

Hospital Consumer Assessment of Healthcare Providers and Systems

➤ URLS's

Hospital General Information –

<https://data.medicare.gov/Hospital-Compare/Hospital-General-Information/xubh-q36u>

HCAHPS – Hospital-

<https://data.medicare.gov/Hospital-Compare/Patient-survey-HCAHPS-Hospital/dgck-syfz>

HCAHPS – State-

<https://data.medicare.gov/Hospital-Compare/Patient-survey-HCAHPS-State/84jm-wiui>

➤ Data Cleaning

Empty Columns:

All the excel sheet contains completely empty columns only with header number. As shown in below figure

HCAHPS - Hospital1 - Excel

E	F	G	H
1 HCAHPS Answer Description	Patient Survey Star Rating	Patient Survey Star Rating Footnote	HCAHPS Answer Percent
2 Summary star rating	Not Applicable	3	Not Applicable
3 Room was "always" clean	Not Applicable	2	66
4 Room was "sometimes" or "never" clean	Not Applicable	2	12
5 Room was "usually" clean	Not Applicable	2	22
6 Cleanliness - linear mean score	Not Applicable	2	Not Applicable
7 Cleanliness - star rating	Not Applicable	2	Not Applicable
8 Nurses "always" communicated well	Not Applicable	2	75
9 Nurse communication - linear mean score	Not Applicable	2	Not Applicable
10 Nurses "sometimes" or "never" communicated well	Not Applicable	2	7
11 Nurse communication - star rating	Not Applicable	2	Not Applicable
12 Nurses "usually" communicated well	Not Applicable	2	18
13 Doctors "always" communicated well	Not Applicable	2	81
14 Doctor communication - linear mean score	Not Applicable	3	Not Applicable
15 Doctors "sometimes" or "never" communicated well	Not Applicable	3	4
16 Doctor communication - star rating	Not Applicable	3	Not Applicable
17 Doctors "usually" communicated well	Not Applicable	2	15
18 Patients "always" received help as soon as they wanted	Not Applicable	2	58
19 Staff responsiveness - linear mean score	Not Applicable	2	Not Applicable
20 Patients "sometimes" or "never" received help as soon as they wanted	Not Applicable	2	15
21 Staff responsiveness - star rating	Not Applicable	2	Not Applicable
22 Patients "usually" received help as soon as they wanted	Not Applicable	2	27
23 Pain was "always" well controlled	Not Applicable	2	66
24 Pain management - linear mean score	Not Applicable	2	Not Applicable
25 Pain was "sometimes" or "never" well controlled	Not Applicable	2	9
26 Pain management - star rating	Not Applicable	2	Not Applicable
27 Pain was "usually" well controlled	Not Applicable	2	25
28 Staff "always" explained	Not Applicable	2	61
29 Communication about medicines - linear mean score	Not Applicable	2	Not Applicable

Solution: Removal of columns that are empty, only with header name to avoid redundant null values when loading data into tableau. Below figure shows datasheet with elimination of entire blank column.

HCAHPS - Hospital1 - Excel

E	F	G	H	I	J
1 HCAHPS Answer Description	Patient Survey Star Rating	HCAHPS Answer Percent	HCAHPS Linear Mean Value	Number of Completed Surveys	Survey Response Rate
2 Summary star rating	Not Applicable	3	Not Applicable	1313	
3 Room was "always" clean	Not Applicable	12	Not Applicable	1313	
4 Room was "sometimes" or "never" clean	Not Applicable	22	Not Applicable	1313	
5 Room was "usually" clean	Not Applicable	2	Not Applicable	1313	
6 Cleanliness - linear mean score	Not Applicable	2	Not Applicable	1313	
7 Cleanliness - star rating	Not Applicable	2	Not Applicable	1313	
8 Nurses "always" communicated well	Not Applicable	75	Not Applicable	1313	
9 Nurse communication - linear mean score	Not Applicable	2	Not Applicable	1313	
10 Nurses "sometimes" or "never" communicated well	Not Applicable	89	Not Applicable	1313	
11 Nurse communication - star rating	Not Applicable	2	Not Applicable	1313	
12 Nurses "usually" communicated well	Not Applicable	2	Not Applicable	1313	
13 Doctors "always" communicated well	Not Applicable	81	Not Applicable	1313	
14 Doctor communication - linear mean score	Not Applicable	2	Not Applicable	1313	
15 Doctors "sometimes" or "never" communicated well	Not Applicable	92	Not Applicable	1313	
16 Doctor communication - star rating	Not Applicable	3	Not Applicable	1313	
17 Doctors "usually" communicated well	Not Applicable	15	Not Applicable	1313	
18 Patients "always" received help as soon as they wanted	Not Applicable	2	Not Applicable	1313	
19 Staff responsiveness - linear mean score	Not Applicable	2	Not Applicable	1313	
20 Patients "sometimes" or "never" received help as soon as they wanted	Not Applicable	15	Not Applicable	1313	
21 Staff responsiveness - star rating	Not Applicable	2	Not Applicable	1313	
22 Patients "usually" received help as soon as they wanted	Not Applicable	27	Not Applicable	1313	
23 Pain was "always" well controlled	Not Applicable	66	Not Applicable	1313	
24 Pain management - linear mean score	Not Applicable	2	Not Applicable	1313	
25 Pain was "sometimes" or "never" well controlled	Not Applicable	85	Not Applicable	1313	
26 Pain management - star rating	Not Applicable	2	Not Applicable	1313	
27 Pain was "usually" well controlled	Not Applicable	25	Not Applicable	1313	
28 Staff "always" explained	Not Applicable	61	Not Applicable	1313	
29 Communication about medicines - linear mean score	Not Applicable	2	Not Applicable	1313	

Incomplete data values [Missing Values] : Few of the records had missing data values. In the below screenshot you can see in “Hospital overall rating” column few of the data values are missing. It creates inconsistency while creating visualization based on the data mentioned in “Hospital overall rating” column.

A	B	C	D	E	F	G
1	State	County Name	Hospital Type	Hospital Ownership	Emergency Services	Hospital overall rating
2	AL	MARSHALL	Acute Care Hospitals	Government - Hospital District or Authority	TRUE	3
3	AL	RANDOLPH	Acute Care Hospitals	Government - Hospital District or Authority	TRUE	4
4	AL	MADISON	Acute Care Hospitals	Proprietary	TRUE	3
5	AK	ANCHORAGE	Acute Care Hospitals	Voluntary non-profit - Church	TRUE	3
6	AK	BETHEL	Acute Care Hospitals	Tribal	TRUE	
7	AK	DILLINGHAM	Critical Access Hospitals	Voluntary non-profit - Private	TRUE	
8	AK	NORTHWEST ARCTIC	Critical Access Hospitals	Tribal	TRUE	
9	AZ	APACHE	Acute Care Hospitals	Government - Federal	TRUE	
10	AZ	COCONINO	Acute Care Hospitals	Voluntary non-profit - Other	FALSE	3 This hospital's star rating only includes data reported on inpatient services
11	AZ	PIMA	Acute Care Hospitals	Government - Federal	FALSE	2 There are too few measures or measure groups reported to calculate a star rating or measure group score
12	AZ	GILA	Acute Care Hospitals	Government - Federal	FALSE	2 This hospital's star rating only includes data reported on inpatient services
13	AZ	APACHE	Acute Care Hospitals	Government - Federal	TRUE	
14	AR	PULASKI	Acute Care Hospitals	Voluntary non-profit - Private	TRUE	2 There are too few measures or measure groups reported to calculate a star rating or measure group score
15	AZ	NAVAJO	Critical Access Hospitals	Tribal	FALSE	2 This hospital's star rating only includes data reported on inpatient services
16	AZ	APACHE	Critical Access Hospitals	Voluntary non-profit - Private	FALSE	
17	AR	CONWAY	Critical Access Hospitals	Voluntary non-profit - Church	TRUE	
18	AR	CHICOT	Critical Access Hospitals	Voluntary non-profit - Private	TRUE	
19	CA	RIVERSIDE	Acute Care Hospitals	Government - Hospital District or Authority	TRUE	3 Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Q
20	CA	SAN FRANCISCO	Acute Care Hospitals	Voluntary non-profit - Church	TRUE	2
21	CA	ORANGE	Acute Care Hospitals	Voluntary non-profit - Private	TRUE	4
22	CA	PLACER	Acute Care Hospitals	Voluntary non-profit - Other	TRUE	4
23	CA	SANTA CLARA	Acute Care Hospitals	Voluntary non-profit - Private	TRUE	4
24	CA	ALAMEDA	Acute Care Hospitals	Voluntary non-profit - Other	TRUE	3
25	CA	ORANGE	Acute Care Hospitals	Voluntary non-profit - Private	TRUE	3
26	CA	LOS ANGELES	Acute Care Hospitals	Government - Local	FALSE	3
27	CA	ORANGE	Childrens	Voluntary non-profit - Private	TRUE	4
28	CO	BROOMFIELD	Acute Care Hospitals	Voluntary non-profit - Church	TRUE	4
29	CT	HARTFORD	Acute Care Hospitals	Voluntary non-profit - Private	TRUE	3

Solution: Inserted “Not Available” string in the empty cells of the record.

Hospital_General_Information - Excel

A	B	C	D	E	F	G	
1	State	County Name	Hospital Type	Hospital Ownership	Emergency Services	Hospital overall rating	Hospital overall rating footnote
2 AL	MARSHALL		Acute Care Hospitals	Government - Hospital District or Authority	TRUE	3 Not Available	
3 AL	RANDOLPH		Acute Care Hospitals	Government - Hospital District or Authority	TRUE	4 Not Available	
4 AL	MADISON		Acute Care Hospitals	Proprietary	TRUE	3 Not Available	
5 AK	ANCHORAGE		Acute Care Hospitals	Voluntary non-profit - Church	TRUE	3 Not Available	
6 AK	BETHEL		Acute Care Hospitals	Tribal	TRUE	3 This hospital's star rating only includes data reported on inpatient services	
7 AK	DILLINGHAM		Critical Access Hospitals	Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
8 AK	NORTHWEST ARCTIC		Critical Access Hospitals	Tribal	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Q
9 AZ	APACHE		Acute Care Hospitals	Government - Federal	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
10 AZ	COCONINO		Acute Care Hospitals	Voluntary non-profit - Other	FALSE	3 This hospital's star rating only includes data reported on inpatient services	
11 AZ	PIMA		Acute Care Hospitals	Government - Federal	FALSE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
12 AZ	GILA		Acute Care Hospitals	Government - Federal	FALSE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
13 AZ	APACHE		Acute Care Hospitals	Government - Federal	TRUE	2 This hospital's star rating only includes data reported on inpatient services	
14 AR	PULASKI		Acute Care Hospitals	Voluntary non-profit - Private	TRUE	Not Available	2 Not Available
15 AZ	NAVAJO		Critical Access Hospitals	Tribal	FALSE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
16 AZ	APACHE		Critical Access Hospitals	Voluntary non-profit - Private	FALSE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
17 AR	CONWAY		Critical Access Hospitals	Voluntary non-profit - Church	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
18 AR	CHICOT		Critical Access Hospitals	Voluntary non-profit - Private	TRUE	3 Not Available	
19 CA	RIVERSIDE		Acute Care Hospitals	Government - Hospital District or Authority	TRUE	3 Not Available	
20 CA	SAN FRANCISCO		Acute Care Hospitals	Voluntary non-profit - Church	TRUE	2 Not Available	
21 CA	ORANGE		Acute Care Hospitals	Voluntary non-profit - Private	TRUE	4 Not Available	
22 CA	PLACER		Acute Care Hospitals	Voluntary non-profit - Other	TRUE	4 Not Available	
23 CA	SANTA CLARA		Acute Care Hospitals	Voluntary non-profit - Private	TRUE	4 Not Available	
24 CA	ALAMEDA		Acute Care Hospitals	Voluntary non-profit - Other	TRUE	3 Not Available	
25 CA	ORANGE		Acute Care Hospitals	Voluntary non-profit - Private	TRUE	3 Not Available	
26 CA	LOS ANGELES		Acute Care Hospitals	Government - Local	FALSE	3 Not Available	
27 CA	ORANGE	Childrens	Acute Care Hospitals	Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Q
28 CO	BROOMFIELD		Acute Care Hospitals	Voluntary non-profit - Church	TRUE	4 Not Available	
29 CT	HARTFORD		Acute Care Hospitals	Voluntary non-profit - Private	TRUE	3 Not Available	

Name Conflict [Contradicting Records]: In the below figure measure id "H_CLEAN_HSP_A_P" provides description "Room was always clean", while the same id in the hospital sheet has description "Patients who reported that their room and bathroom were "Always"

clean"

	A	B	C	D
	HCAHPS Question		HCAHPS Measure ID	HCAHPS Answer Description
1	State		H_CLEAN_HSP_A_P	Room was "always" clean
2	AK Patients who reported that their room and bathroom were "Always" clean		H_CLEAN_HSP_SN_P	Room was "sometimes" or "never" clean
3	AK Patients who reported that their room and bathroom were "Sometimes" or "Never" clean		H_CLEAN_HSP_U_P	Room was "usually" clean
4	AK Patients who reported that their room and bathroom were "Usually" clean		H_COMP_1_A_P	Nurses "always" communicated well
5	AK Patients who reported that their nurses "Always" communicated well		H_COMP_1_SN_P	Nurses "sometimes" or "never" communicated well
6	AK Patients who reported that their nurses "Sometimes" or "Never" communicated well		H_COMP_1_U_P	Nurses "usually" communicated well
7	AK Patients who reported that their nurses "Usually" communicated well		H_COMP_2_A_P	Doctors "always" communicated well
8	AK Patients who reported that their doctors "Always" communicated well		H_COMP_2_SN_P	Doctors "sometimes" or "never" communicated well
9	AK Patients who reported that their doctors "Usually" communicated well		H_COMP_2_U_P	Doctors "usually" communicated well
10	AK Patients who reported that their doctors "Usually" communicated well		H_COMP_3_A_P	Patients "always" received help as soon as they wanted
11	AK Patients who reported that they "Always" received help as soon as they wanted		H_COMP_3_SN_P	Patients "sometimes" or "never" received help as soon as they wanted
12	AK Patients who reported that they "Sometimes" or "Never" received help as soon as they wanted		H_COMP_3_U_P	Patients "usually" received help as soon as they wanted
13	AK Patients who reported that they "Usually" received help as soon as they wanted		H_COMP_4_A_P	Pain was "always" well controlled
14	AK Patients who reported that their pain was "Always" well controlled		H_COMP_4_SN_P	Pain was "sometimes" or "never" well controlled
15	AK Patients who reported that their pain was "Sometimes" or "Never" well controlled		H_COMP_4_U_P	Pain was "usually" well controlled
16	AK Patients who reported that their pain was "Usually" well controlled		H_COMP_5_A_P	Staff "always" explained
17	AK Patients who reported that staff "Always" explained about medicines before giving it to them		H_COMP_5_SN_P	Staff "sometimes" or "never" explained
18	AK Patients who reported that staff "Usually" explained about medicines before giving it to them		H_COMP_5_U_P	Staff "usually" explained
19	AK Patients who reported that staff "Usually" explained about medicines before giving it to them		H_COMP_6_N_P	No, staff "did not" give patients this information
20	AK Patients who reported that NO, they were not given information about what to do during their recovery at home		H_COMP_6_Y_P	Yes, staff "did" give patients this information
21	AK Patients who reported that YES, they were given information about what to do during their recovery at home		H_COMP_7_A	Patients who "Agree" they understood their care when they left the hospital
22	AK Patients who "Agree" they understood their care when they left the hospital		H_COMP_7_D_SD	Patients who "Disagree" or "Strongly Disagree" they understood their care when they left the hospital
23	AK Patients who "Disagree" or "Strongly Disagree" they understood their care when they left the hospital		H_COMP_7_SA	Patients who "Strongly Agree" they understood their care when they left the hospital
24	AK Patients who "Strongly Agree" they understood their care when they left the hospital		H_HSP_RATING_0_6	Patients who gave a rating of "6" or lower (low)
25	AK Patients who gave their hospital a rating of 6 or lower on a scale from 0 (lowest) to 10 (highest)		H_HSP_RATING_7_8	Patients who gave a rating of "7" or "8" (medium)
26	AK Patients who gave their hospital a rating of 7 or 8 on a scale from 0 (lowest) to 10 (highest)		H_HSP_RATING_9_10	Patients who gave a rating of "9" or "10" (high)
27	AK Patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest)		H QUIET_HSP_A_P	"Always" quiet at night
28	AK Patients who reported that the area around their room was "Always" quiet at night		H QUIET_HSP_SN_P	"Sometimes" or "never" quiet at night
29	AK Patients who reported that the area around their room was "Sometimes" or "Never" quiet at night			

	C	D	E
	HCAHPS Measure ID	HCAHPS Question	HCAHPS Answer Description
1	H STAR RATING	Summary star rating	Summary star rating
2	H_CLEAN_HSP_A_P	Patients who reported that their room and bathroom were "Always" clean	Room was "always" clean
3	H_CLEAN_HSP_SN_P	Patients who reported that their room and bathroom were "Sometimes" or "Never" clean	Room was "sometimes" or "never" clean
4	H_CLEAN_HSP_U_P	Patients who reported that their room and bathroom were "Usually" clean	Room was "usually" clean
5	H_CLEAN_LINEAR_SCORE	Cleanliness - linear mean score	Cleanliness - linear mean score
6	H_CLEAN_STAR_RATING	Cleanliness - star rating	Cleanliness - star rating
7	H_COMP_1_A_P	Patients who reported that their nurses "Always" communicated well	Nurses "always" communicated well
8	H_COMP_1_LINEAR_SCORE	Nurse communication - linear mean score	Nurse communication - linear mean score
9	H_COMP_1_SN_P	Patients who reported that their nurses "Sometimes" or "Never" communicated well	Nurses "sometimes" or "never" communicated well
10	H_COMP_1_STAR_RATING	Nurse communication - star rating	Nurse communication - star rating
11	H_COMP_2_A_P	Patients who reported that their nurses "Usually" communicated well	Nurses "usually" communicated well
12	H_COMP_2_SN_P	Patients who reported that their doctors "Always" communicated well	Doctors "always" communicated well
13	H_COMP_2_U_P	Patients who reported that their doctors "Usually" communicated well	Doctor communication - linear mean score
14	H_COMP_2_LINEAR_SCORE	Doctor communication - linear mean score	Doctors "sometimes" or "never" communicated well
15	H_COMP_2_SN_P	Patients who reported that their doctors "Sometimes" or "Never" communicated well	Doctor communication - star rating
16	H_COMP_2_STAR_RATING	Doctor communication - star rating	Doctors "usually" communicated well
17	H_COMP_2_U_P	Patients who reported that their doctors "Usually" communicated well	Patients "always" received help as soon as they wanted
18	H_COMP_3_A_P	Patients who reported that they "Always" received help as soon as they wanted	Staff responsiveness - linear mean score
19	H_COMP_3_SN_P	Patients who reported that they "Always" received help as soon as they wanted	Patients "sometimes" or "never" received help as soon as they wanted
20	H_COMP_3_U_P	Patients who reported that they "Always" received help as soon as they wanted	Staff responsiveness - star rating
21	H_COMP_3_STAR_RATING	Staff responsiveness - star rating	Patients "usually" received help as soon as they wanted
22	H_COMP_3_U_P	Patients who reported that they "Usually" received help as soon as they wanted	Pain was "always" well controlled
23	H_COMP_4_A_P	Patients who reported that their pain was "Always" well controlled	Pain management - linear mean score
24	H_COMP_4_LINEAR_SCORE	Pain management - linear mean score	Pain was "sometimes" or "never" well controlled
25	H_COMP_4_SN_P	Patients who reported that their pain was "Sometimes" or "Never" well controlled	Pain management - star rating
26	H_COMP_4_STAR_RATING	Pain management - star rating	Pain was "usually" well controlled
27	H_COMP_4_U_P	Patients who reported that their pain was "Usually" well controlled	Staff "always" explained
28	H_COMP_5_A_P	Patients who reported that staff "Always" explained about medicines before giving it to them	Communication about medicines - linear mean score
29	H_COMP_5_LINEAR_SCORE	Communication about medicines - linear mean score	

Solution 1: Refer HCAHPS website and generate standardized description for each measure id.

Solution2: Join both the sheet via other parameters other than measure id. For example: Inner join via state or county name as shown in below figure to preserve all different questions mentioned in both the sheet. With this we can create analysis visualization based on HCAHPS question by using filter.

The screenshot shows the Tableau Data Source interface. On the left, under 'Connections', there are three connections: 'HCAHPS - Hospital' (Text File), 'HCAHPS - State' (Text File), and 'Hospital_General_Information' (Text File). In the center, a join dialog box is open, showing a red border around it. The dialog box has two tabs: 'Join' (selected) and 'Data Source'. Under 'Join', four options are listed: 'Inner', 'Left', 'Right', and 'Full Outer'. Under 'Data Source', 'HCAHPS - Hospital.csv' is selected as the left source and 'HCAHPS - State.csv' is selected as the right source. A condition 'State = State [HCAHPS...' is set. Below the dialog box is a preview of the joined data, which includes columns from both CSV files. The preview table has 1,000 rows. At the bottom, there are buttons for 'Go to Worksheet' and 'Sheet1'.

Removal of confidential Data: In the downloaded data set shown in below figure, there is confidential information about the provider, which can result into breach of confidentiality information, so have removed it from the dataset.

Hospital_General_Information - Excel

A	B	C	D	E	F	G	H	I
Provider ID	Hospital Name	Address	City	State	ZIP Code	County Name	Phone Number	Hospital Type
1	10005 MARSHALL MEDICAL CENTER SOUTH	2505 U.S HIGHWAY 431 NORTH	BOAZ	AL	35957	MARSHALL	2565938310	Acute Care Hospitals
2	10032 WEDOWEE HOSPITAL	209 NORTH MAIN STREET	WEDOWEE	AL	36278	RANDOLPH	2563572111	Acute Care Hospitals
3	10131 CRESTWOOD MEDICAL CENTER	ONE HOSPITAL DR SE	HUNTSVILLE	AL	35801	MADISON	2568823100	Acute Care Hospitals
4	20001 PROVIDENCE ALASKA MEDICAL CENTER	POV-196604	ANCHORAGE	AK	99509	ANCHORAGE	9021132675	Acute Care Hospitals
5	20018 YUKON KUSKOKWIM DELTA REG HOSPITAL	PO BOX 287	BETHEL	AK	99559	BETHEL	9075436300	Acute Care Hospitals
6	21309 KANAKANA HOSPITAL	P O BOX 130	DILLINGHAM	AK	99576	DILLINGHAM	9078425260	Critical Access Hospitals
8	21310 MANIILAQ HEALTH CENTER	PO BOX 43	KOTZEBUE	AK	99752	NORTHWEST ARCTIC	9074423321	Critical Access Hospitals
9	30071 FORT DEFIANCE INDIAN HOSPITAL	PO BOX 649	FORT DEFIANCE	AZ	86504	APACHE	9287298000	Acute Care Hospitals
10	30073 TUBA CITY REGIONAL HEALTH CARE CORPORATION	PO BOX 600	TUBA CITY	AZ	86045	COCONINO	9282832500	Acute Care Hospitals
11	30074 SELLS INDIAN HEALTH SERVICE HOSPITAL	PO BOX 548	SELLS	AZ	85634	PIMA	5203837200	Acute Care Hospitals
12	30077 SAN CARLOS APACHE HEALTHCARE	103 MEDICINE WAY ROAD	PERIDOT	AZ	85542	GILA	9284751200	Acute Care Hospitals
13	30084 CHINLE COMPREHENSIVE HEALTH CARE FACILITY	US HWY 191, HOSPITAL ROAD	CHINLE	AZ	86503	APACHE	9286747001	Acute Care Hospitals
14	40007 CHI-ST VINCENT INFIRMIERY	TWO ST VINCENT CIRCLE	LITTLE ROCK	AR	72205	PULASKI	5015523000	Acute Care Hospitals
15	31305 HOPI HEALTH CARE CENTER	HIGHWAY 264, MILEPOST 388	POLACCA	AZ	86042	NAVAJO	9287376000	Critical Access Hospitals
16	31309 SAGE MEMORIAL HOSPITAL	STATE ROUTE 264 SOUTH 191 PO BOX 457	GANADO	AZ	86505	APACHE	928754559	Critical Access Hospitals
17	41324 CHI ST VINCENT MORRILTON	#4 HOSPITAL DRIVE	MORRILTON	AR	72110	CONWAY	5019772300	Critical Access Hospitals
18	41328 CHICOT MEMORIAL MEDICAL CENTER	2729 SOUTH HIGHWAY 65 & 82	LAKE VILLAGE	AR	71653	CHICOT	8702655351	Critical Access Hospitals
19	50054 SAN GORGONIO MEMORIAL HOSPITAL	600 NORTH HIGHLAND SPRINGS AVENUE	BANNING	CA	92220	RIVERSIDE	9518451121	Acute Care Hospitals
20	50055 CALIFORNIA PACIFIC MEDICAL CTR - ST. LUKE'S CAMPUS	3555 CESAR CHAVEZ STREET	SAN FRANCISCO	CA	94110	SAN FRANCISCO	4156416562	Acute Care Hospitals
21	50224 HOAG MEMORIAL HOSPITAL PRESBYTERIAN	ONE HOAG DRIVE	NEWPORT BEACH	CA	92663	ORANGE	9497644624	Acute Care Hospitals
22	50309 SUTTER ROSEVILLE MEDICAL CENTER	ONE MEDICAL PLAZA	ROSEVILLE	CA	95661	PLACER	9167811000	Acute Care Hospitals
23	50441 STANFORD HEALTH CARE	300 PASTEUR DRIVE	STANFORD	CA	94305	SANTA CLARA	6507235708	Acute Care Hospitals
24	50488 EDEN MEDICAL CENTER	20103 LAKE CHABOT ROAD	CASTRO VALLEY	CA	94546	ALAMEDA	5105371234	Acute Care Hospitals
25	50567 MISSION HOSPITAL REGIONAL MED CENTER	27700 MEDICAL CENTER RD	MISSION VIEJO	CA	92691	ORANGE	9493641400	Acute Care Hospitals
26	50717 LAC/RANCHO LOS AMIGOS NATIONAL REHABILITATION CTR	7601 EAST IMPERIAL HIGHWAY	DOWNEY	CA	90242	LOS ANGELES	5624017022	Acute Care Hospitals
27	53306 CHILDREN'S HOSPITAL AT MISSION	27700 MEDICAL CENTER RD, 5TH FLOOR	MISSION VIEJO	CA	92691	ORANGE	9493652408	Childrens
28	60104 ST ANTHONY NORTH HEALTH CAMPUS	14300 ORCHARD PARKWAY	WESTMINSTER	CO	80023	BROOMFIELD	3034303201	Acute Care Hospitals
29	70029 BRISTOL HOSPITAL	BREWSTER RD	BRISTOL	CT	6010	HARTFORD	8605853000	Acute Care Hospitals

Solution: Elimination of columns that contain confidential details about provider.

Hospital_General_Information - Excel

A	B	C	D	E	F	G
state	County Name	Hospital Type	Hospital Ownership	Emergency Services	Hospital overall rating	Hospital overall rating footnote
L	MARSHALL	Acute Care Hospitals	Government - Hospital District or Authority	TRUE	3 Not Available	3 This hospital's star rating only includes data reported on inpatient services
L	RANDOLPH	Acute Care Hospitals	Government - Hospital District or Authority	TRUE	4 Not Available	4 There are too few measures or measure groups reported to calculate a star rating or measure group score
L	MADISON	Acute Care Hospitals	Proprietary	TRUE	3 Not Available	3 Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Q
K	ANCHORAGE	Acute Care Hospitals	Voluntary non-profit - Church	TRUE	3 Not Available	3 This hospital's star rating only includes data reported on inpatient services
K	BETHEL	Acute Care Hospitals	Tribal	TRUE	3 This hospital's star rating only includes data reported on inpatient services	2 This hospital's star rating only includes data reported on inpatient services
K	DILLINGHAM	Critical Access Hospitals	Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
K	NORTHWEST ARCTIC	Critical Access Hospitals	Tribal	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Q
Z	APACHE	Acute Care Hospitals	Government - Federal	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
Z	COCONINO	Acute Care Hospitals	Voluntary non-profit - Other	FALSE	3 This hospital's star rating only includes data reported on inpatient services	3 There are too few measures or measure groups reported to calculate a star rating or measure group score
Z	PIMA	Acute Care Hospitals	Government - Federal	FALSE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
Z	GILA	Acute Care Hospitals	Government - Federal	FALSE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
Z	MAPIKE	Acute Care Hospitals	Government - Federal	TRUE	2 Not Available	2 There are too few measures or measure groups reported to calculate a star rating or measure group score
R	PULASKI	Acute Care Hospitals	Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
Z	NAVAJO	Critical Access Hospitals	Tribal	FALSE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
Z	APACHE	Critical Access Hospitals	Voluntary non-profit - Private	FALSE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
R	CONWAY	Critical Access Hospitals	Voluntary non-profit - Church	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score
R	CHICOT	Critical Access Hospitals	Voluntary non-profit - Private	TRUE	3 Not Available	3 There are too few measures or measure groups reported to calculate a star rating or measure group score
A	RIVERSIDE	Acute Care Hospitals	Government - Hospital District or Authority	TRUE	3 Not Available	2 Not Available
A	SAN FRANCISCO	Acute Care Hospitals	Voluntary non-profit - Church	TRUE	2 Not Available	1 Not Available
A	ORANGE	Acute Care Hospitals	Voluntary non-profit - Private	TRUE	4 Not Available	4 Not Available
A	PLACER	Acute Care Hospitals	Voluntary non-profit - Other	TRUE	4 Not Available	3 Not Available

Definition of transformation workflow and mapping rules:

Depending on the number of data sources, their degree of heterogeneity and the “dirtiness” of the data, a large number of data transformation and cleaning steps may have to be executed. As shown in below figure Hospital- General Information has less state records than Hospital sheet. So, to work on both the sheet simultaneously to create effective utilization we need to use structured joins (effective mapping rules) which will preserve both the data. We have used Inner join based on county name to preserve all the data.

Tableau - Book1

File Data Server Window Help

Connections Add

HCAHPS - Hospital
Text File

HCAHPS - State
Text File

Hospital_General_Information
Text File

Files

- HCAHPS - Hospital.csv
- HCAHPS - State.csv
- Hospital_General_Information.csv
- To Do.txt

New Union

HCAHPS - Hospital.csv+ (Multiple Connections)

Connection Live Extract Filters 0 | Add

HCAHPS - Hospital.csv HCAHPS - State.csv

Join Hospital_General_Information.csv

Inner Left Right Full Outer

Data Source Hospital_General_Information.csv

County Name = County Name (...)

Sort fields Data source order

Show aliases Show hidden fields 1,000 rows

HCAHPS - Ho...	HCAHPS - Hospital.csv	Survey Respo...	Measure Start...									
State	County Name	HCAHPS Mea...	HCAHPS Ques...	HCAHPS Ans...	Patient Surve...	HCAHPS Ans...	HCAHPS Line...	Number of Co...				
AL	HOUSTON	H_STAR_RATING	Summary star ra...	Summary star ra...	3	Not Applicable	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_CLEAN_HSP_...	Patients who rep...	Room was "alwa...	Not Applicable	66	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_CLEAN_HSP_...	Patients who rep...	Room was "somet...	Not Applicable	12	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_CLEAN_HSP_...	Patients who rep...	Room was "usuall...	Not Applicable	22	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_CLEAN_LINEA...	Cleanliness - line...	Cleanliness - line...	Not Applicable	84	1313					27 4/1/2014
AL	HOUSTON	H_CLEAN_STAR...	Cleanliness - star...	Cleanliness - star...	2	Not Applicable	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_COMP_1_A_P	Patients who rep...	Nurses "always..."	Not Applicable	75	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_COMP_1_LIN...	Nurse communic...	Nurse communic...	Not Applicable	89	1313					27 4/1/2014
AL	HOUSTON	H_COMP_1_SN_P	Patients who rep...	Nurses "sometim...	Not Applicable	7	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_COMP_1_STA...	Nurse communic...	Nurse communic...	2	Not Applicable	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_COMP_1_U_P	Patients who rep...	Nurses "usually..."	Not Applicable	18	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_COMP_2_A_P	Patients who rep...	Doctors "always..."	Not Applicable	81	Not Applicable	1313				27 4/1/2014
AL	HOUSTON	H_COMP_2_LIN...	Doctor communic...	Doctor communic...	Not Applicable	92	1313					27 4/1/2014

Go to Worksheet

Data Source Sheet 1

Type or talk to search

1227 AM 3/30/2017

Clean Data Screenshots

Hospital General Information.csv

Hospital General Information - Excel													
1	State/County Name	Hospital Type	Hospital Ownership	Emergency Serv	Hospital overall rating	Hospital overall rating footnote							
2	AL	MASSACHUSETTS	Acute Care Hospitals Government - Hospital District or Auth	TRUE	3 Not Available	Below the National average Not Available							
3	AL	MONTGOMERY	Acute Care Hospitals Government - Hospital District or Auth	TRUE	4 Not Available	Below the National average Not Available							
4	AL	MADISON	Acute Care Hospitals Proprietary	TRUE	3 Not Available	Below the National average Not Available							
5	AK	ANCHORAGE	Acute Care Hospitals Voluntary non-profit - Church	TRUE	3 This hospital's star rating only includes data reported on inpatient services	Some as the National average Not Available							
6	AK	ANCHORAGE	Critical Access Hospt Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
7	AK	DILLINGHAM	Critical Access Hospt Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
8	AK	FAIRBANKS ANDERSON	Critical Access Hospt Voluntary non-profit - Other	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
9	AZ	APACHE	Acute Care Hospitals Government - Federal	TRUE	Not Available	3 This hospital's star rating only includes data reported on inpatient services							
10	AZ	COCONINO	Acute Care Hospitals Voluntary non-profit - Other	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
11	AZ	GILA	Acute Care Hospitals Government - Federal	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
12	AZ	GILA	Acute Care Hospitals Government - Federal	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
13	AZ	APACHE	Critical Access Hospt Voluntary non-profit - Private	TRUE	Not Available	2 This hospital's star rating only includes data reported on inpatient services							
14	AZ	NAVAJO	Critical Access Hospt Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
15	AZ	NAVAJO	Critical Access Hospt Tribal	FALSE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
16	AZ	APACHE	Critical Access Hospt Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
17	CA	CHINLE	Acute Care Hospitals Voluntary non-profit - Church	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
18	AR	CHICOT	Critical Access Hospt Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
19	CA	RIVERSIDE	Acute Care Hospitals Government - Hospital District or Auth	TRUE	Not Available	2 This hospital's star rating only includes data reported on inpatient services							
20	CA	SAN FRANCISCO	Acute Care Hospitals Voluntary non-profit - Church	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
21	CA	ORANGE	Acute Care Hospitals Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
22	CA	SANTA CLARA	Acute Care Hospitals Voluntary non-profit - Other	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
23	CA	ALAMEDA	Acute Care Hospitals Voluntary non-profit - Other	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
24	CA	LOS ANGELES	Acute Care Hospitals Voluntary non-profit - Private	TRUE	Not Available	There are too few measures or measure groups reported to calculate a star rating or measure group score							
25	CA	LOS ANGELES	Acute Care Hospitals Voluntary non-profit - Local	FALSE	Not Available	3 This hospital's star rating only includes data reported on inpatient services							
26	CA	ORANGE	Childrens Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
27	CA	ORANGE	Childrens Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
28	CA	LOS ANGELES	Childrens Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
29	CT	HARTFORD	Acute Care Hospitals Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
30	DE	NEW CASTLE	Acute Care Hospitals Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
31	DE	NEW CASTLE	Acute Care Hospitals Voluntary non-profit - Other	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
32	FL	POLK	Acute Care Hospitals Proprietary	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
33	FL	MIAMI-Dade	Acute Care Hospitals Proprietary	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
34	FL	MARION	Acute Care Hospitals Government - Local	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
35	AK	Not Available	Critical Access Hospt Government - Local	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
36	AK	Not Available	Critical Access Hospt Government - Local	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
37	AK	TOONIES	Acute Care Hospitals Voluntary non-profit - Other	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
38	GA	TOONIES	Acute Care Hospitals Proprietary	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
39	HI	HAWAII	Acute Care Hospitals Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
40	IL	DUKE	Acute Care Hospitals Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
41	IL	COOK	Acute Care Hospitals Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
42	IL	COOK	Acute Care Hospitals Voluntary non-profit - Other	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
43	IL	COOK	Acute Care Hospitals Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
44	IL	COOK	Acute Care Hospitals Voluntary non-profit - Other	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
45	IL	DUKE	Acute Care Hospitals Voluntary non-profit - Other	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
46	IL	JAMES	Critical Access Hospt Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
47	IL	HARDIN	Critical Access Hospt Voluntary non-profit - Other	FALSE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
48	IN	APPANOOSOE	Critical Access Hospt Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
49	IN	JEFFERSON	Acute Care Hospitals Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
50	IA	APPANOOSOE	Critical Access Hospt Voluntary non-profit - Private	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							
51	KS	ALLEN	Critical Access Hospt Proprietary	TRUE	Not Available	Data are shown only for hospitals that participate in the Inpatient Quality Reporting (IQR) and Outpatient Quality Reporting (OQR) for this reporting period							

State-HCAHPS.csv

HCAHPS - State - Excel													
1	State	HCAHPS Question		HCAHPS Measure		HCAHPS Answer Description		HCAHPS Answer Percent	Measure Start Date	Measure End Date			
2	AK	Patients reported that their room and bathroom were "Always" clean		H_CLEAN_HSP_A_P		Room was "always" clean		70	4/1/2014	3/31/2015			
3	AK	Patients who reported that their room and bathroom were "Somewhat" or "Never" clean		H_CLEAN_HSP_P		Room was "somewhat" or "never" clean		8	4/1/2014	3/31/2015			
4	AK	Patients who reported that their room and bathroom were "Usually" clean		H_CLEAN_HSP_U_P		Room was "usually" clean		22	4/1/2014	3/31/2015			
5	AK	Patients who reported that their nurses "Always" communicated well		H_COMP_1_A_P		Nurses "always" communicated well		75	4/1/2014	3/31/2015			
6	AK	Patients who reported that their nurses "Somewhat" or "Never" communicated well		H_COMP_1_S_P		Nurses "somewhat" or "never" communicated well		9	4/1/2014	3/31/2015			
7	AK	Patients who reported that their nurses "Usually" communicated well		H_COMP_1_U_P		Nurses "usually" communicated well		14	4/1/2014	3/31/2015			
8	AK	Patients who reported that their doctors "Always" communicated well		H_COMP_2_A_P		Doctors "always" communicated well		75	4/1/2014	3/31/2015			
9	AK	Patients who reported that their doctors "Somewhat" or "Never" communicated well		H_COMP_2_S_P		Doctors "somewhat" or "never" communicated well		9	4/1/2014	3/31/2015			
10	AK	Patients who reported that their doctors "Usually" communicated well		H_COMP_2_U_P		Doctors "usually" communicated well		16	4/1/2014	3/31/2015			
11	AK	Patients who reported that their doctors explained enough to help as soon as they wanted		H_COMP_3_A_P		Doctors explained enough to help as soon as they wanted		70	4/1/2014	3/31/2015			
12	AK	Patients who reported that they "Always" received help as soon as they wanted		H_COMP_3_S_P		Patients "sometimes" or "never" received help as soon as they wanted		9	4/1/2014	3/31/2015			
13	AK	Patients who reported that they "Usually" received help as soon as they wanted		H_COMP_3_U_P		Patients "usually" received help as soon as they wanted		21	4/1/2014	3/31/2015			
14	AK	Patients who reported that their pain was "Always" well controlled		H_COMP_4_A_P		Pain was "always" well controlled		67	4/1/2014	3/31/2015			
15	AK	Patients who reported that their pain was "Somewhat" well controlled		H_COMP_4_S_P		Pain was "somewhat" well controlled		11	4/1/2014	3/31/2015			
16	AK	Patients who reported that their pain was "Never" well controlled		H_COMP_4_N_P		Pain was "never" well controlled		22	4/1/2014	3/31/2015			
17	AK	Patients who reported that staff "Always" explained enough before giving them pain medicine		H_COMP_5_A_P		Staff "always" explained		67	4/1/2014	3/31/2015			
18	AK	Patients who reported that staff "Somewhat" explained enough before giving them pain medicine		H_COMP_5_S_P		Staff "somewhat" explained		17	4/1/2014	3/31/2015			
19	AK	Patients who reported that staff "Usually" explained enough before giving them pain medicine		H_COMP_5_U_P		Staff "usually" explained		18	4/1/2014	3/31/2015			
20	AK	Patients who reported that NO, they were not given information about what to do during their recovery at home		H_COMP_6_N_P		No, staff did not give patients this information		15	4/1/2014	3/31/2015			
21	AK	Patients who reported that YES, they were given information about what to do during their recovery at home		H_COMP_6_Y_P		Yes, staff did give patients this information		85	4/1/2014	3/31/2015			
22	AK	Patients who reported that they were given clear instructions about their care when they left the hospital		H_COMP_7_A_P		They were given clear instructions about their care when they left the hospital		43	4/1/2014	3/31/2015			
23	AK	Patients who "Disagree" or "Strongly Disagree" they understood their care when they left the hospital		H_COMP_7_D_SD_P		Patients who "Disagree" or "Strongly Disagree" they understood their care when they left the hospital		8	4/1/2014	3/31/2015			
24	AK	Patients who "Agree" or "Strongly Agree" they understood their care when they left the hospital		H_COMP_7_A_SA_P		Patients who "Agree" or "Strongly Agree" they understood their care when they left the hospital		49	4/1/2014	3/31/2015			
25	AK	Patients who gave their hospital a rating of 6 or lower on a scale from 0 (lowest) to 10 (highest)		H_COMP_8_Rating_0_6_P		Patients who gave a rating of "0" or "6" (low)		12	4/1/2014	3/31/2015			
26	AK	Patients who gave their hospital a rating of 7 or higher on a scale from 0 (lowest) to 10 (highest)		H_COMP_8_Rating_7_10_P		Patients who gave a rating of "7" or "10" (high)		22	4/1/2014	3/31/2015			
27	AK	Patients who gave their hospital a rating of "Always" quiet at night		H_QUIET_HSP_A_P		"Always" quiet at night		66	4/1/2014	3/31/2015			
28	AK	Patients who gave their hospital a rating of "Somewhat" or "Never" quiet at night		H_QUIET_HSP_SN_P		"Somewhat" or "never" quiet at night		57	4/1/2014	3/31/2015			
29	AK	Patients who gave their hospital a rating of "Usually" quiet at night		H_QUIET_HSP_U_P		"Usually" quiet at night		9	4/1/2014	3/31/2015			
30	AK	Patients who reported that their room and bathroom was "Somewhat" or "Never" quiet at night		H_QUIET_HSP_SN_N_P		"Somewhat" or "never" quiet at night		54	4/1/2014	3/31/2015			
31	AK	Patients who reported NO, they would probably not or definitely not recommend the hospital		H_RECMD_DN_P		"NO," patients would not recommend the hospital (they probably would not or definitely would not recommend it)		7	4/1/2014	3/31/2015			
32	AK	Patients who reported YES, they would definitely recommend the hospital		H_RECMD_DY_P		"YES," patients would definitely recommend the hospital		71	4/1/2014	3/31/2015			
33	AK	Patients who reported YES, they would probably recommend the hospital		H_RECMD_PV_P		"YES," patients would probably recommend the hospital		22	4/1/2014	3/31/2015			
34	AK	Patients who reported that their room and bathroom were "Somewhat" or "Never" clean		H_CLEAN_HSP_SN_P		Room and bathroom was "somewhat" or "never" clean		72	4/1/2014	3/31/2015			
35	AK	Patients who reported that their room and bathroom were "Usually" clean		H_CLEAN_HSP_U_P		Room was "usually" clean		11	4/1/2014	3/31/2015			
36	AK	Patients who reported that their room and bathroom were "Always" clean		H_CLEAN_HSP_A_P		Room and bathroom were "always" clean		17	4/1/2014	3/31/2015			
37	AK	Patients who reported that their nurses "Always" communicated well		H_COMP_1_A_P		Nurses "always" communicated well		81	4/1/2014	3/31/2015			
38	AK	Patients who reported that their nurses "Somewhat" communicated well		H_COMP_1_S_P		Nurses "somewhat" communicated well		5	4/1/2014	3/31/2015			
39	AK	Patients who reported that their nurses "Usually" communicated well		H_COMP_1_U_P		Nurses "usually" communicated well		14	4/1/2014	3/31/2015			
40	AK	Patients who reported that their doctors "Always" communicated well		H_COMP_2_A_P		Doctors "always" communicated well		86	4/1/2014	3/31/2015			
41	AK	Patients who reported that their doctors "Somewhat" communicated well		H_COMP_2_S_P									

Hospital – HCAHPS.csv

1	Star Count Name	HCAHPS Measure	HCAHPS Question		HCAHPS Answer Description	Patient Survey Star R HCAHPS Answer Pv HCAHPS Linear Mean Number of Completed Su Survey Response R				
2	AL_HOUSTON	H_STAR_RATING	Summary star rating		Summary star rating	3 Not Applicable	Not Applicable	110		
3	AL_HOUSTON	H_CLEAN_HSP_LP	Patients who reported that their room and bathroom were "Always" clean		Room was "sometimes" or "never" clean	66 Not Applicable	Not Applicable	110		
4	AL_HOUSTON	H_CLEAN_HSP_SLP	Patients who reported that their room and bathroom were "Somewhat" or "Never" clean		Room was "somewhat" or "never" clean	12 Not Applicable	Not Applicable	110		
5	AL_HOUSTON	H_CLEAN_HSP_U_P	Patients who reported that their room and bathroom were "Usually" clean		Room was "usually" clean	22 Not Applicable	Not Applicable	110		
6	AL_HOUSTON	H_CLEAN_HSP_SCD	Cleanliness - star rating		Cleanliness - star rating	14 Not Applicable	Not Applicable	110		
7	AL_HOUSTON	H_CLEAN_STAR_RATING	Cleanliness - star rating		Cleanliness - star rating	84	Not Applicable	110		
8	AL_HOUSTON	H_CLOUDY	Patients who reported that their nurses "Always" communicated well		Nurses "always" communicated well	79 Not Applicable	Not Applicable	110		
9	AL_HOUSTON	H_COMP_1_LINEAR_SCD	Communication about medicines - linear mean score		Nurses "somewhat" or "never" communicated well	89	Not Applicable	110		
10	AL_HOUSTON	H_COMP_1_STAR_RATING	Communication about medicines - star rating		Nurses "usually" communicated well	7 Not Applicable	Not Applicable	110		
11	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that their nurses "Somewhat" or "Never" communicated well		Nurses "usually" communicated well	18 Not Applicable	Not Applicable	110		
12	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that their nurses "Usually" communicated well		Nurses "usually" communicated well	2 Not Applicable	Not Applicable	110		
13	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that their doctors "Always" communicated well		Doctors "always" communicated well	81 Not Applicable	Not Applicable	110		
14	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that their doctors "Somewhat" or "Never" communicated well		Doctors "somewhat" or "never" communicated well	92	Not Applicable	110		
15	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that their doctors "Usually" communicated well		Doctors "usually" communicated well	4 Not Applicable	Not Applicable	110		
16	AL_HOUSTON	H_COMP_1_STAR_RATING	Doctor communication - star rating		Doctor communication - star rating	10 Not Applicable	Not Applicable	110		
17	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that they "Always" received help as soon as they wanted		Doctors "always" communicated well	58 Not Applicable	Not Applicable	110		
18	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that they "Somewhat" or "Never" received help as soon as they wanted		Patients "always" received help as soon as they wanted	60	Not Applicable	110		
19	AL_HOUSTON	H_COMP_1_LINEAR_SCD	Staff responsiveness - linear mean score		Staff responsiveness - linear mean score	15 Not Applicable	Not Applicable	110		
20	AL_HOUSTON	H_COMP_1_STAR_RATING	Staff responsiveness - star rating		Patients "usually" received help as soon as they wanted	2 Not Applicable	Not Applicable	110		
21	AL_HOUSTON	H_COMP_1_STAR_RATING	Staff responsiveness - star rating		Patients "usually" received help as soon as they wanted	27 Not Applicable	Not Applicable	110		
22	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that they "Usually" received help as soon as they wanted		Patients "usually" received help as soon as they wanted	66 Not Applicable	Not Applicable	110		
23	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that they "Always" received help as soon as they wanted		Patients "usually" received help as soon as they wanted	66 Not Applicable	Not Applicable	110		
24	AL_HOUSTON	H_COMP_1_LINEAR_SCD	Pain management - linear mean score		Pain management - linear mean score	95	Not Applicable	110		
25	AL_HOUSTON	H_COMP_1_STAR_RATING	Pain management - star rating		Pain was "sometimes" or "never" well controlled	2 Not Applicable	Not Applicable	110		
26	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that their pain was "Somewhat" or "Never" well controlled		Pain was "usually" well controlled	25 Not Applicable	Not Applicable	110		
27	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that their pain was "Always" well controlled		Pain was "usually" well controlled	61 Not Applicable	Not Applicable	110		
28	AL_HOUSTON	H_COMP_1_LINEAR_SCD	Communication about medicines - linear mean score		Communication about medicines - linear mean score	76	Not Applicable	110		
29	AL_HOUSTON	H_COMP_1_LINEAR_SCD	Communication about medicines - linear mean score		Not Applicable	Not Applicable	110			
30	AL_HOUSTON	H_COMP_1_STAR_RATING	Communication about medicines - star rating		Staff "sometimes" or "never" explained about medicines before giving it to them	21 Not Applicable	Not Applicable	110		
31	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that staff "Somewhat" or "Never" explained about medicines before giving it to them		Staff "usually" explained	18 Not Applicable	Not Applicable	110		
32	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that staff "Usually" explained about medicines before giving it to them		Not Applicable	Not Applicable	110			
33	AL_HOUSTON	H_COMP_1_LINEAR_SCD	Discharge information - linear mean score		Discharge information - linear mean score	65	Not Applicable	110		
34	AL_HOUSTON	H_COMP_1_LINEAR_SCD	Discharge information - linear mean score		Not Applicable	Not Applicable	110			
35	AL_HOUSTON	H_COMP_1_STAR_RATING	Discharge information - star rating		Discharge information - star rating	3 Not Applicable	Not Applicable	110		
36	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that YES, they were given information about what to do during their next visit		Yes, staff "did" give patients this information	85 Not Applicable	Not Applicable	110		
37	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that NO, they were not given information about what to do during their next visit		Not Applicable	Not Applicable	110			
38	AL_HOUSTON	H_COMP_1_U_P	Patients who reported that YES, they were given information about care when they left the hospital		Not Applicable	Not Applicable	110			
39	AL_HOUSTON	H_COMP_1_LINEAR_SCD	Care transition - linear mean score		Care transition - linear mean score	81	Not Applicable	110		
40	AL_HOUSTON	H_COMP_1_LINEAR_SCD	Care transition - linear mean score		Not Applicable	Not Applicable	110			
41	AL_HOUSTON	H_COMP_1_STAR_RATING	Care transition - star rating		Care transition - star rating	51 Not Applicable	Not Applicable	110		
42	AL_HOUSTON	H_QUIET_1_LINEAR_SCD	Patients who gave a rating of 6 or lower on a scale from 0 (lowest) to 10 (highest)		Patients who gave a rating of "6" or lower (low)	3 Not Applicable	Not Applicable	110		
43	AL_HOUSTON	H_QUIET_1_LINEAR_SCD	Patients who gave a rating of 7 or 8 on a scale from 0 (lowest) to 10 (highest)		Patients who gave a rating of "7" or "8" (medium)	8 Not Applicable	Not Applicable	110		
44	AL_HOUSTON	H_QUIET_1_LINEAR_SCD	Patients who gave a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest)		Patients who gave a rating of "9" or "10" (high)	21 Not Applicable	Not Applicable	110		
45	AL_HOUSTON	H_QUIET_1_LINEAR_SCD	Overall hospital rating - linear mean score		Overall hospital rating - linear mean score	71 Not Applicable	Not Applicable	110		
46	AL_HOUSTON	H_QUIET_1_LINEAR_SCD	Overall hospital rating - linear mean score		Not Applicable	Not Applicable	110			
47	AL_HOUSTON	H_QUIET_HSP_A_P	"Always" quiet at night		"Always" quiet at night	69	Not Applicable	110		
48	AL_HOUSTON	H_QUIET_HSP_A_P	"Usually" quiet at night		Not Applicable	Not Applicable	110			
49	AL_HOUSTON	H_QUIET_HSP_U_P	Patients who reported that the area around their room was "Always" quiet at night		"Always" quiet at night	66 Not Applicable	Not Applicable	110		
50	AL_HOUSTON	H_QUIET_HSP_U_P	Patients who reported that the area around their room was "Usually" quiet at night		Not Applicable	Not Applicable	110			
51	AL_HOUSTON	H_QUIET_LINEAR_SCORE	Quietness - linear mean score		Not Applicable	Not Applicable	110			
		H_QUIET_LINEAR_SCORE	Quietness - linear mean score		Not Applicable	Not Applicable	87	Not Applicable	110	
		H_QUIET_STAR_RATING	Quietness - star rating		Not Applicable	Not Applicable	110			



➤ QUERIES

Query1:

Find average Patient Survey Star Rating for all the star rating HCAHPS Question?

Star Rating Question:

- i) Care Transition
- ii) Cleanliness
- iii) Communication
- iv) Discharge Information

- v) Doctor Communication
- vi) Nurse Communication
- vii) Pain Management
- viii) Quietness

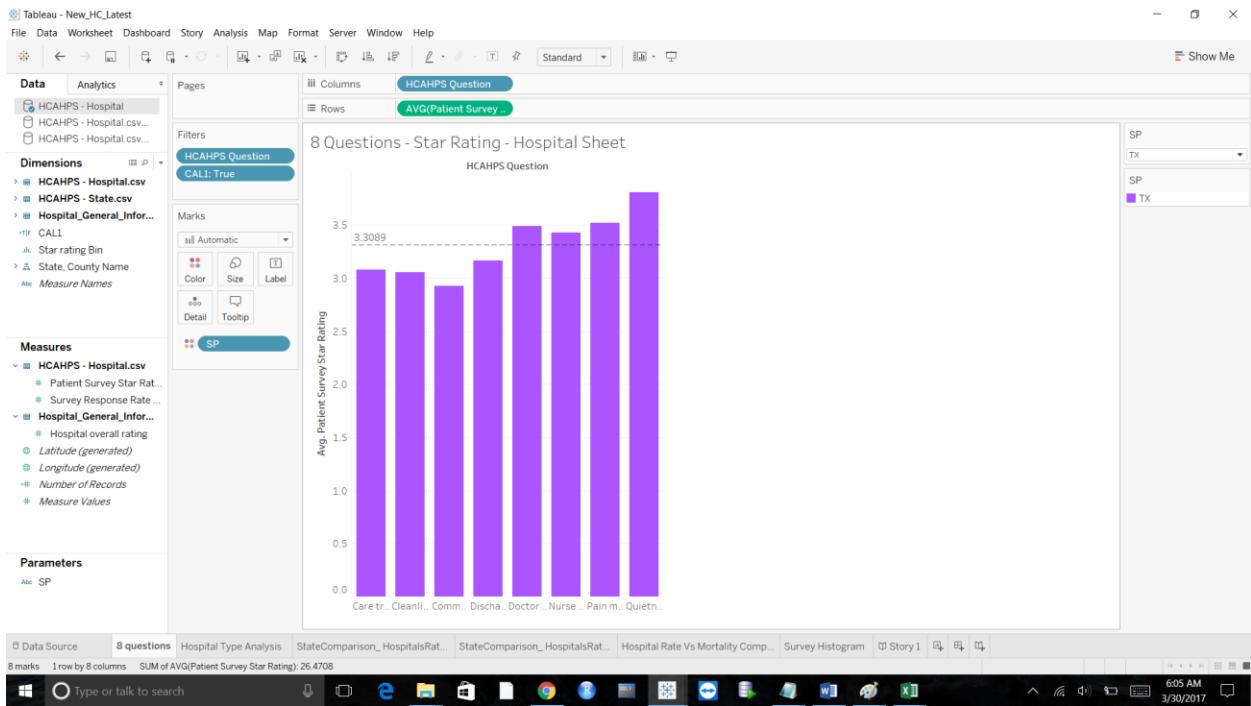
We have created **Parameter, Calculated field and reference line**.

Reference Sheet: Hospital.csv

Insights: This question will give us average patient star rating on various measures like care transition, cleanliness, Communication, Discharge information, Doctor Communication, Nurse Communication, Pain management and Quietness star rating.

Based on the analysis we have found which all state has utmost rating in each measures question.

HCHAPA Question	State	Average Rating
Care Transition	SD	4.0
Cleanliness	ME	3.90
Communication	SD	3.68
Discharge Information	SD	4.31
Doctor Communication	LA	4.22
Nurse Communication	WI	4.20
Pain Management	NE	3.91
Quietness	MS	4.23



Query2

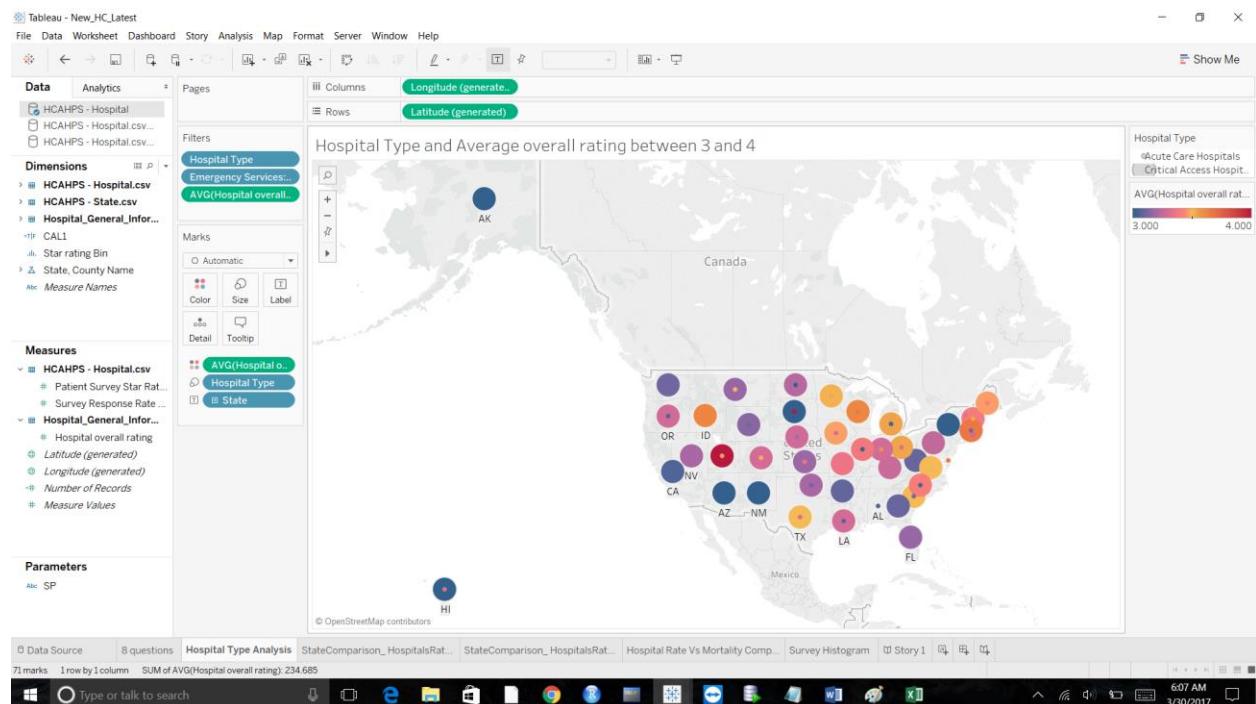
Find Hospital Type state wise which has emergency services and has hospital overall rating between 3 and 4

Reference Sheet: Hospital_General_Information.csv

Insights: There are two types of hospitals Acute Care and Critical Access hospital. We have used **geographical visualization** to identify which all state has different type of hospitals mentioned above and also has emergency services with average hospital overall rating between 3 and 4.

Based on above query we have created visualization as shown below. We have found state like UT comes first for critical access hospitals with emergency services and overall hospital rating 4 whereas SD state ranks 1st for acute care hospitals with average overall hospital rating 3.0. We also noticed that state like CA, WA, AZ, NM has no acute care hospitals which has emergency

services with average rating between 3 and 4. Similarly states like DE and AL has no Critical access hospitals which has emergency services with average rating between 3 and 4



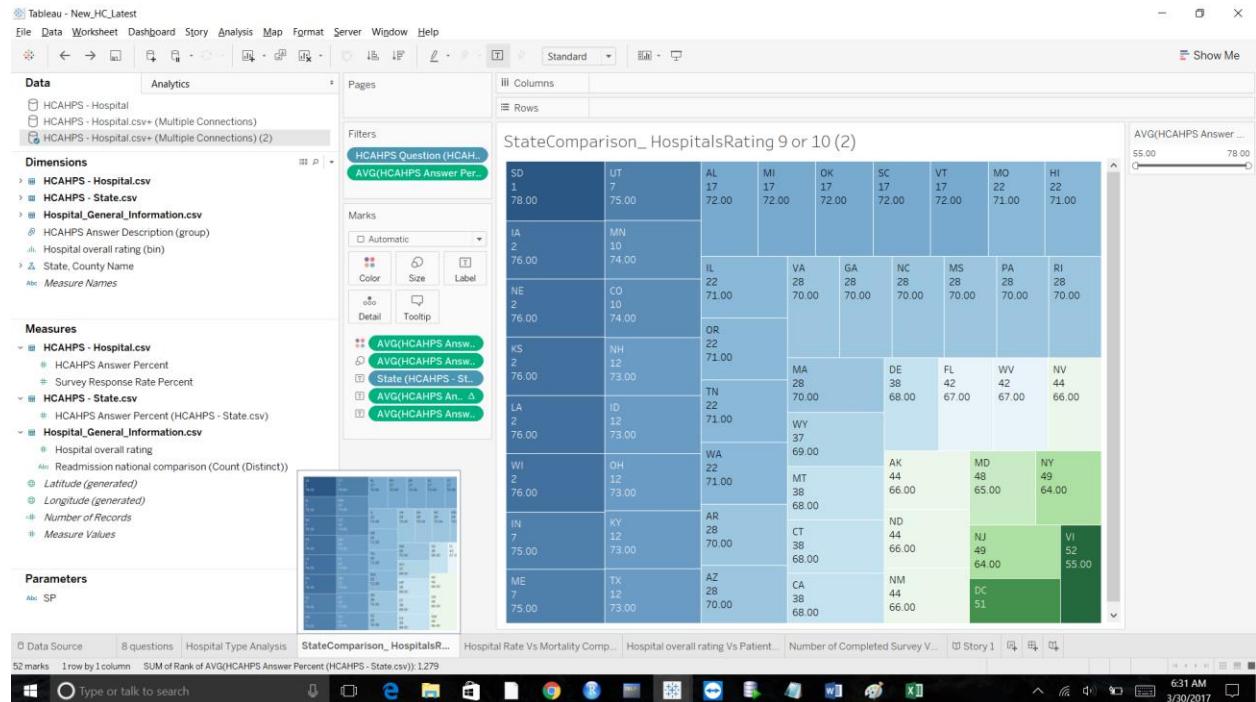
Query3

Find HCAHPS Answer Percent for the states which has received a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest) for HCHAPS question “Patients who gave a rating of "9" or "10" (high)”

Reference Sheet: HCAHPA-State.csv

Insights: We have used **tree maps and ranking** to identify state who received maximum response in terms of percent for above mentioned question.

We have found SD is at number one position who received 78% response for HCHAPS question “Patients who gave a rating of "9" or "10" (high)”. We also analyzed that **DC** state is at the lowest in ranking i.e 51st with answer percent rate 58%



Query 4

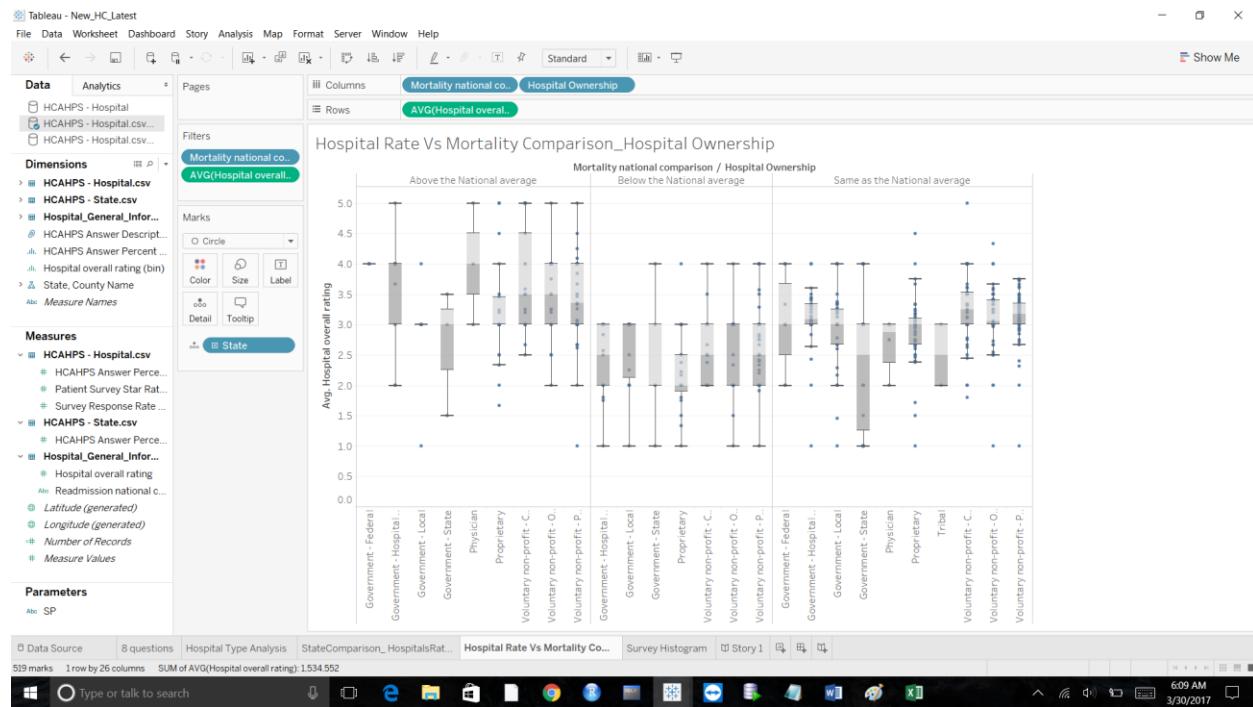
Find states which has high average hospital overall rating and compare it with mortality national comparison and hospital ownership.

Reference Sheet: Hospital_General_Information.csv

Insights: We have used **box and whisker plots** to identify state which has high average hospital overall rating and compared this rating with mortality national comparison parameters (above the national average, below the national average and same as the national average) based on their owners.

We found “Government – Hospital District or Authority “ in FL state, has average hospital overall rating 4.0 (0 (lowest) and 5(highest)) close to highest and also has mortality rate above the national average. Similar case is for Voluntary non-profit-Church hospitals in OH state.

We also found Voluntary non-profit – Other who runs hospital in CA has average hospital overall rating 2.0 and also has the mortality rate below the national average. Similar case is for MO state where Government – State hospitals has average hospital overall rating 2.0 and also has the mortality rate below the national average.



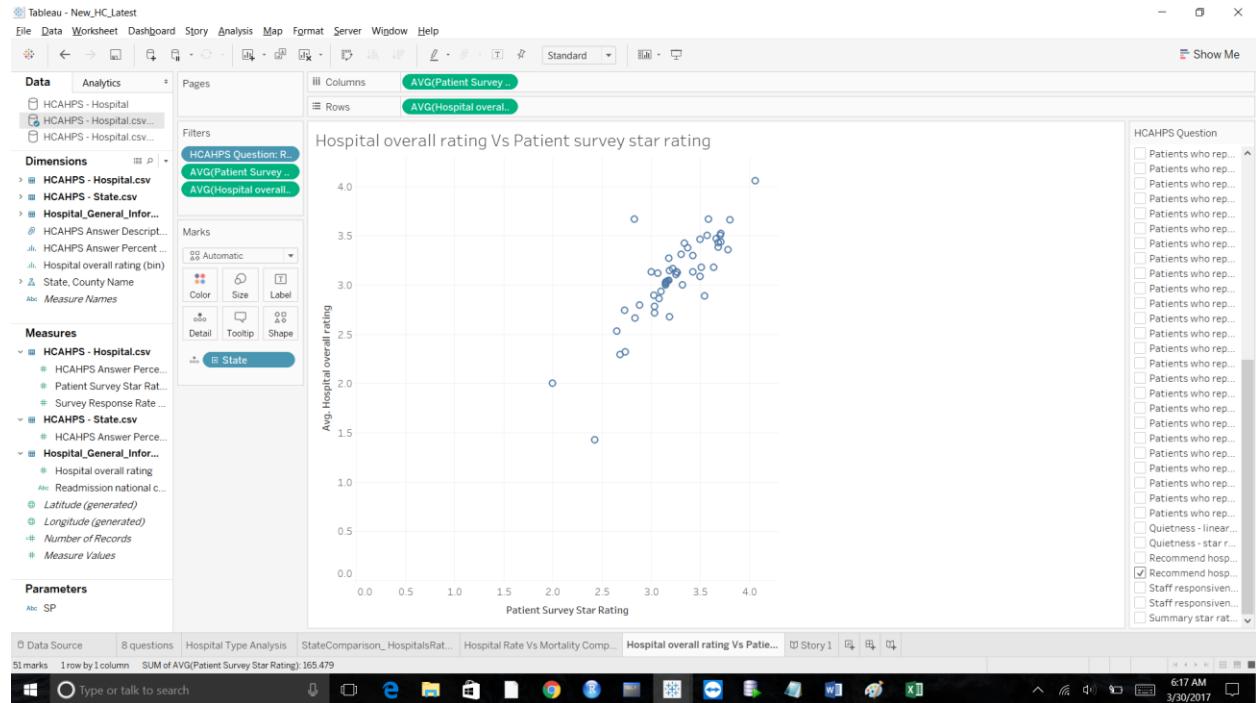
Query 5

Compare average hospital overall rating and Patient Survey star rating state wise for the HCHAPS question “Recommend hospital - star rating”

Reference Sheet: HCHAPS_Hospital.csv and Hospital_General_Information.csv

Insights: We have used **scatter plot** to analyze the data and we have found that SD is the only state which has average hospital overall rating and patient survey star rating close to 4 and also found that DE is the state which has average hospital overall rate 3.6 and Patient survey star rating

2.8



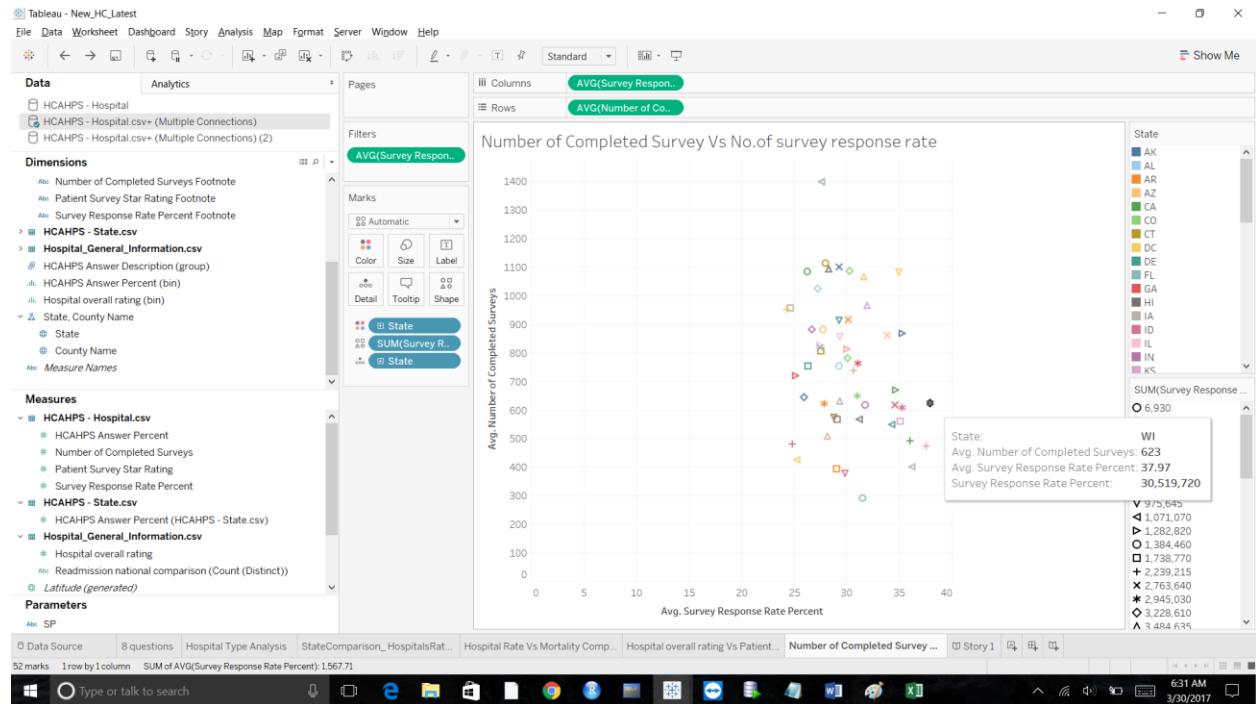
Query 6

Find out how many surveys we completed for each state and what was its survey response rate

Reference Sheet: HCHAPS_Hospital.csv

Insights: We have used **scatter plot** to analyze the data, we found that state who completed 400 to 600 surveys has highest response state across USA than states which has completed 1000-1400 surveys

In the below diagram you can see WI state which has completed on an average 623 surveys has highest response rate 37.97%. Similarly FL state completed 1399 surveys on an average and has lowest average response rate 27.60%



Query 7:

Compare linear mean scores for star rating HCAHPS Question across USA

Reference Sheet: HCHAPS_Hospital.csv

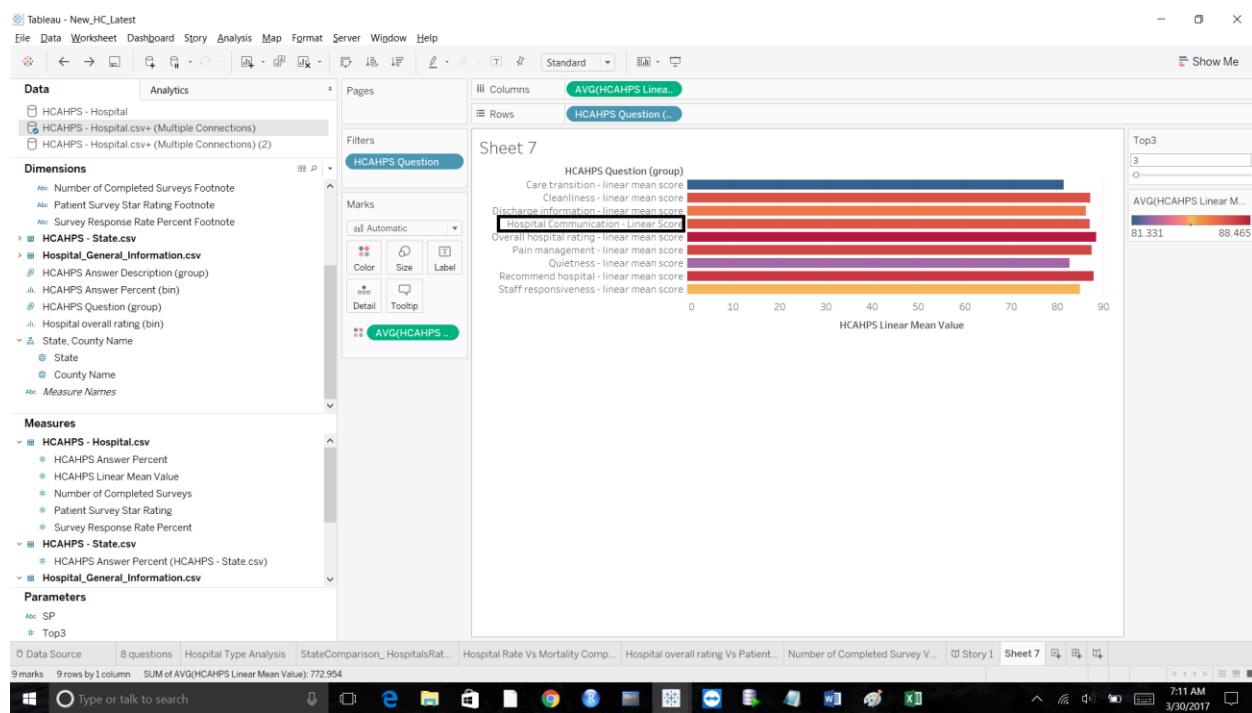
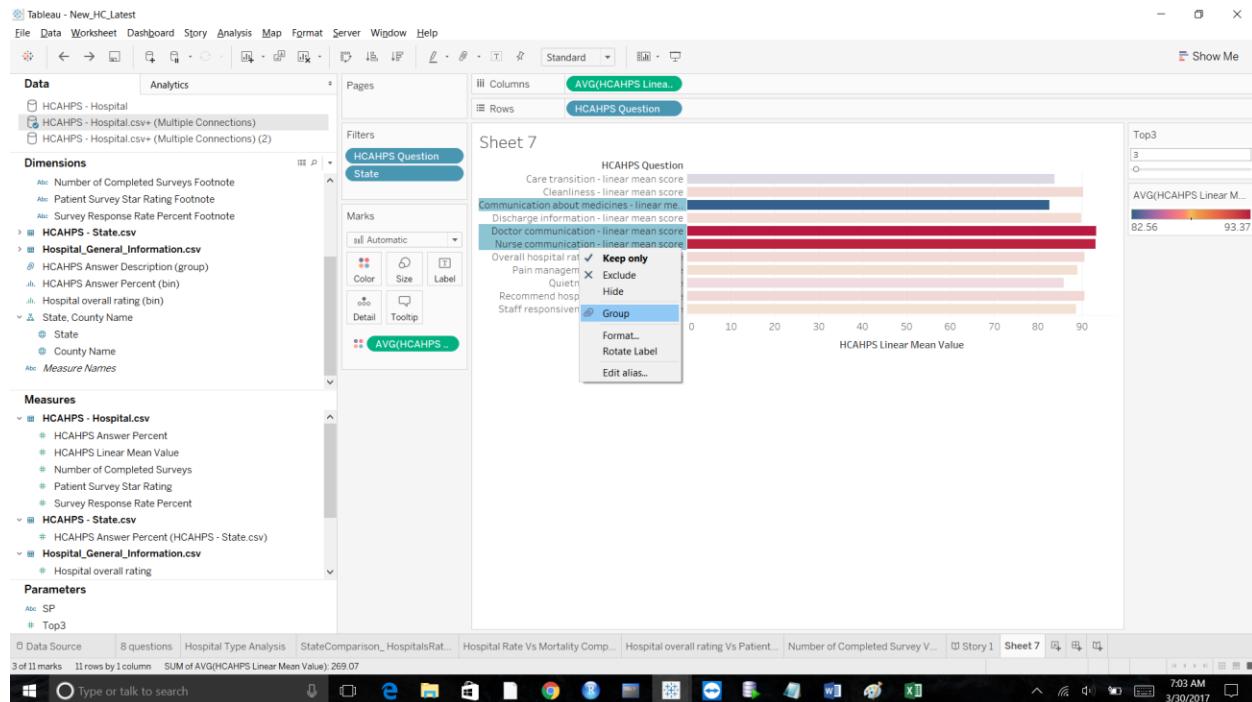
Star Rating Question:

- i) Care Transition
- ii) Cleanliness
- iii) Communication

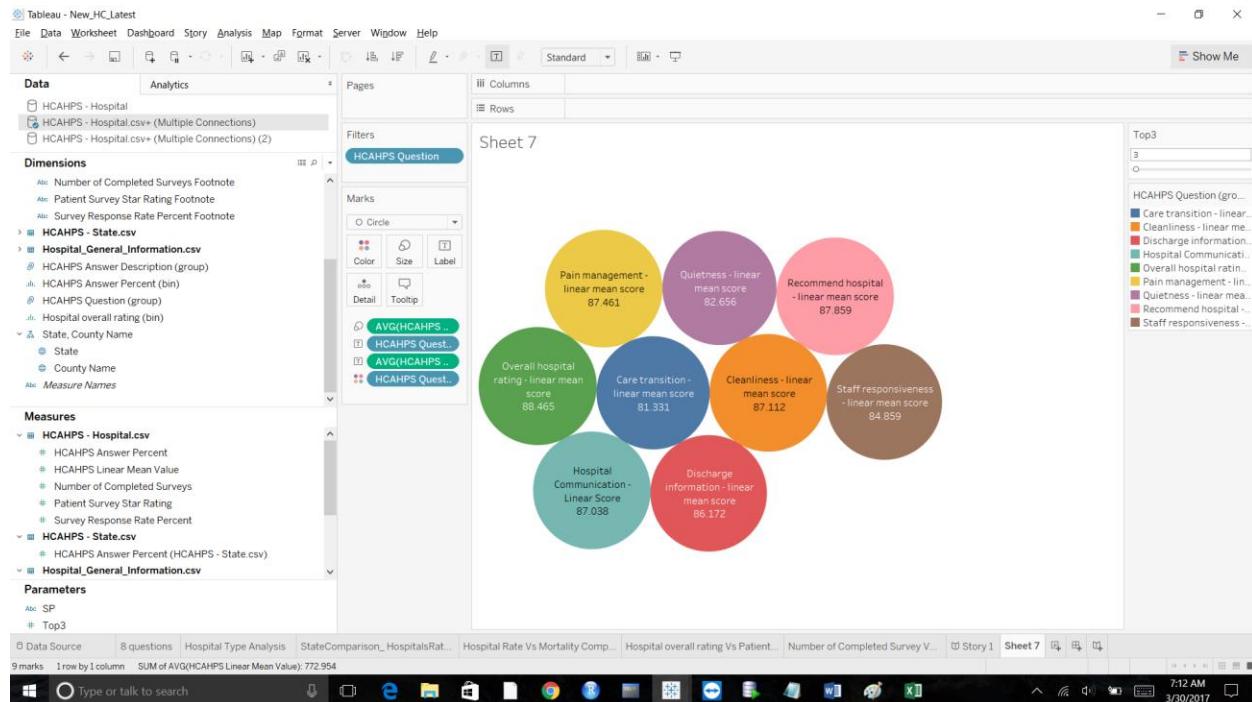
- iv)** Discharge Information
- v)** Doctor Communication
- vi)** Nurse Communication
- vii)** Pain Management
- viii)** Quietness
- ix)** Overall Hospital rating – linear mean
- x)** Recommend hospital – linear mean score
- xi)** Staff responsiveness – linear mean score

Insights:

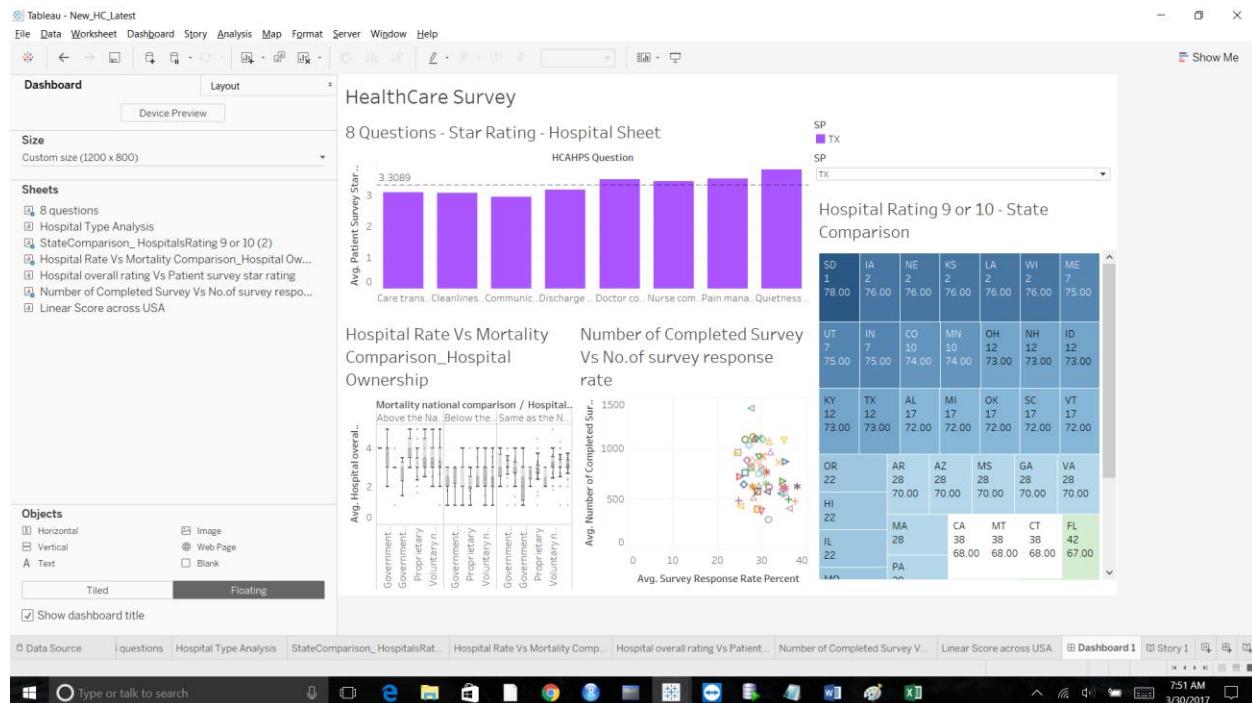
We are using **Bar chart**, grouping “**Doctor Communication, Communication and Nurse Communication**” to “**Hospital Communication**” and then converting it into **packed bubbles chart** for better visualization.



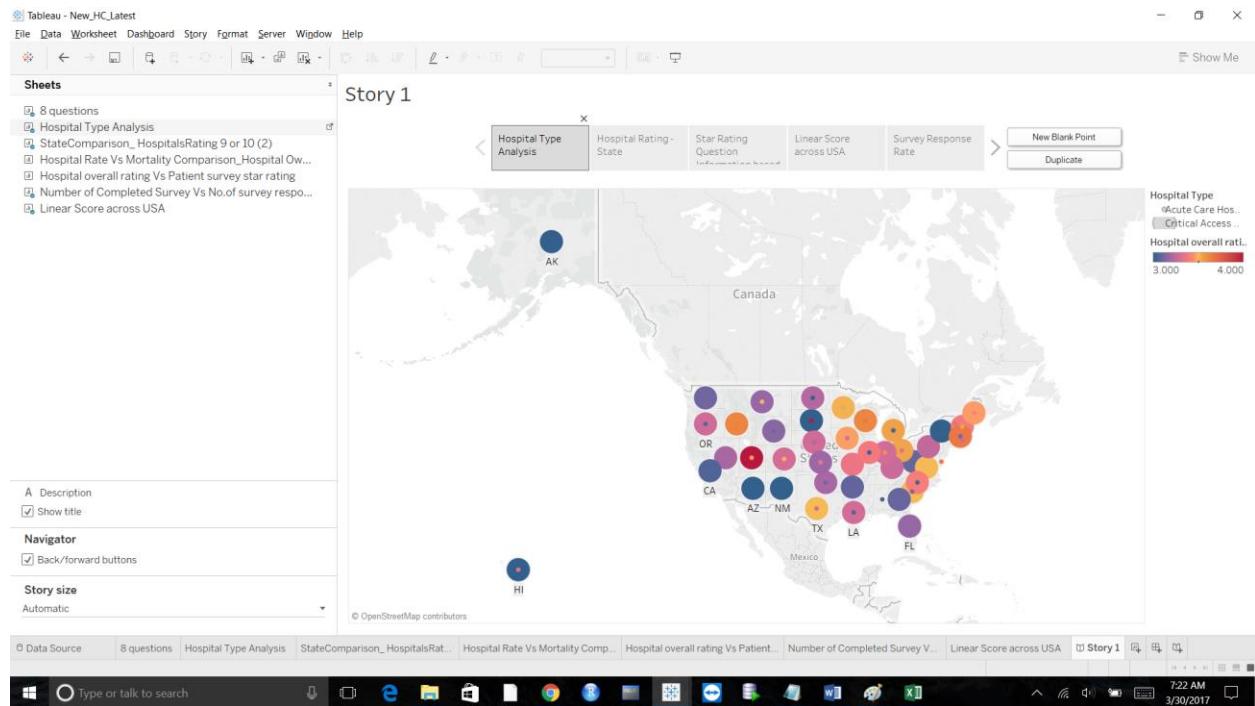
In the below screenshot we found that HCAHPS Overall hospital rating – linear mean score, has higher linear mean value across entire USA 88.46 and Pain Management and Recommend hospital – linear mean score are the next in the list close to 87.50%



➤ Dashboard



➤ Story



Please click on above pdf to get access of story telling answer.