WHO
Multimodal Hand Hygiene Improvement Strategy

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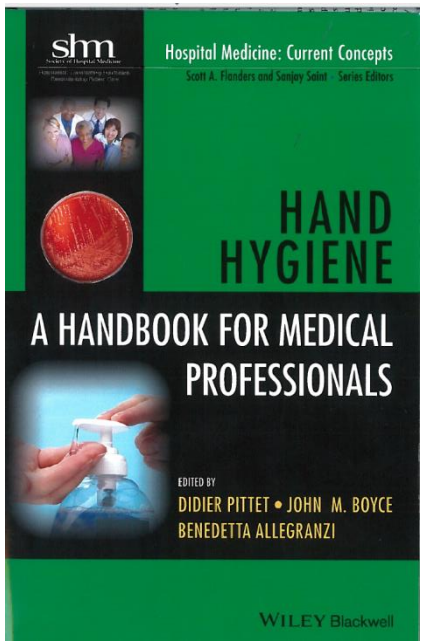
SAVE LIVES
Clean Your Hands



Guide to Implementation

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

WHO Hand Hygiene improvement Multimodal Strategy (MMS)

- Proposed to put into practice the WHO recommendations on HH

- Its development was based on the literature on implementation science, behavioural change, spread methodology , diffusion of innovation and impact evaluation

- Core of the strategy: conceived at HUG and Geneva's faculty of Medicine, where it prove to be effective in reducing HAI and be cost effective

WHO Hand Hygiene improvement Multimodal Strategy

- Between 2006-2008 a draft version, with the implementation tools was tested in nts healthcare facility (HCF) in several countries es in cultural and economic levels, degrees of IPC implementation

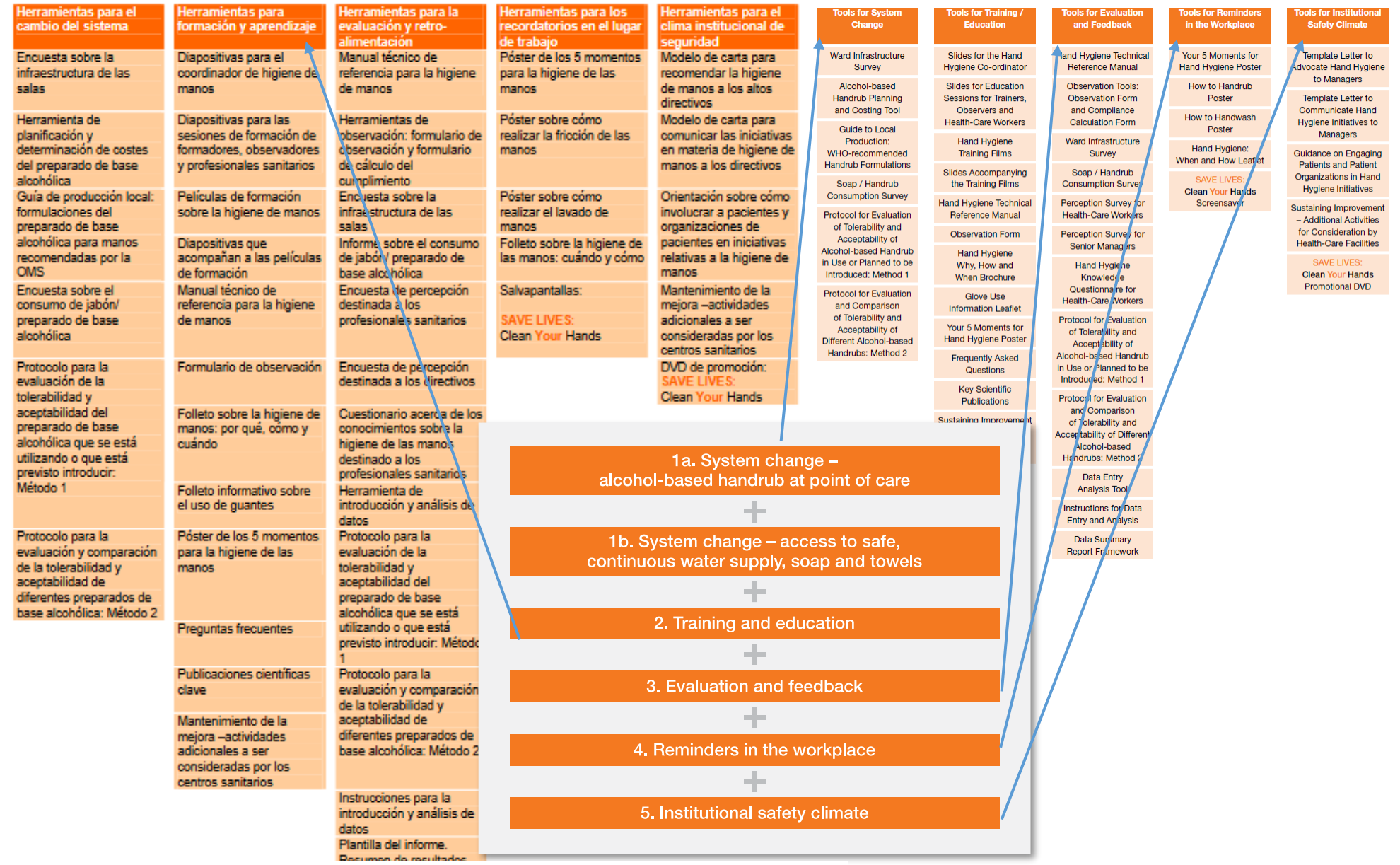
- The implementation proved to e

- Significant improvements of HH infrast compliance, perception and knowledge

WHO Hand Hygiene improvement Multimodal Strategy

- In 2009 with the lessons learned, it was issued a standardized approach for worldwide implementation and adaptation
- To facilitate change, in the infrastructure and the behaviour of HCW at the point of care within an institutional safety climate
- 5 components to be implemented in parallel
- Tools to facilitate implementation of each component – available in different languages

WHO Hand Hygiene improvement Multimodal Strategy

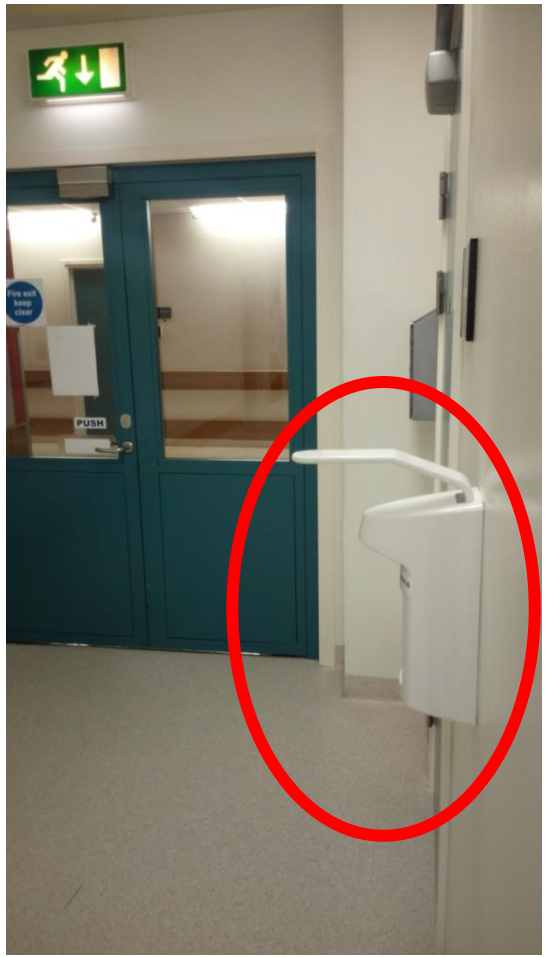

Herramientas para el cambio del sistema
Encuesta sobre la infraestructura de las salas
Herramienta de planificación y determinación de costes del preparado de base alcohólica
Guía de producción local: formulaciones del preparado de base alcohólica para manos recomendadas por la OMS
Encuesta sobre el consumo de jabón/ preparado de base alcohólica
Protocolo para la evaluación de la tolerabilidad y aceptabilidad del preparado de base alcohólica que se está utilizando o que está previsto introducir: Método 1
Protocolo para la evaluación y comparación de la tolerabilidad y aceptabilidad de diferentes preparados de base alcohólica: Método 2
Herramientas para formación y aprendizaje
Diapositivas para el coordinador de higiene de manos
Diapositivas para las sesiones de formación de formadores, observadores y profesionales sanitarios
Películas de formación sobre la higiene de manos
Diapositivas que acompañan a las películas de formación
Manual técnico de referencia para la higiene de manos
Formulario de observación
Folleto sobre la higiene de manos: por qué, cómo y cuándo
Folleto informativo sobre el uso de guantes
Póster de los 5 momentos para la higiene de las manos
Preguntas frecuentes
Publicaciones científicas clave
Mantenimiento de la mejora –actividades adicionales a ser consideradas por los centros sanitarios
Herramientas para la evaluación y retro-alimentación
Manual técnico de referencia para la higiene de manos
Herramientas de observación: formulario de observación y formulario de cálculo del cumplimiento
Encuesta sobre la infraestructura de las salas
Informe sobre el consumo de jabón/ preparado de base alcohólica
Encuesta de percepción destinada a los profesionales sanitarios
Encuesta de percepción destinada a los directivos
Cuestionario acerca de los conocimientos sobre la higiene de las manos destinado a los profesionales sanitarios
Herramienta de introducción y análisis de datos
Protocolo para la evaluación de la tolerabilidad y aceptabilidad del preparado de base alcohólica que se está utilizando o que está previsto introducir: Método 1
Protocolo para la evaluación y comparación de la tolerabilidad y aceptabilidad de diferentes preparados de base alcohólica: Método 2
Instrucciones para la introducción y análisis de datos
Plantilla del informe. Resumen de resultados
Herramientas para los recordatorios en el lugar de trabajo
Póster de los 5 momentos para la higiene de las manos
Póster sobre cómo realizar la fricción de las manos
Póster sobre cómo realizar el lavado de manos
Folleto sobre la higiene de las manos: cuándo y cómo
Salvapantallas:
SAVE LIVES: Clean Your Hands
Herramientas para el clima institucional de seguridad
Modelo de carta para recomendar la higiene de manos a los altos directivos
Modelo de carta para comunicar las iniciativas en materia de higiene de manos a los directivos
Orientación sobre cómo involucrar a pacientes y organizaciones de pacientes en iniciativas relativas a la higiene de manos
Mantenimiento de la mejora –actividades adicionales a ser consideradas por los centros sanitarios
DVD de promoción: SAVE LIVES: Clean Your Hands
Tools for System Change
Ward Infrastructure Survey
Alcohol-based Handrub Planning and Costing Tool
Guide to Local Production: WHO-recommended Handrub Formulations
Soap / Handrub Consumption Survey
Protocol for Evaluation of Tolerability and Acceptability of Alcohol-based Handrub in Use or Planned to be Introduced: Method 1
Protocol for Evaluation and Comparison of Tolerability and Acceptability of Different Alcohol-based Handrubs: Method 2
Tools for Training / Education
Slides for the Hand Hygiene Co-ordinator
Slides for Education Sessions for Trainers, Observers and Health-Care Workers
Hand Hygiene Training Films
Slides Accompanying the Training Films
Hand Hygiene Technical Reference Manual
Observation Form
Hand Hygiene Why, How and When Brochure
Glove Use Information Leaflet
Your 5 Moments for Hand Hygiene Poster
Frequently Asked Questions
Key Scientific Publications
Tools for Evaluation and Feedback
Hand Hygiene Technical Reference Manual
Observation Tools: Observation Form and Compliance Calculation Form
Ward Infrastructure Survey
Soap / Handrub Consumption Survey
Perception Survey for Health-Care Workers
Perception Survey for Senior Managers
Hand Hygiene Knowledge Questionnaire for Health-Care Workers
Protocol for Evaluation of Tolerability and Acceptability of Alcohol-based Handrub in Use or Planned to be Introduced: Method 1
Protocol for Evaluation and Comparison of Tolerability and Acceptability of Different Alcohol-based Handrubs: Method 2
Data Entry Analysis Tool
Instructions for Data Entry and Analysis
Data Summary Report Framework
Tools for Reminders in the Workplace
Your 5 Moments for Hand Hygiene Poster
How to Handrub Poster
How to Handwash Poster
Hand Hygiene: When and How Leaflet
SAVE LIVES: Clean Your Hands Screensaver
Tools for Institutional Safety Climate
Template Letter to Advocate Hand Hygiene to Managers
Template Letter to Communicate Hand Hygiene Initiatives to Managers
Guidance on Engaging Patients and Patient Organizations in Hand Hygiene Initiatives
Sustaining Improvement – Additional Activities for Consideration by Health-Care Facilities
SAVE LIVES: Clean Your Hands Promotional DVD
1a. System change – alcohol-based handrub at point of care
+
1b. System change – access to safe, continuous water supply, soap and towels
+
2. Training and education
+
3. Evaluation and feedback
+
4. Reminders in the workplace
+
5. Institutional safety climate

WHO Hand Hygiene improvement Multimodal Strategy

System change
Hand Hygiene products at the point-of-care

System change
Increased accessibility of Hand Rub

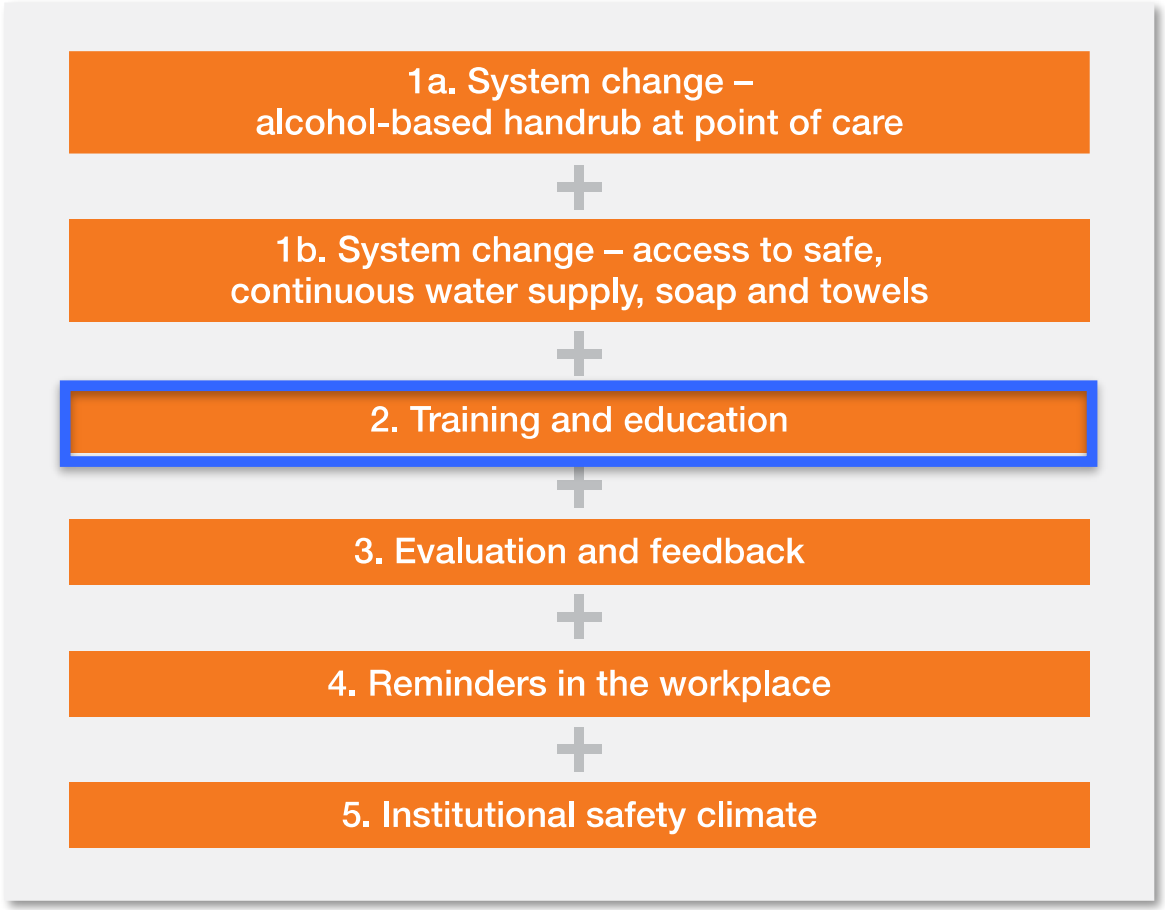
- ABHR at point of care
- At every ward entrance



System change

To overcome time constraint HH should be feasible at the

WHO Hand Hygiene improvement Multimodal Strategy



Training and Education

WHO Hand Hygiene improvement Multimodal Strategy

1a. System change – alcohol-based handrub at point of care

+

1b. System change – access to safe, continuous water supply, soap and towels

+

2. Training and education

+

3. Evaluation and feedback

+

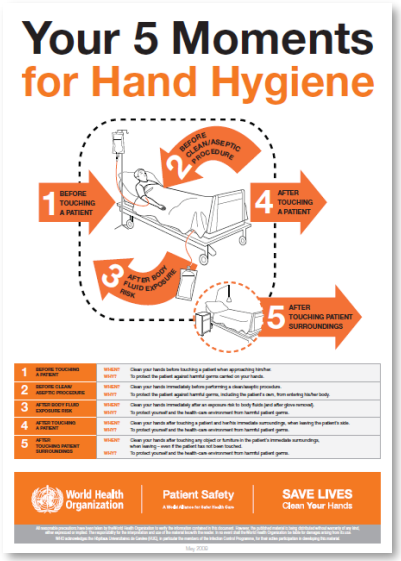
4. Reminders in the workplace

+

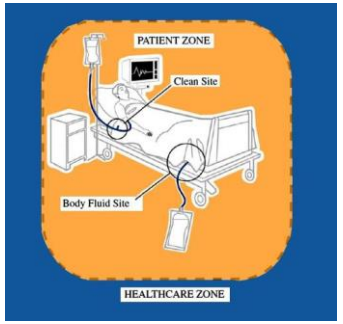
5. Institutional safety climate

Providing regular training on HH and the importance of

When



How



Training and Education

- HH is a core measure to prevent Health-care associated infections (HAI)

- *Erasmus et al*., 2010

  - Median HH compliance < 40% from 95 studies

- Education is a fundamental component for any intervention aimed to improve HH

Education

+

Support from leaders

=

HH sustained improvement

Erasmus et al. Infect Control Hosp Epidemiol 2010;31:283-94

Training and Education

Hand Hygiene opportunities

Health care worker

Training and Education

The training program should be planned using:

Theoretical basis

- The 5 indications for HH (When? How?)
- Understanding of the Patient Zone (Where?)

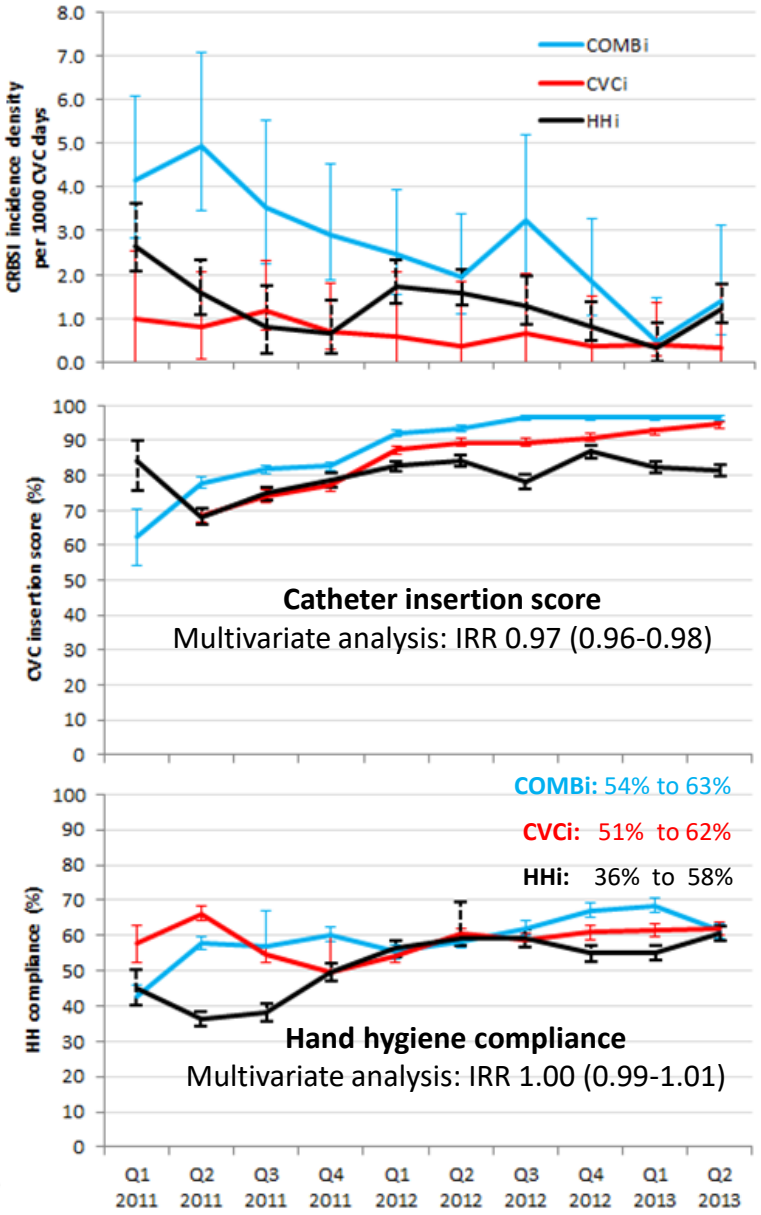
Hands on training (practical sessions)

- Training video discussions
- Simulation-based training (eg.role play)
  - Provides a realistic learning experience in an environment that is **safe**, **structured** and **supportive**
  - Promotes patient safety
  - Enhances **critical thinking** skills
  - Increases self confidence
  - Provides clinical opportunities

Training and Education
A successful training program

It must include:

- Training content that:
  - Covers different types of HCPs and recognizes differences in HCWs' activities and needs
  - Targets different types of audiences: housekeeping staff, volunteers, and visitors
  - Evidence-based and regular updated information
- A regular training for newly appointed and currently working staff (at least annually)
- Competency monitoring of all HCPs on HH training
- A strong and positive leadership and support



PROHIBIT

Prevention of Hospital Infection by Intervention and Training

14 ICUs in Europe

3 Interventions:

- Implementation of best practice CVC insertion strategy (CVCi)
- A WHO-based HH promotion strategy (HHi)
- A combination of both (COMBI)

Results

✓ Decreased catheter-related BSI incidence density from **2.4/1000 CVC-days** at baseline to **0.9/1000 CVC-days** ($p < 0.0001$)

✓ Improved CVC insertion scores

✓ Increased HH compliance

Van der Kooi Intensive Care Med 2018;44:48-60

 Kooi T, et al. Intensive Care Med 2018 ;44:48-60

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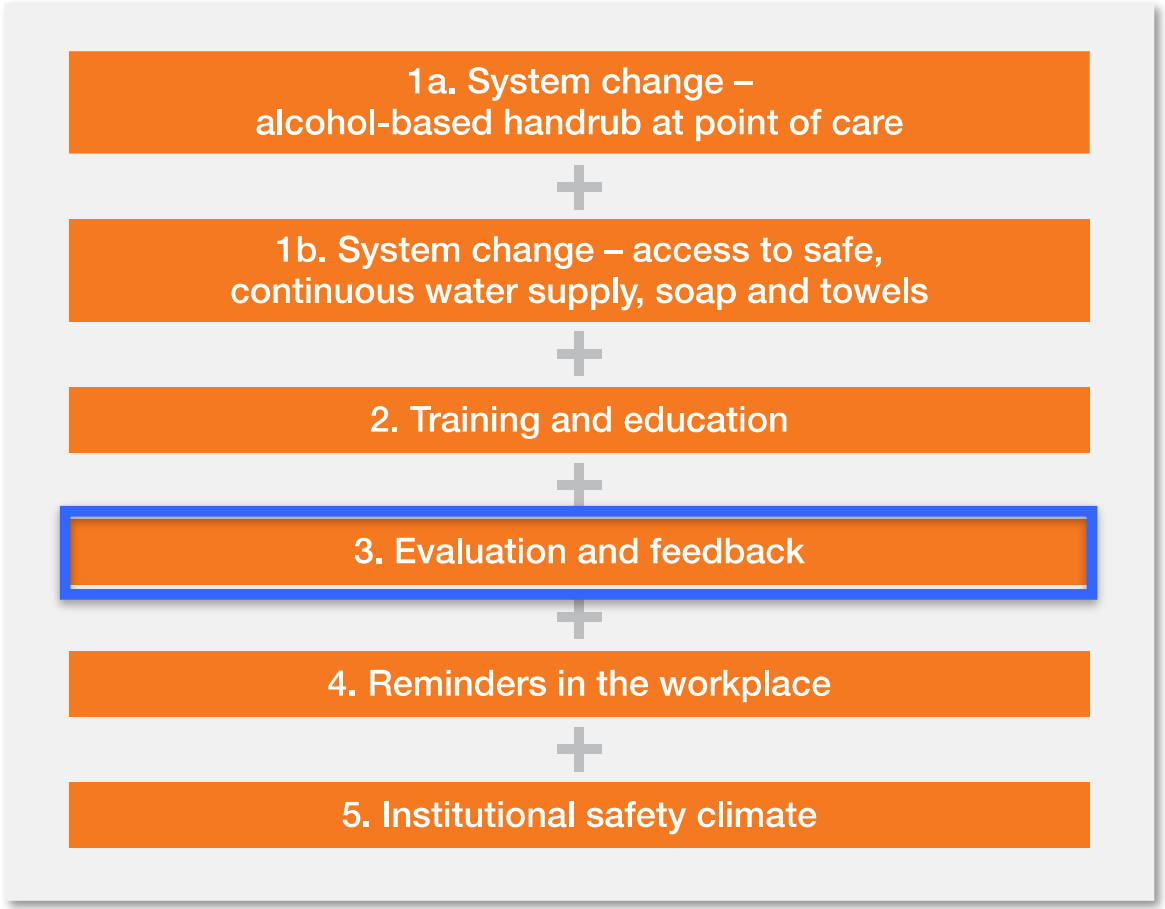


Evaluation and Feedback

- Monitoring HH practices and infrastructure
- Perceptions and knowledge among HCW
- Provide performance feedback to the staff either on: -
  - an individual basis
  - a group/sector
- Key indicators should be assessed **before** the beginning of HH campaign and **periodically** during and after the implementation period

The Feedback to HCWs

Expert leader

Debriefing

HH observer

1. Feedback

Health care worker

Hand Hygiene opportunities

The Feedback to HCWs

Immediate

What?

Individualized feedback

When?

After each observation session

How?

Quick, or

Delayed

What?

Transmission of the monitoring results

-to nurse and medical departments

-to hospital senior management

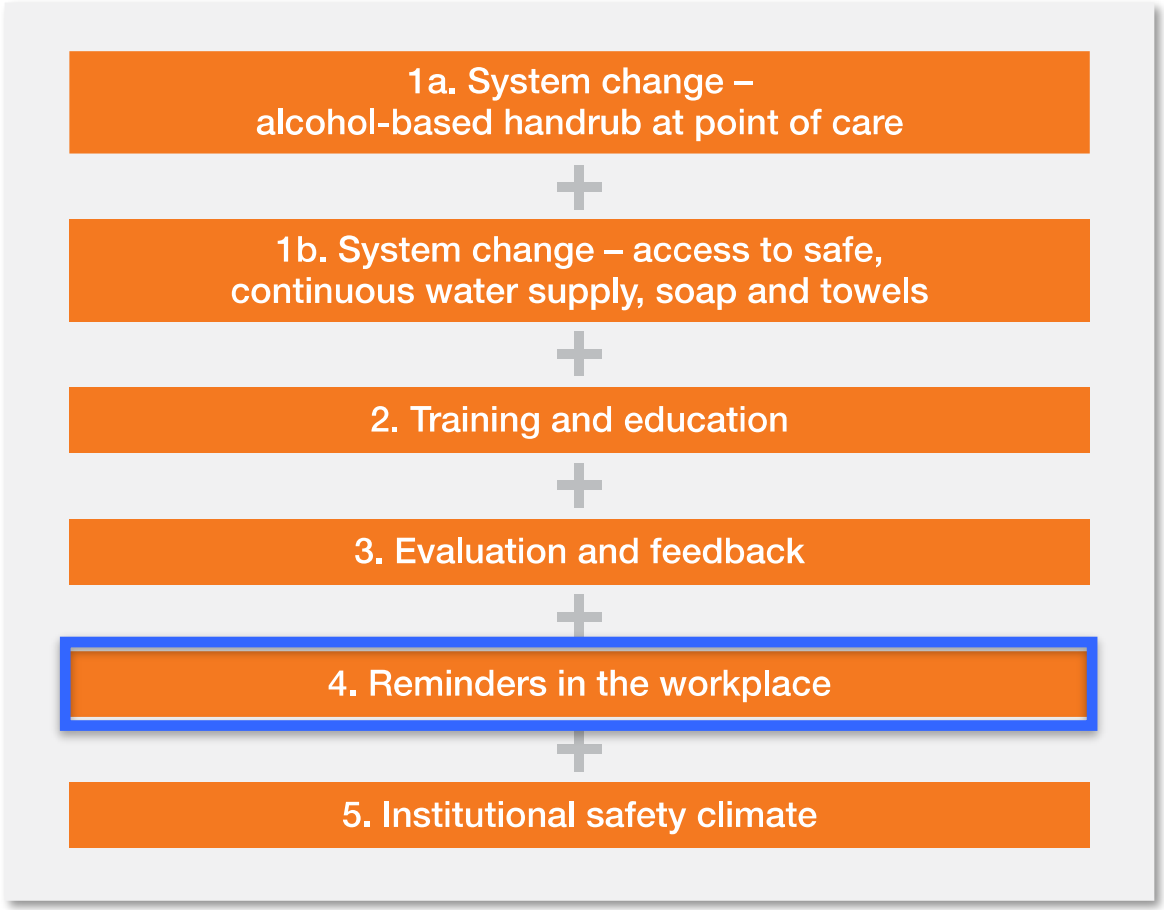
When?

Ward/ departmental meetings

How?

Oral and/or written report to the charge nurse and hospital senior management

WHO Hand Hygiene improvement Multimodal Strategy

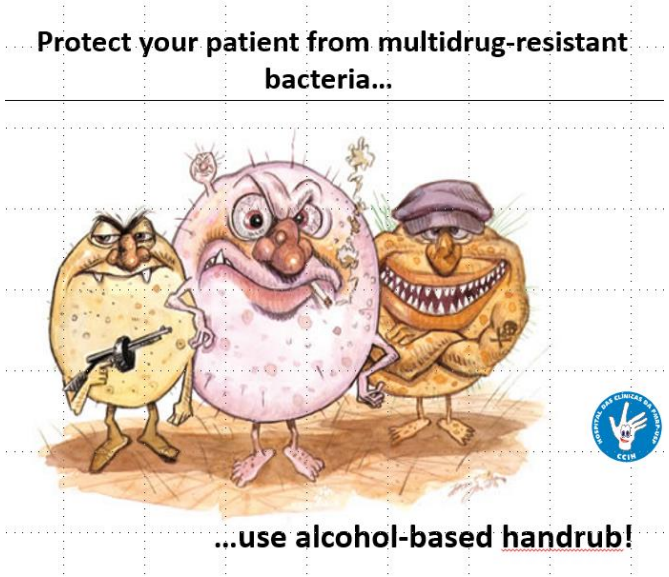


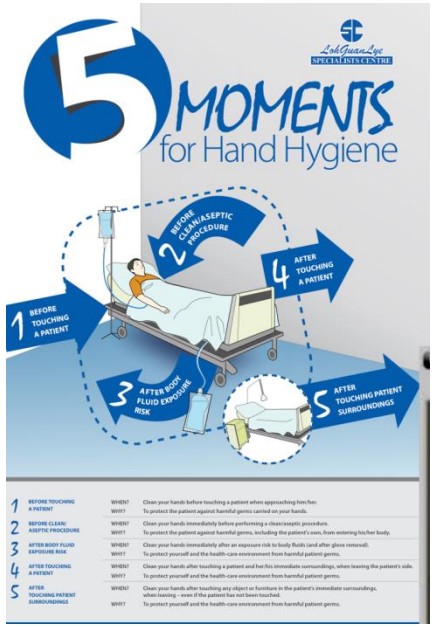
Reminders in the workplace

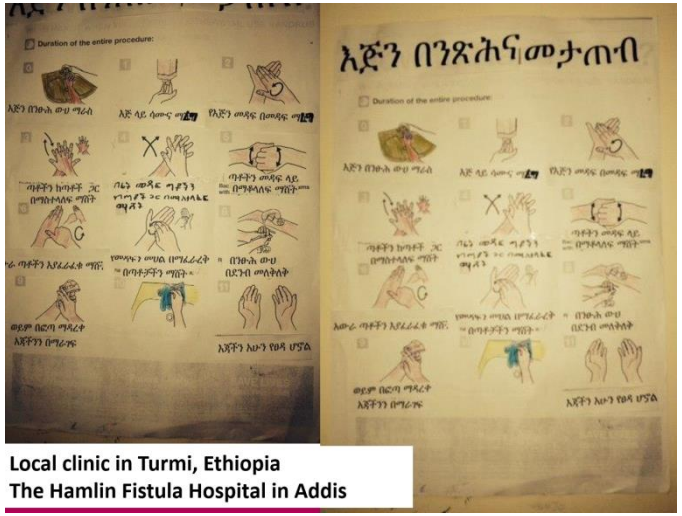
- Prompting and reminding HCW about the importance of HH, the HOW and WHEN (indications)

- To remind HCWs about **the relevance of HH**

Reminders in the workplace

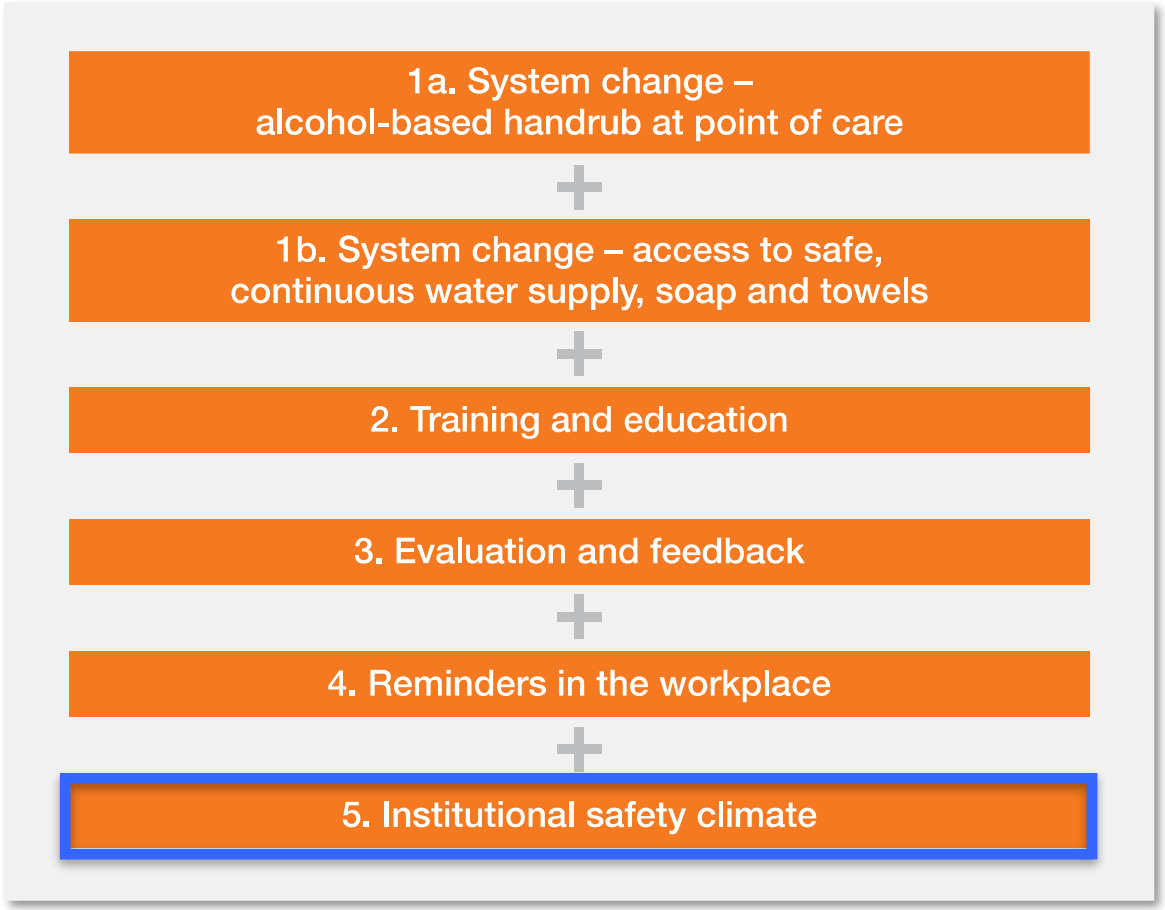






Local clinic in Turmi, Ethiopia
The Hamlin Fistula Hospital in Addis

WHO Hand Hygiene improvement Multimodal Strategy



Institutional Safety Climate

Creating an environment and the perceptions that facilitate awareness-raising about:

- Patient safety issues
- HH improvement at all levels as a high priority

Journal of Hospital Infection (2004) 58, 1-13

Available online at www.sciencedirect.com

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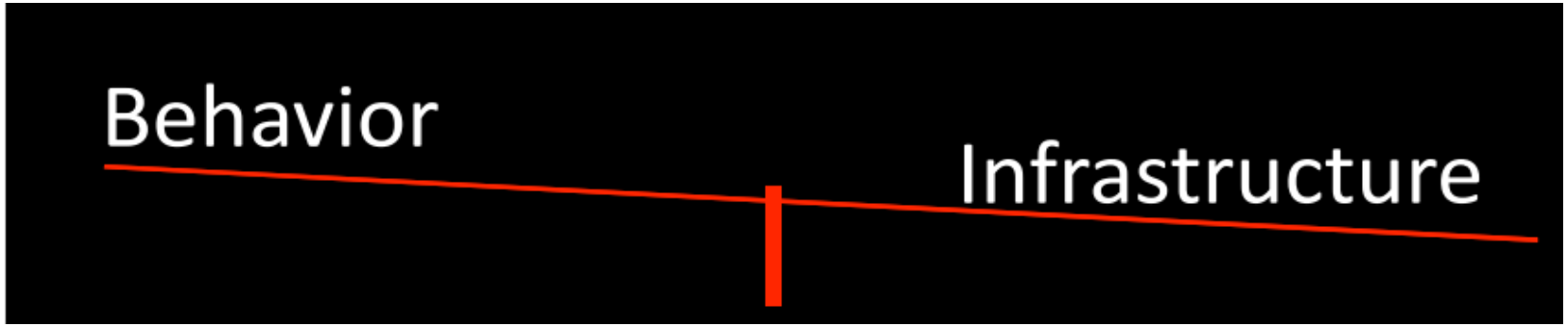
REVIEW

The Lowbury lecture: behaviour in infection control

D. Pittet[a,b,*]



- Hand hygiene programs focusing solely on infrastructure are unlikely to generate effective and sustainable improvements
- Behavioral, cultural, social and organizational factors must be taken into consideration

Institutional Safety Climate

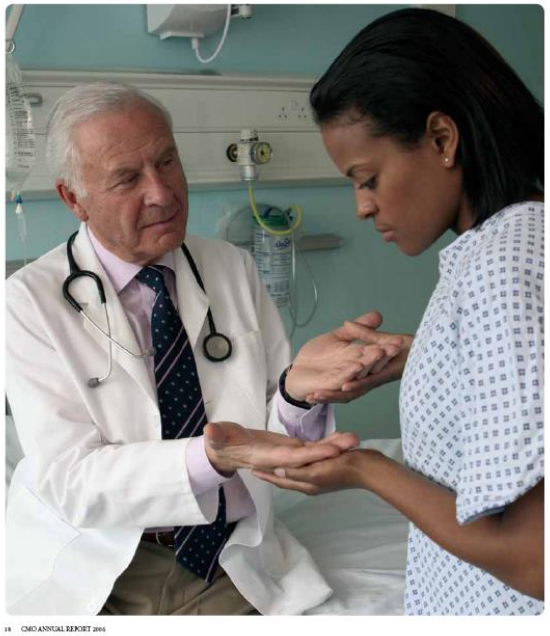
- *Brink et al*. show that organizational strategies and interventions to support the change of HH ownership are feasible and may lead to improvements in system-wide multi-hospital HH compliance in South Africa
- Authors conclude that institutional behavior change can b sustained by leveraging ancient African philosophy of Ubuntu '*I am what I am because of who we are*' "

Mean compliance per type of hand hygiene opportunity ($N = 50$ hospitals): comparative compliance (July 2016 versus July 2017)

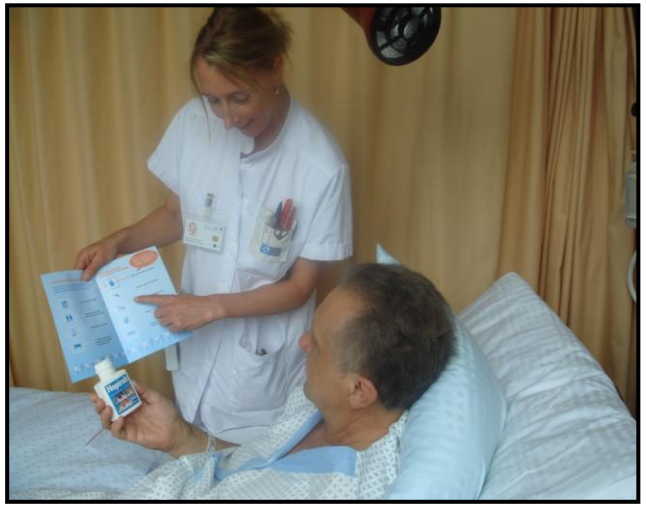
HH opportunity	July 2016			July 2017			Δ (%)
	Compliance (%)	SD	95% CI	Compliance (%)	SD	95% CI	
Composite compliance	77.4	12.8	3.6	85.2	8.8	2.5	7.8[a]
After body fluid exposure risk	83.2	19.8	7.2	93.6	9.1	3.2	10.4[a]
After contact with patient surroundings	68.8	21.2	6.6	79.0	15.1	4.4	10.2[a]
After patient contact	77.2	17.7	5.2	84.6	12.2	3.5	7.4[a]
Bare below elbows	82.1	9.6	3.2	87.1	8.3	2.6	5.0[a]
Before aseptic task	82.2	21.9	8.1	94.2	7.8	2.8	12.0[a]
Before patient contact	75.6	17.8	5.5	82.2	14.6	4.2	6.6[a]

HH, hand hygiene; SD, standard deviation; CI, confidence interval; Δ, difference.
[a] Denotes significant difference ($P < 0.01$) in compliance July 2016 vs July 2017.

Promoting Safety Climate: Patient's participation



Partnership with patients and patient's organizations



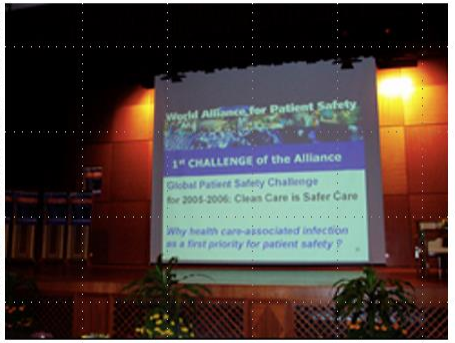
https://webbertraining.com/photos/custom/Ask1.poster.jpg

Promoting Safety Climate: Active participation of leaders

Saudi Arabia

Turkey

Minister of Health signs statement committing to address health care-associated infections



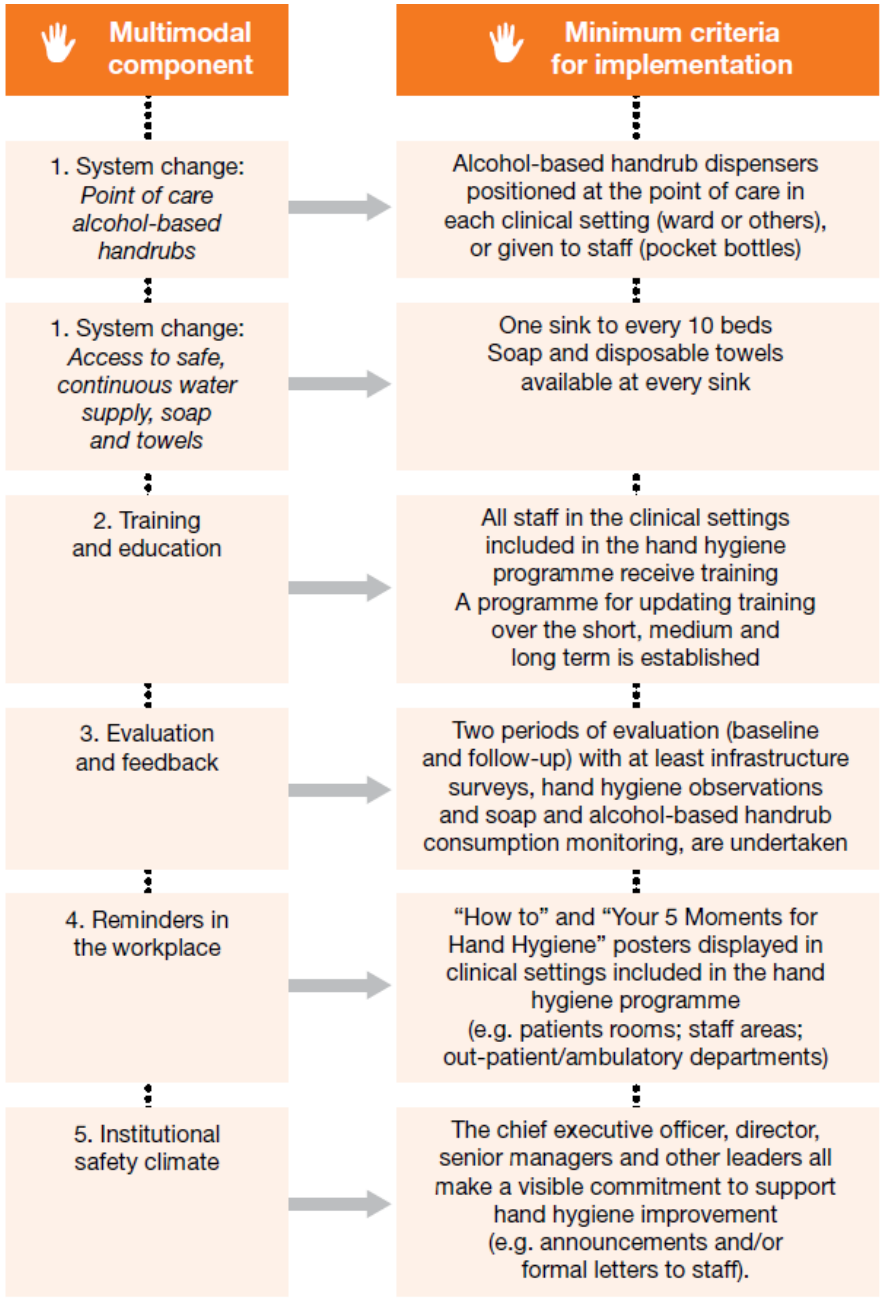
WHO Global Patient Safety Challenge
15 May 2006 Putrajaya, Malaysia

Question

Which of the following statements is true?

- The posters can act as reminders in the HCF to remind HCWs to keep HH in mind
- HH monitoring and performance feedback are essential elements to achieve behavioral change amongst HCWs
- HCW education regarding the importance of HH, when and how to perform it is a pillar of any HH improvement strategy

⊙ All of above


Multimodal component
Minimum criteria for implementation
1. System change: Point of care alcohol-based handrubs
Alcohol-based handrub dispensers positioned at the point of care in each clinical setting (ward or others), or given to staff (pocket bottles)
1. System change: Access to safe, continuous water supply, soap and towels
One sink to every 10 beds
Soap and disposable towels available at every sink
2. Training and education
All staff in the clinical settings included in the hand hygiene programme receive training
A programme for updating training over the short, medium and long term is established
3. Evaluation and feedback
Two periods of evaluation (baseline and follow-up) with at least infrastructure surveys, hand hygiene observations and soap and alcohol-based handrub consumption monitoring, are undertaken
4. Reminders in the workplace
"How to" and "Your 5 Moments for Hand Hygiene" posters displayed in clinical settings included in the hand hygiene programme (e.g. patients rooms; staff areas; out-patient/ambulatory departments)
5. Institutional safety climate
The chief executive officer, director, senior managers and other leaders all make a visible commitment to support hand hygiene improvement (e.g. announcements and/or formal letters to staff).

Step-wise approach

The Five Components of the WHO multimodal hand hygiene improvement strategy

- 1a. System change – alcohol-based handrub at point of care
- 1b. System change – access to safe, continuous water supply, soap and towels
- 2. Training and education
- 3. Evaluation and feedback
- 4. Reminders in the workplace
- 5. Institutional safety climate

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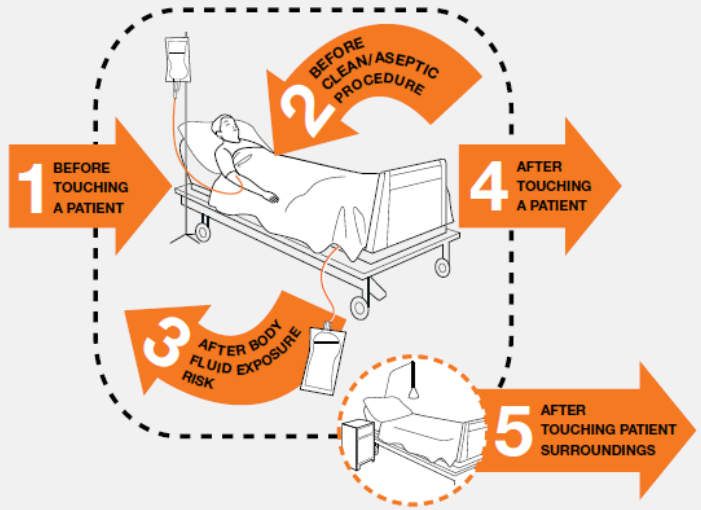
The five moments for hand hygiene in health care



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The step-wise approach

Facility preparedness → Baseline evaluation → Implementation → Follow-up evaluation → Review and planning

Step-wise approach

The general objective is to set HH as an integral part of the culture of the HCF

Step 1: Facility preparedness

Readiness for action –including necessary resources (human and financial)

Step 2 : Baseline evaluation – HH practice, perception, knowledge and infrastructure available

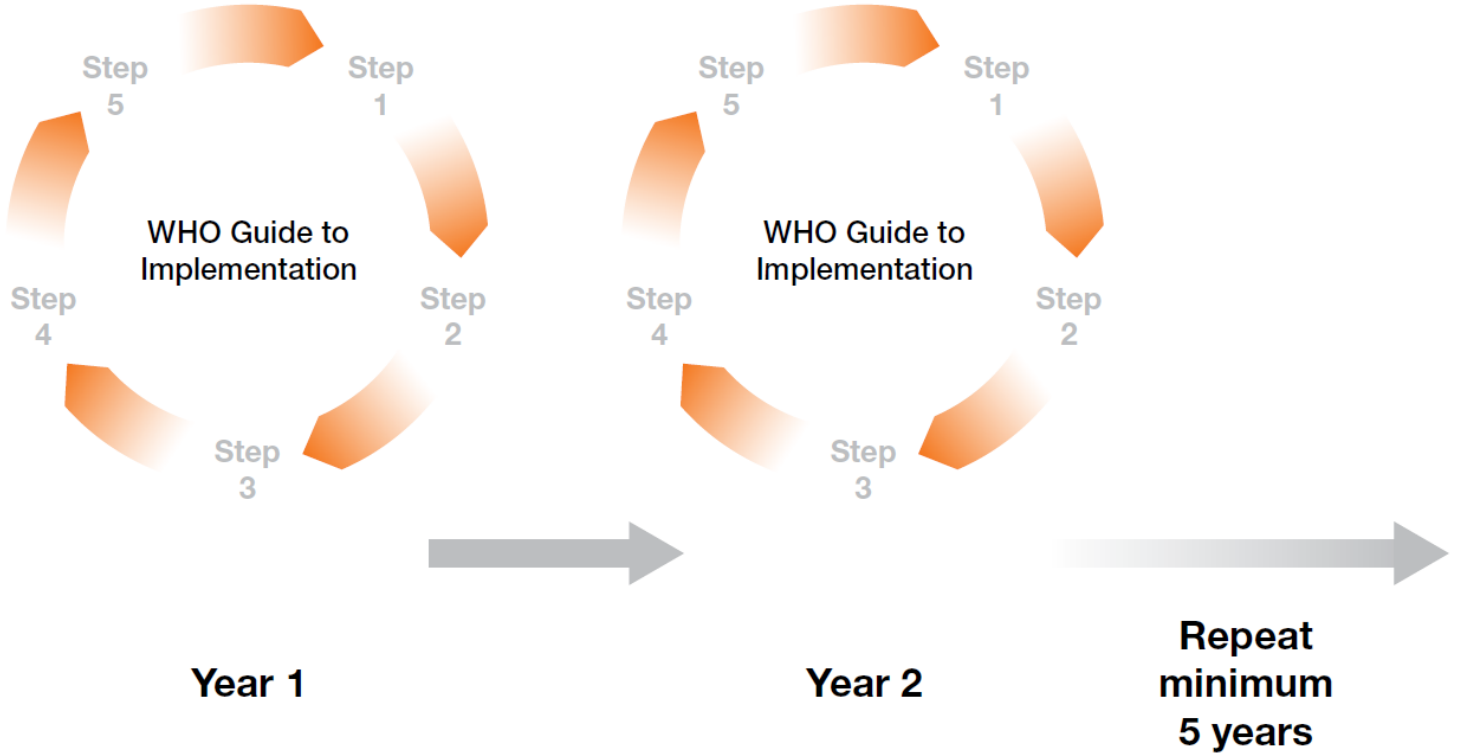
Step-wise approach

Step 3: Implementation- introducing the improvement activities: ABHR at the point of care, staff education, reminders, etc.

Step 4 : Follow-up evaluation- to assess the effectiveness of the programme

Step 5 : Ongoing planning and review cycle- developing a plan for the next 5 years minimum

Step-wise approach

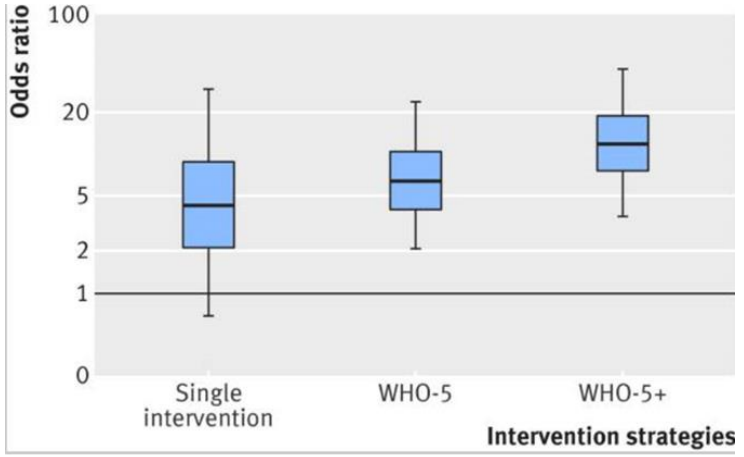


What have happened since 2009?

It has been implemented worldwide, in thousands of HCF

- A systematic review and network meta-analysis demonstrated that WHO MMS plays a key role in promoting HH

Luangasanatip, N et al. BMJ (Clinical research ed.) 2015;351: h3728



Comparative efficacy of interventions to promote HH in hospital

- Some studies have shown increased compliance with HH and reduced HAIs

  Saito H et al., 2017

- A hospital in Uganda that implemented MMS, observed improvement of HH compliance and a reduction of HAIs/ SIRS*

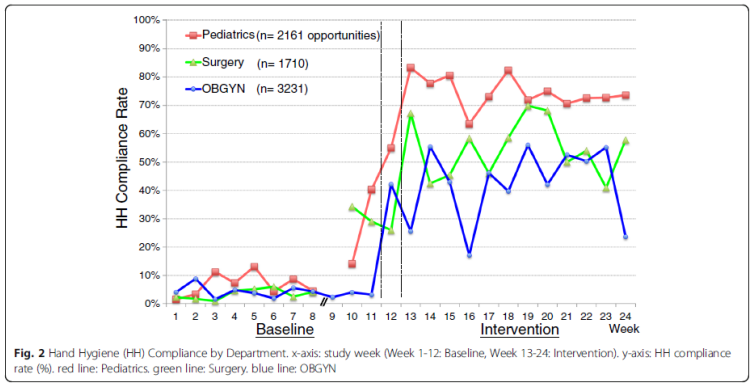


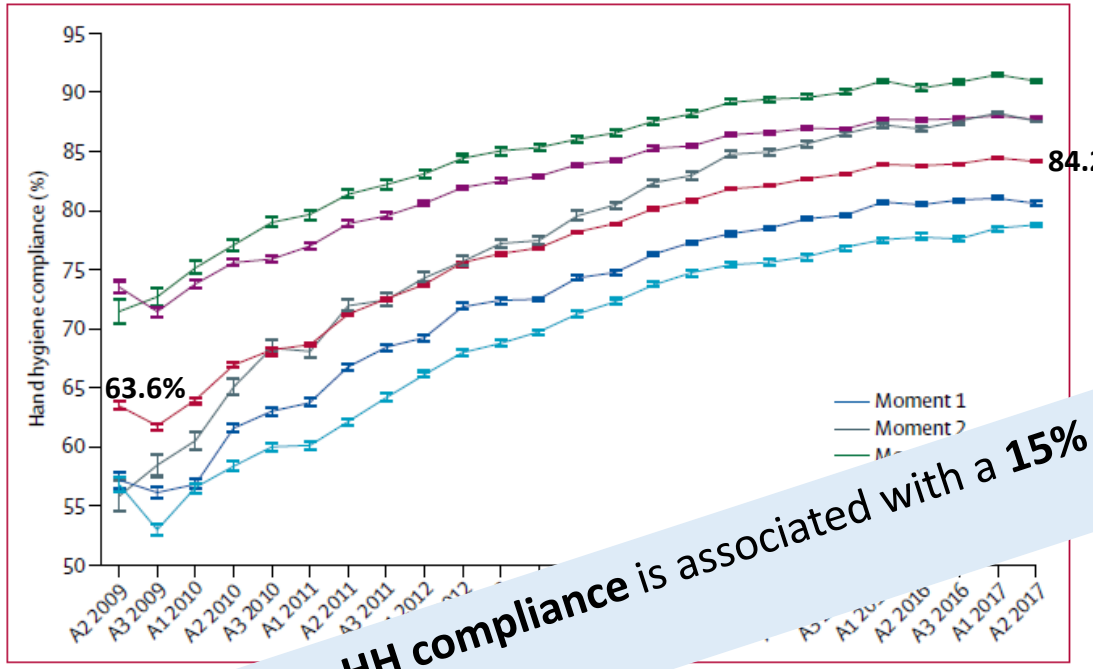
Fig. 2 Hand Hygiene (HH) Compliance by Department. x-axis: study week (Week 1-12: Baseline, Week 13-24: Intervention). y-axis: HH compliance rate (%). red line: Pediatrics. green line: Surgery. blue line: OBGYN

Saito H et al. Antimicrobial Resistance and Infection Control 2017; 6:129

*SIRS: Sytemic inflammatory response syndrome

A national HH program using a multi-modal HH improvement strategy, where HH education is part of hospital accreditation, has achieved:

Significant sustained improvement in HH compliance



A significant decline in the incidence of HA-SAB*

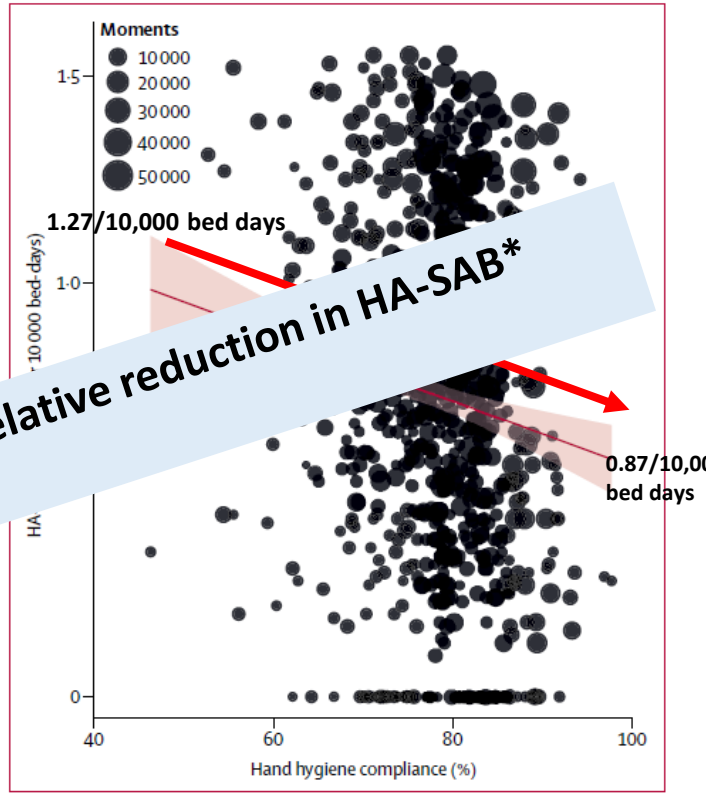


Figure 5: **Comparison of annual rates of hand hygiene compliance with the incidence of HA-SAB for the 132 largest Australian public hospitals, 2010–17**
Each point represents one hospital in one 12-month period, with the point size being proportional to the number of hand hygiene Moments (based on WHO's My 5 Moments for Hand Hygiene) submitted. The solid red line is a linear line of best fit with the SE represented in pink. Note that the x-axis is truncated to 40–100%. HA-SAB=health-care-associated *Staphylococcus aureus* bacteraemia.

A **10% increase in HH compliance** is associated with a **15% relative reduction in HA-SAB*** incidence

*HA-SAB:Health-care-associated *Staphylococcus aureus* bacteraemia

Grayson ML, et al.Lancet Infect Dis 2018; 18: 1269–77

What have happened since 2009?

In a systematic review *Gould D. et al., 2017* concluded that:

Methods and interventions used in studies evaluating MMS are very varied, and the certainty of the evidence is low

- Research using rigorous methodology is needed:
- For the comparison of multimodal vs simpler interventions in the improvement of HH compliance
- To determine which components or combinations of strategies work best

Gould D. et al.Cochrane Database of Systematic Reviews 2017, 9: CD005186

- The data regarding its impact on AMR transmission is limited

Types of Interventions[1]	Impact	Outcomes and Certainty of the evidence (GRADE) [2]		
		Hand Hygiene Compliance[3]	Change in infection rates[4]	Change in colonisation rates[4]
Multimodal, WHO-based: contains all strategies recommended by WHO	It is uncertain whether multimodal interventions that include all strategies recommended in the WHO guidelines improve hand hygiene compliance or reduces infection because the certainty of this evidence is very low. Such multimodal interventions may slightly reduce colonization rates (low certainty of evidence)	⊕⊝⊝⊝ **very low** (5 studies)	⊕⊝⊝⊝ **very low** (2 studies)	⊕⊕⊝⊝ **low** (2 studies)
Multimodal, WHO-enhanced: contains all strategies recommended by WHO and additional ones	Multimodal interventions that contain all strategies recommended in the WHO guidelines plus additional strategies may slightly improve hand hygiene compliance (low certainty of evidence). It is uncertain whether such multimodal interventions reduce infection rates because the certainty of this evidence is very low	⊕⊕⊝⊝ **low** (6 studies)	⊕⊝⊝⊝ **very low** (1 study)	---
Performance feedback	Performance feedback may improve hand hygiene compliance (low certainty of evidence) and probably slightly reduces infection and colonisation rates	⊕⊕⊝⊝ **low** (6 studies)	⊕⊕⊕⊝ **moderate** (1 study)	⊕⊕⊕⊝ **moderate** (1 study)
Education	Education may improve hand hygiene compliance (low certainty of evidence)	⊕⊕⊝⊝ **low** (2 studies)	---	---
Cues	Cues such as signs or scent may slightly improve hand hygiene compliance (low certainty of evidence)	⊕⊕⊝⊝ **low** (3 studies)	---	---
Placement of ABHR	Placement of ABHR close to point of use probably slightly improves hand hygiene compliance (moderate certainty of evidence).	⊕⊕⊕⊝ **moderate** (1 study)	---	---

Successful components in Multimodal Strategies

- Leveraging leadership commitment
- Opinion leaders and champions
- Positive reinforcement
- Principles of product marketing
- Accessibility to hand rub
- Role models
- Targeted training
- Innovation

WHO Hand Hygiene improvement Multimodal Strategy

1a. System change –
alcohol-based handrub at point of care

+

1b. System change – access to safe,
continuous water supply, soap and towels

+

2. Training and education

+

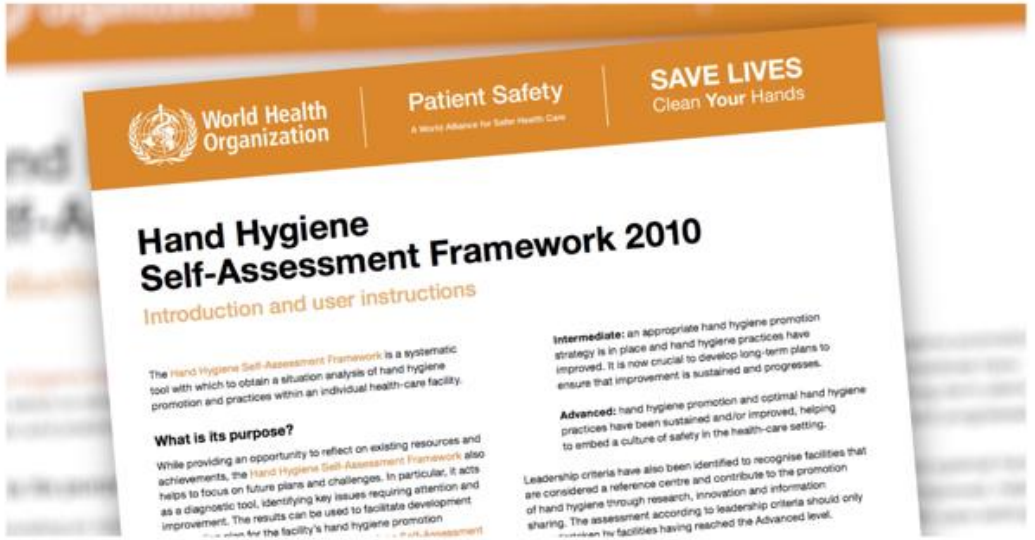
3. Evaluation and feedback

+

4. Reminders in the workplace

+

5. Institutional safety climate



https://cdn.who.int/media/docs/default-source/integrated-health-services-(ihs)/hand-hygiene/monitoring/hhsa-framework-october-2010.pdf?sfvrsn=41ba0450_6

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Hand Hygiene Self-Assessment Framework 2010

Introduction and user instructions

The Hand Hygiene Self-Assessment Framework is a systematic tool with which to obtain a situation analysis of hand hygiene promotion and practices within an individual health-care facility.

What is its purpose?

While providing an opportunity to reflect on existing resources and achievements, the Hand Hygiene Self-Assessment Framework also helps to focus on future plans and challenges. In particular, it acts as a diagnostic tool, identifying key issues requiring attention and improvement. The results can be used to facilitate development of an action plan for the facility's hand hygiene promotion programme. Repeated use of the Hand Hygiene Self-Assessment Framework will also allow documentation of progress with time.

Overall, this tool should be a catalyst for implementing and sustaining a comprehensive hand hygiene programme within a health-care facility.

Who should use the Hand Hygiene Self-Assessment Framework?

This tool should be used by professionals in charge of implementing a strategy to improve hand hygiene within a health-care facility. If no strategy is being implemented yet, then it can also be used by professionals in charge of infection control or senior managers at the facility directorate. The framework can be used globally, by health-care facilities at any level of progress as far as hand hygiene promotion is concerned.

How is it structured?

The Hand Hygiene Self-Assessment Framework is divided into five components and 27 indicators. The five components reflect the five elements of the WHO Multimodal Hand Hygiene Improvement Strategy (http://www.who.int/gpsc/5may/tools/en/index.html) and the indicators have been selected to represent the key elements of each component. These indicators are based on evidence and

Intermediate: an appropriate hand hygiene promotion strategy is in place and hand hygiene practices have improved. It is now crucial to develop long-term plans to ensure that improvement is sustained and progresses.

Advanced: hand hygiene promotion and optimal hand hygiene practices have been sustained and/or improved, helping to embed a culture of safety in the health-care setting.

Leadership criteria have also been identified to recognise facilities that are considered a reference centre and contribute to the promotion of hand hygiene through research, innovation and information sharing. The assessment according to leadership criteria should only be undertaken by facilities having reached the Advanced level.

How does it work?

While completing each component of the Hand Hygiene Self-Assessment Framework, you should circle or highlight the answer appropriate to your facility for each question. Each answer is associated with a score. After completing a component, add up the scores for the answers you have selected to give a subtotal for that component. During the interpretation process these subtotals are then added up to calculate the overall score to identify the hand hygiene level to which your health-care facility is assigned.

The assessment should not take more than 30 minutes, provided that the information is easily available.

Within the Framework you will find a column called "WHO implementation tools" listing the tools made available from the WHO First Global Patient Safety Challenge to facilitate the implementation of the WHO Multimodal Hand Hygiene Improvement Strategy (http://www.who.int/gpsc/5may/tools/en/index.html). These tools are listed in relation to the relevant indicators included in the Framework and may be useful when developing an action plan to address areas identified as needing improvement.

It is divided in 5 Major Components of the WHO Multimodal Hand Hygiene Improvement Strategy

-27 Indicators
-For self assessment
-Representing the key elements for each component
-Based on evidence & expert

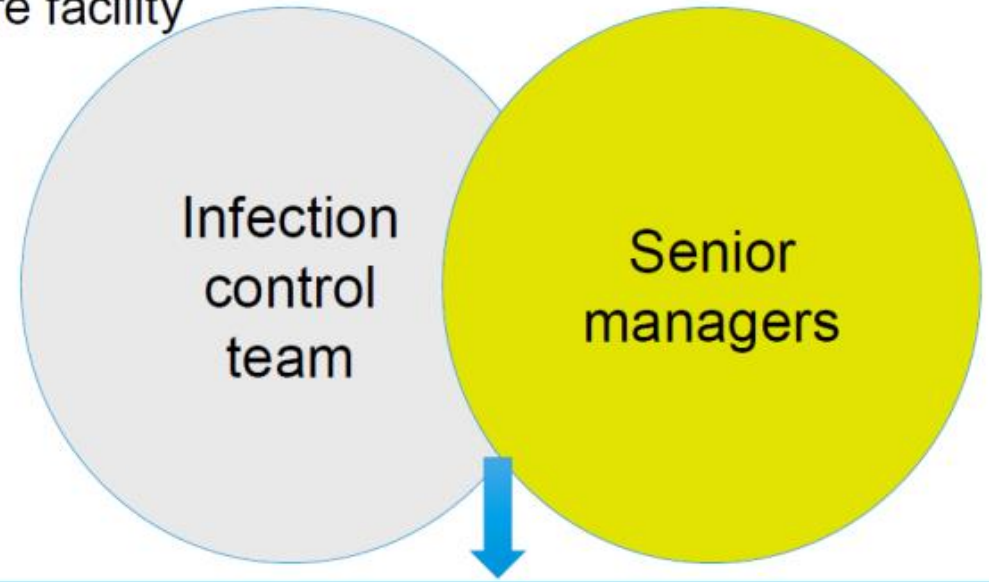
Hand Hygiene Self-Assessment Framework 2010

- **To implement and sustain** a hand hygiene programme
- **A global systematic tool** used by health-care facilities
- A complete **situation analysis**
- Serves as a **Benchmark**
- **A diagnostic tool**
  - to identify key issues requiring focus and improvement
- Facilitates the development of an **action plan**
- A comprehensive hand hygiene strategy
- **Documentation of progress** with time

Who should complete and use the HHSAF?

World Health Organization

This tool should be used by professionals in charge of implementing a strategy to improve hand hygiene within a healthcare facility



The HHSAF can be used globally at any level of hand hygiene progress

All healthcare facilities: Acute and long term


WORLWIDE
HHSAF
METHODOLOGY
METRIC
AGENDA
PROCESS
BENCHMARK
DIAGNOSTIC TOOL
BEST HOSPITAL PRACTICES
RESOURCES
GLOBAL SURVEY
HAND HYGIENE SELF-ASSESSMENT FRAMEWORK
CRITICAL APPRAISAL TOOL
RESULTS
DEVELOPMENT
FOCUS
EVALUATION
IMPROVEMENT
PERFORMANCE
DRIVER FOR BEST PRACTICE
QUALITY INDICATOR
STRUCTURE
STANDARD TOOL
STRATEGY
ACTION PLAN
HAND HYGIENE

WHO Hand Hygiene improvement Multimodal Strategy

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Hand Hygiene Self-Assessment Framework 2010

1. System Change

Question	Answer	Score	WHO improvement tools
1.1 How easily available is alcohol-based handrub in your health-care facility? **Choose one answer**	Not available	0	→ Ward Infrastructure Survey → Protocol for Evaluation of Tolerability and Acceptability of Alcohol-based Handrub in Use or Planned to be Introduced: Method 1 → Guide to Implementation II.1
	Available, but efficacy[1] and tolerability[2] have not been proven	0	
	Available only in some wards or in discontinuous supply (with efficacy[1] and tolerability[2] proven)	5	
	Available facility-wide with continuous supply (with efficacy[1] and tolerability[2] proven)	10	
	Available facility-wide with continuous supply, and at the point of care[3] in the majority of wards (with efficacy[1] and tolerability[2] proven)	30	
	Available facility-wide with continuous supply at each point of care[3] (with efficacy[1] and tolerability[2] proven)	50	
1.2 What is the sink:bed ratio? **Choose one answer**	Less than 1:10	0	→ Ward Infrastructure Survey → Guide to Implementation II.1
	At least 1:10 in most wards	5	
	At least 1:10 facility-wide and 1:1 in isolation rooms and in intensive care units	10	

Hand Hygiene Self-Assessment Framework 2010

2. Training and Education

Question	Answer	Score	WHO improvement tools
2.1 Regarding training of health-care workers in your facility:			
2.1a How frequently do health-care workers receive training regarding hand hygiene[7] in your facility? **Choose one answer**	Never	0	→ Slides for Education Session for Trainers, Observers and Health-care Workers → Hand Hygiene Training Films → Slides Accompanying the Training Films → Slides for the Hand Hygiene Co-ordinator → Hand Hygiene Technical Reference Manual → Hand Hygiene Why, How and When Brochure → Guide to Implementation II.2
	At least once	5	
	Regular training for medical and nursing staff, or all professional categories (at least annually)	10	
	Mandatory training for all professional categories at commencement of employment, then ongoing regular training (at least annually)	20	
2.1b Is a system in place to ensure that all health-care workers complete this training?	No	0	
	Yes	20	
2.2 Are the following educational resources (or locally produced equivalents with similar content) easily available to all health-care workers?			→ Guide to Implementation II.2
2.2a 'WHO Guidelines on Hand Hygiene in Health-care: A Summary'	No	0	→ WHO Guidelines on Hand Hygiene in Health Care: A Summary
	Yes	5	
2.2b 'Hand Hygiene Technical Reference Manual'	No	0	→ Hand Hygiene Technical Reference Manual
	Yes	5	

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Hand Hygiene Self-Assessment Framework 2010

3. Evaluation and Feedback

Question	Answer	Score	WHO improvement tools
3.1 Is a ward infrastructure survey regarding available hand hygiene products and facilities performed at least annually?	No	0	→ Ward Infrastructure Survey → Guide to Implementation II.3
	Yes	10	
3.2 Is health-care worker knowledge regarding indications and technique for hand hygiene assessed at least annually?	No	0	→ Hand Hygiene Knowledge Questionnaire for Health-Care Workers → Five Standardized Questions → Guide to Implementation II.3
	Yes	10	
3.3 Indirect Monitoring of Hand Hygiene Compliance			
3.3a Is consumption of alcohol-based handrub monitored monthly (or at least every 3-5 months)?	No	0	→ Soap/Handrub Consumption Survey → Guide to Implementation II.3
	Yes	5	
3.3b Is consumption of soap monitored monthly (or at least every 3-5 months)	No	0	
	Yes	5	
3.3c Is alcohol based handrub consumption at least 20L per 1000 patient-days?	No	0	
	Yes	5	

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Hand Hygiene Self-Assessment Framework 2010

4. Reminders in the Workplace

Question	Answer	Score	WHO improvement tools
4.1 Are the following posters (or locally produced equivalent with similar content) displayed?			→ Guide to Implementation II.4
4.1a Poster explaining the indications for hand hygiene **Choose one answer**	Not displayed	0	→ Your 5 Moments for Hand Hygiene (Poster)
	Displayed in some wards/treatment areas	15	
	Displayed in most wards/treatment areas	20	
	Displayed in all wards/treatment areas	25	
4.1b Poster explaining the correct use of handrub **Choose one answer**	Not displayed	0	→ How to Handrub (Poster)
	Displayed in some wards/treatment areas	5	
	Displayed in most wards/treatment areas	10	
	Displayed in all wards/treatment areas	15	
4.1c Poster explaining correct hand-washing technique **Choose one answer**	Not displayed	0	→ How to Handwash (Poster)
	Displayed in some wards/treatment areas	5	
	Displayed in most wards/treatment areas	7.5	
	Displayed at every sink in all wards/treatment areas	10	

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Hand Hygiene Self-Assessment Framework 2010

5. Institutional Safety Climate for Hand Hygiene

Question	Answer	Score	WHO improvement tools
5.1 With regard to a hand hygiene team[10] that is dedicated to the promotion and implementation of optimal hand hygiene practice in your facility:			→ Guide to Implementation II.5
5.1a Is such a team established?	No	0	
	Yes	5	
5.1b Does this team meet on a regular basis (at least monthly)?	No	0	
	Yes	5	
5.1c Is there dedicated time available to organize a hand hygiene campaign and to teach hand hygiene principles	No	0	
	Yes	5	
5.2 Have the following members of the facility leadership made a visible commitment to support hand hygiene improvement?			→ Template Letter to Advocate Hand Hygiene to Managers → Template Letter to communicate Hand Hygiene Initiatives to Managers → Guide to Implementation II.5
5.2a Chief executive officer	No	0	
	Yes	10	
5.2b Medical director	No	0	
	Yes	5	
5.2c Director of nursing	No	0	
	Yes	5	

Interpretation: A Four Step Process

1.
Add up your points.

Score	
Component	**Subtotal**
1. System Change	
2. Education and Training	
3. Evaluation and Feedback	
4. Reminders in the Workplace	
5. Institutional Safety Climate	
Total	

2.
Determine the assigned 'Hand Hygiene Level' for your facility.

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

Total Score provides the level of HH promotion and practice

The maximum overall score is **500** points

- **Inadequate:** (overall score 0-125) HH practices and promotion are deficient. Significant improvement is required
- **Basic:** (overall score 126-250): some measures are in place, but not to a satisfactory standard. Further improvement is required
- **Intermediate:** (overall score 251-375): an appropriate HH promotion strategy is in place and HH practices have improved. It is now crucial to develop long-term plans to ensure that improvement is sustained and progresses
- **Advanced:** (overall score 376-500): HH promotion and optimal HH practices have been sustained and/or improved, helping to embed a culture of safety in the health-care setting

Interpretation:

1.
Add up your points.

Score	
Component	**Subtotal**
1. System Change	**85**
2. Education and Training	**60**
3. Evaluation and Feedback	**55**
4. Reminders in the Workplace	**70**
5. Institutional Safety Climate	**65**
Total	**335**

Intermediate:

- an appropriate HH promotion strategy is in place
- HH practices have improved
- Crucial to develop long-term plans to ensure that improvement is sustained and progresses

2.
Determine the assigned 'Hand Hygiene Level' for your facility.

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

Your facility has reached the Advanced Level? Go on and complete the Leadership section

Leadership Criteria

Reminders in the Workplace		
Is a system in place for creation of new posters designed by local health-care workers?	Yes ○	No ●
Are posters created in your facility used in other facilities?	Yes ○	No ●
Have innovative types of hand hygiene reminders been developed and tested at the facility?	Yes ○	No ●
Institutional Safety Climate		
Has a local hand hygiene research agenda addressing issues identified by the WHO Guidelines as requiring further investigation been developed?	Yes ○	No ●
Has your facility participated actively in publications or conference presentations (oral or poster) in the area of hand hygiene?	Yes ●	No ○
Are patients invited to remind health-care workers to perform hand hygiene?	Yes ○	No ●
Are patients and visitors educated to correctly perform hand hygiene?	Yes ○	No ●
Does your facility contribute to and support the national hand hygiene campaign (if existing)?	Yes ●	No ○
Is impact evaluation of the hand hygiene campaign incorporated into forward planning of the infection control programme?	Yes ○	No ●
Does your facility set an annual target for improvement of hand hygiene compliance facility-wide?	Yes ●	No ○
If the facility has such a target, was it achieved last year?	Yes ○	No ●

Total 6/20

Your facility has reached the Hand Hygiene Leadership level if you answered "yes" to at least one leadership criteria per category and its total leadership score is 12 or more. Congratulations and thank you!

Your facility has not reached Hand Hygiene Leadership level, yet.

WHO survey 2011 – Results

Table 3. Overall HHSAF score and level in participating facilities

	Values
Overall score, mean±SD, (range)	292.5±100.6 (0-500)
Hand hygiene level, n (%)	
Inadequate	111 (5)
Basic	631 (30)
Intermediate	864 (41)
Advanced	488 (24)
Proportion of centres among leadership facilities with a score ≥ 12 (%)	393/471 (83)

SD= standard deviation

Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: www.ajicjournal.org

Major article

Status of the implementation of the World Health Organization multimodal hand hygiene strategy in United States of America health care facilities

Benedetta Allegranzi MD [a], Laurie Conway RN, MS, CIC [b], Elaine Larson RN, PhD, FAAN, CIC [b], Didier Pittet MD, MS [c,*]

[a] First Global Patient Safety Challenge, World Health Organization Patient Safety Program, World Health Organization, Geneva, Switzerland
[b] Columbia University School of Nursing, Columbia University, New York, NY
[c] Infection Control Program and WHO Collaborating Centre on Patient Safety, University of Geneva Hospitals and Faculty of Medicine, Geneva, Switzerland

Key Words:
WHO multimodal strategy
Health care-associated infection
Infection control
US hospitals
WHO Hand Hygiene Self-Assessment Framework

Background: The World Health Organization (WHO) launched a multimodal strategy and campaign in 2009 to improve hand hygiene practices worldwide. Our objective was to evaluate the implementation of the strategy in United States health care facilities.

Methods: From July through December 2011, US facilities participating in the WHO global campaign were invited to complete the Hand Hygiene Self-Assessment Framework online, a validated tool based on the WHO multimodal strategy.

Results: Of 2,238 invited facilities, 168 participated in the survey (7.5%). A detailed analysis of 129, mainly nonteaching public facilities (80.9%), showed that most had an advanced or intermediate level of hand hygiene implementation progress (48.9% and 45.0%, respectively). The total Hand Hygiene Self-Assessment Framework score was 36 points higher for facilities with staffing levels of infection preventionists > 0.75/100 beds than for those with lower ratios ($P = .01$) and 41 points higher for facilities participating in hand hygiene campaigns ($P = .002$).

Conclusion: Despite the low response rate, the survey results are unique and allow interesting reflections. Whereas the level of progress of most participating facilities was encouraging, this may reflect reporting bias, ie, better hospitals more likely to report. However, even in respondents, further improvement can be achieved, in particular by embedding hand hygiene in a stronger institutional safety climate and optimizing staffing levels dedicated to infection prevention. These results should encourage the launch of a coordinated national campaign and higher participation in the WHO global campaign.

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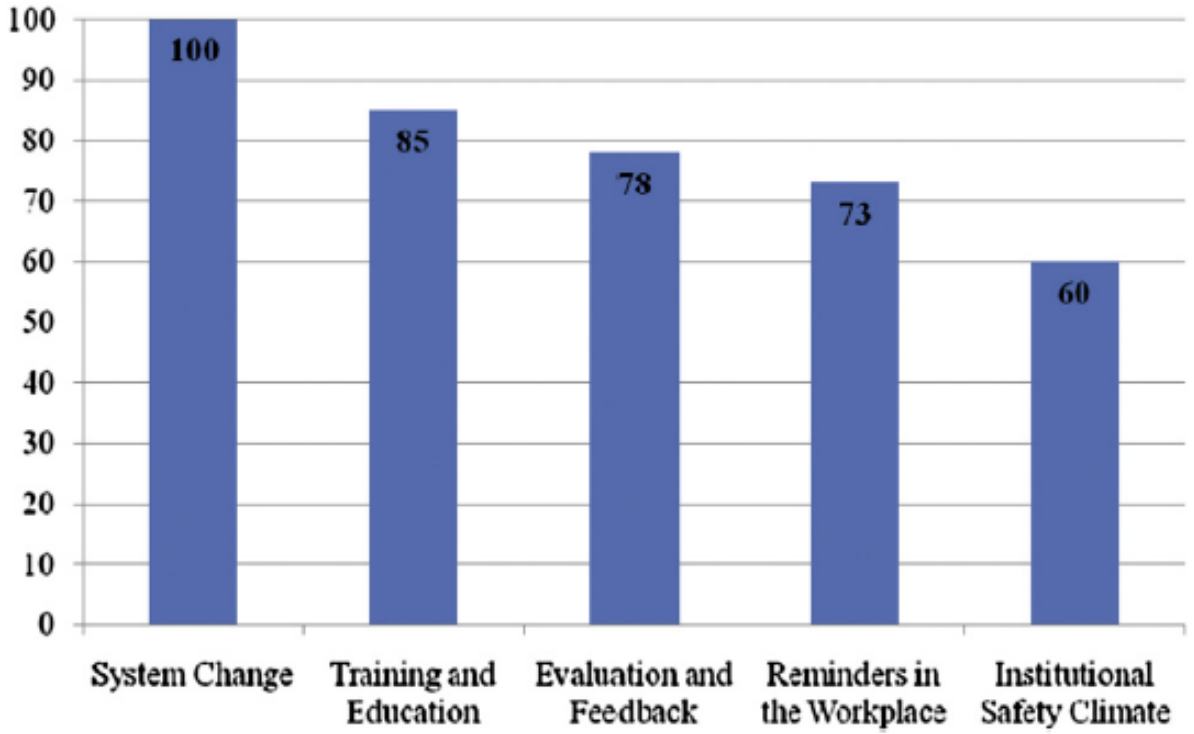


Fig 2. Median component scores for US facilities participating in the World Health Organization Hand Hygiene Self-Assessment Framework survey 2011 (n = 129).

Summary Report:
Hand Hygiene Self-Assessment Framework Survey 2015/2016
A report from the WHO Infection Prevention and Control Global Unit

WHO survey 2015 – Results

- Largest number of participating HCF were in Malaysia (150), France (65) and Spain (49) Total: 91 countries
- Overall mean score: *Intermediate*
- 87% of facilities were *Intermediate* or *Advanced*
- 79% of facilities qualified for leadership level
- Lowest scores concerned : - evaluation and feedback
  -institutional patient safety climate
- Mean score < African region >South East Asian region

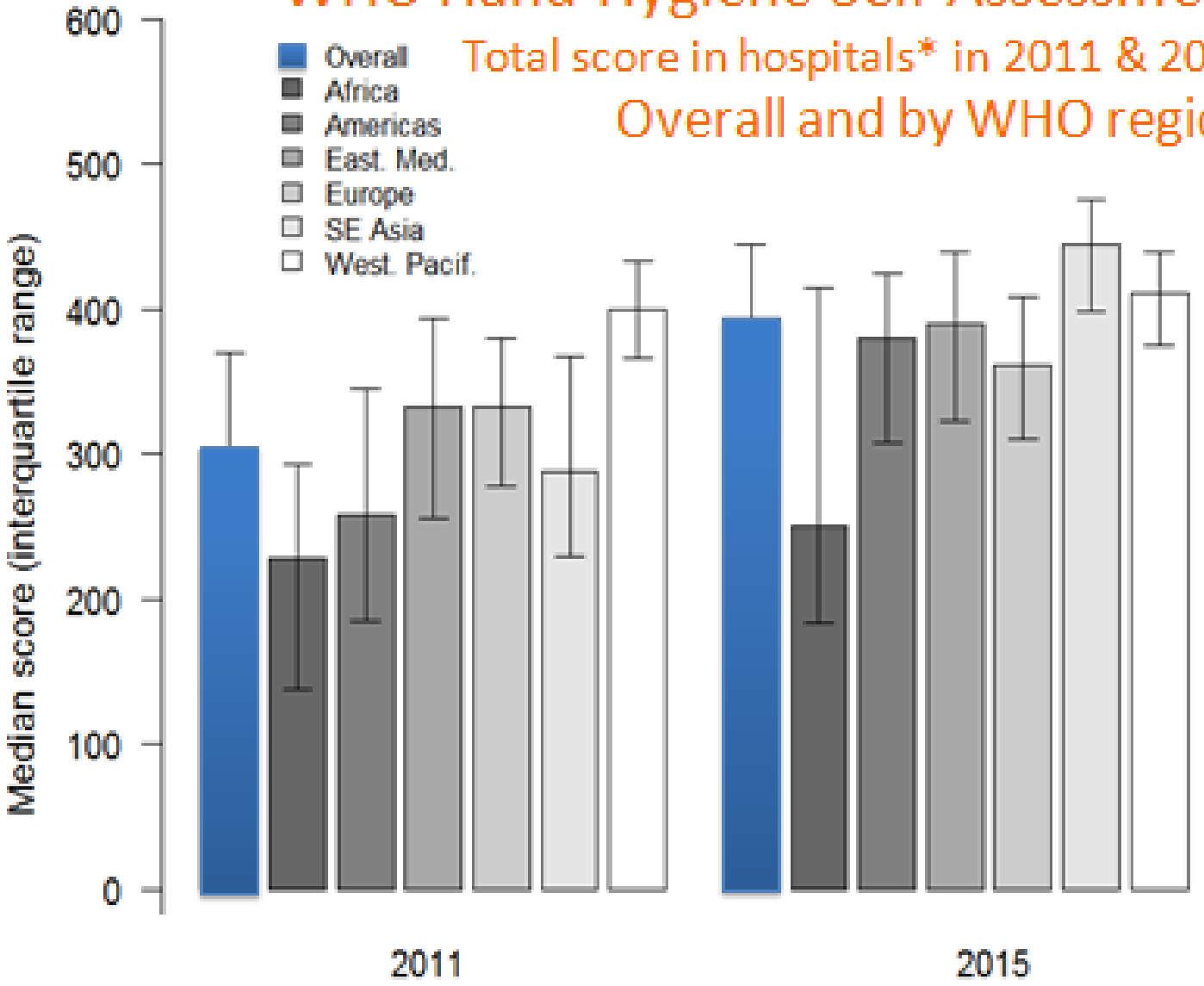
- < African region (280.9 ± 127.3) - 60 facilities
- > South East Asian region (420.6 ± 77.6) - 231 facilities

Find the full report: https://apps.who.int/iris/handle/10665/330067

WHO Hand Hygiene Self-Assessment

Total score in hospitals* in 2011 & 2015

Overall and by WHO region



*only in hospitals participating in both survey in 2011 & 2015

Implementation of hand hygiene in health-care facilities: results from the WHO Hand Hygiene Self-Assessment Framework global survey 2019

Marlieke E A de Kraker, Ermira Tartari*, Sara Tomczyk, Anthony Twyman, Laurent C Francioli, Alessandro Cassini, Benedetta Allegranzi, Didier Pittet*

3206 Health care facilities (HCF) from **90** countries

Proportions of countries responding:

- Americas (22 of 35, 63%) ⬆*
- Eastern Mediterranean region (13 of 21, 62%) ➡
- South-East Asia (6 of 11, 55%) ⬇
- Europe (22 of 53, 42%) ⬇
- Africa (18 of 47, 38%) ⬆
- Western Pacific region (9 of 27, 33%) ⬆

*comparison with 2015 survey

de Kraker M, et al. Lancet Infect Dis 2022;22:835-44

Descriptive characteristics of the responses to the HHSAF survey 2019

	All responses (n=3206; %)
WHO region	
Africa	649 (20·2%)
Americas	516 (16·1%)
Eastern Mediterranean	545 (17·0%)
Europe	654 (20·4%)
South East Asia	72 (2·2%)
Western Pacific	770 (24·0%)
World Bank income level	
Low income	122 (3·8%)
Lower-middle income	771 (24·0%)
Upper-middle income	1230 (38·4%)
High income	1083 (33·8%)

de Kraker M, et al. Lancet Infect Dis 2022;22:835-44

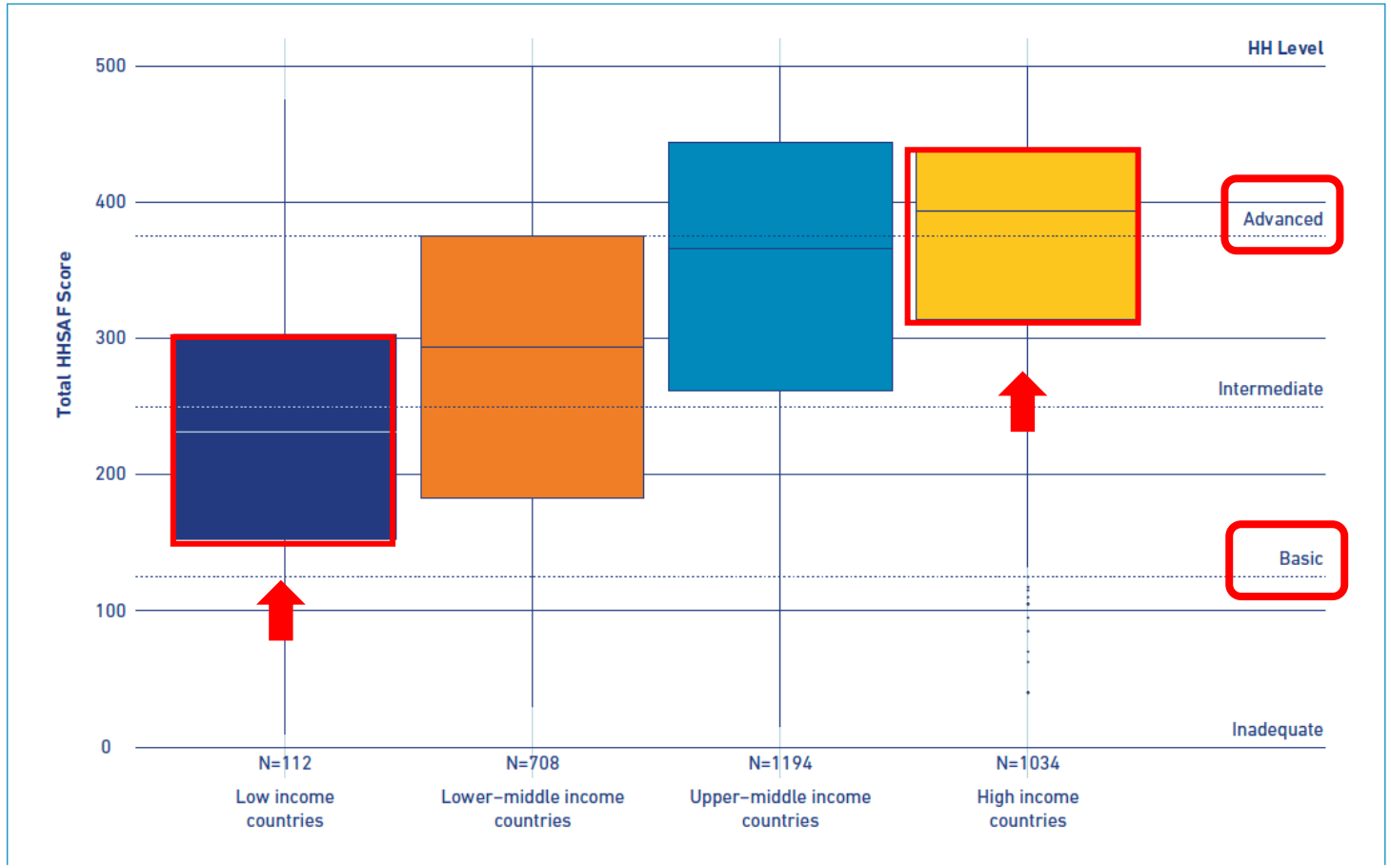
WHO survey 2019 – Results

	System Change	Training and Education	Evaluation and Feedback	Reminders in the Workplace	Institutional Safety Climate	Total score
Overall	3165; 85 (55–100)	3161; 75 (45–90)	3137; 70 (40–85)	3153; 70 (50–95)	3102; 55 (35–75)	3048; 350 (248–430)
Region						
Africa	641; 70 (35–95)	644; 60 (35–85)	639; 55 (20–80)	640; 60 (43–90)	632; 55 (30–65)	624; 292 (165–384)
Eastern Mediterranean	543; 90 (65–100)	536; 80 (60–90)	534; 75 (55–85)	534; 90 (70–100)	531; 65 (40–80)	527; 388 (297–460)
Europe	649; 100 (80–100)	647; 75 (60–90)	643; 70 (50–85)	646; 70 (58–85)	642; 55 (40–71)	635; 363 (305–413)
Americas	514; 75 (50–100)	511; 70 (45–90)	504; 70 (50–85)	507; 63 (48–83)	502; 55 (30–80)	498; 330 (245–423)
South East Asia	72; 80 (45–85)	71; 63 (25–70)	71; 60 (30–85)	71; 63 (22–87)	70; 30 (10–75)	70; 276 (157–411)
Western Pacific	746; 100 (55–100)	752; 85 (55–100)	746; 80 (55–95)	755; 80 (65–90)	725; 55 (50–80)	694; 390 (303–440)

- Overall mean score indicated an *Intermediate* level (**350**, IQR 248-430)
- 41.7% of HCF were *Advanced* level and 32% of HCF were *Intermediate*
- Lowest score concerned : Institutional safety climate
- Mean score:
  - Lowest in South East Asian region
  - Highest in Western Pacific region

de Kraker M, et al. Lancet Infect Dis 2022;22:835-44

Figure 6. Overall hand hygiene scores, by country and World Bank income levels



A significant, positive association between total HHSAF score and country income level

- Besides, private HCF scored significantly higher than public HCF (not shown in the graph)

WHO. Global report on infection prevention and control, Executive summary. May 2022

WHO survey 2019/2015 – Results

190 HCF participated in both 2015 and 2019 surveys

- Overall median scores did not change significantly

  in 2015 (**435**,IQR 371-470) and 2019 (**430**, IQR 385-460)
- Most of the HCF participating in both surveys already had

  an advanced HH level (score >375)
- The total HHSAF score increased significantly for high-income countries
- A significant improvement was only seen in the institutional safety climate component

	N	HHSAF score 2015	HHSAF score 2019	HHSAF score 2019–15*	Comparison p value†
Overall	190	435 (371 to 470)	430 (385 to 460)	1·2 (–25 to 35)	0·17
WHO region					
Africa	9	215 (190 to 353)	355 (317·5 to 440)	100 (–10 to 138)	0·074
Americas	13	372·5 (250 to 420)	385 (302·5 to 440)	15 (–5 to 45)	0·16
Eastern Mediterranean	10	397·5 (368 to 423)	417·5 (396·2 to 460)	36·2 (–9 to 87)	0·092
Europe	36	355 (317 to 413)	386·2 (340·6 to 406·9)	19 (–21 to 63)	0·12
South East Asia	6	432·5 (276 to 490)	435 (320 to 486)	13 (1 to 44)	0·22
Western Pacific	116	455 (425 to 475)	445 (417 to 470)	–5 (–30 to 25)	0·17
World Bank income level 2019					
Low income	1	215	318	103	NA
Lower-middle income	12	276 (209 to 395)	375 (319 to 398)	30 (–12 to 98)	0·13
Upper-middle income	118	460 (425 to 479)	448 (418 to 470)	–5 (–28 to 25)	0·41
High income	59	380 (333 to 430)	395 (351 to 430)	18 (020 to 61)	0·026

de Kraker M, et al. Lancet Infect Dis 2022;22:835-44

Please state whether true or false

Statements	T	F
The HHSAF acts as a diagnostic tool, identifying key issues requiring attention and improvement		
The results can be used to facilitate the development of an action plan for a HH campaign		
The HHSAF is designed for being used in tertiary care hospitals by hospital managers		

Thank you

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Background: The World Health Organization (WHO) launched a multimodal strategy and campaign in 2009 to improve hand hygiene practices worldwide. Our objective was to evaluate the implementation of the strategy in United States health care facilities.

Methods: From July through December 2011, US facilities participating in the WHO global campaign were invited to complete the Hand Hygiene Self-Assessment Framework online, a validated tool based on the WHO multimodal strategy.

Results: Of 2,238 invited facilities, 168 participated in the survey (7.5%). A detailed analysis of 129, mainly nonteaching public facilities (80.6%), showed that most had an advanced or intermediate level of hand hygiene implementation progress (48.9% and 45.0%, respectively). The total Hand Hygiene Self-Assessment Framework score was 36 points higher for facilities with staffing levels of infection preventionists > 0.75/100 beds than for those with lower ratios ($P = .01$) and 41 points higher for facilities participating in hand hygiene campaigns ($P = .002$).

Conclusion: Despite the low response rate, the survey results are unique and allow interesting reflections. Whereas the level of progress of most participating facilities was encouraging, this may reflect reporting bias, ie, better hospitals more likely to report. However, even in respondents, further improvement can be achieved, in particular by embedding hand hygiene in a stronger institutional safety climate and optimizing staffing levels dedicated to infection prevention. These results should encourage the launch of a coordinated national campaign and higher participation in the WHO global campaign.