When the captain of a ship calls “all hands on deck” he desires everyone to help with great urgency. This call to action is especially critical when you are navigating a ship in rough waters. The risk to the crew may be the loss of each of their lives. Hand hygiene adherence has taken on much the same urgency. Every day, healthcare workers struggle to comply with hand hygiene, the most basic infection prevention measure. Hospital-acquired infections are reaching staggering numbers and costing our healthcare system billions of dollars to treat. The recent WHO hand hygiene document attributes poor hand hygiene behavior to the following; healthcare workers lacking knowledge of guidelines for hand hygiene, lack of recognition of hand hygiene opportunities during patient care, and lack of awareness of the risk of cross-transmission of pathogens as barriers to good hand hygiene practices. Furthermore, some HCWs believe that they washed their hands when necessary even when observations indicated that they did not.

Additional perceived barriers to hand hygiene behavior are listed in the table below.

<table>
<thead>
<tr>
<th>Factors Influencing Adherence to Hand Hygiene Practices</th>
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<tbody>
<tr>
<td><strong>Factors for poor adherence/low compliance</strong></td>
</tr>
<tr>
<td>A. Observed risk factors for poor adherence to recommended hand hygiene practices:</td>
</tr>
<tr>
<td>‣ Doctor status (rather than a nurse);</td>
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<tr>
<td>‣ Nursing assistant status (rather than nurse);</td>
</tr>
<tr>
<td>‣ Physiotherapist;</td>
</tr>
<tr>
<td>‣ Technician;</td>
</tr>
<tr>
<td>‣ Male sex;</td>
</tr>
<tr>
<td>‣ Working in intensive care;</td>
</tr>
<tr>
<td>‣ Working in surgical care unit;</td>
</tr>
<tr>
<td>‣ Working in emergency care;</td>
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<tr>
<td>‣ Working in anesthesiology;</td>
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<tr>
<td>‣ Working during the week (vs. weekend);</td>
</tr>
<tr>
<td>‣ Wearing gowns/gloves;</td>
</tr>
<tr>
<td>‣ Caring of patients aged less than 65 years old;</td>
</tr>
<tr>
<td>‣ Caring of patients recovering from clean/clean-</td>
</tr>
<tr>
<td>‣ contaminated surgery in PACU;</td>
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<tr>
<td>‣ Before contact with a patient’s environment;</td>
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<tr>
<td>‣ After contact with a patient’s environment (e.g.</td>
</tr>
<tr>
<td>‣ equipment);</td>
</tr>
<tr>
<td>‣ Patient care in non-isolated rooms;</td>
</tr>
<tr>
<td>‣ Duration of contact with patient (&lt; or equal to 2</td>
</tr>
<tr>
<td>‣ minutes of contact);</td>
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<tr>
<td>‣ Interruption in patient-care activities;</td>
</tr>
<tr>
<td>‣ Automated sinks;</td>
</tr>
<tr>
<td>‣ Activities with high risk of cross-transmission;</td>
</tr>
<tr>
<td>‣ High patient-to-nurse ratio and more shifts per day;</td>
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<tr>
<td>‣ High number of opportunities for hand hygiene per hour</td>
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<tr>
<td>‣ of patient care.</td>
</tr>
<tr>
<td>B. Self-reported factors for poor adherence to hand</td>
</tr>
<tr>
<td>hygiene:</td>
</tr>
<tr>
<td>‣ Handwashing agents cause irritations and dryness;</td>
</tr>
<tr>
<td>‣ Sinks are inconveniently located or shortage of sinks;</td>
</tr>
<tr>
<td>‣ Often too busy or insufficient time;</td>
</tr>
<tr>
<td>‣ Hand hygiene interferes with HCW-patient relationship;</td>
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<tr>
<td>‣ Low risk of acquiring infection from patient;</td>
</tr>
<tr>
<td>‣ Wearing of gloves or the belief that glove use obviates</td>
</tr>
<tr>
<td>‣ the need for hand hygiene;</td>
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<tr>
<td>‣ Lack of institutional guidelines or provider’s lack of</td>
</tr>
<tr>
<td>‣ knowledge of guidelines or protocols;</td>
</tr>
<tr>
<td>‣ Lack of knowledge, experience or education;</td>
</tr>
<tr>
<td>‣ Lack of rewards/encouragement;</td>
</tr>
<tr>
<td>‣ Lack of role model from colleagues or superiors;</td>
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<tr>
<td>‣ Skepticism about the value of hand hygiene;</td>
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<tr>
<td>‣ Not thinking about it or forgetting;</td>
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<tr>
<td>‣ Disagreement with recommendations;</td>
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<tr>
<td>‣ Lack of scientific information of definitive impact of</td>
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<tr>
<td>‣ improved hand hygiene on HAI rates.</td>
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<tr>
<td>C. Additional perceived barriers to adherence to</td>
</tr>
<tr>
<td>appropriate hand hygiene:</td>
</tr>
<tr>
<td>‣ Lack of active participation in hand hygiene promo</td>
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<tr>
<td>‣ tion at either the institutional or personal level;</td>
</tr>
<tr>
<td>‣ Lack of institutional priority for hand hygiene;</td>
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<tr>
<td>‣ Lack of administrative sanctions for non-compliers or</td>
</tr>
<tr>
<td>‣ rewarding compliers;</td>
</tr>
<tr>
<td>‣ Lack of institutional safety climate/culture of personal</td>
</tr>
<tr>
<td>‣ accountability of HCWs to perform hand hygiene.</td>
</tr>
</tbody>
</table>
Infection preventionists have long been the lone voice in the woods calling attention to the abysmal rate of 40 percent compliance with hand hygiene. The call to action and the need for solutions has never been greater. Demonstration of compliant behaviors by all healthcare professionals can wait no longer. With regulatory agencies and the public demanding improvement, several effective strategies have been well published in the literature and are listed below.

**Strategies for Successful Promotion of Hand Hygiene in Healthcare Settings**

<table>
<thead>
<tr>
<th>Strategy action</th>
<th>1. System change:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Make hand hygiene possible, easy and convenient;</td>
</tr>
<tr>
<td></td>
<td>• Make alcohol-based hand rub available;</td>
</tr>
<tr>
<td></td>
<td>• Make water and soap continuously available;</td>
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<td></td>
<td>• Install voice prompts.</td>
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<tr>
<td>2. Hand hygiene education.</td>
<td></td>
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<tr>
<td>3. Promote/facilitate skin care for HCWs’ hands.</td>
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<tr>
<td>4. Routine observation and feedback.</td>
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<tr>
<td>5. Reminders in the workplace.</td>
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<tr>
<td>6. Improve institutional safety climate:</td>
<td></td>
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<tr>
<td></td>
<td>• Promote involvement at the institutional level and individual level;</td>
</tr>
<tr>
<td></td>
<td>• Avoid overcrowding, understaffing, excessive workloads;</td>
</tr>
<tr>
<td></td>
<td>• Institute administrative sanctions/rewards.</td>
</tr>
<tr>
<td>7. Combination of several of the above strategies.</td>
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</tr>
</tbody>
</table>

Hand hygiene is the most basic infection prevention measure.

Healthcare providers and infection preventionists are looking for hand hygiene solutions to help transfer knowledge into behaviors utilized at the bedside. The following five strategies have been shown to improve hand hygiene compliance and help to change behavior.

- Education and training;
- Audit and feedback;
- Reminders;
- Use of multidisciplinary teams;
- Systematic performance improvement methods.

The dynamic of behavioral change is complex and multifaceted. It involves a combination of education, motivation and system change. Wide dissemination...
of hand hygiene guidelines alone are not sufficient motivation for changes in hand hygiene practice. With our current knowledge, it can be suggested that programs to improve hand hygiene compliance in HCWs cannot rely solely on awareness, but must take into account the major barriers to altering an individual’s pre-existing hand hygiene behavior.¹

Healthcare organizations around the world felt the test on basic infection prevention measures as we watched the H1N1 influenza spread across the nation and then the globe.

We have been battling drug-resistant infections and Mother Nature continues to have the upper hand when she sent the H1N1 pandemic. As I write this article the WHO reports 134,503 cases of H1N1 around the globe with 816 deaths. Infection prevention measures must include respiratory hygiene and hand hygiene to prevent the transmission of this virus. Frequent use of alcohol-based hand rubs is effective to kill the H1N1 virus and disinfect hands when used properly. In each pandemic, about 30 percent of the U.S. population developed illness, with about half seeking medical care. Children have tended to have the highest rates of illness, though not of severe disease and death. Geographical spread in each pandemic was rapid and virtually all communities experienced outbreaks.⁵

**Healthcare organizations around the world felt the test on basic infection prevention measures as we watched the H1N1 influenza spread across the nation and then the globe.**

Frequent use of alcohol-based hand rubs is effective to kill the H1N1 virus when used properly.

Infection preventionists have become the captain of hand hygiene ship navigating rough waters to push compliance. The seriousness of basic infection prevention will be transparent as we approach the 2009 influenza season. We must change our behaviors as this is the right thing to do for our patients. As healthcare professionals we make a pledge to first do no harm. It’s not a duty to produce an outcome or a duty to follow a procedural rule. This duty does not come from another human being’s explicit instructions. Rather, it’s out there as part of society’s fabric. It’s what we owe one another, the duty to not put others at an unjustifiable risk of harm.³

**References**


Lorri Downs, RN, BSN, MS, CIC, is a board certified infection preventionist and vice president of Infection Prevention at Medline Industries Inc. Ms. Downs possesses a diverse portfolio of more than 25 years in the nursing profession. Her expertise has focused on infection prevention surveillance at large acute care organizations, plus ambulatory and public health settings. Ms. Downs has crafted hospital infection control programs, local emergency preparedness plans as well as lectured on various infection prevention topics.