating Analysis**



29.0

**Max Bottom-box** %

2.0

Min Bottom-box %

8%

**Avg Bottom-Box %** 

1.16%

Diff %\_ 2015 to 2023

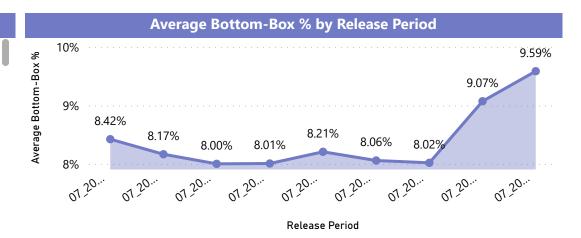
Release Period 

All

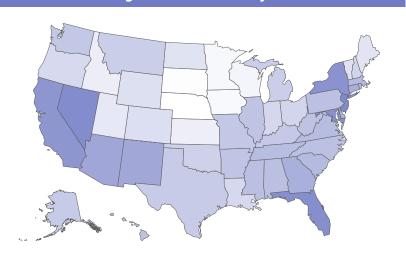
Region ×

State ×

Minimum Bottom-box % by States and Release Period												
State Name	07_2015	07_2016	07_2017	07_2018	07_2019	07_2020	07_2021	07_2022	07_2023	Total		
Alabama	3.0	3.0	3.0	4.0	4.0	5.0	5.0	5.0	5.0	3.0		
Alaska	7.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	3.0	3.0		
Arizona	5.0	5.0	5.0	5.0	5.0	6.0	5.0	6.0	7.0	5.0		
Arkansas	4.0	4.0	4.0	4.0	5.0	4.0	4.0	5.0	4.0	4.0		
California	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0		
Colorado	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0		
Connecticut	4.0	4.0	5.0	4.0	5.0	4.0	4.0	5.0	6.0	4.0		
Delaware	4 0	4 0	40	40	40	5.0	5.0	5.0	6.0	4 0		
Total	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		



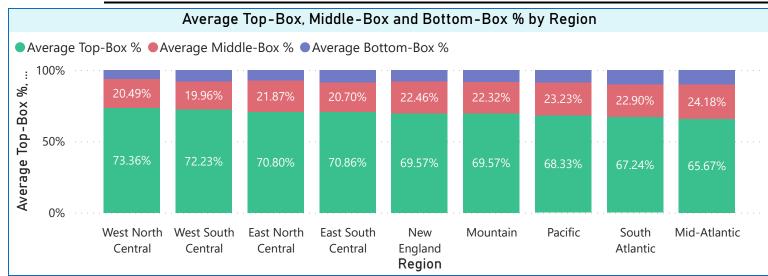
#### **Average Bottom-Box % by States**

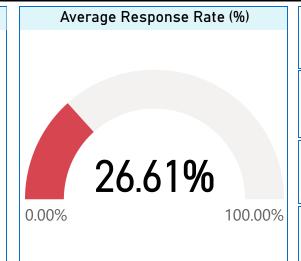


Average Bottom-box % by Measure and Release Period										
Measure	07_2015	07_2016	07_2017	07_2018	07_2019	07_2020	07_2021	07_2022	07_2023	Total
Care Transition	5.25%	5.22%	5.12%	4.94%	4.94%	4.86%	4.86%	5.88%	6.06%	5.24%
Cleanliness of Hospital Environment	8.22%	8.16%	8.02%	7.59%	7.45%	7.51%	7.51%	9.39%	9.82%	8.19%
Communication about Medicines	17.59%	17.34%	16.98%	16.73%	16.57%	16.55%	16.69%	18.84%	19.98%	17.47%
Communication with Doctors	4.24%	4.02%	4.00%	4.25%	4.65%	4.45%	4.35%	5.08%	5.24%	4.48%
Communication with Nurses	4.35%	4.14%	4.08%	4.10%	4.31%	4.12%	3.92%	4.59%	4.86%	4.28%
Discharge Information	13.78%	13.22%	12.65%	12.71%	13.02%	12.98%	12.92%	13.57%	14.33%	13.24%
Overall Hospital Rating	7.82%	7.52%	7.29%	7.41%	7.82%	7.47%	7.47%	8.16%	9.04%	7.78%
Quietness of Hospital Environment	9.37%	8.98%	8.94%	9.41%	9.94%	9.51%	9.45%	9.75%	10.04%	9.49%
Responsiveness of Hospital Staff	8.69%	8.26%	8.25%	8.18%	8.43%	8.16%	8.08%	9.90%	10.39%	8.71%
Willingness to Recommend the Hospital	4.92%	4.80%	4.69%	4.76%	4.94%	4.98%	4.94%	5.57%	6.10%	5.08%
Total	8.42%	8.17%	8.00%	8.01%	8.21%	8.06%	8.02%	9.07%	9.59%	8.39%

#### **RATINGS BY STATES**









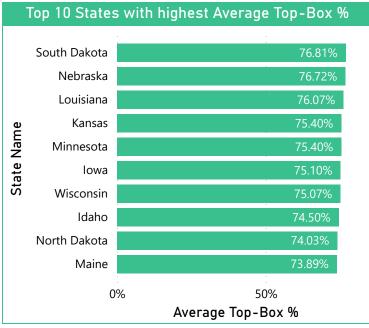
State Name	Region	No.of Facilities	Total	Avg Response Rate (%)	Response Rate (%) diff 2015 to 2023	Avg Top- Box %	Avg Middle- Box %	Avg Bottom- Box %	Top-box % diff 2015 to 2023	Middle-box % diff 2015 to 2023	Bottom-box % diff 2015 to 2023
<b>A</b>		racilities	Surveys %	Rate (%)	uiii 2015 to 2025	BUX %	DUX %	DUX 76	2015 to 2025	aiii 2015 to 2025	aiii 2015 to 2025
Alabama	East South Central	93	1.95%	25.73%	-7.89%	72.67%	20.72%	8.69%	-1.90%	0.44%	1.50%
Alaska	Pacific	21	0.21%	21.76%	-6.36%	70.04%	24.23%	8.14%	2.60%	0.33%	-2.90%
Arizona	Mountain	84	2.09%	27.60%	-9.62%	68.24%	24.16%	10.01%	-3.60%	0.78%	2.90%
Arkansas	West South Central	77	1.25%	24.97%	-8.56%	72.06%	21.65%	8.46%	0.50%	-0.89%	0.30%
California	Pacific	345	10.86%	22.84%	-7.77%	67.12%	24.44%	10.88%	-2.10%	0.67%	1.50%
Colorado	Mountain	83	1.74%	27.21%	-8.55%	73.47%	21.58%	7.11%	-0.40%	-0.33%	0.70%
Connecticut	New England	30	0.96%	25.12%	-6.58%	68.73%	24.09%	9.59%	-2.70%	0.78%	2.00%
Delaware	South Atlantic	7	0.16%	23.14%	-5.90%	69.02%	24.07%	9.31%	-3.70%	1.33%	2.50%
District of	South Atlantic	8	0.28%	20.61%	-10.14%	62.43%	25.57%	14.56%	-0.40%	-0.44%	0.80%
Columbia											
Florida	South Atlantic	191	8.03%	23.16%	-7.96%	67.38%	23.77%	11.23%	-2.90%	0.78%	2.20%
Georgia	South Atlantic	141	2.50%	21.14%	-7.74%	70.64%	22.05%	9.51%	-1.50%	0.22%	1.30%
Hawaii	Pacific	16	0.44%	25 60%	-7 23%	70.61%	23 10%	8 60%	-3.00%	1 67%	1 50%
Total		4793	100.00%	26.61%	-8.10%	71.33%	22.53%	8.39%	-1.41%	0.28%	1.16%

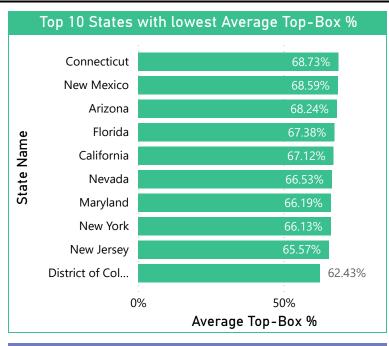
#### **Remarks**

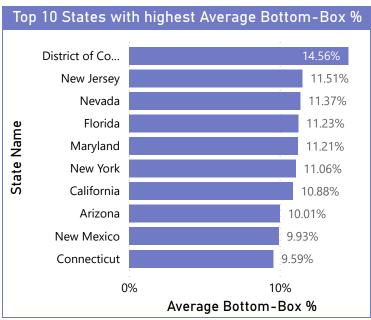
The Green color in the table shows the Positive change of Top-Box and Middle-Box ratings and Negative change of Bottom-Box ratings from 2015 to 2013. The Red color in the table shows the Negative change of Top-Box and Middle-Box ratings and Positive change of Bottom-Box ratings from 2015 to 2013.

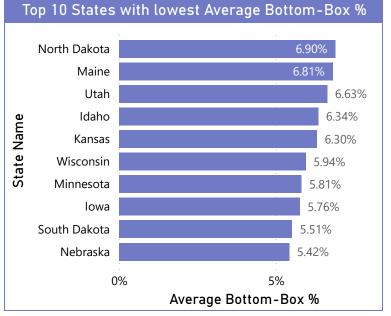
#### **RATINGS BY STATES**



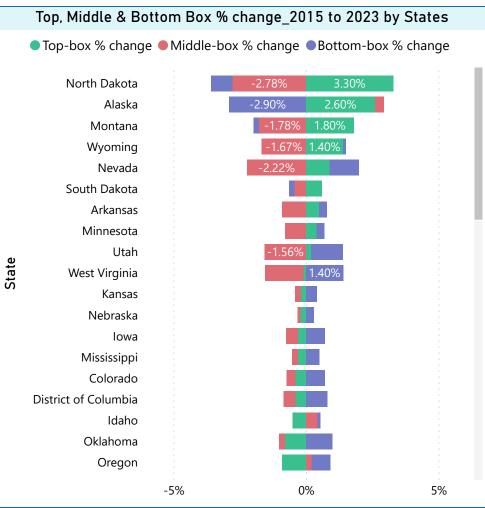












## DATA PREPARATION & MEASURES

#### **CREATED MEASURES**

- The Average of Top-Box, Middle-Box and Bottom-Box ratings.
- The Max, Min Values of all ratings for every year and for each measure.
- The difference of average of Top-box, Middle-box & Bottom-box ratings between report release years 2015 and 2023 to understand the rating trend from 9 years back until latest.
- The percentage of changes between total completed surveys in 2015 and 2023.
- Average of Survey response rate (%).
- The percentage of changes between average response rate (%) in 2015 and 2023.



#### **DATA CLEANING & PREPARING**

Replaced the text values in the column named 'completed surveys' in the table 'responses' as shown below, changing the column to whole number type for a better result.

<b>Text Value</b>	Replaced as Whole Number
300 or more	300
Between 100 and 299	200
Fewer than 100	100
Fewer than 50	50

#### **REMARKS**

The questions with the code **H\_COMP\_6** (included within the measure **Discharge Information**) offers only two response options, namely "Yes" or "No," eliminating the presence of a middle-box answer. Consequently, when computing the averages, minimum, and maximum values for middle-box responses, the value 0 for this particular question has been omitted from the calculations.

The state **Maryland (MD)** doesn't have survey report on **07\_2016** release period.

## **OVERALL HOSPITAL QUALITY OF CARE**



### Over the past 9 years, the overall quality of care of hospitals has decreased.

#### For the Past 9 Years

Top- box rating has been decreased by 1.41% average Middle-Box rating has been increased by 0.28% average Bottom-box rating has been increased by 1.16% average.

Up until 2021, there has been a consistent increase in the Average Top-box rating, a corresponding decrease in the Average Middle-box rating, while the Average Bottom-box rating has remained steady.

From 2021 to 2023, there has been a notable decrease in the Average Top-box rating, accompanied by a significant increase in the Average Middle-box rating. Additionally, the Average Bottom-box rating has experienced a slight increase during this period. Amid the challenges posed by the COVID-19 pandemic in 2020 and 2021, survey ratings took a hit. The Top-box percentage declined during this period, along with a slight increase in the Bottom-box ratings. However, the Bottom-box ratings has increased.

Release Period 2021 marks the highest Top-box rating (72.30%) and lowest Bottom-box rating (7.90%)

Until 2021, there was a consistent increase in the Average Top-Box rating; however, from the release period of 2021 to 2023, a decline in the average Top-Box rating has been observed.

## **MEASURES WITH SIGNIFICANT CHANGES IN RATING**



Highest Top-box rating

**Discharge Information 86.67%** 

Lowest Top-Box rating

**Care Transition 52.56%** 

Measures with significant decrease (Almost 2%)

in Avg Top-Box rating from 2015 to 2023

Cleanliness of Hospital Environment
Communication about Medicines
Communication with Doctors
Responsiveness of Hospital Staff
Willingness to Recommend the Hospital

Lowest Bottom-box rating

**Communication with Nurses 4.22%** 

Highest Bottom-box rating

**Communication about Medicines** 17.78%

Measures with significant increase (Almost 2%) in Avg Bottom-Box rating from 2015 to 2023

Cleanliness of Hospital Environment
Communication about Medicines
Communication with Doctors
Responsiveness of Hospital Staff
Willingness to Recommend the Hospital

## TOP-BOX & BOTTOM-BOX RATINGS\_ STATES & REGIONS



Highest Avg Top-box rating State

South Dakota 76.81%

Lowest Avg Top-Box rating State

District of Columbia

62.43%

Highest Avg Top-box rating Region

West North Central 74.89%

Lowest Avg Top-box rating Region

Mid-Atlantic 67.30%

The following states has witnessed a positive change in Top-Box rating and a negative change in Bottom-Box rating.

Alaska North Dakota Montana South Dakota 9 States shows positive change in Avg Top-Box ratings and 4 states shows negative change in Avg Bottom-Box ratings for the past 9 years. Which means these states has increased their healthcare quality.

## **SURVEY GROWTH & RESPONSE RATE (%) CHANGES**



#### For the Past 9 Years

Total No. of Surveys has been increased by 113% Average response rate (%) has been decreased by 8%

#### **Top 10 States by survey growth %**

**Florida** (268.55%) **District of Columbia (244.14%) New Jersey** (241.22%) Maryland (196.67%)Hawaii (178.22%)California (165.88%)Connecticut (162.50%) Massachusetts (150.77%) Alabama (145.18%) Missouri (139.09%)

#### **Regions with more than 100% Survey Growth**

South Atlantic (156.98%)
Pacific (143.22%)
Mid-Atlantic (136.72%)
New England (110.62%)
East North Central (105.33%)

#### **Bottom 3 States by survey growth % (Below 20%)**

Alaska (9.09%)
Wyoming (10.81%)
North Dakota (13.37%)

## **SURVEY GROWTH & RESPONSE RATE (%) CHANGES**



While every states has witnessed a positive growth in no. of surveys taken, but average response rate (%) has been decreased everywhere for the past 9 years

- For the past 9 years, **District of Columbia** is in the second top position of the top 10 states of Survey Growth with 244%, but the average response rate has been decreased by 10%.
- Maryland has also witnessed a 197% survey growth, though the average response rate has been decreased by 10% for the past 9 years.

- The state, **Utah** has witnessed the lowest decrease (-15%) of average response rate (%), though it has 194% survey growth for the past 9 years.
- **Idaho** (-12%) is the second last state with average response rate (%) change and shows a lower survey growth % (45%) compared to other states.

### **MAVEN RECOMMENDED ANALYSIS**



## Have hospitals made improvements in their quality of care over the past 9 years?

Over the past nine years, there has been an overall decline in the quality of healthcare provided by hospitals. Up until 2021, the average top-box rating in surveys was on an increasing trend, while the average bottom-box rating remained stable. However, from 2021 to 2023, there has been a rapid decrease in the average top-box rating, a slight increase in the bottom-box rating, and a significant increase in the middle-box rating.

Despite this overall trend, when examining state-wise or region-wise reports, it becomes evident that many hospitals have made noteworthy improvements in the quality of care. Specifically, nine states have seen an increase in top-box ratings, while four states have experienced a decline in bottom-box ratings.

### **MAVEN RECOMMENDED ANALYSIS**



# Are there any specific areas where hospitals have made more progress than others?

In the context of ratings over the past nine years, there has been an overall negative trend for all measures in top-box rating and positive trend in bottom-box rating, indicating a decline in ratings. However, when examining middle-box ratings, there are positive changes observed in specific measures, including:

- Communication about Medicines
- Responsiveness of Hospital Staff
- Communication with Doctors
- Willingness to Recommend the Hospital
- Cleanliness of Hospital Environment
- **Care Transition**

### **MAVEN RECOMMENDED ANALYSIS**



## Are there still any major areas of opportunity?

Yes. Certain measures have witnessed a notable **decrease** of nearly **2% in the average top-box rating**, coupled with a corresponding **increase** of almost **2% in the average bottom-box rating**. This signifies areas that warrant focused improvements, particularly in the following aspects:

- Communication about Medicines
- Responsiveness of Hospital Staff
- Cleanliness of Hospital Environment

Additionally, the **top-box rating** for the following measures has experienced a significant **decline** over the past nine years:

- Communication with Doctors
- Willingness to Recommend the Hospital

### **RECOMMENDATIONS & SOLUTIONS**



- Implement training programs for healthcare staff to improve communication with patients about medications.
- Establish clear communication channels for patients to provide feedback on staff responsiveness.
- Implement rigorous cleanliness protocols and regular audits to maintain a hygienic environment.
- Encourage doctors to enhance patient communication, providing clear explanations and addressing concerns.
- Gather patient feedback systematically and address specific issues affecting recommendation scores.
- Utilize state-specific strategies for areas where bottom-box ratings have increased.
- Encourage an open feedback loop, allowing patients and staff to contribute to ongoing quality improvement initiatives.
- Explore innovative technologies to streamline communication and improve patient experiences.
- Implement digital solutions for appointment scheduling, information dissemination, and patient engagement.
- Recognize and reward staff contributions to quality improvement initiatives.