

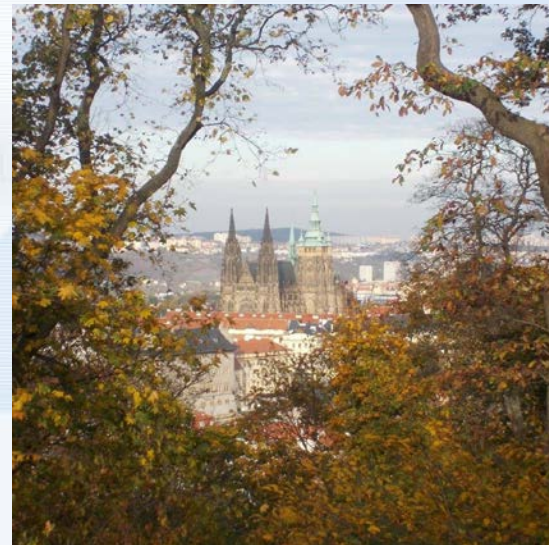
Quality Management and Patient Safety

Introduction to Medication Safety

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Learn about the Accreditation Process

- Prague Foundations Program
- February 6-8, 2018
- <https://www.jointcommissioninternational.org/prague-foundations-of-accreditation2018/>



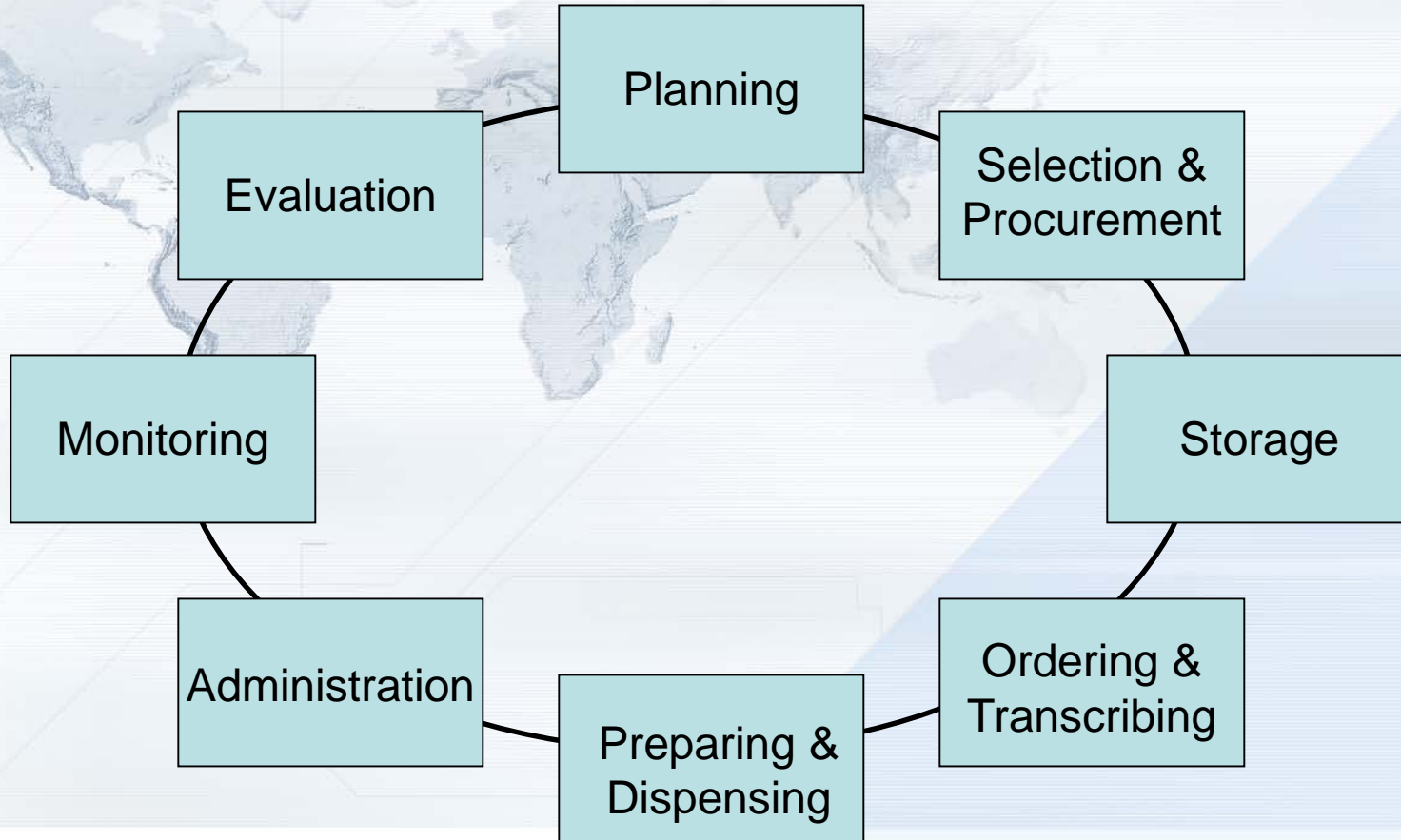


Background on Medication Safety

The Problem

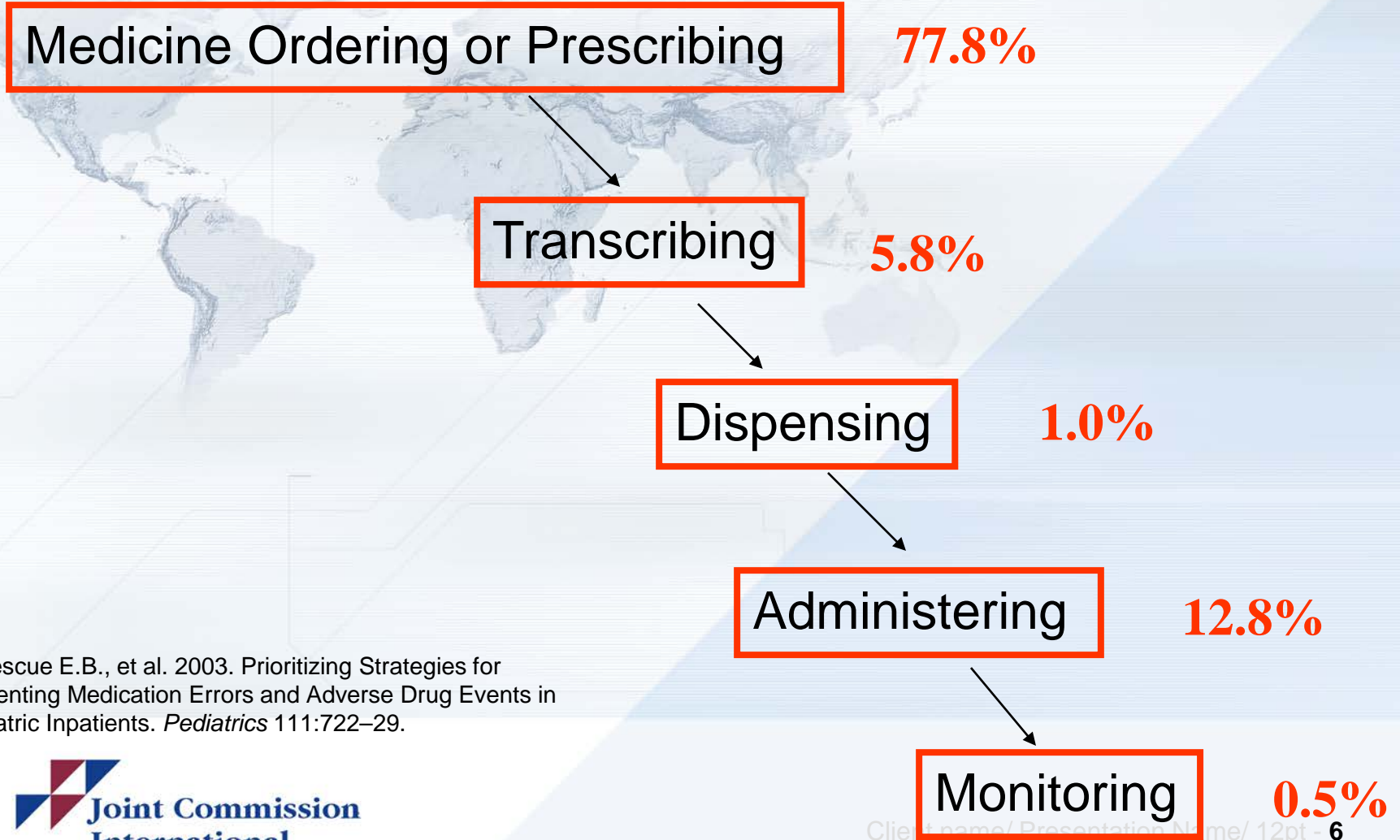
- Medication use has become increasingly complex in recent times
- Medication error is a major cause of preventable patient harm
- As healthcare provider, you have an important role in making medication use safe

The Medication Management System



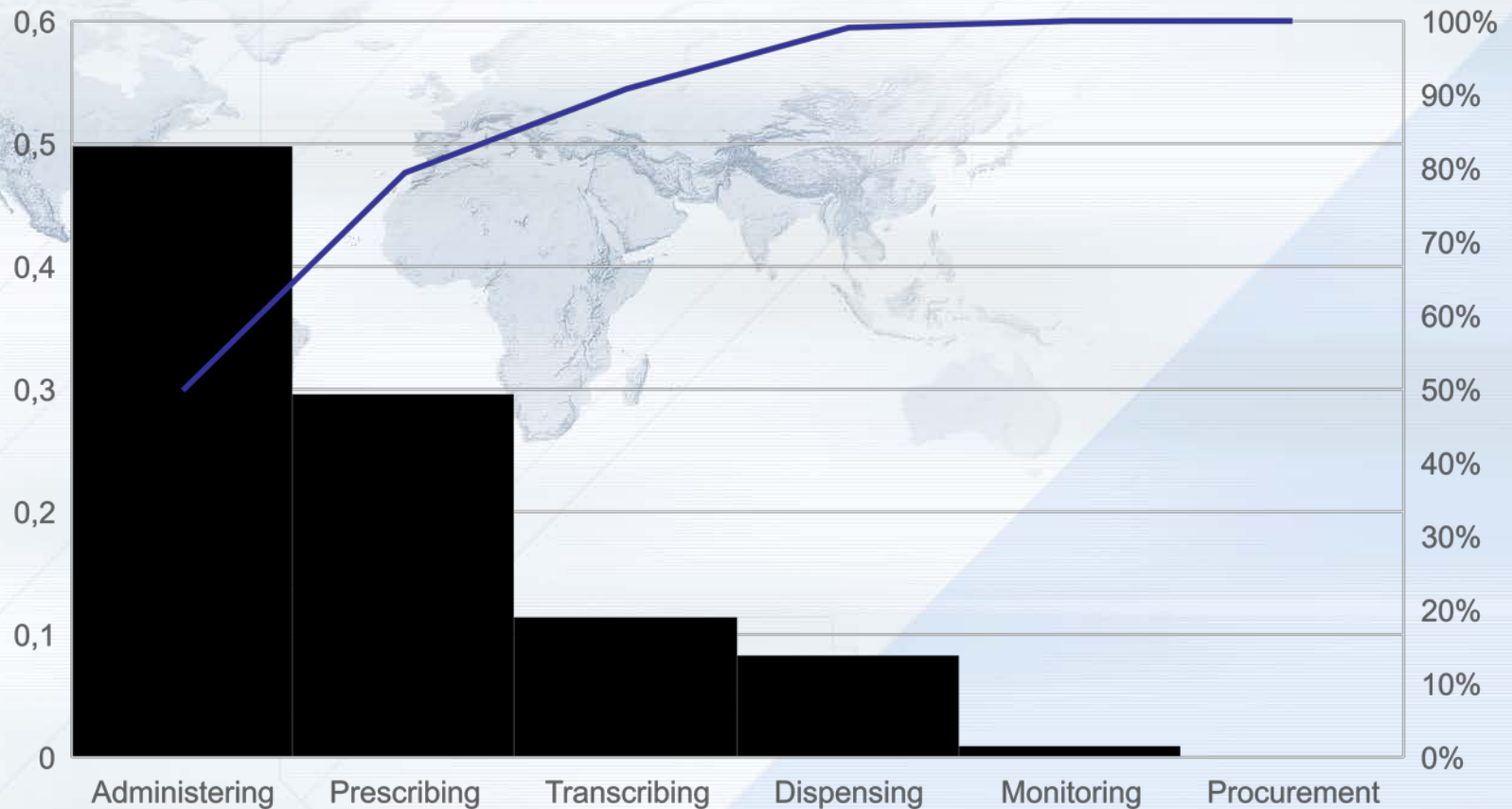
Phases of Medication Errors

Pediatric



Fortescue E.B., et al. 2003. Prioritizing Strategies for Preventing Medication Errors and Adverse Drug Events in Pediatric Inpatients. *Pediatrics* 111:722-29.

Phases of Medication Errors - Adults



Hicks, R.W., Becker, S. C., and Cousins, D. D. (2006). *MEDMARX® Data Report: A Chartbook of Medication Error Findings from the Perioperative Settings from 1998-2005*. Rockville, MD: USP Center for the Advancement of Patient Safety.

Definition: Medication Error

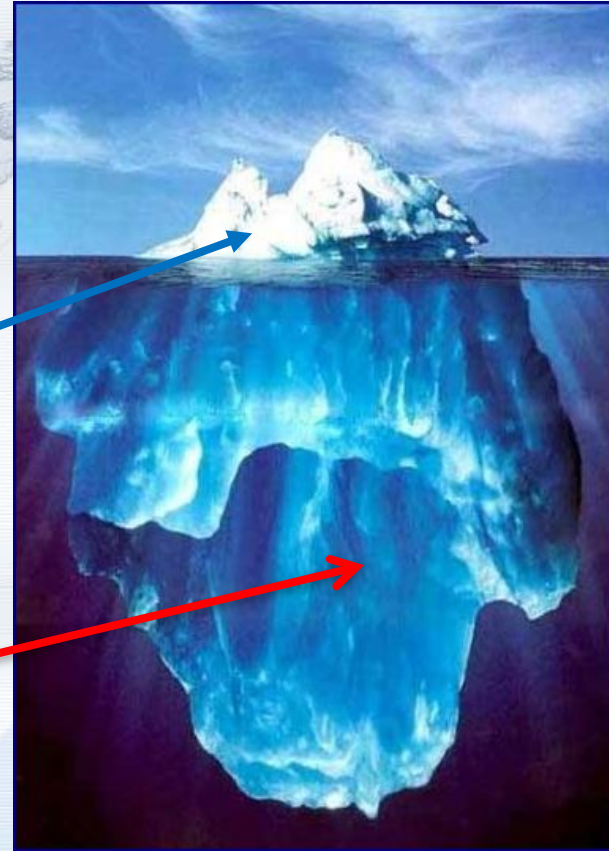
- Medication errors are defined as **preventable events** involving **inappropriate drug use or patient harm** while health care workers, patients, or consumers are **in control of a drug.**

Vocabulary of Patient Safety

- **Error:** Failure to carry out a planned action as intended or application of an incorrect plan
- **Adverse event:** Injury resulting from a medical intervention
- **Negligence:** Failure to meet standards reasonably expected of the average physician
- **Near miss:** Error that results in no harm

Scope of Near Miss

- Ranges from no harm, minor injury, permanent injury, to death
- Adverse events
- Near misses
7-100 X adverse events



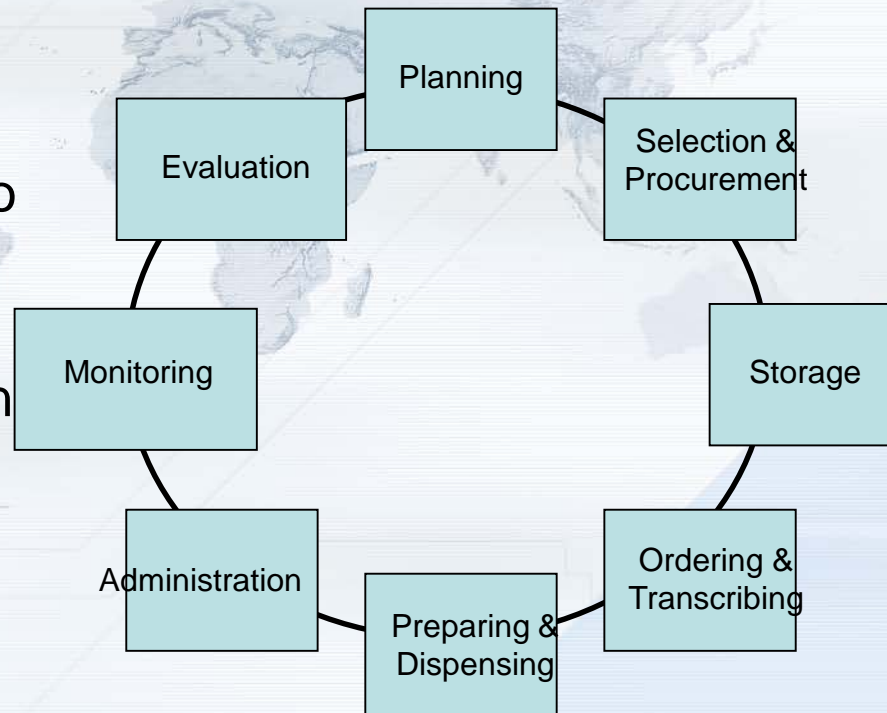
A light blue world map is centered in the background of the slide. The map shows the continents of North America, South America, Europe, Africa, and Asia. The map is overlaid on a grid of thin, light blue lines. The background of the slide is a gradient of light blue and white, with a dark red vertical bar on the left side.

Factors that Contribute to Medication Errors

Factors that Contribute to Medication Safety

Staff Factors

- Lack of training
- Communication (verbal orders)
- Administration (6 rights)
- Dispensing
- Illegible handwriting by prescribers



System Factors

- Heavy Workload
- New staff
- Poor training
- Distraction
- Look alike and Sound alike medication

Prescribing involves ...

- Choosing an appropriate medication for a given clinical situation taking individual patient factors into account such as allergies
- Selecting the administration route, dose, time and regimen
- Communicating details of the plan with healthcare providers who will administer the medication (written-transcribing and/or verbal)

How can *prescribing* go wrong?

- wrong patient, wrong dose, wrong time, wrong drug, wrong route
- inadequate communication (written, verbal)
- documentation - illegible, incomplete, ambiguous
- mathematical error when calculating dosage

Look-a-like and sound-a-like medications

- Celebrex (an anti-inflammatory)
- Cerebryx (an anticonvulsant)
- Celexa (an antidepressant)

YOU ARE Soooo FAMILIAR!

Look-alike & Sound-alike items are everywhere!

Match up these easy to confuse items:

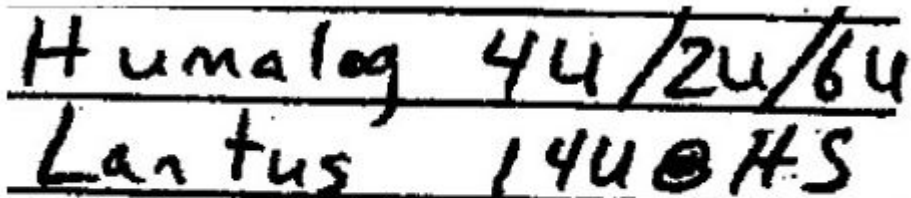
Zantac	Elouise Rogers
Prozac	Ephedrine
Louise Rodgers	Clonidine
Epinephrine	Prilosec
Hydromorphone	5,200 mcg / hour
Heparin	Celexa
Klonopin	Xanax
50 to 100 mcg / hour	Morphine
Celebrex	Hespan

“Alike” items can be VERY different!

Ambiguous nomenclature

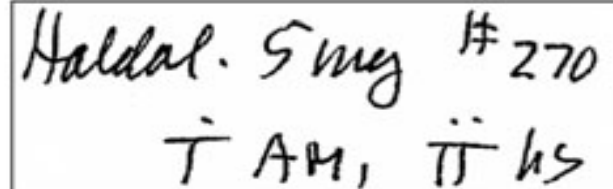
- Trailing zeros
 - e.g. write 1 not 1.0
- Leading zeros
 - e.g. write 0.1 not .1
- know accepted local terminology
- write neatly, print if necessary

Dangerous Abbreviations



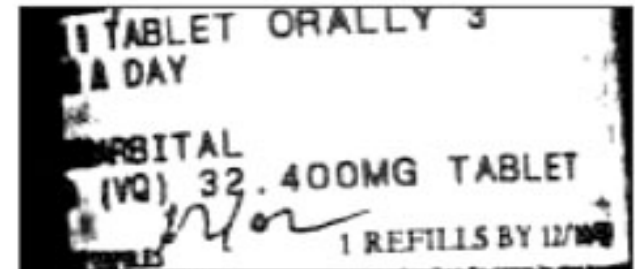
Humalog 44/2u/6u
Lantus 14u @ HS

Figure 1. "4U" Mistaken for "44." Image provided courtesy of ISMP.



Haldol. 5mg #270
T AM, T HS

Without a leading zero, this prescription was misinterpreted and dispensed as "Haldol 5 mg."



1 TABLET ORALLY 3
A DAY
ORBITAL
(VQ) 32.400MG TABLET
1 REFILLS BY 12/10/00

In this computer-generated label, the use of trailing zeros could cause confusion.

Administration involves ...

- obtaining the medication in a ready-to-use form; may involve counting, calculating, mixing, labeling or preparing in some way
- checking for allergies
- giving the right medication to the right patient, in the right dose, via the right route at the right time

How can drug *administration* go wrong?

- wrong patient
- wrong route
- wrong time
- wrong dose
- wrong drug
- omission, failure to administer
- inadequate documentation

How can *monitoring* go wrong?

- lack of monitoring for side-effects
- drug not ceased if not working or course complete
- drug ceased before course completed
- drug levels not measured, or not followed up on
- communication failures

Which patients are most at risk of medication error?

- patients on multiple medications
- patients with another condition, e.g. renal impairment, pregnancy
- patients who cannot communicate well
- patients who have more than one doctor
- patients who do not take an active role in their own medication use
- children and babies (dose calculations

How can workplace design contribute to medication errors?

- absence of a safety culture in the workplace
 - e.g. poor reporting systems and failure to learn from past near misses and adverse events
- absence of memory aids for staff
- inadequate staff numbers

How can medication presentation contribute to medication errors?

- look-alike, sound-a-like medications
- ambiguous labeling



Medication Error Reporting System

A faint world map is visible in the background, centered on the Atlantic Ocean. The map is light blue and white, matching the overall color scheme of the slide. The text is overlaid on the map.

**“You cannot control what
you do not measure”**

hence the focus on error reporting

Medication Error Reporting

- Event reporting refers to actions undertaken to obtain information about medical errors, adverse events, and near-misses
- The reporting reveals the **type and severity of events and the frequency** with which they occur
- Events are **prioritized and acted upon** more quickly according to the seriousness of their consequences

Medication Error Event Reporting

Two Approaches

- Self-Reporting
 - Requires a culture of safety
 - Requires a reporting form with instructions and definitions
 - Requires a verification process to ensure accuracy

- IHI Trigger Method
 - Requires selection of trigger medications
 - Requires a retrospective chart audit
 - Requires trained staff with documentation form

NCC MERP Index for Categorizing Medication Errors

Category A:
Circumstances or events that have the capacity to cause error

Category B:
An error occurred but the error did not reach the patient (An "error of omission" *does* reach the patient)

Category C:
An error occurred that reached the patient but did not cause patient harm

Category D:
An error occurred that reached the patient and required monitoring to confirm that it resulted in no harm to the patient and/or required intervention to preclude harm

Category E:
An error occurred that may have contributed to or resulted in temporary harm to the patient and required intervention

Category F:
An error occurred that may have contributed to or resulted in temporary harm to the patient and required initial or prolonged hospitalization

Category G:
An error occurred that may have contributed to or resulted in permanent patient harm

Category H:
An error occurred that required intervention necessary to sustain

Category I:
An error occurred that may have contributed to or resulted in the patient's death


- No Error**
- Error, No Harm**
- Error, Harm**
- Error, Death**

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Drug Errors in Special Situations

- Geriatric
 - 25% prescribed inappropriate medications
- Pediatric
 - 29% errors do to improper dosing
 - 26% improper procedure
 - Drug over dose in sedation
- Transdermal patches
 - Variation in dosages, shapes, sizes, colors
- High alert medications
 - Controlled drugs, Paralytics, etc



Factors/interventions that could improve safety

Knowledge requirements

- understand the scale of medication error
- understand the steps involved in a patient using medication
- identify factors that contribute to medication error
- learn how to make medication use safer
- understand a doctor's responsibilities when using medication



Focus on Key JCI Safety Processes

Summary

- medications can greatly improve health when used wisely and correctly
- yet, medication error is common and is causing preventable human suffering and financial cost
- remember that using medications to help patients is not a risk-free activity
- know your responsibilities and work hard to make medication use safe for

Summary

- Track adverse events and additional process measures
- Recognize and celebrate outcomes
- Embed change into work processes
- Align with organization priorities

- Thank you!