



## Workarounds: A Sign of Opportunity Knocking

This recent report submitted to PA-PSRS is an example of a workaround:

*Humulin regular insulin was administered instead of Humalog (2 doses) as ordered. The Pyxis system was overridden to obtain the Humulin regular insulin due to a delay in the Humalog medication being profiled in Pyxis.*

A workaround is a method of accomplishing an activity when the usual system/process is not working well.<sup>1</sup> While a workaround provides a temporary solution to the immediate problem, it is also a symptom of a system that may need improvement.

Healthcare workers may use workarounds with good intentions, such as getting a medication to a patient quickly or providing more efficient care for multiple patients. The rewards are usually positive and immediate, promoting convenience and patient comfort, and saving time. In many cases, workarounds may not result in patient injuries, fostering attitudes of “No harm, no foul” and “Workarounds may hurt other patients, but not mine.”

*Though workarounds are signs of errors “waiting to happen,” they can be used as opportunities for system improvement.*

While workarounds may have a place in certain emergency situations when no system solution exists, using them on a regular basis negatively affects patient safety. Workarounds are considered at-risk behaviors that do not solve a system-based problem.<sup>2,3</sup> Workarounds may vary according to the individuals that use them. Such inconsistency introduces a variety of “fixes” that may not provide optimal solutions, as well as a multiplicity of ways that errors can occur. When one standard process is not used, it becomes difficult to determine exactly where failure modes occur. Thus, error analysis and system improvement are thwarted. No matter how carefully applied, workarounds are likely to promote error, thereby compromising patient safety.<sup>4</sup>

For example, numerous PA-PSRS reports have been submitted for just one type of workaround: overrides of automated dispensing cabinets. These reports reflect the following types of errors:

- Wrong drug given (sound-alike medications).
- Wrong dose.

- Wrong route.
- Documented allergy to medication administered.
- Wrong frequency.
- Wrong patient.
- Medication dispensed without an order.

All of these errors may have been prevented if the automated dispensing cabinet were not overridden.

### Symptoms

Workarounds are a symptom of a system or process problem that requires resolution. Whenever a workaround occurs, think about the basic system problem that encourages the use of that workaround. Analyzing the workaround can provide a wealth of information about why the system is not working, as well as possible approaches to improve it. Problems with technology may be identified. For example, a VA hospital discovered that staff were forced to rely on informal patient identification processes because barcodes on patient armbands were easily water-damaged—a situation that can be remedied with waterproof wristbands.<sup>5</sup> Workarounds may also uncover unnecessarily complex processes that can be simplified.

### Human Factors Engineering

Human factors engineering (HFE) concepts can be used to analyze the established system and the workaround. HFE incorporates human characteristics, limitations, and capabilities into the analysis and design of systems, machines, and tools.<sup>6</sup> HFE focuses on “user centered design” – user needs and characteristics, as well as feedback from repeated end user testing. The goal is to ensure that a system is designed to

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## Workarounds: A Sign of Opportunity Knocking (Continued)

fulfill the intended purpose and operates as intended.<sup>6</sup> Analyzing workarounds using HFE concepts may help to identify safer and more user friendly system changes.

### Organizational Culture

Some organizational cultures may tolerate, or even reward, at-risk behaviors such as workarounds and/or informally punish or create disincentives for practicing safe behaviors. In fact, at-risk behaviors may even be viewed as being efficient.<sup>7</sup>

Conducting an organizational self-assessment may help determine to what extent the organization tolerates such behavior. Sharing the results of the assessment may help to increase staff awareness of such behaviors.

The following types of questions might prove enlightening if incorporated into a self-assessment:

- How do you react when you must locate a patient's medication administration record for a physician who wants to make sure no medications have been accidentally discontinued?<sup>8</sup>

### Exhibit 1. Examples of At-Risk Behaviors

Following are over 70 at-risk behaviors the Institute for Safe Medication Practices (ISMP) has identified. These examples are associated with prescribing/dispensing/administering medications; however, many may apply to other processes as well. Which of these behaviors apply to other healthcare processes? What additional at-risk behaviors can you identify in other healthcare processes?

#### Patient Information

- Preparing more than one patient's medications/more than one medication at one time
- Not checking patient identification using two identifiers (e.g., name, medical record number, birth date)
- Using an estimated patient weight rather than an actual weight
- Prescribing/dispensing/administering medication without checking patients' laboratory values and vital signs
- Not checking a patient's allergies before prescribing/dispensing/administering medications
- Not waking the patient for assessments/medications
- Not viewing/checking the patient's complete medication profile (or medication administration record [MAR]) prior to prescribing/dispensing/administering medications

#### Drug Information

- Prescribing/dispensing/administering medications without complete knowledge of the medication
- Unnecessary use of manual calculations
- Not taking the MAR to the patient's bedside when administering medications
- Administering medications before pharmacy review of the medication order
- Excessive prescribing of non-formulary medications/refusal of therapeutic substitution
- Not questioning unusually large doses of medications
- Writing incomplete discharge instructions
- Failing to validate/reconcile the medications and doses that the patient states are taken at home

#### Communication

- Rushed communication with next shift/covering colleague

- Intimidation/not speaking up when there is a question or concern about a medication
- Use of error-prone abbreviations/apothecary designations/dangerous dose designations
- Unnecessary use of verbal orders
- Not reading back verbal orders
- Overuse of stat orders or stat process as a workaround for slow pharmacy service
- Providing incomplete orders (e.g., lack of full drug name, route, strength, frequency)
- Not questioning incomplete orders
- Not communicating important patient information to the pharmacy (e.g., allergies, height, weight, chronic and acute diagnoses)
- Documenting medication administration/monitoring parameters at the end of the shift
- Not sending all orders to pharmacy (i.e., if they contain no medication orders, or if medication is available as unit-based floor stock)
- Illegible handwriting
- Writing for multiple prescriptions on one prescription blank

#### Labeling, Packaging, Nomenclature

- Removing medications from packages prior to reaching the patient's bedside
- Not labeling or poor labeling of syringes/solutions/other medication packages
- Grab and go without fully reading the label of a medication before dispensing/administering/restocking medications
- Storing medications with look-alike labels and packaging beside one another
- Placing hospital-prepared or auxiliary labels over important information on the manufacturer's label

#### Drug Stock, Storage, Distribution

- Leaving medications at bedside
- Leaving medications in an unlocked storage area
- Preparing IV admixtures outside of the pharmacy
- Not notifying physicians, nurses, and other personnel who order and administer drugs of impending and actual drug shortages

## Workarounds: A Sign of Opportunity Knocking (Continued)

### Exhibit 1. Examples of At-Risk Behaviors (Continued)

- Keeping unused medications from discharged patients in patient care areas for potential administration to other patients
- Borrowing medications from one patient to administer to another patient
- Carrying medications in a uniform or coat pocket
- Placing more importance on financial criteria than on safety when procuring medications (e.g., multiple-dose vials vs. single-use vials or prefilled syringes)
- Failure to dispense medications in unit doses or patient-specific doses
- Non-pharmacist access to the pharmacy when closed

#### Environment/Staffing Patterns

- Managing multiple priorities/addressing interruptions while carrying out complex processes (e.g., order entry, transcription, drug administration, IV admixture)
- Holding/admitting overflow patients in inappropriate units/areas
- Not notifying management if staffing is inadequate
- Failure to adequately supervise/orient staff
- Inadequate staffing based on patient acuity

#### Patient Education

- Prescribing/administering/dispensing medications without educating the patient
- Disregarding the patient's/caregiver's concerns about a medication's appearance, reactions, effects, or other expressed worry
- Discharging patients without proper education about the medications to take at home

#### Staff Education

- Inadequate orientation of new/agency staff
- No organizational incentives to achieve certification or attend continuing education
- Lack of a structured and ongoing staff competency program related to medication use

#### Quality/Culture

- Sacrificing safety for timeliness

- Failure to report and share error information
- Organizational culture of secrecy rather than openness about medication errors
- Organizational culture of finger pointing rather than system change

#### Double Checks

- Overconfidence in colleague's work (failure to independently double check thoroughly)
- Filling/checking medications using the label, not the order/prescription
- Failure to ask a colleague to double check manual calculations before proceeding
- Failure to ask a colleague to double check high alert medications before dispensing/administering
- Failure to ask a colleague to double check high risk processes (e.g., patient controlled analgesia) before proceeding

#### Teamwork

- Reluctance to consult others or ask for help when indicated
- Lack of responsiveness to colleague/patient requests

#### Technology

- Technology workarounds
- Overriding computer alerts without due consideration
- Over reliance on technology as a safety tool
- Using outdated/poorly maintained technology
- Failure to fully engage available technology
- Failure to provide education/training for new/updated technology
- Inadequate ongoing participation of frontline clinical staff in technology user/planning meetings

Source: Examples of at-risk behaviors for healthcare providers. Used with permission from The Institute for Safe Medication Practices. At-risk behaviors [online] 2004 Oct 7 [cited 2005 Jun 10]. Available from Internet: [http://www.ismp.org/pdf/At\\_Risk\\_Behaviors.pdf](http://www.ismp.org/pdf/At_Risk_Behaviors.pdf).

- How does it make you feel when a nurse takes more time to administer medications because she asks colleagues to double-check high-alert medications?<sup>8</sup>

- Are those who request independent verification of their medication calculations considered independent workers?<sup>8</sup>

- What criteria are used when assigning persons the responsibility for fixing a safety problem?<sup>8</sup>

- Do you see co-workers taking shortcuts that could be dangerous to patients?<sup>5</sup>

- When you see a workaround occurring, do you directly confront the colleague?<sup>5</sup>

The results of such an assessment can be used to promote a change in organizational culture – encouraging the identification of workarounds as a foundation for system improvement, while at the same time heightening awareness of at-risk behaviors and their negative consequences on patient safety.

## Workarounds: A Sign of Opportunity Knocking (Continued)

### Communication

Workarounds can provide an opportunity to promote communication that enhances patient safety. A study of 1,700 physicians, nurses, clinical care staff, and administrators was conducted nationwide. The majority of healthcare workers (82% of physicians; 62% of nurses/other clinical care providers) have seen colleagues take shortcuts that might be dangerous to patients. Yet, only 10% reported directly confronting their colleagues about the concern.<sup>9</sup> However, the few healthcare workers who raised such concerns reported better patient outcomes, greater staff satisfaction, enhanced commitment to remaining in their jobs, and worked beyond the required minimum.<sup>9</sup>

### Education/Heightening Awareness

Even conscientious healthcare workers can use workarounds and other at-risk behaviors. Staff may not realize that such behaviors place patients at risk. Awareness of at-risk behaviors and their consequences can reduce staff tolerance of at-risk behaviors. Analyzing facility reports of errors and near misses will help identify at-risk behaviors. Presenting this information with corresponding safe behaviors will help set the tone for promoting safety.<sup>8</sup>

The Institute for Safe Medication Practices (ISMP) has prepared a list of examples of medication-related at-risk behaviors (See Exhibit 1). Such a list can be used to heighten staff awareness of the problem. After reviewing the list, staff could be encouraged to document one at-risk and one safe behavior daily, as well as the circumstances under which the behaviors occurred. Such data can be aggregated and used as a foundation for system improvement and positive reinforcement of safe behaviors.<sup>8</sup>

### Accountability

Instead of disciplining individuals who work around the system, involve them in analyzing, changing, and improving the system. Changing the focus of accountability from individual blame to participation in system improvement can refocus the culture (and individuals) upon process improvement in which safety is consistently highly valued.

### Motivation/Reinforcement

Rewarding based upon patient outcomes, or disciplining individuals who use at-risk behaviors, may inadvertently discourage reporting of occurrences, errors, injuries, or workarounds. Incentives are more likely to promote a safer environment if based upon safe behaviors. Small rewards for all who meet established criteria for safe behaviors are more effective than a

large reward given to one person.<sup>10</sup> Behavior changes and system improvements resulting from identifying and analyzing workarounds provide success stories which can be used in positive reinforcement.

### Conclusion

Workarounds are a clue of system weakness. Examining workarounds as a means for process improvement can provide opportunities to transform healthcare workers and facilities from being risk tolerant to risk adverse. Patient safety can become an unwavering value associated with every healthcare activity – not one of many priorities that shift according to changing circumstances or competing concerns such as cost effectiveness, efficiency, productivity, or expediency.<sup>7,10</sup> Replacing a workaround with a standardized system improvement will consistently ensure patient safety over time.

### Notes

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An Independent Agency of the Commonwealth of Pennsylvania

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The Institute for Safe Medication Practices (ISMP) is an independent, nonprofit organization dedicated solely to medication error prevention and safe medication use. ISMP provides recommendations for the safe use of medications to the healthcare community including healthcare professionals, government agencies, accrediting organizations, and consumers. ISMP's efforts are built on a non-punitive approach and systems-based solutions.