The Joint Commission’s Center for Transforming Healthcare aims to solve health care’s most critical safety and quality problems. The Center’s participants – the nation’s leading hospitals and health systems – use a proven, systematic approach to analyze specific breakdowns in patient care and discover their underlying causes to develop targeted solutions that solve these complex problems. In keeping with its objective to transform health care into a high reliability industry, The Joint Commission will share these proven effective solutions with the more than 20,500 health care organizations it accredits.

Bringing the Leading Health Care Organizations Together to Solve Challenging Health Care Problems

Atlantic Health System
Barnes-Jewish Hospital
Baylor Medical Center
Cedars-Sinai Health System
Cleveland Clinic
Exempla Healthcare
Fairview Health Services
Floyd Medical Center
Froedtert Hospital
Intermountain Healthcare
The Johns Hopkins Hospital and Health System
Kaiser Permanente
Mayo Clinic
Memorial Hermann Healthcare System
New York-Presbyterian Hospital
North Shore-Long Island Jewish Health System
Northwestern Memorial Hospital
OSF Saint Francis Medical Center
Partners HealthCare System
Sharp HealthCare
Stanford Hospital & Clinics
Texas Health Resources
Trinity Health
VA Connecticut Healthcare System
Virtua
Wake Forest Baptist Health
Wentworth-Douglass Hospital

How Will We Get There?

- Change Management
- Lean Six Sigma
- High Reliability
- Measureable Success
- Targeted Solutions
- Industry Engagement
- Sustainability

The Roadmap to Developing Solutions

Update: January 14, 2015
In the United States, one in 136 hospital patients become seriously ill as a result of acquiring an infection in the hospital. This is equivalent to two million cases a year.

And the costs.....“the overall annual direct medical costs of HAI to U.S. hospitals ranges from $28.4 to $45 billion.. the benefits of prevention range from a low of $5.7 to $6.8 billion to a high of $25.0 to $31.5 billion.”

R. Douglas Scott II, Economist, Division of Healthcare Quality Promotion, CDC, March 2009

“Every day, 247 people die in the USA as a result of a health care-associated infection.”
This is equivalent to a 767 aircraft crashing every day or more than 90,000 deaths annually.”

WHO Guidelines on Hand Hygiene in Health Care

World Health Organization

SAVE LIVES: Clean Your Hands

Health Care Associated Infections (HAI) affect hundreds of millions of people worldwide and are a major global issue for patient safety.

“Yet hand hygiene improvement is not a new concept… long lasting improvements remain difficult to sustain……”

WHO, Guide to Implementation of the WHO Multimodal Hand Hygiene Improvement Strategy

Update: January 14, 2015
# Hand Hygiene Project: Participating Hospitals’ Characteristics and Project Details

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Location</th>
<th>Teaching hospital</th>
<th>Number of Beds</th>
<th>Medical Surgical</th>
<th>Intensive Care Unit</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cedars-Sinai Medical Center</td>
<td>Los Angeles, California</td>
<td>Yes</td>
<td>950</td>
<td>x</td>
<td>x</td>
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</tr>
<tr>
<td>Exempla Lutheran Medical Center</td>
<td>Wheat Ridge, Colorado</td>
<td>No</td>
<td>400</td>
<td></td>
<td></td>
<td>x*</td>
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<tr>
<td>Froedtert Hospital</td>
<td>Milwaukee, Wisconsin</td>
<td>Yes</td>
<td>486</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Johns Hopkins Hospital</td>
<td>Baltimore, Maryland</td>
<td>Yes</td>
<td>1,041</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Memorial Hermann The Woodlands</td>
<td>Houston, Texas</td>
<td>No</td>
<td>252</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Trinity Health - Saint Joseph Mercy Hospital</td>
<td>Ann Arbor, Michigan</td>
<td>Yes</td>
<td>537</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtua Memorial Hospital</td>
<td>Mount Holly, New Jersey</td>
<td>No</td>
<td>270</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Wake Forest Baptist Medical Center</td>
<td>Winston-Salem, North Carolina</td>
<td>Yes</td>
<td>872</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

*Implemented throughout hospital

---

**Update:** January 14, 2015
Hand Hygiene Compliance Aggregated

<table>
<thead>
<tr>
<th>Month/Year</th>
<th>Hand Hygiene Compliance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb-Jul09</td>
<td>75%</td>
</tr>
<tr>
<td>Aug09</td>
<td>76%</td>
</tr>
<tr>
<td>Sept09</td>
<td>78%</td>
</tr>
<tr>
<td>Oct09</td>
<td>81%</td>
</tr>
<tr>
<td>Nov09</td>
<td>79%</td>
</tr>
<tr>
<td>Dec09</td>
<td>78%</td>
</tr>
<tr>
<td>Jan10</td>
<td>82%</td>
</tr>
<tr>
<td>Feb10</td>
<td>81%</td>
</tr>
<tr>
<td>Mar10</td>
<td>82%</td>
</tr>
<tr>
<td>Apr10</td>
<td>82%</td>
</tr>
<tr>
<td>May10</td>
<td>83%</td>
</tr>
<tr>
<td>Jun10</td>
<td>80%</td>
</tr>
<tr>
<td>Jul10</td>
<td>82%</td>
</tr>
<tr>
<td>Aug10</td>
<td>81%</td>
</tr>
<tr>
<td>Sept10</td>
<td>81%</td>
</tr>
</tbody>
</table>

**Aggregated Hand Hygiene Project Results**

- **Baseline**: Solutions Beginning
  - $\bar{x}=76\%$
  - $\bar{x}=75\%$
  - $\bar{x}=78\%$

- **Improve**: Sustained Improvement
  - $\bar{x}=81.0\%$

- **Post Improvement**: 70.5% Improvement ($p$-value=0.000)

**Joint Commission Center for Transforming Healthcare**

Update: January 14, 2015
# Main Causes of Failure to Clean Hands (across all participating hospitals)

<table>
<thead>
<tr>
<th>Main Causes of Failure to Clean Hands (across all participating hospitals)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ineffective placement of dispensers or sinks</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Hand hygiene compliance data are not collected or reported accurately or frequently</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Lack of accountability and just-in-time coaching</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Safety culture does not stress hand hygiene at all levels</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Ineffective or insufficient education</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Hands full</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Wearing gloves interferes with process</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Perception that hand hygiene is not needed if wearing gloves</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Health care workers forget</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Distractions</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

Note that not all of the main causes of failure appear in every hospital. The chart above represents the validation of the root causes across hospitals. This underscores the importance of understanding hospital-specific root causes so that appropriate solutions can be targeted.

Update: January 14, 2015
Identifying Causes, Targeting Solutions

Causes

- Ineffective placement of dispensers or sinks
- Hand hygiene compliance data are not collected or reported accurately or frequently
- Lack of accountability and just-in-time coaching

Solutions

- Provide easy access to hand hygiene equipment and dispensers
- Data provide a framework for a systematic approach for improvement
- Utilize a sound measurement system to determine the real score in real time
- Scrutinize and question the data
- Measure the specific, high-impact causes of hand hygiene failures in your facility and target solutions to those causes
- Leadership commits to hand hygiene as an organizational priority and demonstrates support by role modeling consistent hand hygiene compliance
- Train leaders as just-in-time coaches to reinforce compliance
- Through just-in-time coaches, intervene to remind health care workers to wash their hands
- Implement employee contracts to be signed by all health care workers to reinforce their commitment to hand hygiene
- Apply progressive disciplinary action against repeat offenders. Expectations should be applied equally to all health care workers

Joint Commission Center for Transforming Healthcare

Update: January 14, 2015
Identifying Causes, Targeting Solutions

Causes

- Safety culture does not stress hand hygiene at all levels
- Ineffective or insufficient education
- Hands full

Solutions

- Make hand hygiene a habit – as automatic as looking both ways when you cross the street or fastening your seat belt when you get in your car
- Commitment of leadership to achieve hand hygiene compliance of 90+ percent
- Serve as a role model by practicing proper hand hygiene
- Hold everyone accountable and responsible – doctors, nurses, food service staff, housekeepers, chaplains, technicians, therapists
- Provide general education on hand hygiene expectations. Include information on infection prevention, and stress the organization-wide commitment to hand hygiene highlighting strategies deployed to reinforce compliance such as posters and visual cues. Some organizations make this part of annual training provided to new and existing employees.
- Provide discipline-specific education that puts hand hygiene within the context of an employee’s daily work and processes
- Reinforce education with just-in-time coaching
- Create a place for everything: for example, a health care worker with full hands needs a dedicated space where he or she can place items while performing hand hygiene
Identifying Causes, Targeting Solutions

Causes

- Wearing gloves interferes with process
- Perception that hand hygiene is not needed if wearing gloves
- Health care workers forget or Distractions

Solutions

- Locate glove dispensers near handrub dispensers and sinks to facilitate the proper use of gloves
- Provide training on glove use that incorporates hand cleansing and glove use within a specific work flow
- Use visual cues to reinforce and remind

- Provide discipline-specific education that puts hand hygiene within the context of an employee’s daily work and processes
- Standardize the work processes that involve entry into a patient’s room, and specify when and why hand hygiene is required; for instance, standard processes for food tray delivery and room cleanings.
- Provide discipline-specific education and training on glove use

- Use a code word to be used among health care workers to signal to a peer that they missed an opportunity and need to wash
- Identify new technologies to make it easy for health care workers to remember to clean their hands, such as RFID, automatic reminders, and warning systems
- Train and deploy just-in-time coaches to provide real-time reinforcement and feedback to health care workers. Just-in-time coaches are critical in creating a change in culture and behavior.
- Visual cues reinforce hand hygiene messages and training. These include stickers, colors, and posters. Visual cues need to be changed periodically so that they continue to be effective.
- Apply progressive disciplinary action against repeat offenders. Expectations should be applied equally to all health care workers.
Effective Hygiene is in Our HANDS

Habit
- Always wash in and wash out upon entering/exiting a patient care area and before and after patient care
- Make washing hands a habit – as automatic as looking both ways when you cross the street or fastening your seat belt when you get in your car

Active Feedback
- Coach and intervene to remind staff to wash hands
- Clearly state expectations about when to sanitize hands to all staff members
- Communicate frequently – provide visible reminders and ongoing coaching to reinforce effective hand hygiene expectations
- Engage staff – real time performance feedback
- Tailor education in proper hand hygiene for specific disciplines
- Provide just-in-time training
- Use technology-based reminders and real time feedback
- Celebrate improved hand hygiene

No One Excused
- Protect the patient and the environment – everyone must wash in and wash out
- Make it comfortable to wash hands with soap or use waterless hand sanitizer
- Identify proper hand hygiene as an organizational priority and performance expectation
- Hold everyone accountable and responsible – doctors, nurses, food service staff, housekeepers, chaplains, technicians, therapists
- Apply progressive discipline from the top – managers must hold everyone accountable for proper hand washing
- Commitment of leadership to achieve hand hygiene compliance of 90+ percent
- Serve as a role model by practicing proper hand hygiene

Data Driven
- Data provide a framework for a systematic approach for improvement
- Utilize a sound measurement system to determine the real score in real time
- Use trained, certified independent observers to monitor appropriateness of hand hygiene
- Scrutinize and question the data
- Measure the specific, high-impact causes of hand hygiene failures in your facility and target solutions to those causes

Systems
- Focus on the system, not just on people
- Make it easy; examine work flow of health care workers to ensure ease of washing hands:
  - Provide easy access of hand hygiene equipment and dispensers
  - Create a place for everything: for example, a health care worker with full hands needs a dedicated space where he or she can place items while washing hands
  - Limit entries and exits from a patient’s room – make supplies available in room and eliminate false alarms that require staff to leave room to turn alarm off
  - Identify new technologies to make it easy for staff to remember to wash hands, i.e. radio frequency identification, automatic reminders, warning systems, real time scoring

No One Excused

Update: January 14, 2015