



TOPIC: COVID-19 ESTIMATED PATIENT IMPACT AND HOSPITAL CAPACITY BY STATE

CIS 5270 – Business Intelligence

Submitted By: PRADNYA PATIL (401385189)

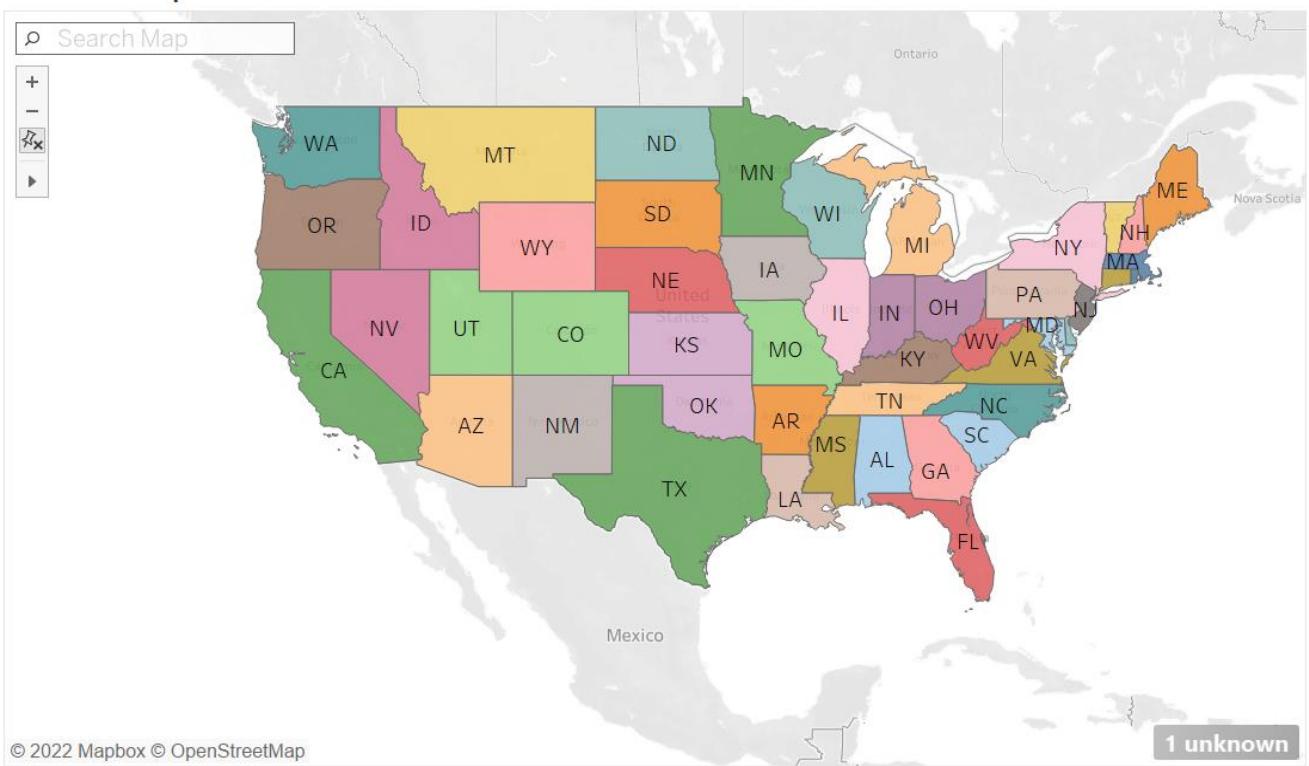
Introduction:

The COVID19 situation cause a major impact on human beings and many sectors. The major sector impacted during the pandemic is the medical sector. This situation leads to major requirements for medical facilities. The number of infected patients changes quickly worldwide. As per the report provided by WHO in March 2020 – over 442,967,526 cases were reported worldwide and 6 million death and more than 376 million recoveries. The world reached six million deaths on March 3,2022. This entire situation creates a major effect on hospital facilities. As per financial analysis the spending on National health increases in 2020. In the USA, the COVID-19 pandemic had a dramatic impact and leads 9.7% growth in total national healthcare spending and bringing spending to \$4.1 trillion. I am conducting analysis of data provided by WHO on November 23, 2021. The dataset represents COVID-19 estimated patient impact and major impact on health care centers (Hospital capacity and facility). The data is extracted from the following two main sources:

- HHS Tele Tracking
- Reporting Provided directly to HHS Protected by State/territory health department on behalf of their health care facility

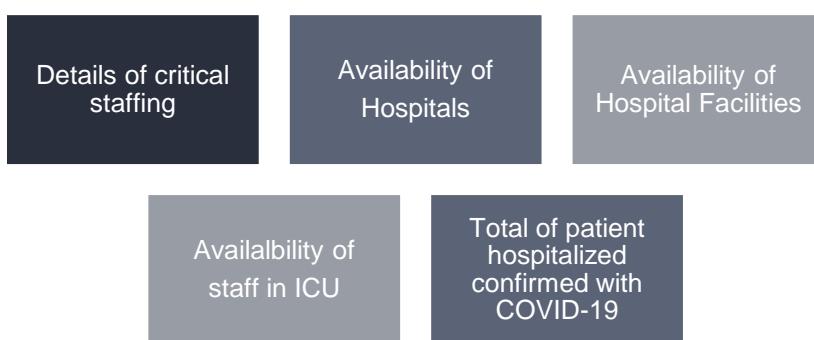
The dataset represents information basis on state in United States. This projection is based on the information from WHO reported on their website.

States Representation



The project report provides detailed information on important factors required for hospitalization facilities. The report will cover all aspects of hospitalization facilities and details of services for all mentioned states.

Following are the important factors covered in the report:



I am conducting a detail analysis of medical facilities available in each state at United States. The COVID-19 pandemic has overshadowed development and research activities across the world. This situation has a direct impact on all sectors such as the financial sector and the medical sector. The COVID-19 situation creates high demand for medical facilities all over the world. Treatment of COVID-19 requires isolation facilities and emergency care facilities. Hence state conducted a basic survey to identify the availability of medical facilities and the requirement for medical facilities in the future. The important factors are to develop isolation wards for patients suffering from COVID-19. **The emergency care services include the availability of bed facilities for patients suffering from COVID-19, testing kit to identify the exact symptoms of the disease and identification of facilities such as the availability of emergency care staff. There are certain set of combinations of medicines required for the treatment of COVID-19.** It is important to identify requirement of facilities and take precautionary measures to develop such facilities.

The dataset provides details of all required factors including the count for all states. The detailed information helps to create analysis scenarios and study in detail. I started my analysis by gathering the required information for the project and I came across a dataset which includes all the necessary information for study. By understanding the certain conditions for specific state. **During analysis I came across some details such as state having large geographic locations and having the large number of populations also impacted due to the COVID-19 situation. The availability of medical facilities is limited in those states and demand, or requirement of treatment is high because of sudden pandemic situation. Hence this survey dataset helps me to understand the hospital onset for COVID-19 and required facilities for future treatment.**

As symptoms of influenza and COVID-19 are similar, there are many patients who are suffered from influenza and required medical facilities and emergency care -ICU Beds. Hence state needs to identify all scenarios and maintain the availability of required facilities. This analysis will help me to analyzing exact condition of medical required in the future for each state.

Following are the important analysis questions covered in entire project report:

Q1. How many hospitals in each state are onset for COVID-19 treatments? Provide analysis for hospital readiness for COVID-19 situation.

Q2. What are count of Critical facilities available in state at United States having limited provision of medical facilities?

Q3. What is total count of inpatient bed facilities and Staffed services in emergency care available in hospitals in each state?

Q4. What is total count of patient suffering from COVID-19 and influenza or other disease?

Q5. What is the medicine availability for treatment of disease?

Reference:

- <https://www2.deloitte.com/nl/nl/pages/consumer/articles/impact-of-covid-19-on-the-hospitality-industry.html>
- (World Health Organization, n.d.)

Section B -Data Description:

URL: <https://catalog.data.gov/dataset/covid-19-reported-patient-impact-and-hospital-capacity-by-state-timeseries-cf58c>

Field Name	Data Description	Data Type 1	Data Type 2
State	Column represent information of States	Char	Qualitative
Critical Staffing Shortage	Column represent information of hospital staff	Number	Quantitative
Hospital onset Covid	Column represent information of readiness of hospital during Covid situation	Number	Quantitative
Hospital onset Covid Coverage	Columns represent information of Covid coverage by hospital	Number	Quantitative
Inpatient bed	Colum represent availability of beds in hospital	Number	Quantitative
Inpatient bed coverage	Column represent information of bed coverage	Number	Quantitative
Inpatient bed used	Column represents information of inpatient bed used	Number	Quantitative
Inpatient bed used covid coverage	Column provides information of inpatient bed used during Covid	Number	Quantitative
Previous day admission adult Covid confirmed	Column represent count of adult Covid confirmed	Number	Quantitative
Previous day admission adult Covid suspected	Column represent information of adult Covid suspected	Number	Quantitative
Previous day admission pediatric Covid confirmed	Column represent information of admission pediatric Covid confirmed	Number	Quantitative
Previous day admission pediatric Covid suspected	Column represent information of pediatric Covid suspected	Number	Quantitative
Staff adult ICU bed occupancy	Column represent information of staff adult ICU bed occupancy	Number	Quantitative
Staffed ICU adult patient confirmed and suspected Covid	Column represent information of ICU staffed	Number	Quantitative

Total adult patients hospitalized confirmed and suspected Covid	Column provide information of count of adult patient hospitalized confirmed	Number	Quantitative
Total pediatric patient hospitalized confirmed Covid coverage	Column provides information of total pediatric patient hospitalized	Number	Quantitative
Total Staff adult ICU Beds	Column provides details of total staff adult ICU beds	Number	Quantitative
Inpatient beds utilization	Column represent details inpatients bed utilization	Number	Quantitative
Percentage of inpatients with Covid	Column represent information in percentage of inpatients with covid	Number	Quantitative
Impatient bed Covid utilization	Column represents impatinent bed covid utilization	Number	Quantitative
Adult ICU bed Covid utilization	Column represent details adult ICU bed for Covid utilization	Number	Quantitative
Deaths due to Covid	Column represents details of death due to Covid	Number	Quantitative
ICU patient confirmed influenza	Column represent information of ICU patient confirmed influenza	Number	Quantitative
Previous day admission influenza confirmed	Column represent information of previous day admission influenzas confirmed	Number	Quantitative
Previous day death covid and influenza	Column provide information of total count of previous day death covid and influenza	Number	Quantitative
Previous day death covid & influenza coverage	Column provides information of previous day death Covid & influenza coverage	Number	Quantitative
Previous day deaths influenza	Column represent information of previous day deaths of influenza	Number	Quantitative
Total patients hospitalized confirmed influenza	Column represent information of total count of patients hospitalized confirmed with influenza	Number	Quantitative

Total patient hospital confirmed influenza & Covid	Column represent information of total patient hospital confirmed influenza and Covid	Number	Quantitative
Total patients hospitalized confirmed influenza coverage	Column represent information of total patients hospitalized and confirmed with influenza coverage	Number	Quantitative

Section C- Data Cleaning:

Column Deletion:

1.I have deleted column as reporting_cutoff_start – the column provides details of dataset extracted.

Column: reporting_cutoff_start

Pre-Cleaning Screenshot:

inpatient_inpatient_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu	reporting_cutoff_start	geocoded	previous	previous	previous	previous	previous	previous
107 1541 0.106061 24 14 132 0.833333 24 110 132 NA	2/13/2022	0	23	0	19	2		
1663 14956 0.242365 113 373 1539 0.919467 117 1450 1577 NA	2/13/2022	1	115	4	115	9	115	
1038 9051 0.269565 108 248 920 0.827108 110 775 937 NA	2/13/2022	1	107	4	103	5	102	
0 150 0 1 0 7 0.285714 1 2 7 NA	2/13/2022	0	1		0			
1898 16748 0.182131 115 318 1746 0.735734 118 1328 1805 NA	2/13/2022	3	113	9	109	13	110	
7423 67437 0.197333 403 1391 7049 0.789809 411 5704 7222 NA	2/13/2022	7	408	63	403	74	403	
775 11832 0.1456 105 182 1250 0.696804 107 894 1283 NA	2/13/2022	0	106	6	94	5	94	
346 7771 0.041379 38 36 870 0.717489 39 640 892 NA	2/13/2022	1	38	2	38	4	38	
217 3246 0.121795 13 38 312 0.81982 14 273 333 NA	2/13/2022	0	14	1	14	1	14	
198 3159 0.097143 15 17 175 0.762431 16 138 181 NA	2/13/2022	0	16	2	16	2	16	
4637 59561 0.117747 261 759 6446 0.80124 267 5297 6611 NA	2/13/2022	3	262	28	252	39	251	
2862 22907 0.226167 168 567 2507 0.864685 171 2211 2557 NA	2/13/2022	6	170	33	166	12	166	
166 2646 0.084112 25 18 214 0.733645 25 157 214 NA	2/13/2022	1	25	2	22	1	22	
775 8748 0.23284 108 173 743 0.888598 110 678 763 NA	2/13/2022	1	106	6	93	7	95	
217 2941 0.172093 65 37 215 0.656109 66 145 221 NA	2/13/2022	0	66	2	64	2	64	
3152 23063 0.236511 124 526 2224 0.831731 128 1903 2288 NA	2/13/2022	1	128	16	125	29	125	
100 2262 0.205357 49 46 224 0.745614 50 170 228 NA	2/13/2022	0	50	5	48	2	48	
401 4563 0.175365 98 84 479 0.796334 99 391 491 NA	2/13/2022	2	99	3	93	4	93	
125 7025 0.095073 20 10 221 0.80542 20 179 221 NA	2/13/2022	0	20	1	20	2	20	

Post Cleaning Screenshot:

inpatient_inpatient_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu_adult_icu	geocoded_state	previous						
107 1541 0.106061 24 14 132 0.833333 24 110 132 NA	0	23	0	19	2	19		
1663 14956 0.242365 113 373 1539 0.919467 117 1450 1577 NA	1	115	4	115	9	115		
1038 9051 0.269565 108 248 920 0.827108 110 775 937 NA	1	107	4	103	5	102		
0 150 0 1 0 7 0.285714 1 2 7 NA	0	1	0	0	0	0		
1898 16748 0.182131 115 318 1746 0.735734 118 1328 1805 NA	3	113	9	109	13	110		
7423 67437 0.197333 403 1391 7049 0.789809 411 5704 7222 NA	7	408	63	403	74	403		
775 11832 0.1456 105 182 1250 0.696804 107 894 1283 NA	0	106	6	94	5	94		
346 7771 0.041379 38 36 870 0.717489 39 640 892 NA	1	38	2	38	4	38		
217 3246 0.121795 13 38 312 0.81982 14 273 333 NA	0	14	1	14	1	14		
198 3159 0.097143 15 17 175 0.762431 16 138 181 NA	0	16	2	16	2	16		
4637 59561 0.117747 261 759 6446 0.80124 267 5297 6611 NA	3	262	28	252	39	251		
2862 22907 0.226167 168 567 2507 0.864685 171 2211 2557 NA	6	170	33	166	12	166		
166 2646 0.084112 25 18 214 0.733645 25 157 214 NA	1	25	2	22	1	22		
775 8748 0.23284 108 173 743 0.888598 110 678 763 NA	1	106	6	93	7	95		
217 2941 0.172093 65 37 215 0.656109 66 145 221 NA	0	66	2	64	2	64		
3152 23063 0.236511 124 526 2224 0.831731 128 1903 2288 NA	1	128	16	125	29	125		
100 2262 0.205357 49 46 224 0.745614 50 170 228 NA	0	50	5	48	2	48		
401 4563 0.175365 98 84 479 0.796334 99 391 491 NA	2	99	3	93	4	93		
125 7025 0.095073 20 10 221 0.80542 20 179 221 NA	0	20	1	20	2	20		

Column: geocoded State:

2. I have deleted column geocoded State as this provided null value.

Pre-cleaning screenshot:

Post-Cleaning Screenshot:

Column: previous_day_deaths_covid_and_influeza

3. I have deleted column previous_day_deaths_covid and influenza as column showing null values.

Pre-cleaning Screenshot:

COVID-19_Reported_Patient_Impac																		
DD1	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI
1	deaths_c	deaths_c	on_hand	on_hand	on_hand	previous_c	previous_c	previous_c	icu_patien	icu_patien	patien	previous_c	previous_c	previous_c	previous_c	previous_c	total_pati	total_pati
2	0	9	612	40	644	0	0	0	0	24	0	24	0	0	7	0	7	0
3	24	113	911	0	847	0	0	0	1	113	3	113	0	0	8	0	8	0
4	10	53	301	36	465	0	0	10	2	108	6	108	0	0	49	0	49	25
5	0	426			10	0		0	0	1	0	1	0	0	0	0	0	0
6	9	43	2933	767	2188	25	4	10	4	115	11	115	0	0	39	0	39	44
7	281	142	8665	1718	3431	311	0	0	3	402	1	402	0	0	352	0	353	42
8	4	49	4310	839	1912	9	0	9	3	105	5	105	0	0	45	0	45	16
9	2	9	2394	0	2364	0	0	0	0	38	0	38	0	0	8	0	8	0
10	2	13	304	258	224	27	0	0	1	13	0	13	0	0	1	0	1	2
11	1	8	1039	0	855	0	0	0	0	15	1	15	0	0	8	0	8	2
12	27	146	4033	69	3385	1447	237	318	7	261	6	261	1	137	1	137	60	
13	26	135	4643	3285	4710	86	25	26	16	168	6	168	0	0	140	0	140	50
14	2	13	405	0	2	0	0	15	0	25	0	25	0	0	12	0	12	0
15	6	56	780	109	408	333	0	89	1	108	6	108	0	0	50	0	50	16
16	7	59	623	372	482	15	0	0	1	65	0	65	0	0	55	0	55	6
17	34	108	1080	2	1951	1	0	0	1	124	6	124	0	0	106	1	106	32
18	1	44	430	0	479	0	0	0	1	49	0	49	0	0	1	0	1	5
19	7	82	784	17	736	8	0	1	1	98	2	98	0	0	81	0	81	9
20	7	114	n	n	502	n	n	n	n	261	7	261	0	0	7	n	7	2

Post Cleaning Screenshot:

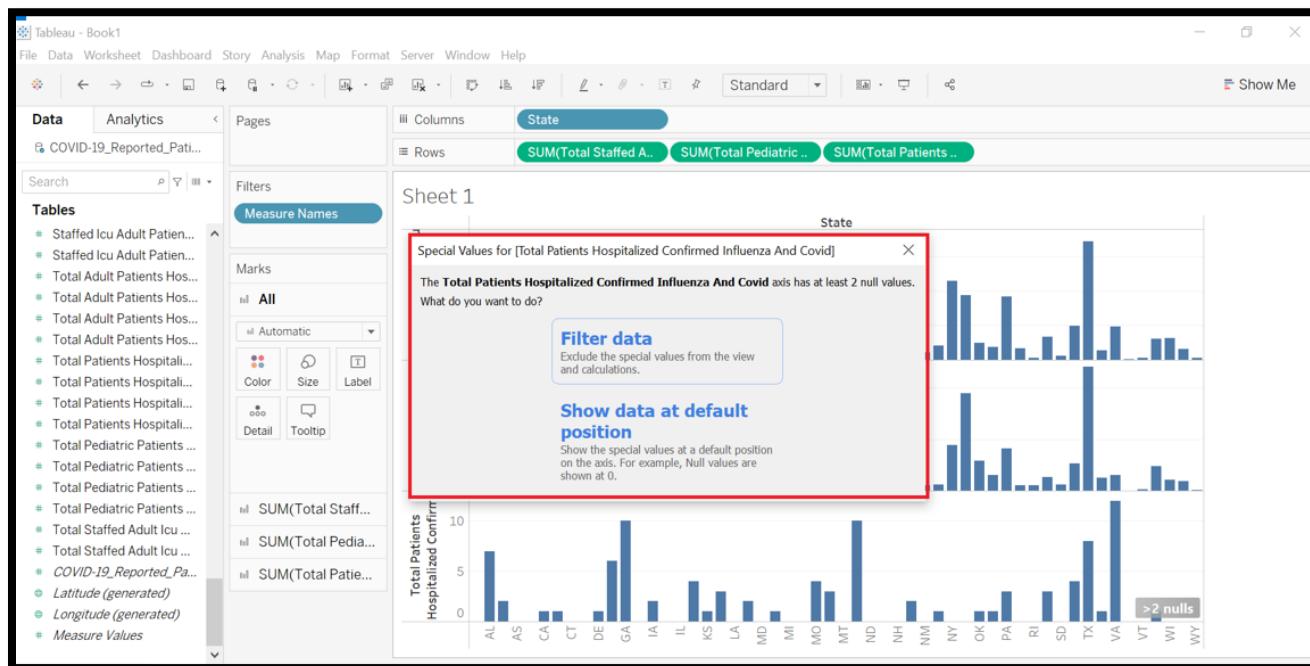
DD1

	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	D
1	on_hand_on_hand_on_hand_previous	on_hand_on_hand_on_hand_previous	previous	previous	previous	icu_patien	icu_patien	previous	previous	previous	previous	previous	total	total	total	total	total	
2	612	40	644	0	0	0	0	24	0	24	7	0	7	0	0	7	24	
3	911	0	847	0	0	0	1	113	3	113	8	0	8	27	7	101	113	
4	301	36	465	0	0	10	2	108	6	108	49	0	49	25	2	49	108	
5	426		10	0		0	0	1	0	1	0		0	0		0	1	
6	2933	767	2188	25	4	10	4	115	11	115	39	0	39	44	0	39	115	
7	8665	1718	3431	311	0	0	3	402	1	402	352	0	353	42	1	353	402	
8	4310	839	1912	9	0	9	3	105	5	105	45	0	45	16	1	45	105	
9	2394	0	2364	0	0	0	0	38	0	38	8	0	8	0	0	8	38	
10	304	258	224	27	0	0	1	13	0	13	1	0	1	2	0	1	13	
11	1039	0	855	0	0	0	0	15	1	15	8	0	8	2	1	8	15	
12	4033	69	3385	1447	237	318	7	261	6	261	137	1	137	60	6	137	261	
13	4643	3285	4710	86	25	26	16	168	6	168	140	0	140	50	10	140	168	
14	405	0	2	0	0	15	0	25	0	25	12	0	12	0	0	12	25	
15	780	109	408	333	0	89	1	108	6	108	50	0	50	16	3	50	108	
16	623	372	482	15	0	0	1	65	0	65	55	0	55	6	0	55	65	
17	1080	2	1951	1	0	0	1	124	6	124	106	1	106	32	10	106	124	
18	430	0	479	0	0	0	1	49	0	49	1	0	1	5	0	1	49	
19	784	17	736	8	0	1	1	98	2	98	81	0	81	9	0	81	98	
20	1210	0	502	0	0	0	0	20	2	20	7	0	7	2	0	7	20	

COVID-19_Reported_Patients_Impact

Tableau feature for dataset correction:

Tableau highlighted there are null values in specific column, I used this feature for cleaning the dataset.



Removing Duplicate Values:

Pre data cleaning screenshot:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	state	critical_st	hospital_onset	hospital_onset	inpatient_inpatient	inpatient_inpatient	inpatient_inpatient	inpatient_inpatient	inpatient_inpatient	previous_previous	previous_previous							
2	AK	1	21	2	5	17	2	13	24	24	24	1190	24	107	24	13	24	
3	AL	0	8	109	43	53	21	39	113	113	117	11780	117	1663	113	148	115	
4	AR	5	92	13	21	87	2	15	108	108	110	6905	110	1038	108	93	110	
5	AS	0	1	0	1	0	0	0	1	1	1	81	1	0	1	0	1	
6	AZ	10	76	32	13	84	21	31	114	114	118	13591	118	1898	115	240	118	
7	CA	11	139	261	134	239	38	109	403	403	411	53423	411	7423	403	734	411	
8	CO	16	60	31	23	64	20	23	105	105	107	8470	107	775	105	95	107	
9	CT	1	13	25	2	29	8	25	38	38	39	6300	39	346	38	47	39	
10	DC	0	1	13	0	13	1	2	13	13	14	2820	14	217	13	8	14	
11	DE	2	13	1	5	10	1	6	15	15	16	2530	16	198	15	16	16	
12	FL	8	188	71	40	167	60	181	261	261	267	48973	267	4637	261	561	267	
13	GA	39	112	20	46	105	20	39	168	168	171	19736	171	2862	168	319	171	
14	HI	3	17	5	3	18	4	9	25	25	25	2030	25	166	25	27	25	
15	MS	5	95	10	21	86	3	13	108	108	110	6014	110	775	108	63	110	
16	MT	7	55	4	10	52	4	25	65	65	66	2137	66	217	65	37	66	
17	NC	8	108	12	12	102	14	70	124	124	128	18662	128	3152	124	271	128	
18	ND	0	3	47	15	31	4	61	49	49	50	1836	50	100	49	22	50	
19	NE	17	69	13	23	74	2	11	98	98	99	3452	99	401	98	34	99	
20	NH	2	10	10	6	6	6	1	20	20	20	2426	20	125	20	10	20	

Post Data Cleaning Screenshot:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	state	critical_st	hospital_onset	inpatient_inpatient	inpatient_inpatient	inpatient_inpatient	inpatient_inpatient	inpatient_inpatient	inpatient_inpatient	previous_previous	previous_previous	previous_previous							
2	AK	1	21	2	5	17	2	13	24	1541	24	1190	24	107	24	13	24	0	24
3	AL	0	8	109	43	53	21	39	113	15172	117	11780	117	1663	113	148	115	82	113
4	AR	5	92	13	21	87	2	15	108	9093	110	6905	110	1038	108	93	110	50	108
5	AS	0	1	0	1	0	0	0	1	150	1	81	0	1	0	1	0	1	
6	AZ	10	76	32	13	84	21	31	114	17049	118	13591	118	1898	115	240	118	120	115
7	CA	11	139	261	134	239	38	109	403	68225	411	53423	411	7423	403	734	411	451	403
8	CO	16	60	31	23	64	20	23	105	11939	107	8470	107	775	105	95	107	68	105
9	CT	1	13	25	2	29	8	25	38	7858	39	6300	39	346	38	47	39	32	38
10	DC	0	1	13	0	13	1	2	13	3377	14	2820	14	217	13	8	14	44	13
11	DE	2	13	1	5	10	1	6	15	3191	16	2530	16	198	15	16	16	32	15
12	FL	8	188	71	40	167	60	181	261	60470	267	48973	267	4637	261	561	267	215	261
13	GA	39	112	20	46	105	20	39	168	23189	171	19736	171	2862	168	319	171	139	168
14	HI	3	17	5	3	18	4	9	25	2646	25	2030	25	166	25	27	25	9	25
15	MS	5	95	10	21	86	3	13	108	8813	110	6014	110	775	108	63	110	38	108
16	MT	7	55	4	10	52	4	25	65	2970	66	2137	66	217	65	37	66	17	65
17	NC	8	108	12	12	102	14	70	124	23334	128	18662	128	3152	124	271	128	171	124
18	ND	0	3	47	15	31	4	61	49	2288	50	1836	50	100	49	22	50	4	49
19	NE	17	69	13	23	74	2	11	98	4634	99	3452	99	401	98	34	99	20	98
20	NH	2	10	10	6	6	6	1	20	20	20	2426	20	125	20	10	20	20	

Deleting Row:

- Deleting the value in row providing duplicate values:

AL	AM	AN	AO	AP	AQ	AR	AS	AI	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
total_staff	total_inpatient	inpatient_inpatient_percent_o	adult_icu	adult_icu	adult_icu	adult_icu	adult_icu	adult_icu										
132	24	0.772226	24	1190	1541	0.089916	24	107	1190	0.069435	24	107	1541	0.106061	24	14	132	0.833333
1577	117	0.77643	117	11780	15172	0.142882	113	1663	11639	0.111193	113	1663	14956	0.242365	113	373	1539	0.919467
937	110	0.759375	110	6905	9093	0.150872	108	1038	6880	0.114683	108	1038	9051	0.269565	108	248	920	0.827108
7	1	0.54	1	81	150	0	1	0	81	0	1	0	150	0	1	0	7	0.285714
1805	118	0.797173	118	13591	17049	0.142087	115	1898	13358	0.113327	115	1898	16748	0.182131	115	318	1746	0.735734
7222	411	0.783041	411	53423	68225	0.140616	403	7423	52789	0.110073	403	7423	67437	0.197333	403	1391	7049	0.789809
1283	107	0.70944	107	8470	11939	0.092471	105	775	8381	0.0655	105	775	11832	0.1456	105	182	1250	0.696804
892	39	0.801731	39	6300	7858	0.055538	38	346	6230	0.044525	38	346	7771	0.041379	38	36	870	0.717489
333	14	0.835061	14	2820	3377	0.079779	13	217	2720	0.066852	13	217	3246	0.121795	13	38	312	0.81982
181	16	0.792855	16	2530	3191	0.07901	15	198	2506	0.062678	15	198	3159	0.097143	15	17	175	0.762431
6611	267	0.809873	267	48973	60470	0.096157	261	4637	48223	0.077853	261	4637	59561	0.117747	261	759	6446	0.80124
2557	171	0.851093	171	19736	23189	0.146596	168	2862	19523	0.12494	168	2862	22907	0.226167	168	567	2507	0.864685
214	25	0.767196	25	2030	2646	0.081773	25	166	2030	0.062736	25	166	2646	0.084112	25	18	214	0.733645
763	110	0.682401	110	6014	8813	0.13023	108	775	5951	0.088592	108	775	8748	0.23284	108	173	743	0.888598
221	66	0.719529	66	2137	2970	0.10231	65	217	2121	0.073784	65	217	2941	0.172093	65	37	215	0.656109
2288	128	0.799777	128	18662	23334	0.171081	124	3152	18424	0.136669	124	3152	23063	0.236511	124	526	2224	0.831731
228	50	0.802448	50	1836	2288	0.055218	49	100	1811	0.044209	49	100	2262	0.205357	49	46	224	0.745614
491	99	0.744929	99	3452	4634	0.118115	98	401	3395	0.087881	98	401	4563	0.175365	98	84	479	0.796334
221	29	0.829983	30	2436	2935	0.051314	30	125	2436	0.042589	30	125	2935	0.085973	29	19	221	0.80543
2945	95	0.677441	95	16453	24287	0.077858	94	1281	16453	0.052744	94	1281	24287	0.059423	94	175	2945	0.448557
451	55	0.778819	55	3324	4268	0.142594	54	464	3254	0.111538	54	464	4160	0.268065	54	115	429	0.891353
831	62	0.81334	62	6963	8561	0.118137	60	809	6848	0.096104	60	809	8418	0.20603	60	164	796	0.832732
4591	206	0.79141	206	38935	49197	0.092679	197	3575	38574	0.073578	197	3575	48588	0.123214	197	552	4480	0.750381

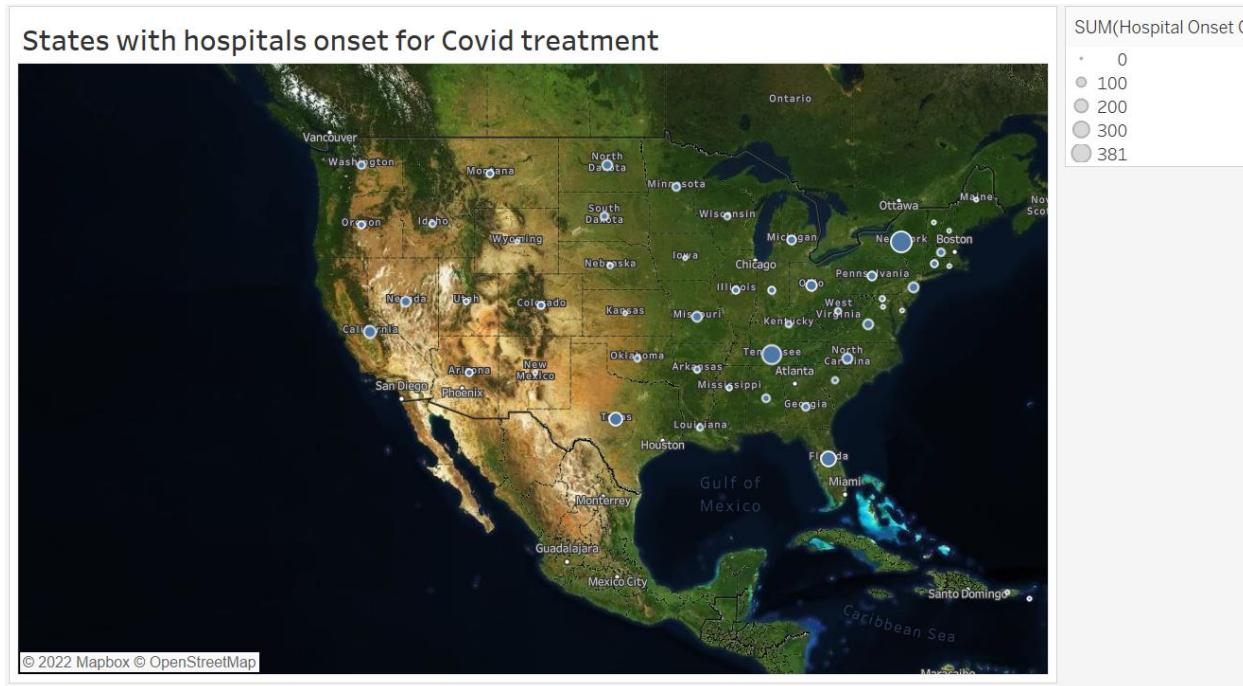
Post Cleaning Screenshot:

7222	411	0.783041	411	53423	68225	0.140616	403	7423	52789	0.110073	403	7423	67437	0.197333	403	1391	7049	0.789809
1283	107	0.70944	107	8470	11939	0.092471	105	775	8381	0.0655	105	775	11832	0.1456	105	182	1250	0.696804
892	39	0.801731	39	6300	7858	0.055538	38	346	6230	0.044525	38	346	7771	0.041379	38	36	870	0.717489
333	14	0.835061	14	2820	3377	0.079779	13	217	2720	0.066852	13	217	3246	0.121795	13	38	312	0.81982
181	16	0.792855	16	2530	3191	0.07901	15	198	2506	0.062678	15	198	3159	0.097143	15	17	175	0.762431
6611	267	0.809873	267	48973	60470	0.096157	261	4637	48223	0.077853	261	4637	59561	0.117747	261	759	6446	0.80124
2557	171	0.851093	171	19736	23189	0.146596	168	2862	19523	0.12494	168	2862	22907	0.226167	168	567	2507	0.864685
214	25	0.767196	25	2030	2646	0.081773	25	166	2030	0.062736	25	166	2646	0.084112	25	18	214	0.733645
763	110	0.682401	110	6014	8813	0.13023	108	775	5951	0.088592	108	775	8748	0.23284	108	173	743	0.888598
221	66	0.719529	66	2137	2970	0.10231	65	217	2121	0.073784	65	217	2941	0.172093	65	37	215	0.656109
2288	128	0.799777	128	18662	23334	0.171081	124	3152	18424	0.136669	124	3152	23063	0.236511	124	526	2224	0.831731
228	50	0.802448	50	1836	2288	0.055218	49	100	1811	0.044209	49	100	2262	0.205357	49	46	224	0.745614
491	99	0.744929	99	3452	4634	0.118115	98	401	3395	0.087881	98	401	4563	0.175365	98	84	479	0.796334
221	29	0.829983	30	2436	2935	0.051314	30	125	2436	0.042589	30	125	2935	0.085973	29	19	221	0.80543
2945	95	0.677441	95	16453	24287	0.077858	94	1281	16453	0.052744	94	1281	24287	0.059423	94	175	2945	0.448557
451	55	0.778819	55	3324	4268	0.142594	54	464	3254	0.111538	54	464	4160	0.268065	54	115	429	0.891353
831	62	0.81334	62	6963	8561	0.118137	60	809	6848	0.096104	60	809	8418	0.20603	60	164	796	0.832732
4591	206	0.79141	206	38935	49197	0.092679	197	3575	38574	0.073578	197	3575	48588	0.123214	197	552	4480	0.750381

Section D – Data Analysis:

Q1. How many hospitals in each state are onset for COVID-19 treatments? Provide analysis for hospital readiness for COVID-19 situation.

Solution: The analysis is conducted for the country USA. The dataset provides detailed information on hospital readiness for COVID-19 using the category as State. I have conducted my analysis on state basis count of hospitals readiness. I have used a tableau for visual analysis. The graphical representation of data helps to simplifies the analysis. Following geo map represent the information of states which are considered during this analysis process:



(Figure 1- Geo Map representation of States Details)

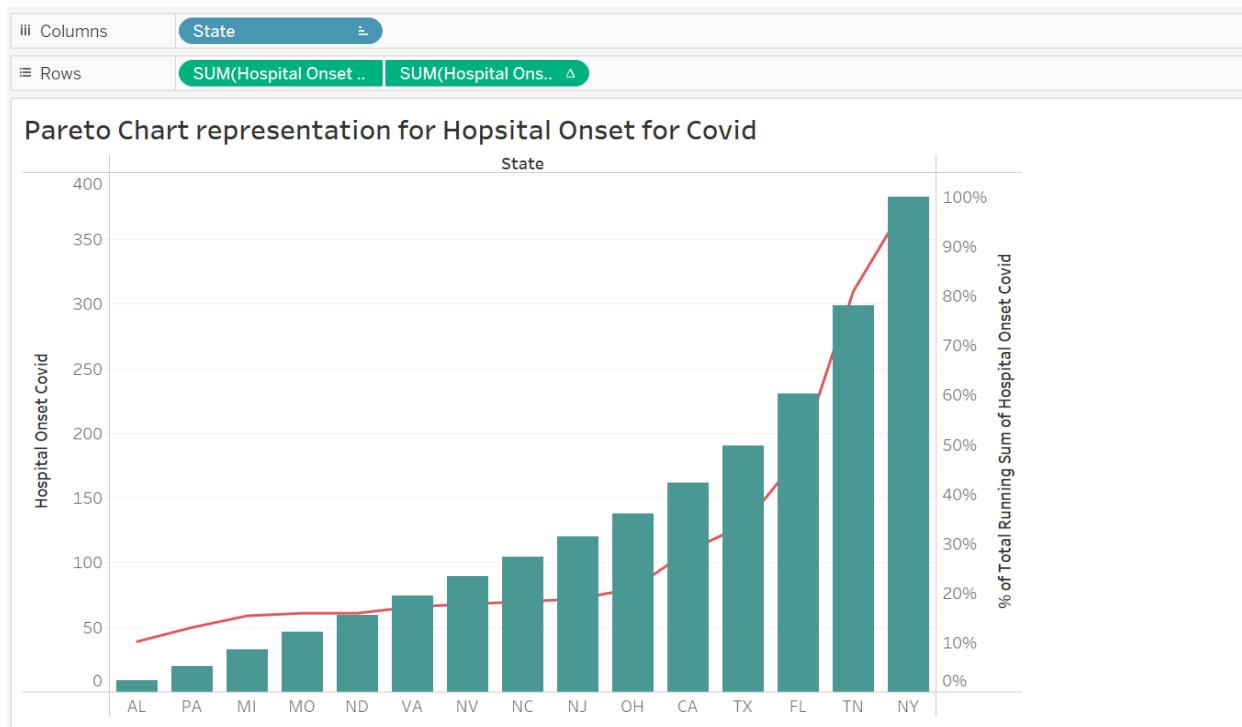
The geo-map represents the details of state and their hospital count which are onset for COVID-19 treatments. As per geo-map indication states such as New York, Texas and Florida having maximum hospital facilities are available. The geo-map also represents the count of hospital readiness for COVID-19 treatments. The blue bubbles in the geo map represent the hospital readiness count and 381 -more than that is the highest count while 100 and below range of that having lowest count.

Further analysis is conducted by categorizing the top 15 states with good hospital facilities. I have added filter conditions on state and identified the top 15 states name with maximum hospital-onset for COVID-19 treatments. I used pareto chart for representation of hospital facilities in these states. Following are the details of fifteen states in the United States. I have conducted analysis on 15 well-known states in the United States and identified the count of hospitals onset for COVID-19.

Top 15 States List	
State	
AL	39
CA	109
FL	181
MI	59
MO	61
NC	70
ND	61
NJ	72
NV	68
NY	381
OH	80
PA	50
TN	310
TX	129
VA	66

(Figure 2- Text Table -represent the details of State and Count of hospitals onset for COVID-19)

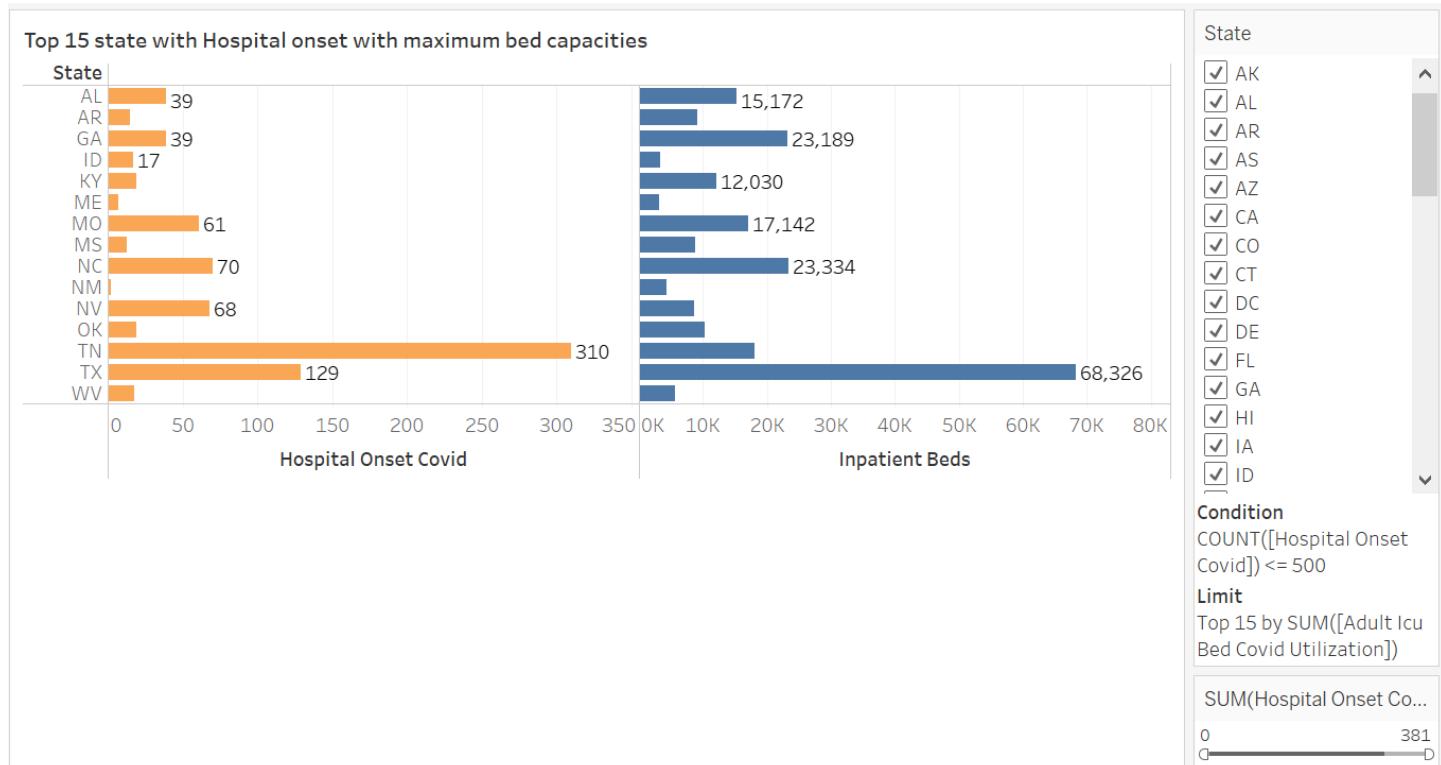
For further analysis, I have used pareto chart using data set representation of state with hospital-onset for COVID-19 and percentage of hospital count available for treatment of COVID19. The pareto chart analysis involves graphical representation of hospital count in line graph and bar graph format. I used pareto chart to highlight the large set of data count in a meaningful way. Pareto chart representation helps me to analysis the states which need to focus more on their hospital facilities. Following is Pareto Chart representation:



(Figure- 3 – Pareto Chart Representation)

The graphical representation indicates that the state of New York is having maximum hospital facilities while the state Alabama (AL) has the lowest hospital facilities for COVID-19 treatments. The states such as Nevada (NV), North Carolina (NC) and New jersey (NJ) have medium-range hospital facilities available for

COVID-19 treatment. I conducted analysis in more detail and identified the important part of hospital facilities are available if Beds for patients. I studied my dataset and identified the column which represents the count of bed facilities available for COVID-19 patients' treatments. Following dual-axis bar graph represent the count of hospital onset for COVID -19 treatment and count of availability of bed in hospitals. This graph helps me to analyze that Alabama and Georgia state having same number of counts for hospital onset facility but the number of bed facilities available is different in both states. This helps me to understand that if the hospital count is same in both of states but there will be the difference in facilities in each state. Hence states need to focus on hospital availability and maximize the facilities available in hospitals.



(Figure -4 -Dual Axis bar Chart)

Analysis: The detailed study conducted on top 15 state in United States. I have gathered information of total count of hospitals available in each state and then conducted analysis on facilities available in all hospital in those states. This study helps me to analyze the readiness of hospital facilities for COVID-19 treatment. I understand that the New York state having maximum hospital facilities and Alabama state having minimal hospital facilities for COVID-19 treatment. Following dashboard represents the analysis conducted on top 15 states of United States and availability of medical facilities such as hospital count for treatment of COVID-19.

Dashboards provide all details in same frame and easy for conducting visual analysis. This analysis helps me to understand the medical facilities in each state and I can able to conduct my analysis on top 15 states in United States.

Hospital Onset for Covid-19 Treatment

Hospita.. States with hospitals onset for Covid treatment

- 0
- 100
- 200
- 300
- 381

State

- AK
- AL
- AR
- AS
- AZ

Condition COUNT([

Hospital Onset

Covid])

<= 500

Limit

Top 15 by

SUM([

Adult Icu

Bed

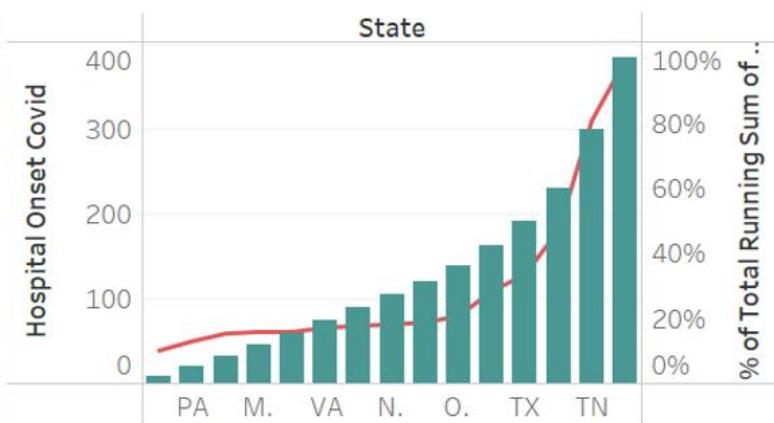
Covid

Utilizatio

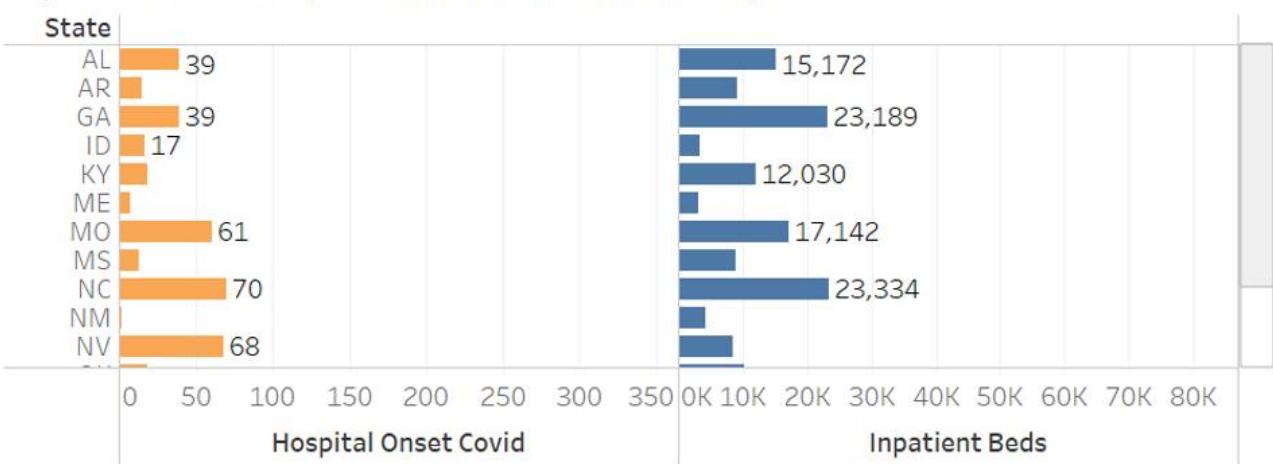
Hospita..
To Null



Pareto Chart representation for Hopsital Onset for Covid



Top 15 state with Hospital onset with maximum bed capacities



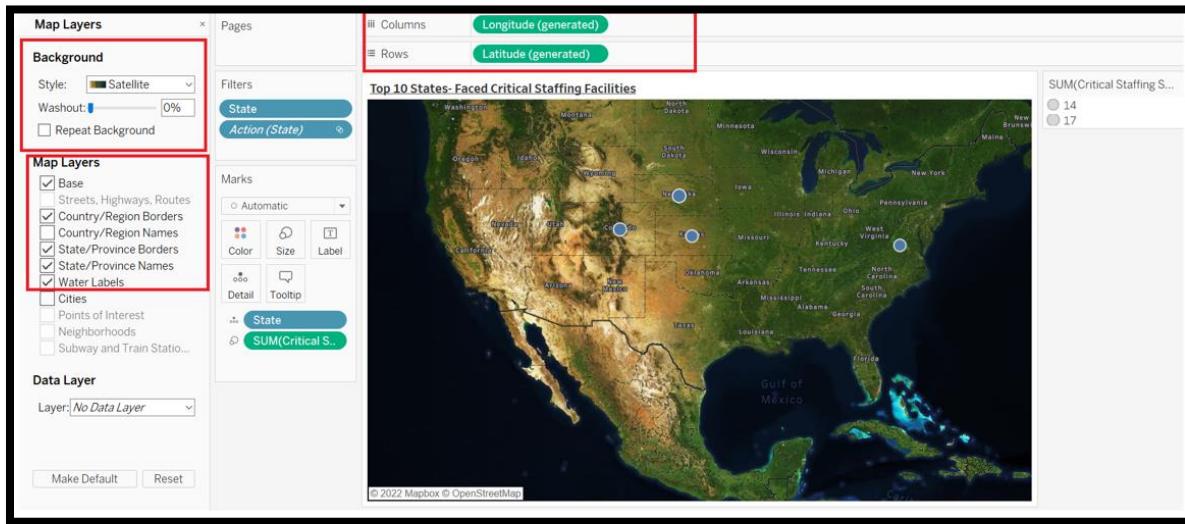
(dashboard)

Reference:

- (World Health Organization, n.d.)
- (<https://disasterphilanthropy.org/disasters/covid-19-coronavirus/Medical Facilities AVailability>)

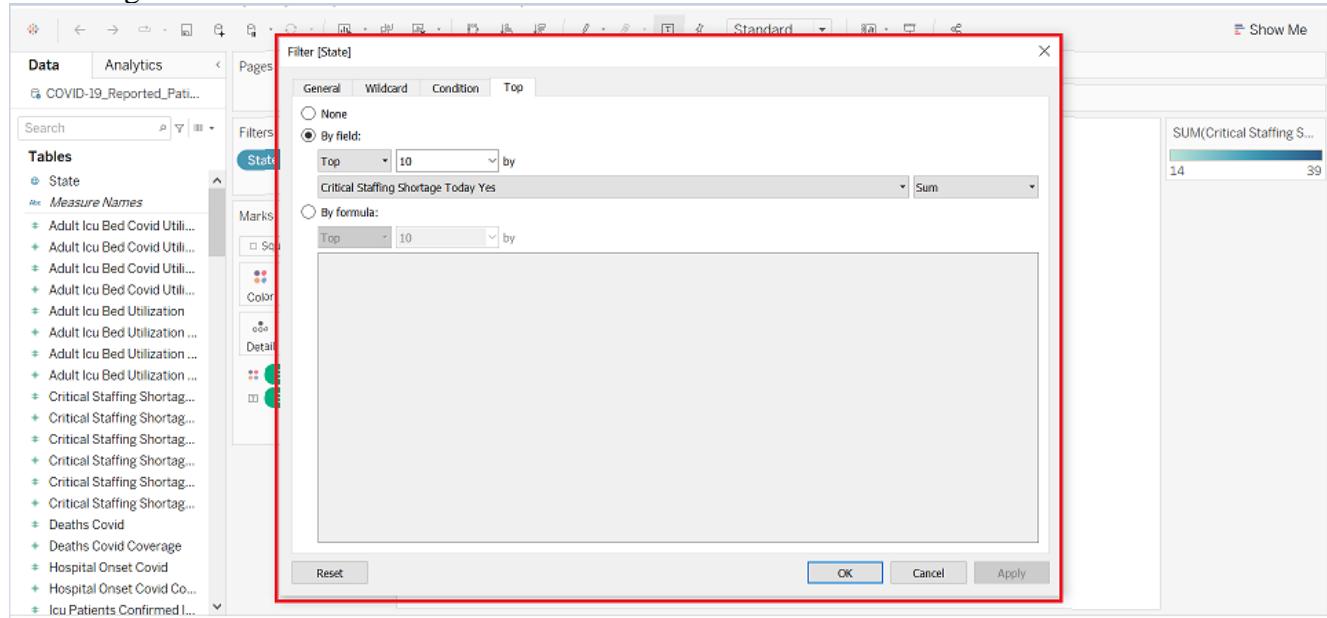
Tableau Feature Used for Analysis:

- **Geo Map:** The geo map representation helps me to understand location of states which will be considered during the analysis. The map is created basis of state information provided in dataset. I have used background as satellite and multiple values of map layers.

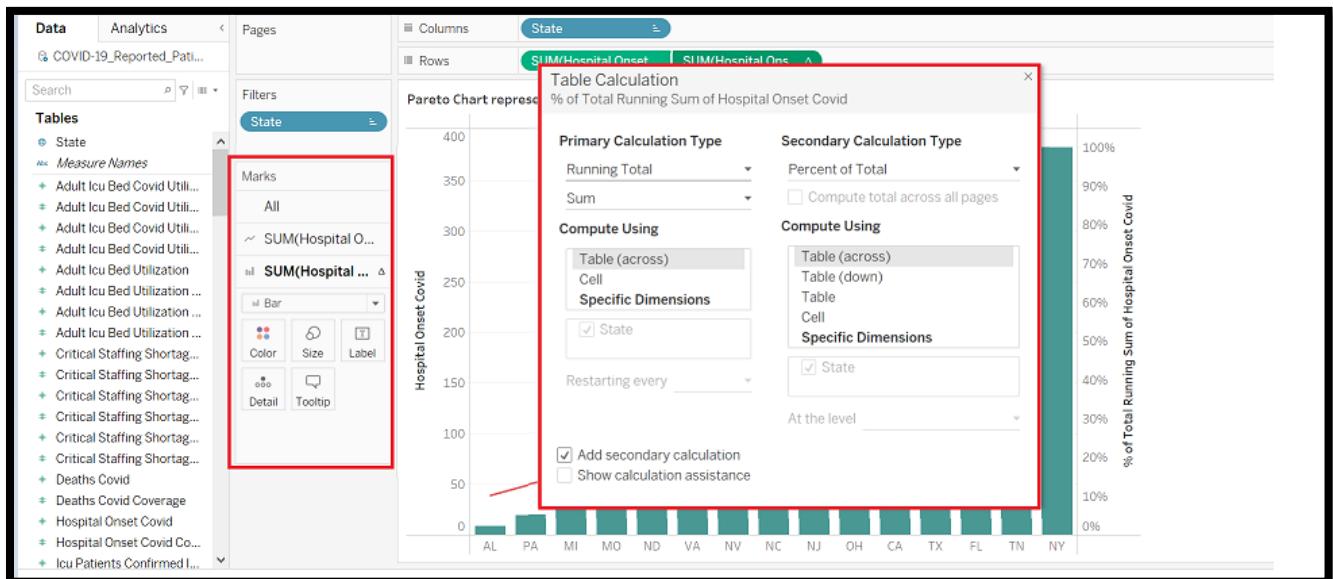


- **Text Table:** I used text table feature of tableau for data representation in table format. I have applied filter as top 10 states on state columns. I have used top 10 states data for analysis of one of the scenarios.

Following is screenshot for filter condition:

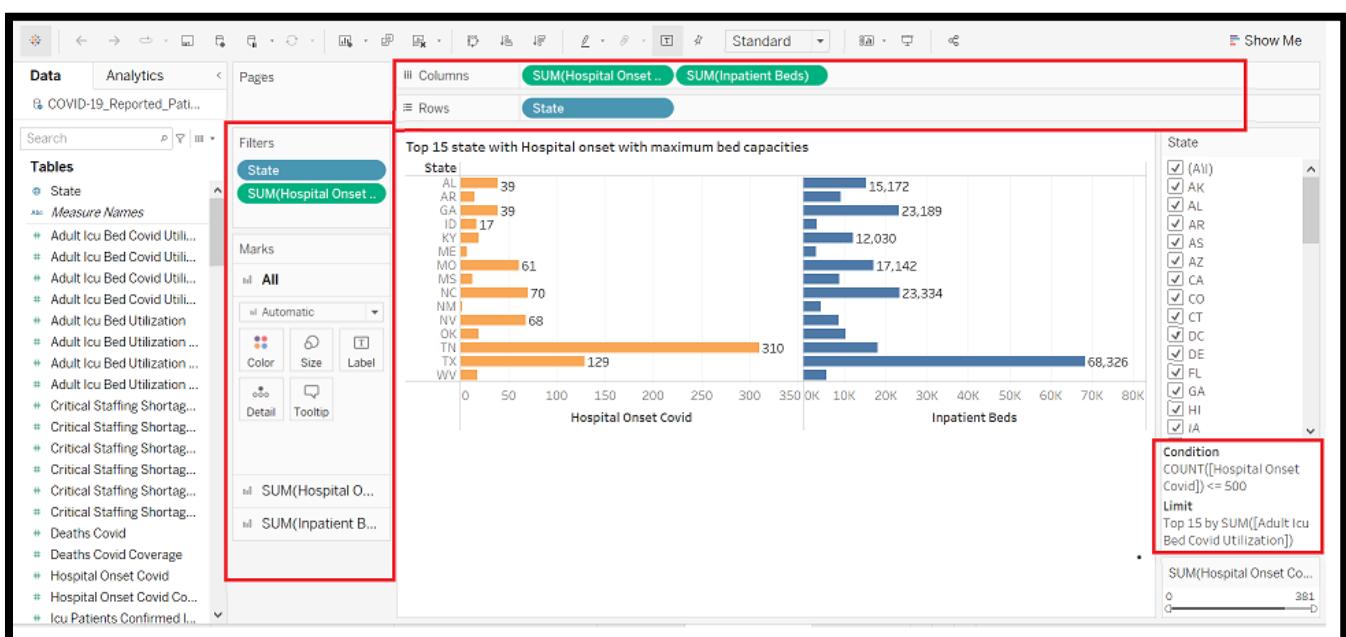


- **Pareto Chart:** I have created pareto chart to provide details of readiness of hospital for COVID-19 situation. I have used certain calculation for same data values and created this graph. Following are the tableau features are used for this analysis: I have applied sort condition descending for detail analysis.



- Dual Axis Bar Chart:** I have used tableau feature as dual axis bar chart for more detail analysis of scenario. I have created calculation on hospital onset data to get count of onset hospital in range of 500 or above.

I have applied filter condition on states and sum of hospital onset for COVID values.



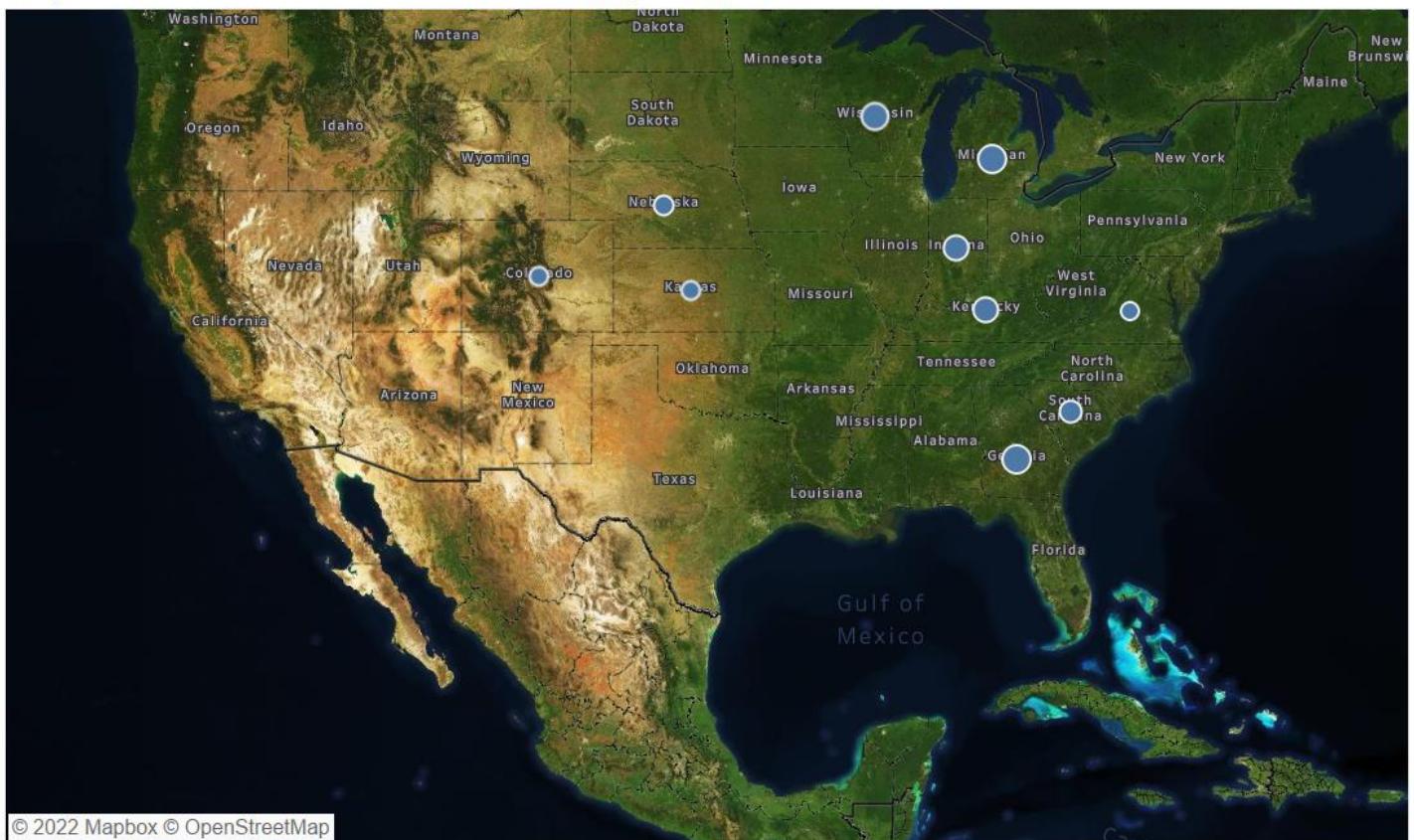
Q2. What are count of Critical facilities available in state at United States having limited provision of medical facilities?

Solution: I have conducted analysis for the availability of critical facilities in states to handle and treatment of COVID-19 situation. **The data set of Hospital facilities and impact on the patient for COVID-19 situation** provides details of medical facilities in each state in the United States and categorization of patients such as patients infected with Coronavirus and patient having beginning level symptoms of COVID-19. The important analysis during study is analyzing the critical and emergency facilities availability at hospitals. The critical facilities such as staffing facilities availability for emergency care. **Following are points covered under critical facilities analysis:**

- **Critical Staffing Shortage**
- **Critical Staffing reported**
- **Critical staffing shortage anticipated within the week period**

Following geo-map representation for ten states in the United States with critical and emergency care facilities addressed:

Top 10 States- Faced Critical Staffing Facilities



(Figure 5- Geo Map)

I have conducted my analysis for top 10 states in United states which having limited provision of medical facilities. Following states covered under this analysis:

State Name	Code
Colorado	CO
Georgia	GA
Indiana	IN
Kansas	KS
Kentucky	KY
Michigan	MI
Nebraska	NE
South Carolina	SC
Virginia	VA
Wisconsin	WI

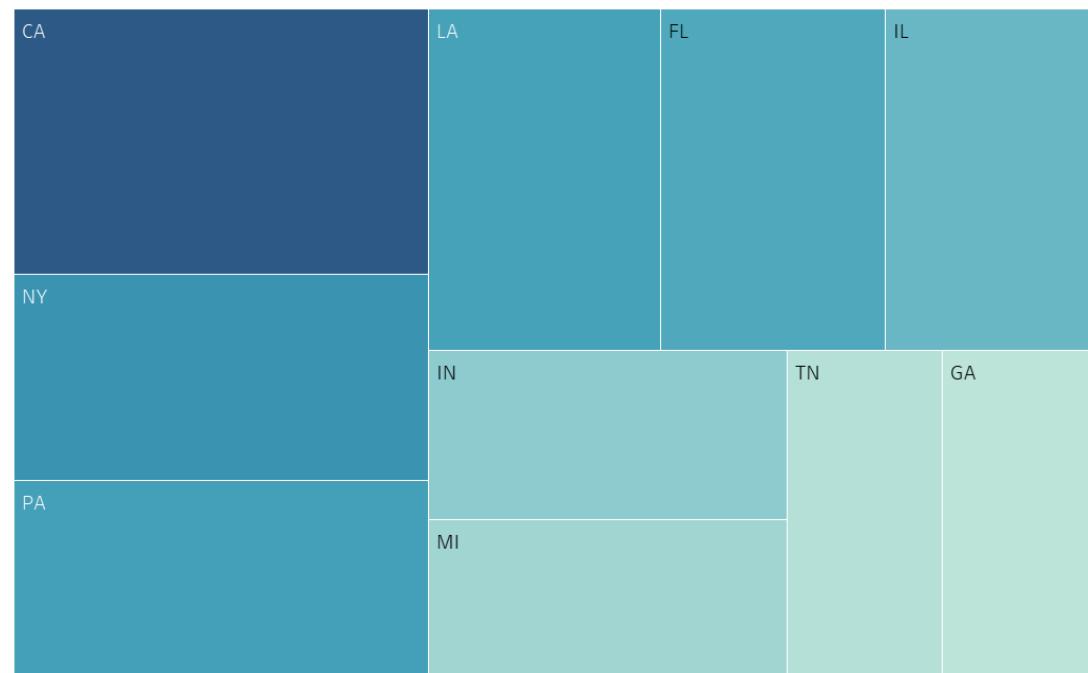
Following is bar graph representation of critical staffing facilities available in above states:



(Figure 6- Bar Graph Representation)

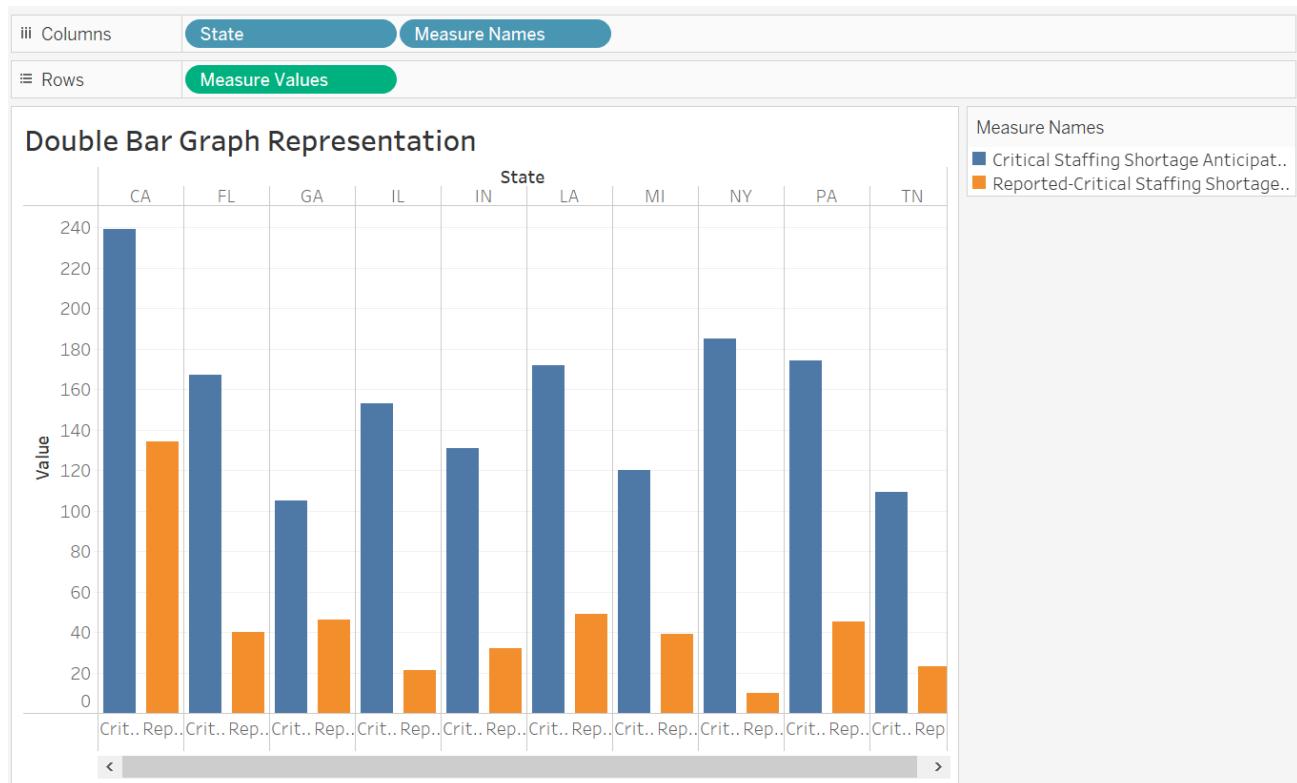
As per bar graph representation states such as Georgia, Michigan and Wisconsin have comparatively good arrangements and emergency care facilities. The state Kansas and Virginia have the comparatively low critical medical facility. I have calculated the difference in count of facility with top states with good hospital facilities available. After the study, I found that state such as New York and California are capable with goof emergency care staffing and facilities. Following heat map represent the availability and count of critical facilities at top10 states in the United States.

Heat Map Representation



(Figure-7-Heat Map)

The heat map representing magnitude of a phenomenon as color in two dimensions. The variation of color represents the critical staffing facilities availability at that area. For more detailed analysis, I have created visual representation in bar graph:

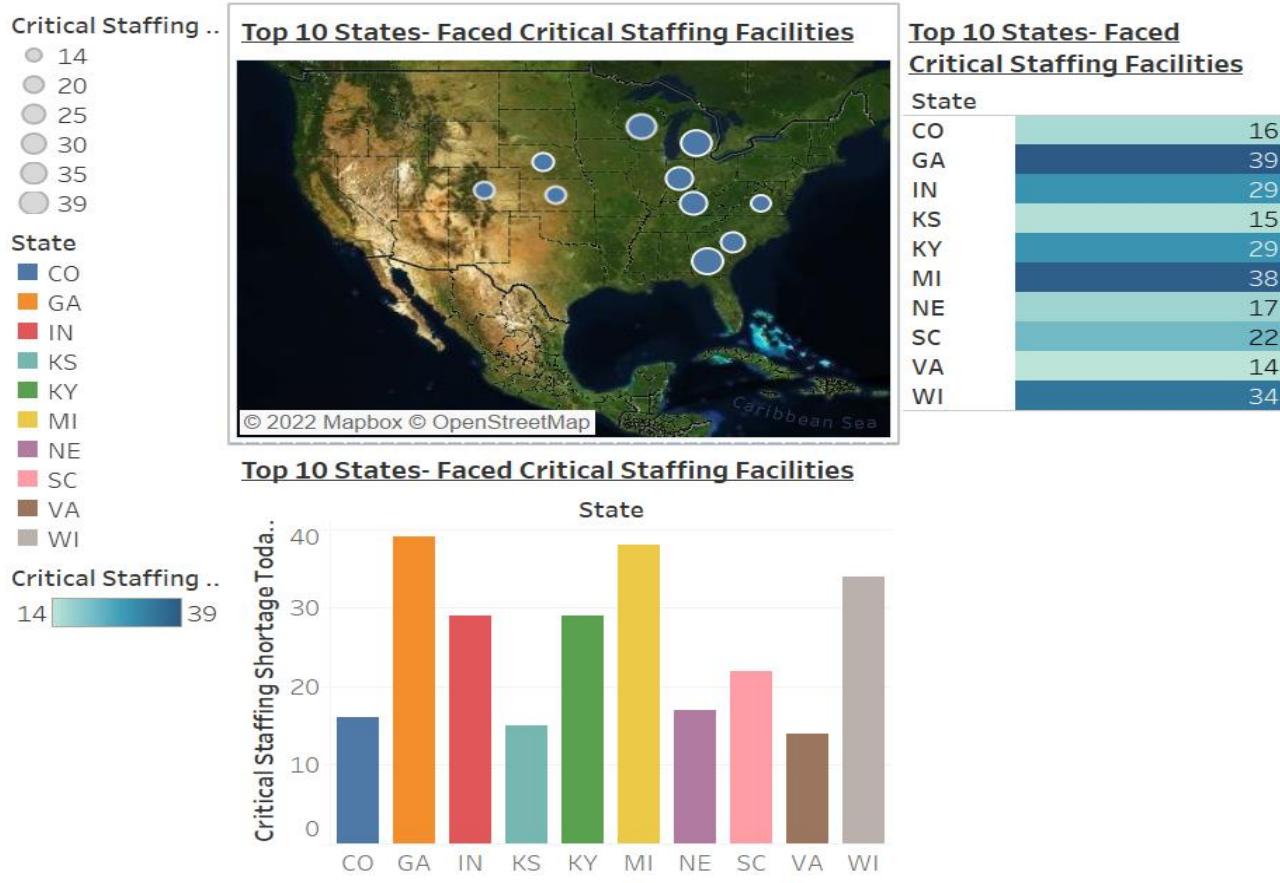


(Figure 8- Dual Bar Graph)

The dual bar graph represents two columns of information at the same time. The dual bar represents the critical staffing facility count available in hospitals in that States and the critical staffing shortages reported by states. This two information is represented by different color code. The blue color code represents the critical facilities availability in state and orange color code represent the information of state reported information for the shortage of critical facilities. The states are taking necessary precautions and action taken for availability of critical facilities.

Analysis: I have created an effective dashboard for simplifying and presentable analysis. I have added all visual representations in one page using dashboard. This helps me to understand exact requirements and conditions of critical staffing in specific states.

Critical Facilities Available in States



(Dashboard-2)

For further analysis, I have selected specific state values such as GA, IN, MI and WI. The bar graph and text table are connected to geo map and those features help me to understand the critical staffing values in those states and additional requirement in future.

Critical Facilities Available in States

Critical Staffing ..

- 29
- 30
- 32
- 34
- 36
- 38
- 39

State

- GA
- IN
- MI
- WI

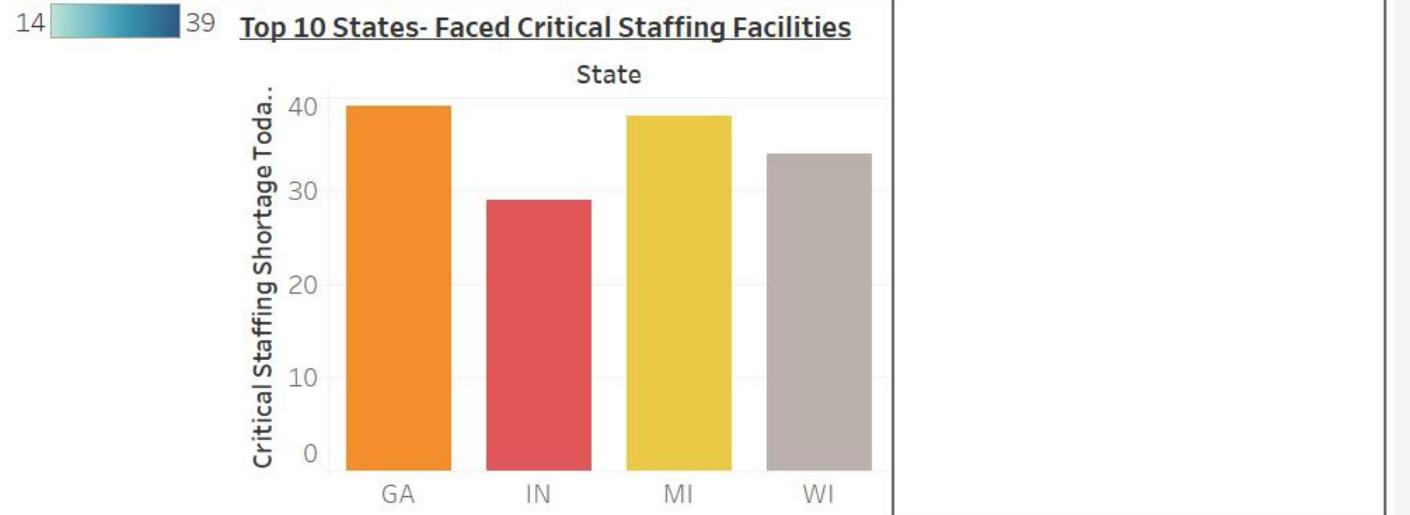
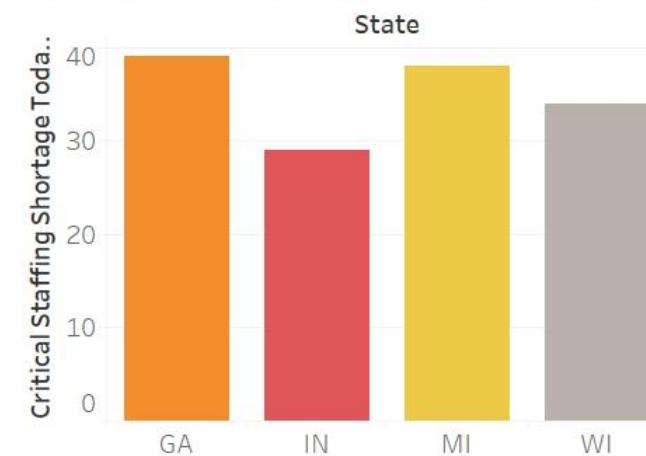
Critical Staffing ..

Top 10 States- Faced Critical Staffing Facilities



Critical Staffing ..

Top 10 States- Faced Critical Staffing Facilities



(Dashboard-3)

I have applied additional filter condition of on states having lower range of critical staffing facilities. I have selected states CO, KS, NE, VA for analysis. These states are having lower medical facilities as compared to other states. The availability of critical staffing facilities is limited for those states. State VA is having lowest critical staffing facility availability.

Critical Facilities Available in States



State

- CO
- KS
- NE
- VA

Critical Staffing ..



Top 10 States- Faced Critical Staffing Facilities

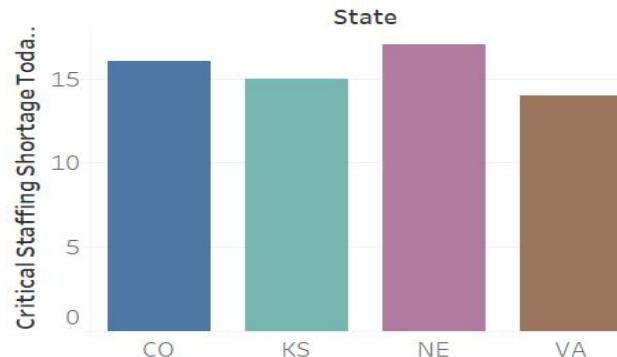


Top 10 States- Faced Critical Staffing Facilities

State

CO	16
GA	39
IN	29
KS	15
KY	29
MI	38
NE	17
SC	22
VA	14
WI	34

Top 10 States- Faced Critical Staffing Facilities



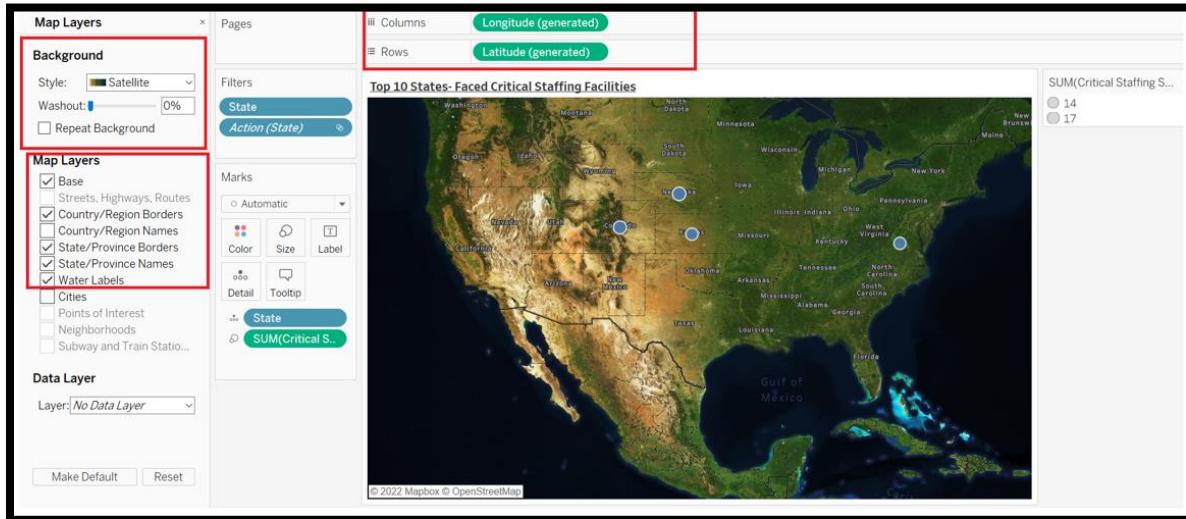
(Dashboard-4)

Reference:

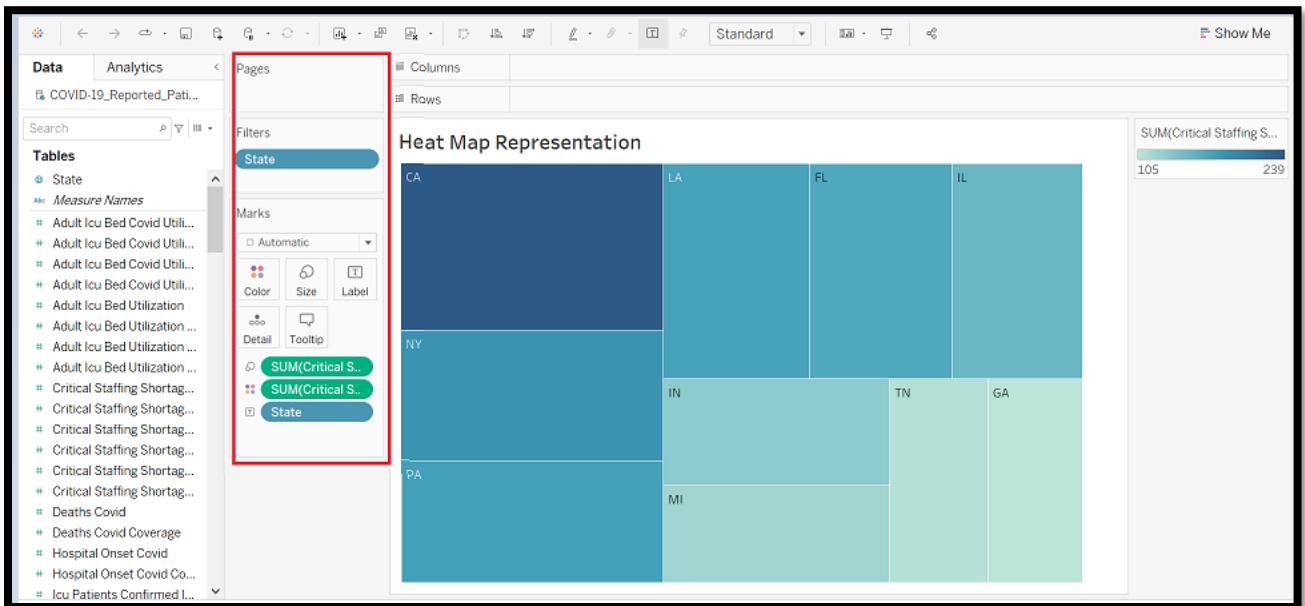
- (World Health Organization, n.d.)
- (<https://disasterphilanthropy.org/disasters/covid-19-coronavirus/Medical Facilities Availability>)

Tableau Feature Used for Analysis:

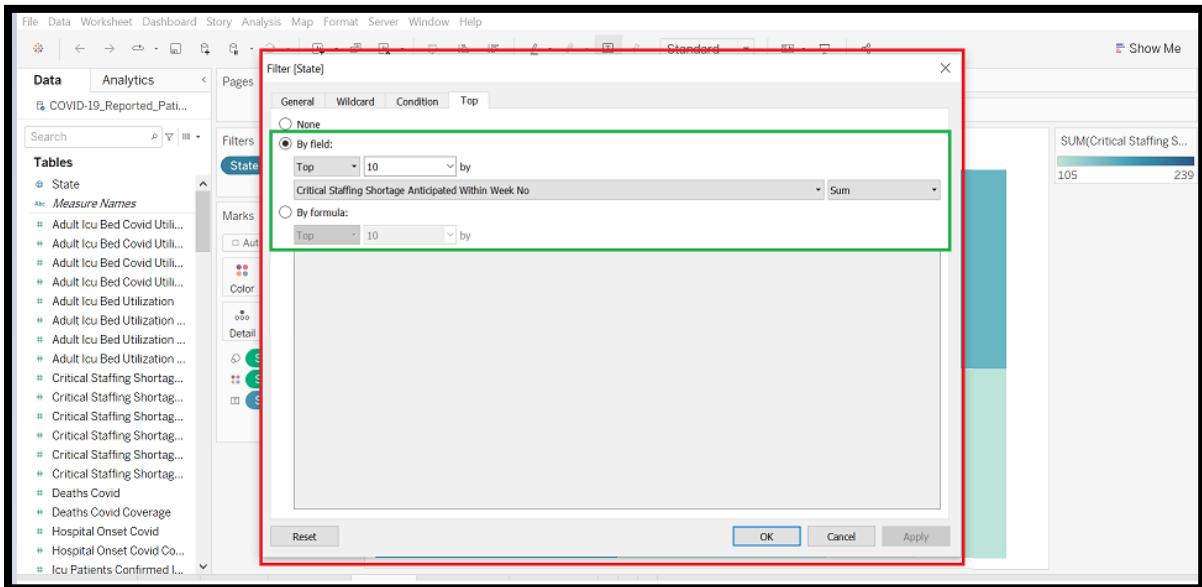
- **Geo Map:** The geo map representation helps me to understand location of states which will be considered during the analysis. The map is created basis of state information provided in dataset. I have used background as satellite and multiple values of map layers.



- **Heat Map:** Heat Map is two-dimension representation in which values are represented in color. The shades of color represent the critical staffing availability in each state. The color shade from dark to light highlight the criticality.

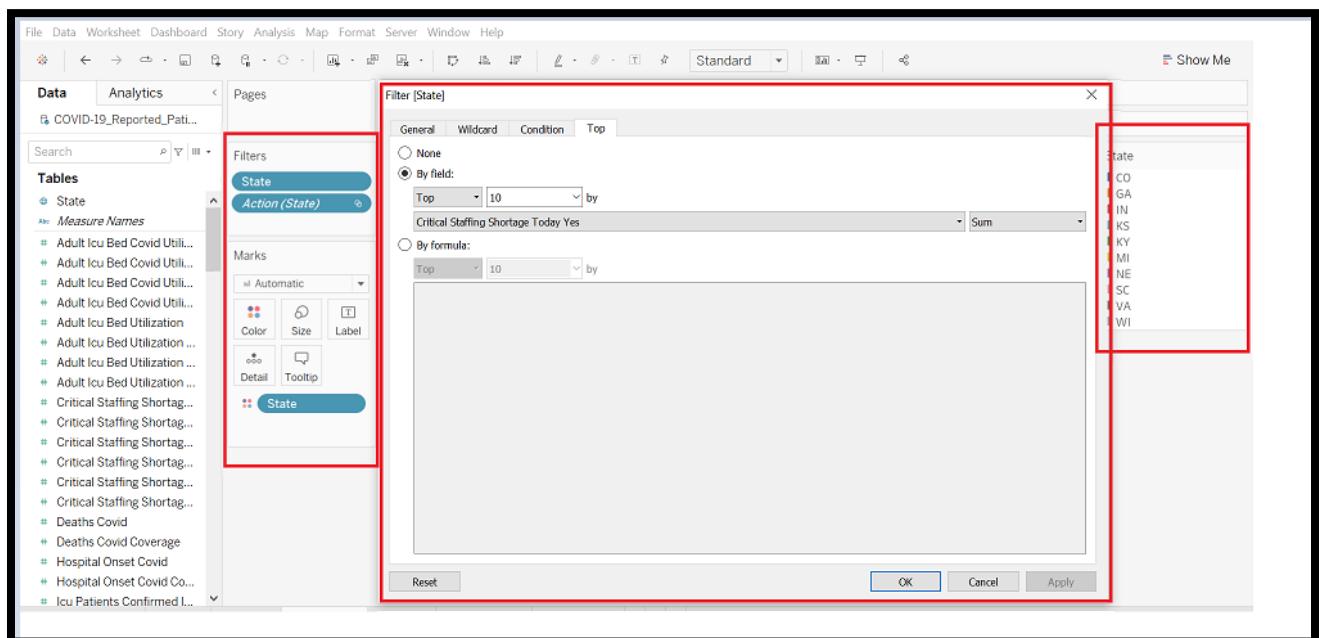


I have used specific filter condition for analyzing the scenario. The filter condition is applied on specific data field for gathering detailed information.



- **Bar Graph:** The bar graph representation helps to analyzing the data in specific categories.

I have added filter condition as top 10 states for analysis.

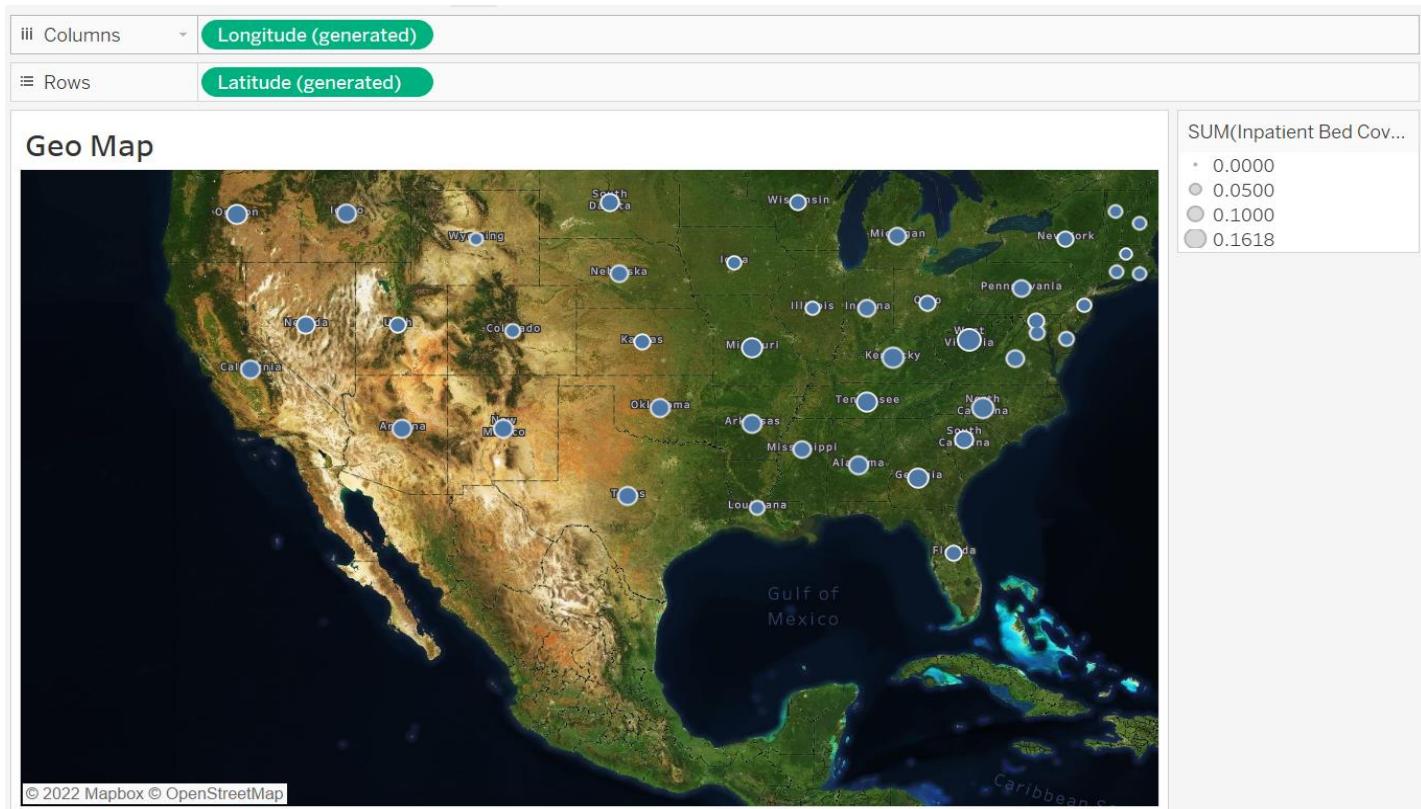


- **Dual Axis Bar Graph:** I have displayed two set of data in same graphical representation. Following are the conditions selected for creation dual axis bar graph.



Q3. What is total count of inpatient bed facilities and Staffed services in emergency care available in hospitals in each state?

Solution: All countries working on medical facilities for treatment of COVID-19 infected patients. The different states in United States are also taking major actions on COVID-19 readiness. The states are taking initiative by analyzing the actual medical facilities and hospitals available in states and developing maximum emergency care facilities for treatment of patients. The dataset is based on hospital count and hospital facilities for treatment of COVID-19. For this scenario, I have conducted analysis on following states in United States. The geo map represents the exact location of states for which this analysis is conducted.



(Geo Map for State Representation)

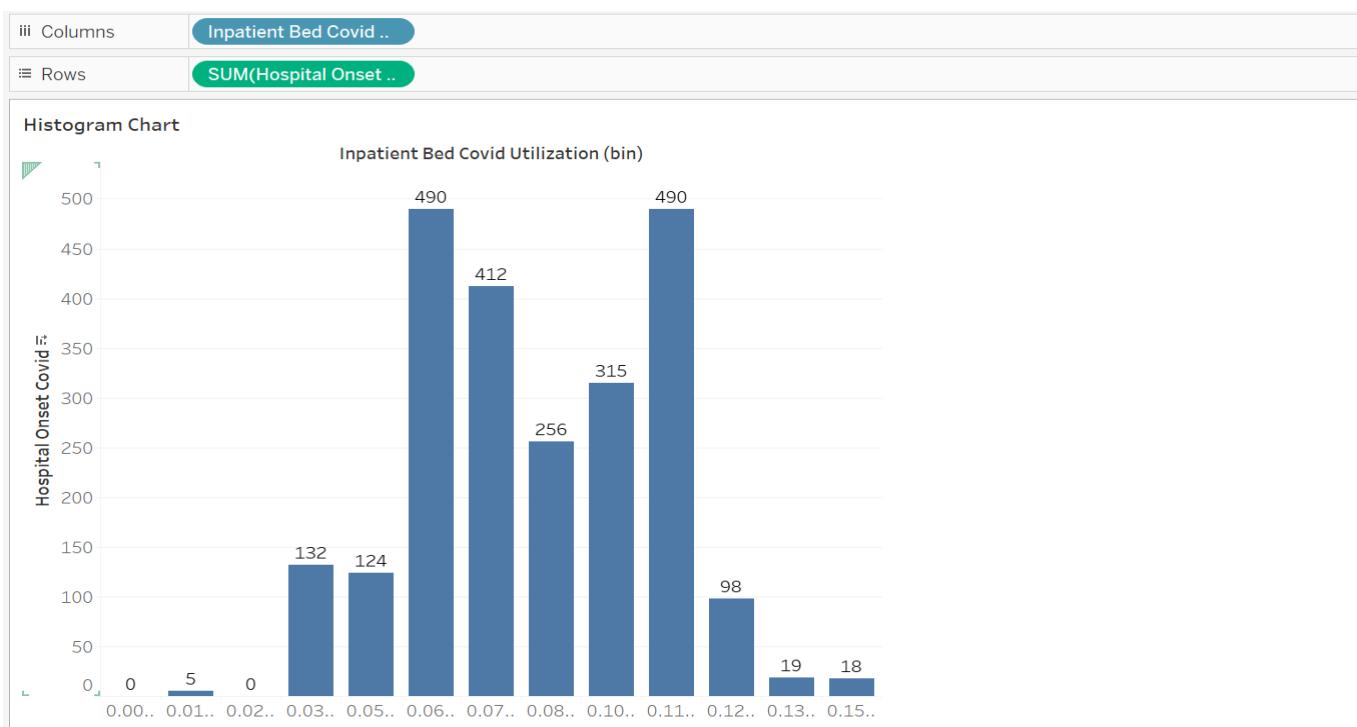
For detailed analysis, I have created a bubble plot chart using conditions as State, Inpatient bed count ,inpatient bed coverage vaccant for COVID-19 tretament and inpatient beds already covered with different diseases. I have conducted comaparative analysis during my study for this scenario. I found that I haved represented three categories in bubble visualization and it help me to analyzing the exact diffrence between inpatient bed vaccant for COVID-19 tretament and bed available for other disease patients. The first analysis is conducted on five states such as Alabama (AL), California (CA), Florida (FL), Louisiana (LA) and New York (NY). Following is the bubble chart representation for analysis:



(Figure 12- Bubble Plot)

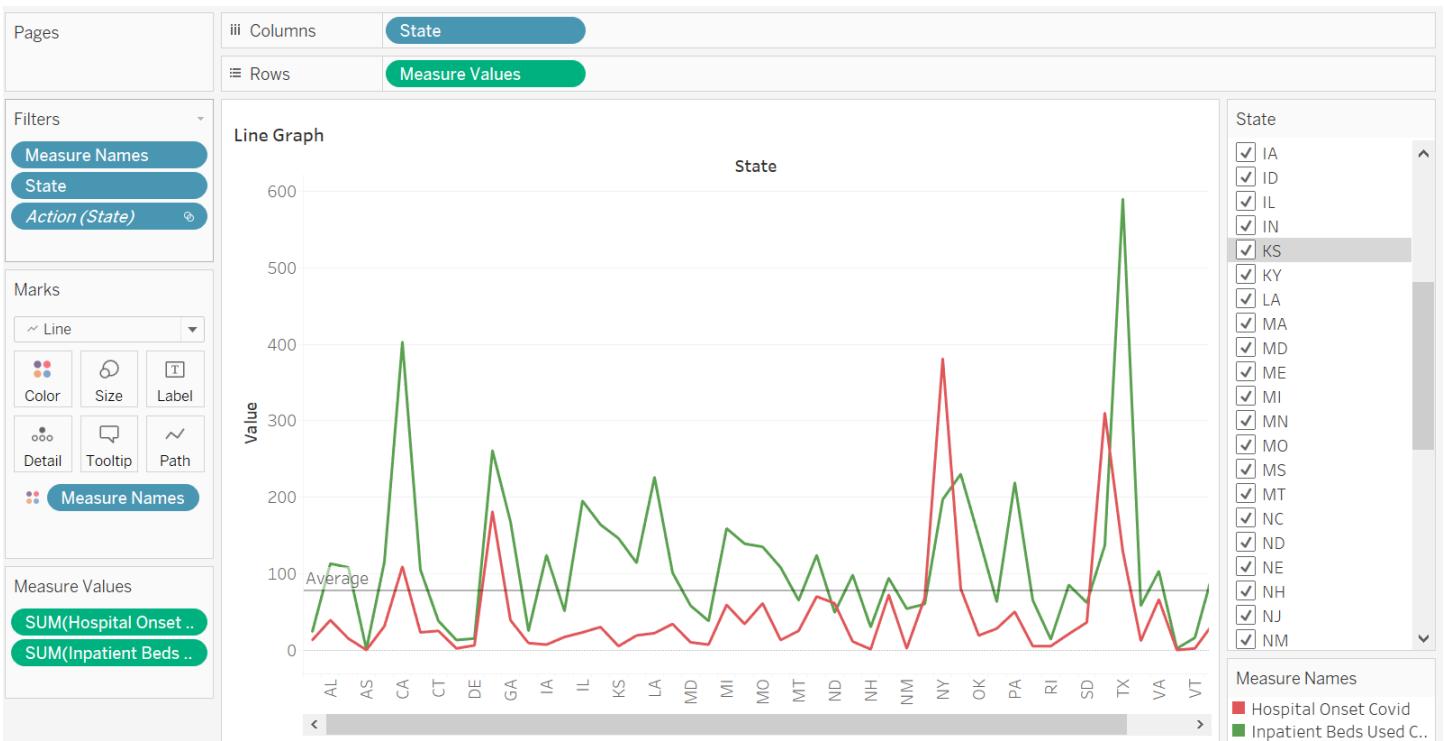
The bubble graph represents three values such as Inpatient bed facilities available in all states, inpatient bed facilities available for COVID-19. As per graphical representation, all state is having maximum number of inpatient bed facilities except from Louisiana state and Arizona state. The Louisiana and Arizona state having bed facilities in between range of 10K to 20K. **The California state having highest medical and emergency bed facilities available i.e., more than 70K.** To check more details, I compare this scenario with previous analysis i.e., availability of hospital facilities. For detailed information and visual analysis, I have created a histogram to understand the range of hospital facilities available in state and inpatient bed services available in these states.

The histogram representation helps me to understand the frequency of inpatient beds COVID and number of hospital onset for COVID-19 treatment. As per analysis 490 is highest range of frequency of availability of good emergency care facility in states and minimum is between range of 0 to 5. For analysis and understanding the frequency and probability range emergency care facilities available in each state. The bar represents the value and frequency of two analytical points such as total count of hospital in state and inpatient facilities available in each state.



(Figure 13- Histogram Bar Graph)

For additional details I have transformed histogram into line graph representation. This graphical representation helps me to analyze the pattern of change in values and frequency of hospital facilities.

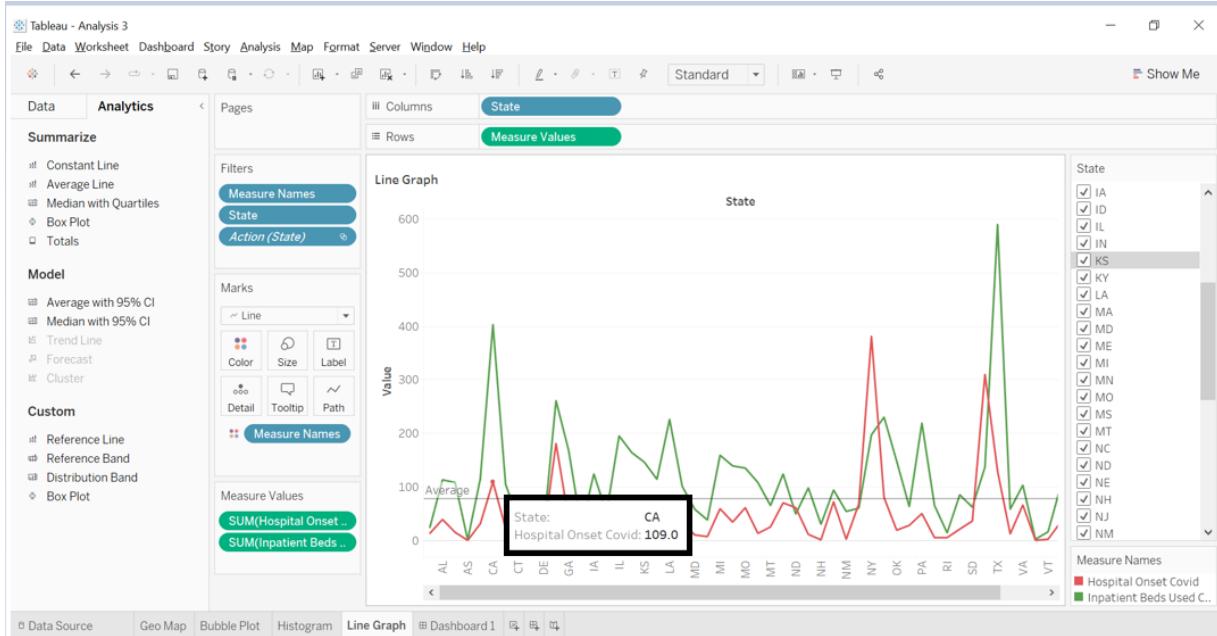


(Figure 14- Line Graph representation)

The Line graph representation help me to analyze frequency range between two factors very clear ways. The average frequency of this factors is 77.8.



The green line represents the range of inpatient beds available for Covid-19 coverage while red line represents range of hospital facility available for emergency care.



Analysis: I have studied all scenarios during analysis process and come across conclusion that the state which are capable for medical facilities having highest number of hospital facilities available with highest number of inpatient bed count for emergency care. Those states are very well prepared for COVID-19 treatments. Following dashboard representation provides detail frequency of facilities:

Analysis for Inpatient Bed Facility for Emergency Care

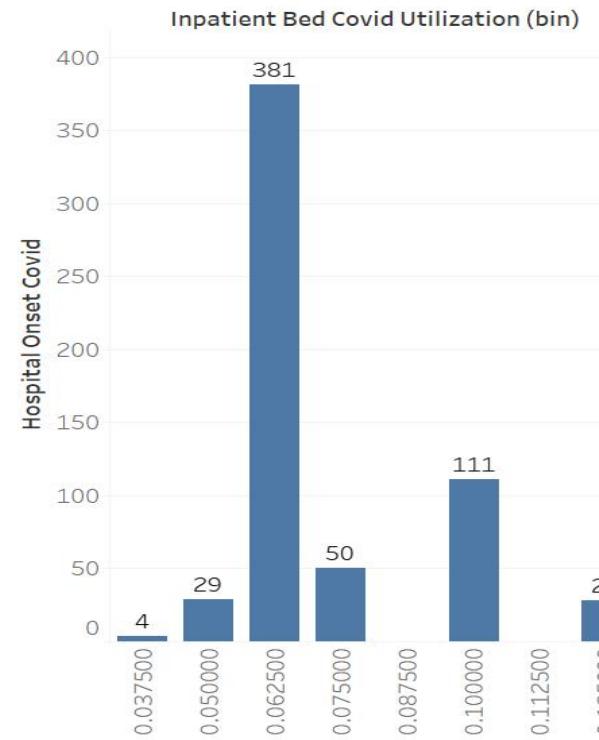
Geo Map



Line Graph



Histogram Chart



(Dashboard-3)

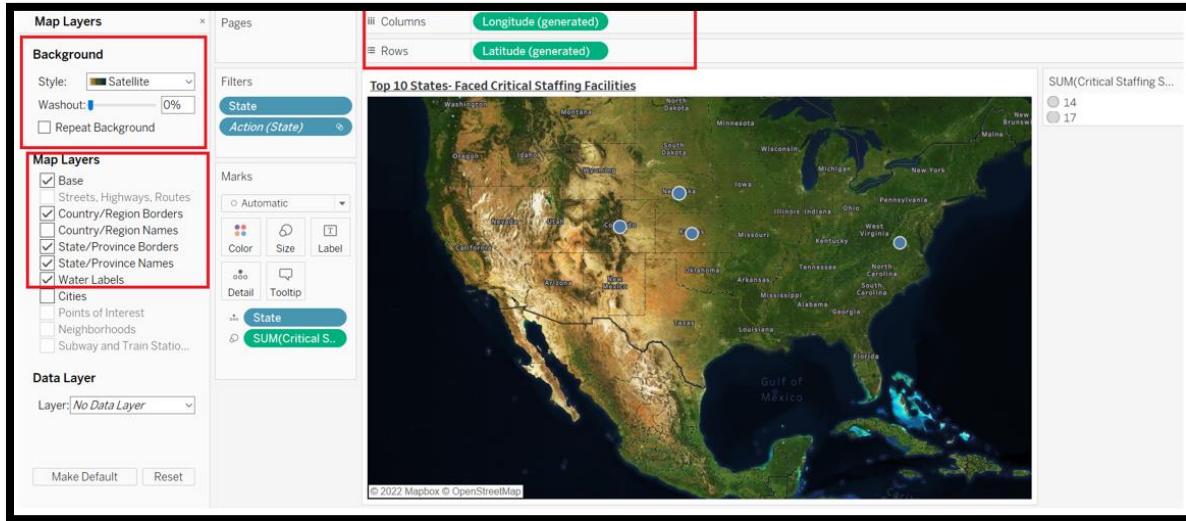
I have selected eight states -CA, IA, LA, NM, NY, OR, PA, WY and studied frequency and difference in range of hospital facility and emergency bed count. The interactive dashboard helps me to conduct analysis of selected states. California state and New York states having good medical facilities while NM and OR having comparatively low medical facilities.

Reference:

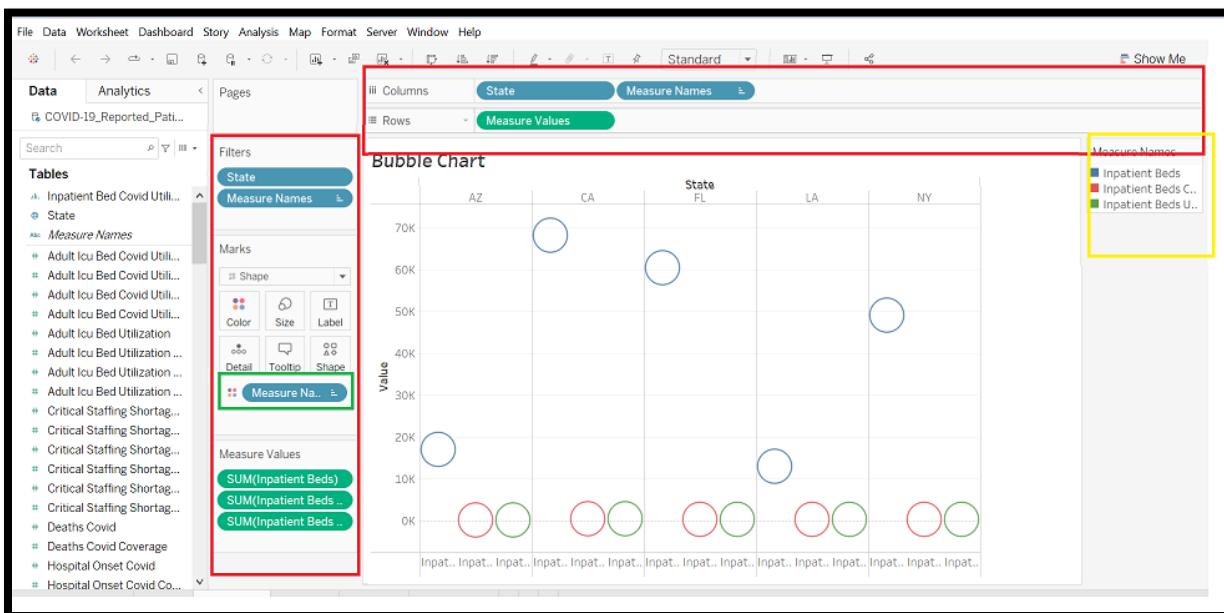
- (World Health Organization, n.d.)
- (<https://disasterphilanthropy.org/disasters/covid-19-coronavirus/Medical Facilities Availability>)

Tableau Feature Used for Analysis:

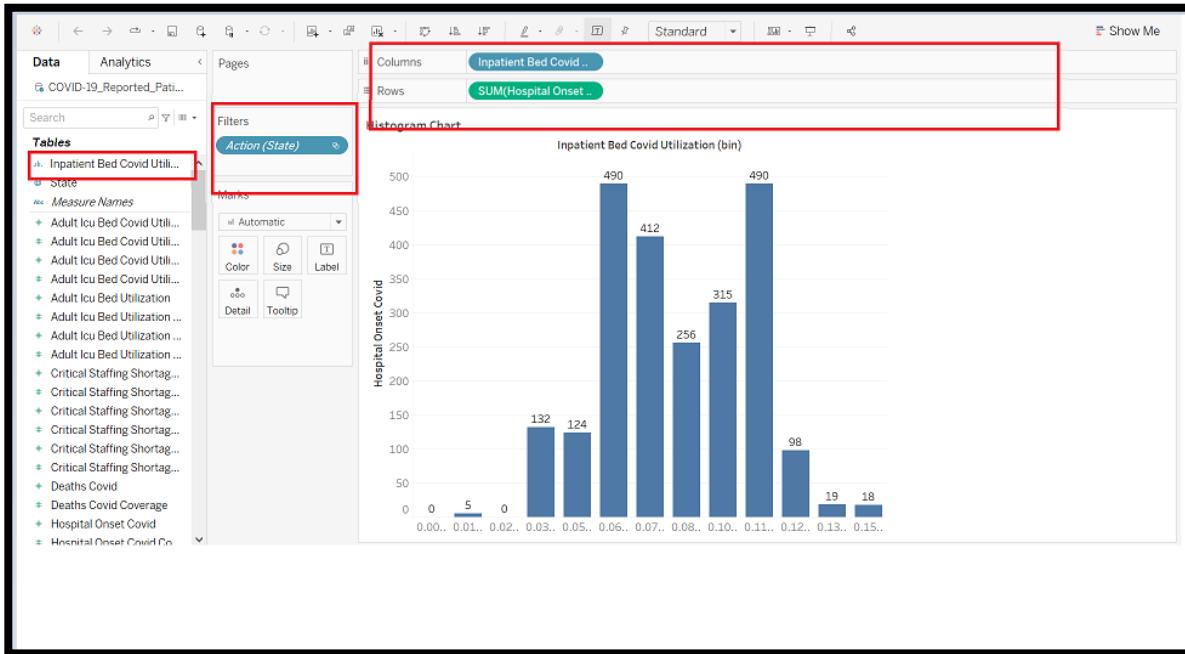
- **Geo Map:** The geo map representation helps me to understand location of states which will be considered during the analysis. The map is created basis of state information provided in dataset. I have used background as satellite and multiple values of map layers.



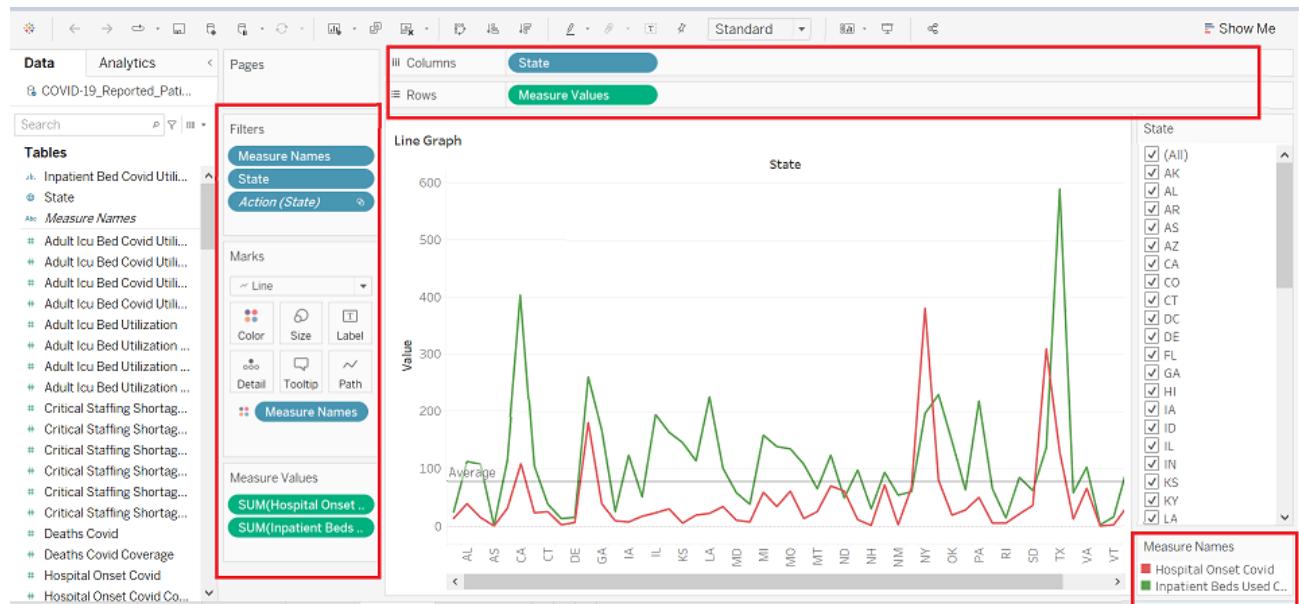
- **Bubble Plot:** I have created bubble plot to understand the range and frequency of two dataset representing the similar information. The data is represented in circular format. I have applied sorting condition for value representations.



- **Histogram:** I have used histogram for summarize discrete value of data in same plane. To showcase the distribution of data I have used features of histogram. I have created specific bin function for detail representation of dataset.

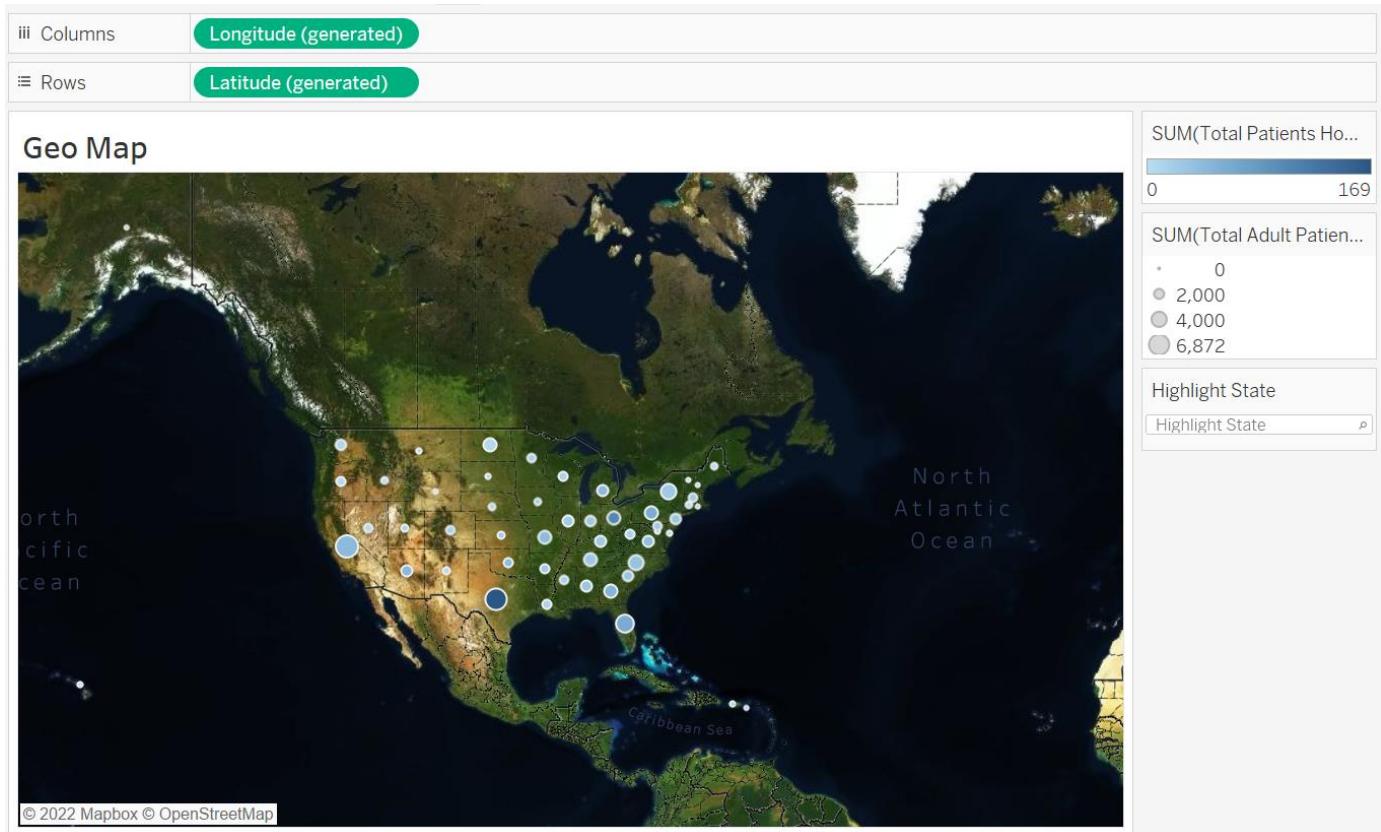


- **Line Graph:** I have used line graph feature for detailed analysis of scenario. The line graph is used to connect data point and provide relationship between each point. It helps me to showcase the change in values for specific states.



Q4. What is total count of patient suffering from COVID-19 and influenza or other disease?

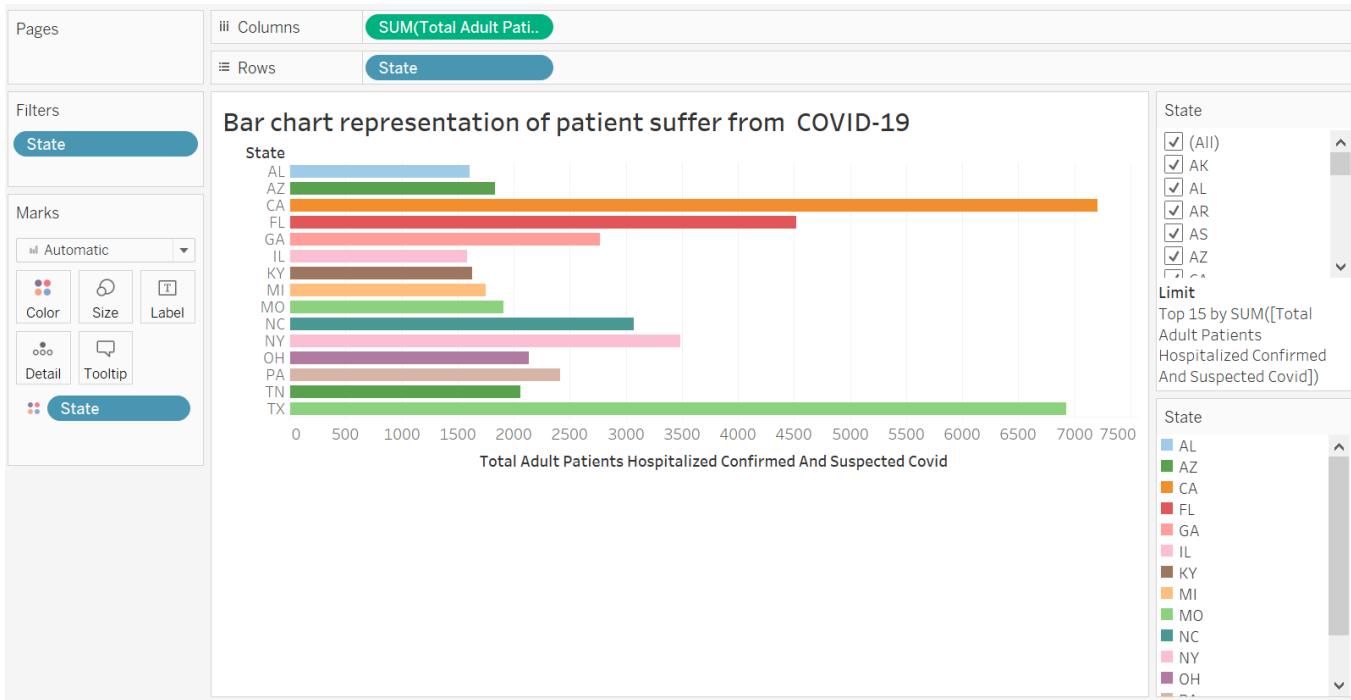
Solution: This analysis is conducted for representing the total count of patient suffering from COVID-19 and influenza or other disease. I came across different scenarios for this analysis. As per dataset representation states are not only suffered with COVID-19 but other disease such as influenza, cold and flu. The medical facilities available in states need to estimate for COVID-19 treatment. COVID-19 is spreading through air or surface touch. Hence separate isolation zone needs to develop by hospitals for treatment of COVID-19. The number of medical facilities will directly proportional to availability of emergency care. To avoid spread of COVID-19, hospital facilities must be included isolation facilities for treatments. Following is geo map representation of states in United states which will be considered during this analysis.



(Figure-17 -Geo Map)

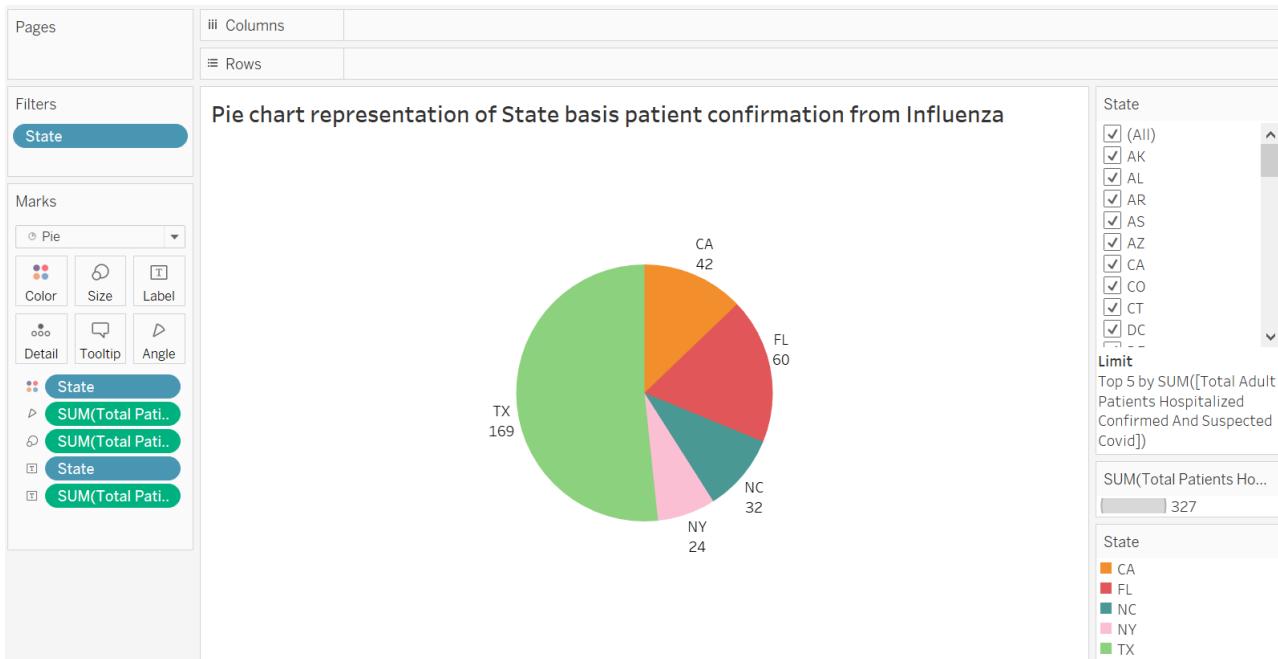
For further analysis, I have created horizontal bar graph for top15 states which are providing treatment on COVID-19. **The graphical representation of adult patient admitted in hospital for COVID-19 treatment. As per visual analysis two states having highest effect of COVID-19 those are California (CA) and Texas (TX).** **The maximum patient is listed in these states.** The previous analysis shows that these states are medically capable of treatment of COVID-19. These states have all medical facilities and high range of hospital emergency care availability. The isolation facilities and emergency care facility available in states. There are some states

facing issue of shortage of medical facilities and having high count of patient hospitalized and confirmed with COVID-19.



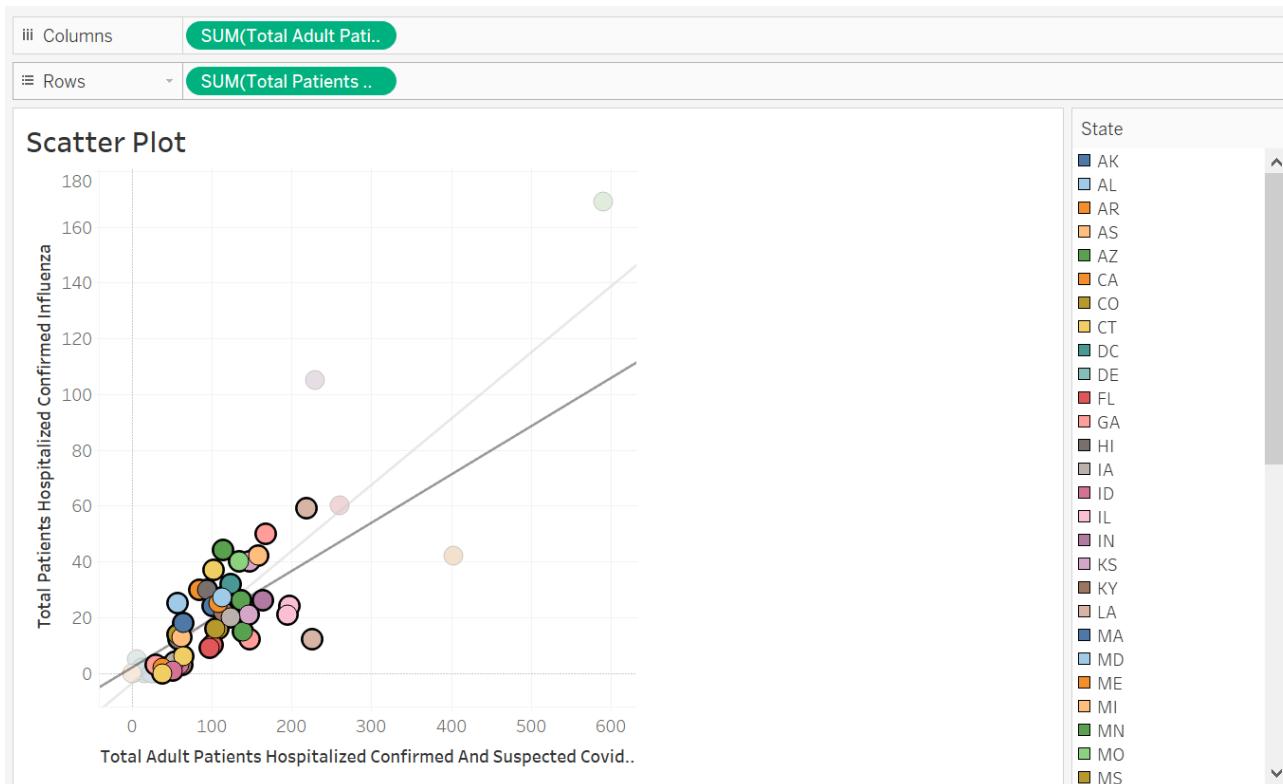
(Figure-18 Bar graph)

As per dataset representation, the states having other disease such as influenza and flu. Following pie chart visualization represent the exact count of these states identified the influenza patients. The hospital in these states need to develop different medical zone for treatment of influenza. The Texas having highest rate of patient suffering from influenza while same states having maximum patient suffering from COVID-19.



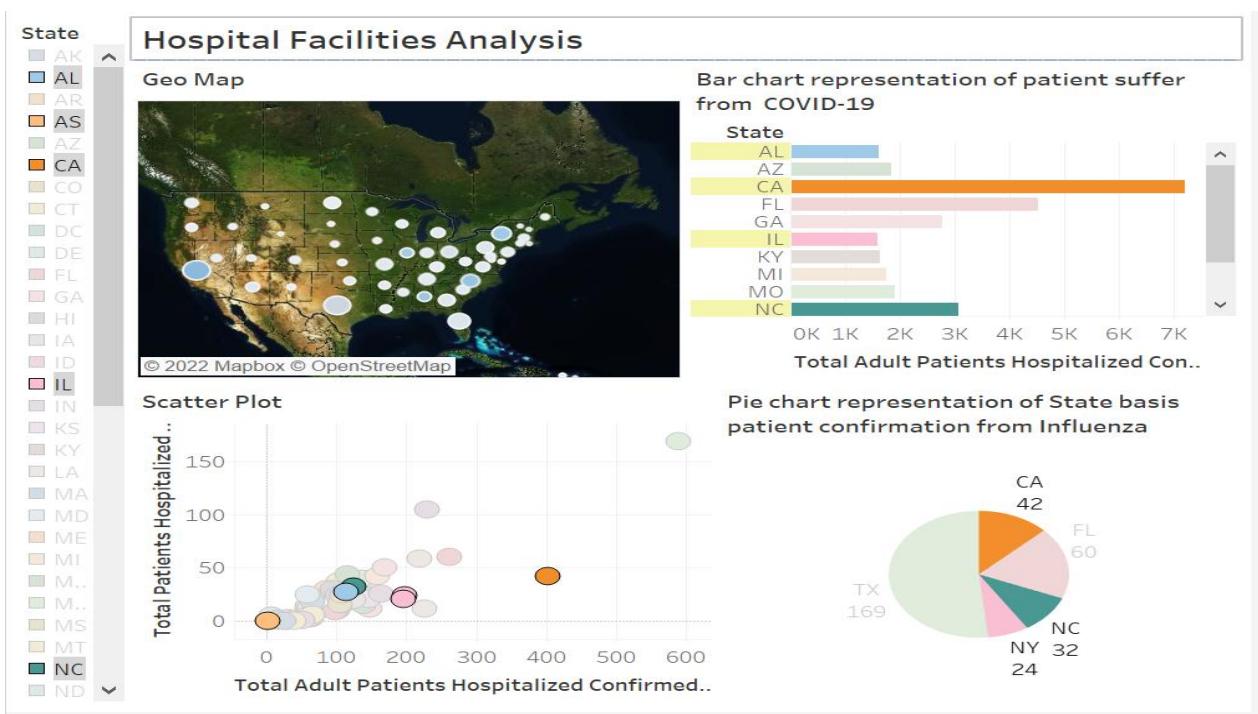
(Figure- 18- Pie Chart)

For further analysis, I have created bubble plot. The bubble plot estimation helps me to identify more details of total patient hospitalized and confirmed with influenza and total patient hospitalized and confirmed with COVID-19. Bubble plots help me to understand the pattern of measures at same time. The trending line provides details of specific region. The bubble plot provides details of combination of patient suffered from influenza and COVID-19.

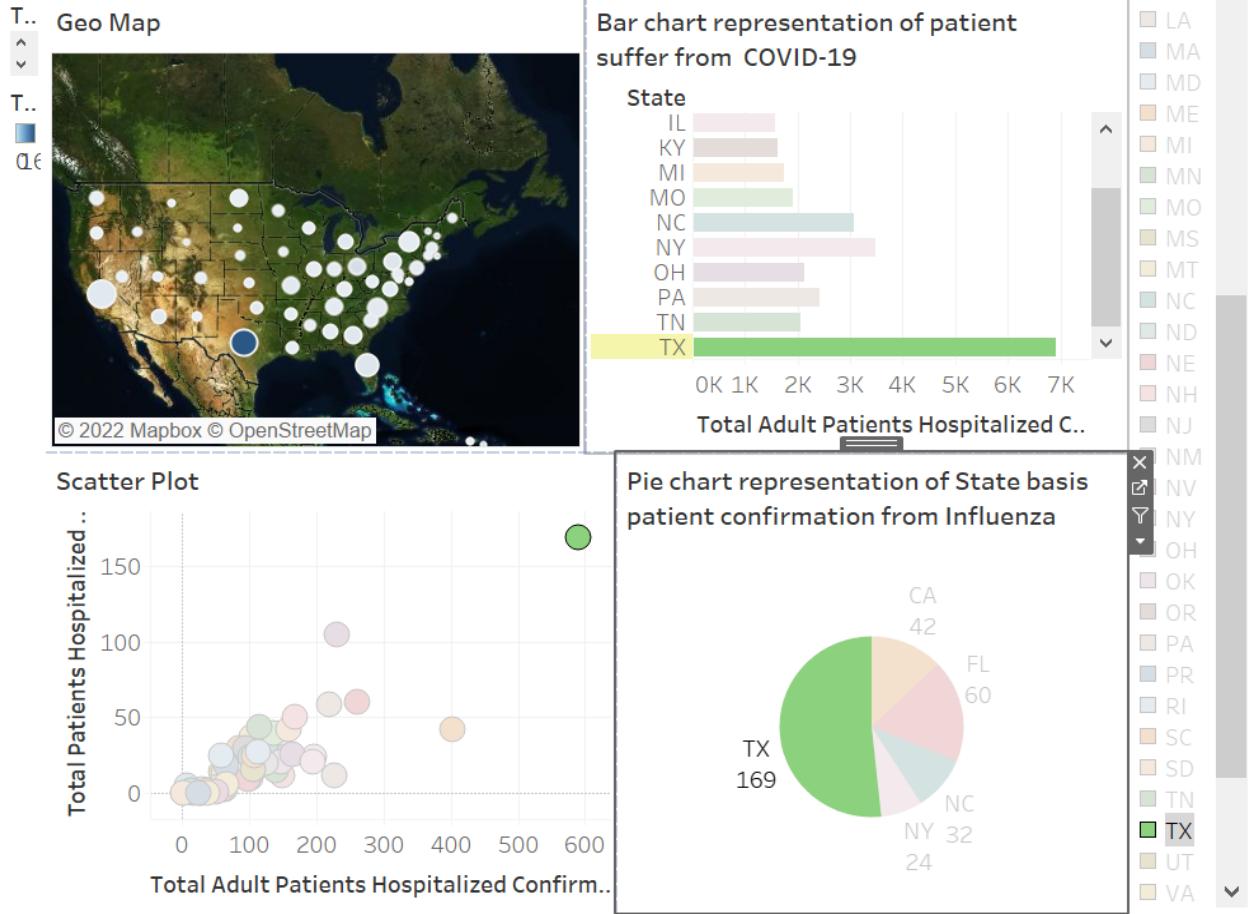


(Figure-19- Bubble Plot)

Analysis: The dataset provides details and total count of patient hospitalized due to COVID-19 and Influenza. Following dashboard provides more details in visual format. As per visualization, Texas is highly affected from patient suffering from influenza and COIVD-19. The California state is also having high range of patient suffering from influenza and COVID-19. NC and IL having lowest count of patients suffering from influenza and COVID-19. The medical and emergency facilities requirement will be higher for TX and CA. The emergency care and isolation planning required in CA and TX.



Hospital Facilities Analysis



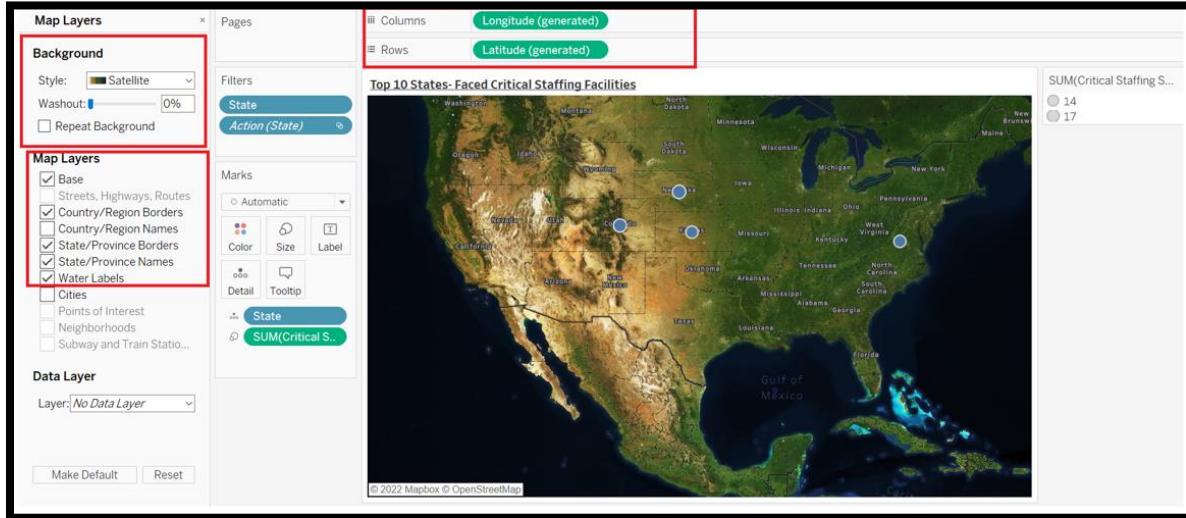
(Dashboard Representation)

Reference:

- (World Health Organization, n.d.)
- (<https://disasterphilanthropy.org/disasters/covid-19-coronavirus/Medical Facilities Availability>)

Tableau Feature Used for Analysis:

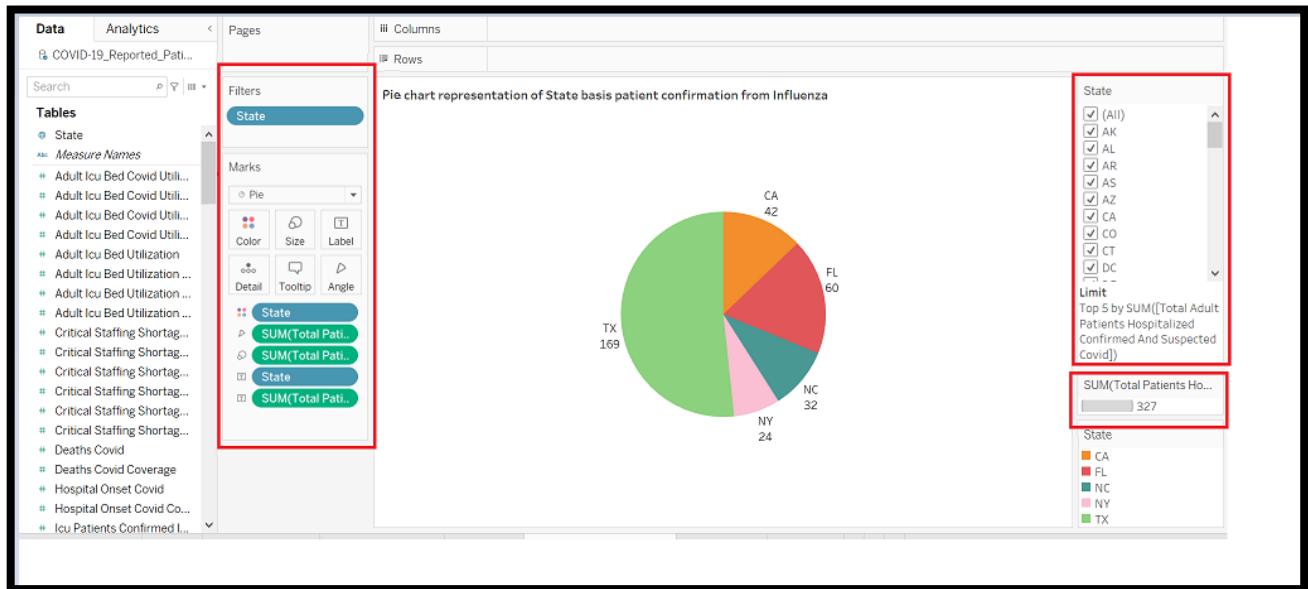
- **Geo Map:** The geo map representation helps me to understand location of states which will be considered during the analysis. The map is created basis of state information provided in dataset. I have used background as satellite and multiple values of map layers.



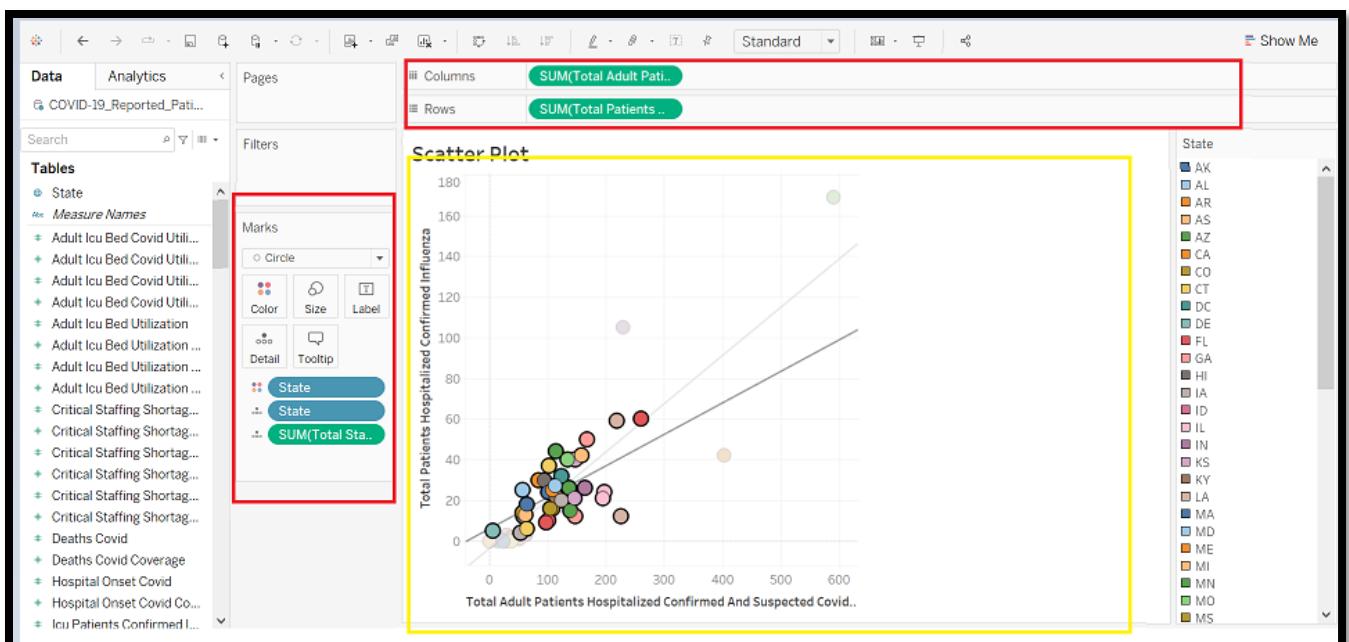
- **Bar Graph:** The bar graph representation of states having maximum patients listed suffering from COVID-19. I have created calculation field by estimating certain limit to values. Following is visual representation of same.



- **Pie-Chart:** I have created pie chart graphical representation for states having maximum patient confirmed with influenza. Following pie chart represent certain calculation made on value total patient suffered from influenza.



- **Scatter Plot:**
I have created scatterplot for visual representation of two different values such as total number of patient suffering from COVID-19 and total number of patients suffering from influenza. I have creating trending line to check values in specific range which is highlighted in yellow line.



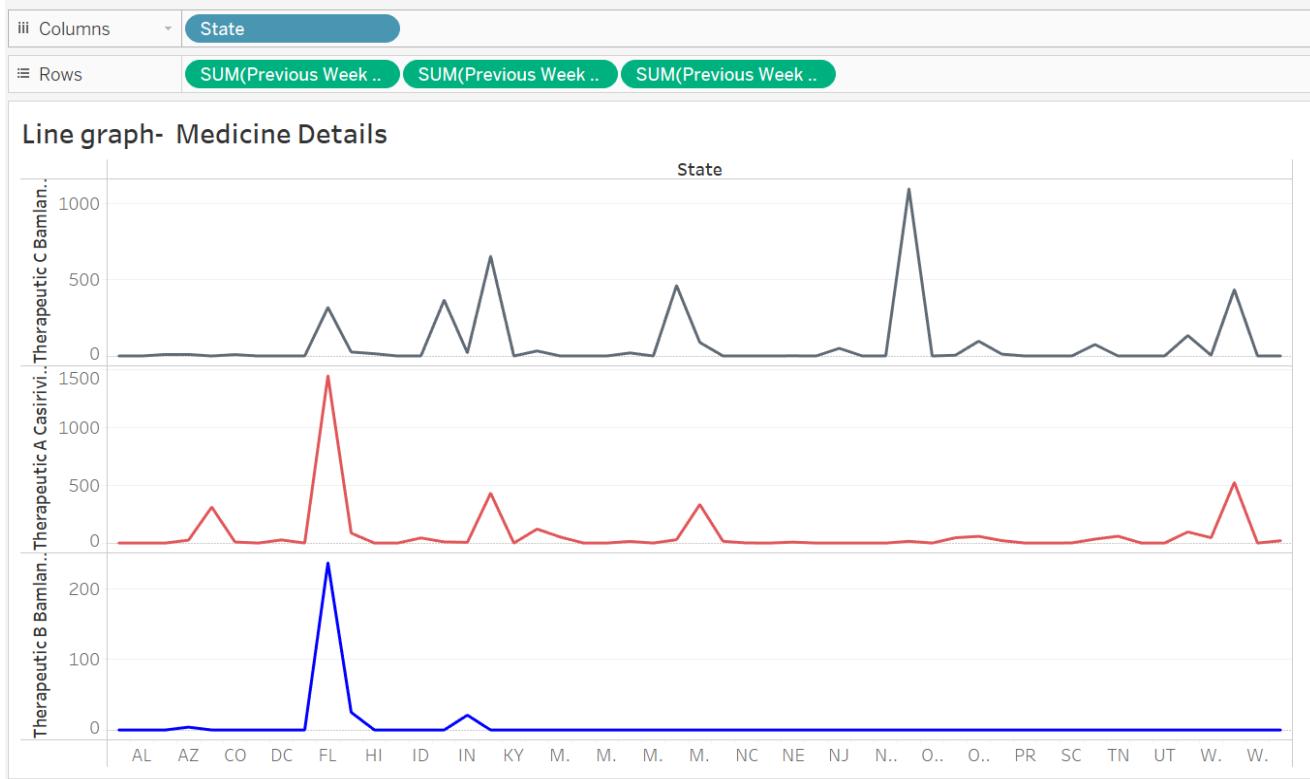
Q5. What is the medicine availability for treatment of disease?

Solution: The dataset provides detail information of hospital facilities. The availability of medicine for treatment of COVID-19 is important. There are three types of medicines recommended for treatment of COVID-19 such as therapeutic a, therapeutic b, therapeutic c. The analysis is conducted to analyze the availability of these medicines in specific states. Following text table represent the details of availability of medicines in specific states.

Text Table

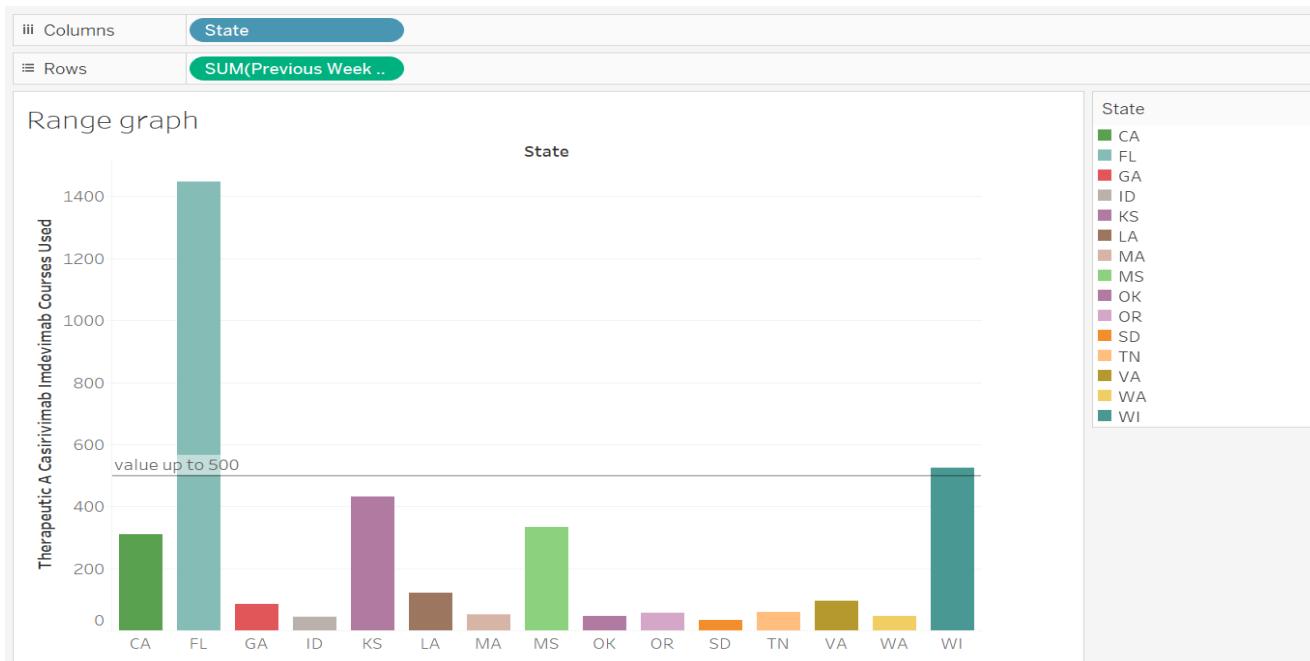
State	Therapeutic A Casirivimab Imdevima..	Therapeutic B Bamlanivimab Course..	Therapeutic C Bamlanivimab Etesevi..
AK	0	0	0
AL	0	0	0
AR	0	0	10
AZ	25	4	10
CA	311	0	0
CO	9	0	9
CT	0	0	0
DC	27	0	0
DE	0	0	0
FL	1,447	237	318
GA	86	25	26
HI	0	0	15
IA	0	0	0
ID	44	0	0
IL	10	0	366
IN	6	21	21
KS	431	0	654
KY	0	0	0
LA	121	0	33
MA	52	0	0
MD	0	0	0
ME	0	0	0
MI	14	0	20
MN	0	0	0
MO	29	0	462
MS	333	0	89
MT	15	0	0
NC	1	0	0
ND	0	0	0
NE	8	0	1
NH	0	0	0
NJ	0	0	50
NM	0	0	0
NV	0	0	0
NY	15	0	1,096
OH	0	0	0
OK	46	0	5
OR	58	0	97
PA	21	0	12
PR	0	0	0
RI	0	0	0
SC	1	0	0
SD	34	0	75
TN	59	0	0
TX	0	0	0
UT	0	0	0
VA	96	0	134
WA	46	0	5
WI	524	0	435
WV	0	0	0
WY	20	0	0

For further analysis, I have created line graph for count of three medicine in states. The line pattern helps to understand the highest availability of medicine and lowest availability of medicine in specific states.



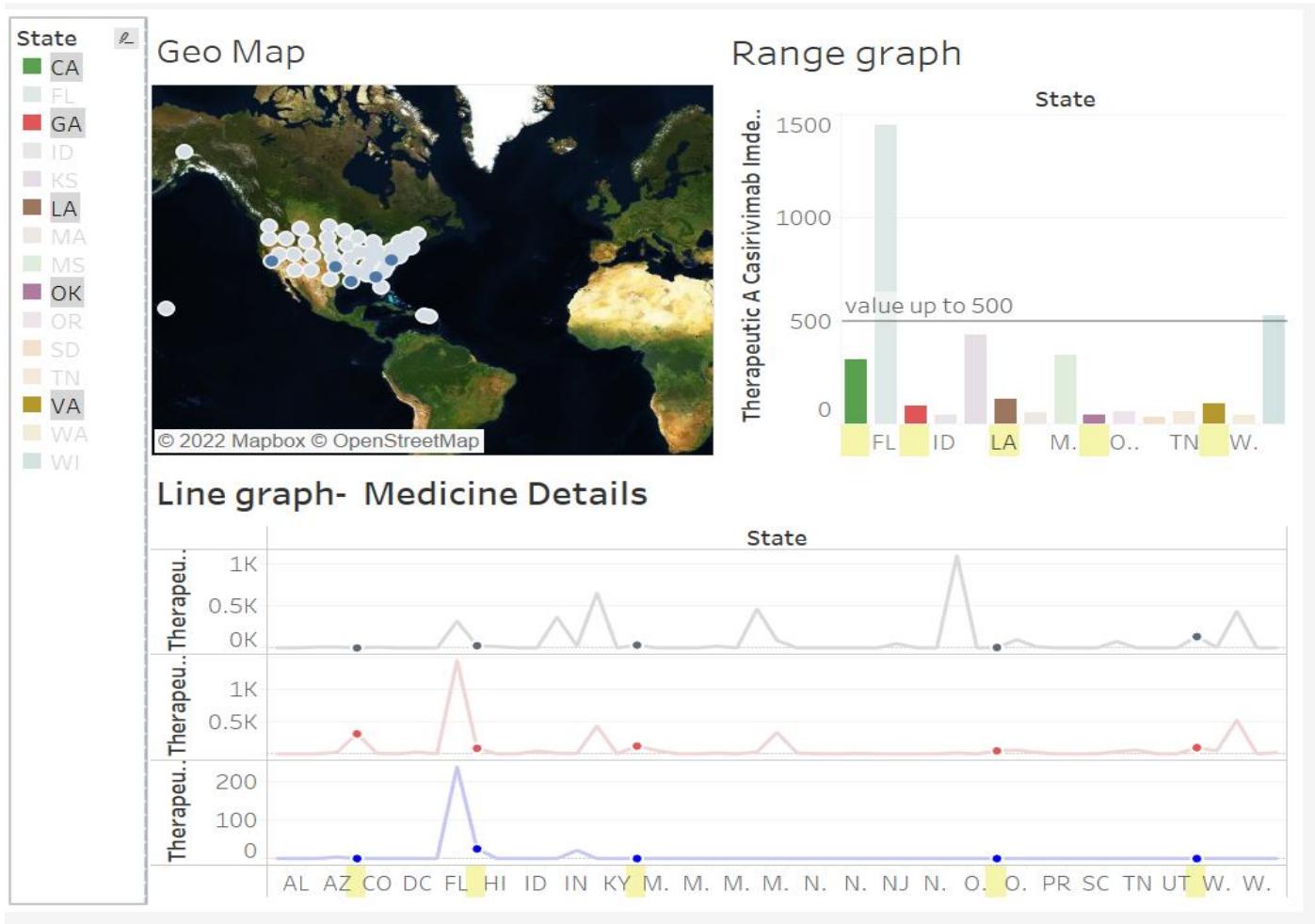
(Line Graph)

The color of lines helps to categorized three medicines differently. This line graph helps me to understand that the availability of Therapeutic A is highest in Florida states while lowest in NE, NJ. The availability of medicine therapeutic B is highest in FL and lowest in other states. For further analysis to check specific availability of medicine and total number of medicine sample available in states. I have created bar graph representation and used calculation of average of medicine availability. The trend line represents the range of 500.



(Figure- Bar graph with trend line)

Analysis: The analysis provides the details of three medicines availability in each state. These three medicines required for treatment of COVID-19 and influenza. The analysis is conducted to check the availability of medicine for treatment of COVID-19 and influenza. I have selected certain range to check availability of medicine such as value is set up to 500 and using certain range I am checking availability of medicine. This analysis help me to understand the exact requirement of medicine in specific states and same is highlighted using dashboard.

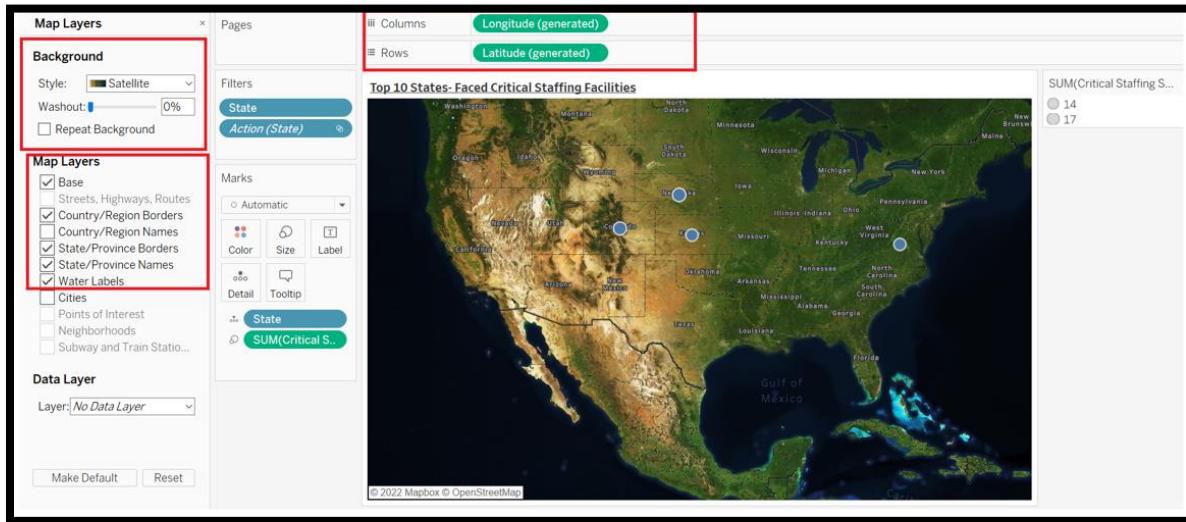


Reference:

- (World Health Organization, n.d.)
- (<https://disasterphilanthropy.org/disasters/covid-19-coronavirus/Medical Facilities Availability>)

Tableau Feature Used for Analysis:

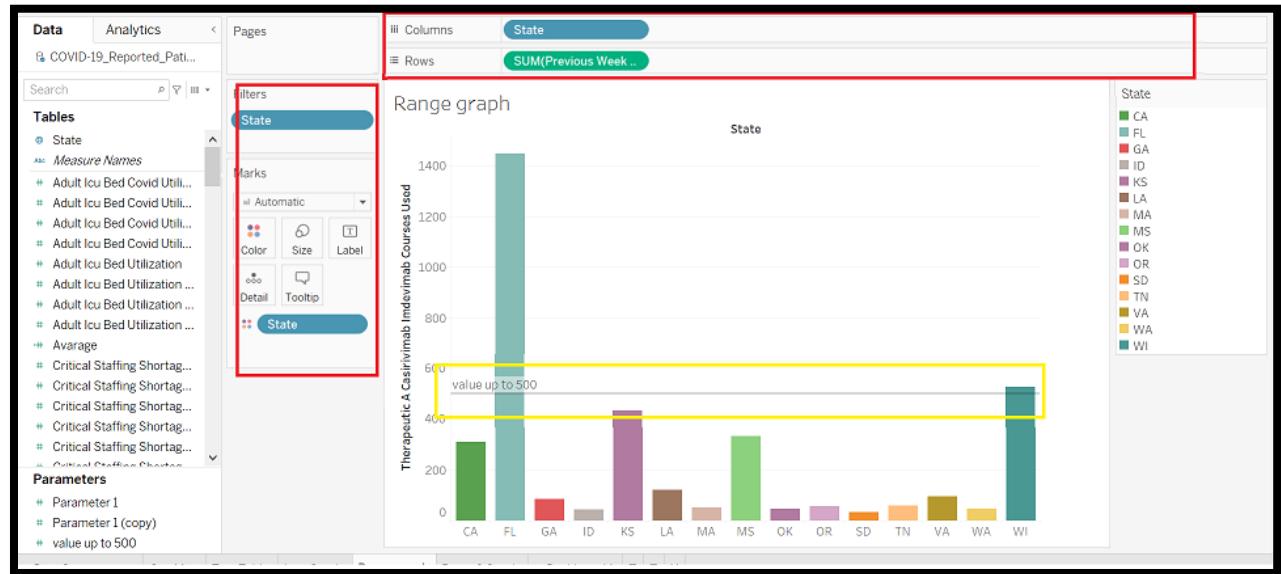
- **Geo Map:** The geo map representation helps me to understand location of states which will be consider during the analysis. The map is created basis of state information provided in dataset. I have used background as satellite and multiple values of map layers.



- **Line graph:** I have created line graph representation to indicate the availability of medicines in different states. The availability count of medicine indicated in different color representation. It is easy to understand.

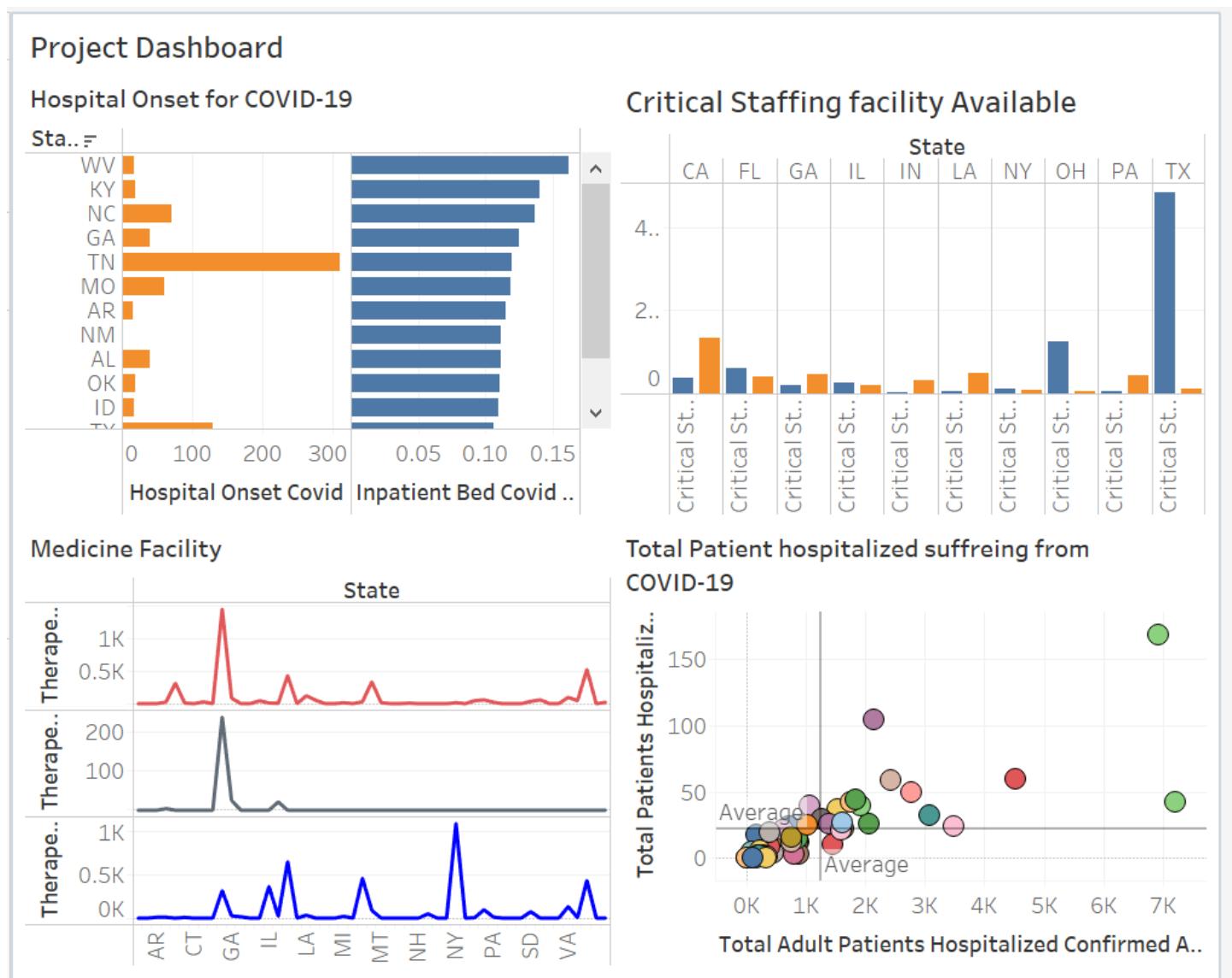


- **Range Graph:** I have created graph to analysis of average range of availability of medicine in different states. I have created calculation to check average highlighted in yellow.



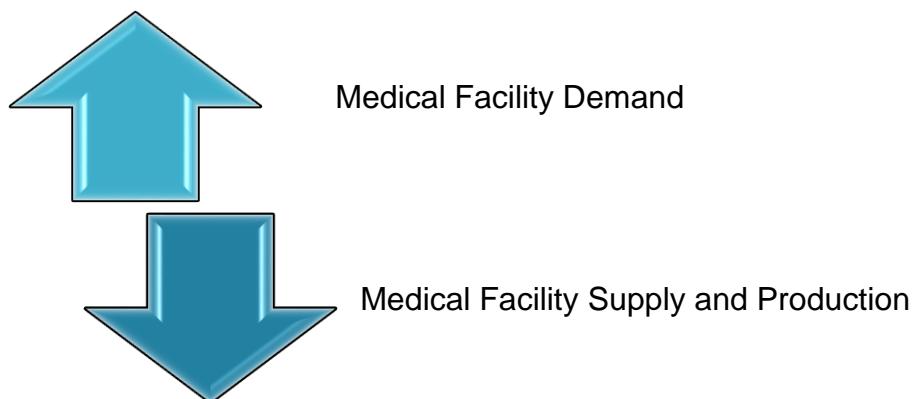
Section E: Project Dashboard

A project dashboard is a collection of key data, qualitative information and visuals summarizing an entire detail of the projects. The dashboard covers all aspects of project and analysis conducted during each phase of project. The effective visual representation and provides details of minor sections of project. The following dashboard represents the effective area of project and analysis conducted during the entire process. I have used different graphical representation such as graphs (line graph and bar graph) and calculations of average and median to identify range and frequency of change in count.

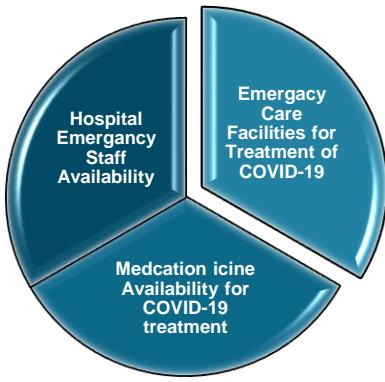


Section F -Story Telling:

Year 2020, the Entire world suffered from COVID-19 situation. The COVID-19 situation impacts various sectors all over the world. The major impact of COVID-19 situation was on the financial sector (economy of the country) and medical sector. The lockdown condition leads to the closure of multiple job, and it directly impacts on the production of raw materials. The supply of raw materials was limited, and it impact majorly on the production of goods. This similar situation impacted on the medical industry. The medical facilities were impacted due to sudden transmission of COVID-19. The demand increases and production decreases.



This directly impacted on medical sector all over the world. The country started facing a shortage of medical facilities issue for the treatment of COVID-19. Every country started taking major steps to minimize this situation. The major countries started conducting healthcare analysis on basis of states and availability of medical facilities in those regions. The analysis was conducted by using certain parameters such as the total population of states and medical facilities requirements in states for the treatment of COVID-19. The states need to develop the medical facilities centers such as emergency care, ICU facilities and isolation facilities. The facilities are divided as per symptoms of patients. The patients having basic symptoms of COVID-19 required limited medication and can be isolated at home. But patients required highly medical consultation required to isolate and an immediate basis of ICU and emergency care facilities. The analysis is conducted for the United States and understanding the medical facilities availability demand of medical facilities as per enrollment of patients suffering from COVID-19. The basic survey was conducted in every state to understand the total number of hospitals available in each state. The count of existing patients suffering from COVID-19. Following are the major categories considered during entire survey. The survey is classified to understand current situation in each state in United States and availability of facilities. The major point considered during the establishment of COVID-19 treatment facility is the availability isolation areas for patients suffering from COVID-19. The isolation facility and emergency care staff and beds availability points need to be considered for treatment of COVID-19. Each state is taking major action to avoid the transmission of COVID-19. The patient is also taking majority precautions to avoid the transmission of COVID-19.



This project is based on a survey conducted in each state to understand medical facilities readiness and requirement for treatment. The major facts covered under the dataset are the total count of hospital facilities in each state, the critical care staff availability and total count of staff available for ICU patients, the current inpatient bed facilities available and the separation of wards for patients suffering from influenza and COVID-19. **The important point came under notice that during time of COVID-19 states was suffering from other disease like influenza and flu. The basic symptoms of influenza and flue are very similar to COVID-19 symptoms. The states need to separate their medical facilities and emergency wards as per detection diseases. The testing facilities and availability of medicine is major pain point for every states. After initial level of survey, the states having large population such as Louisiana state, Arizona state facing issue of limited hospital facilities count. Those states are having large number of population and requirement of emergency facilities was high in those states but limited medical facilities available.**

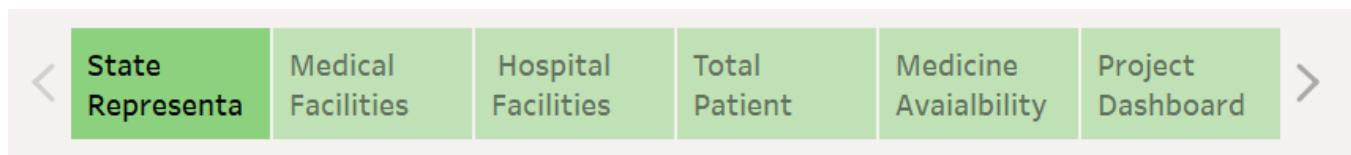
There are certain set of medicine required for treatment of basic symptoms of COVID-19 and influenza. The secondary analysis is conducted on basis of patient recovered from COVID-19 and patient are still in serious condition and want medical facilities. The separate survey conducted, and analysis provide such as the patient suffering from influenza and flu. The total patient suffered and admitted in hospital by influenza and flu. After survey it is found that the count of patient suffering from COVID-19 and influenza is similar in some of states. The medical facilities and availability of hospital is limited in some states. Hence hospitals need to manage facilities for both. For COVID-19 treatment the states need to take extra precautions for developing isolation centers and emergency centers. The main factors need to be considered for each state such as medical facilities include availability of medicines and inpatient bed facilities. The states also facing medical staff shortage hence state need prepare for staffing facilities.

The medical facilities analysis is important factor during COVID-19. As COVID-19 is spreading rapidly and treatment facilities requirement for high amount. It is difficult to arrange the higher level of medical facilities within such short time. Many states are under privilege group facing issue of financial support and medical facilities. The COVID-19 situation impact highly on every state and country. It is difficult to develop and establish the facilities within short time limit. I have narrated detail story using visual analysis.

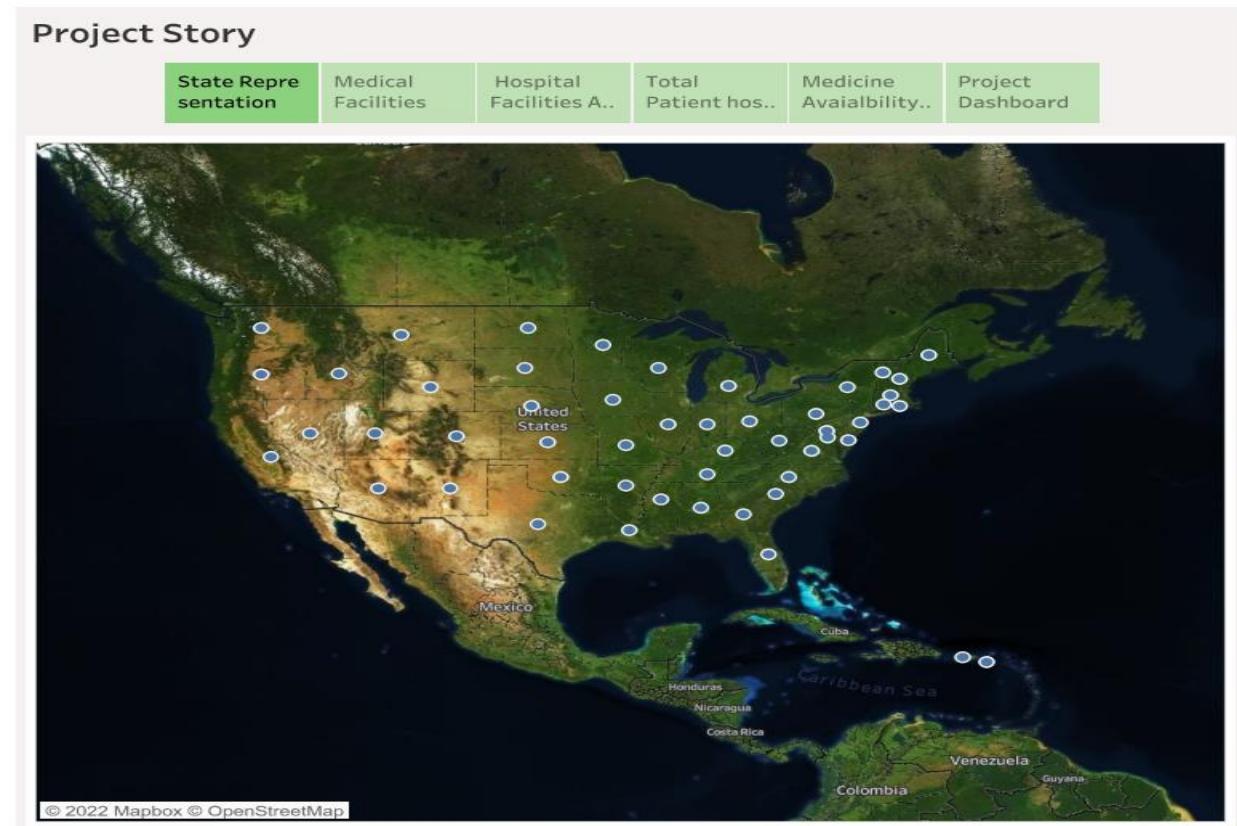
The detail analysis of hospital facilities incorporates details on basis of state, understanding the actual count and condition of states for readiness for COVID-19 and influenza. For critical facilities the research is conducted for availability staff and shortage of staff. If there is shortage of staff, then if that point is reported and demand is placed for additional staff. The total number of hospital available in each location of state and inpatient bed facilities available in hospital and count of patient admitted in hospital categorized under suffering from COVID-19 and influenza. The further detail analysis is conducted for staffed available for treatment inpatient in ICU. As COVID-19 is easily transmitted if person in come in close contact with patient. The isolation facilities and emergency care facilities are required in high number. The medicine shortage is also important factor which need to be consider.

This analysis will provide details of readiness of medical facilities in states. The further story will narrate using visual representation. The visual representation provides details of dataset in effective ways:

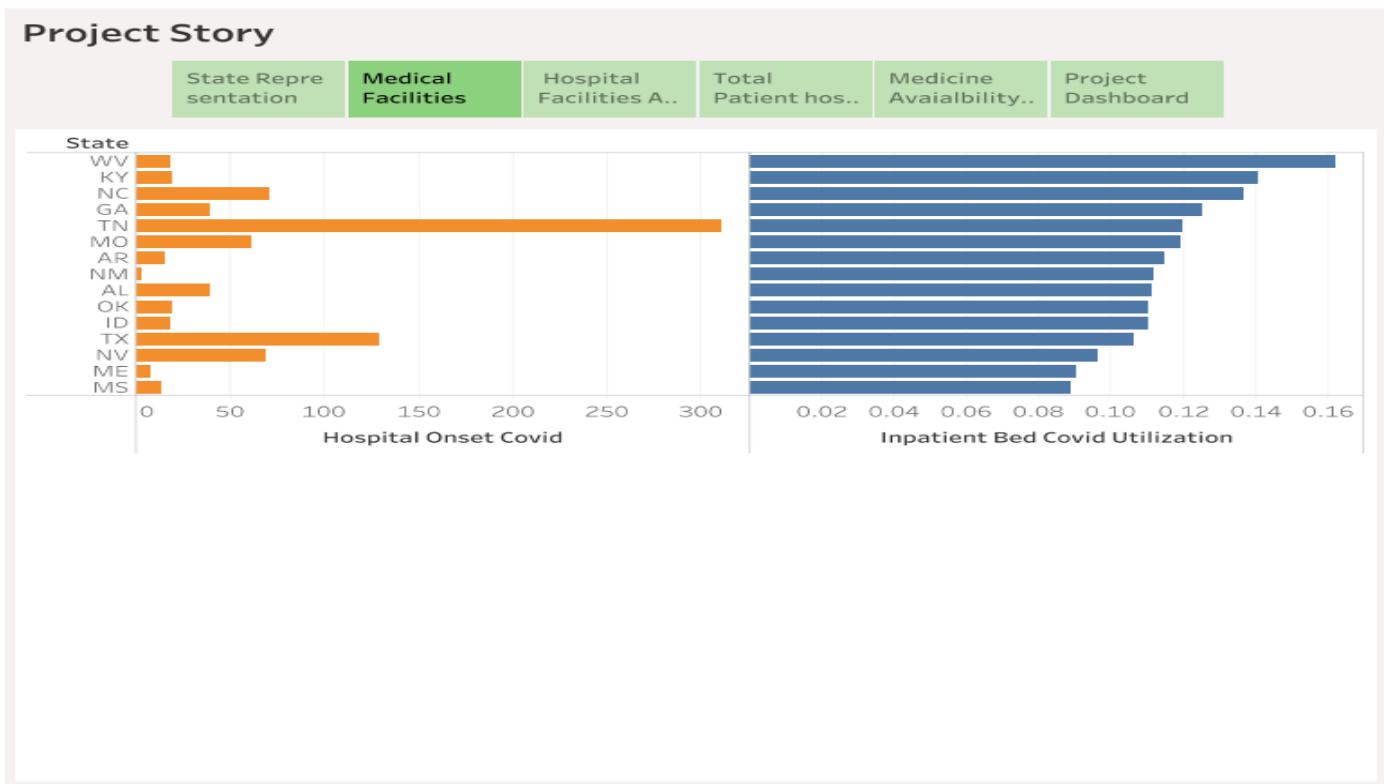
Navigation Panel:



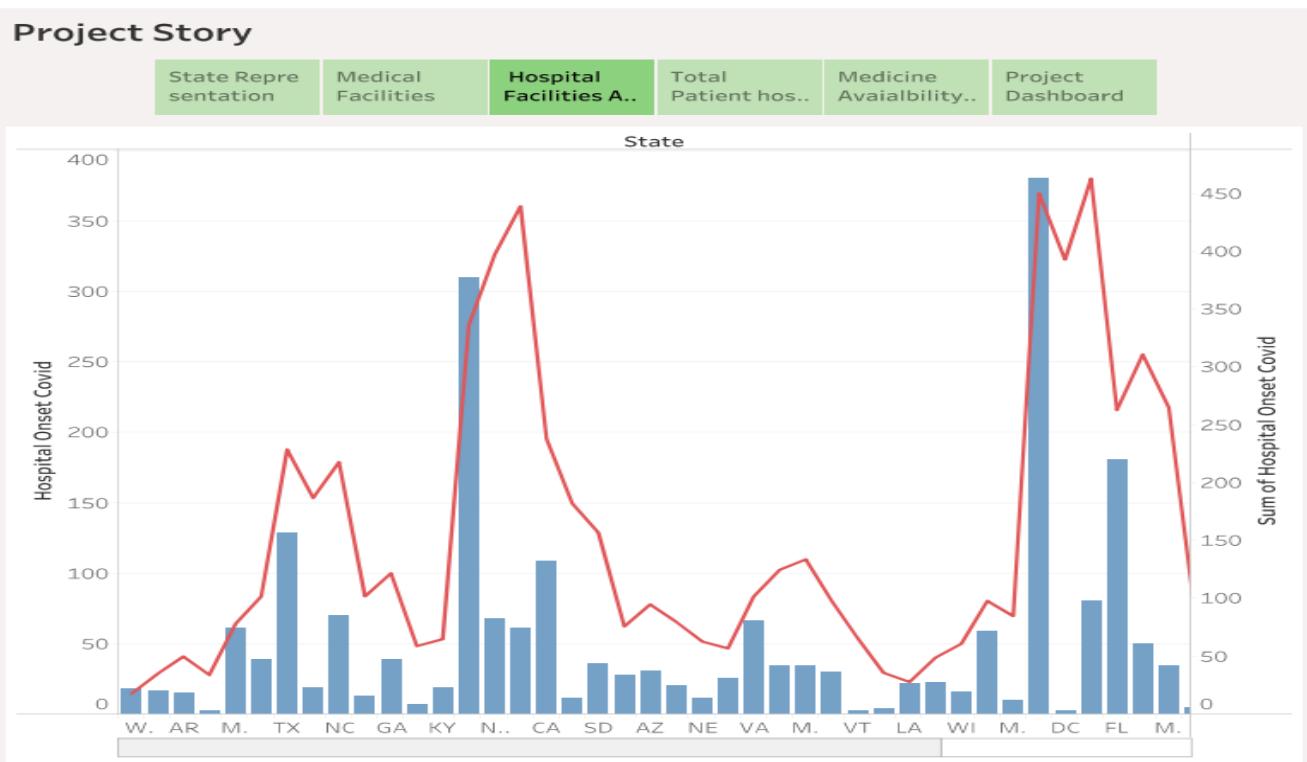
I am conducting analysis for following states in united states. The geo map representation helps me to represent the exact location if states.



The further analysis was made on important factor such as availability of existing medical facilities and requirement of medical facilities in future.

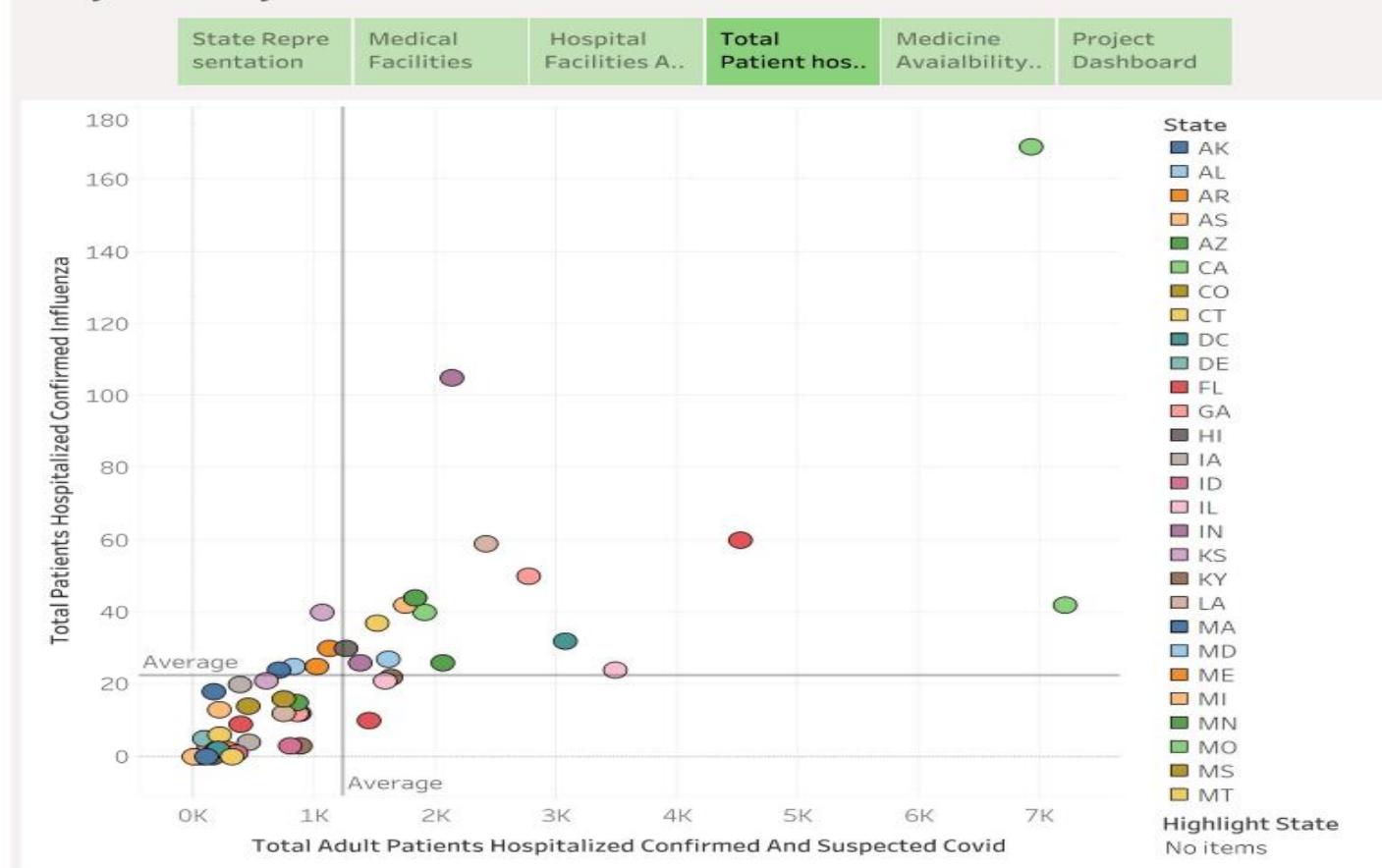


For detail understanding of hospital total count in each state, I have created line and bar graph which shows the existing hospital count in specific states and in future requirement of facilities in those states.



The visual representation of important factor that the categorization of patient hospitalized and suffering from COVID-19 and patient hospitalized and suffering from influenza.

Project Story



For treatment there will be requirement of three important medicines such as therapeutic A, therapeutic B and therapeutic C with different combinations, the line graph represents the availability of these medicines in specific states.

Project Story



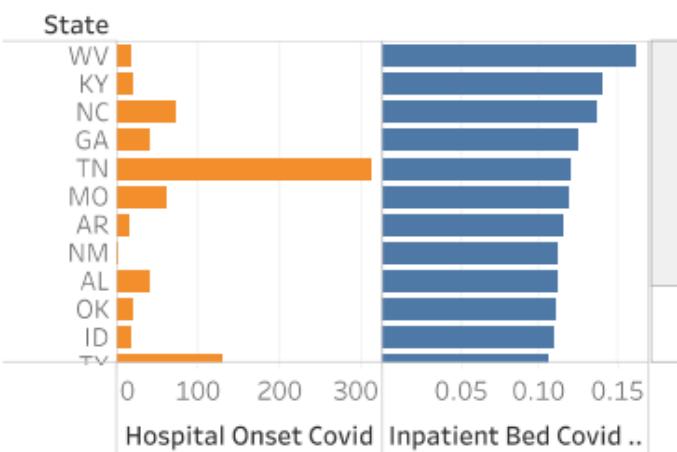
Project dashboard summarizes entire analysis of project in effective visual representation.

Project Story

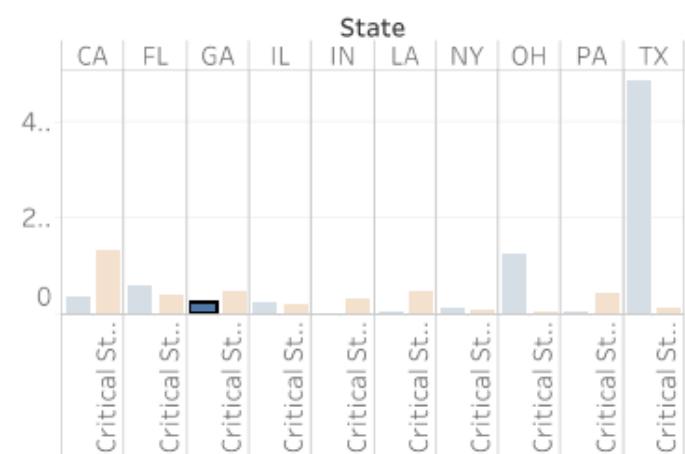
State Representation	Medical Facilities	Hospital Facilities A..	Total Patient hos..	Medicine Avaialbility..	Project Dashboard
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Project Dashboard

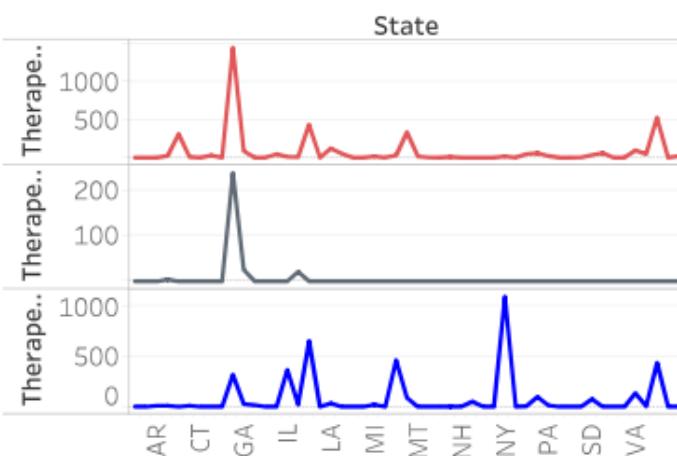
Hospital Onset for COVID-19



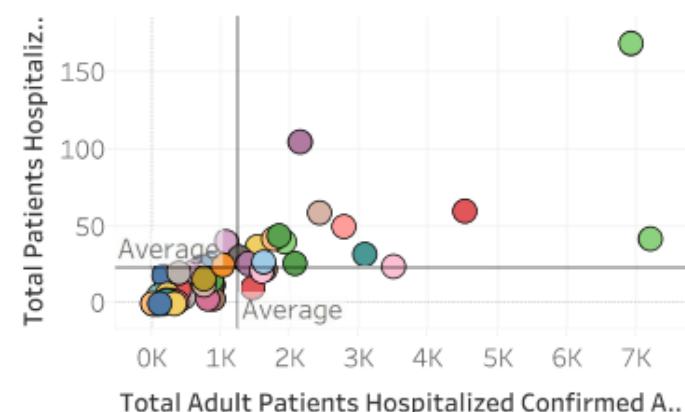
Critical Staffing facility Available



Medicine Facility



Total Patient hospitalized suffreing from COVID-19



Reference:

- (World Health Organization, n.d.)
- (<https://disasterphilanthropy.org/disasters/covid-19-coronavirus/Medical Facilities AVailability>)
- (<https://www2.deloitte.com/nl/nl/pages/consumer/articles/impact-of-covid-19-on-the-hospitality-industry.html>)