PSNet
PATIENT SAFETY NETWORK

Workplace Safety in Health Care

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Perspective

The patient safety movement has highlighted the risks that patients face when receiving health care. But, importantly, workers face risks as well.(1,2) Although debate continues regarding whether worker safety should be considered part of the patient safety movement, many organizations think about it that way, including the National Patient Safety Foundation.(3,4) This article will focus on some of the newer ideas about workforce safety, which emerged from our thinking about patient safety and improvement more generally. It describes a repeatable process and structure that, we believe, can lead to improved safety in a variety of health care settings.

Both the employer and the employee have responsibility to keep the workforce safe.(2) For example, while management provides personal protective equipment (PPE), such as safety glasses to keep debris and chemical splashes away from the eyes, it is the employee's responsibility to wear the PPE when performing work that management has identified as requiring it.(5) More generally, it is the responsibility of management to prepare detailed work instructions that clearly describe how work should be performed in order to prevent quality and safety failures; the employee is responsible for following these procedures.(6)

In addition, management is responsible for providing a safe workplace where, for example, employees can safely leave the work area in case of fire or quickly locate an eyewash station to rinse their eyes in case of a splash with a corrosive liquid. The workplace is brimming with hazards, including less obvious ones: sharps injuries that occur when passing a suture needle in the operating room (OR), musculoskeletal injuries from lifting heavy instrument kits in Central Processing and the OR, and injuries caused by moving patients with obesity.(3,7) In particular, the hazards of working in an OR are numerous, including trip and concussion injuries due to electrical cords on the floors and multiple monitors on booms.

How can management maintain a safe workplace where there are so many hazards? In 2013, a team at Beth Israel Deaconess Medical Center combined selected tools and techniques used in manufacturing and continuous improvement to develop a process to identify, prioritize, and mitigate hazards in the health care environment. When implemented by cross-functional teams consisting of people who do the work, their

supervisors, and employee health and safety professionals, we believe others could utilize this process. A suggested approach is described below.

Getting Started

Before these Job Safety Behavioral Observation teams met, continuous improvement (commonly referred to today as Lean) principles were applied to help ensure success. The first step was to create a team charter, which was done by the frontline workers and their managers. It takes only an hour to draft a good charter that clearly outlines the following:

1. The burning platform: the current injury rate and why it must be reduced
2. A goal for injury reduction as measured by days away from work due to injury on the job; a reasonable goal is a 20% reduction
3. Suggested approach (as outlined in this article)
4. Membership:
    a. Co-Leader: Department Manger
    b. Co-Leader: Health and Safety Department representative
    c. One or two supervisors and a couple of staff members who do the work in the department
    d. A facilitator trained in continuous improvement methodologies
    e. A sponsor who also serves as a team member; the sponsor is responsible for breaking down barriers to progress.

A Lean Approach

Before rushing to solve problems, Lean process improvement teams take the time to fully understand them.(8-11) Similarly, work on the analysis phase of projects to reduce staff injury began by surveying those who do the work (the entire staff, not just the staff members on the team) regarding how they are injured.

It is important to recognize conditions that lead to injury, such as a wet floor leading to slips and falls. But as, or even more, important is understanding *behavior*.(6,12) Why did the employee not get help before moving the patient with obesity? Were there time pressures in the OR to proceed with no help? Only by asking employees about how they were injured did the OR Job Safety Behavioral Observation team begin to understand the root causes of hazards. The team deepens its understanding by formal observations. As our work progressed, we utilized OR staff meetings to keep all of our stakeholders informed of progress.

Formal Observations

Other principles of continuous improvement are to never reinvent the wheel and to go out and observe. This Job Safety Behavioral Observation process for health care uses tools and methodologies common in industry yet never applied to health care. For example, the observation tool we used is widely available; we made a few minor additions to address health care–specific hazards such as surgical smoke (Figure 1).

Job Safety Analysis

Another tool we adopted from industry was the Job Safety Analysis (Table). This tool facilitates a meticulous analysis of a risky process by requiring identification of hazards for each process step and a way to eliminate them. As one example, our OR Job Safety Behavioral Observation team used the Job Safety Analysis to predict an injury before it occurred. For some GYN procedures requiring lithotomy, the nurse must remove the bed end. Doing so with a 25-pound standard bed end requires that the nurse pull it forcefully while in an awkward position. We identified this hazard (Table) and found a lightweight bed end that eliminated it. Sadly, while waiting for the bed ends to arrive from the vendor, a nurse was injured exactly the way we predicted. Since the lightweight bed ends were installed, no one has been similarly injured.

Mitigating Hazards

After Job Safety Behavioral Observation teams complete the analysis phase of these projects, they move on to mitigate the hazards identified. We have launched Job Safety Behavioral Observation teams in four areas (OR, Central Processing, Environmental Services, and Food Services), and we have found numerous hazards in each of them. Below are some examples of hazards that were identified and eliminated in the OR. More examples are available in an online chart.

- **Revised Kit Pick Process:** We observed that for most total hip procedures five kits were picked and delivered to the OR. However, only two of the five kits were normally used. After discussion with surgeons performing this procedure we changed the pick process such that only two of the five kits were routinely brought to the OR. If a surgeon requires one or more of the other three kits, they will be brought up to the OR from Central Processing. As a result of this process change, the OR and Central Processing staff lifts 34 kg less per case, thereby decreasing their exposure to musculoskeletal injuries.
- **Implemented Use of Cord Covers:** The trip hazard caused by electrical cords on the OR floor was eliminated by covering the cords with a bright orange material to prevent people from catching their feet on them.

Managing the Work

After completing their analyses and implementing some improvements, Job Safety Behavioral Observation teams continue to meet every other week to brainstorm ways to eliminate hazards, review work accomplished since the last meeting, and plan new actions to eliminate hazards. Slowly but surely, incident rates in each area have dropped. Setting new goals and targeting specific hazards, our job safety teams renew their charters at the start of every year.

Performance Scorecard

Process improvement teams use performance scorecards to monitor progress toward the goals. A performance scorecard—which uses the cumulative sum of days away from work due to injury on the job as the metric—provided a good measure of progress. By displaying both the previous and current year's performance, we were able to demonstrate our progress in a way that informed our work and inspired others, including the health system leadership (Figure 2).

Real and lasting progress in improving workplace safety can only be achieved by changing the safety culture to one in which employees believe that all accidents are preventable and that everyone plays a role.(13,14) Our experience has shown that implementing Job Safety Behavioral Observation teams and adopting a robust, repeatable process can improve the safety culture of the workplace and result in fewer injuries.

Ross W. Simon Sr. Management Engineer Beth Israel Deaconess Medical Center, Boston, MA

Elena G. Canacari, RN Associate Chief Nurse, Perioperative Services Beth Israel Deaconess Medical Center, Boston, MA

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Table

Table. Job Safety Analysis of GYN Procedure.

Basic Job Step	Injury Type	Potential Hazards	Recommended Safe Procedures
Attendant cleans surfaces & empties trash & laundry	**MSK**	MSK related to lifting heavy linen bags	Explore using smaller linen bags
Attendant mops floor	**Trips & Falls**	Slips and falls on wet floor	Planned change to microfiber mop leaving floor drier than string mop
Attendant cleans & replaces step stools	**Trips & Falls**	Tripping and falling on stools	Step stools placed in designated corner of room between cases
Move equipment in/out of room for set-up	**MSK**	MSK related to heavy, awkward equipment and sticking doors	Use prep tables to move stirrups & gel pads. Have doors in working order.
Lifting heavy kit pans from case cart	**MSK**	MSK related to lifting pans from overhead top shelf	Do not use top shelf for any kit pans
Position patient in stirrups	**MSK**	MSK strains bending & stretching in lead	Always have a person at each leg ready to lift together
Secure electrical cords	**Trips & Falls**	Trips/falls	Explore options (other than blankets) to cover/secure cords
Check & replace oxygen tank	**MSK**	MSI/strain related to rushed transport/replacement of tank	Have attendants check & replace oxygen tank on stretchers in peripheral corridor between cases
Remove the bottom of the bed for lithotomy	**MSK**	**MSK/strains related to heavy lifting**	**Explore use of lightweight bed extension to replace 10.9 Kg bed end**
Removing pt to stretcher post procedure	**MSK**	MSK related to pushing, pulling, stretching	Stress ergonomics, maximum assistance (4 staff)

Position overhead monitors	**Concussion** Head injury	Do not lower monitors until team is scrubbed at field to reduce potential for head injury

MSK: musculoskeletal; MSI: musculoskeletal injury

Figures

Figure 1. Job Safety Observational Form. Link to PDF

Figure 2. Performance Scorecard.