Pseudopolis Medical Associates (PMA) clinic - Patient Visits Data Analysis Report

The given dataset represents one year of patient visits to the fictional Pseudopolis Medical Associates (PMA) clinic, a small practice group providing specialist care in infectious diseases and behavioral therapy. The dataset has patient id, patient condition, insurance type, age, sex, visit date, appointment time and provider information.

Find below the highlights and inferences based on different factors observed in the dataset

- **Summary of patient visits for specific medical conditions**

  Below are the 3 medical conditions treated by the clinic
  - TV Personality Disorder
  - Saturday night fever
  - Uncommon Cold

Medical Condition	Total Patient visits	Male	Female
Saturday night fever	2694	1830	864
TV Personality Disorder	1608	509	1099
Uncommon Cold	1455	810	645
	5757	3149	2608

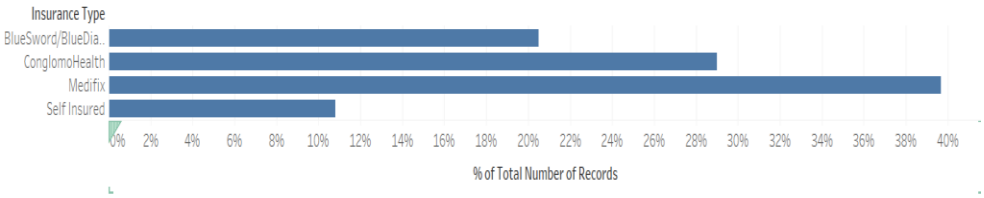
  - The clinic treats comparatively a greater number of patients for 'Saturday night fever' of which 68% of patients are male; whereas for TV Personality Disorder, 68% of patients treated are female.
  - Patients treated for uncommon cold comprises of both male and female accounting to 55%, 45% respectively, does not show any major impact based on sex.
  - The age of the patients visits the clinic are between 16 and 84

- **Patients arrival time and Scheduled time**

% of patients arrive OnTime	33%
% of patients arrive Early	34%
% of patients arrive Late	33%

  Any difference in scheduled time and patient arrival time is considered as a delay or early arrival.
  33% of patients are arriving late, the delay was only within 4 mins of their scheduled time which may not have a huge impact on another patient's schedule.

- **Patients and the type of insurance they posses**

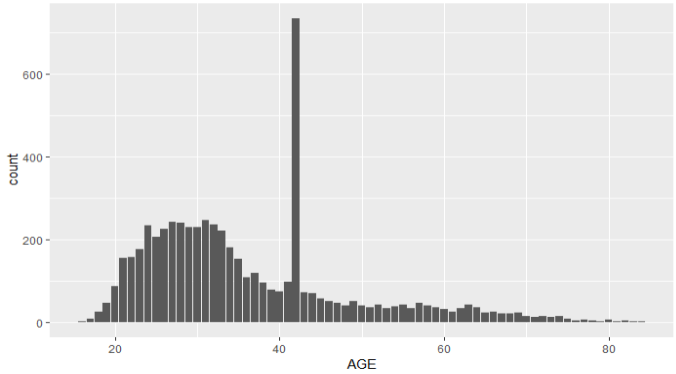


  More no of patients holds the insurance type Medifix and only 11% are self insured

- **Repeating patients to the clinic within the selected year**

  Only 17 patients are repeating patients and have visited multiple times in the same year for the same medical condition.
  Also, identified there are no repeating patients for the medical condition 'TV Personality Disorder'

- **Patient visits - age graph: Count of patient visits vs age of patient**

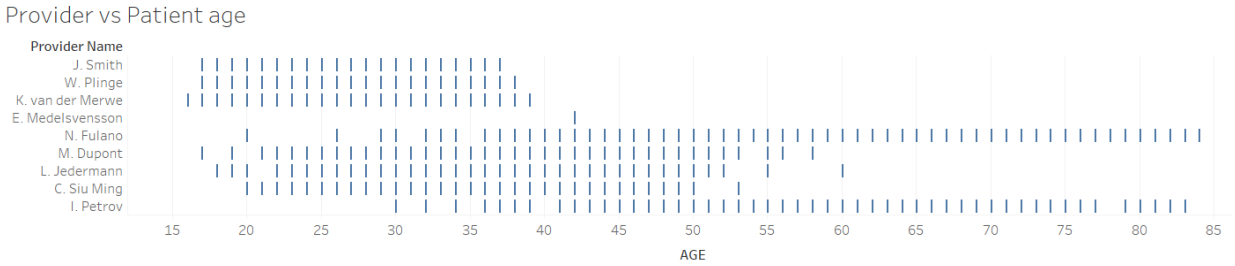


  - Noticed that there is a sudden spike at the age of 42, which depicts more no. of patient visits at a particular age.
  - After analysis it is observed that, patients at age of 42 has made 734 visits to the clinic for the selected year, out of which 668 patients are treated for **'TV Personality Disorder'. Also noted that 41% of patients with TV Personality Disorder belongs to age 42.**

- **Provider- Patient Time and patient age** (The Provider here is assumed as the physician who treats the patients)
  Find below the actual time spent by each provider with their patients, and total no. of patients each provider consulted

No of Patient visits	Provider Name	Average Consultation Time(Mins) per patient
319	I. Petrov	34
636	N. Fulano	34
653	E. Medelsvensson	34
880	K. van der Merwe	23
896	W. Plinge	23
918	J. Smith	23
473	C. Siu Ming	16
484	L. Jedermann	16
498	M. Dupont	16

  - The time spent by the providers with the patients was between 16 and 34 mins. This will be helpful for effective patient appointment scheduling considering the amount of time spent for consultation.
  - Provider 'J. Smith', W. Plinge and K.van der Merwe handles more no of patients in the year than other providers and have an average consultation time of 23 mins. I. Petrov handled least number of patients than other providers in the year. Management can use this to track the doctors schedule with the clinic accordingly.



  - Most of the patients of age between 50 and 85 are handled by providers 'I.Petrov' and 'N.Fulano'.Also, as inferred above 'I.Petrov' and 'N.Fulano' spent on a average of 34 mins which is the maximum time spent of all providers. Further we can infer that, the age of the patient might have impact on the time spent by the provider.

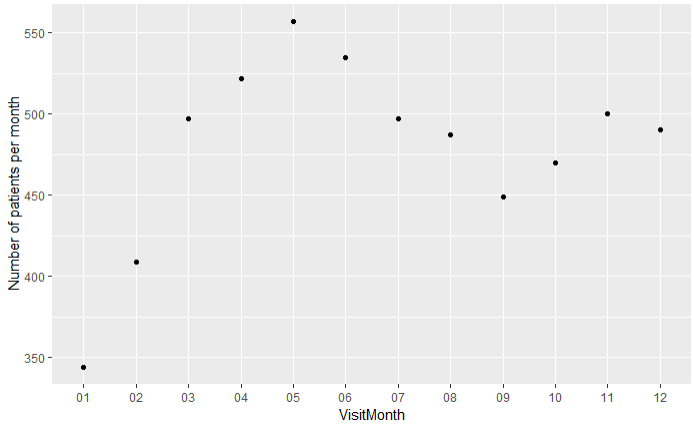
- **Average wait time for the patients**
  For each provider, below are the average wait time for the patients in their visit.

PROVIDER_NAME	Wait_Time(Mins)
C. Siu Ming	10
J. Smith	10
M. Dupont	10
W. Plinge	10
I. Petrov	11
K. van der Merwe	11
L. Jedermann	11
N. Fulano	19
E. Medelsvensson	20

- Provider E. Medelsvensson has the maximum average wait time of 20ms and N. Fulano has the average wait time of 19 mins. All other providers have an average wait time of 10- 11 ms.
- The management has to check if the specific providers are over scheduled or can be ineffective appointment scheduling which may lead to patient dissatisfaction.

- **Predict Clinic utilization pattern**

I) Patient visits vs visit month: There is a gradual increase of patient visits from the beginning of year up to 2nd quarter of the year (till May), then there is a decrease in patients visiting the clinic until September.
Below graph depicts the no of patients visited the clinic, by months of the year

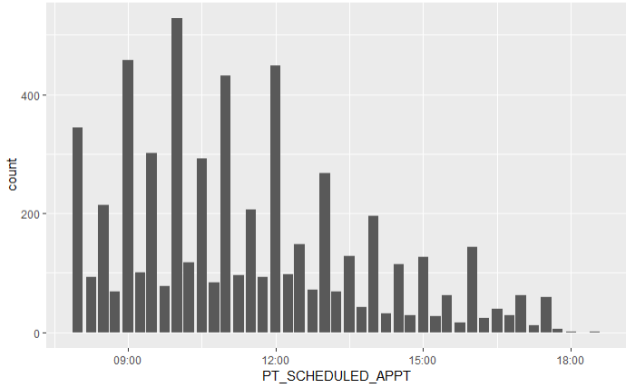


VisitMonth	Patient count
1	344
2	409
3	497
4	522
5	557
6	535
7	497
8	487
9	449
10	470
11	500
12	490

- The clinic was busy in the months of March- July and end of the year (Nov-Dec), accommodated more no. of patients in the month of May which demands that the clinic need to have optimal staff levels and availability to handle the patients in these months.
- As inferred above for the selected year, by analyzing the patient visit data for different years we can effectively predict the patient utilization pattern and take proactive steps for busy seasons.

II) Patient visits vs time of visit

From the graph below, the clinic receives more no of patients in the morning, and considerably lesser no of patients between 12 and 3pm.



- This shows that the clinic is most busy during 8- 12 pm, most of peek patients visit times falls in this time period. This gives clinic a heads up when the clinic would get busy, so that we can ensure optimal staffing while reducing wait time and increase patient satisfaction.

Questions to Management

- Given dataset does not have information about patients who scheduled appointment but didn't show up, having this population helps to identify the patient dropout rate and make use of clinic time effectively.
- Need previous years patient visits dataset for further analysis on clinic utilization and achieve better appointment scheduling at right time and reduce patient wait time.
- Having patient's medical history including other medical conditions diagnosed and medications, to help analyze the patient profile in relative to the medical conditions treated by the clinic.
- Need multiple years data to measure trend of overall patient visits over a period of time.