

TITLE	INTRODUCTION	Statewise benchmark achievement	Procedures by states	Waiting times and volumes	Exploratory Analysis (1)	Exploratory Analysis (2)	Regression Analysis	Cluster Analysis	Time series Analysis
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WAITING TIMES FOR PRIORITY PROCEDURES IN CANADA:

ANALYSIS, INSIGHTS AND RECOMMENDATIONS

Study Project:

Data Citation:
Canadian Institute for Health Information. *Wait Times for Priority Procedures in Canada — Data Tables*. Ottawa, ON: CIHI; 2022...



WAITING TIMES FOR PRIORITY PROCEDURES IN CANADA (Analysis & Insights)

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INTRODUCTION:

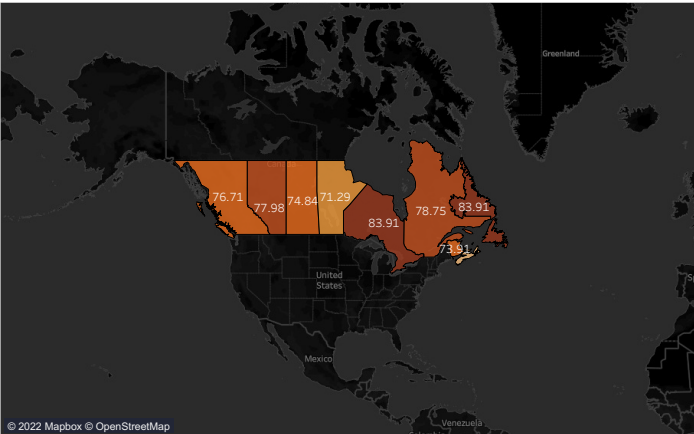
Due to ever increasing case load and constrained resources Waiting times for priority procedures are believed to be on the rise.

OBJECTIVE:

- Analyze the Waiting time data (2008-2021) and come up with insights on waiting times for Priority Procedures in different Provinces of Canada.
- Identify procedure wise Average waiting times and come up with probable reasons for increased waiting times.
- Give Recommendations to reduce waiting times for priority procedures.

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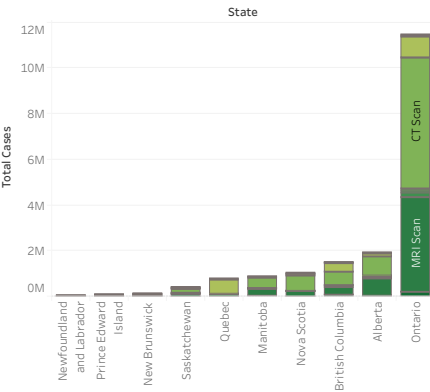
Percentage of cases meeting Benchmark (by States in Canada)

- The benchmark achievement percentage is the highest in the Provinces of Ontario and New foundland Labrador (83.9%).
- The Benchmark achievement percentage is the lowest in Nova scotia(66.6) followed by Manitoba(71.29%).

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Total cases by states



Statewise Medical Procedures:

- Ontario, Alberta and British Columbia are the states where majority of the medical Procedures are conducted.
- Highest number of medical procedures were conducted in Ontario between 2008-2021.
- After diagnostic Procedures like CT Scans and MRI, Cataract surgeries, Radiation Therapy and Knee replacement surgeries are the most performed procedures in these states.

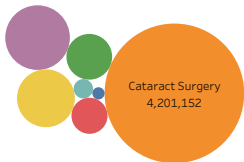
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Procedure-wise Average waiting time in days.



Procedures by volume



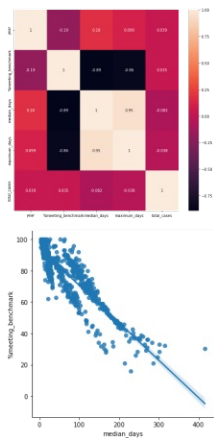
Major priority procedures (stats):

- Average waiting times:**
- *Highest Avg. waiting times:*
Knee replacement, Hip Replacement, Cataract surgery.
 - *Lowest Avg. waiting times:*
Radiation Therapy, Coronary Artery Bypass Graft(CABG)

- Procedures by Volumes:**
- Highest number of Procedures:*
Cataract Surgeries, Radiation Therapy, Knee Replacement.
 - Least Number of procedures:*
Coronary Artery Bypass Grafts(CABG)

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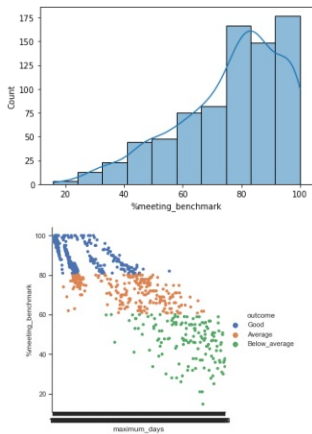


Data Exploration:

- There is a strong negative correlation(-0.89) between median waiting time and % cases meeting benchmark.
- There is a strong negative correlation between Maximum waiting days and %meeting benchmark.
- There appears a mild negative correlation(-0.082) between median days and total cases

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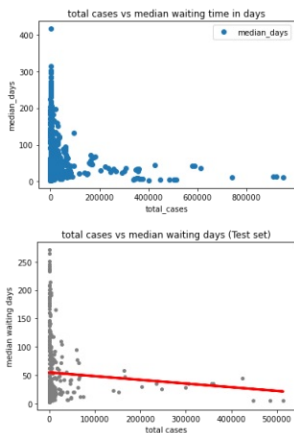


Percentage meeting Benchmark:

- Majority of the reported procedures fall in the 'good' (blue) and 'Average'(orange) performance category of Benchmark achievement.
- Considerable number of cases fall in the 'below average' (green) category of benchmark performance.
- The below average performance group (green) has a considerably high waiting time(maximum days). The reasons for this have been explored further.

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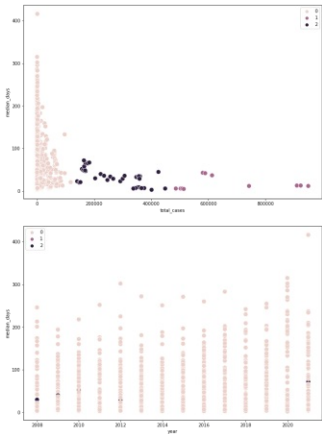
Regression Analysis:

- The scatter plot shows that majority of reports show very less total number of cases but the waiting time(median_days) is still very high.
- The regression plot also confirms the same. The regression line shows a very mild negative relationship between the variables
- This indicates that the median waiting time is high where the total number of cases is low.
- In other words, we can say that inspite of lesser number of cases the waiting time is high.

Why??

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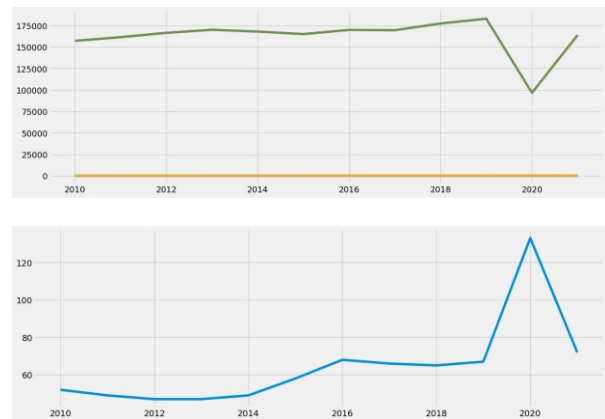


Cluster Analysis:

- The light pink cluster in the cluster chart is the largest cluster which is characterized by Lower total number of cases and higher median waiting days.
- When the waiting time('median_days') is plotted against the years shows that the median waiting time for this cluster has considerably risen in period between 2018 to 2020 which corresponds to the COVID-19 pandemic.
- Since the pink cluster is the majority cluster and we know from the bubble chart that majority of surgical procedures performed were Cataract surgeries.
- we shall perform a time series analysis of Cataract surgeries to uncover the reasons for Higher waiting times for lower total number of cases.

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Time Series Analysis: (Cataract surgeries)

- The Time series chart for cataract surgeries pretty much answers all questions.
- When the two charts are compared, it is clear that, between 2010 to 2019,inspite of High total number of cases (150000- 175000) the median waiting time was roughly between 40 to 70 days.
- A complete contrast was seen in the year 2019-2020 when the median waiting time soared to over 130 days that too when the total number of cases had plunged to around 100000.
- This is true for almost all medical procedures especially the ones with higher risk.

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Simple Steps to Reduce the Patient Wait Time

- Collect Patient Information
- Documentation Responsibility
- Alternative Forms
- Strict No-Show Policy
- Spot the Schedule Spoilers
- Embrace Telemedicine Solution
- Smartphone icon

Insights:

- Waiting times for priority procedures were greatly hampered by the covid pandemic.
- Priority Procedures like cataract surgery were hampered the most.
- There is unequal case distribution between the states. Only a few procedures are benchmarked.

Recommendations:

- Pandemic preparedness: Need to stress on allocation of sufficient resources and technology to effectively handle Priority procedure during the period.
- Process improvement: The health systems should set up benchmarks for all procedures and strive to achieve them through streamlining operations, developing KPI for waiting times and implementing Quality principles like Kaizen and Lean Six Sigma to improve efficiency and swiftness of operations.
- Redundant processes like undue paper work should be done away with the introduction of technology...