

## Patient Safety Tip of the Week

January 20, 2015

### He Didn't Wash His Hands After What!

An observational study ([Burcharth 2014](#) as reported by [Bernard 2015](#)) found that an astonishing 20% of attendees at an American surgical conference failed to wash their hands after visiting the restroom!

Admittedly, that may not be the same as hand hygiene in surgeons prior to surgery or prior to and after examining patients elsewhere. But we'll bet that some of the same factors that influence hand hygiene apply in both situations. Four timely studies on the factors that influence the hand hygiene compliance of physicians and others lend some insight.

In the first, Squires and colleagues ([Squires 2014](#)) did semi-structured interviews with medical and surgical physicians and residents at a Canadian tertiary care center with two campuses, chosen via a quasi-experimental sampling strategy. They found 53 specific beliefs from 9 theoretical domains that influenced hand hygiene practices of participants. Sounds too ethereal for us! But the many statements from physicians they quote provide great insight.

They did find some key barriers and enablers found in previous studies: environmental context, social pressure, perception of the risk of cross-contamination, and a positive attitude about hand hygiene itself. But they also identified knowledge gaps about hand hygiene guidelines and evidence linking poor hand hygiene to healthcare-associated infections. Moreover, they identified a skill gap in the performance of hand hygiene.

Unlike studies in nurses, which show nurses tend to perform hand hygiene as a routine and automatic process, their study found that **physicians required a conscious decision** to perform hand hygiene and that **cues, visual or otherwise, were often needed** to encourage hand hygiene.

Social influences can come from colleagues and patients, though evidence for the influence of patients was weaker. They stress the importance of **role models** and "positive deviance" in encouraging hand hygiene. At least one of the respondents described a phenomenon we've often spoken about: if you see the leader of a team of

rounding physicians and students stop to wash his/her hands, the rest of the team members are very likely to do the same.

(We're not surprised about the relative lack of influence by patients. Patients still seldom speak up despite our efforts to get them to do so. They may be reluctant to potentially offend their physician. We've recommended trying a little humor to help patients feel more comfortable "challenging" their physician: use "Wanted...Armed and Dangerous!" posters in patient rooms, putting a picture of their attending physician on an old-west style wanted poster with a subcaption "If you see this individual, beware and make sure he/she washes his/her hands!". But before you try that one, make sure your attending physicians also have a sense of humor!)

System constraints, as expected, were significant influences. Having **easy access to hand hygiene resources at the point of patient contact** was an almost universally mentioned factor. But they also found that high **workloads** were a barrier to hand hygiene.

They did find **some differences across specialties**. Fewer surgery than medicine physicians reported that other physicians influenced their hand hygiene practice. They speculate that, while this might reflect a sample size artifact, it could reflect that surgeons tend to work more independently than medicine physicians, who tend to work more in teams.

The Squires study lays the groundwork for further research and development of strategies to improve hand hygiene rates among physicians. It also has an extensive bibliography that you may find useful.

The second study ([Chassin 2015](#)) reports lessons learned from the [Joint Commission Center for Transforming Healthcare hand hygiene quality improvement project](#). The eight hospitals in that project used Lean, Six Sigma and change management methods and saw a 70.5% increase in compliance (from 47.5% to 81.0%). This study included multiple types of healthcare workers, not just physicians.

They initially identified 41 different causes of hand hygiene noncompliance and condensed these into 24 groups of causes. But key causes varied greatly among the hospitals so each hospital focused on those issues most important at their facilities and organizations.

There is much overlap with barriers identified by Squires and colleagues and other previous researchers. **Systems issues** are common (hand hygiene facilities not readily available, empty hand dispensers, no soap at the sink, broken dispensers, etc.). But other system issues may include lack of space to free up hands for washing, need to go in and out of rooms frequently for supplies, etc. There are also occasional healthcare workers for whom the hand cleaning product may be irritating or otherwise unpleasant.

**Workflow issues** may also be barriers and the impression (perceived or real) that hand washing will slow you down is a frequent barrier.

But, much like described in the Squires study, people **often simply forget to wash or are distracted** and **staff fail to remind each other** about hand hygiene. Education is often inadequate. Many still have the **mistaken impression** that there is no need for hand hygiene if they are wearing **gloves**. Most importantly, the **safety culture (or lack thereof)** of the organization is an overriding factor. In many columns of our columns we've discussed how safety culture may vary considerably by unit (that's why improvement projects work best when using the CUSP or comprehensive unit-based safety program model). So even though hand hygiene must be an organization-wide priority you may need to tailor your individual interventions to specific units.

Recommendations (from the Chassin paper and the project website) were nicely summarized into the "**HANDS**" acronym:

<b>H</b>	Habit
<b>A</b>	Active feedback
<b>N</b>	No one excused
<b>D</b>	Data-driven
<b>S</b>	Systems

Making handwashing a **habit** and **automatic** is key. Healthcare workers should always wash in and wash out upon entering/exiting a patient care area and before and after patient care.

In addition to providing education, training, and visible and technology-based reminders, one of the most important methods for **active feedback** was use of "**just-in-time**" **coaching**. These individuals, upon observing an episode of noncompliance with hand hygiene, would immediately discuss with the "offender" and find out the reason(s) why they did not perform hand hygiene. Discipline-specific training and education may be important for some issues, such as glove-related problems. And when you use visible and technology-based reminders, make sure you rotate them so that they remain effective and don't simply get lost in the background "noise".

"No one excused" means **no one** is excused. We all know that physicians generally have much poorer compliance with hand hygiene than nurses and other healthcare workers. It is incumbent upon the hospital and physician leadership to make hand hygiene a priority. That holding everyone accountable and responsible and applying progressive discipline from the top. It emphasizes the importance of role models. As we noted above, if you see the leader of a team of rounding physicians and students stop to wash his/her hands, the rest of the team members almost always do the same.

Being **data-driven** means that you use an acceptable, accurate monitoring and measurement system and provide the data in as near real-time as possible. It also means you scrutinize the data and act upon it.

Fixing the **systems**, not just the people, is critical. That means providing easy access to hand hygiene equipment and supplies at places the healthcare workers need them. It also

means keeping hand dispensers filled. But it is more than that. One of the barriers often noted is that the healthcare worker has his/her hands full and no place to put things down so they can wash their hands. So it means making sure space is available to put those things down. You should also re-engineer the space to minimize the number of times you need to exit and re-enter a room (eg. keep frequently needed supplies in the room so you don't have to go out and come back in). They also note that your alarm management initiatives (see our July 2, 2013 Patient Safety Tip of the Week "[Issues in Alarm Management](#)") and our multiple other columns on alarm-related issues) should reduce the frequency of false alarms that cause your staff to needlessly exit the room. Also, improving the systems by using new technologies like radiofrequency identification and automated reminders and real-time scoring is promising. And placing glove dispensers near the hand dispensers may be important in dealing with the glove-related issues.

The underlying theme of the Chassin paper is that using the Lean, Six Sigma or similar approach allowed each hospital to **customize** its improvement efforts by focusing on the causes most prevalent at its own facility. "One-size-fits-all" strategies probably won't work very well.

A third study did qualitative interviews with senior hospital staff at an Australian academic medical center ([McInnes 2014](#)). Seven themes emerged: culture change starts with leaders, refresh and renew the message, connect the five moments to the whole patient journey, actionable audit results, empower patients, reconceptualising non-compliance and start using the hammer. Like all other studies they note the importance of **leadership** not just verbally endorsing good hand hygiene practices but actually demonstrating their commitment and serving as **role models**. They speak about the hospital hierarchy, whether official or not, that leads to staff not speaking up when they see examples of noncompliance with hand hygiene. They discuss the need to train staff in ways to tactfully address the issue with noncompliers, including use of "graded assertiveness". **Refreshing the message**, as noted by many others, is a strategy taken from the advertising and marketing industry. Just like advertising posters get changed at the local bus stop, hospital posters etc. need to be refreshed so that people notice them. They then note that WHO's "5 Moments of Hand Hygiene" don't all apply to all settings in the hospital. So there is a **need to tailor strategies to individual settings**. For example, they note that a group rehabilitation setting is much different than an inpatient bedside setting. **Audits need to be actionable**. All too often they are neither timely nor specific enough for actions. They recommend deaggregating data so that managers and department heads can take actions with specific groups or individuals. They discuss barriers to **empowering patients** and the multiple reasons patients won't speak up. However, they also stress the need to educate staff and physicians on how to respond when a patient does speak up. The last 2 themes, **reconceptualising non-compliance and start using the hammer**, are related. Many of those interviewed felt that hand hygiene **noncompliance needs to be treated as an error** and that those making such errors need to be held accountable. Using a **graded/staged or tiered approach to managing noncompliant staff (eg. progressive discipline)** was felt to be the best approach. Yet many felt that such an approach was counter to the "no blame" culture and

also could aggravate a shortage of staff and physicians. All agreed that a **multimodal approach to behavior change** is much more efficacious than single interventions.

And the fourth study comes from the Pennsylvania Patient Safety Authority ([Bradley 2014](#)). Examples of events related to hand hygiene compliance are provided and there are good summaries of the efficacy of alcohol-based handrubs and currently available methods of monitoring compliance. Then the author discusses components of a **multimodal approach** that begins with **assessing barriers to hand hygiene and surveying hand hygiene beliefs and behaviors**. It provides links to several useful online tools for those assessments, such as the [WHO Hand Hygiene Self-Assessment Framework 2010](#) and the [WHO Perception Survey for Health Care Workers](#). It goes on to suggest implementation of a **hand hygiene “bundle”** and **map specific strategies** to barriers, beliefs and behaviors found in the assessments and suggests a **graduated intervention scale called the “disruptive behavior pyramid”** as a measure to curtail reckless hand hygiene behaviors.

These 4 studies should help you in addressing this long-running problem that continues to plague most hospitals. Also, for those of you who may have missed them in the fall of 2014 there were evidence-based updates on “Strategies to Prevent Healthcare-Associated Infections through Hand Hygiene” ([Ellingson 2014](#)) and SHEA’s “A Compendium of Strategies to Prevent Healthcare-associated Infections in Acute care Hospitals: 2014 Updates” ([SHEA 2014](#)).

### **Some of our other columns on handwashing:**

January 5, 2010	<a href="#">“How’s Your Hand Hygiene?”</a>
December 28, 2010	<a href="#">“HAI’s: Looking In All The Wrong Places”</a>
May 24, 2011	<a href="#">“Hand Hygiene Resources”</a>
October 2011	<a href="#">“Another Unintended Consequence of Hand Hygiene Device?”</a>
March 2012	<a href="#">“Smile... You’re on Candid Camera”</a>
August 2012	<a href="#">“Anesthesiology and Surgical Infections”</a>
October 2013	<a href="#">“HAI’s: Costs, WHO Hand Hygiene, etc.”</a>
November 18, 2014	<a href="#">“Handwashing Fades at End of Shift, ?Smartwatch to the Rescue”</a>

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<http://ugeskriftet.dk/videnskab/hver-femte-kirurg-vasker-ikke-haender-efter-toiletbesoeg-et-etnografisk-feltstudie>

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<http://www.centerfortransforminghealthcare.org/projects/detail.aspx?Project=3>

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Bradley S. A Systems and Behavioral Approach to Improve Hand Hygiene Practice. Pa Patient Saf Advis 2014; 11(4): 163-7

<http://patientsafetyauthority.org/ADVISORIES/AdvisoryLibrary/2014/Dec;11%284%29/Pages/163.aspx>

WHO Hand Hygiene Self-Assessment Framework 2010

[http://www.who.int/gpsc/country\\_work/hhsa\\_framework.pdf](http://www.who.int/gpsc/country_work/hhsa_framework.pdf)

WHO Perception Survey for Health Care Workers

[http://www.who.int/gpsc/5may/tools/evaluation\\_feedback/en/](http://www.who.int/gpsc/5may/tools/evaluation_feedback/en/)

Ellingson K, Haas JP, Aiello AE, et al. Strategies to Prevent Healthcare-Associated Infections through Hand Hygiene. *Infection Control and Hospital Epidemiology* 2014; 35(8): 937-960

<http://www.jstor.org/stable/10.1086/677145>

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