PHARM TECH BASICS · ONE-PAGER

Medication Safety and Error Prevention

Types of dispensing errors, look-alike names and Tall Man lettering, high-alert drugs, safe dose writing, workflow checks, what goes to the pharmacist, and how errors are reported and studied

40 sources + more detail

pharmtechbasics.com/sheets/pharm-medication-safety.html

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1 Where errors happen

STAGE	TYPICAL ERROR	WHERE THE PHARMACY CATCHES IT
Prescribing	Wrong drug or dose chosen, missing information, error-prone abbreviation	Pharmacist review and DUR; clarify with the prescriber
Transcription and order entry	Wrong patient profile, wrong product picked from a list, sig typed wrong, wrong quantity or days supply	Compare the entry with the original order; pharmacist verification
Dispensing	Wrong drug, strength, dosage form or quantity; wrong label or directions; right drug in the wrong bag	Bar-code scan, count check, pharmacist final check, check at pickup
Administration and monitoring	Patient takes it wrong (daily instead of weekly, wrong device), effect not followed up	Pharmacist counseling, clear labels, refill and adherence checks

2 Prescription errors by type

ERROR	EXAMPLE	SAFEGUARD
Wrong drug	hydrOXYzine filled for hydrALAZINE	Tall Man lettering, separate stock, scan every bottle
Wrong strength or dose	.5 mg read as 5 mg; 1.0 mg read as 10 mg	Leading zero, no trailing zero; check strength on stock and label
Wrong quantity	Miscount, or quantity entered for 90 days on a 30-day order	Recount or scale count; check days supply against the sig
Wrong patient	Two patients with the same name; bags swapped at pickup	Two identifiers at drop-off and at pickup
Wrong route or dosage form	Ear drops dispensed for an eye order; extended-release filled for immediate-release	Match form and route to the order; read the full product name
Wrong directions	Weekly methotrexate labeled 'daily'	Read the sig back against the order; pharmacist check

3 Look-alike, sound-alike names

Drug names that look or sound alike cause wrong-drug errors. Tall Man lettering puts the letters that differ in capitals so the eye stops on them. FDA's Name Differentiation Project (since 2001) asks makers to use it on labels; ISMP publishes a longer list.

- glipiZIDE and glyBURIDE
- buPROPion and busPIRone
- predniSONE and prednisoLONE
- traZODone and traMADol
- DOBUTamine and DOPamine

EXAM TIP Tall Man letters highlight the part of the name that differs; they do not change the drug. Exams also test the other fixes: shelve look-alikes apart, use shelf alerts, and scan.

4 High-alert medications

ISMP calls a drug high-alert when an error with it is more likely to cause serious harm. Errors may be no more common; they are more dangerous. Main groups: insulin, opioids, anticoagulants, concentrated electrolytes (hospital), oral chemotherapy, and oral methotrexate for non-cancer use.

SAFETY Methotrexate taken daily instead of weekly has killed patients (boxed warning). U-500 insulin is five times as concentrated as U-100. Check these twice and bring every question to the pharmacist.

5 Writing doses safely

WRITE	NEVER	BECAUSE
0.5 mg	.5 mg	Missed decimal: read as 5 mg (tenfold)
5 mg	5.0 mg	Missed decimal: read as 50 mg (tenfold)
units	U	Read as 0 or 4: 4U looks like 40
units (Joint Commission: International Unit)	IU	Read as IV or 10
daily	QD	Read as QID (four times a day) or QOD
every other day	QOD	Read as QD or QID
5 mL	1 tsp	Liquid doses on labels should be metric only

The Joint Commission keeps a short do-not-use list; ISMP keeps a longer list of error-prone abbreviations, symbols and dose designations. If an order uses one, do not guess: the pharmacist clarifies it.

6 Safeguards in the workflow

- Two identifiers, such as full name and date of birth, at drop-off, at entry and at pickup
- Scan the stock bottle's bar code (NDC) against the entry for every fill; stop at any mismatch
- Separate look-alike stock on the shelf; use Tall Man shelf labels and alerts
- Keep the original order, stock bottle and filled vial together for the pharmacist's final check
- At pickup, open the bag with the patient and confirm each drug name

7 Refer to the pharmacist

SITUATION	TECHNICIAN	PHARMACIST
DUR alert (interaction, duplicate, dose, allergy)	Records allergies and medications accurately; does not override the alert	Reviews it and decides
OTC or 'what should I take?' question	Can say where a product is	Recommends
Early refill, possible misuse	Notes the dates	Decides whether to fill
Missed refills, side effects, adherence worry	Notices and passes it on	Counsels
Substitution or therapeutic interchange	Enters what is approved	Decides
Reaction or question after a vaccine	Gets the pharmacist now	Assesses, reports to VAERS

8 Reporting

REPORT	WHAT IT COVERS	WHO
MedWatch Form 3500 (or online)	Serious adverse events, product quality problems, medication errors, therapeutic failure	Health professionals, voluntary
Form 3500B	Same, plain language	Patients and consumers, voluntary
Form 3500A	Mandatory reports	Manufacturers, distributors, importers, user facilities, IND researchers
VAERS	Adverse events after any vaccine	Anyone; some events required (CDC and FDA)
ISMP MERP	Medication errors and hazards	Health professionals, voluntary and confidential
Internal incident report	Errors and near misses inside the pharmacy	Every staff member, per policy

EXAM TIP Report near misses too. An error caught at the final check still shows where the system failed. Root-cause analysis asks why it happened, not who did it.

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