

Hand hygiene programs in Healthcare settings

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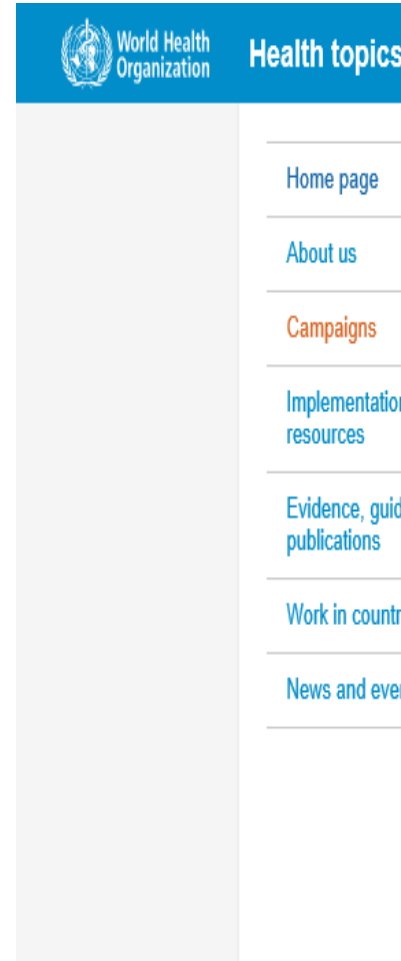
Where are we at?

WHO - Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework



Patient Safety
A World Alliance for Safer Health Care

- ▶ 2009
 - ▶ SAVE LIVES: Clean Your Hands
 - ▶ WHO Guidelines for Hand Hygiene in Healthcare
- ▶ 2010
 - ▶ The Hand Hygiene Self-Assessment Framework (HHSAF)
 - ▶ Tracking healthcare facility (HCF) level of progress
 - ▶ Implementation and continuous improvement
 - ▶ It was launched in following usability and reliability testing
- ▶ WHO has conducted two global surveys
 - ▶ 2011 & 2015



WHO Guidelines
on Hand Hygiene in Health Care

First Global Patient Safety Challenge
Clean Care is Safer Care



Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework.
Journal of Hospital Infection. Published online: July 30, 2018 <https://doi.org/10.1016/j.jhin.2018.07.036>

WHO - Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework

- ▶ 2011
 - ▶ 2119 health facilities
 - ▶ 69 countries
- ▶ 2015
 - ▶ 807 health facilities
 - ▶ 91 countries
- ▶ A total of 86 facilities submitted results for both surveys
- ▶ Overall score increased significantly ($p < 0.001$) from 335.1 ($SD \pm 97.5$) to 374.4 ($SD \pm 90.5$)



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Article in Press

Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework

[Claire Kilpatrick](#), [Erмира Tartari](#), [Angèle Gayet-Ageron](#), [Julie Storr](#), [Sara Tomczyk](#), [Benedetta Allegranzi](#)¹, [Didier Pittet](#)¹✉

WHO - Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework

- ▶ A total of 86 HCF from 31 countries participated in both surveys
 - ▶ 65.1% non-teaching
 - ▶ 50% acute care
 - ▶ 76.7% private sector
- ▶ The average number of beds per facility
 - ▶ 491.2 (SD±668.9) in 2011 and
 - ▶ 490.0 (SD±707.3) in 2015 (p=0.902)
- ▶ The **majority of the 86 HCFs** were **non-teaching, acute care facilities belonging to the private sector**



World Health Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES

Clean Your Hands

Hand Hygiene Self-Assessment Framework 2010

Introduction and user instructions

Total Score (range)	Hand Hygiene Level
0 - 125	Inadequate
126 - 250	Basic
251 - 375	Intermediate (or Consolidation)
376 - 500	Advanced (or Embedding)

Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework.

Journal of Hospital Infection. Published online: July 30, 2018 <https://doi.org/10.1016/j.jhin.2018.07.036>

WHO - Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework

► 2015

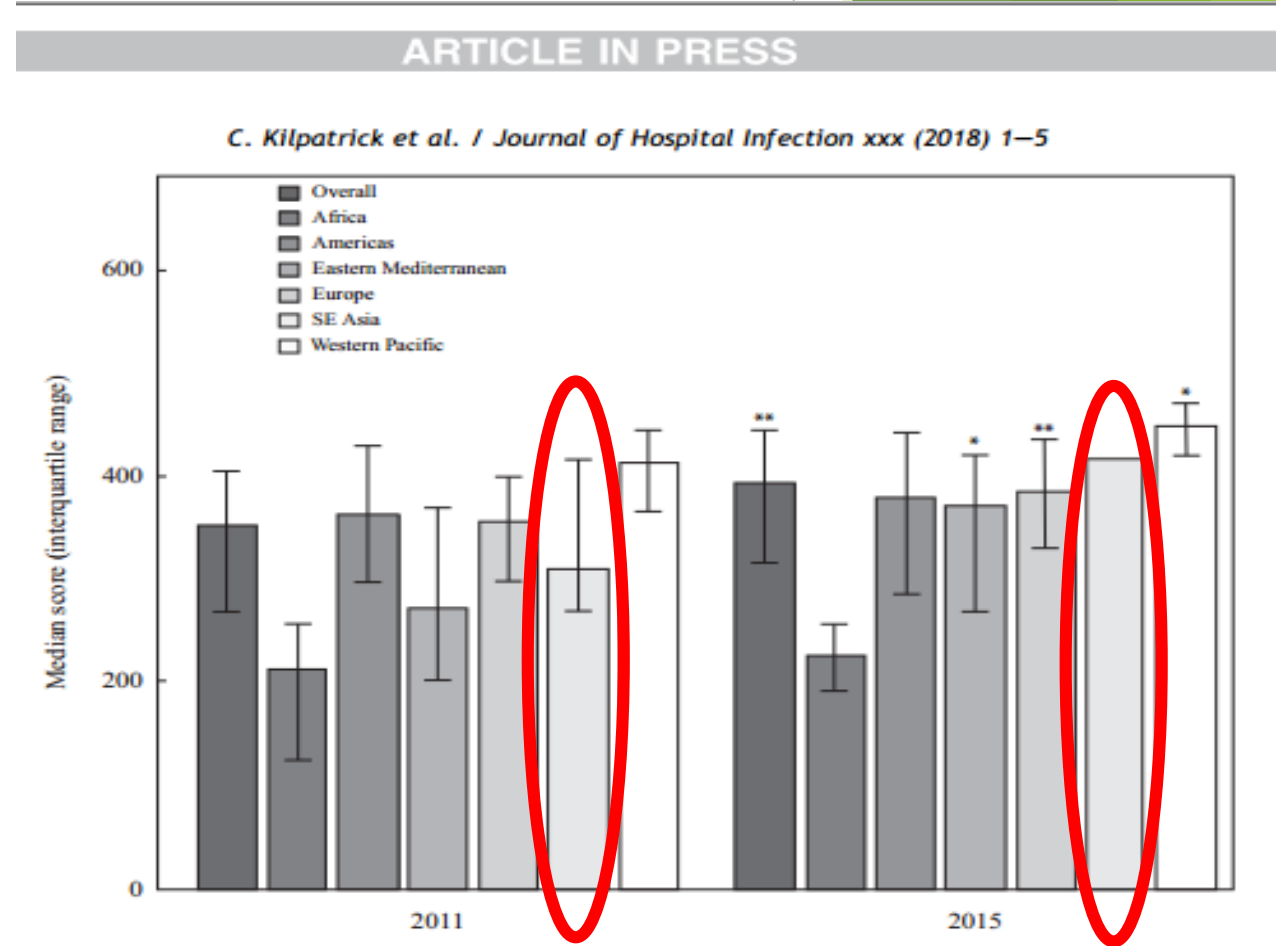
- Some facilities that achieved the advanced level **did not complete the leadership level indicators**
 - HHSAF be completed by IPC leads, or senior managers fully informed about hand hygiene activities in the institution

Table 1: Hand Hygiene Self-Assessment Framework; WHO global surveys 2011 vs. 2015 (86 healthcare facilities, from 31 countries*)

	2011	2015
Overall score (mean±SD, median) (n=86)	335.1 (±97.5, 351)	374.4 (±90.5, 392.5)
By components (mean±SD, median)		
System change (n=84)	85.2 (±21.5, 100.0)	88.2 (±21.3, 100.0)
Training and education (n=85)	71.7 (±21.0, 75.0)	77.1 (±21.7, 80.0)
Evaluation and feedback (n=84)	59.6 (±24.4, 65.0)	69.2 (±22.8, 75.0)
Reminders in the workplace (n=85)	68.9 (±24.5, 70.0)	75.4 (±20.8, 80.0)
Institutional safety climate for hand hygiene (n=85)	54.6 (±25.2, 55.0)	63.8 (±25.8, 65.0)
Hand hygiene level, n (%) (n=86)		
Inadequate	2 (2.3)	1 (1.2)
Basic	16 (18.6)	10 (11.6)
Intermediate (or consolidation)	37 (43.0)	23 (26.7)
Advanced (or embedding)	31 (36.1)	52 (60.5)
Score for leadership criteria on 31 hospitals (mean±SD, median)	14.3 (±3.7)	15.8 (±2.7)
Proportion of centers with a leadership score ≥12 (%) (n=31)	28 (90.3)	30 (96.8)

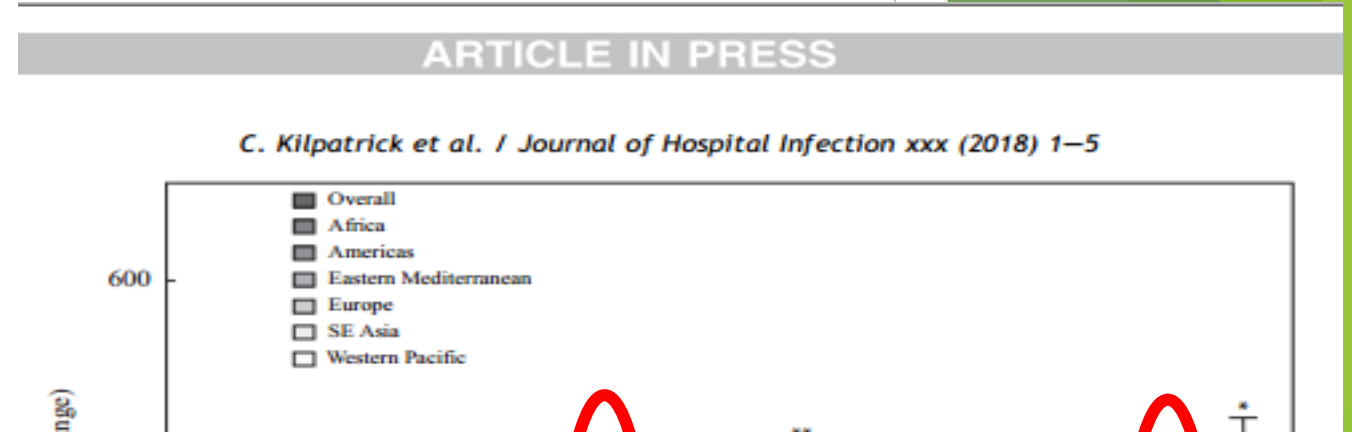
WHO - Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework

- ▶ WHO Hand Hygiene Self-Assessment Framework median overall score in 2011 and 2015 surveys and by region (n=86 facilities)
- ▶ The median overall HHSAF score improved significantly ($P < 0.001$) between 2011 and 2015
- ▶ In selected facilities in selected countries across all six WHO regions, reaching statistical significance for:
 - ▶ Eastern Mediterranean ($P < 0.01$)
 - ▶ Europe ($P < 0.001$) and
 - ▶ Western Pacific ($P < 0.01$) regions



WHO - Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework

- ▶ ? Global snapshot of the current position of hand hygiene implementation efforts in selected facilities in countries across all WHO regions



Countries (number of facilities) were: Algeria (n=3), Argentina (n=3), Australia (n=11), Austria (n=1), Bahrain (n=1), Belgium (n=1), Burundi (n=1), Canada (n=3), China (n=1), Columbia (n=1), Costa Rica (n=1), Estonia (n=1), France (n=5), Hungary (n=1), Italy (n=6), Kuwait (n=1), Malta (n=1), New Zealand (n=2), Philippines (n=1), Portugal (n=4), Saudi Arabia (n=7), Singapore (n=1), Spain (n=7), Sudan (n=5), Switzerland (n=2), Thailand (n=1), Tunisia (n=1), United Arab Emirates (n=1), UK (n=3), USA (n=8) and Vietnam (n=1)

Australia -National Data

National Hand Hygiene Initiative

- ▶ National Hand Hygiene Initiative
 - ▶ Audit Period Two 2018
 - ▶ 1st April 2018 - 30th June 2018
 - ▶ 1017 organisations (934 hospitals)
 - ▶ Both the public and private sectors
- ▶ The average compliance rate was **85.1%**

The screenshot shows the Hand Hygiene Australia website. The header includes the logo and navigation links: Home, About Us, Contact Us, Search, and FAQ. Below the header is a secondary navigation bar with links for HAND HYGIENE, ONLINE LEARNING, AUDITS, IMPLEMENTATION, and RESOURCES. The main content area displays the title 'National Data - National Hand Hygiene Initiative' and the audit period 'Audit Period Two 2018 1st April 2018 - 30th June 2018'. A text block states: 'Data have been collected nationally from a total of 1017 organisations (934 hospitals) from both the public and private sectors. The average compliance rate was 85.1%.' Below this is a table titled 'Overall Compliance Rate' with a red circle highlighting the 'Compliance Rate' column.

	Correct Moments	Total Moments	Compliance Rate	Lower 95% CI	Upper 95% CI
Overall Rate	501,534	589,640	85.1%	85.0%	85.1%

Hand Hygiene Compliance - there are serious validity problems

▶ Australia

- ▶ University tertiary teaching hospital in Sydney, NSW
- ▶ December 2014 - June 2015
- ▶ HHA rates (Hand Hygiene Australia human audits)
 - ▶ June 2014 were 85% and 87% on the medical and surgical wards, respectively
- ▶ Covert automation (electronic surveillance) rates
 - ▶ **June 2014 on the medical and surgical ward at 30% and 49%, respectively**

Australia - Yen Lee Angela Kwok et al. Automated hand hygiene auditing with and without an intervention. American Journal of Infection Control 44 (2016) 1475-80

American Journal of Infection Control 44 (2016) 1475-80

Contents lists available at ScienceDirect

 American Journal of Infection Control 

journal homepage: www.ajicjournal.org

Major Article

Automated hand hygiene auditing with and without an intervention 

Yen Lee Angela Kwok MBBS, MPH, MHM, PhD ^a, Craig P. Juergens MBBS, DMedSc, FRACP ^b, Mary-Louise McLaws DipTropPubHlth, MPHlth, PhDMed ^{a,*}

^a School of Public Health and Community Medicine, UNSW Medicine, UNSW Australia, Sydney, NSW, Australia
^b Southwestern Sydney Clinical School, UNSW Medicine, UNSW Australia, Sydney, NSW, Australia

Human hand hygiene audits makes patients, the public and clinicians believe that habitual compliance is actually high

Cost of automation is 'expensive' but so is using nursing staff to collect highly biased rates that are inflated by 30-65 percentage points

Australia - Cost effectiveness of a national Hand Hygiene initiative

- ▶ Hand Hygiene Australia program in 6 Australian states/territories indicated the following:
 - ▶ In 2/6 states there was a 1% chance it was cost effective

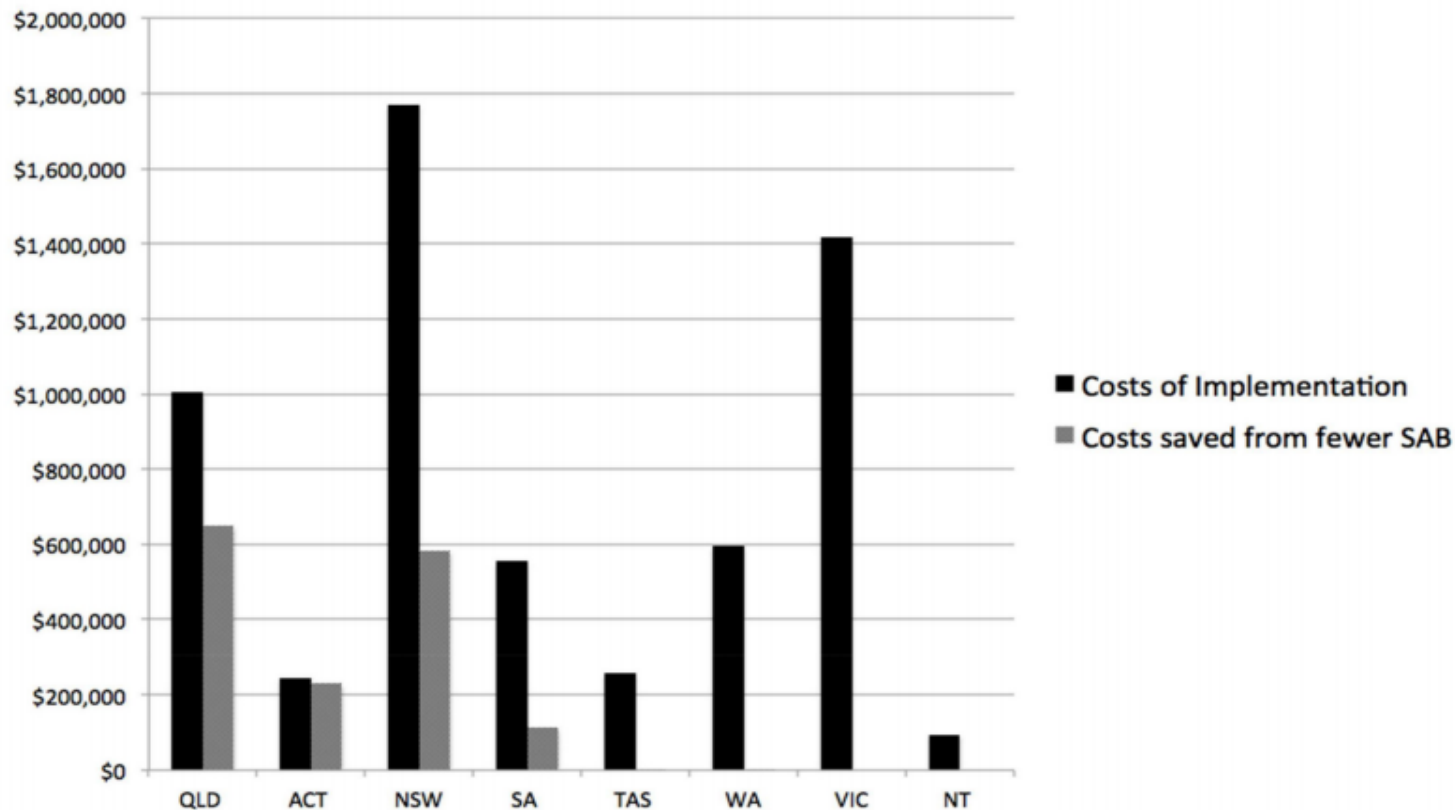


Fig 2. Cost increases and cost savings by state and territory for the National Hand Hygiene Initiative.

Cost-Effectiveness of a National Initiative to Improve Hand Hygiene Compliance Using the Outcome of Healthcare Associated *Staphylococcus aureus* Bacteraemia

Nicholas Graves^{1*}, Katie Page¹, Elizabeth Martin¹, David Brain¹, Lisa Hall¹, Megan Campbell¹, Naomi Fulop², Nerina Jimmison³, Katherine White¹, David Paterson⁴, Adrian G. Barnett¹

¹ Institute of Health & Biomedical Innovation, Queensland University of Technology, Brisbane, Queensland,

Graves N, Page K, Martin E, Brain D, Hall L, Campbell M, et al. (2016) Cost-Effectiveness of a National Initiative to Improve Hand Hygiene Compliance Using the Outcome of Healthcare Associated *Staphylococcus aureus* Bacteraemia. *PLoS ONE* 11(2): e0148190. doi:10.1371/journal.pone.0148190

UK - Infection Prevention and Control parliamentary debate

- ▶ **15/5/2018** - UK parliamentary debate, Westminster Hall
- ▶ **Actual hand hygiene compliance is only 18% - 44% in the UK**
- ▶ Direct observation is grossly overestimating HH compliance rates (Hawthorn effect)

<https://goo.gl/7D4zTD>

The screenshot shows the Hansard website interface. At the top, there is a navigation bar with the UK Parliament logo and links for Parliamentary Business, MPs, Lords and Offices, About Parliament, Get Involved, Visit, and Education. Below this is the Hansard header with dropdown menus for Commons, Lords, and About, and a search bar. A green banner below the header reads "House of Commons Hansard" and includes a link to take a survey. The main content area is titled "Infection Prevention and Control" and includes a "Share" button. The date "15 May 2018" and "Volume 641" are displayed. A speech bubble from Jim Shannon (Strangford) (DUP) is shown, starting with "I beg to move," and mentioning that the House has considered raising standards of infection prevention and control in the NHS.

Switzerland

- ▶ Switzerland
 - ▶ Haematology transplant ward at a tertiary care centre -UniversityHospital Basel, Switzerland
 - ▶ 1st March 2012 - 28th February 2013
 - ▶ Calculated compliance was inversely associated with nurses' workload
 - ▶ **Hand-rub activities/patient-day, observer-determined compliance and amount of disinfectant dispensed did not correlate with actual compliance** and thus should be used with caution

The screenshot shows the top navigation bar of the Journal of Hospital Infection website, including the journal title and the Healthcare Infection Society logo. Below the navigation bar is a search bar with a dropdown menu set to 'All Content' and a 'Search' button. The main content area displays the article title 'Workload even affects hand hygiene in a highly trained and well-staffed setting: a prospective 365/7/24 observational study' and the issue information 'September 2017 Volume 97, Issue 1, Pages 11-16'. A green-bordered text box highlights the following text: 'Electronic determined compliance 24% - 66% the higher the workload the lower the compliance' and 'Observational compliance 90%'.

USA - Joint Commission

► 2004

- Surveyors have been surveying an institution's hand hygiene program to National Patient Safety Goal (NPSG) which requires healthcare organizations to:
 - Implement a hand hygiene program
 - Set goals for improving compliance with the program
 - Monitor the success of those plans
 - Improve the results through appropriate actions
- A healthcare organization can implement hand hygiene guidelines established by either the Centers for Disease Control and Prevention (CDC) or the World Health Organization (WHO)



The screenshot shows the website for The Joint Commission, specifically the page for Hand Hygiene. The page features a navigation bar with links for Accreditation, Certification, Standards, Measurement, Topics, About Us, and Daily Update. The main content area is titled "Hand Hygiene" and includes a section for "Hand hygiene information" with a list of resources. There are also sections for "Joint Commission Content" and "Joint Commission Resources".

The Joint Commission

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Home > Topics > Infection Prevention and Control > Hand Hygiene

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Wednesday 2:14 CST, September 19, 2018

Hand Hygiene

The Infection Control Page and HAI Portal are now one new resource: The Infection Prevention and HAI Portal

Hand hygiene information

Hand hygiene is the most important intervention for preventing HAIs. Resources include:

- Hand hygiene solutions available from the Center for Transforming Healthcare
- The monograph on Measuring Hand Hygiene Adherence: Overcoming the Challenges

Joint Commission Content

- Hand Hygiene Compliance Now Mandatory in All Ambulatory Care Settings
- Sustaining and Spreading Improvement in Hand Hygiene Compliance

Joint Commission Resources

- Hand Hygiene Buttons and Stickers
- "Stopping Infection Is in Our Hands" hand hygiene buttons

Joint Commission Center for Transforming Healthcare

- Hand Hygiene Project
- International Hand Hygiene Project

https://www.jointcommission.org/topics/hai_hand_hygiene.aspx

USA - Joint Commission

- ▶ Jan. 1, 2018
 - ▶ Announced that **any observation by Joint Commission surveyors** of individual failure to perform hand hygiene in the process of direct patient care will be cited as a deficiency
 - ▶ **Resulting in a Requirement for Improvement (RFI)** under the Infection Prevention and Control (IC) chapter for all accreditation programs



The Joint Commission
Journal on Quality and Patient Safety[®]

Improvement from Front Office to Front Line January 2015
Volume 41 Number 1

Sustaining and Spreading Improvement in Hand Hygiene Compliance

Features

- Infection Prevention and Control**
 - Editorial: Toward More Reliable Processes in Health Care
 - Improving Hand Hygiene at Eight Hospitals in the United States by Targeting Specific Causes of Noncompliance
 - Beyond the Collaborative: Spreading Effective Improvement in Hand Hygiene Compliance
- Performance Improvement**
 - Using Lean Management to Reduce Blood Culture Contamination
- Teamwork and Communication**
 - Implementation of a Standardized Postanesthesia Care Handoff Increases Information Transfer Without Increasing Handoff Duration
- Department Field Notes**
 - Inviting Families to Participate in Care: A Family Involvement Menu

"If other quality and safety problems exhibit the same characteristics as hand hygiene noncompliance, attempting to address them everywhere with exactly the same set of interventions is likely to fail because the key causes of the problem will differ from place to place."

— Beyond the Collaborative: Spreading Effective Improvement in Hand Hygiene Compliance (p. 24)

 Joint Commission Resources

Journal of Hospital Infection - Editorial

Hand hygiene compliance: are we kidding ourselves?

- ▶**unachievably high local or national targets**, and especially those where underperformance attracts penalties, **might provide a perverse incentive to demonstrate high hand hygiene compliance**
- ▶ **Apps may also assist in reducing interobserver variation**,use of apps still depends on direct observation of practice, meaning that **the risk of a Hawthorne effect remains**
- ▶**90% -100% compliance is not achievable** as demonstrated in independent studies, but there is little evidence for any specific values below which patients are put at risk of HCAI**would it be better to target hand hygiene education and monitoring on the highest-risk practices?**
- ▶ Another issue is that the **WHO moments of hand hygiene concept (which itself has a limited evidence base)** gives equal weight to each moment, whereas some moments may have a greater bearing on HCAI compared with others

Journal of Hospital Infection 92 (2016) 307–308



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Journal of Hospital Infection

journal homepage: www.elsevierhealth.com/journals/jhin



Editorial

Hand hygiene compliance: are we kidding ourselves?



described by Viswanath *et al.* can facilitate better recording of hand hygiene compliance.⁸ It offers the potential for rapid collation of data and timely feedback to HCWs in order to facilitate improvement. Apps may also assist in reducing inter-observer variation, which is an important source of bias.⁹ However, use of apps still depends on direct observation of practice, meaning that the risk of a Hawthorne effect remains.⁹ Against this background, the study by Møller-Sørensen *et al.* provides an important reminder that any method of observation of hand hygiene performance is subject to bias.¹⁰ Whereas the authors demonstrated an improvement in the rate of hand hygiene compliance in those using the toilet facility, this apparently favourable outcome may have been

Introduction

Hand hygiene is one of the main strategies for reducing the incidence of healthcare-associated infections (HCAs) and it is included in a number of national and international guidelines.^{1,2} The weight of evidence for hand hygiene in preventing

Journal of Hospital Infection - Editorial

Hand hygiene compliance: are we kidding ourselves?

- ▶ **It is clear that monitoring hand hygiene compliance using direct observation is flawed.....** and that electronic devices/methods in combination with smaller observational audits using appropriately trained staff would enable a better assessment
- ▶in an era of multi-resistant Gram-negative bacteria, **it is now time to take stock and consider that we have spent a number of years performing research on hand hygiene with little evidence that any particular strategy works**
- ▶ Perhaps **future research should be focused not on campaigns to improve hand hygiene at all costs**, but on understanding when hand hygiene is most beneficial, setting reasonable, achievable targets, and then monitoring using validated, reproducible methods

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Editorial

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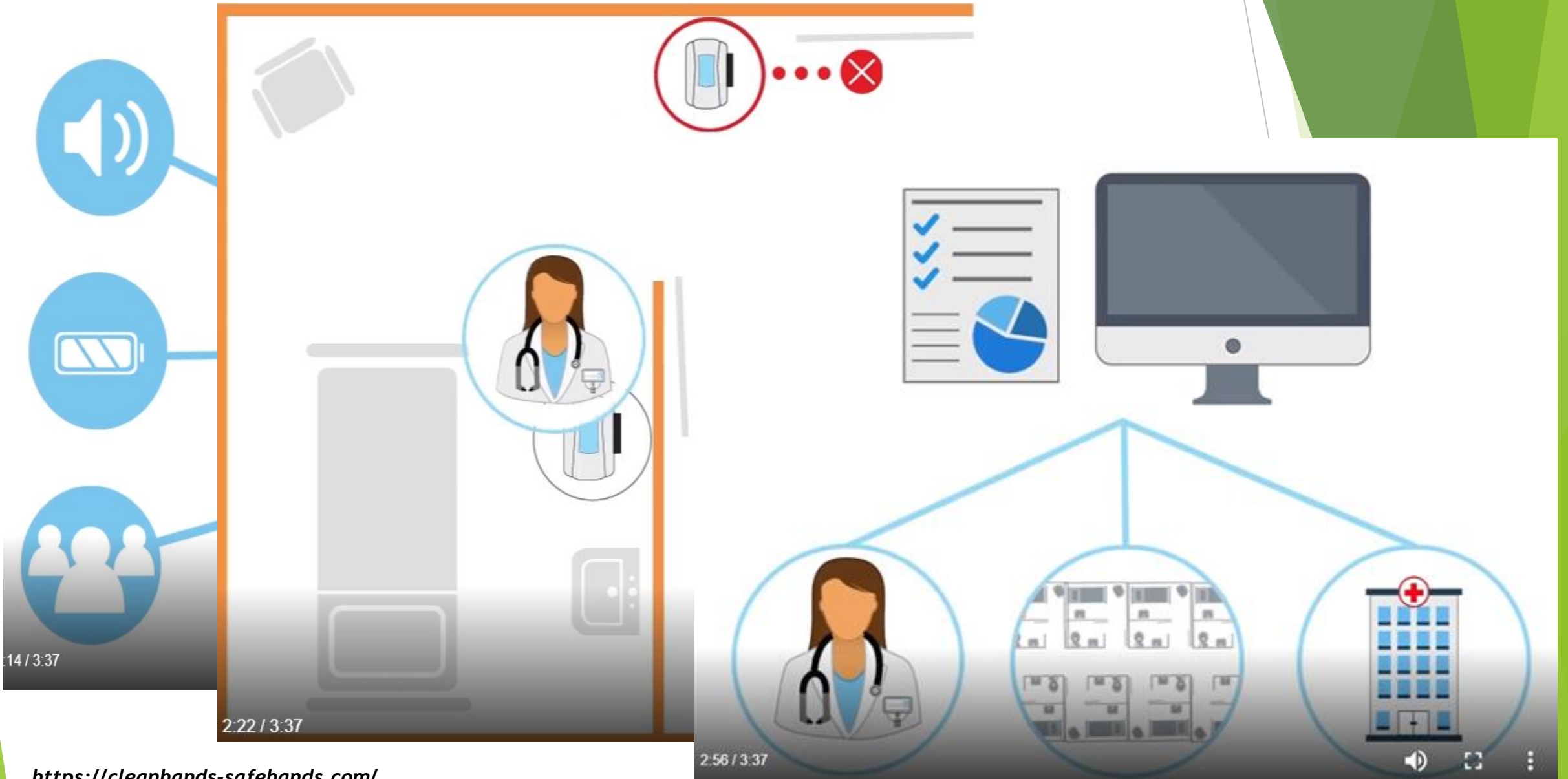


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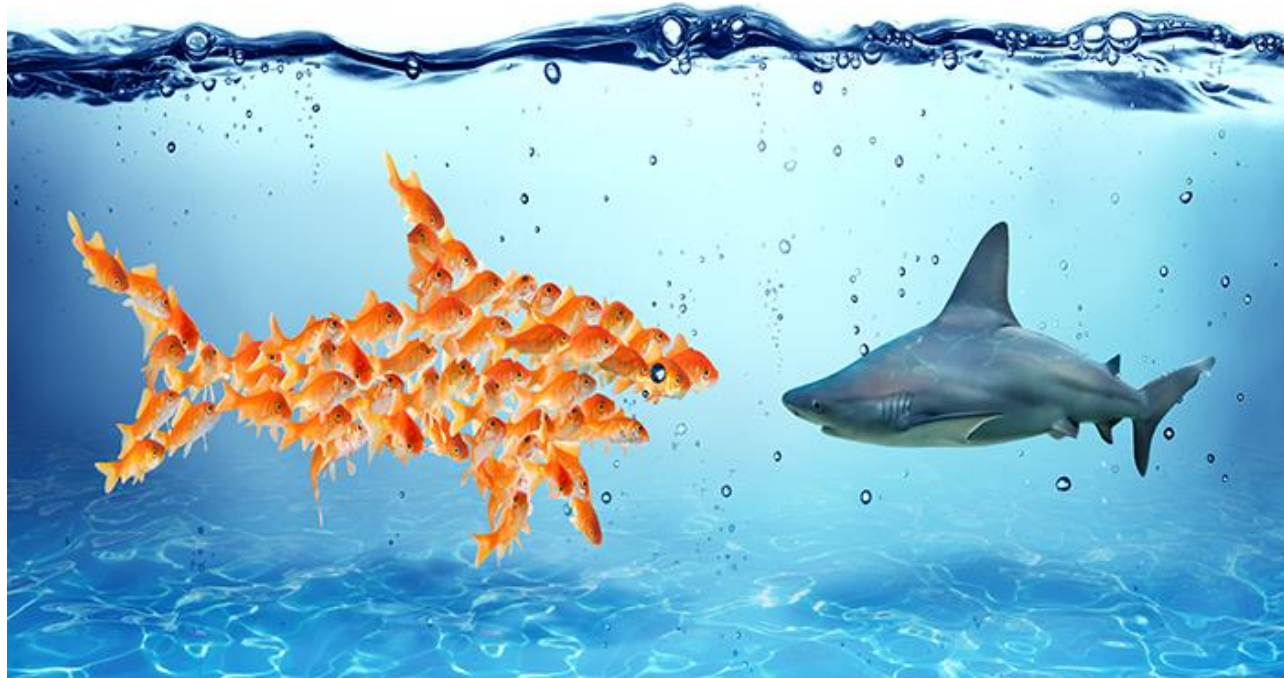
Introduction

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Hand hygiene monitoring system



TEAMWORK



Thank you

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