The Importance of Worldwide Hand Hygiene Events and Activities

Prof. Didier Pittet, Patient Safety, Geneva
Sponsored by WHO First Global Patient Safety Challenge, Clean Care is Safer Care

Objectives

- Describe the background to WHO SAVE LIVES: Clean Your Hands – The scope of the problem
- Outline the impact of WHO's global hand hygiene efforts
- Outline examples of activities related to 5 May; the global day for focusing hand hygiene in health care

Establishing a global, annual day for hand hygiene in health care – the initial drivers

- High burden of endemic health care-associated infection worldwide
- Known sub-optimal hand hygiene compliance rates
- The potential impact of improved hand hygiene
- The potential impact of a campaign

High burden of endemic health care-associated infection worldwide

- Health care-associated infections (HCAI) are the most frequent adverse event in health-care delivery worldwide
- It can be estimated that each year, hundreds of millions of patients around the world are affected by HCAI
- The burden of HCAI is several fold higher in low- and middle-income than in high-income countries
- The burden of HCAI is one of the key areas of work of Clean Care is Safer Care

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An original article on the HCAI endemic burden in developing countries was published by the WHO Clean Care is Safer Care team in *The Lancet*.


### Compliance with hand hygiene in different health-care facilities - Worldwide

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Sector</th>
<th>Compliance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preston</td>
<td>1981</td>
<td>General Wards</td>
<td>16</td>
</tr>
<tr>
<td>Albert</td>
<td>1981</td>
<td>ICU</td>
<td>41</td>
</tr>
<tr>
<td>Larson</td>
<td>1981</td>
<td>ICU</td>
<td>28</td>
</tr>
<tr>
<td>Donowitz</td>
<td>1987</td>
<td>Neonatal ICU</td>
<td>30</td>
</tr>
<tr>
<td>Graham</td>
<td>1990</td>
<td>ICU</td>
<td>52</td>
</tr>
<tr>
<td>Dubbert</td>
<td>1990</td>
<td>Neonatal Unit</td>
<td>81</td>
</tr>
<tr>
<td>Pettinger</td>
<td>1991</td>
<td>Surgical ICU</td>
<td>51</td>
</tr>
<tr>
<td>Larson</td>
<td>1992</td>
<td>Neonatal Unit</td>
<td>40</td>
</tr>
<tr>
<td>Doebbeling</td>
<td>1992</td>
<td>ICU</td>
<td>40</td>
</tr>
<tr>
<td>Zimakoff</td>
<td>1993</td>
<td>ICU</td>
<td>40</td>
</tr>
<tr>
<td>Meengs</td>
<td>1994</td>
<td>Emergency Room</td>
<td>32</td>
</tr>
<tr>
<td>Pittet</td>
<td>1999</td>
<td>Hospital-wide</td>
<td>48</td>
</tr>
</tbody>
</table>

Average: 38.7%

WHO Moment 1 Global Observation Survey – 5 May 2010 - Results (1)
- 388 health-care settings
- 47 countries
- 82,650 opportunities
- Overall compliance: 51.4 ± 0.07%

WHO Moment 1 Global Observation Survey – Results (2)

### Hand hygiene compliance by region

<table>
<thead>
<tr>
<th>WHO region</th>
<th>N facilities (%)</th>
<th>N opportunities (%)</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMRO</td>
<td>140 (42.8%)</td>
<td>23183 (39.2%)</td>
<td>25%</td>
</tr>
<tr>
<td>EURO</td>
<td>99 (30.3%)</td>
<td>22278 (29%)</td>
<td>64%</td>
</tr>
<tr>
<td>EMRO</td>
<td>25 (7.6%)</td>
<td>16252 (21.2%)</td>
<td>44%</td>
</tr>
<tr>
<td>WPRO</td>
<td>40 (12.2%)</td>
<td>8452 (11%)</td>
<td>61%</td>
</tr>
<tr>
<td>SEARO</td>
<td>16 (5.5%)</td>
<td>5091 (6.6%)</td>
<td>54%</td>
</tr>
<tr>
<td>AFRO</td>
<td>5 (1.5%)</td>
<td>1547 (2%)</td>
<td>48%</td>
</tr>
<tr>
<td>Total</td>
<td>327 (100%)</td>
<td>76803 (100%)</td>
<td>51%</td>
</tr>
</tbody>
</table>

WHO Moment 1 Global Observation Survey – Results (3)

### Hand hygiene compliance by professional category

<table>
<thead>
<tr>
<th>Professional category</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse</td>
<td>64%</td>
</tr>
<tr>
<td>Doctor</td>
<td>48%</td>
</tr>
<tr>
<td>Auxiliary</td>
<td>56%</td>
</tr>
<tr>
<td>Other HCW</td>
<td>54%</td>
</tr>
</tbody>
</table>

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Impact of hand hygiene promotion on HCAI

- 1977- Feb 2011, 30 studies investigated the impact of hand hygiene (as a single intervention) to reduce HCAI
- 27 showed that behavioural change, illustrated by improved hand hygiene compliance, leads to the reduction of HCAI, particularly bloodstream and surgical site infection
- Only 3/30 studies showed no significant impact on HCAI but in 2 hand hygiene compliance did not increase significantly
- An increasing number of studies have investigated the correlation between alcohol-based handrub consumption and HCAI rates

Long-term reduction of infection rates and cost implications of successful hand hygiene promotion

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate of Handrub Use (per 1,000)</th>
<th>Cost of Handrub (per kg)</th>
<th>Incremental Cost of Handrub</th>
<th>Other Direct Costs</th>
<th>Total Direct Costs</th>
<th>No. of Nosocomial Infections</th>
<th>Infection Rate (per 100 Admissions)</th>
<th>Primary Infection Reduction (per kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>4.1</td>
<td>0.225</td>
<td>-</td>
<td>0.008</td>
<td>0.225</td>
<td>1,507</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>1995</td>
<td>4.9</td>
<td>0.225</td>
<td>-</td>
<td>0.008</td>
<td>0.225</td>
<td>1,507</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>1996</td>
<td>5.5</td>
<td>0.225</td>
<td>-</td>
<td>0.008</td>
<td>0.225</td>
<td>1,507</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>1997</td>
<td>2.7</td>
<td>0.14</td>
<td>-</td>
<td>0.008</td>
<td>0.14</td>
<td>1,006</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>1998</td>
<td>1.9</td>
<td>0.14</td>
<td>-</td>
<td>0.008</td>
<td>0.14</td>
<td>1,006</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>1999</td>
<td>2.0</td>
<td>0.14</td>
<td>-</td>
<td>0.008</td>
<td>0.14</td>
<td>1,006</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>2000</td>
<td>2.0</td>
<td>0.14</td>
<td>-</td>
<td>0.008</td>
<td>0.14</td>
<td>1,006</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>2001</td>
<td>5.0</td>
<td>0.14</td>
<td>-</td>
<td>0.008</td>
<td>0.14</td>
<td>1,006</td>
<td>0.06</td>
<td>0.06</td>
</tr>
</tbody>
</table>

The cost of a hospital-wide hand hygiene campaign averaged Euro 2.53 per admission and corresponds to ~ 1% of costs attributable to HAI.

HH Culture-Change Program

Components:
- Executive commitment – hospital, State, national
- Alcohol-based hand-rub
- Alcohol wipes for shared equipment (not mandated)
- Education – HCWs, patients & relatives
- HCW empowerment & engagement (talking walls, gimmicks)
- Clear outcome measures
- Publicity – open reporting of good and bad results

Measurement
- HH compliance
- ABHRS usage data (monthly)
- Rates of methicillin-resistant S. aureus (MRSA) disease:
  - HCA-MRSA bacteremia per 100 patient discharges (100 PDs) (monthly)
  - HCA-MRSA isolates per 100 pt days (monthly)

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Impact of alcohol hand-rub use on methicillin-resistant Staphylococcus aureus: an analysis of the literature

An increase in alcohol-based handrub consumption correlated significantly with an improvement in the MRSA situation (r = 0.78).


Significant reduction of Methicillin-resistant S. aureus burden in 38 French hospitals (1993-2007)

Following the launch of the ABHR campaign the consumption of ABHR increased regularly from 2000 to 2007 (2 to 21 L per 1000 HD)

In acute care hospitals, MRSA rate decrease was sharper after the launch of the ABHR campaign (-2% vs -4.7% per year)


Using campaigns to improve health

TB

Malaria

Using campaigns to improve health

TB

Malaria

Countries or areas running hand hygiene campaign

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WHO SAVE LIVES: Clean Your Hands

- To maintain a global profile on the importance of hand hygiene in health care to reduce health care-associated infections and enhance patient safety worldwide
- Every 5 May – WHO, bringing people together to improve and sustain hand hygiene

Objectives

- Describe the background to WHO's SAVE LIVES: Clean Your Hands – The scope of the problem
- Outline the impact of WHO's global hand hygiene efforts
- Outline examples of activities related to 5 May

124 countries committed to address HAI
89.3% world population coverage

Countries/areas running hand hygiene campaigns
(December 2010, 42 campaigns)

Adoption of the “My 5 Moments for Hand Hygiene” approach

Adoption of the “My 5 Moments for Hand Hygiene” approach

Proposes a unified vision
- for trainers, observers and health-care workers
- to facilitate education
- to minimize inter-individual variation
- to increase adherence

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Registrations 2009 - 2010

Examples of local activities 2009 & 2010

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>2009 (number of countries)</th>
<th>2010 (number of countries)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education sessions held</td>
<td>32</td>
<td>38</td>
</tr>
<tr>
<td>Promotional material distributed</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Displays about hand hygiene put up at facility</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>Hand hygiene audit</td>
<td>5</td>
<td>15*</td>
</tr>
<tr>
<td>Development and promotion of e learning tools</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Hand hygiene testing station</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Hand hygiene quiz</td>
<td>6</td>
<td>11</td>
</tr>
</tbody>
</table>

Examples of local activities 2009 & 2010

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>2009 (number of countries)</th>
<th>2010 (number of countries)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Media coverage</td>
<td>9*</td>
<td>6</td>
</tr>
<tr>
<td>Animator - hand / mascot</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Hand hygiene art project</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Synchronised hand wash</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Hand Hygiene questionnaire</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Signing a pledge to reduce HCAI and improve HH</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

Breaking news….facilities registered – May 2011

13 226 registered health-care facilities from 153 countries
Approx 7.6 mio health-care staff, and 3.3 mio patient beds

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Hand hygiene is important every day
- Aim for at least one registered health-care facility in every country
- A targeted plan to connect with those who still have no registered facilities
- Regions and countries to aim to keep the profile of hand hygiene alive by achieving more and more registrations & actively featuring SAVE LIVES: Clean Your Hands aims and goals, day on day, year on year
- SAVE LIVE: Clean Your Hands is a perfect illustration of "Great oaks from little acorns grow"

Examples of important publications that influence the 'impact' - 2011

Newly issued on 5 May 2011
http://www.who.int/gpsc/en/

Examples of important publications that influence the 'impact' - 2011

SAVE LIVE: Clean Your Hands registration curve – 4 May 2011

Updated bar graph on region numbers (4 May)

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SAVE LIVES Clean Your Hands

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Constraints with HCAI surveillance
- Surveillance systems for HCAI exist in several high-income countries but are virtually nonexistent in most low- and middle-income countries
- This makes it difficult to gather reliable global information on HCAI; however no institution or country can claim to have solved the problem of HCAI
- Only 23 developing countries (23/147 [15.6%]) reported a functioning HCAI national surveillance system in 2010
- 13/28 (46.4%) European high-income countries were reporting either ICU-acquired infections, SSI, or both, to the HELICS network in 2008

Overall prevalence of HCAI
Low- and middle-income countries
- Overall prevalence: 10.1%
- Pooled prevalence: 15.5%

High-income countries
- Overall prevalence: 7.6%

Overall healthcare- and device-associated infection incidence in high risk patients, 1995-2010 – meta-analysis

High-income countries
- Overall HAI: 17.0 pt-days
- CR-BSI: 3.5/1000 cath-days
- CR-UTI: 4.1/1000 cath-days
- VAP: 7.9/1000 vent-days

Low- and middle-income countries
- Overall HAI: 47.9/1000 pt-days
- CR-BSI: 12.2/1000 cath-days
- CR-UTI: 8.8/1000 cath-days
- VAP: 23.9/1000 vent-days

- at least X 2-3
- up to 13 times higher in some countries

Main solutions and perspectives for improvement are:
- identifying local determinants of the HCAI burden;
- improving reporting and surveillance systems at the national level;
- ensuring minimum requirements in terms of facilities and dedicated resources available for HCAI surveillance at the institutional level, including microbiology laboratories’ capacity;
- ensuring that core components for infection control are in place at the national and health-care setting levels;
- implementing standard precautions, particularly best hand hygiene practices at the bedside;
- improving staff education and accountability;
- conducting research to adapt and validate surveillance protocols based on the reality of developing countries;
- conducting research on the potential involvement of patients and their families in HCAI reporting and control.

Objectives
- Describe the background to WHO’s SAVE LIVES: Clean Your Hands – The scope of the problem
- Outline the impact of WHO’s global hand hygiene efforts
- Outline examples of activities related to 5 May

5 May 2011
Where do YOU stand on hand hygiene?

■ It’s time to move from commitment to sustained action on hand hygiene improvement!
■ The key aim for 5 May 2011 is to:
  - have all registered health-care facilities assess the progress of their hand hygiene practices through the WHO Hand Hygiene Self-Assessment Framework:
  - a validated and systematic tool to obtain a situational analysis of hand hygiene promotion and practices and to identify the level of progress within YOUR health-care facility

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Hand Hygiene Self-Assessment Framework

**HOW?**
- Download the Framework at [http://www.who.int/gpsc/5may/en/](http://www.who.int/gpsc/5may/en/) and fill out the online form to give WHO your details.
- Complete the Framework and calculate the score to identify the assigned level of hand hygiene promotion and practice in your healthcare facility.

[Hand Hygiene Self-Assessment Framework]

Testing the framework usability- 26 Respondents

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WHO Hand Hygiene Self-Assessment Framework Global Survey

- After a pilot phase involving a number of invited health-care settings and some hand hygiene national campaigns, WHO launches a global survey based on the use of the WHO Hand Hygiene Framework.

- The main objective is to evaluate the state of progress in terms of hand hygiene infrastructure, promotional activities, performance monitoring and feedback, and institutional commitment in health-care facilities around the world.

- WHO will invite all health-care facilities registered for SAVE LIVES: Clean Your Hands to participate and submit their Framework results online.

- Strict confidentiality will be kept on the facility's identity.

Everyone is important in the success of 5 May

WHO commitment to SAVE LIVES: Clean Your Hands

Encourage:
- through regular communications incl. a monthly newsletter;
- availability of tools;
- announcing SL;CYHs registration numbers;
- issuing new information on the global burden of HCAI;
- monitoring of Self-Assessment use;
- gathering of a sample of completed Self-Assessments;

Advocates at organizational, national and regional level

Promote:
- use of the WHO Framework (& WHO hand hygiene tools) for improved and sustained hand hygiene;
- SAVE LIVES: Clean Your Hands commitment through registrations;
- 5 May 2011 ‘promotional’ activities, with features on local web pages.

WHO Hand Hygiene Self-Assessment Framework Global Survey

- How to handwash poster;
- Your 5 Moments for hand hygiene poster;
- Hand hygiene when and how wallet;
- Observation tools;
- Hand hygiene why, how and when brochure;
- HH Self-Assessment Framework - French;
- HH Self-Assessment Framework - Spanish.

Use the Framework to identify where your facility stands in terms of hand hygiene resources, practices and promotion!

AND

By submitting your results online, help WHO obtain a global picture of hand hygiene progress and identify areas for further improvement!

To participate in the global survey your health-care facility must be registered for SAVE LIVES: Clean Your Hands and will receive an invitation by WHO.

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Health-care facilities
- **Commit** = register for SAVE LIVES: Clean Your Hands (if not already)
- **Track progress** = use the WHO Self-Assessment Framework
- **Plan actions** = address the components of the WHO multimodal improvement strategy, use hand hygiene improvement tools and plan reuse of the Framework
- **Communicate** = inform WHO on using the Self-Assessment Framework and plan and share other 5 May 2011 ‘promotional’ activities by presenting information on local web pages

Example activities 2011 – the importance of acknowledging key advocates around the globe

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Thank you for your support – the impact is being felt all around the globe

SAVE LIVES:
Clean Your Hands

5 MAY 2011
Where do YOU stand on hand hygiene?

Find all information at www.who.int/gpsc/5may
Send enquiries to savelives@who.int

WHO Patient Safety Challenge ... Clean Care is Safer Care
2011 Teleclass Series

- February 1 – Quality Improvement in Infection Prevention and Control
- April 8 – Hand Hygiene Education and Monitoring: Returning to the WHO "My Five Moments" Campaign
- May 5 – The Importance of Worldwide Hand Hygiene Events and Activities
- June 21 – Establishing an Infection Control Program for Acute Respiratory Infections and Ensuring Pandemic Preparedness
- July 20 – Highlights and Results from May 5, 2011 Initiatives Around the World
- August 20 – Latest Update on Clostridium difficile Control
- October 4 – MRSA: Is Search & Destroy the Way To Be?
- December 7 – Best Practices for Cleaning, Disinfection and Sterilization in Healthcare

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