Visual Analytic Dashboards Project Group 9

Title of the Project: Navigating US Healthcare: A visual exploration of Performance, Medicaid, Medicare, Healthcare expenditure and Hospice care across the United States.

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Short Description of the Project:

This Tableau project offers a comprehensive and thorough analysis of U.S. healthcare analytics, focusing on state-wise healthcare performance across key areas such as number of ICU beds occupied, maternal mortality rate across states, avoidable deaths, etc. and other metrics like hospice care, healthcare expenditure and utilization of Medicare and Medicaid services. By leveraging visual analytics, this dashboard provides stakeholders and users with actionable insights to improve healthcare outcomes and policy effectiveness on a state-by-state basis in the United States.

List of data sources web links used in the Project:

a. https://public.tableau.com/app/profile/yash.navin.agarwal/viz/USASTATEWISECOVIDCASES GEOSPATIALVIZ/USASTATEWISECOVIDCASES [USA State-wise COVID cases]

b. https://e.infogram.com/c1d7f9e3-5389-46dd-908a-301612b40bea?parent_url=https%3A%2F%2Fwww.commonwealthfund.org%2Fpublications%2Fscorecard%2F2023%2Fjun%2F2023-scorecard-state-health-system-performance&src=embed#
[Avoidable deaths in US states since COVID-19]

c. https://e.infogram.com/eef01f4c-88b9-4cb9-9c59-c85860573af2?parent_url=https%3A%2F%2Fwww.commonwealthfund.org%2Fpublications%2Fscorecard%2F2023%2Fjun%2F2023-scorecard-state-health-system-performance&src=embed# [Maternal Mortality Rate across states since 2019]

d. https://e.infogram.com/dbfbd1a2-da53-417a-86c2-c92ce205fe5c?parent_url=https%3A%2F%2Fwww.commonwealthfund.org%2Fpublications%2Fscorecard%2F2022%2Fjun%2F2022-scorecard-state-health-system-performance&src=embed# [Number of ICU beds occupied visualization]

e. https://data.cms.gov/summary-statistics-on-beneficiary-enrollment/medicare-and-medicaid-reports/cms-program-statistics-medicare-medicaid-dual-enrollment
[New Enrollment Dashboard]

f. https://data.cms.gov/provider-data/dataset/3xeb-u9wp
    [National Data]

g. https://data.cms.gov/provider-data/dataset/252m-zfp9
    [Hospice provider data]

h. https://data.cms.gov/provider-data/dataset/a55e-5b88
    [Hospice survey data]

i. https://ghdx.healthdata.org/record/ihme-data/united-states-health-spending-by-state-payer-type-service-2003-2019
    [Healthcare spending expenditure data]

j. https://data.cms.gov/summary-statistics-on-beneficiary-enrollment/medicare-and-medicaid-reports/cms-program-statistics-medicare-medicaid-dual-enrollment
    [Medicare and Medicaid data]

Dashboard stories: -

1. **Healthcare Performance Dashboard**: This Tableau dashboard delivers a critical overview of state-wise healthcare performance in the US, with more focus on state-specific data that most primarily captures the impact of COVID-19 on healthcare systems. Audience and stakeholders can derive valuable insights into ICU bed occupancy rates, changes in avoidable deaths, maternal mortality rates since 2019, and state-wise cases due to COVID-19. By analyzing these varied indicators, the dashboard addresses the central question of how the pandemic in general has affected healthcare efficiency and outcomes and how different US states fared in terms of healthcare performance, providing a clear visual benchmark for policymakers and healthcare providers to assess the effectiveness of current strategies and plan for future healthcare initiatives.

2. **New Enrollment Dashboard**: This Tableau dashboard provides a comprehensive analysis of Original Medicare-Medicaid Enrollment (MME) data, segmented by program type and geographical distribution. It offers key insights into program reach and identifies opportunities for optimization. The full-benefit program covers a wider range of services beyond basic Medicare, including long-term care and prescription drugs. The partial-benefit program focuses on helping with Medicare costs like premiums and co-pays but may not cover additional services. More low-income people are on partial benefits- This suggests they might not know about full benefits or the help programs offered within the partial plan. Top 5 stat 5 states (CA, NY, TX, FL, IL) have the most MMEs (37% of all). This aligns with their high population. Finally, the dashboard combines program type and location. It shows states with higher/lower than average enrollment by program type and allows you to see trends over time (2013-2021). Interestingly, the Southeast has more people in partial-benefit MMEs than full-benefit ones. *In this dashboard **new enrollment metric** is being considered for data presenting*.

3. **Hospice Analytics Dashboard:** This dashboard presents national hospice care metrics in the U.S., highlighting quality measures such as discharge rates, care gaps, hospitalization rates, and place of death. The data helps identify areas for improvement in hospice care delivery and offers insights at scale. The Analysis of National Hospice Care Measures visual provides a national perspective on end-of-life care quality, highlighting concerning trends in patient completion rates. The hospice facilities ownership graph zooms in on state-wide ownership, categorizing facilities as for-profit, non-profit, or government-run. The Patient View Survey hospice care graph offers a state-by-state perspective on patient experiences, focusing on emotional support, respectful treatment by staff, symptom management, communication within the care team, timeliness of care, and staff training.

4. **Healthcare Spending Dashboard**: The dashboard provides a comprehensive overview of U.S. healthcare spending per capita. Examining the trends, states like New York, California, Texas, Florida, and Illinois consistently rank among the top contributors, likely due to their large populations. The year-on-year growth chart for New York shows fluctuations, except a decrease in 2012, potentially indicating policy or economic factors influencing costs. Overall, this dashboard provides a visual analysis of U.S. healthcare spending patterns, allowing users to explore state-level variations, identify top contributors, and analyze historical trends.

5. **Total Enrollment Dashboard**: This Tableau dashboard presents a thorough examination of Total Medicare-Medicaid Enrolment (MME) data, categorized by program type and age demographics. It delivers valuable observations regarding program accessibility. The comprehensive program encompasses various services beyond basic Medicare, such as long-term care and prescription drugs. In contrast, the partial program primarily assists with Medicare expenses like premiums and co-pays, possibly without covering extra services. *Here in this dashboard **cumulative enrollment metric** is being considered for data presenting*.