Patient Appointment Analysis - Overview

Overview

Patient No-Shows permeate medical practices, across specialties, locations, and practice models. No-shows consistently cause problems for medical practices. Therefore, medical practices track their No-Show rates to realize the impact that No-Shows have on both their internal processes and bottom-line revenue.

There are many reasons why patients fail to make their appointments. However, there are demographic similarities across patients who no-show more consistently than others. This project analyzes medical appointments for a seven-month period (November 2015 – June 2016). Over 110,000 appointments are included in the underlying dataset. Factors under considerations include age, gender, alcoholism, diabetes, handicap, hypertension, patient's location, scheduled appointment time, and whether the patient received an automated SMS appointment reminder.

Key Objectives

- Identify factors that are shared among patients who routinely no-show for appointments
- Determine the most important factor that contributes to whether a patient is a no-show for their scheduled appointment
- Provide suggestions to minimize the number of No-Shows

Summary

Year: 2015 | 2016

Quarter: 1 | 2 | 4

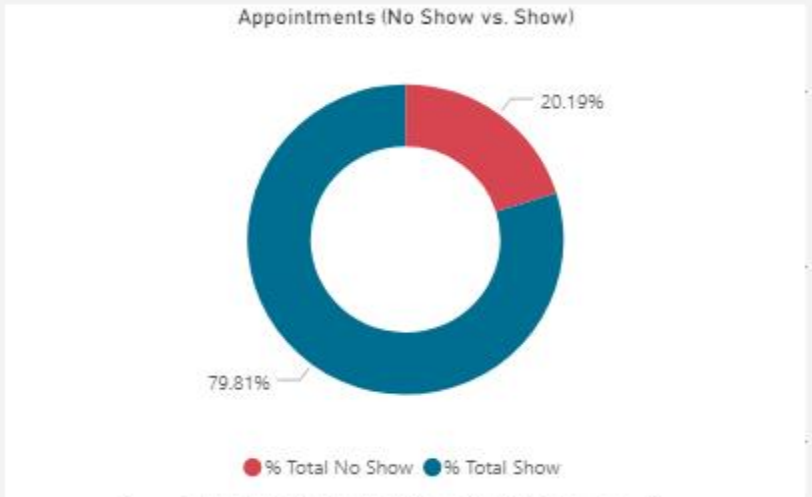
Scheduled Day: 11/10/2015 – 6/8/2016

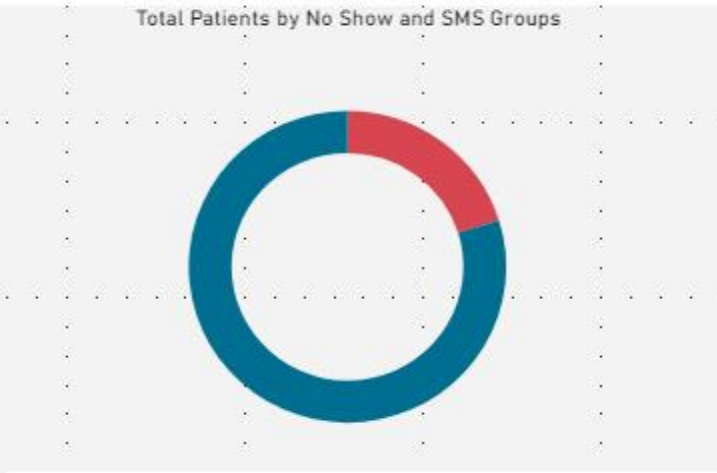
22,319
Total No Show

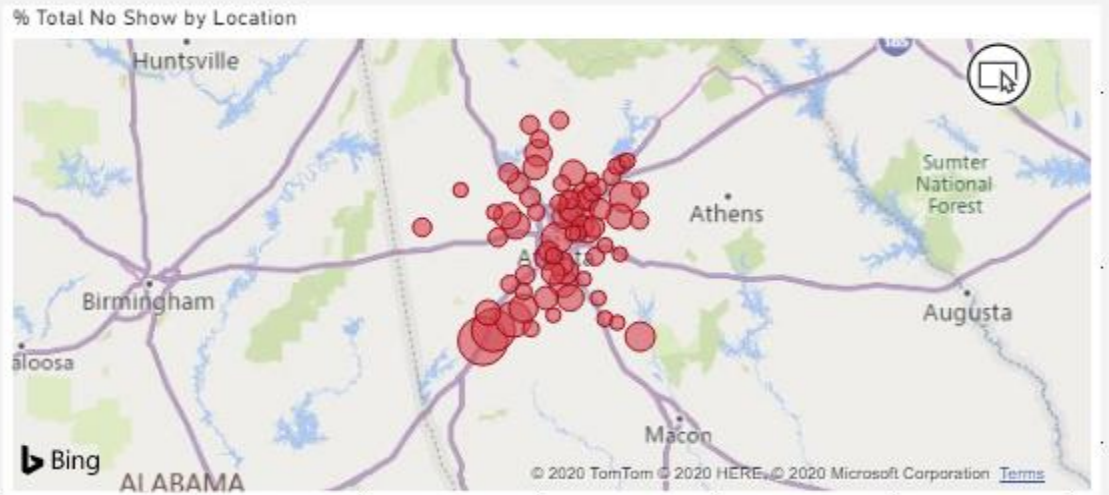
88,208
Total Show

110,527
Total Appointments

110,527
Total Patients







https://www.linkedin.com/in/aphillipsiii

Gender Analysis

Year: 2015 | 2016

Quarter: 1 | 2 | 4

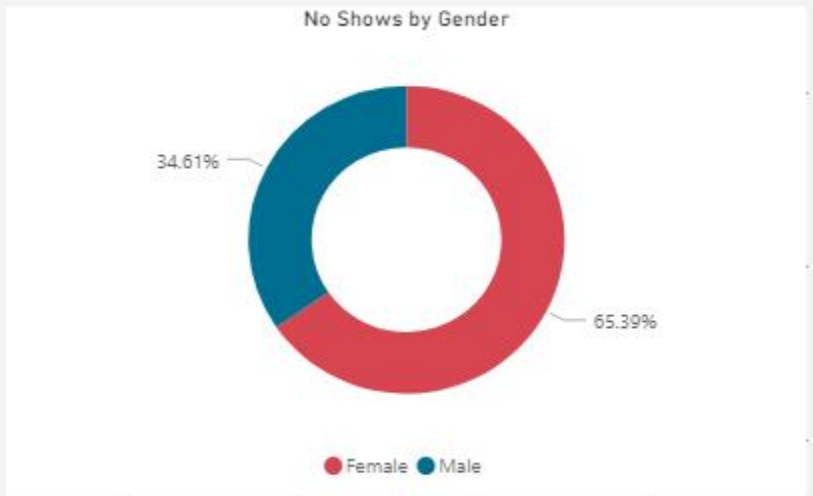
Scheduled Day: 11/10/2015 – 6/8/2016

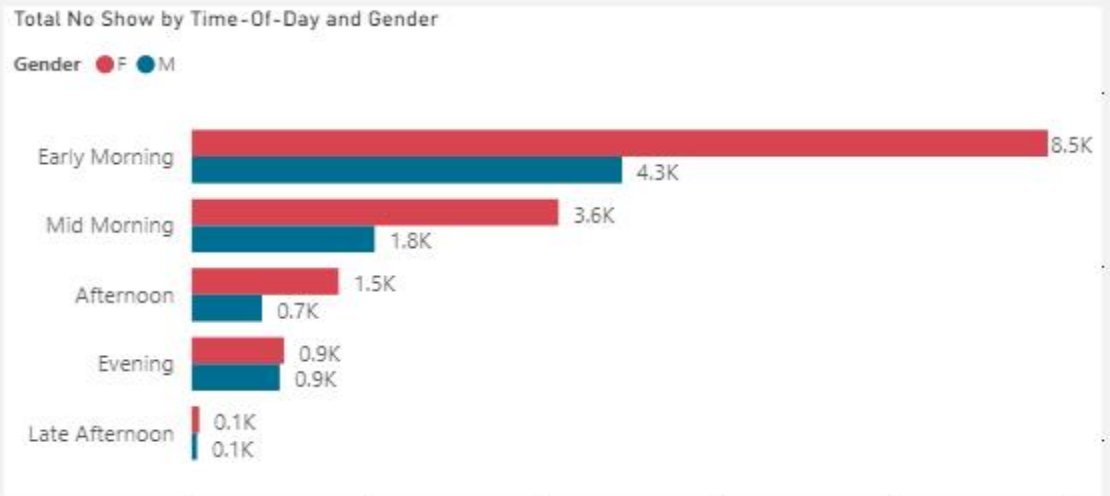
14,594
No Shows - Female

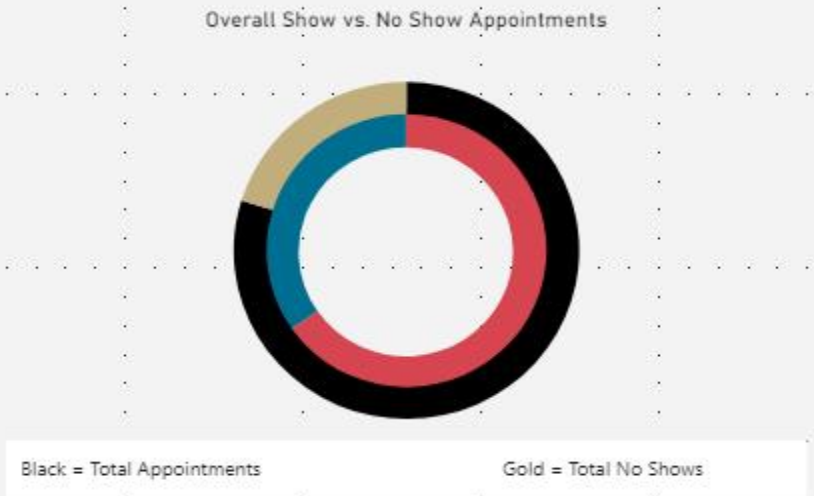
7,725
No Shows - Male

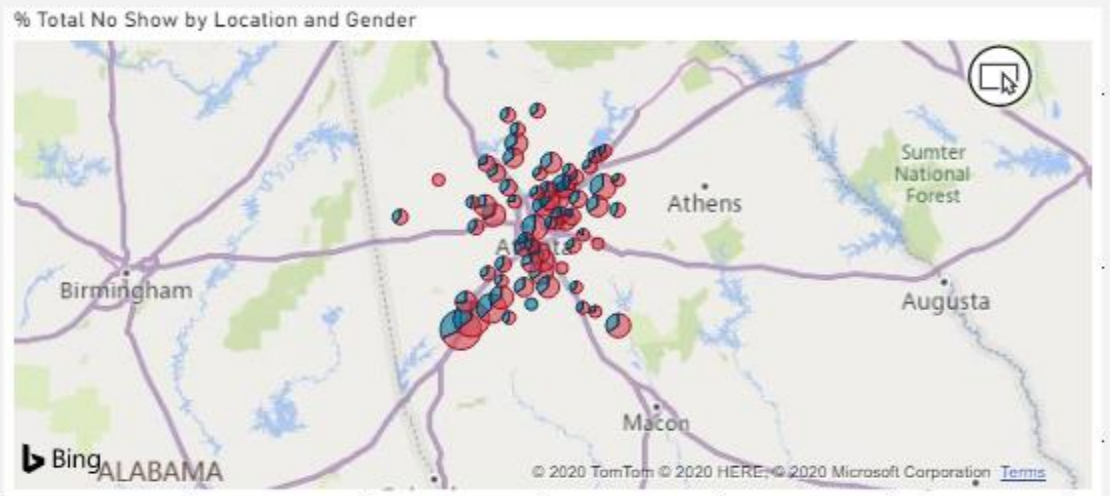
22,319
Total No Shows

110,527
Total Appointments









https://www.linkedin.com/in/aphillipsiii

HyperT Analysis

Year: 2015 | 2016

Quarter: 1 | 2 | 4

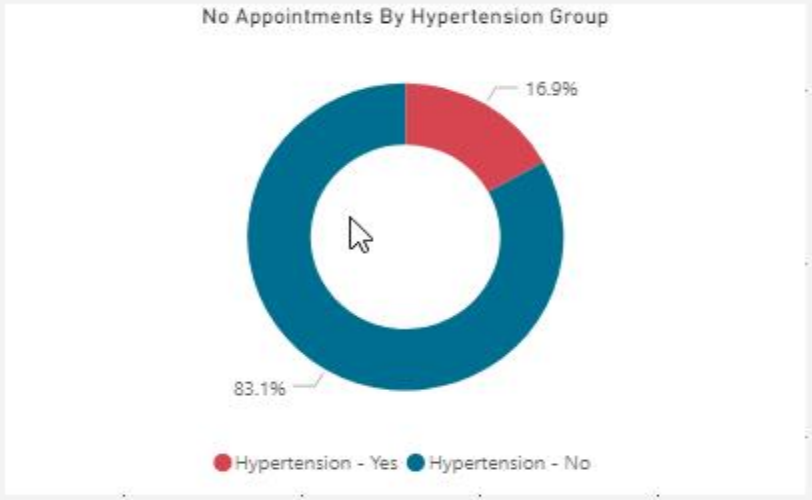
Scheduled Day: 11/10/2015 – 6/8/2016

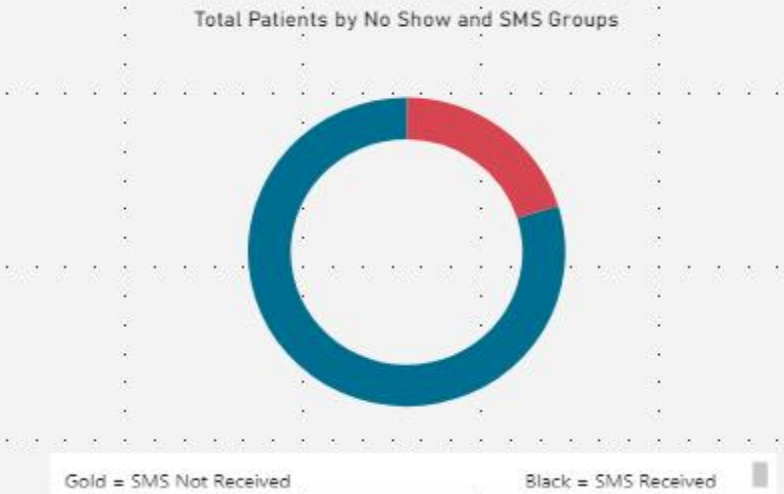
3,772
Hypertension - Yes

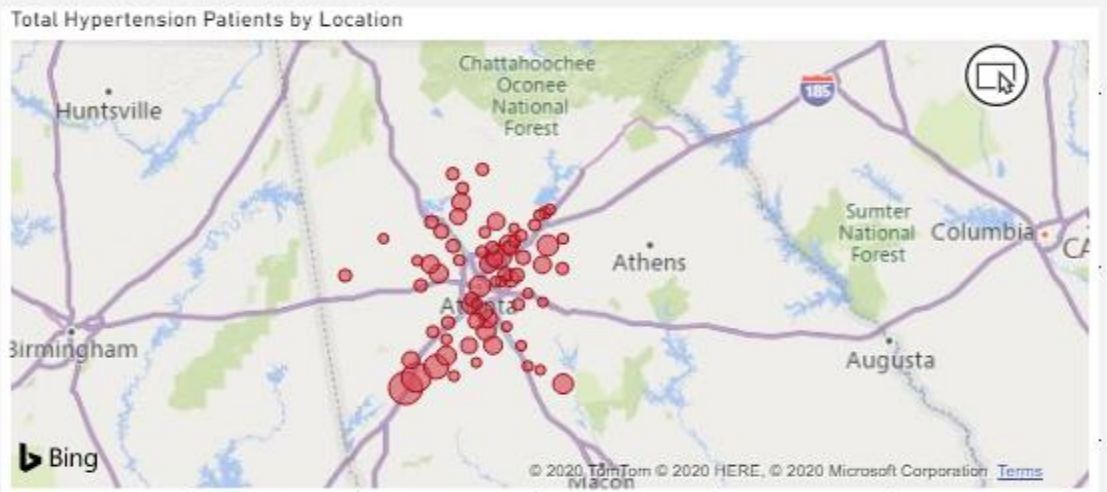
18,547
Hypertension - No

22,319
Total Hypertension Appt

110,527
Total Appointments

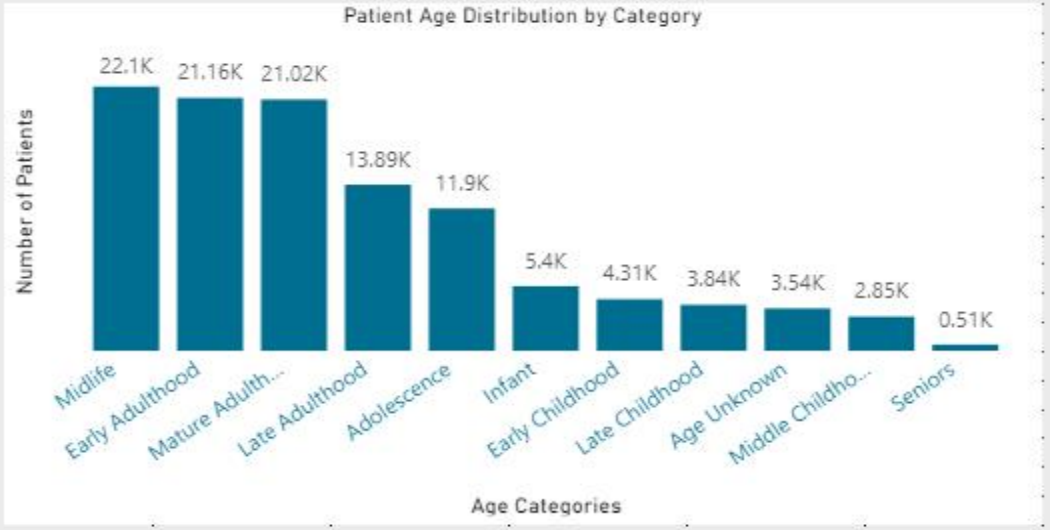


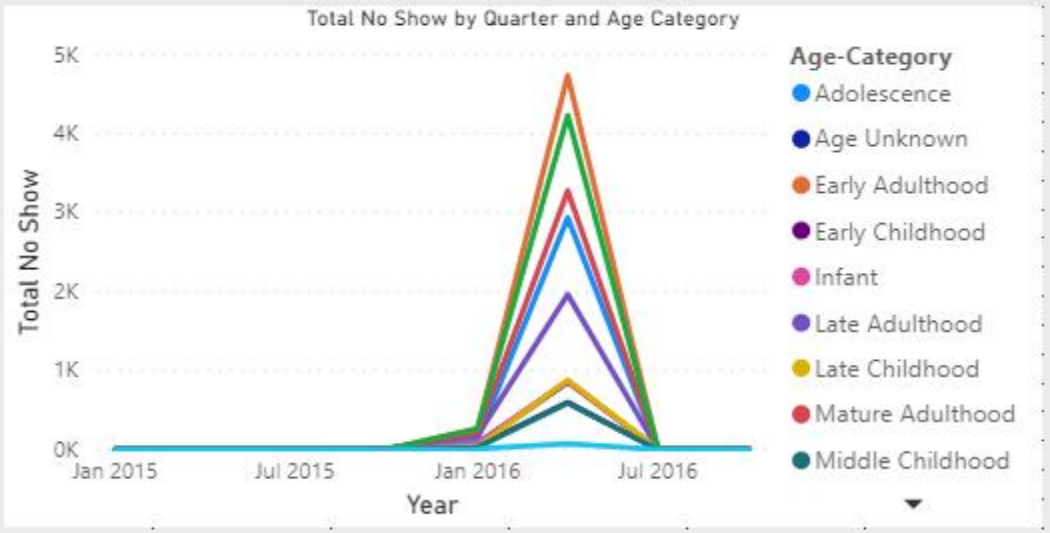


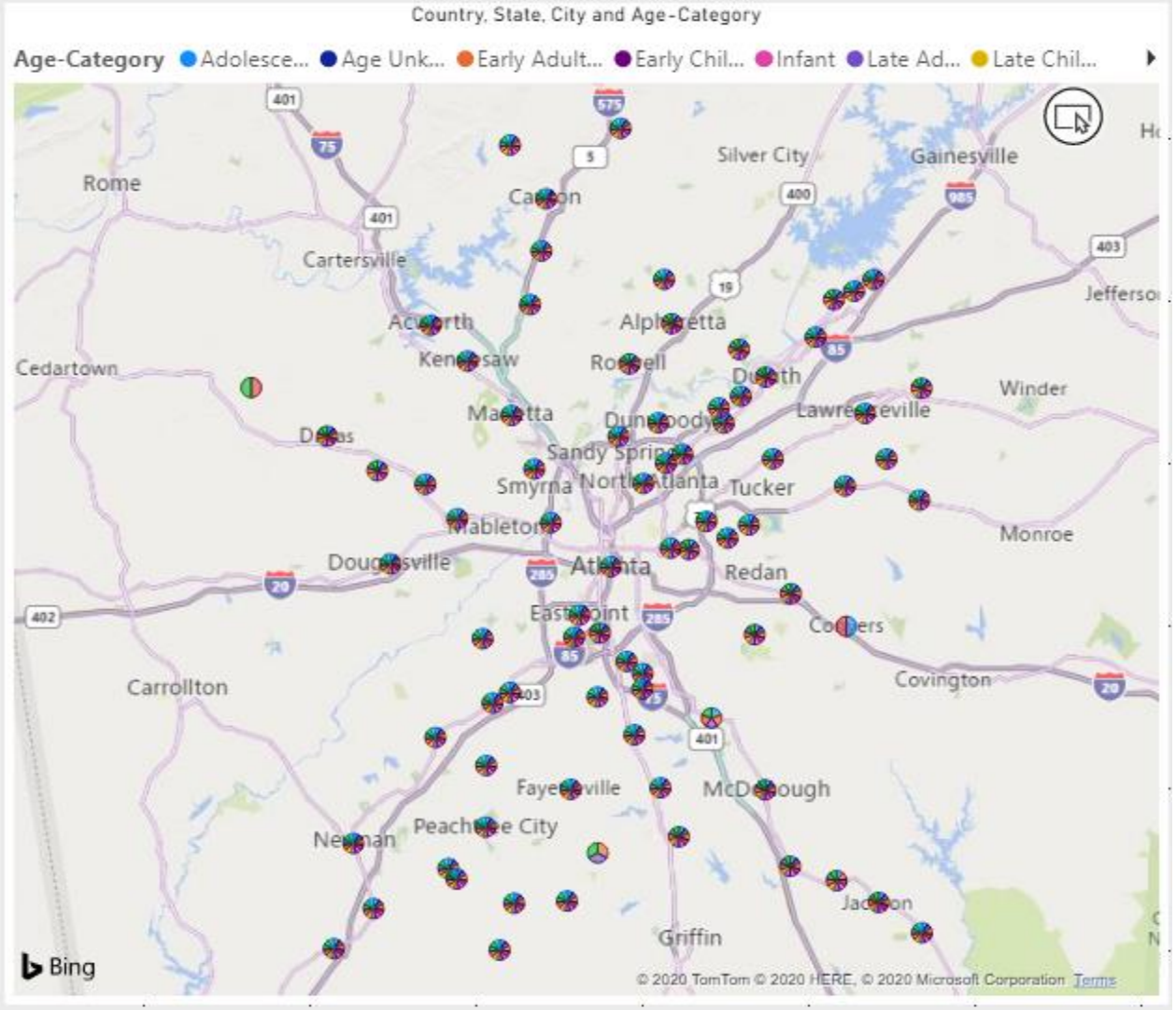


https://www.linkedin.com/in/aphillipsiii

Age Analysis







https://www.linkedin.com/in/aphillipsiii

Key Influencers

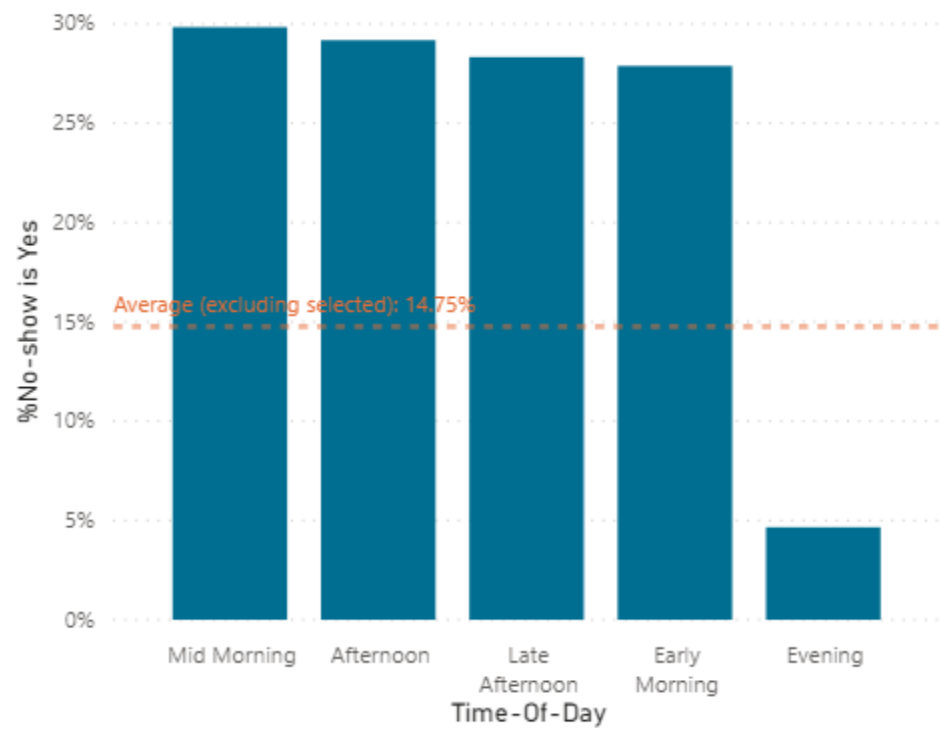
Key influencers | Top segments

What influences No-show to be Yes ?

When...	....the likelihood of No-show being Yes increases by
Time-Of-Day is Early Morning	1.91x
Handcap is 1	1.76x
Time-Of-Day is Mid Morning	1.63x
Time-Of-Day is Afternoon	1.54x
Age is 5 - 27	1.46x
Hypertension is 0	1.26x
Diabetes is 0	1.23x

Sort by: Impact Count

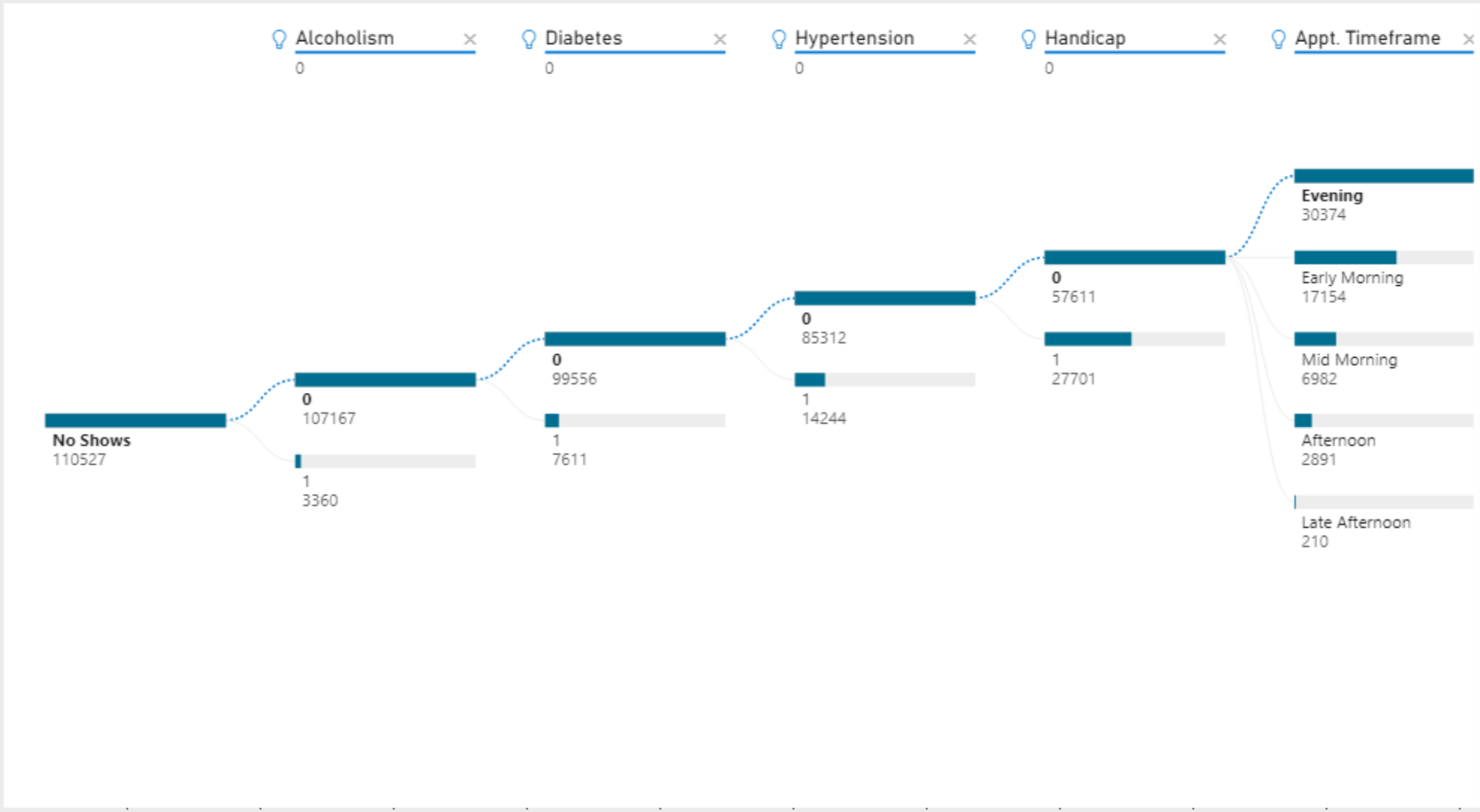
← No-show is more likely to be Yes when Time-Of-Day is Early Morning than otherwise (on average).



Only show values that are influencers

https://www.linkedin.com/in/aphillipsiii

Explore and Analyze the Data



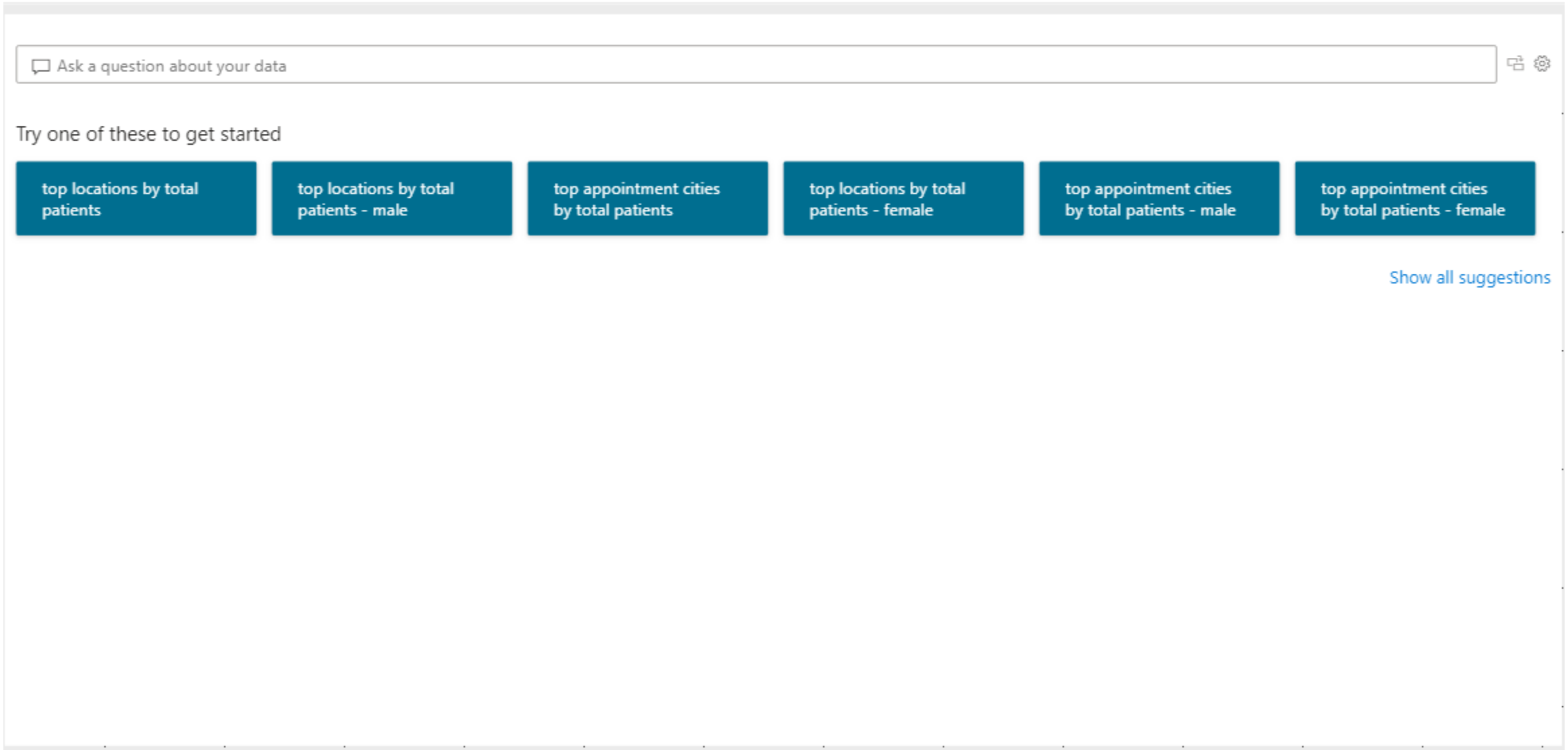
Time Periods
- Select all
- 2015
- 2016
  - Qtr 1
    - January
    - February
    - March
  - Qtr 2
  - Qtr 3
  - Qtr 4

Gender
- Select all
- F
- M

Age Category
- Select all
- Adolescence
- Age Unknown
- Early Adulthood
- Early Childhood
- Infant
- Late Adulthood
- Late Childhood
- Mature Adulthood
- Middle Childhood
- Midlife

https://www.linkedin.com/in/aphillipsiii

What questions do you have regarding the data?



Patient No-Show Appointment Analysis - Results

Analysis Results

The following factors were shared most among patients who were routinely No-Shows:

- Key contributing factor to No-Shows: Early Morning appointments (i.e., before 9AM) – 1.91 times likely to be No-Shows
- Patients without medical ailments and challenges (e.g., diabetes, hypertension, alcoholism, etc.), excluding handicapped individuals, are more apt to miss appointments
- Patients between the ages of 5 – 27 are 1.46 times likely to be No-Shows
- Females tends to be No-Shows more often than males

Recommendations

- Strategically schedule appointments after 9AM – 3PM, when possible
- Schedule patients between the ages of 5-27 after 3PM

Additional Suggested Analysis

- Patient's distance from treatment facility