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Interactive Data Visualization of Patient Experience and Inpatient Datasets using Tableau Desktop

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Introduction

Data visualization is a valuable means for reporting and interpreting large datasets. It allows users to present key messages from the data in a simple way. Although many industries have adopted and embedded data visualization within their analytic teams, healthcare has only recently begun to realize this potential.

Objectives and Approach

The objective of this interactive presentation is to introduce Tableau (visualization software) and to provide quick, impactful examples of its use. Visualizations will be created using a free version of Tableau Desktop; available to students and academics. Two blinded datasets encompassing hospital discharges in Alberta from April 2014 to March 2016 will be used. The first dataset will contain approximately 50,000 patient experience surveys, as completed by patients within 6 weeks of their hospital discharge. The second dataset will contain inpatient records from the Discharge Abstract Database (DAD). Visualizations will be created using the individual and combined datasets.

Results

Following a brief description of each dataset and its respective elements, a variety of interactive visualizations will be created in real-time. From the patient experience dataset, we will be able to quickly determine which hospitals have the highest overall rating from their patients. We will then display the results from all survey questions from a single hospital; allowing for a determination of areas where care is delivered well, and to provide opportunities for improvements. From the DAD, we will highlight hospital length of stay, and its relation with gender, age group, geography, and clinical condition. In the final portion of the presentation, both datasets will be linked to examine the relationships between survey responses, patient demographics, and clinical characteristics.

Conclusion/Implications

Data visualization has great potential in healthcare. From this presentation, attendees will receive an introduction to its use using practical, real-world examples. The dynamic visualizations in this presentation will be created in mere minutes; a small fraction of the time typically spent by analysts to create static, paper-based reports.

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