Actionable Patient Safety Solutions (APSS) #2A:
Hand hygiene

How to use this guide
This guide gives actions and resources for creating and sustaining safe practices for hand hygiene. In it, you'll find:

Patient Safety
MOVEMENT

Executive summary checklist

The lack of consistent, appropriate hand hygiene in all patient care areas is a "medical error" that results in avoidable infections and deaths. As of January 1, 2018, The Joint Commission began citing individual failures to perform hand hygiene in direct patient care as a deficiency, prompting a Requirement for Improvement (RFI) – meaning that a medical provider's accreditation is at risk when staff members are seen as noncompliant.

Use this checklist to help you prioritize your actions and measure your organization's progress in each area.

Ensure best patient care

☐ Ensure that alcohol-based hand rubs and / or soap and water are available as close to the point of patient care as possible

Create an action plan

☐ Show accountability for performance improvement in your organization and unit leadership levels as part of an Organizational Hand Hygiene Guideline

☐ Establish a multi-disciplinary hand hygiene team responsible for implementation of the Hand Hygiene Guideline, including:

☐ Nurses

☐ Physicians

☐ Infection preventionists

☐ Administration

☐ Include mandatory training for all healthcare workers (HCWs) when they are hired and at least once a year. Train all HCWs to:

☐ Address indications for the WHO's 5-moments for hand hygiene

☐ Follow hand rubbing and soap and water washing techniques

☐ Create signs for hand rubbing (sanitizing) vs. soap and water washing (World Health

☐ Organization (WHO) or Center Disease Control (CDC) Guideline)

☐ Speak up when fellow HCWs don't comply

☐ Accept reminders to perform hand hygiene.

☐ Provide education for patients, family members, and visitors

☐ Conduct performance evaluation and give feedback

☐ Include training for patients and family members when they are admitted and encourage them to speak up when a healthcare provider fails to perform hand hygiene before contact

Use data to find areas for improvement

- [ ] Hand hygiene compliance must be measured using a validated, electronic system capable of capturing and reporting all hand hygiene events
  - [ ] These systems have been shown to lead to sustainable improvement, reduced infections and costs, and a positive impact on patient safety culture when compliance rates improve significantly (Bouk et al., 2016; Kelly et al., 2016; Michael et al., 2017; Son et al., 2011)
- [ ] Direct Observation (DO) should only be used for:
  - [ ] Coaching
  - [ ] Performance feedback
  - [ ] Obstacle
  - [ ] Barrier identification
- [ ] There is currently no research to support that either direct observation nor electronic monitoring is better than the other. However, for direct observation it should be emphasized that the training of observers for direct observation is a recommended step.

Engage staff

- [ ] Provide performance feedback to unit leadership and frontline staff on a regular basis, using evidence-based behavior change feedback models (Welsh et al., 2012)
- [ ] Place reminders in the workplace using:
  - [ ] Posters
  - [ ] Brochures
  - [ ] Leaflets
  - [ ] Badges
  - [ ] Stickers
- [ ] Ensure the messages and reminders are consistent with your organization's Hand Hygiene
- [ ] Use patient stories—in written and video form—to identify gaps and inspire change in your staff

What we know about hand hygiene

Hand hygiene keeps patients safe. While hand hygiene is not the only measure to prevent Healthcare Associated Infections (HAIs), compliance with it alone can significantly enhance patient safety (Kelly et al., 2016). HAIs are preventable infections that patients may get while being treated for another condition, especially when devices such as catheters or ventilators are used. Research shows that microbes causing HAIs are most frequently spread between patients on the hands of healthcare workers. Patients may carry microbes without any obvious signs or symptoms of an infection—colonized or sub clinically-infected. This can happen because microbes have an impressive ability to survive on the hands—sometimes for hours—if hands are not cleaned. The hands of staff can become contaminated even after seemingly 'clean' procedures, such as taking a pulse or blood pressure reading, or touching a patient's hand (World Health Organization, 2009).

We know that healthcare facilities that readily embrace strategies for improving hand hygiene are more open to closer scrutiny of their infection control practices. Therefore, the impact of focusing on hand hygiene can lead to an overall improvement in patient safety across an entire organization (Kelly et al., 2016).

What we know about this safety issue has been typically accomplished by Direct Observation (DO) by human observers known as "secret shoppers". However, recent research shows that DOs should no longer measure hand hygiene because they can overstate compliance by as much as 300% giving a false sense of security and complacency that blocks the sense of urgency to improve (Srigley et al., 2014; Scheithauer et al., 2009). Further, allowing "secret shoppers" to observe the lack of hand hygiene compliance and do nothing to intervene enables a healthcare worker to provide care with potentially contaminated hands—putting patients at unnecessary risk of harm. The solution is to measure hand hygiene compliance with an evidence-based and validated electronic hand hygiene compliance system.

Center for Medicare & Medicaid Innovation (CMS/CMMI) and their Partnership for Patients are now promoting the deployment of electronic hand hygiene compliance systems to reduce infections and costs to the Hospital Improvement Innovation Networks (HIINs) via their website and a web broadcast.

Leadership plan

To improve hand hygiene practices and maintain compliance, leaders in your organization must take these key actions:

- Be engaged and model compliant hand hygiene practices
- Foster psychological safety and promote a "just" safety culture. It must be safe for everyone to be able to speak up and "stop the line" when hand hygiene does not occur
- Use DOs for unit based feedback and real-time barrier identification
  - Develop and agree on an action plan to remove the barriers
  - Research suggests that this approach leads to sustainable improvement (Steed, 2016)
- Agree on unit-specific improvement goals and celebrate small successes (Son et al., 2011)
- Engage with your frontline staff and give frequent feedback on performance
- Make hand hygiene compliance improvement part of performance evaluation

o   Report results to senior leadership for facility-wide feedback
- Use patient stories – in written and video form – to identify gaps and inspire change in your staff
    o   Curate stories based on your own organization's culture
    o   Use examples that are meaningful, such as from:
        - Patient Safety Movement Foundation
        - Partnering to Heal (Office of Disease and Health Promotion, 2018)

Action plan

Change management is a critical element that you must include to sustain any improvements. A change management tool helps prepare and support individuals and teams so they can make organizational changes.

Ensure accountability

Recognizing the needs and ideas of the people who are part of the process—and who are charged with implementing and sustaining a new solution—is critical in building the acceptance and accountability for change. Building a strategy for acceptance and accountability of a change initiative can increase the opportunity for success and subsequent sustainability of improvements in your organization. "Facilitating Change," the change management model The Joint Commission developed, contains four key elements to consider when working through a change initiative to address HAIs (See **Appendix A**).

The Joint Commission Center for Transforming Healthcare Targeted Solutions Tool (TST) provides healthcare organizations with a comprehensive approach to improve hand hygiene compliance. However, when using the tool, measurement should only be done with an evidence-based, validated electronic hand hygiene compliance system. Both electronic monitoring and DOs have been proven to drive sustainable improvement (Steed, 2016; Boyce, 2017).

Create guidelines

This involves a proven 4 step process:

1. Identify barriers and obstacles unique to the unit using interventional DO as described above
2. Work with your unit leadership to put in place training and an action plan to remove the barriers
3. Implement training and action plan
4. Measure improvement using:
    a. An evidence-based, validated electronic hand hygiene compliance system
    b. Give appropriate feedback to ensure successes are acknowledged and that remaining barriers and obstacles are addressed (Steed, 2016)

Provide staff training

1. 1)   Teach staff by modeling and staff to teach-back the concepts
2. Admission nurses teach the concepts with daily reminders by staff nurses
    a. Family and visitors will also be taught
3. Use print and audiovisual materials to strengthen teaching
4. Ensure knowledge and use of approved cleaning agents for computers and other technological equipment

Technology plan

These suggested practices and technologies have shown proven benefit or, in some cases, are the only known technologies for certain tasks. If you know of other options not listed here, please complete the form for the PSMF Technology Vetting Workgroup to consider: **patientsafetymovement.org/actionable-solutions/apss-workgroups/technology-vetting/**

Recent research suggests that electronic hand hygiene compliance systems are accurate and reliable (Diller et al., 2014; Pittet et al., 2013) when combined with appropriate staff feedback and multimodal action plans can lead to reduced infections and avoided costs (Kelly et al., 2016; Robinson et al., 2014).

What to look for in an electronic hand hygiene compliance system

An electronic hand hygiene compliance system must:

- Be capable of capturing and reporting all hand hygiene events
- Be able to provide room level soap vs. sanitizer monitoring in the case of C Diff.
    o Giving timely feedback to staff on soap vs. sanitizer use has been shown to reduce C Diff rates (Robinson et al. 2014)
- Include a behavior change framework for how to use the data with front line staff to drive sustainable behavior change
    o The behavior change framework must also inherently foster a "just culture" and promote "psychological safety"
- Have validated accuracy
- Be evidence-based

Measuring outcomes

There is no direct calculation for mortality related to the hand hygiene performed in hospitals. Hospitals would need to link mortality to a healthcare-associated infection rate (ex: APSS 2A-2F). The most commonly accepted metric for measuring a hospital's compliance is offered below.

Key performance indicators

Key performance indicators you can use within the Hand Hygiene Protocol should be:

- Compliance rates at the Unit, Facility and IDN (Integrated Delivery Network) level plus individual when such technology is employed
- Daily, Weekly, Monthly, Quarterly, Yearly
- HAI rates and changes at the Unit, Facility and IDN level
- Safety Culture Assessment Annually

Based on the WHO "My five moments for hand hygiene" method (Sax et al., 2007; Sax et al., 2009), you can define moments as:

- Before patient contact
- Before aseptic task
- After body fluid exposure
- After patient contact
- After contacts with patient surroundings

Outcome measure formula

You can use the formula to calculate hand hygiene compliance during all 5 moments (Pittet, et al., 2013). You can apply a similar approach if only the Wash In/Wash Out Method is used. However, the "in room" moments provide a high risk of infection (Kelly, et al., 2015) and thus training on, and measurement of all 5 Moments is indicated. The WHO 5 Moments mirror the CDC Guideline so if your facility wants to adhere to CDC Guidelines, either the CDC or WHO 5 Moments need to be the standard of care that is taught, measured, and used for feedback.

Numerator: Number of hand hygiene events performed as measured by a validated electronic hand hygiene compliance system

Denominator: Number of hand hygiene events required (hand hygiene opportunities or HHOs) based on how the technology software calculates the denominator:

- The denominator could be based on the WHO 5 Moments, Wash In/Wash Out Method or another algorithm depending on the technology system used

Metric recommendations:

Direct impact: All patients

Deploying Use of the Electronic Hand Hygiene Compliance Data - Evidence Based Practice (Son et al., 2011)

1. Share the data with your frontline staff routinely (daily or weekly to start)
2. Empower your unit leadership to identify unit based barriers and obstacles along with action plans to eliminate them

3. Enable your units to establish their own performance improvement goals
4. Measure performance improvement against the goals and celebrate all successes
   a. Use DOs to understand lack of improvement
5. Hold your unit leadership accountable to performance improvement goals and make this part of the performance evaluation process

Conflicts of interest disclosure

The Patient Safety Movement Foundation partners with as many stakeholders as possible to focus on how to address patient safety challenges. The recommendations in the APSS are developed by workgroups that may include patient safety experts, healthcare technology professionals, hospital leaders, patient advocates, and medical technology industry volunteers. Some of the APSSs recommend technologies that are offered by companies involved in the Patient Safety Movement Foundation. The workgroups have concluded, based on available evidence, that these technologies work to address APSS patient safety issues. Workgroup members are members are required to disclose any potential conflicts of interest.

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Appendix A

"Facilitating Change," the change management model The Joint Commission developed, contains four key elements to consider when working through a change initiative to address Healthcare Associated Infections (HAIs).

Plan the Project:

- At the start of project, build a strong foundation for change by:
  - o Assessing the culture for change
  - o Defining the change
  - o Building a strategy
  - o Engaging the right people
  - o Painting a vision of the future

Inspire People:

- Ask for support and active involvement in the plan to reduce:
  - o HAIs
  - o Get agreements
  - o Build accountability for the outcomes
- Identify a leader for the HAI initiative (this is critical to the success of the project)
- Understand where resistance may come from

Launch the Initiative:

- Align operations and guarantee the organization has the capacity to change, not just the

ability to change
- Launch the HAI initiative with a clear champion and a clearly communicated vision by leadership

Support the Change:

- All leaders within the organization must be a visible part of the HAI initiative
- Frequent communication regarding all aspects of the HAI initiative will enhance the initiative
- Celebrate success as it relates to a reduction in HAIs or a positive change in HAI organizational culture
- Identify resistance to the HAI initiative as soon as it occurs