D.PHARM • SECOND YEAR

Hospital & Clinical Pharmacy

CHAPTER 12

Medication Errors and Drug Interactions



ENGLISH CHAPTER NOTES

DIPLOMA IN PHARMACY

MEDICATION ERROR: DEFINITION AND SYSTEM

NCC MERP DEFINITION

A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medicine is in the control of a healthcare professional, patient or consumer.

WHERE ERRORS CAN OCCUR



IMPORTANT DISTINCTIONS

- **Error**: a preventable process failure; harm may or may not occur.
- **Near miss**: error detected before reaching the patient.
- **Adverse Drug Reaction**: harmful unintended response at normal use; it is not automatically an error.
- **Adverse Drug Event**: patient harm involving a medicine; it may be preventable or non-preventable.

SAFETY CULTURE

Report hazards, near misses and errors without blame. Analyse the system: task, workload, environment, communication, technology, training and human factors.

Goal: learn and redesign before the same pathway harms another patient.

TYPES OF MEDICATION ERRORS



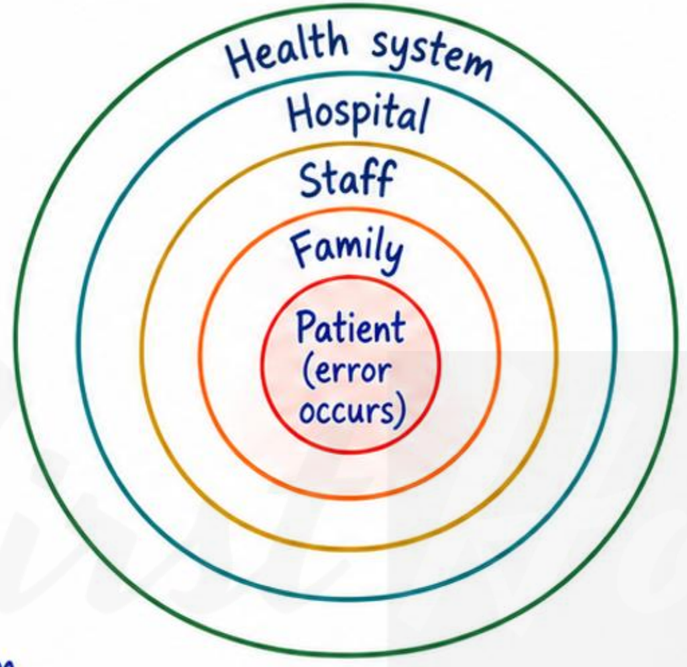
1. **PRESCRIBING**
   wrong medicine, dose, form, route, frequency or incomplete / unsafe order.
2. **OMISSION**
   required dose not administered or supplied.
3. **WRONG TIME**
   given outside the clinically or institutionally approved time window; the window depends on medicine and policy.
4. **UNAUTHORIZED MEDICINE**
   medicine not ordered or authorized for that patient.
5. **WRONG DOSE**
   more, less or different concentration than intended.
6. **WRONG DOSAGE FORM**
   incorrect formulation or release type.
7. **WRONG ROUTE**
   oral, IV, intrathecal or another route confused.
8. **WRONG TECHNIQUE**
   incorrect preparation, dilution, device use, rate or administration method.
9. **DETERIORATED PRODUCT**
   expired, damaged or improperly stored medicine used.
10. **MONITORING ERROR**
    necessary assessment, laboratory test or response review omitted.
11. **ADHERENCE-RELATED DISCREPANCY**
    prescribed plan not followed because of misunderstanding, access, complexity, side effects, forgetfulness or another barrier; investigate without blame.
12. **LASA ERROR**
    look-alike or sound-alike names, labels or packages confused.

One incident may fit more than one type.

CONSEQUENCES AND INCIDENT ANALYSIS

POSSIBLE CONSEQUENCES

- **Patient:** no harm, temporary harm, prolonged stay, disability or death.
- **Treatment:** therapeutic failure, toxicity or delayed recovery.
- **System:** extra tests, treatment and cost.
- **People:** patient distress, loss of trust and staff emotional impact.
- **Organization:** complaint, legal / regulatory action and reputational harm.

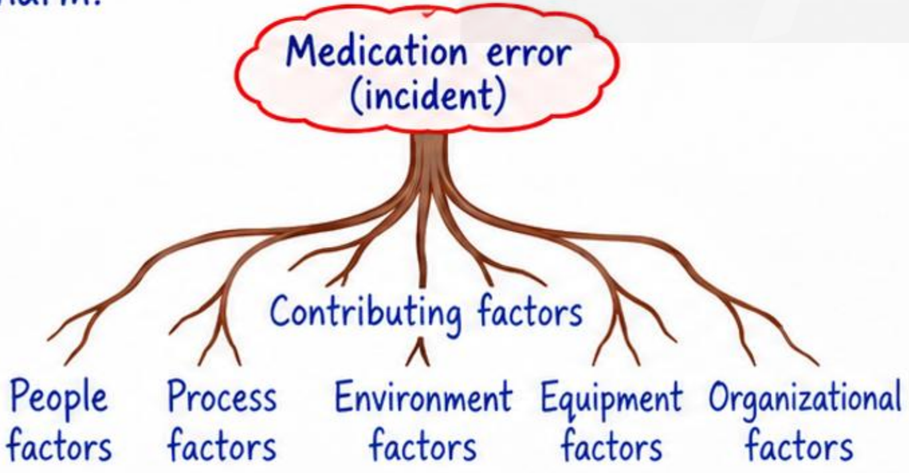


WHEN AN ERROR IS FOUND

1. Protect and assess the patient immediately.
2. Inform the responsible clinician and give required treatment.
3. Preserve accurate records; do not hide or alter documentation.
4. Disclose according to law and institutional policy.
5. Report the incident / near miss promptly.
6. Follow the patient and document outcome.

SYSTEM ANALYSIS

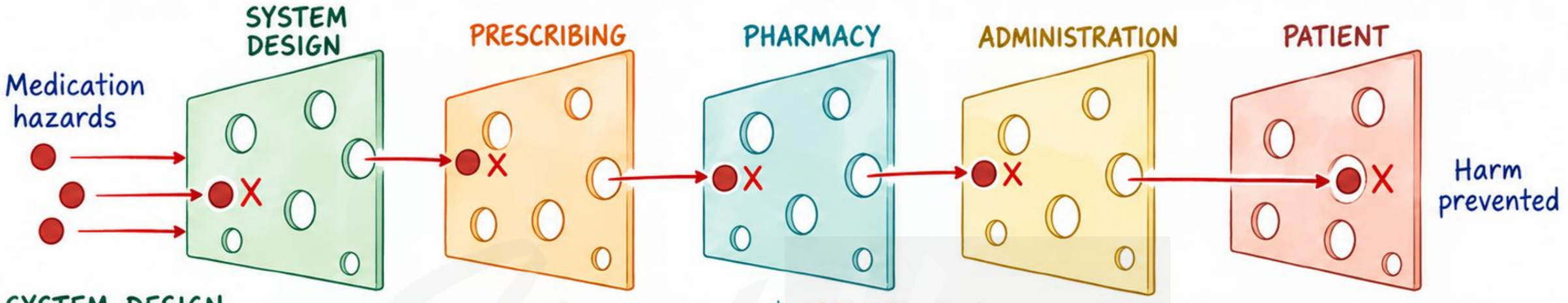
Ask what conditions allowed the error: confusing name or label, poor storage, unclear order, interruption, workload, inadequate handoff, equipment design, missing check or training gap.



IMPROVEMENT

Prefer strong actions—standardization, forcing functions, separation and redesign—over reminders alone. Measure whether the action prevents recurrence.

PREVENTING MEDICATION ERRORS



SYSTEM DESIGN

- CPOE with well-designed CDSS • standard order sets • clear policies • adequate staffing • interruption control • learning incident system.

PHARMACY

- Medication reconciliation • formulary standardization • unit dose • barcode verification • clear labels • LASA separation • high-alert safeguards • final check • controlled compounding.

ADMINISTRATION

- Use the rights of medication administration: right patient, medicine, dose, route and time—plus indication, documentation, response and patient education. Apply read-back for critical verbal orders and independent double check only where evidence / policy supports it.

TECHNOLOGY

- ADCs, smart pumps and barcodes support safety but require accurate data, maintenance, override review and a downtime plan.

PATIENT PARTNERSHIP

- Ask allergies and current medicines • explain purpose and changes • encourage questions • use teach-back • provide an updated medication list.

HIGH-ALERT PRINCIPLE

- Reduce reliance on memory: standardize concentration, limit access, use prominent warnings and monitor outcomes.

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