

Medication Safety Vulnerabilities Within the Medication Use System

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OPA Annual Conference & Trade Show
Reimagining Pharmacy

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Disclosure Statement

- Shelly Morvay and Maria Sellas Wcislo have no relevant financial relationships with ineligible companies to disclose.
- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.

Learning Objectives

At the completion of this activity, the participant will be able to:

1. Distinguish between high and low leverage safety strategies for improving the medication use system;
2. Identify opportunities for learning from medication safety risks that are reported by other pharmacies;
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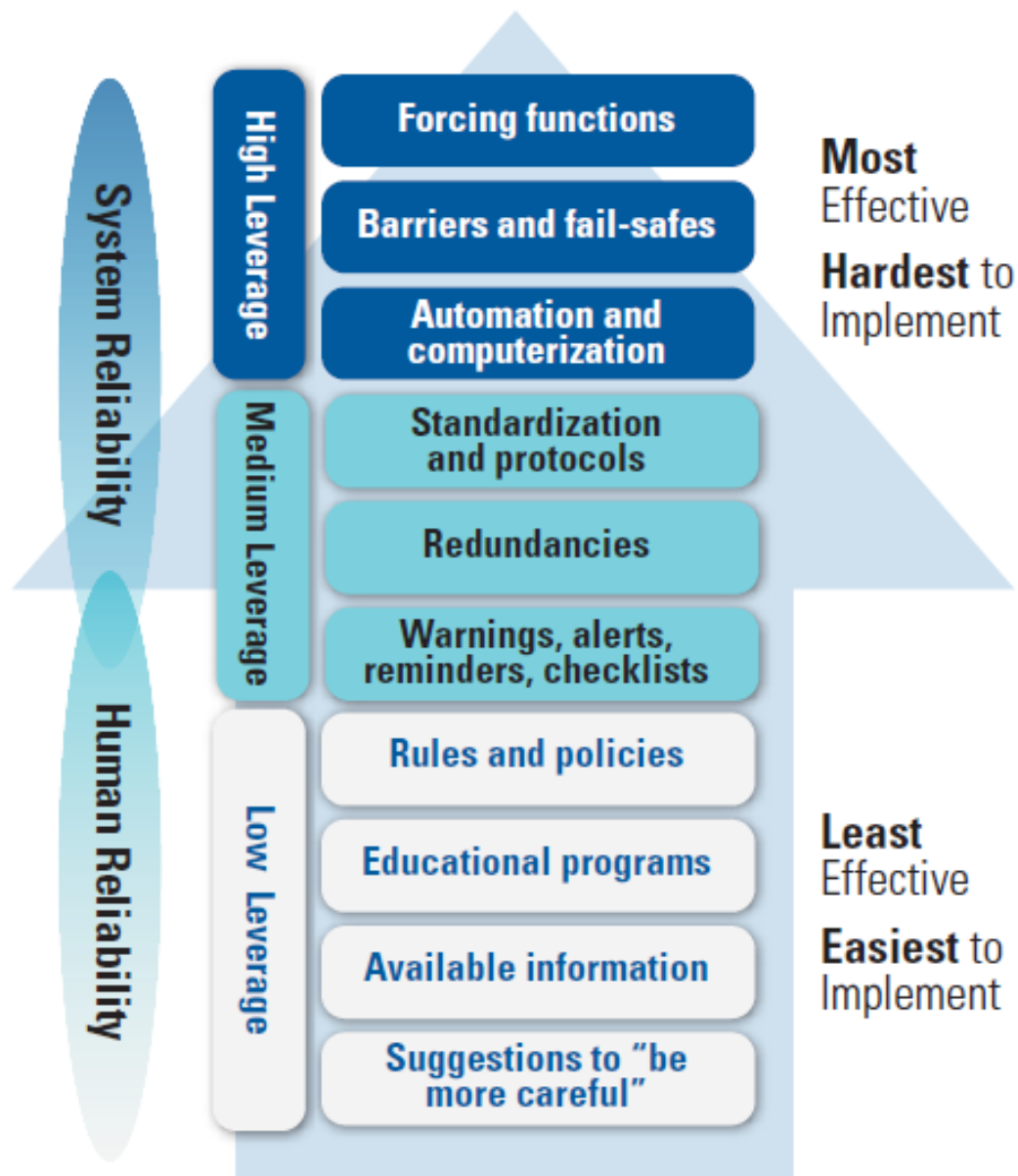
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Self-Assessment Question #1

Which of the following error-reduction strategies is most effective according to ISMP?

- A. Standardization and protocols
- B. Educational programs
- C. Automation and computerization
- D. Forcing functions

Figure 1. ISMP Hierarchy of Error-Reduction Strategies



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Acute Care
ISMP
Medication
Safety Alert!
April 21,
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LOW Leverage Error-Reduction Strategies

CAUTION

Be more
careful!



Make
information
available

LOW Leverage Error-Reduction Strategies



Education



Rules and
Policies

LOW Leverage Error-Reduction Strategies

EASY



EASY to
implement

LEAST
effective

MEDIUM Leverage Error-Reduction Strategies



Warnings

Alerts

Reminders

Checklists

Redundancies

Standardization
and Protocols

MEDIUM Leverage Error-Reduction Strategies



**HARDER to
implement**



**MORE
effective**

HIGH Leverage Error-Reduction Strategies



Automate
and
Computeriz
e



Barriers
and
Fail-safes



Forcing
functions

HIGH Leverage Error-Reduction Strategies

complex



**MOST
DIFFICULT**

**MOST
effective**

Case Example 1

- USP 800 is now enforced!
- Identification of hazardous drugs
- Hazardous drugs are shipped separately by wholesalers
- Hazardous drugs are stored in impervious bags in a separate area
- Staff must wear personal protective equipment when handling hazardous drugs

Case Example 1



Hazardous drugs are shipped from the wholesaler or manufacturer in labeled containers, separate from other medications



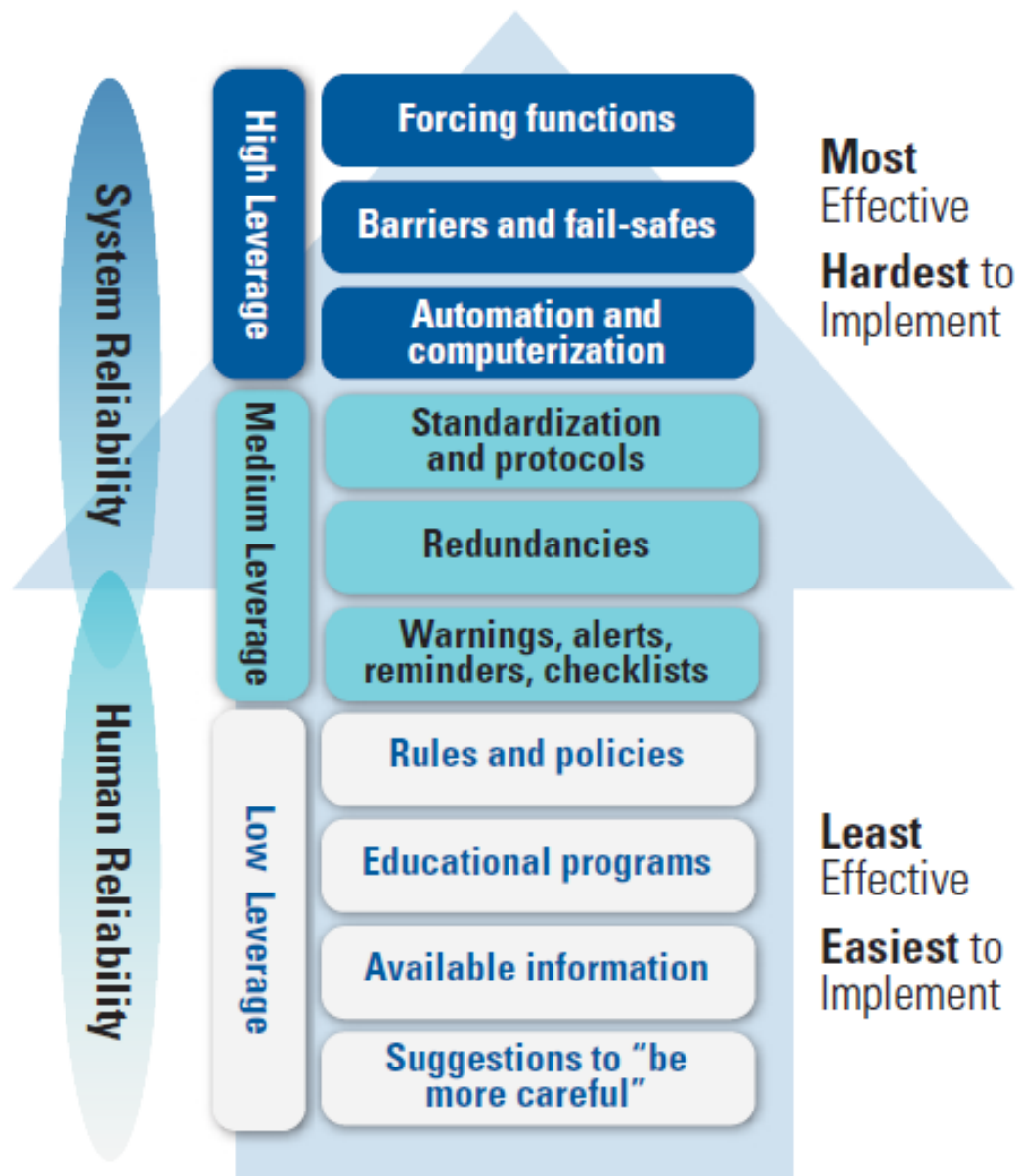
Hazardous drugs stored in impervious bags in a designated area, separate from non-hazardous medications.

Case Example 1

Which of the following error reduction strategies is used for hazardous drug handling? Is this a low, medium or high leverage strategy?

- A. Warnings, alerts, reminders and checklists
- B. Educational program
- C. Standardization and protocols
- D. Forcing functions

Figure 1. ISMP Hierarchy of Error-Reduction Strategies



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Case Example 1

- Which of the following error reduction strategies is used for hazardous drug handling? Is this a low, medium or high leverage strategy?
 - A. Warnings, alerts, reminders and checklists
 - B. Educational program
 - C. Standardization and protocols
(medium leverage)
 - D. Forcing functions

Self-Assessment Question #1

Which of the following error-reduction strategies is most effective according to ISMP?

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- B. Educational programs
- C. Automation and computerization
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Case Example 2

Unbeknownst to staff in pharmacy 1, a certain workflow caused patient receipts to print amongst pharmacy 2's new/refill prescription receipts on a shared printer as prescriptions were being filled. This resulted in "wrong patient" errors when receipts were attached to prescription bags.

Case Example 2

Which of the following would be the HIGHEST LEVERAGE strategy?

- A. Require staff to read all receipts before attaching to prescription bags
- B. Reroute patient receipts from pharmacy 1 to a separate printer that is not used for pharmacy 2's workflow
- C. Change the printer configuration so that pharmacy 1 and pharmacy 2 receipts print on different colored paper
- D. Educate all staff about the risk for error

Case Example 2

Which of the following would be the HIGHEST LEVERAGE strategy?

- A. Require staff to read all receipts before attaching to prescription bags (*should be happening already*)
- B. Reroute patient receipts from pharmacy 1 to a separate printer that is not used for pharmacy 2's workflow
- C. Change the printer configuration so that pharmacy 1 and pharmacy 2 receipts print on different colored paper (*what if we load the wrong paper into printer tray; colorblind*)
- D. Educate all staff about the risk for error (*lowest leverage*)

Option B is the highest leverage strategy!
(Automation and computerization)

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Self-Assessment Question #2

Medication errors reported by other pharmacies provide an opportunity for all pharmacies to enhance safety.

True

False

Medication Error/Near Miss Reporting



Medication Error/Near Miss Reporting

- Who can we learn from?
 - Professional organizations
 - Professional publications
 - Patient Safety Organizations
 - Regulatory bodies
 - The Institute for Safe Medication Practices©

ISMP Medication Safety Alert!® ActionAgenda

One of the most important ways to prevent medication errors is to learn about problems that have occurred in other organizations and to use that information to prevent similar problems at your practice site. To promote such a process, the following selected agenda items have been prepared for you and your staff to stimulate discussion and collaborative action to reduce the risk of medication errors. These agenda topics appeared in the *ISMP Medication Safety Alert! Community/Ambulatory Care* between May 2022 and August 2022. Each item includes a brief description of the medication safety problem, recommendations to reduce the risk of errors, and the issue to locate additional information. The *Action Agenda* is also available for download in Excel and Word formats at: www.ismp.org/node/41110.

Key:  — ISMP high-alert medication

Issue	Problem	Recommendation	Organization Assessment	Action Required/Assignment	Date Completed
Added risk of age-related mix-ups now that younger patients can receive coronavirus disease 2019 (COVID-19) vaccines					
06/22	With the expanded emergency use authorization (EUA) for patients as young as 6 months old, there are now three age groups, many with different doses and dosing schedules, that are eligible for COVID-19 vaccinations (www.ismp.org/ext/934). As seen previously in other age groups, mix-ups have occurred with the youngest age group.	Refer to COVID-19 vaccine information from Moderna (www.ismp.org/ext/995) and Pfizer-BioNTech (www.ismp.org/ext/937) for guidance on age-related dosing and vaccination schedules. Segregate storage of the vaccines; verify patient identity, age, and the vaccine(s) requested; verify the vaccine history; label vaccine syringes; employ barcode technology prior to dispensing and administration; and report any vaccine errors.			
Numerous wrong dose errors with PAXLOVID (nirmatrelvir and ritonavir)					
06/22 08/22	Paxlovid requires dose modification for patients with moderate renal impairment, which initially required pharmacists to remove nirmatrelvir tablets from blister cards prior to dispensing. In April 2022, a reduced-dose pack became available, but errors continue, including prescribing or dispensing the wrong strength, improper renal dosing, and self-administration errors due to the lack of patient counseling and confusing blister pack instructions.	On drop-down menus, indicate the strength of Paxlovid as a 300 mg and 100 mg dose pack, or for moderate renal impairment, as a 150 mg and 100 mg dose pack. Confirm the patient's renal function before prescribing or dispensing. Educate practitioners about the reduced-dose blister pack for patients with moderate renal impairment. Mark Paxlovid prescriptions for mandatory patient education. Provide patients with the updated <i>Fact Sheet for Patients, Parents, and Caregivers</i> (www.ismp.org/ext/968).			
Pen injectors need pen needles					
05/22	Omitted doses and reused needles have been reported when pen needles were not prescribed and/or dispensed along with pen devices (www.ismp.org/node/31803). Some events were attributed to dispensing the wrong pen needles and unfamiliarity with the pen injector.	Check state laws to determine if a prescription is required to dispense pen needles. Create order sets that include pen needles. Remind patients to pick up BOTH the pen injector and needles from the pharmacy, and educate patients regarding how to use the pen device.			

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Paxlovid Dose Errors



Pfizer

PAXLOVID™
(nirmatrelvir tablets; ritonavir tablets),
co-packaged for oral use

Each carton contains 20 tablets in 5 blister cards
Each blister card contains 4 tablets:
• 2 nirmatrelvir tablets (150 mg each)
• 2 ritonavir tablets (100 mg each)

150 mg; 100 mg Dose Pack

Morning Dose - Take both tablets at the same time from the morning dose portion of the blister card (white side).
Evening Dose - Take both tablets at the same time from the evening dose portion of the blister card (pink side).

For use under Emergency Use Authorization. Rx only



Pfizer

PAXLOVID™
(nirmatrelvir tablets; ritonavir tablets),
co-packaged for oral use

Each carton contains 30 tablets in 5 blister cards
Each blister card contains 6 tablets:
• 4 nirmatrelvir tablets (150 mg each)
• 2 ritonavir tablets (100 mg each)

Morning Dose - Take all 3 tablets at the same time from the morning dose portion of the blister card (left half, yellow side).
Evening Dose - Take all 3 tablets at the same time from the evening dose portion of the blister card (right half, blue side).

For use under Emergency Use Authorization. Rx only

NDC 0069-1085-30



ritonavir tablet (100 mg)

nirmatrelvir tablet (150 mg)

ritonavir tablet (100 mg)

nirmatrelvir tablet (150 mg)

Moderate Renal Impairment Dosing COV500-5TKR

Morning Dose: Take one nirmatrelvir tablet with one ritonavir tablet at the same time from the morning dose portion of the blister card (left half, yellow side).

Evening Dose: Take one nirmatrelvir tablet with one ritonavir tablet at the same time from the evening dose portion of the blister card (right half, blue side).

This package has been altered to accommodate your dose.

For use under Emergency Use Authorization

Inst. by Pfizer Labs, Div. of Pfizer Inc., New York, NY 10017

Paxlovid Dose Errors

- ISMP Recommendations:
 - Name on drop down lists should include “mg”
 - Paxlovid 300 mg + 100 mg
 - Paxlovid 150 mg + 100 mg
 - Confirm patient’s renal function
 - Educate prescribers about the dose and package for patients with moderate renal impairment
 - Mandatory patient education

Self-Assessment Question #2

Medication errors reported by other pharmacies provide an opportunity for all pharmacies to enhance safety.

True – we WANT to learn from others so the error is not repeated at our pharmacy!

False

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Medication Reconciliation

- 2023 Ambulatory Health Care National Patient Safety Goal from The Joint Commission
- Improved accuracy when completed by pharmacy staff
- Importance of reconciliation
 - Prevention of poly-pharmacy and adverse effects

Case: Vaccine Reconciliation



A patient presents to your pharmacy stating they would like to receive the zoster vaccine.

You review their chart, determine it is appropriate for them to receive the vaccine, and process the vaccine.

You administer the vaccine and discuss some potential side effects but state they will be protected from shingles.

The patient states they had already received the shingles vaccine at their PCP.

Case: Vaccine Reconciliation

- What are some ways to prevent duplicate vaccine administration?

Drug Shortages

- Growing problem in US
- Currently 231 entries on ASHP's drug shortage page
 - Impact health systems and community pharmacies
- Leads to pharmacy shopping and potentially suboptimal care

Pharmacy Health Literacy

- “the degree to which individuals are able to obtain, process, and understand basic health and medication information and pharmacy services needed to make appropriate health decisions”
- Only 12% of adults have “proficient health literacy”
- Increase risk of medication errors in patients with low health literacy

Pharmacy Health Literacy

- Resources from the Agency for Healthcare Research and Quality (AHRQ)
 - Communication training
 - Standardized language
 - Assessment tools
- Cultural and language barriers
 - Utilizing interpreter services
 - Online translation tools
 - Embedding translation in pharmacy software

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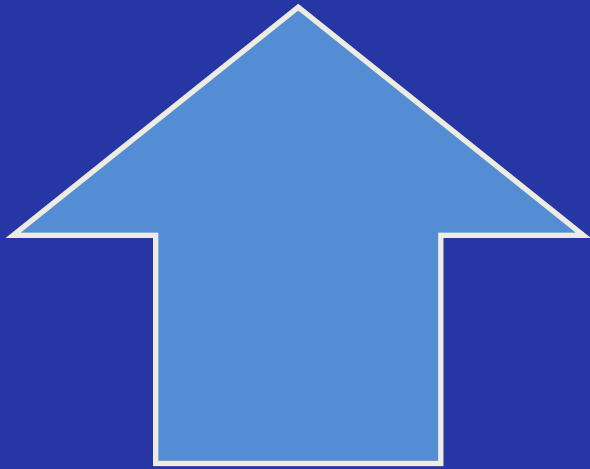
“Safety management should therefore move from ensuring that ‘as few things as possible go wrong’ to ensuring that ‘as many things as possible go right’”

-From Safety-I to Safety-II: A White Paper

Proactive Safety Opportunities

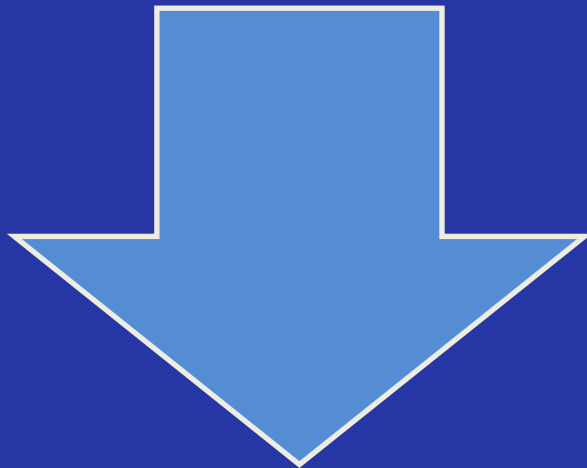
- New processes or technology
- Unusual circumstances
- Training

Failure Modes and Effects Analysis



Pros

- Systematic
- Thorough



Cons

- Difficult to complete
- Time consuming

Proactive Safety

- Focus on the things that go right
- Continuous anticipation of the need to change
- Work on being thorough while still being efficient
- Utilization of simulations

A Room of Errors Simulation to Improve Pharmacy Operators' Knowledge of Cytotoxic Drug Production

- Study from Switzerland
- Simulation with 25 possible errors built in
 - Developed from literature review, reporting system, and critical safety points in internal process
 - 7 visible at any time; 18 made by the operator in front of participant

Room of Errors

Logistics

Hygiene

Dressing

Preparation

Bag
Approval

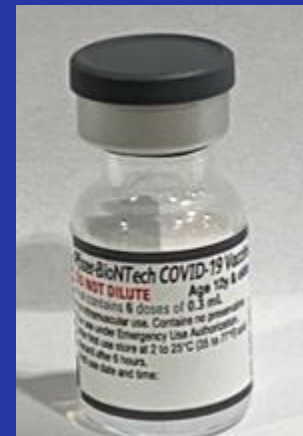
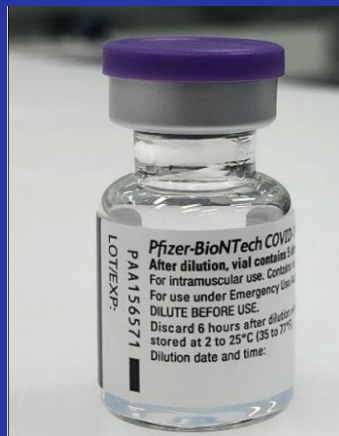
Room of Errors

- Study not set up to show impact of simulation on errors
- Did show improved knowledge and confidence in knowledge
- Evaluate impact on error detection and long-term knowledge retention

Case Example: COVID-19 Vaccines

- 4 of top 10 errors reported to ISMP in 2021 were COVID vaccine related
- New products available over time
- Significant risk for errors

Case Example: COVID-19 Vaccines



Case Example: Proactive Risk Mitigation Suggestions

Separate Products

Labels

Color Coding

Limit Population

Double Checks

Barcode Scanning

Case Example: New System

- Your pharmacy will be transitioning to a new computer system
- What are some ways to proactively prepare for this transition?

Case Example: New System

Talk to other pharmacies who use the system

Create simulations for staff to test

Take time in setting up functionality

References

Personal practice changes practitioners would make after learning firsthand about medication errors at ISMP. Figure 1 ISMP Hierarchy of error-reduction strategies. Acute Care ISMP Medication Safety Alert! April 21, 2022;27(8).

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Need More Information?

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