Hand Hygiene in the ED

Jeremiah Schuur, MD, MHS
Department of Emergency Medicine
Brigham & Women’s Hospital

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No conflict of interest to declare

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- Emergency Medicine Foundation, BWH Richard Wuerz Fund
- The John A. Hartford Foundation & The Atlantic Philanthropies
- Harvard Catalyst
- Society for Chest Pain Centers

Outside Work
- Scientific Advisory Board of United HealthCare
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- **Infection Prevention**: Debbie Yokoe, MD; Gina Picsz, RN
- Many RAs!!!!
- others
Brigham & Women’s Hospital

- Boston, MA
- Academic Medical Center, Level 1 Trauma
- ED residency
- ~60,000 ED visits per year
- Diverse patient population
Background:
Hand Hygiene by Unit, Feb-Apr 2008

Percent Compliant (%)
HH QI Plan, May 2008

- Assemble a multidisciplinary HH team
- Identify & Fix Physical Barriers
- Raise Awareness & Educate
- Measure Performance & Feedback to Staff
- Identify Champions (RN, MD, Environ Svcs, Security, Transport)
Barriers to HH in ED

- Knowledge
- Availability of Purell
- Awareness, Believability, & Ownership of performance
- Outside staff in ED

- Education & Awareness Campaign
- Mapped Purell Dispensers
- Numbered and created system for refilling
- Added regular internal audits & feedback
- Asked MDs to champion HH in ED
- Communication with consultants & rotators
Awareness
Knowledge: Agar Plates
Patient Contact

- After Contact
- After Purell
Stethoscope

After Used on Patient  After Cleaned with Alcohol
EKG Machine

- After Use

- After Purell
Ultrasound Machine

- After use
- After Purell
Keyboard

- After use
- After Purell
Physical Barriers: Hand Sanitizer availability
Near Real-Time Feedback
### BWH ED Hand Hygiene Audit Feedback Tool

<table>
<thead>
<tr>
<th>Date</th>
<th>10/6/2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Observed</td>
<td>Bravo</td>
</tr>
<tr>
<td>Shift</td>
<td>AM (7a-3p)</td>
</tr>
</tbody>
</table>

#### Attending 1:
- Arbelaez, Christian

#### Attending 2:
- Lauzon, Paul

#### Nurse in Charge

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### OVERALL HAND HYGIENE COMPLIANCE = 80%

12 of 15 observations

<table>
<thead>
<tr>
<th>Type of Provider</th>
<th>Total Observations</th>
<th>Obs. With Appropriate HH</th>
<th>Percent Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD / PA</td>
<td>4</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>ED Attending</td>
<td>2</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>ED Resident</td>
<td>2</td>
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<td>100%</td>
</tr>
<tr>
<td>Other Resident</td>
<td>0</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>Consult</td>
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</tr>
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<td>PA</td>
<td>0</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>Med/PA Student</td>
<td>0</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>Nurse</td>
<td>6</td>
<td>4</td>
<td>67%</td>
</tr>
<tr>
<td>ED Nurse</td>
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<td>4</td>
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</tr>
<tr>
<td>Float Nurse</td>
<td>0</td>
<td>0</td>
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</tr>
<tr>
<td>Student Nurse</td>
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</tr>
<tr>
<td>ESA</td>
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</tr>
<tr>
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<td>0</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>Pt. Transport</td>
<td>2</td>
<td>1</td>
<td>50%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
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**Note:** Three violations were observed in Bravo this afternoon. All three violations occurred after contact with a patient’s environment.
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### Overall Ultrasound Machine Cleaning Compliance

<table>
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<th>Type</th>
<th>Total Obs.</th>
<th>Clean Obs.</th>
<th>Percent Cleanliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine</td>
<td>2</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Probes</td>
<td>6</td>
<td>6</td>
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Appropriate hand hygiene means cleaning your hands both directly before and after patient contact. If you are wearing gloves, please clean directly before and after putting gloves on. To clean your hands either use Purell or soap and water.

Please remind fellow staff members to “Just clean your hands.”

Appropriate ultrasound probe cleaning means wiping the transducers before and after patient contact with red top "Sani Cloth" wipes.

**Attendings:** Please share this feedback with your residents/PAs on rounds at the end of your shift, then place this paper in the trash.
BWH Experience: Hand Hygiene Performance

Schuur J, et al. A multifaceted QI program improves HH compliance in the ED. Ann EM.; 2009;54(3):S75-S76
Kiosks: Waiting Room
Increased Visibility
Increased Visibility
Financial Reward

- Attending physicians who had shift HH compliance >90% received additional year end bonus
- ~$1000
Ongoing Monitoring, Prompt Feedback, and Reminders Improve Hand Hygiene in a Busy, Urban Emergency Department

Snapshot

Summary

The Brigham and Women’s Hospital Emergency Department implemented a multifaceted strategy to improve adherence to appropriate hand hygiene protocols. The strategy revolves around ongoing auditing, with unit leaders and staff receiving daily feedback on adherence rates. A multidisciplinary committee meets monthly to review these data, brainstorm solutions, and implement strategies to improve adherence, such as increasing the number of waterless hand sanitizer dispensers and providing education, training, and real-time reminders to staff. The program increased adherence significantly during a 10-month study period, from 36 to 91 percent. The majority of this improvement has been maintained since the end of the study, with rates remaining above 80 percent over the last 2 years.

Evidence Rating (What is this?)

Moderate: The evidence consists of pre- and post-implementation comparisons of the percentage of staff (both overall and by staff type) adhering to established hand hygiene protocols.

http://www.innovations.ahrq.gov/content.aspx?id=3071
HH Compliance: Predictors of HH Compliance

- 18 months; >5000 observations; Adjusted Relative Risks (p<.05)
- Healthcare worker type
  - PAs had higher HH compliance relative to others
  - Transport workers had lowest compliance
- Location (low compliance)
  - Hallway bed location (vs. a private treatment space)
  - Observation unit (vs. Acute units)
  - High room visibility (vs. low visibility)
- Workflow (low compliance)
  - Use of gloves, (vs. no gloves)
- ED crowding did not predict HH compliance
  - (occupancy, census, proximate unit census)

Success or Failure?

![Graph showing hand hygiene rate over time for different units: ED, ICU, and Non-ICU. The graph compares FY2010 to FY2012 across different quarters (FQ 1 to FQ 4).]
Challenges

- We don’t give direct real-time feedback
- Built environment challenges – trauma rooms
- How to engage non-ED staff:
  - consultants and rotators?
  - Transport, environmental services
- We wanted to be transparent to our patients with our results, but PR disagreed
- We don’t believe the hospital data
Questions?

“Wait, this one’s a lawyer. We’d better wash our hands.”
New ED Pod: Doorways
Precautions