Enhanced Medication Safety

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Learning Objectives

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Upon completion of this session, participants will be able to;

- Recognize importance of medication safety.
- Identify medication errors in different setting.
- Discuss how to enhance medication safety.

Disclaimer:

This presentation is for academic purpose only.

Medication errors (MEs)

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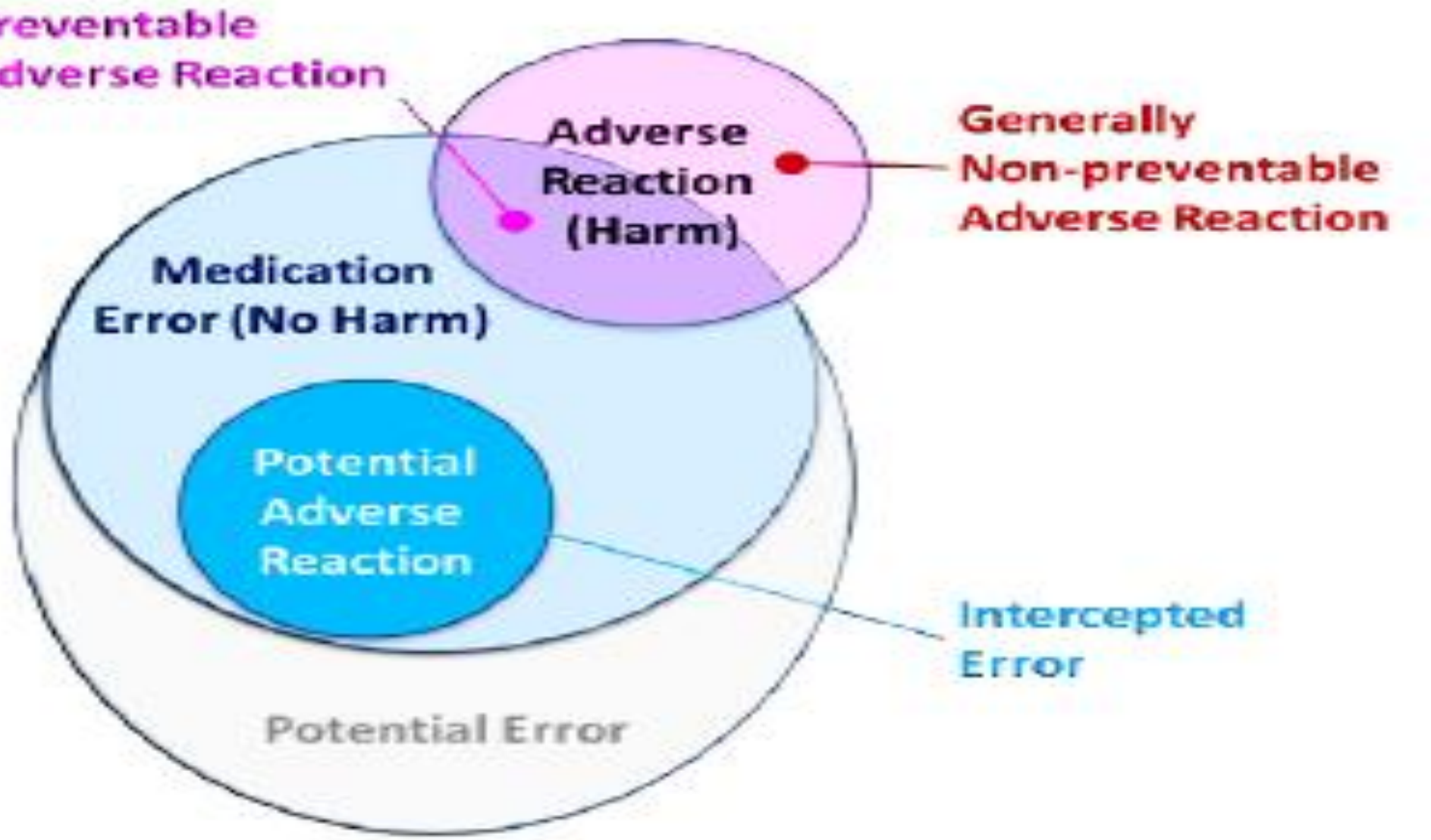
Medication errors (MEs) are defined as *any* mistake at *any* stage of the medication use process

- selection and procurement,
- storage,
- ordering and transcribing,
- preparing and dispensing,
- administration, or
- monitoring.

Medication errors
Correlation with harm and preventability



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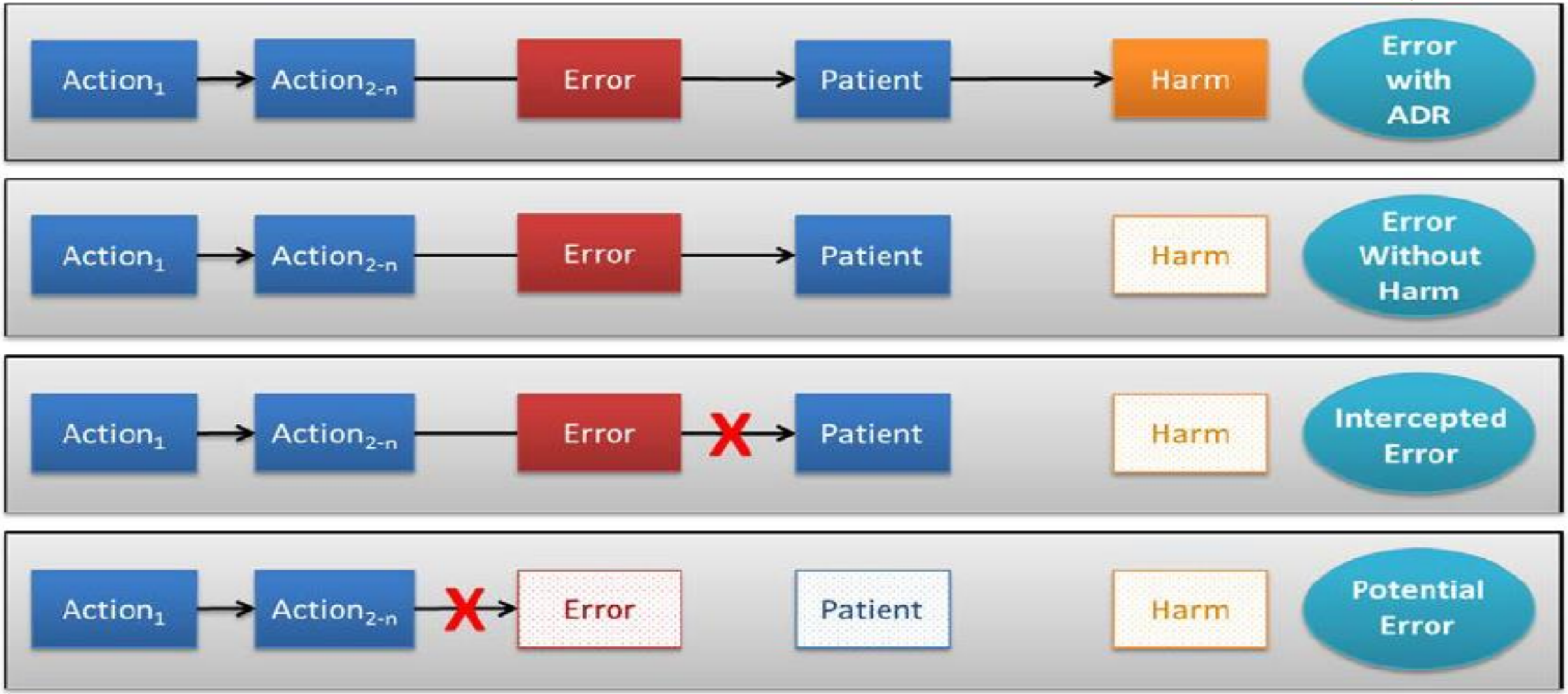

Examples

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- Patient was switched to different insulin product without dose adjustment written on the prescription and experienced hypoglycemia.

- Patient well controlled on antiepileptic medicines failed to get repeat supply and was hospitalized with partial seizures.

- Infant was administered overdose of antipyretic solution for infusion due to a confusion of ‘mg’ with ‘ml’.

Examples….

- Patient was dispensed the wrong product due to confusion of packs.
- A 3-month-old baby was inadvertently given an ibuprofen syrup quantity measured for a 3-year-old child.
- A father administered one paracetamol suppository to his child without knowing that the child already had received the suppository 10 minutes before.

Why Medication Safety is Important

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- ADEs are a serious public health problem.
- more than 1 million emergency department visits.
- **280,000 hospitalizations** each year.
- **$3.5 billion** is spent on medical costs of ADEs annually.
- more than 40% of costs related to ambulatory ADEs are **preventable**.

Most common **causes** are anticoagulants, antibiotics, Hypoglycemic drugs, and opioid analgesics.

- children and adolescents: **Antibiotics**
- adults : **Antibiotics**
- older adults: **Anticoagulants** and **Hypoglycemic drugs.**

Geriatrics

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- Twice as likely as others to come to ED.
- Nearly **seven times more likely to be hospitalized** after an emergency visit, mostly due to just a few drugs known to require careful monitoring.
- Common drugs that can require monitoring are
  - anticoagulants(e.g., warfarin),
  - diabetes medications (e.g., insulin),
  - antiepileptics(e.g., phenytoin),
  - digoxin

Antibiotics

- Antibiotics are one of the top prescribed medication classes.
- Cause over 140,000 ED visits for reactions to antibiotics each year.
- Cause one out of five (19%) ED visits for adverse drug events
- Almost four out of five (79%) ED visits for antibiotic-associated adverse drug events are due to allergic reactions

Insulin

- nearly 100,000 ED visits occurred each year in the U.S. for insulin-related hypoglycemia or errors when taking insulin.
  - Nearly **two-thirds** of the patients had **symptoms of severe hypoglycemia**, such as shock, seizures, or loss of consciousness.
  - Almost **one-third** of the ED visits resulted in **hospitalization.**

Adverse drug events are likely to grow

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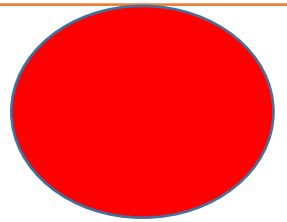
- Development of new medicines
- Discovery of new uses for older medicines
- Aging population
- Increased use of medicines for disease treatment and prevention
- Expansion of insurance coverage for prescription medicines

1. Center for Disease Control. Medication Safety Program. https://www.cdc.gov/medicationsafety/program_focus_activities.html. Accessed December 14, 2017.

High Alert Medications or High Risk Medicines

- Increased risk of causing **significant patient harm or death** if they are misused or used in error.
- Medicines with a **narrow therapeutic index**

High Alert Medication



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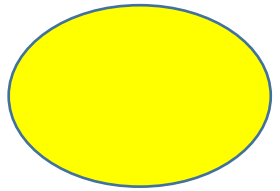
- Could cause an immediate life threatening condition for the patient if an error in administration occurs.
- **Labeled with a *red* dot.**

- Inj. Adrenaline
- Inj. Digoxin
- Tab. Warfarin
- Inj. Potassium chloride 15%
- Insulin

High Risk Medication



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- Risk of causing significant patient harm when they are used in error.
  - They are labeled with a *yellow* dot.

- Amiodarone
- Infusion. Dextrose 50%
- Inj. Metoprolol
- Inj. Phenytoin
- Tab. Glibenclamide

Look-Alike Sound-Alike (LASA) Medication

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Tall Man Lettering for Look-Alike Drug Names

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Drug Name With Tall Man Letters	Confused With
acetaZOLAMIDE	acetoHEXAMIDE
acetoHEXAMIDE	acetaZOLAMIDE
buPROPion	busPIRone
busPIRone	buPROPion
chlorproMAZINE	chlorproPAMIDE
chlorproPAMIDE	chlorproMAZINE
clomiPHENE	clomiPRAMINE
clomiPRAMINE	clomiPHENE
cycloSERINE	cycloSPORINE
cycloSPORINE	cycloSERINE
DAUNOrubicin	DOXOrubicin
dimenhyDRINATE	diphenhydrAMINE
diphenhydrAMINE	dimenhyDRINATE
DOBUTamine	DOPamine
DOPamine	DOBUTamine

Quality use of medicines in Thumbay Hospital, Ajman

- Medication management policy.
- Best possible medication history.
- Drug information services.
- Medication reconciliation at all transfers of care.
- Safer naming, labeling and packaging and storage of medicines.
- Recommendations for terminology, abbreviations and symbols used in medicines documentation.
- Standardized hospital medication charts.
- Patient education.

Summary ensure the 5 Rs

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Prescribing

Dispensing

Administering

RIGHT

1. Patient
2. Drug
3. Dose
4. Route
5. Time

Take home message

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- **“Improving medication safety” is important** because medication errors cause a significant proportion of adverse events.
- Know about the potential for adverse drug reactions
- Consider all relevant factors when prescribing, dispensing, administering, and monitoring the effects of medications.

Thank you

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DISCLAMER

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