



DISSERTATION IN APOLLO HOSPITALS

A STUDY ON DOCTORS USER SATISFACTION WITH AN ELECTRONIC MEDICAL RECORDS SYSTEM “DNA MED-MANTRA” IN OUTPATIENT DEPARTMENT

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PG/16/34

HEALTH I.T

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INTRODUCTION OF ORGANIZATION



- THE APOLLO HOSPITALS GROUP WAS STARTED BY DR. PRATHAP C. REDDY IN 1979.
- INDIA'S LARGEST HEALTHCARE CHAIN, AND IS THE SECOND LARGEST HOSPITAL IN DELHI
- APOLLO HOSPITAL HAS BEEN ACCREDITED IN 2005, JULY BY JOINT COMMISSION INTERNATIONAL (JCI) USA AS THE FIRST INTERNATIONALLY ACCREDITED HOSPITAL IN INDIA AND SOUTH ASIA

- THE GROUP STARTED ITS FIRST HOSPITAL AT CHENNAI IN 1983 WITH THE INITIAL BED STRENGTH OF 150
- THE BED STRENGTH TODAY STANDS AT OVER 9000 AND IN APOLLO INDRAPRASTHA IT IS OVER 750
- THIRD SUPER SPECIALTY TERTIARY CARE HOSPITAL SET BY THE APOLLO HOSPITALS GROUP, JOINTLY WITH THE GOVERNMENT OF DELHI, INDIA'S CAPITAL.
- 24 DEPARTMENTS IN APOLLO JASOLA
- THE FIRST SUCCESSFUL PEDIATRIC AND ADULT LIVER TRANSPLANTS IN INDIA WERE PERFORMED AT APOLLO HOSPITALS IN NOVEMBER 1998

ROLE AND REPONSIBILTIES

DESIGNATION-

- WORKING AS A HIMS PROJECT COORDINATOR

RESPONSIBILITIES-

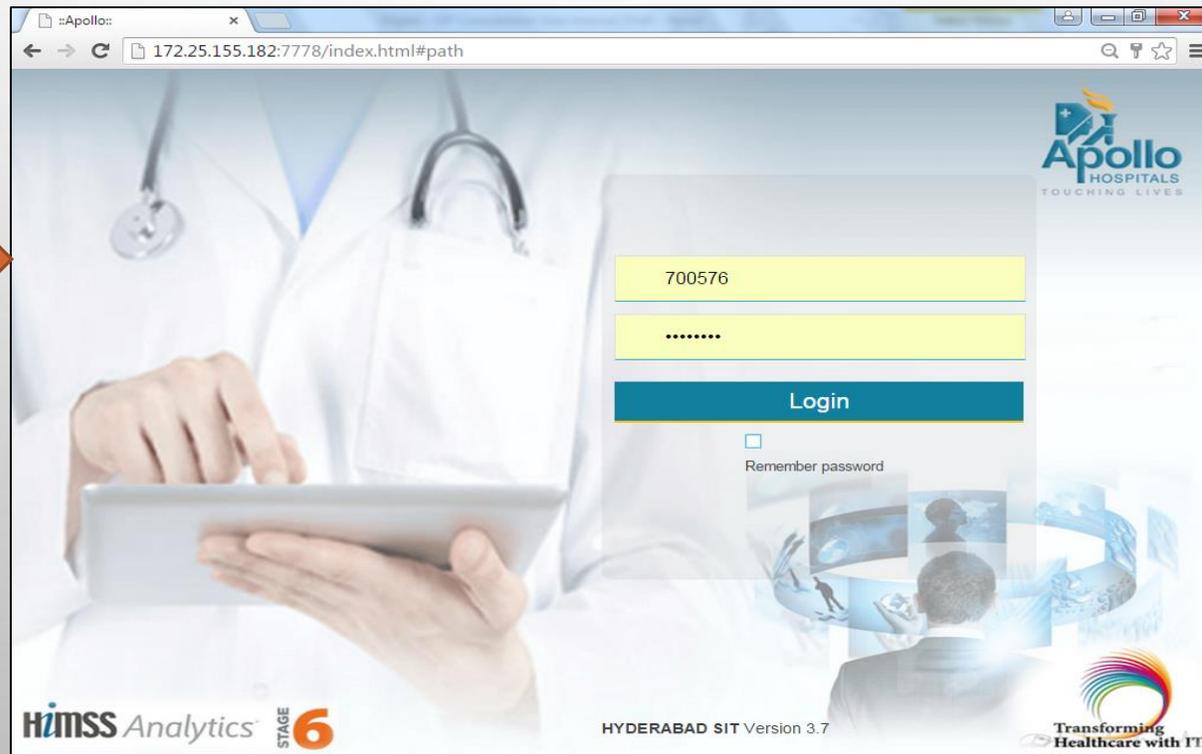
- PROVIDING TRAINING TO ALL THE DOCTORS AND THEIR SECRETARIES
- FOLLOWING UP OF DOCTORS AFTER TRAINING
- SOLVING DOCTOR'S QUERIES REGARDING SOFTWARE FUNCTIONALITY
- PROVIDING RECOMMENDATIONS OF DOCTORS IN SOFTWARE TO SOFTWARE DEVELOPMENT TEAM

OVERVIEW OF MED-MANTRA

- IN 2014, NOV TATA CONSULTANCY SERVICES (TSC) DEVELOPED ONLINE EMR APPLICATION AND NAMED AS “MED-MENTRA”
- ENABLE THE TRACKING OF PATIENT’S RECORDS AT THE DIGITAL PLATFORM.
- MED-MANTRA INCLUDES O.P AND I.P CONSULTATION MODULE.

LOGGING INTO

MED-MANTRA →



DOCTOR'S
OP DASHBOARD

Out Patients

Chennai - Main, Greams 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

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](#)

Allergies

Cardiac Risk Factor

Complaints

Current medication

Familv history

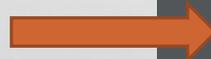
HOPI

Past history

Phvsical examination

[Swap Template Format](#)

E-PRESCRIPTION



GetOPServiceRequestsReport

OP Prescription

Patient Name : Mr. R K NAGAR		Sex : Male	
Age : 58Yr 7Mth 16Days		UHDID : APD1.0010868295	
UHDID : APD1.0010868295		OP Number : OP8700	
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

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OBJECTIVE & METHODOLOGY

OBJECTIVE

- TO DETERMINE THE SATISFACTION LEVEL OF THE DOCTORS WITH THE ELECTRONIC MEDICAL RECORDS SYSTEM NAMED MED-MANTRA AND TO SUBMIT RECOMMENDATIONS TO ADDRESS THE LIMITATIONS.

METHODOLOGY

- **STUDY LOCATION:** OUT PATIENT DEPARTMENT (OPD) OF INDRAPRASTHA APOLLO HOSPITALS.
- **STUDY POPULATION:** DOCTOR IN OUT PATIENT DEPARTMENT (OPD) OF INDRAPRASTHA APOLLO HOSPITALS.
- **STUDY DESIGN:** CROSS-SECTIONAL (DESCRIPTIVE STUDY).
- **STUDY DURATION:** 3 MONTHS.
- **SAMPLING TECHNIQUE:** PURPOSIVE SAMPLING
- **SAMPLE SIZE:** 100 DOCTORS

- **DATA COLLECTION TOOL:**

- CHECKLIST – 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 CONSULTANTS.

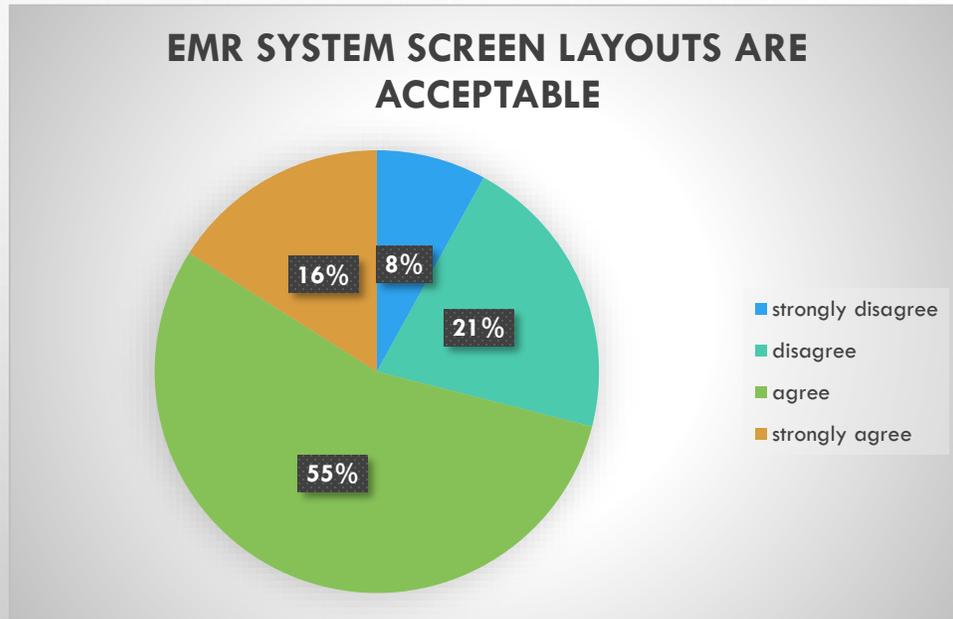
- **SELECTION CRITERIA –**

- **INCLUSION CRITERIA: -**
OPD PHYSICIANS AND CONSULTANTS

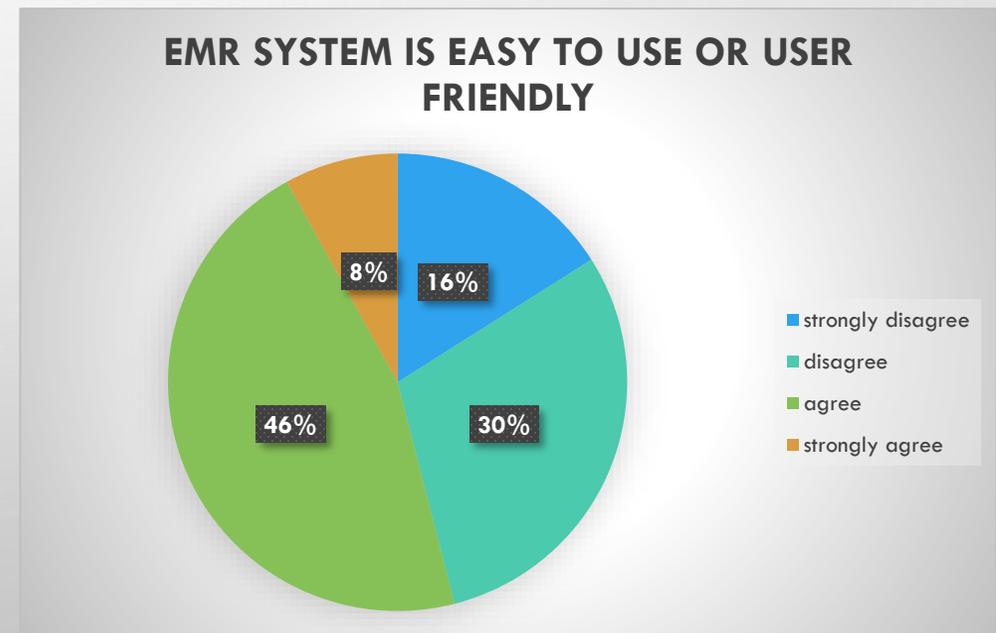
- **EXCLUSION CRITERIA: -**
IPD DOCTORS
VISITING CONSULTANTS
NURSES

RESULTS AND DATA INTERPRETATION

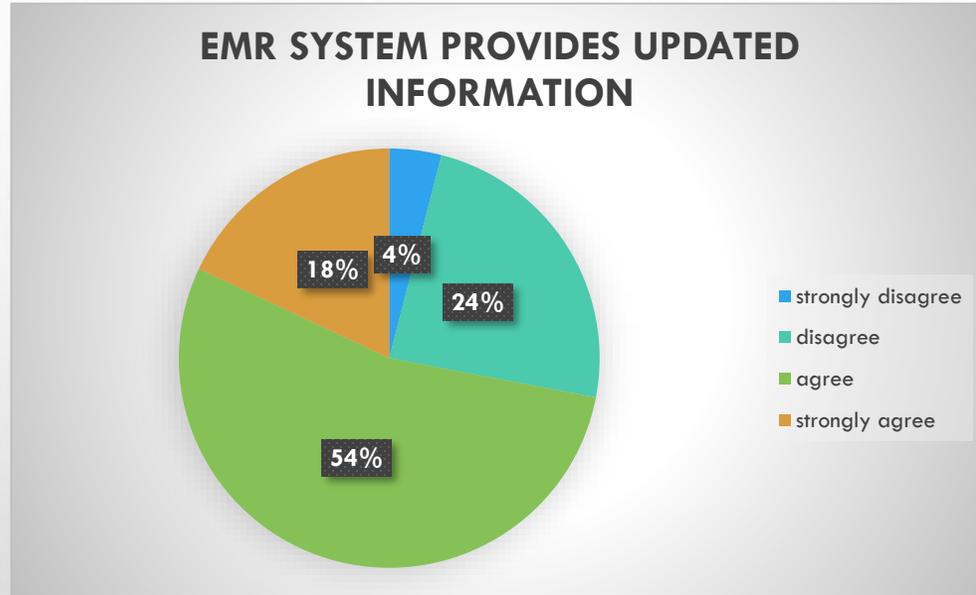
1. ACCEPTABILITY OF EMR SYSTEM LAYOUTS BY THE OPD DOCTORS ?



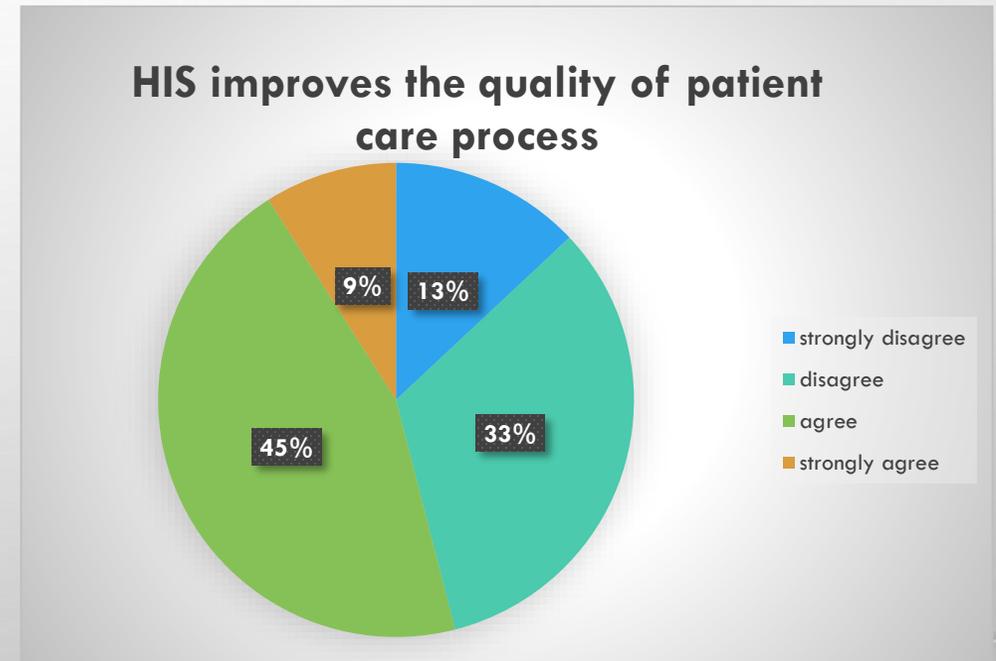
2. EMR SYSTEM IS EASY TO USE OR USER FRIENDLY?



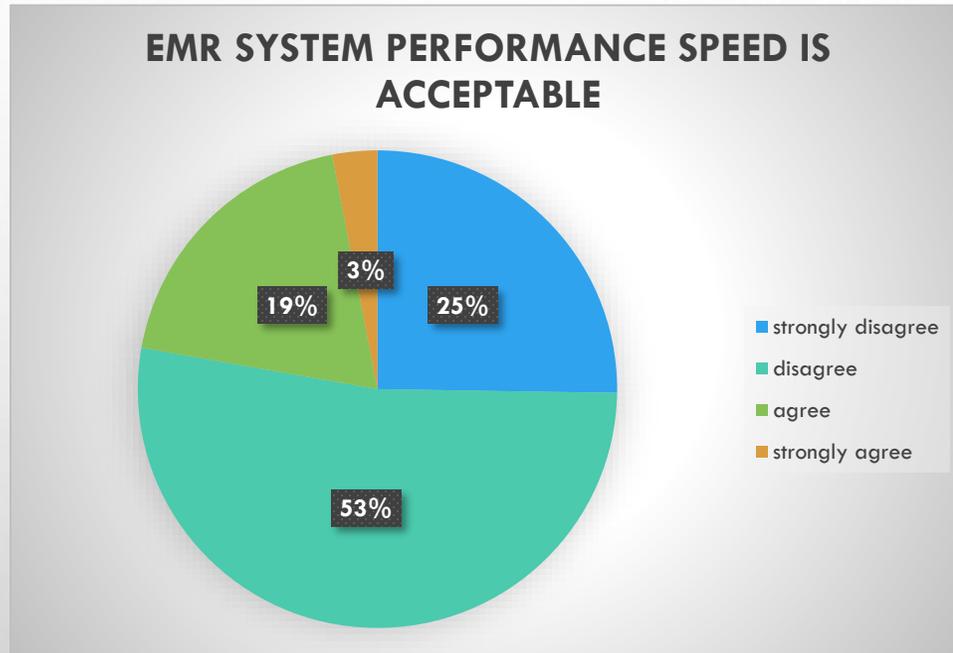
3. EMR SYSTEM PROVIDES UPDATED INFORMATION ?



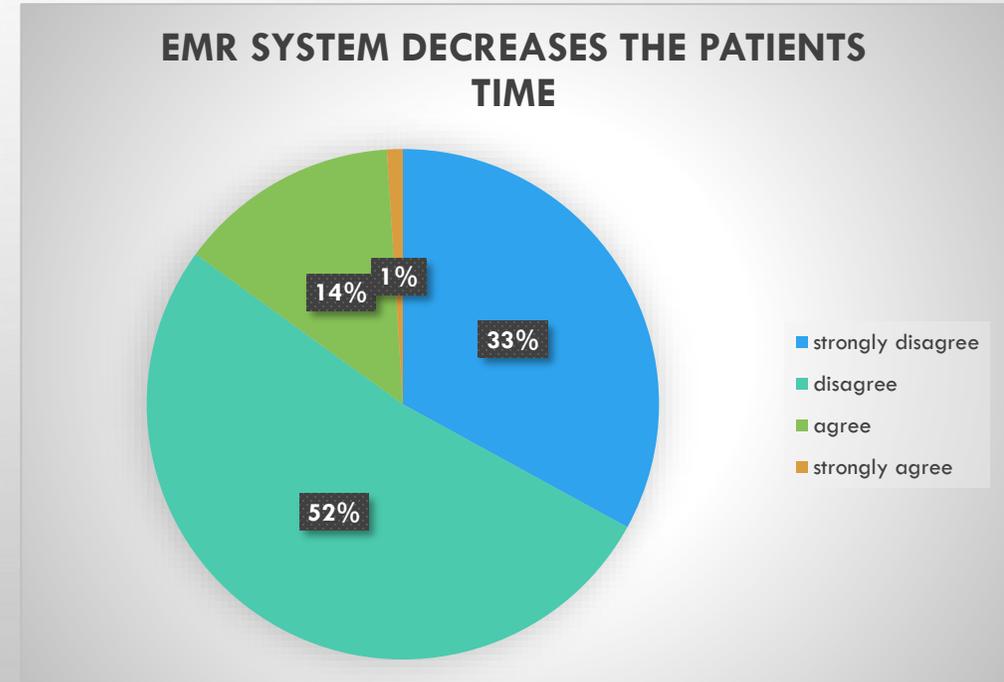
4. HIS IMPROVES THE QUALITY OF PATIENT CARE PROCESS ?



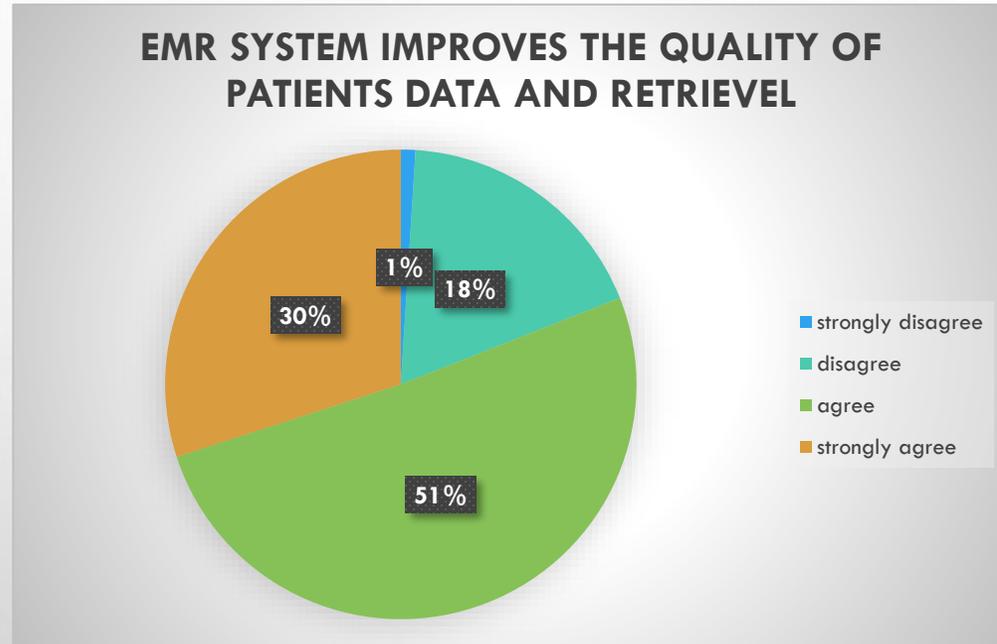
5. EMR SYSTEM PERFORMANCE SPEED IS ACCEPTABLE ?



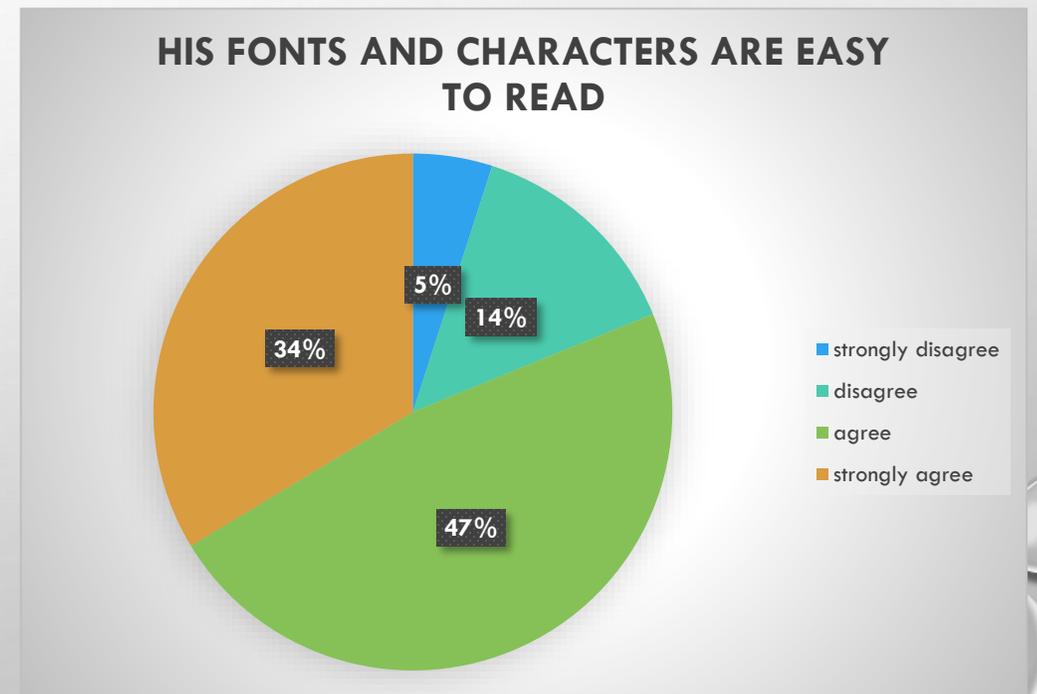
6. EMR SYSTEM DECREASES THE TIME SPENT ON PATIENT ?



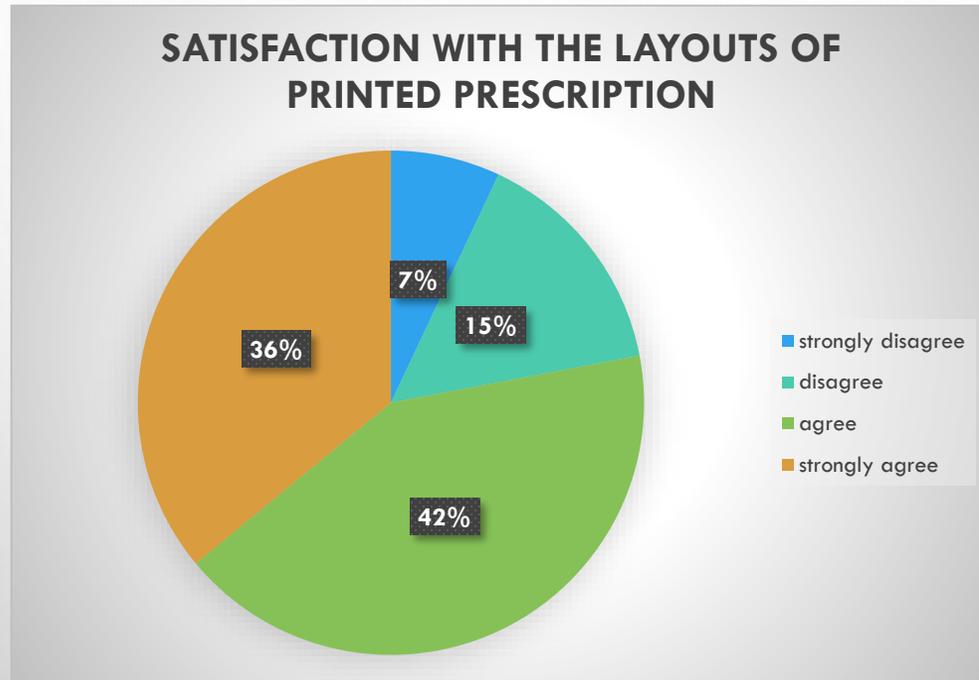
7. EMR SYSTEM IMPROVES THE QUALITY OF PATIENT DATA AND RETRIEVAL ?



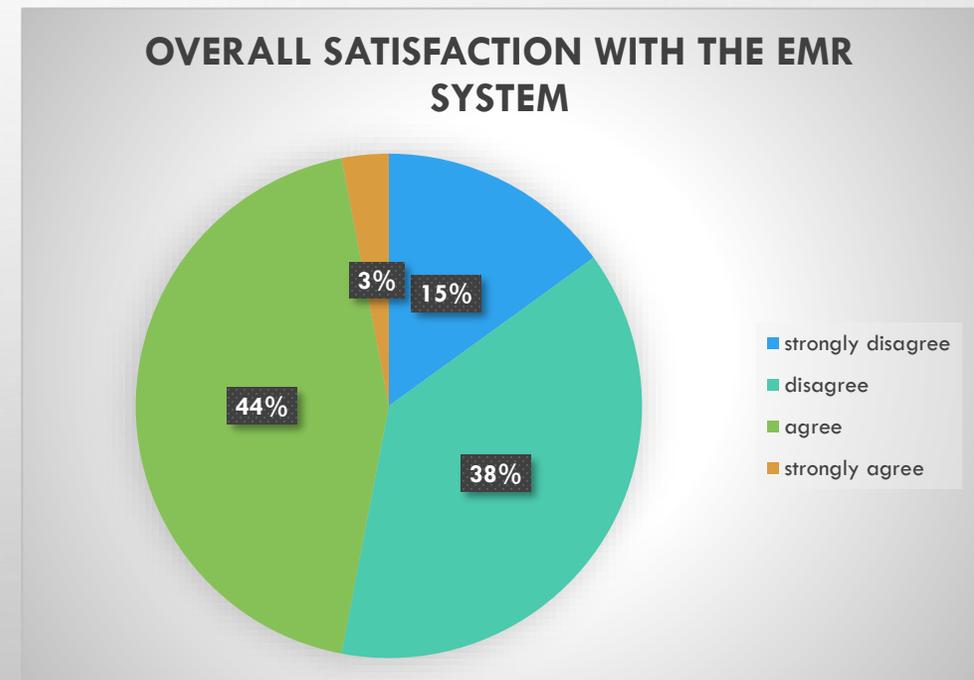
8. HIS FONTS AND CHARACTERS ARE EASY TO READ ?



9. SATISFACTION WITH THE LAYOUTS OF PRINTED PRESCRIPTION ?

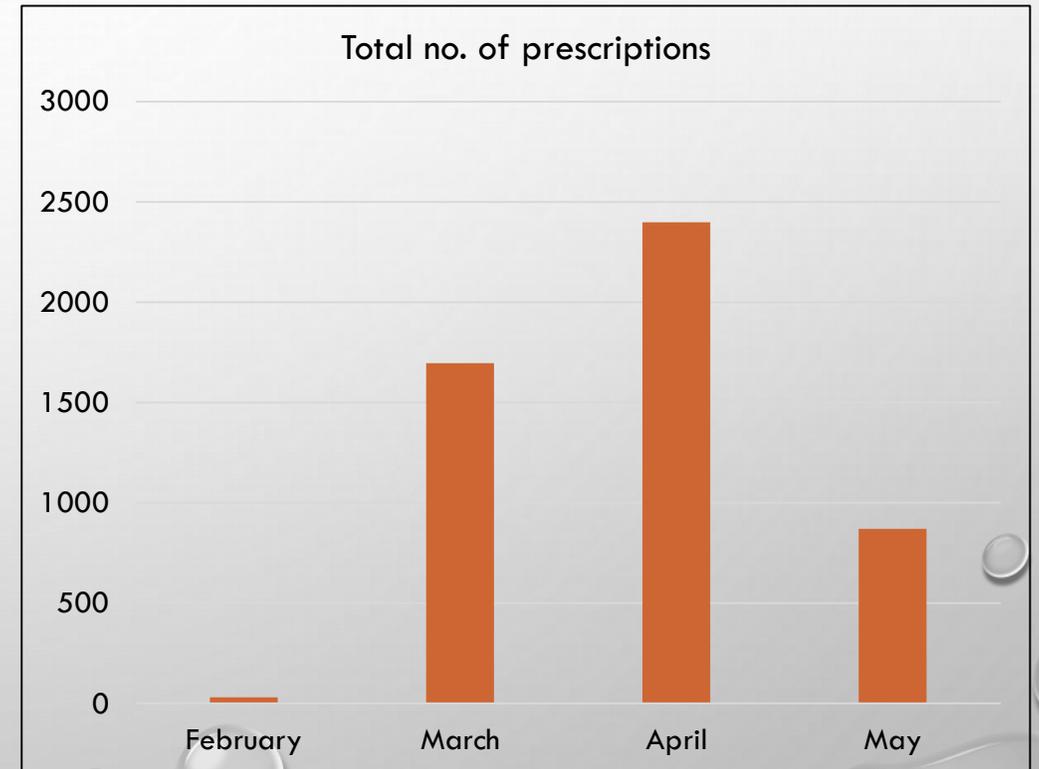


10. OVERALL SATISFACTION WITH THE EMR SYSTEM



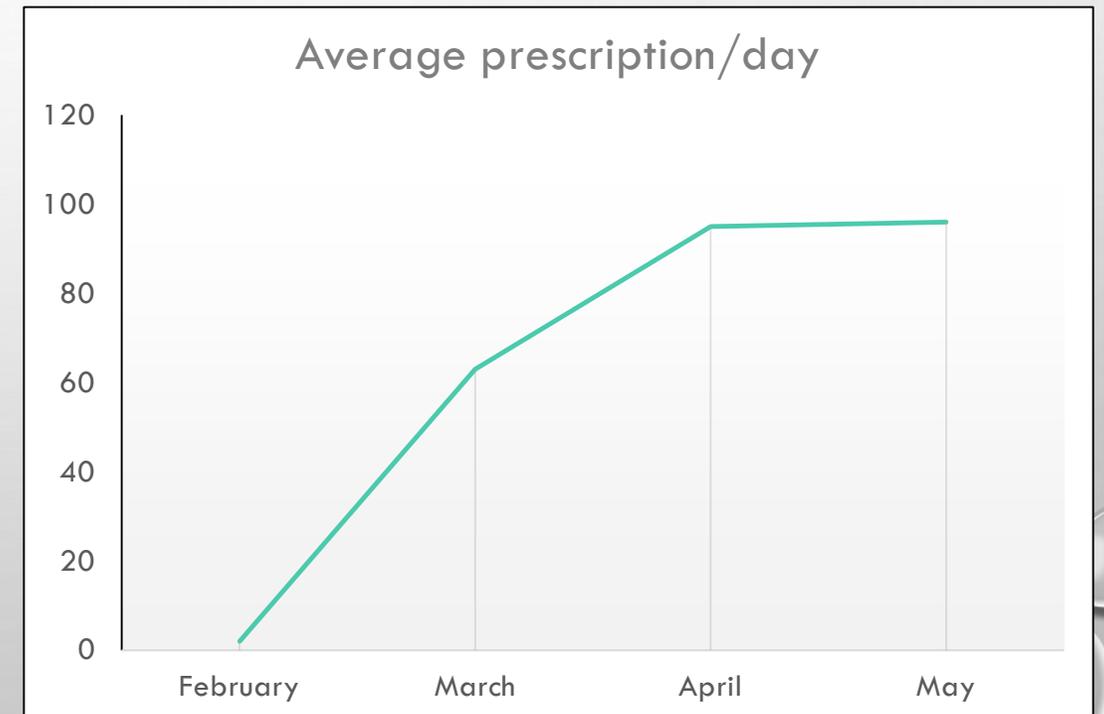
- DATA IS COLLECTED FROM 10TH FEBRUARY TO 10TH MAY. TOTAL NUMBER OF DOCTORS ON BOARDED TILL THE GIVEN TIME PERIOD ARE 91

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



GAP ANALYSIS

➤ MAJOR CHALLENGES IN MED-MANTRA

- ONLY CREDIT PATIENTS WERE REFLECTING ON DASHBOARD.
- NETWORK CONNECTIVITY ISSUE
- IN 'ATTACHMENT' PARAMETER OF PRESCRIPTION, ONLY FILE FORMAT SUCH AS 'JPEG' WAS GIVEN.
- THE OVERALL PROCESS OF TYPING E-PRESCRIPTION WAS VERY LENGTHY AND TIME CONSUMING.

➤ CHALLENGES FACED BY DOCTORS

- DOCTORS COULDN'T USE EMR WHENEVER THERE WAS HEAVY PATIENT FLOW.
- NOT FEELING COMFORTABLE IN TYPING LENGTHY PRESCRIPTION
- IT WAS HAMPERING THE LEVEL OF THEIR PATIENT SATISFACTION.

RECOMMENDATIONS

- THE STATUS OF CASH PATIENTS SHOULD REFLECT ON OP DASHBOARD.
- THE PROCESS OF TYPING USERNAME SHOULD BE AUTOMATICALLY SET AS A DEFAULT RATHER BY ENTERING WHOLE SET
- FILE FORMAT SUCH AS “.PDF” SHOULD BE ENABLED AT ATTACHMENT OPTION TOWARDS UPLOADING OF FILE IN E-PRESCRIPTION
- CONNECTIVITY ISSUES NEED TO BE IMPROVED
- UNNECESSARY STEPS IN MED-MANTRA SHOULD BE REMOVED FROM PATIENT LANDING SCREEN.



Thank
you!!