

Data Analytics Academy

Final Capstone Project Proposal

SUBMITTED BY:		DATE SUBMITTED:	
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PROJECT NAME

Impact of missed appointments on Hospital Finances and Quality of Care provided

TEAM MEMBERS

- Furhan Babar | Harlem Hospital Center - Finance
- Mary Grace Boyd | Community Care – Workforce Development

MOTIVATION

This project was selected to measure the financial and quality of care provided to patients impacted by the No Show rate. At the same time, Harlem Hospital Center's goals ties into the NYC Health and Hospital's strategic pillars (SP) therefore affecting institutional as a whole.

- Improve quality of patient care and services (SP: Quality, Safety)
- Increase revenue streams (SP: Financial Sustainability)

DESCRIPTION

Business Goal:

- To be able to use this data to analyze trends in patients' appointment no show data
- To be able to use this data as baseline information when analyzing quality improvement projects related to quality of patient care and services provided in Harlem Hospital

Scope of the Project:

This project aims to create a baseline data for quality improvement projects and analyze available data to seek trends that will help achieve Harlem Hospital Center's business goal.

- SQL program will be used to manage and manipulate the data variables in the raw database
- Python program will be used to convert the database into a data frame where it can be cleaned and structured for further data analysis and visualization
- Tableau program will be used to generate reports and transform them into charts, graphs, dashboards, etc. for data visualization purposes

Data Inputs:

- Raw data will include the following data variables: Medical record number, date of birth, phone, encounter provider, visit date, visit month, appointment time, status, encounter status, department, department id, average payment, visit type, visit type id, copay, check-in time, check-in / check-out, encounter diagnosis
- Additional data obtained from other sources will include the following: holidays, weather, average payment

Hypothesis:

- Keeping appointments during adverse weather conditions will most likely increase the rate of no-show patients
- Male patients will most likely not to show for their appointment compared to their female counterpart.
- Patients without insurance have the higher tendency to not show for an appointment than those who have insurance.
- Patients will most likely ignore appointments during the summer months and on days before/after a holiday

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Success Criteria:

- The team will be able to setup and analyze the data using SQL, Python, and Tableau programs.
- The team will be able to create a presentation specific to defined stakeholders/audience that was easy to understand using tables, graphics, and other forms of data visualization (i.e. dashboard)
- The team will be able to prove / disprove written hypothesis by providing conclusion at the end of presentation.

DATA BACKGROUND & SOURCES

Raw data was acquired from EPIC Reporting Work Bench. Additional data was acquired from multiple relevant websites.

RESEARCH QUESTIONS:

- What effect does a/an [data variable] have on the rate of patient “no-show” status for their appointment?
 - Data variables: Weather, holidays, geographical location, type of appointment, primary care physician, reason for visit, religion, language, etc.
- How have financial factors or insurance status affected patterns the rate of patients who are labeled “no-show” for their appointments?
- How do genders compare in keeping their appointments?

CONCLUSION: *(Hypothetical Example)*

- Pediatric appointments have lesser no-show rate than any other appointment
- Appointments right after holidays have a higher rate of “no show” rate than any other day
- Patients with insurance have a lower “no-show” rate than those who does not have insurance

REFERENCES:

- <https://w2.weather.gov/climate/xmacis.php?wfo=okx>
- https://en.wikipedia.org/wiki/Public_holidays_in_the_United_States