Analyzing Hospital Bed Occupancy in USA During COVID-19: A Comprehensive Report

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1 Introduction

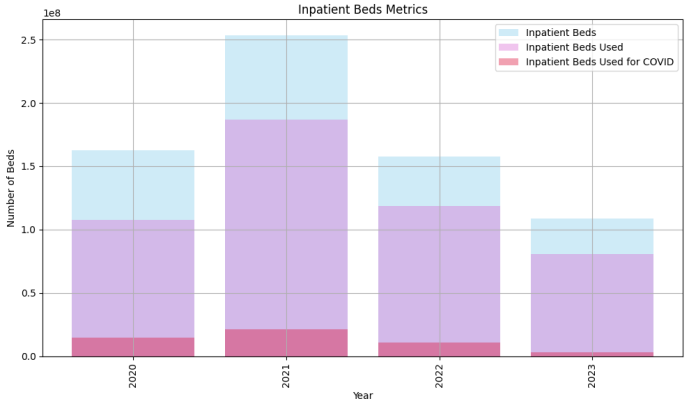
This thorough analysis delves into looking for variations in hospital occupancy during the COVID-19 pandemic in the United States. Our primary objective is to analyze data gathered from diverse regions within the state, in order to understand the impact that COVID-19 may have had on hospital occupancy rates. Through a thorough evaluation of occupancy trends spanning the pre-pandemic, pandemic, and post-pandemic periods, our aim is to ascertain the extent to which COVID-19 has influenced the utilization of hospital beds across the entire United States. By examining data on different types of bed occupancy we aim to provide a comprehensive understanding of the strain experienced by healthcare facilities and the adaptive measures undertaken to mitigate it.

2 ANALYSIS

2.1 Beds Metrics

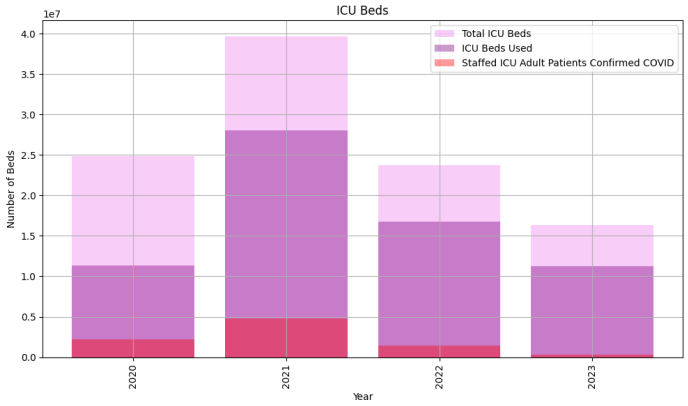
2.1.1 Inpatient Beds Metrics

The stacked bar chart provided below illustrates the total number of allocated inpatient beds, the total number of inpatient beds utilized, and the total number of inpatient beds utilized for COVID-19 cases. Notably, in the year 2021, both the total number of inpatient beds allocated and the total number of inpatient beds utilized reached their peaks, while the utilization of inpatient beds for COVID-19 cases remains comparatively low. Additionally, across all years, there is a consistent pattern of a small number of inpatient beds remaining unused.



2.1.2 ICU Beds Metrics

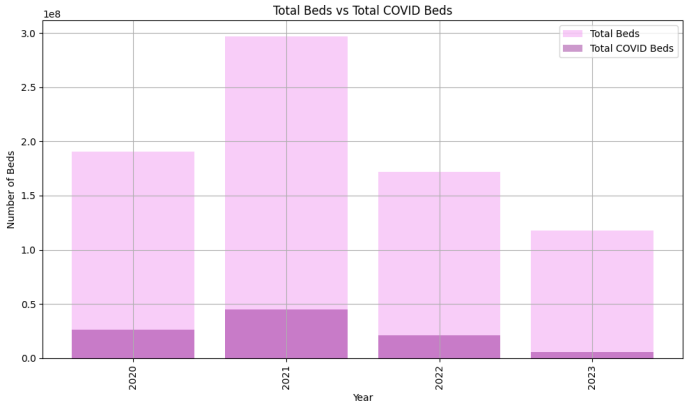
The stacked bar chart below displays the total count of allocated ICU beds, the total count of ICU beds in use, and the total count of adult COVID-19 patients occupying staffed ICU beds. Notably, in 2021, both the allocation and utilization of ICU beds reached their peak, while the usage of ICU beds for COVID-19 patients remained relatively low. Furthermore, throughout all the years, there's a consistent trend of a small portion of ICU beds remaining unoccupied. Moreover, it's worth noting that 2020 and 2021 exhibit similar patterns, although there's a higher number of ICU beds utilized in 2022 compared to 2020.



2.1.3 Total Beds VS Total COVID Beds

The stacked bar chart presented below illustrates the total number of beds across the entire USA and the total number of beds occupied by COVID-19 patients. Notably, in 2021, the total number of beds reached its highest point, while the utilization of beds for COVID-19 patients remained relatively low but

still higher compared to other years. Additionally, it's noteworthy that 2020 and 2021 demonstrate comparable trends.

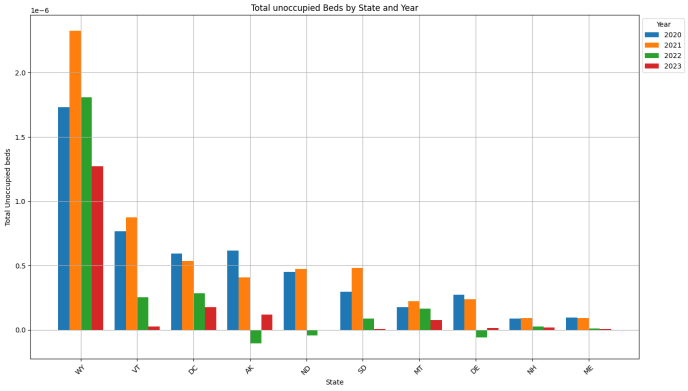


2.2 Total Unoccupied Beds By State and Year

An article stated that "Currently, nearly 80% of inpatient hospital beds in the USA are occupied, a level not seen since the week ending Jan. 23, 2022, as the omicron wave was subsiding, according to an analysis by ABC News." Alaska has seen an influx of refugees and immigrants, which, combined with wintry weather in 2022, has overwhelmed emergency cold weather shelters in Anchorage, necessitating an increase in bed capacity. These circumstances may explain the negative values of unoccupied beds when scaled by population.

The data has been normalized based on the population of each state. The accompanying grouped bar graph illustrates the top 10 states with the highest total number of unoccupied beds in the United States from 2020 to 2023. It is evident that Wyoming consistently has the highest number of unoccupied beds across all years from 2020 to 2023, with the peak occurring in 2021 followed by Vermont. Moreover, the year 2022 shows a higher number of unoccupied beds in Wyoming compared to 2020.

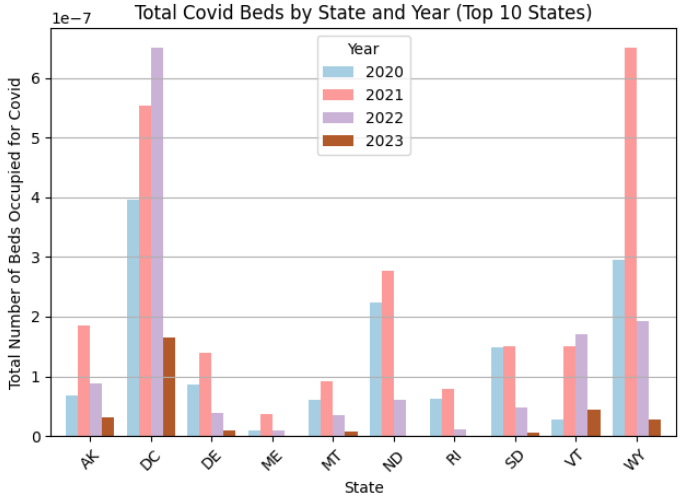
Another striking observation is the decrease in occupied beds during the COVID-19 period (2020-2021) and an increase in bed occupancy in 2023. Among the 10 states with the highest number of unoccupied beds are Wyoming, Vermont, Washington DC, and Alaska.



2.3 Total COVID Occupied Beds by State and Year

The grouped bar graph presented below displays the top 10 states with the highest total number of COVID-19 beds in the United States spanning from 2020 to 2023. Overall, it is evident that Wyoming and Washington DC consistently had the highest number of COVID-19 beds occupied. Specifically, in 2020 and 2022, Washington DC, followed by Wyoming, had the highest total occupied COVID beds, whereas this trend reversed in 2021.

Interestingly, when examining the total number of unoccupied beds, Wyoming had the highest number in 2021, coinciding with the year it also had the highest number of COVID-19 beds occupied.



2.4 COVID Admissions by Age-Group

The provided data is adjusted based on the population of each age group and illustrates the total number of COVID admissions within each group. It is noticeable that the peak of COVID-19 admissions occurred in 2021, particularly among individuals aged above 80. Generally, COVID admissions were prevalent among age groups above 60. Interestingly, 2020 and 2022 witnessed equal numbers of COVID-19 admissions across all age groups, while 2021 stood out as the year with the highest admissions across the board.