

**A STUDY ON DOCTORS USER SATISFACTION WITH AN
ELECTRONIC MEDICAL RECORD SYSTEM: DIGITAL
NETWORK APOLLO MED-MANTRA IN OUTPATIENT
DEPARTMENT AT INDRAPRASTHA APOLLO HOSPITAL ,
JASOLA, NEW DELHI**

GUIDED BY: DR. CHARU MATHUR

PRESENTED BY: DR. SHELLY SINGH

ROLL NO: 0494

MBA HOSPITAL MANAGEMENT

ROLE AND REponsibilities

DESIGNATION-

- Working as a Hospital Management Information System (HMIS) project coordinator in Indraprastha Apollo Hospital, New Delhi.

RESPONSIBILITIES-

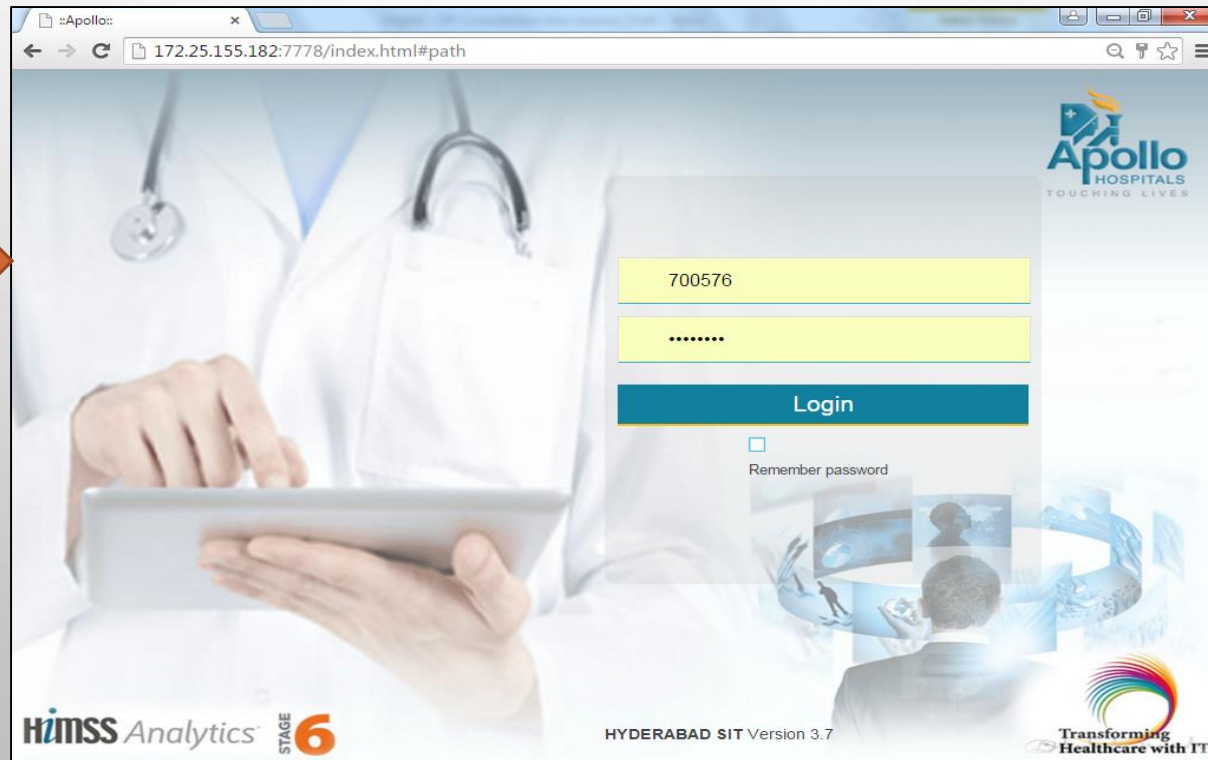
- Providing training to all the doctors and their secretaries.
- Following up of doctors after training.
- Solving doctor's queries regarding software functionality.
- To explain recommendations provided by doctors in software to the software development team.

OVERVIEW OF MED-MANTRA

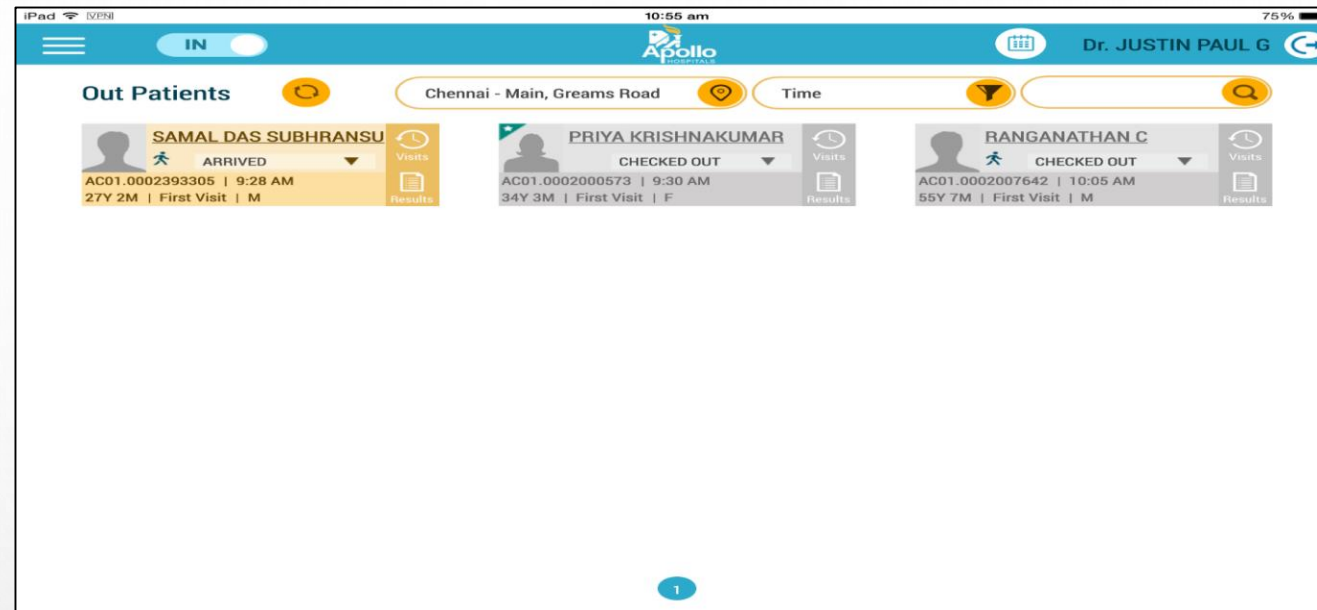
- In november,2014 Tata consultancy services (TSC) developed online EMR application and named as “MED-MENTRA” .
- Enables the tracking of patient’s records at the digital platform.
- Med-mantra includes Outpatient and Inpateint consultation module.

LOGGING INTO

MED-MANTRA



DOCTOR'S OUTPATIENT DASHBOARD



Out Patients

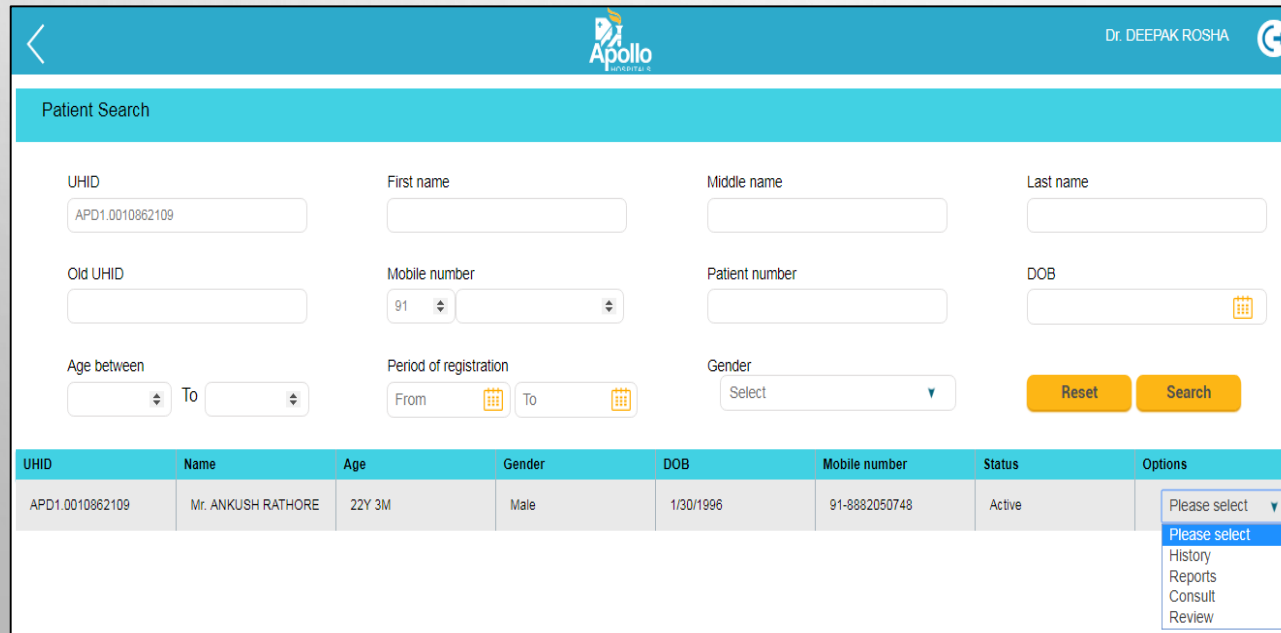
Chennai - Main, Grems Road

Time

SAMAL DAS SUBHRANSU
ARRIVED
AC01.0002393305 | 9:28 AM
27Y 2M | First Visit | M

PRIYA KRISHNAKUMAR
CHECKED OUT
AC01.0002000573 | 9:30 AM
34Y 3M | First Visit | F

RANGANATHAN C
CHECKED OUT
AC01.0002007642 | 10:05 AM
55Y 7M | First Visit | M



Patient Search

UHID: APD1.0010862109

First name:

Middle name:

Last name:

Old UHID:

Mobile number: 91

Patient number:

DOB:

Age between: To

Period of registration: From To

Gender: Select

Reset Search

UHID	Name	Age	Gender	DOB	Mobile number	Status	Options
APD1.0010862109	Mr. ANKUSH RATHORE	22Y 3M	Male	1/30/1996	91-8882050748	Active	Please select Please select History Reports Consult Review

Doctor can search or consult
patient by UHID, NAME,
MOBILE NUMBER ETC

**AFTER COFIRMATION PATIENT WILL
APPEAR ON THE DOCTOR'S DASHBOARD**

 Dr. DEEPAK ROSHA

Patient Search

UHID: APD1.0010862109

First name: Middle name: Last name:

Old UHID: DOB: 1/30/1996

Age between: To:

Confirmation

Do you want to Consult this patient?

YES NO

Reset Search

UHID	Name	Age	Gender	DOB	Mobile number	Status	Options
APD1.0010862109	Mr. ANKUSH RATHORE	22Y 3M	Male	1/30/1996	91-8882050748	Active	Consult

 IN IP Dashboard   Dr. DEEPAK ROSHA 

Out Patients

Time: Delhi - Sarita Vihar

ANKUSH RATHORE

CHECKED IN

APD1.0010862109 | TOA 9:58 AM

22Y 3M | First Visit | MI TOB 9:59 AM

Visits Results

CLICK ON PATIENT'S NAME FOR e-PRESCRIPTION

CREDENTIALS FOR THE e-PRESCRIPTION WRITING

Vitals

SpO₂

BMI

Habits

My previous visit notes

Auto Text : [CLICK HERE FOR ALL PARAMETERS](#) [CLICK HERE FOR GLOBAL](#)

My previous visit notes

Cardiac Risk Factor

Swap Template Format

Complaints

Current medication

HOPI

Past history

Familiv history

Physical examination

Attachments

Image Name

Diagnosis

Previous diagnosis

Diagnosis	Doctor	Episode type	Date
No previous diagnosis found			

Current Diagnosis

Diagnosis	Side	Location	Type
-----------	------	----------	------

View & Select Result

Investigation Results

 Requests

Service name	Comments

 Other Tests

 Medicines

Medicines	Comments

 Procedures Performed

 Advice

 Referred to

 Plan



 Follow up

FOR MEDICATION SREACH

LABH CHAND
APD1.00104581... | 68Y 2M | M

Visits

DMS

Apollo HOSPITALS

Dr. DEEPAK ROSHA

Auto Text :

CLICK HERE FOR ALL PARAMETERS

CLICK HERE FOR GLOBAL

Cardiac Risk Factor

Back

Medicines

Previous prescriptions

Last prescription

☒ Brand Search ☐ Generic Search

My favourites list

Search medicine

Type free text medicine

Drug Strength

Quantity

Quantity unit

Frequency

Meals relation

Comments

Duration

Duration type

Add

Clear

Medicines	Comments	In-house	Fav
  FORACART 1 MG/ 2 ML RESPULES 2ML BID		☒	
  LOFTAIR INHALER 50MCG,110MCG Once		☒	
  DUOLIN RESPULES 2.5ML 500MCG,1.25MG BID		☒	
  DERIPHYLLIN RETARD 150 MG TAB 115MG,35MG BID		☒	
  DUONASE 9.8ML NASAL SPRAY 70MCG,30MCG BID		☒	
  PANTOCID DSR TAB 30MG,40MG BID		☒	

Cancel

Save

 Note to secretary

 Special note for next visit

Others

Psychological Assessment : ☐ Normal ☐ Anxious ☐ Depressed ☐ None

Functional Status (Ability to perform routine activities) : ☐ Yes ☐ No ☐ None

Admission : ☐ Yes ☐ No

 Appointment details

OP Consultation - First Visit

Finalize

Save as draft

Copy from last visit

[OP Summary](#)

[See Recommendation list](#)

[See Prescription](#)

[Print](#)

[Post to Prism](#)

Update

CLICK ON OP SUMMARY TO GET e-PRESCRIPTION

LAYOUT OF e-PRESCRIPTION

GetOPServiceRequestsReport 1 / 2

OP Prescription

Patient Name :	Mr. R K NAGAR	Sex :	Male
Age :	58Yr 7Mth 16Days	OP Number :	OP8700
UHID :	APD1.0010868295		
Visit Date :	02-May-2018		

Allergy :- No Known Allergy

Chief Complaints
pain both legs 6 months
Swelling both legs
Heaviness bilateral
Discolouration both ankles

H/O Present Illness
Pain both legs during the day relieved when lying and compression
Heaviness all the time

Past Medical History
Spine surgery 7 month ago
Hypertension
No diabetes

Physical Examination
GC good
No gross varicose veins
Dermatitis bilateral
Bed side colour dopper study - Right leg - SF Reflux, LSV 11.4 mm groin; 5.2 knee; 5 mm below knee; 4.8 mm SSV;
Left leg - SF reflux; LSV 11.4 mm groin; LSV 4.8 knee; LSV 4.4 BK SSV 4.1.

Diagnosis:
Bilateral varicose veins with dermatitis

Investigation Results
Colour doppler study for leg veins bilaterally. - 8/3/18 - No DVT but bilateral SF reflux and varicose veins

Advice
Leg elevation
Below knee stockings both legs

Plan
Surgery - Bilateral RFA + sclerotherapy

JK
TR
+
-

Printed By:901583 Printed Date & Time : 02-May-2018 15:18 Page 1 of 2

OBJECTIVE & METHODOLOGY

OBJECTIVES

- To study the workflow of Med-Mantra.
- To assess the satisfaction level of the Doctors using Electronic Medical Record System.

METHODOLOGY

- **STUDY LOCATION:** Out patient department (OPD) of Indraprastha Apollo Hospitals.
- **STUDY POPULATION:** Doctors in out patient department (OPD) of Indraprastha Apollo Hospitals.
- **STUDY DESIGN:** Cross-sectional (descriptive study).
- **STUDY DURATION:** Three months (10th Feb to 10 May,2016).
- **SAMPLING TECHNIQUE:** Purposive sampling



- **SAMPLE SIZE:** 100

- **DATA COLLECTION TOOL:**

- **QUESTIONNAIRE** – On the basis of observation and interview with OPD consultants and staff

- **DATA COLLECTION METHOD:**

- Reviewing of MED-MANTRA manual, polices, digital network Apollo (DNA). Interactions with hospital's staff and consultant

- **DATA ANALYSIS:**

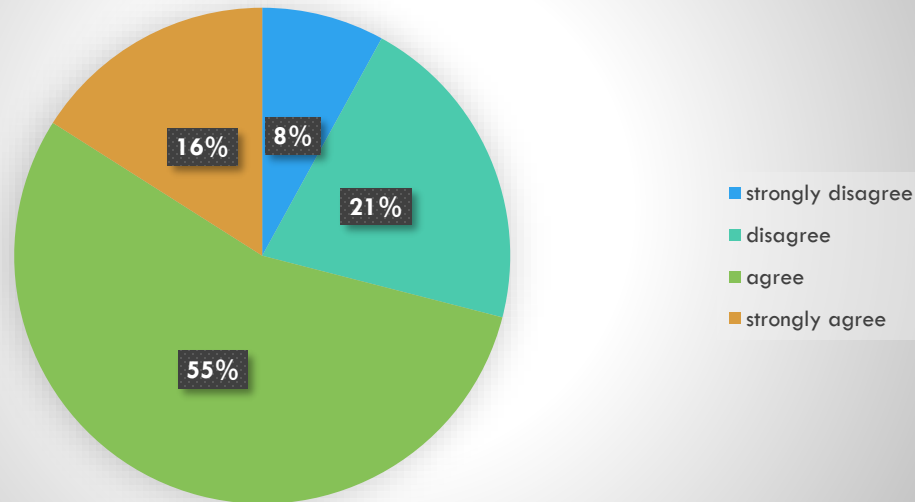
- With the help of Likert scale on MS. Excel.



RESULTS AND DATA INTERPRETATION

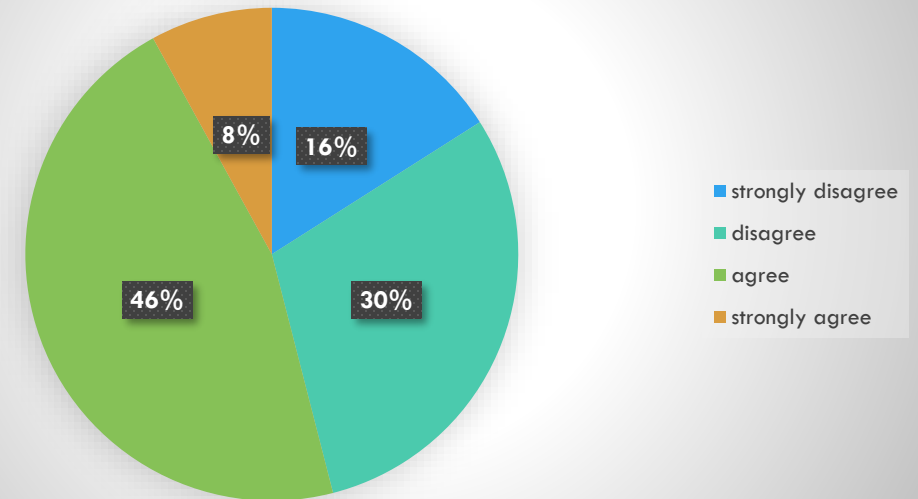
INFERENCE: The above data depicts that 55% of doctors agree that EMR system screen layouts are acceptable.

EMR SYSTEM SCREEN LAYOUTS ARE ACCEPTABLE
n=100



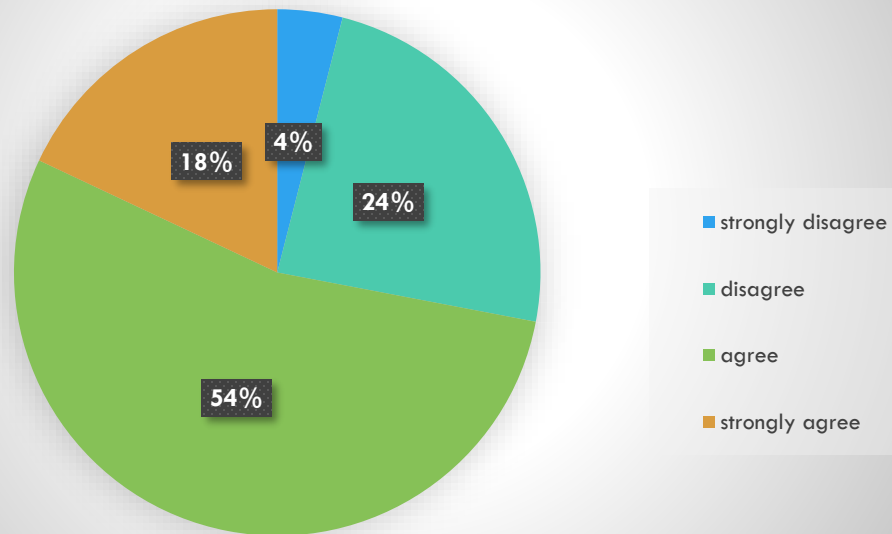
INFERENCE: The above data depicts that 46% of doctors agree that EMR system is easy to use or user-friendly whereas 30% has denied.

EMR SYSTEM IS EASY TO USE OR USER- FRIENDLY
n=100



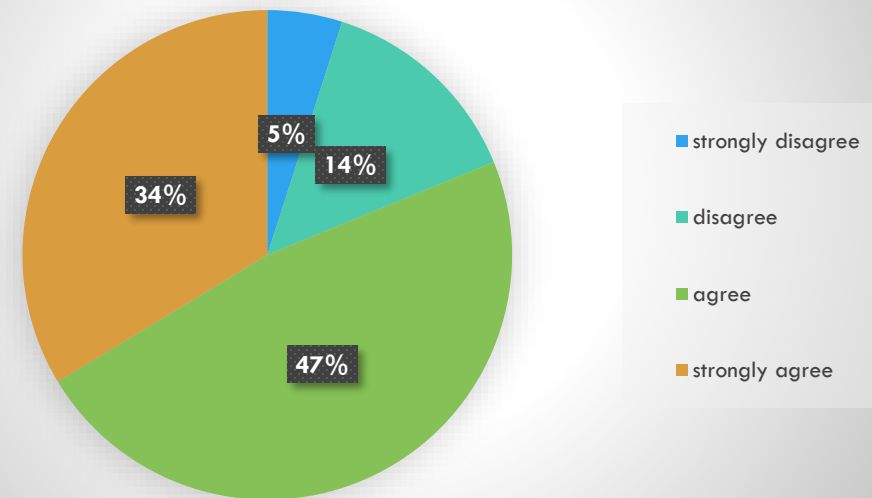
INFERENCE: The above data depicts that 54% of doctor agree that EMR system provides updated information.

EMR SYSTEM PROVIDES UPDATED INFORMATION
n=100



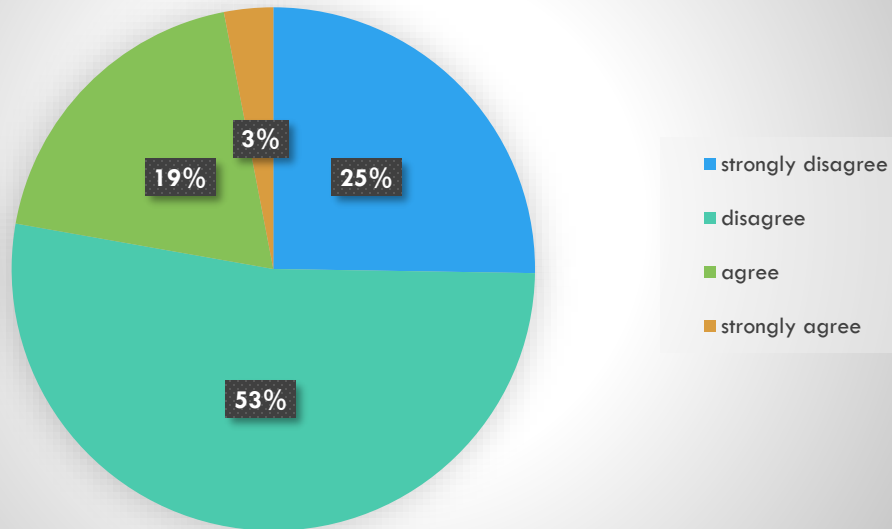
INFERENCE: The above data depicts that 47% of doctors agree that EMR system fonts and characters are easy to read whereas 34% has denied.

EMR SYSTEM FONTS AND CHARACTERS ARE EASY TO READ
n=100



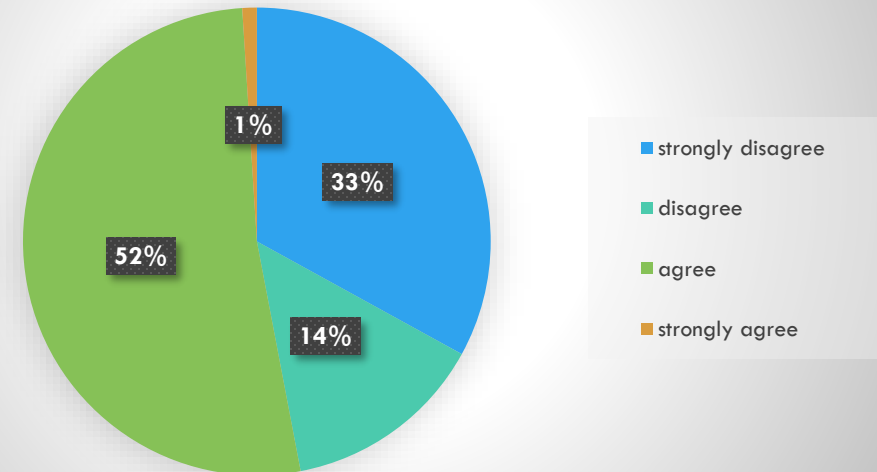
INFERENCE: The above data depicts that 53% of doctors disagree that EMR system performance speed is acceptable

EMR SYSTEM PERFORMANCE SPEED IS ACCEPTABLE
n=100



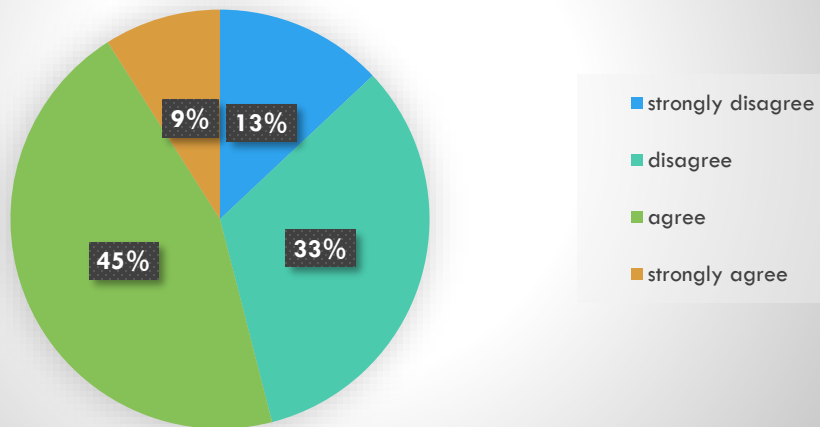
INFERENCE: The above data depicts that 52% of doctors agree that EMR system decreases the patient's consultation time in OPD

EMR DECREASES THE PATIENT'S CONSULTATION TIME IN OPD
n=100



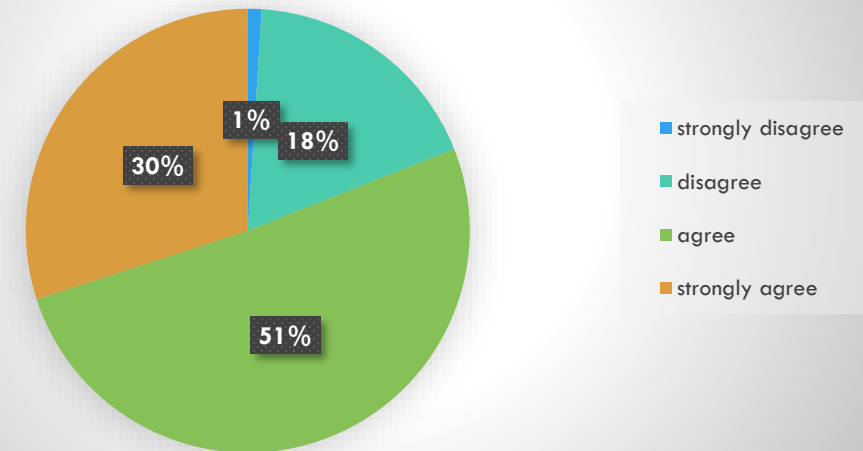
INFERENCE: The above data depicts that 45% of doctors agree that EMR system improves the quality of patient care process

**EMR IMPROVES THE QUALITY OF PATIENT CARE
PROCESS**
n=100



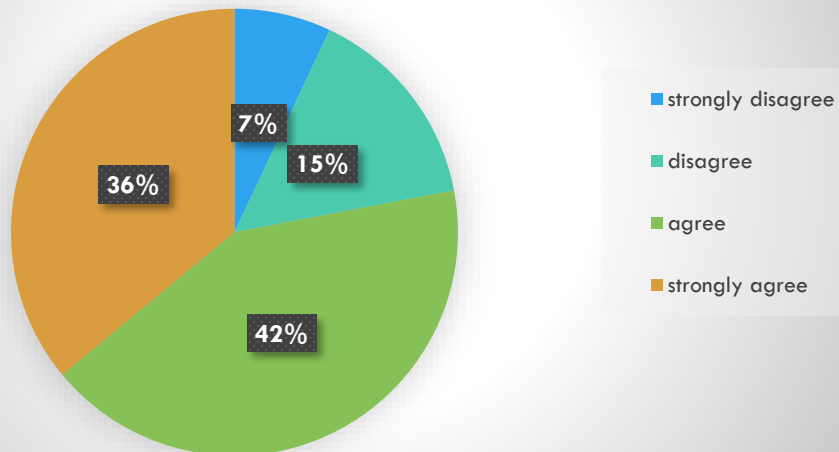
INFERENCE: the above data depicts that 51% of doctors agree that EMR system improves the quality of patient's data and retrieval.

**EMR SYSTEM IMPROVES THE QUALITY OF
PATIENTS DATA AND RETRIEVAL**
n=100



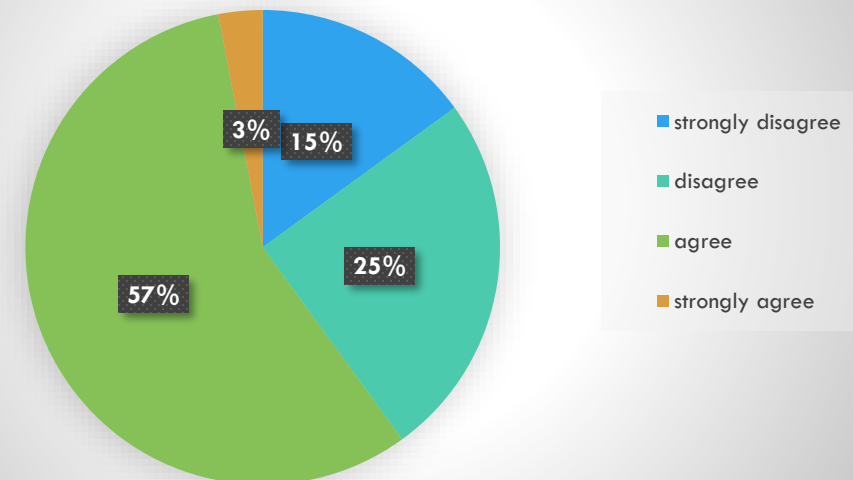
INFERENCE: the above data depicts that 42% of doctors satisfied with the layout of the printed prescription.

SATISFACTION WITH THE LAYOUTS OF PRINTED PRESCRIPTION
N=100



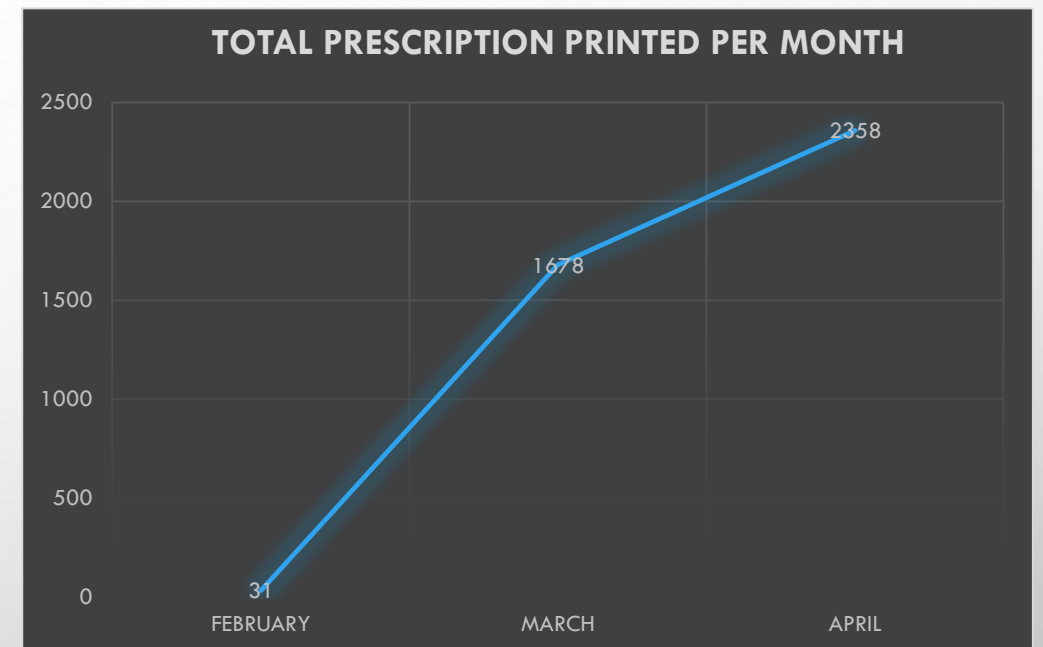
INFERENCE: the above data depicts that 57% of doctors satisfied with EMR system.

OVERALL SATISFACTION WITH EMR
n=100



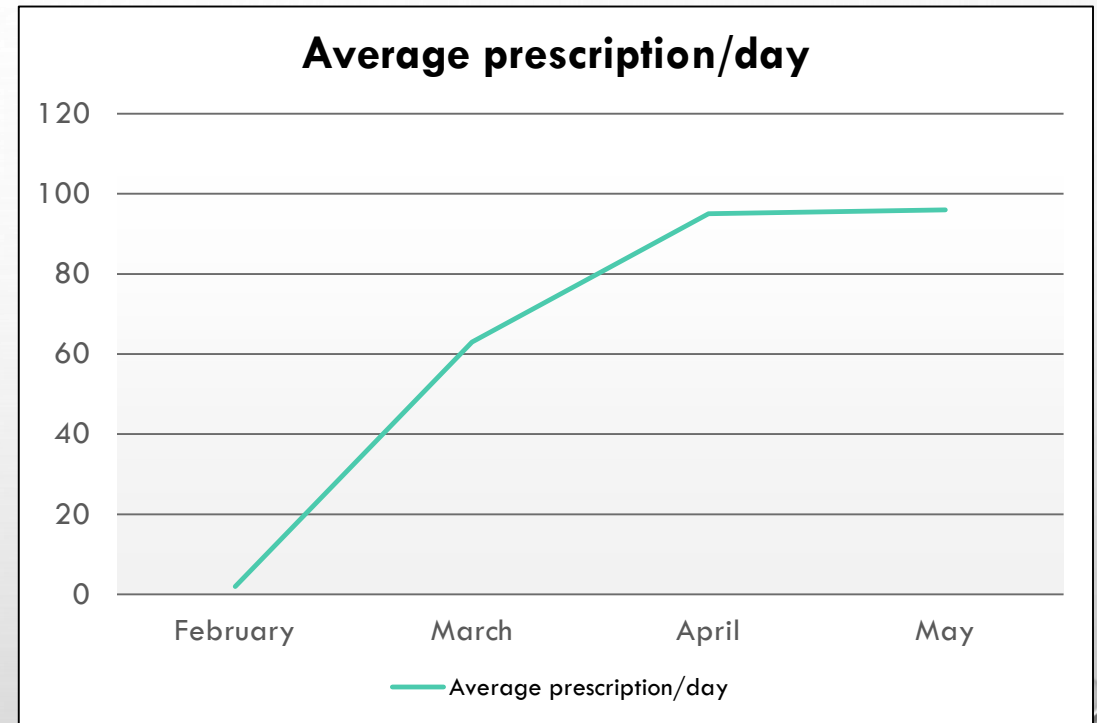
- Data is collected from 10th February to 10th May.
- Total number of doctors on boarded till the given time period are 91

S.No	Month	Total no. of days	Total no. of doctors onboarded	Total no. of prescriptions
1	February	17	19	31
2	March	27	34	1696
3	April	25	35	2399
4	May	9	3	870



- Number of average prescriptions printed by doctors per day in each month

S.No	Month	Average prescription/day
1	February	2
2	March	63
3	April	95
4	May	96



RECOMMENDATIONS

- Status of cash patients should reflect on OP dashboard.
- The process of typing “apd1.0010...” (username) should be automatically set as a default rather by entering the whole set.
- File format such as “pdf” should be enabled at attachment option towards uploading of the file.
- Under medicines options “generic name” are different from listed medicines. Same needs to be updated.
- Connectivity issues should be resolved.
- Options like “click here for parameters, click here for global parameters & swap template should be removed from patient landing screen.
- Auto text option should be there for easy work.

CONCLUSION

- The initial monitoring has shown positive growth chart, wherein satisfaction rate in terms of accepting the application as user- friendliness and ease to use is being rated. The strategy to move from volume to value and ability to bear risk on all fronts is being calculated on a timely basis.
- Stating that initiatives taken by Apollo to move towards digitalization and make it a better patient welfare organization, all efforts are being maximized to move toward one goal.

“Let’s make smart Apollo. Let’s accept the change and bring the change”

***Thank
You!***