



Clinical Audit

A prescription audit for medication safety in a tertiary care centre of Tamilnadu, India

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1. Background

Objective

To systematically evaluate the quality, accuracy, and appropriateness of prescriptions to enhance patient safety, ensure compliance with guidelines, and improve overall healthcare delivery.

To discuss the strategies to reduce prescription error.

- Place of Audit: KMC Speciality Hospital, Cantonment, Trichy
- Duration of Audit: January 2024 to October 2024
- Source of Audit: Outpatient Department of KMC Speciality Hospital, Cantonment
- Done by: Clinical team

Methodology

This audit employed a retrospective analysis of prescription records over ten months (From Jan 2024 to Oct 2024). We evaluated the legibility of the prescription to meet NABH standards.

NABH standard for writing prescription

- Legibility: The prescription should be written in capital letters and be legible.
- Completeness: The prescription should include the name of the drug, strength, dose, and dosage form, route of administration, frequency, and duration.
- Signature: The doctor should sign the prescription, along with their name and registration number.
- Abbreviations: Abbreviations should not be used for prescribing medications.
- Decimals: When using decimals, leading zeros should be used, such as 0.5 mg.

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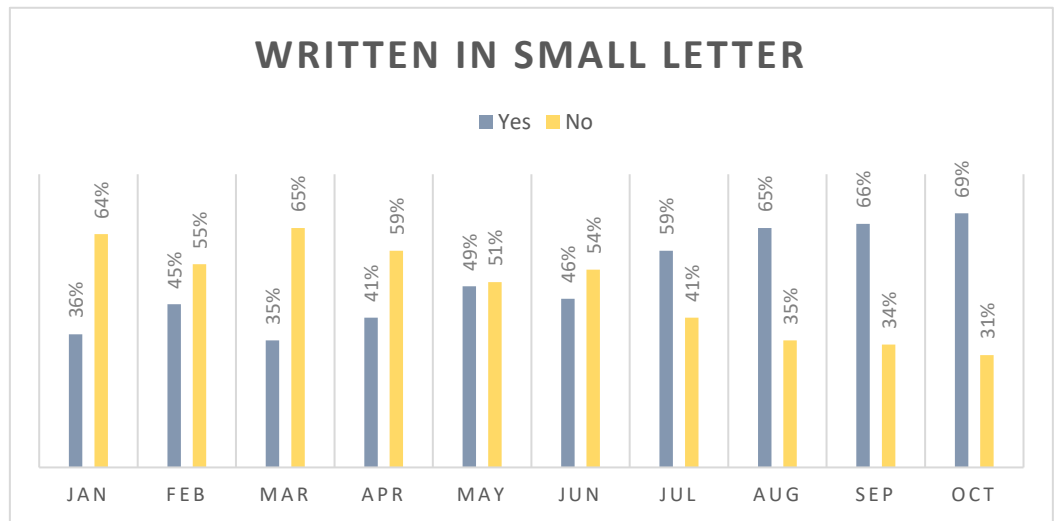
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2. Results and Discussion

Prescription Written in Small Letter

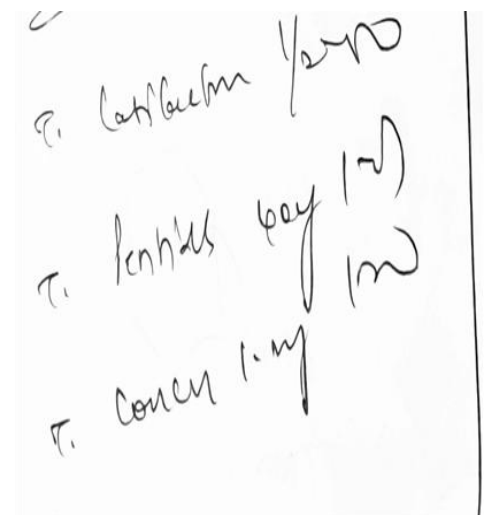
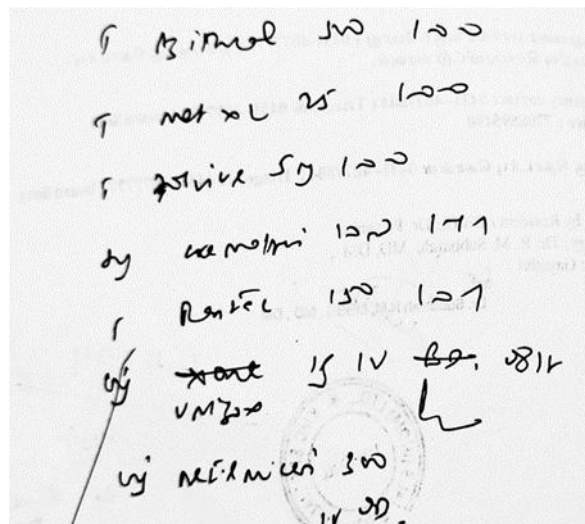


- No. of prescription audit 1703
- No. of prescription written in small letter 876
- No. of prescription written in capital letter 827

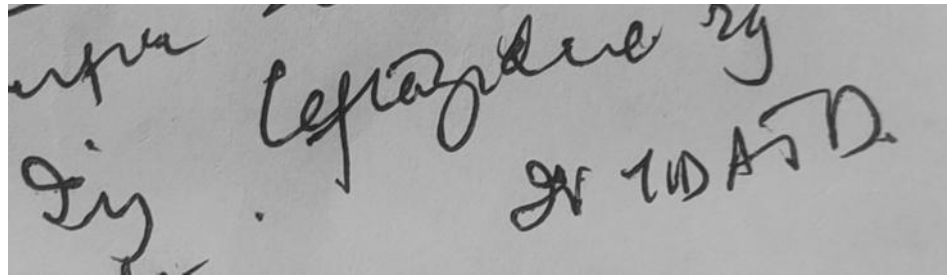
Approximately 49% written in capital letter and 51% written in small letter.

Prescription – Small Handwriting- Difficult to Interpret

Example 1

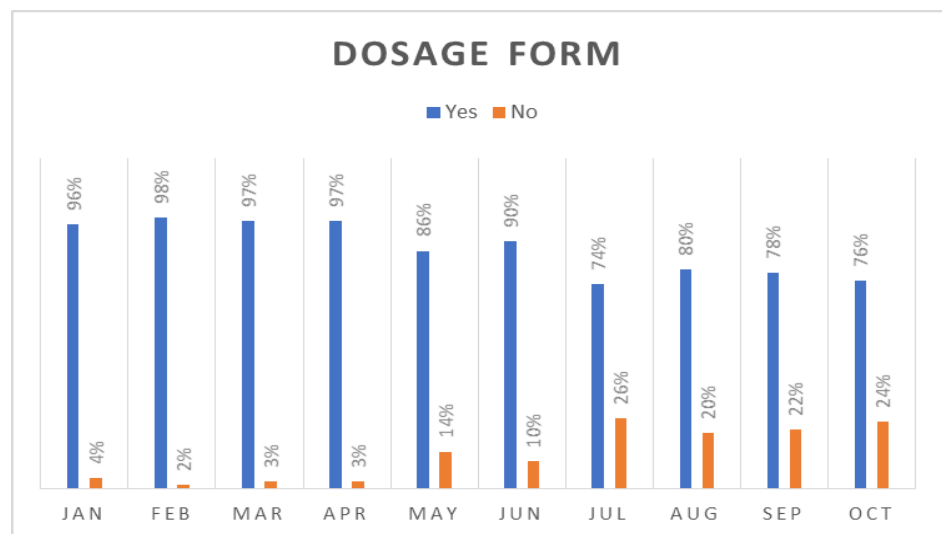


Example 2



? Ceftazidime/cefuroxime, if written in capital letters can be readable

Dosage form written in prescription



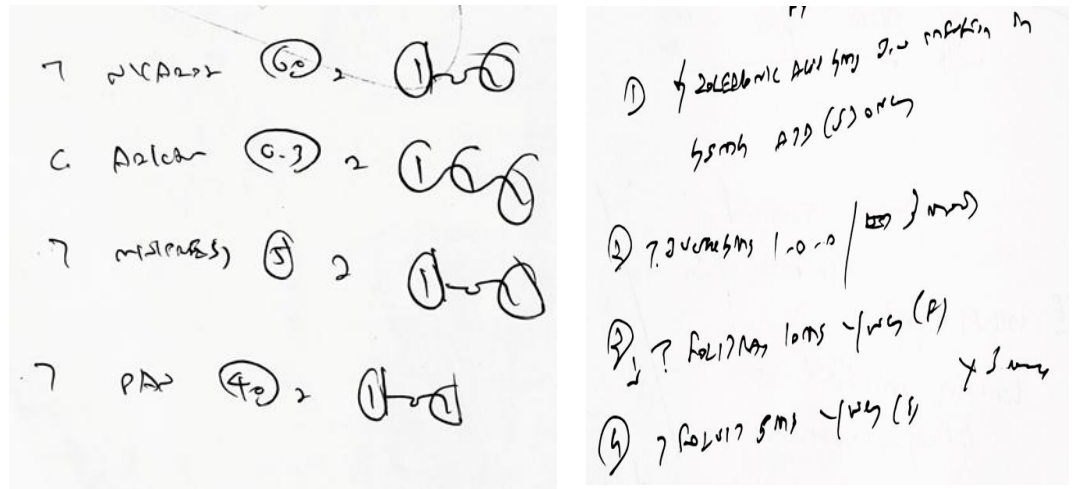
Dosage forms: Tablets, Capsules, Syrup, Powders, Injectable solution.

- No. of prescription audit 1703
- No. of prescription dosage form entered 1430
- No. of prescription dosage form not entered 223

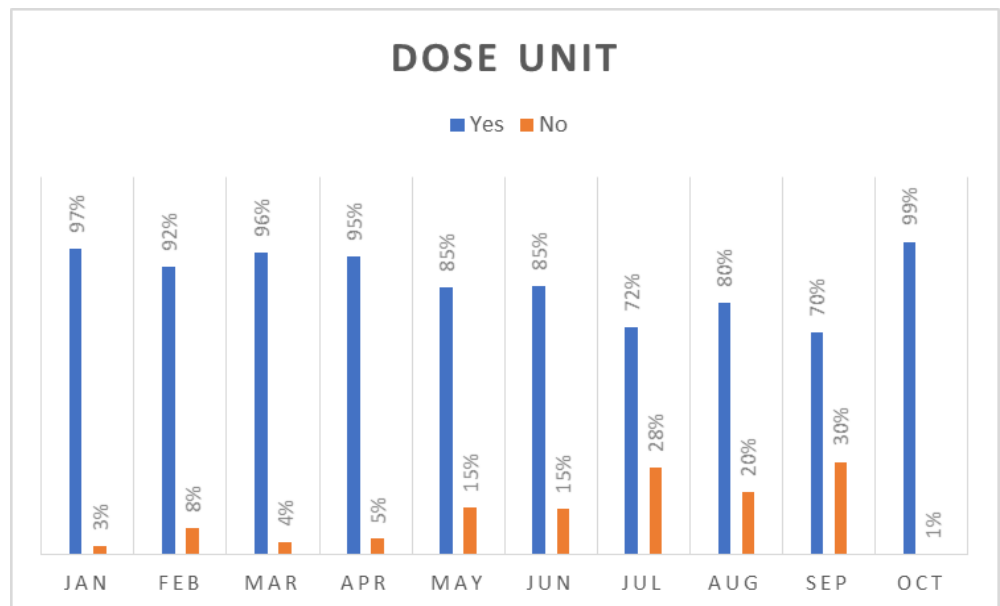
87% of prescription dosage forms have been entered and 13% were not entered.

Dosage Form Not Legible in Prescription

Example 1



Dose unit entry in prescription

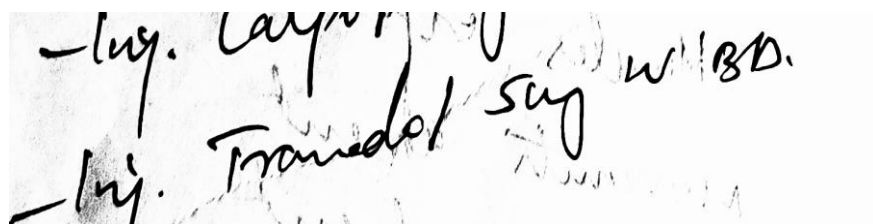


Dose unit entry: Milligrams (mg), Millilitres (mL), International Units (IU)

- No. of prescription audit 1692
- No. of prescription dose unit entered 1472
- No. of prescription dose unit not entered 220

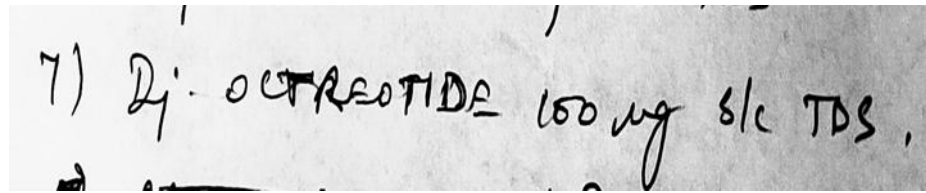
87% of prescription dose units were entered 13% were not entered.

Example 1



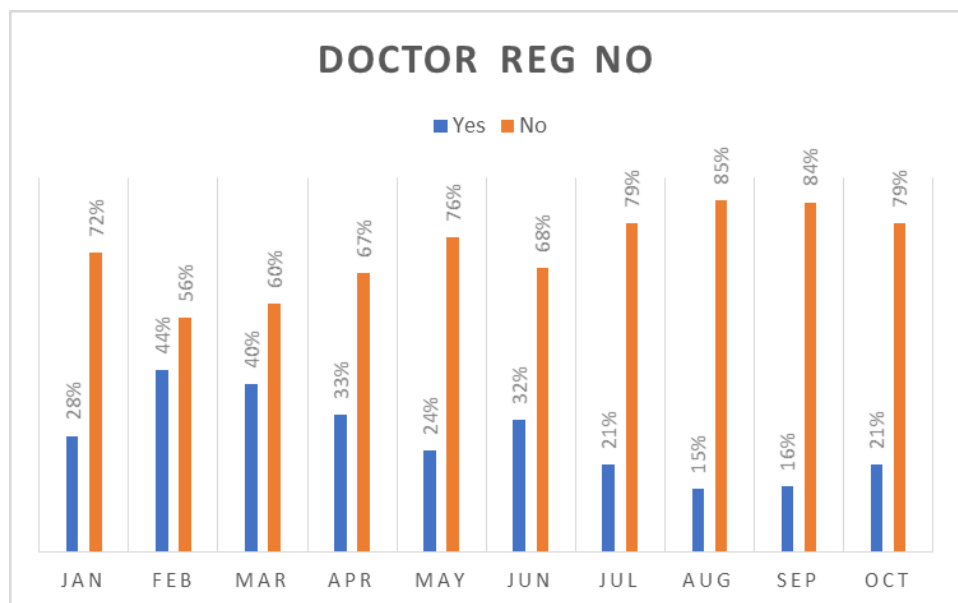
Dose unit mg is not legible. Dose of Tramadol 50mg can be read as 5 mg.

Example 2



The dose of the drug can be read as 150mg, but it is 100mcg

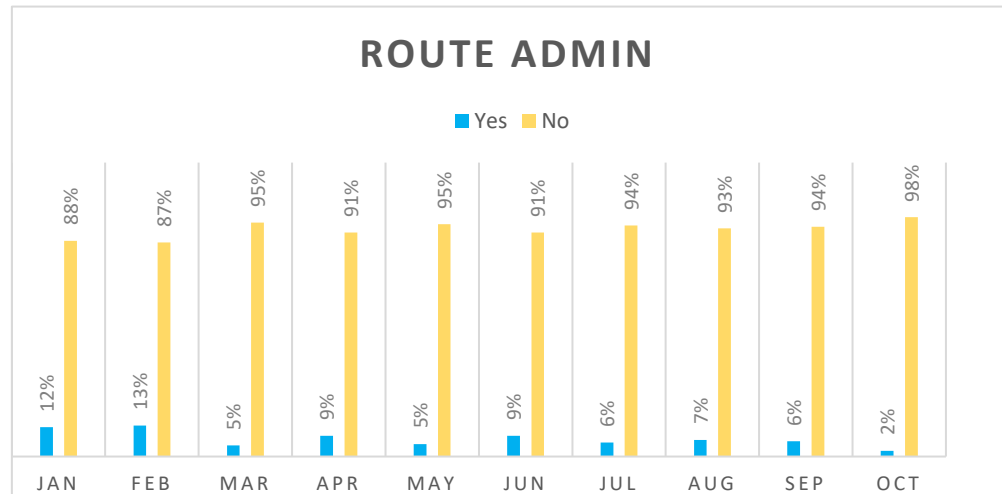
Registration number in prescription



- No. of prescription audit total 1695
- No. of prescription registration number written 456
- No. of prescription registration number not written 1239

27% of prescriptions were written registration numbers and 73% not written.

Route of Administration



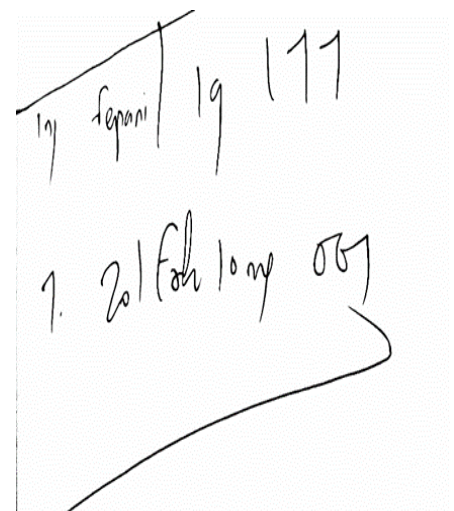
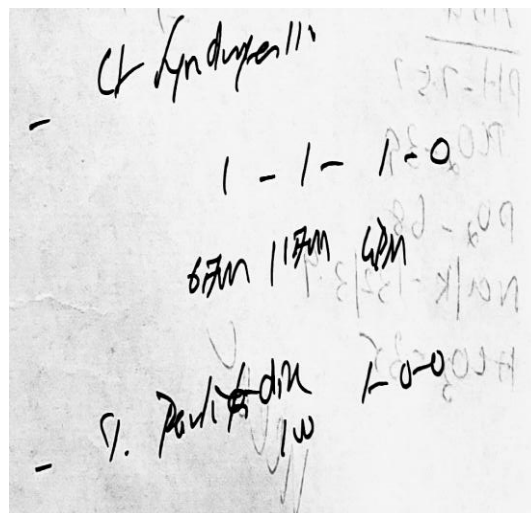
Route of administration: Intravenous (IV), Intramuscular (IM), Topical, Inhalation

- No. of prescription audit 1703
- No. of prescription route of administration entered 120
- No. of prescription route of administration not entered 1583

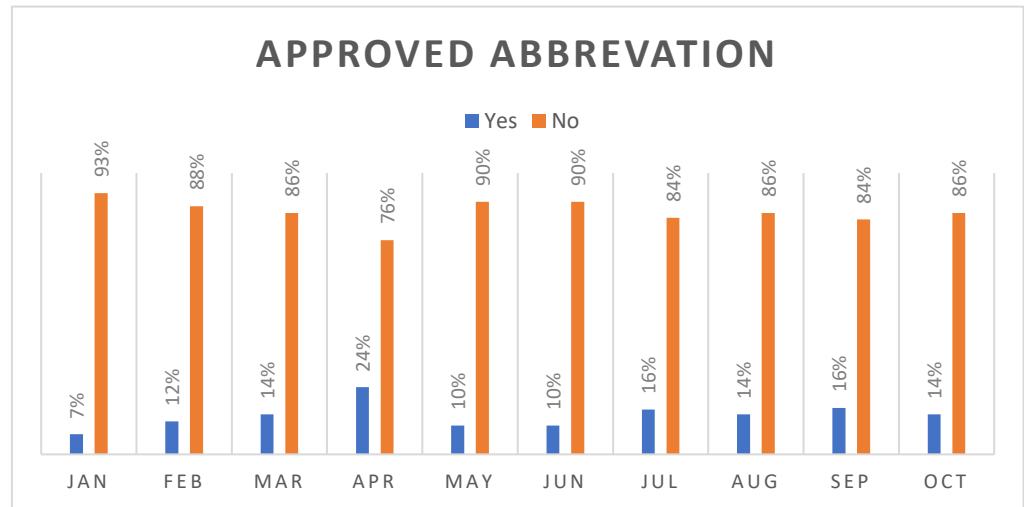
7% of prescription route of administration has been entered and 93% were not entered.

Route of administration written in prescription is not clear legible

Example 1



Usage of approved abbreviation

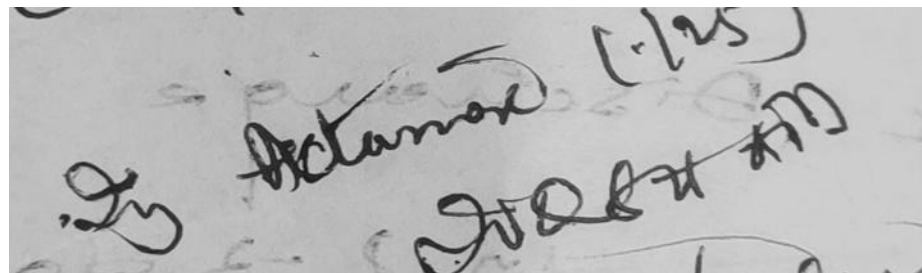


Abbreviations: qd - once a day, bid - twice a day, syr - syrup, tab - Tablet, cap - Capsule, inj - Injection.

- No. of prescription audit 1695
- No. of prescription usage of approved abbreviation 236
- No. of prescription not using the approved abbreviation 1459

14% of prescription usage of approved abbreviations and 86% were not entered.

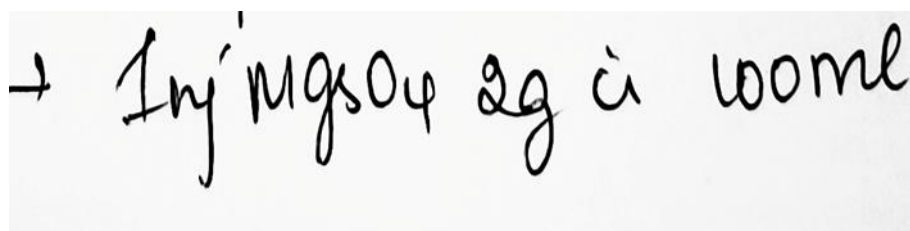
Example 1

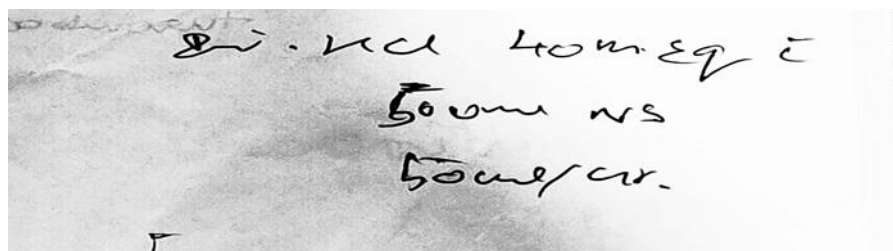


Approved abbreviation Injection (inj), written in the order, is not legible.

Example 2

Abbreviations should not be used for prescribing medications.

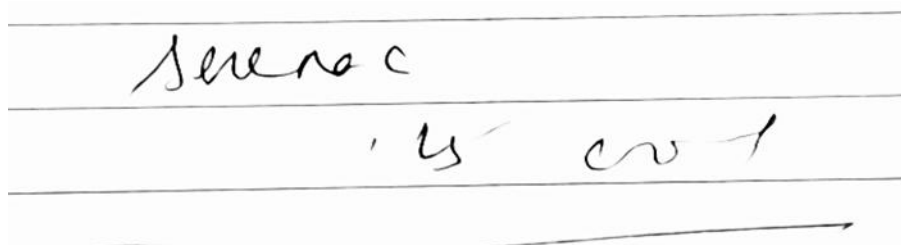




Abbreviation of Drug name, which should not be, used (example KCL, NACL, MGSO4.)
Need to be written as Potassium chloride, sodium chloride and is accepted.

Example 3

When using decimals, leading zeros should be used as per NABH standards



.25mg can read as 25mg, so needs to be written as 0.25mg which is clear.

3. Findings

Overall assessment of prescription audit reveals

S. No	Assessment	Results
1	Legibility of prescription	49%
2	Completeness of prescription	75%
3	Route of administration in prescription	7%
4	Registration number of doctor entered	27%
5	Approved abbreviation in prescription	14%

4. Strategies to Overcome Manual Prescription Errors

- Manual prescription errors are a significant concern in healthcare, as they can compromise patient safety.
- Prescription errors often arise due to illegible handwriting, incomplete information, incorrect dosages, or misinterpretation of instructions.
- Addressing this issue requires a multifaceted approach involving standardization, technology adoption, education, and system optimization.
- E-Prescribing (EMRs) is indeed solution in modern healthcare.

Aspect	EMR Prescription	Manual Prescription
Accuracy	Higher (automated checks for errors)	Prone to errors due to illegible handwriting
Legibility	Clear and standardized	Often illegible or inconsistent
Efficiency	Faster, integrated with pharmacy systems	Slower, requires physical transfer
Patient Safety	Alerts for drug interactions and allergies	Higher risk of mistakes and missed interactions
Prescription Sharing	Instant sharing with pharmacies and providers	Physically transferred, prone to delay/loss
Environmental Impact	Reduced paper waste, electronic storage	Generates paper waste and requires physical storage
Audit and Compliance	Easy tracking, integrated with regulations	Difficult to track and audit
Adaptability	Can quickly adapt to new guidelines or regulations	Slow adaptation to changes



THE NEW AGE FAMILY HOSPITAL



UHID No : CN240000512272	Patient Name : Master. Jasim R, 14Y/M
OP No : OPCN01026796	Speciality : Pulmonology
Date of Visit : 11/12/2024 9:51:20 AM	Doctor Name : [REDACTED]

Presenting complaints :

HR 117 SPO2 97

Diagnosis:

1. ACUTE EXACERBATION
ASTHMA

Rx	Frequency				In-Take (Duration)
	Morning (am 6am)	Afternoon (pm 12pm)	Evening (pm 6pm)	Night (pm 9pm)	
1. DOXY-1 LDR FORTE CAPSULE (DOXYCYCLINE (100MG) + LACTOBACILLUS (5BILLION SPORES))	1	0	0	1	After Food (5 Days)
2. SOMPRAZ 30 MG TABLET (ESOMEPRAZOLE (20MG))	1	0	0	0	Before Food (15 Days)
3. ALASPAN AM 5 MG TABLET (LORATADINE + AMBROXOL)	1	0	0	1	After Food (15 Days)
4. MEDROL 4 MG TABLET (METHYLPREDNISOLONE (4MG))	1	0	0	1	After Food (10 Days)

Review :

Review Date : 26-12-2024


[REDACTED]

(Reg. No. [REDACTED])



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THE NEW AGE HOSPITAL

UHID No : CN210000401964 Patient Name : Mr. Thambikkana ,82Y/M
 OP No : OPCN01025824 Speciality : Urology
 Date of Visit : 07/12/2024 12:23:43 PM Doctor Name : ~~XXXXXXXXXXXXXXX~~

Vitals :
 HR : 87 (BPM), BP : 150 / 90 (mm Hg), SPO2 : 97 (%)

Rx	Frequency				In-Take (Duration)	Remarks
	Morning (8AM-12PM)	Afternoon (12PM-5PM)	Evening (5PM-8PM)	Night (8PM-11PM)		
1. INJ. DEGAPRIDE 240 MG	0	0	0	0	After Food (0 Days)	DONE TODAY(S/C)
2. BONELAR 1000 CAPSULE (CALCITRIOL(0.25MCG)+ELEMENTAL CALCIUM(200MG)+ELEMENTAL ZINC(7.5MG)+VITAMIN K2-7(45MCG))	0	1	0	0	After Food (30 Days)	
3. TAB. ORGONIST 120 MG	1	0	0	0	After Food (30 Days)	
4. VOLTIRA GEL (DICILOFENAC DIETHYLAMINE(1.14%W/W) + LENSSED OIL(3%W/W) + METHYL SALICYLATE(10%W/W) + MENTHOL(5%W/W) + CAPSAICIN(0.025%W/W))	1	0	0	1	After Food (0 Days)	FOR LOCAL APPLICATION

General Advice :
 INJ. DEGAPRIDE 80 MG AFTER 30 DAYS

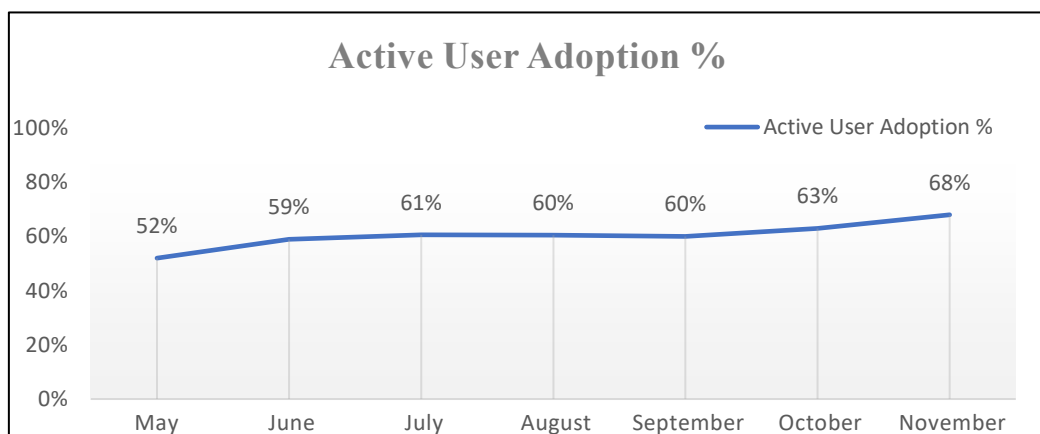
Review :
 Review Date : 06-01-2025

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EMR usage in OPD KMC cantonment



5. Conclusion

The transition from handwritten prescriptions to EMRs is driven by the need for efficiency, accuracy, and patient safety in healthcare. Both have their advantages and limitations, but EMR systems are increasingly becoming the standard in healthcare due to

their efficiency and potential to improve patient safety and care quality. While the transition may involve challenges, but the long-term benefits of EMRs—such as better compliance, reduced errors, and improved patient outcomes.