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PATIENT SAFETY NETWORK

Primary Workaround, Secondary Complication

July 1, 2018
Debono D, Levett-Jones T. Primary Workaround, Secondary Complication. PSNet [internet]. 2018.
https://psnet.ahrq.gov/web-mm/primary-workaround-secondary-complication

The Case

A young adult with a progressive neurological disorder presented to a hospital emergency department (ED) from a nursing home with a dislodged gastrojejunostomy (GJ) tube. The patient had a history of multiple GJ tube dislodgements over the prior several months. When the GJ tube was dislodged, nursing home staff inserted a Foley catheter into the ostomy and inflated the Foley bulb in the stomach to maintain patency. The distal portion of the Foley catheter was tied in a loose knot but not otherwise secured (Figure 1). The catheter was in place on arrival to the ED. When the patient was taken to interventional radiology for GJ tube placement (Figure 2), there was no Foley noted; a new GJ tube was successfully inserted.

The patient was discharged back to the nursing home but readmitted 2 days later with fever and increasing abdominal distention. An abdominal CT scan showed an obstructing foreign body in the small bowel, initially thought to be a retained segment of the previously dislodged GJ tube. Surgical consultation was obtained, but nonsurgical intervention was recommended due to the patient's neurological condition. The patient continued to deteriorate despite volume resuscitation, broad spectrum antibiotics, and attempts to reduce the small bowel obstruction nonsurgically. After discussion with the patient's family, comfort measures were instituted on the fourth hospital day, and the patient died shortly thereafter.

The patient's family requested an autopsy in order to determine the cause of death. At autopsy, the entire Foley catheter—with inflated balloon and distal knot—was found to be obstructing the small bowel (Figure 3). The catheter appeared to have been pulled into the small bowel by peristalsis.

A root cause analysis (RCA) revealed several missed opportunities to have prevented the patient's unfortunate outcome. First, when the Foley catheter was initially inserted through the ostomy and inflated, the potential for peristalsis to pull the Foley catheter bulb into the stomach despite the distal loose knot was not adequately considered. A more appropriate method would have been a T-clamp or similar device instead of a loose knot to secure the catheter. Second, when the patient arrived in the ED, an opportunity to further secure the Foley catheter externally was missed. Third, when the patient was in interventional radiology and the Foley catheter was not in place, an opportunity to search for the Foley catheter was missed. It was assumed that the Foley had been removed pending the procedure. Finally, the radiologist

did not consider that the obstructing body might be the Foley catheter and not the retained segment of the previously dislodged GJ tube.

The results of the RCA were disclosed to the patient's family. Although they were grateful that a thorough analysis had been performed and measures would be implemented to prevent these errors, they remained concerned about the decision to insert a Foley catheter through the GJ tube site. Since this took place at the nursing home, it fell outside the hospital RCA's jurisdiction. However, hospital safety leaders realized that this practice was common for hospitalized patients as well, potentially putting many patients at risk.

The Commentary

Commentary by Deborah Debono, PhD, RN, and Tracy Levett-Jones, PhD, RN

Workarounds are defined as behaviors or actions implemented to circumvent a problem to achieve a goal, or do so more easily. In the case study, the use of a Foley catheter to maintain the patency of a stoma in the absence of a replacement gastrojejunostomy (GJ) tube is one example of a workaround. Workarounds—also referred to as shortcuts, deviations, situational violations, innovative solutions, patches, quick or temporary fixes—may differ from organizationally prescribed procedures.(1) Workarounds are ubiquitous, especially in health care, and health care professionals have been called the "masters at workarounds."(2)

Workarounds constitute a type of work known as articulation work: "work that gets things back 'on track' in the face of the unexpected, and modi?es action to accommodate unanticipated contingencies […] it is invisible to rationalized models of work."(3) Not all workarounds are bad; in fact, they may improve patient outcomes by promoting timely care, reducing risks of adverse events, and highlighting areas for improvement. They may even be incorporated into future practice. However, they undermine standardization and blur the effects of specific interventions or mask systemic problems that need to be addressed.(4)

Workarounds are prime illustrations of the difference between work-as-imagined (formal work) and work-as-done (informal work—how the job is actually done). But because they are mostly unsanctioned practices, workarounds are shared informally, rarely documented, and can cause tension for those who use them because their use may risk retribution should something go wrong.

Ensuring patient safety mandates considering the potential ramifications of using workarounds, specifically: (i) What are the potential unintended consequences of the workaround? (ii) Are the risks of using the workaround justified? (iii) How can any risks be mitigated? (iv) What secondary workarounds might be required to compensate for the first?

Workarounds are not inherently bad or good, and banning them may stifle innovation and undermine patient care. In fact, studies of multiple industries show that workarounds are inevitable, which means that rather than trying to ban them, it may be more valuable to develop preemptive strategies to promote their safe use. The Traffic Light Model for categorizing antimicrobial restrictions (4,5) is potentially applicable to workarounds:

- Green workarounds: workarounds that, while not ideal, are supported by evidence. Here, it is useful to consider strategies to mitigate secondary harms.
- Orange workarounds: workarounds that may be beneficial in specific contexts, but users must proceed with caution, including seeking guidance from senior colleagues.
- Red workarounds: workarounds that should not be supported under any circumstances.

Specific workarounds may be sanctioned and formalized in guidelines (green workarounds). For example, the case study described using a Foley catheter to maintain patency of a stoma in the absence of a replacement GJ tube (primary workaround), a strategy supported by clinical guidelines (6) if the stoma tract is mature.(7) This temporary measure, an example of a green workaround, was done to promote patient safety and prevent adverse outcomes, and the Foley catheter should be replaced with a dedicated gastrostomy tube as soon as possible.(8-10)

Primary and Secondary Workarounds

Workarounds beget workarounds—a workaround employed to circumvent one barrier (primary workaround) often fosters others (secondary workarounds) not considered in assessing the potential consequences of the first. Although clinical guidelines recommend using a Foley catheter in the type of situation described, they are unclear on recommended methods to secure it. Using the catheter (the primary, sanctioned workaround) required a method to secure the catheter internally and externally (secondary workarounds, which were not defined or sanctioned).(6) Moreover, while some evidence-based guidelines supported temporary use of an equivalent-sized Foley catheter if potential risks are considered, because of the increased risk of migration (as there is not an external phalange) they also recommended that it be secured externally and that the insertion and removal be documented and communicated to health care team members. In the case study, the radiology staff did not question the disappearance of the catheter. Because of inadequate communication, they likely assumed it had been removed prior to the procedure.

Whether sanctioned or unsanctioned, workarounds remain a temporary fix to circumvent barriers to a goal—they do not address the underlying barrier. To harness their potential to inform improvement, it is essential to capture data on the use of workarounds. Mechanisms that allow staff who use or observe the use of workarounds to report them are needed. Data on the use of workarounds can be used by managers, patient safety officers, and frontline staff themselves to inform improvement. The finding of a workaround should prompt a search for more permanent solutions.

Clinicians must also formalize communication about potential unintended consequences of workarounds. This is easier when the workarounds, such as the Foley catheter, are sanctioned and can be openly discussed. It is more difficult when the dominant patient safety discourse holds most workarounds to be unsafe, which generally has the result of pushing them underground.

Workarounds Highlight Improvement Opportunities

While using workarounds highlights opportunities for improvement, the primary focus should be preventing the underlying problem, thereby avoiding secondary workarounds. For example, the use of a Foley catheter

highlighted that a replacement GJ tube should always be available (including during patient transportation). However, when health care professionals have no option, structures and processes are essential to communicate the primary workaround across the system and to identify and address unintended consequences of secondary workarounds.

In relation to sanctioned workarounds, if imperative, clinicians must ensure the primary workaround is appropriate (e.g., correct size of Foley catheter, inserted using aseptic technique, etc.), consider and address potentially negative consequences of the secondary workaround (e.g., instructions on how to secure the catheter appropriately), and document its use and resolution (e.g., when the catheter was removed). Using sanctioned workarounds therefore requires an accompanying protocol.

Although trying to ban workarounds might seem like a sound patient safety strategy, it fails to account for the real-world circumstances that often bedevil providers and upset the best laid plans. Safe organizations accept that some workarounds will occur and take steps to make them safer and to learn from them.

Take-Home Points

- Workarounds circumvent barriers to achieve a goal in the short term.
- When explicit, workarounds can highlight areas for improvement and may potentially enhance practice. When not made explicit, workarounds hide system problems.
- Workarounds beget other workarounds. A primary workaround to one problem may create another problem requiring secondary workarounds.
- The person who works around one barrier may not see the consequences elsewhere in the system.
- A Traffic Light Model may enhance effective decision-making about workarounds.
- Communication about the use of workarounds is essential for patient safety.

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Figures

Figure 1. Normal Placement of a Percutaneous Gastrojejunostomy Feeding Tube. (Illustration © 2018 Chris Gralapp.)

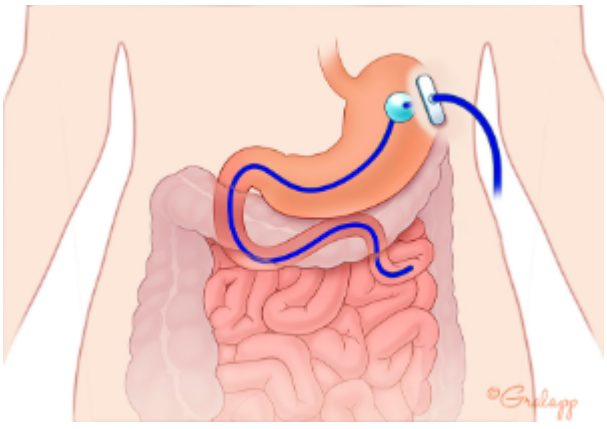


Figure 2. Workaround: After the GJ Tube Was Dislodged, a Foley Catheter Was Inserted Into the Stomach While Awaiting Replacement of the GJ Tube. (Illustration © 2018 Chris Gralapp.)

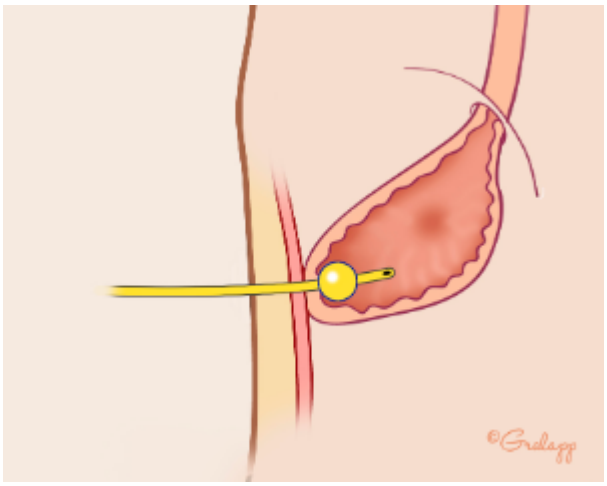
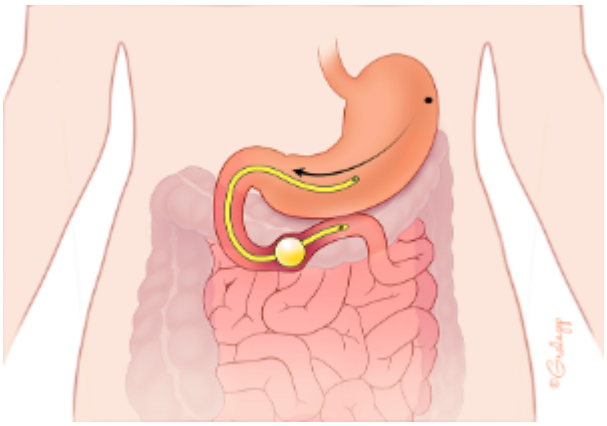


Figure 3. Adverse Event: Because the Temporary Foley Catheter Was Not Secured Properly, It Became Displaced and Caused a Small Bowel Obstruction. (Illustration © 2018 Chris Gralapp.)



This project was funded under contract number 75Q80119C00004 from the Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services. The authors are solely responsible for this report's contents, findings, and conclusions, which do not necessarily represent the views of AHRQ. Readers should not interpret any statement in this report as an official position of AHRQ or of the U.S. Department of Health and Human Services. None of the authors has any affiliation or financial involvement that conflicts with the material presented in this report. *View AHRQ Disclaimers*