# From Clean Hands to Clean Hospitals, 2005 to 2022

#### Professor Didier Pittet, MD, MS, CBE

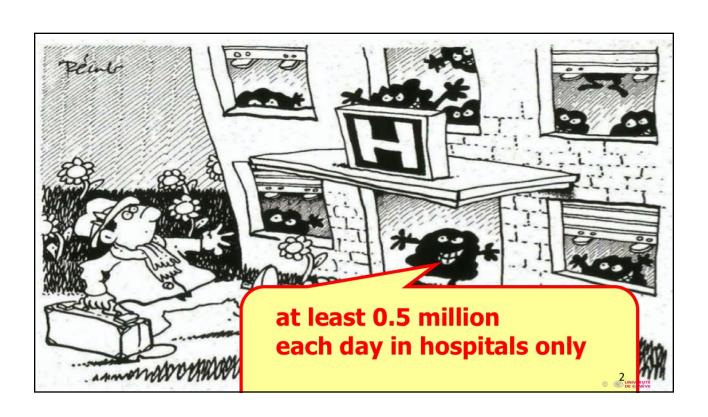
Professor of Medicine (hon) Faculty of Medicine,
University of Geneva, Switzerland
Chair, Clean Hospitals

Hosted by Dr. Pierre Parneix Hôpital Pellegrin, France

> Former-Director of Infection Control Programme, The Geneva University Hospitals, Switzerland



www.webbertraining.com



Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com

## **Hospital** infections

500,000 patients each day

16 million deaths every year

3

# Daily impact of hospital infections in the USA....

Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com





Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com





Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com

Healthcare-associated infections

A silent pandemic

9

## **Clean Hands**

Where did we start?
What did we do?
Where are we today?
Where do we go?

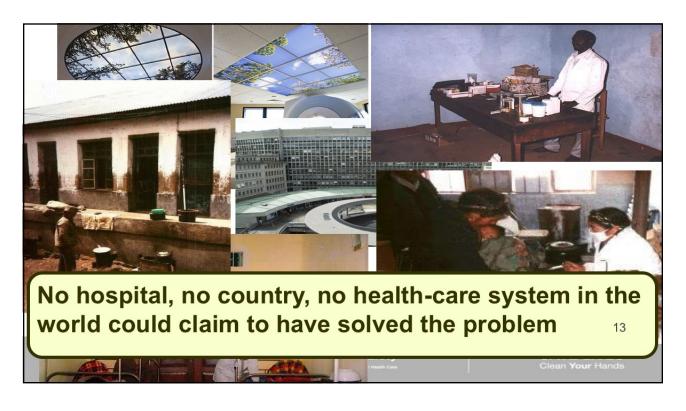
## Clean Hands

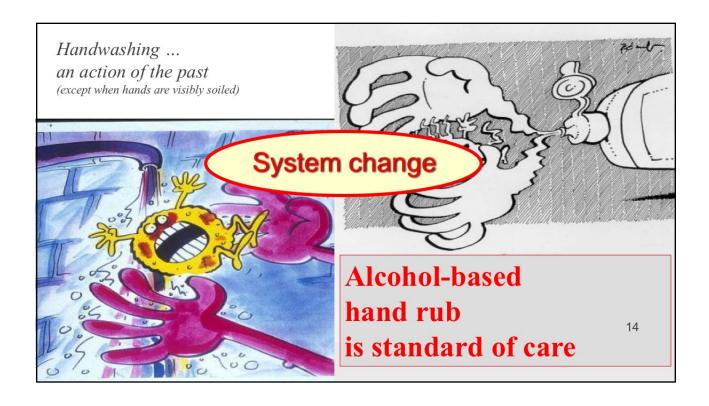
Where did we start?
What did we do?
Where are we today?
Where do we go?

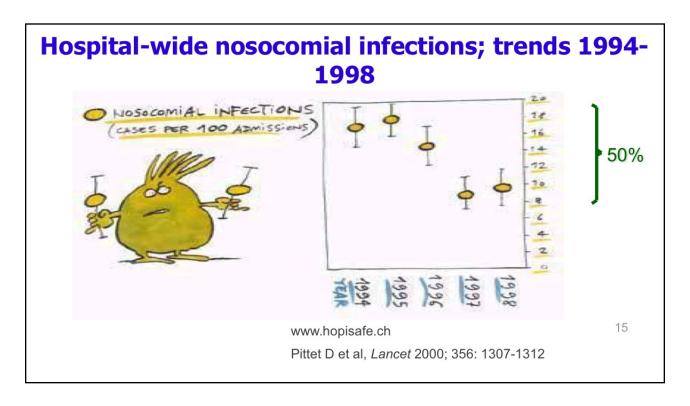
11

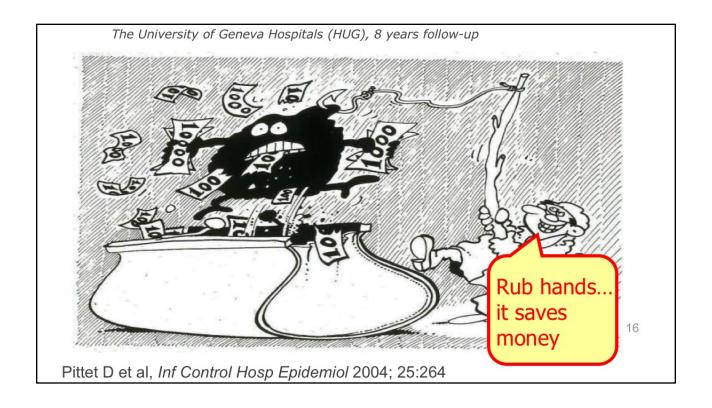


Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com









Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com

## Effectiveness of a hospital-wide programme to improve compliance with hand hygiene

Didier Pittet, Stéphane Hugonnet, Stephan Harbarth, Philippe Mourouga, Valérie Sauvan, Sylvie Touveneau, Thomas V Perneger, and members of the Infection Control Programme

THE LANCET Vol 256 - October 14, 2000

- « Geneva model » of hand hygiene promotion, Reproduced with success (2002-2005)
- ♦ in single hospitals in France, Belgium, USA, Australia ...
- in multiple hospitals in Hong Kong, Australia, Belgium, ...
- ♦ in national promotion campaigns: Belgium, the UK, Switzerland

17

## Clean Hands

Where did we start?
What did we do?
Where are we today?
Where do we go?

## Clean Hands

Where did we start?
What did we do?
Where are we today?
Where do we go?

- Review the evidence
- Multimodal strategy
- New guidelines
- Implementation tools
- Field testing
- Implementation strategy
- Allow for adaptation
- Promotion campaigns
- Obtain endorsement
- Monitor levels
- Train-the-Trainers (TTT)

19

- Drive excellence

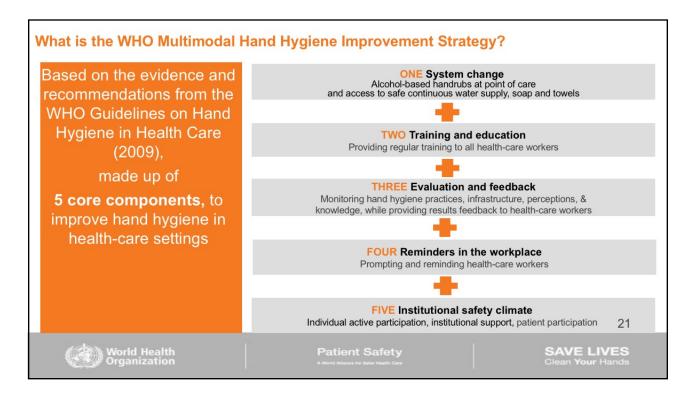
Implementation strategy and toolkit for the WHO Guidelines on Hand Hygiene in Health Care

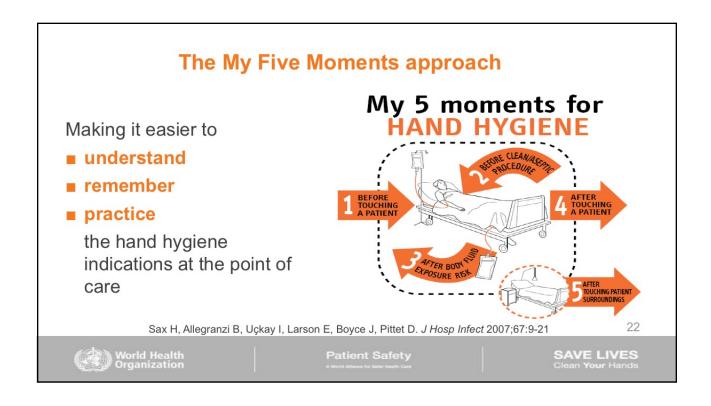
Knowledge & evidence

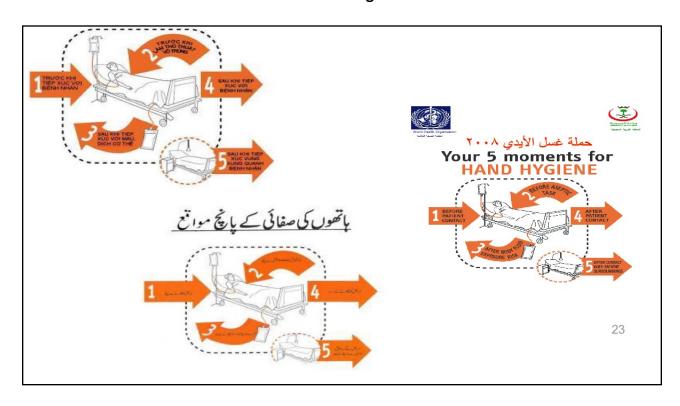
Action

Action

With Displace | The Mark Care | The Mark Care









Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com



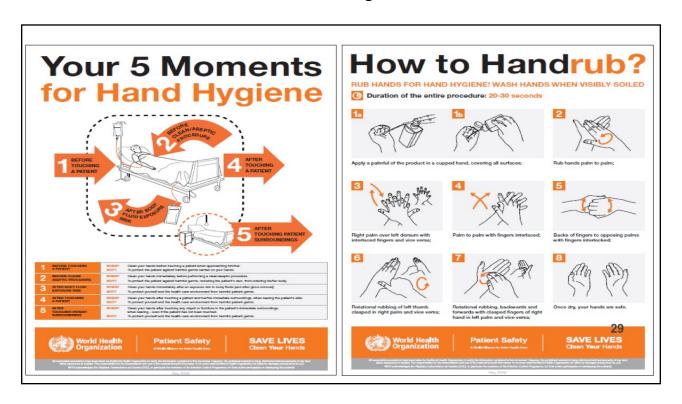


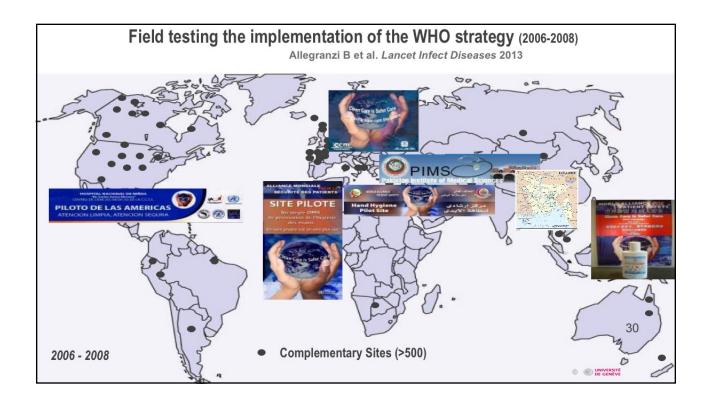
Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com





Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com





Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com





Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com





Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com



## Clean Hands

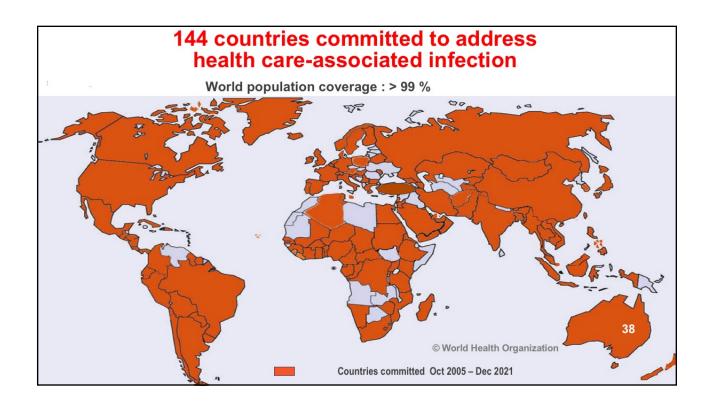
Where did we start?
What did we do?
Where are we today?
Where do we go?

- Review the evidence
- Multimodal strategy
- New guidelines
- Implementation tools
- Field testing
- Implementation strategy
- Allow for adaptation
- Promotion campaigns
- Obtain endorsement
- Monitor levels
- Train-the-Trainers (TTT)
- Drive excellence

36

Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com





Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com

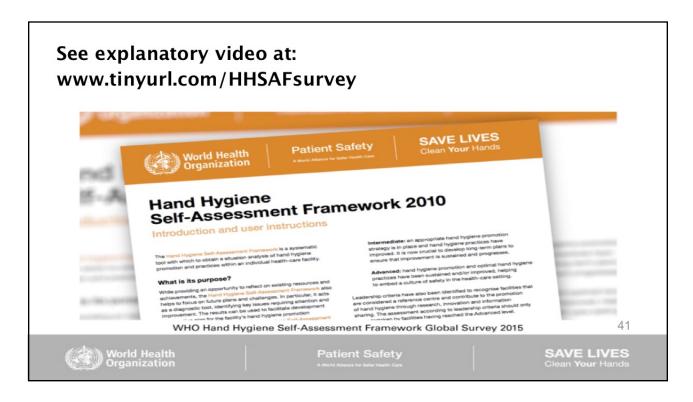
# Clean Hands

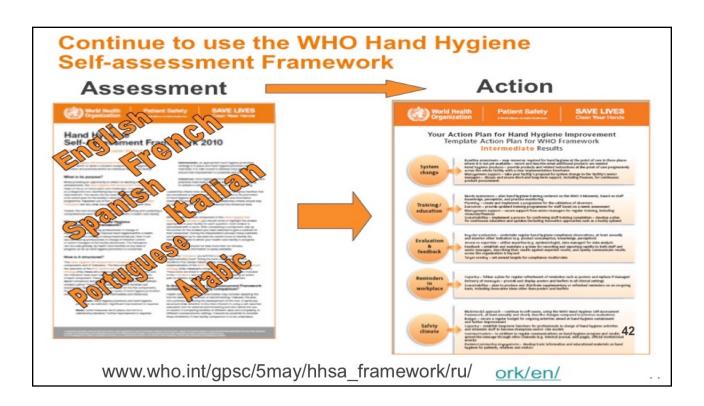
Where did we start?
What did we do?
Where are we today?
Where do we go?

- Review the evidence
- Multimodal strategy
- New guidelines
- Implementation tools
- Field testing
- Implementation strategy
- Allow for adaptation
- Promotion campaigns
- Obtain endorsement
- Monitor levels
- Train-the-Trainers (TTT)
- Drive excellence

Tools to monitor practices and ensure sustainability of the solution worldwide...

40





# Clean Hands

Where did we start?
What did we do?
Where are we today?
Where do we go?

43





#### WHO Global Hand Hygiene Self-Assessment Survey 2019

Marlieke de Kraker - Geneva University Hospitals, Switzerland Ermira Tartari - University of Malta, Msida, Malta

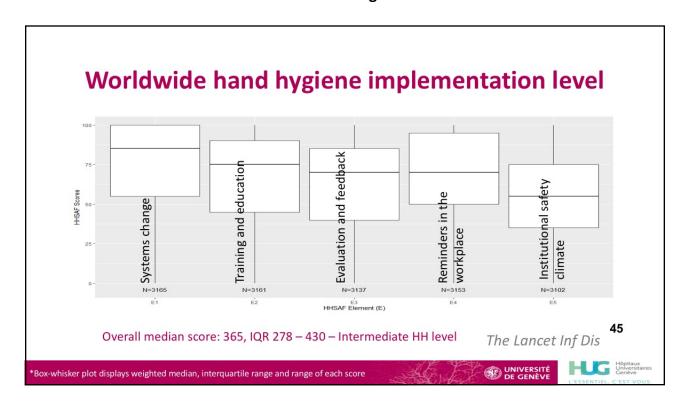
ICPIC September 2021, Oral Session 013

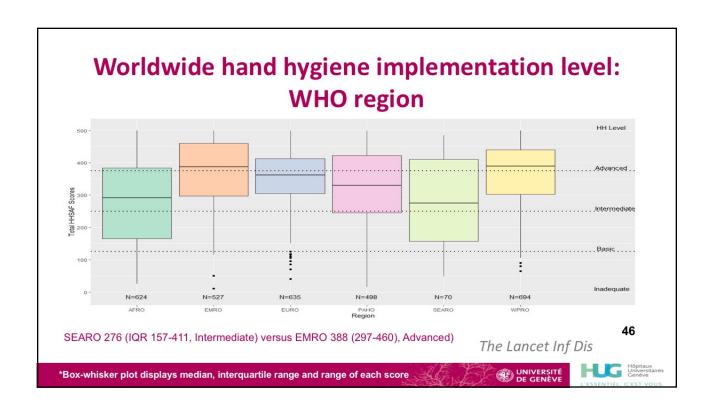
Thursday 16 Sept 09:00 - 10:30

Collaborators: Sara Tomczyk - RKI, Germany Anthony Twyman - WHO-HQ Laurent Francioli - MIT, USA Benedetta Allegranzi - WHO-HQ Didier Pittet - HUG, Switzerland

44

The Lancet Inf Dis







Where did we start?
What did we do?
Where are we today?
Where do we go?

47

## Train-The-Trainers







#### in hand hygiene:

Based on the WHO multimodal strategy:

- 1. Lectures and round tables
- 2. Hands-on-simulation training
- 3. Sharing of experiences
- 4. Evaluation of knowledge pre-post course

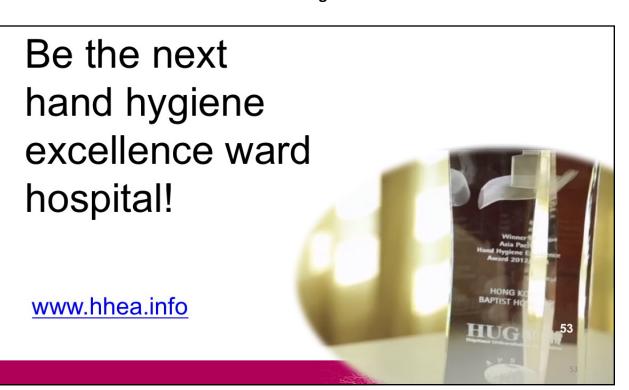






### How to achieve excellence in hand hygiene?

www.hhea.info





## Clean Hospitals

Where did we start?
What did we do?
Where are we today?
Where do we go?

55

## What is Clean Hospitals?

A coalition of international stakeholders who work explicitly to promote and support healthcare environmental hygiene

- research
- publications
- participation in conferences and events
- education and training
- specialized working groups



#### Where did we start?

## - Identifying the need

- The healthcare environment remains a major gap in IPC
- We need to address silos and fragmentation in the field
- Clean Hospitals' official launch was at "Interclean 2018"

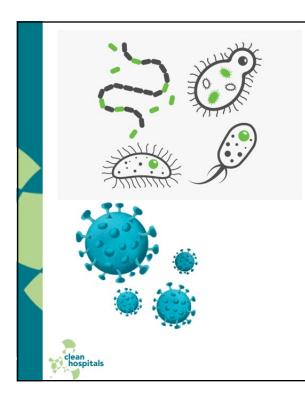


# The role of HEH in disease transmission

- Depends on the setting
- 50-70% of HAI are caused by contaminated hands
- Estimate 20-40% of HAI are spread through the healthcare environment







## Healthcareassociated infections in Europe

- Currently, 1 out of every 15 patients will get an HAI during their hospital stay
- If we are able to reduce 20% through improved HEH that means 1/19 will get an HAI
- If we are able to reduce 40% through improved HEH that means 1/25 patients will get an HAI

59

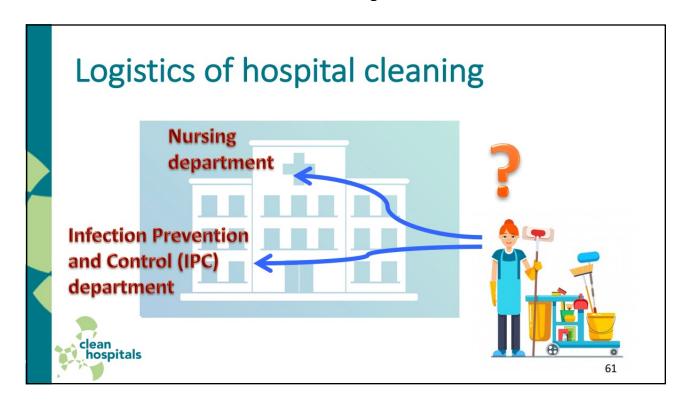
# Who cleans what? Everyone is crucial to the outcome

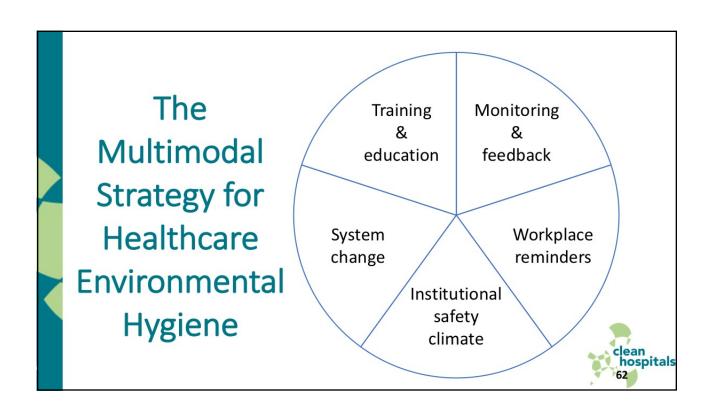




60

Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com





Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com

#### 5 Elements in HEH

- System change- access to necessary products and supplies
- Training and education- of EVS staff, managers, and raising awareness for other healthcare staff and administration
- Monitoring and feedback- of performance how clean is clean, and optimizing feedback is for improving performance
- Workplace reminders- safety posters, events, etc
- Institutional safety climate- career advancement, ability to communicate with nursing staff and up the heirarchy



## System Change

Availability of tools, supplies and machines to:

- · Cleaning and disinfecting surfaces
- To treat air when needed
- To sterilize and reprocess medical devices
- Water treatment
- Waste treatment
- Laundry





## Training & Education

- Training EVS staff for cleaning and disinfection, how to operate equipment, or do specialized tasks
- Can be through classroom, manuals training, job training or E-learning





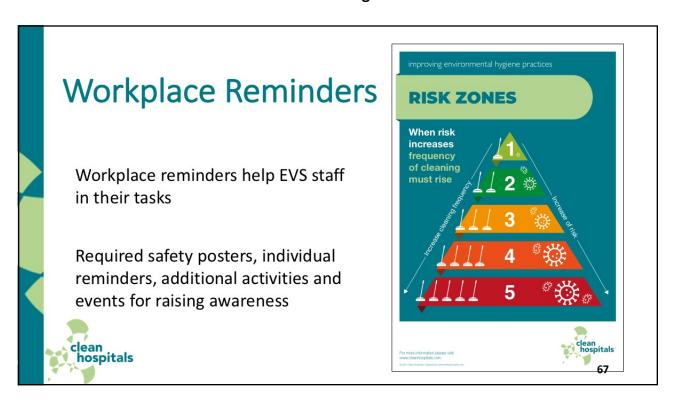


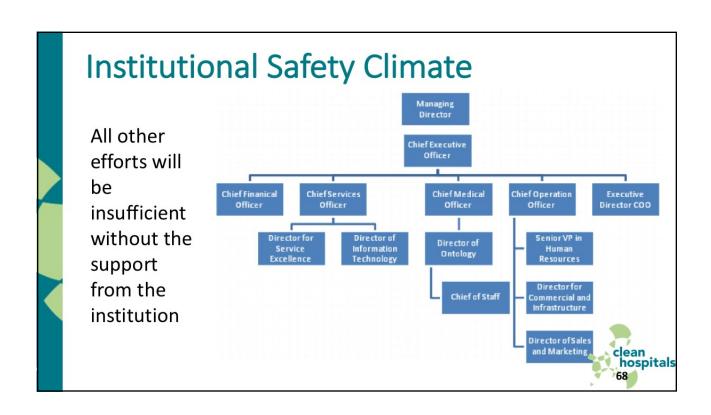
## Monitoring & Feedback

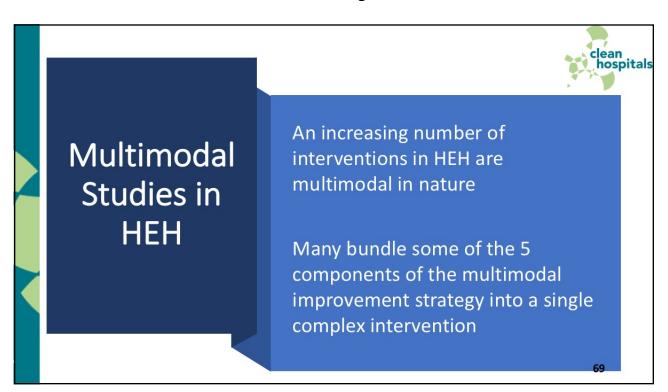
- Monitoring EVS staff through visual monitoring, ATP measurements, fluorescent marking or, rarely, with microbiological sampling
- Feedback can be given in a constructive or punitive way, and either individual, the team, or institutional level (or a combination)















## **Optimising HEH**

- Optimal HEH is as much about the products as it is about institutions and people
- All elements need to work harmoniously for improvement

## Clean Hospitals

Where did we start?
What did we do?
Where are we today?
Where do we go?

71

#### What did we do?

Brought together academia and industry to:

- Champion the science, best practices and evidencebased solutions
- Drive and support academic research
- Create a network where project members can exchange and collaborate
- Create a platform from which to bring healthcare environmental hygiene into the spotlight

clean hospitals

#### 2021 in Numbers



#### Another very busy year despite COVID-19!

- Peer-reviewed publications
- 20 Conferences in person and remotely
- **2** Teleclasses/Webinars

**CH Day Teleclass:** 

37,000 live attendees

over **88,000** on-demand attendees

Teleclass on COVID and Fake News: 38'000 attendees during live sessions

- 2 Digital Days
- 1 Global Clean Hospitals Day
- 1 Book chapter
  - + 100s of citations
  - + major increase of HEH abstracts at ICPIC

73

#### Publications in the last 2 years:



- Vaux S, Fonteneau L, Venier AG, Gautier A, Soing Altrach S, Parneix P, Lévy-Bruhl D. Influenza vaccination coverage of
  professionals working in nursing homes in France and related determinants, 2018-2019 season: a cross-sectional
  survey. BMC Public Health. 2022 May 25;22(1)
- Peters A, Schmid MN, Kraker MEA, Parneix P, Pittet D. Results of an international pilot survey on healthcare environmental hygiene at the facility level. Am J Infect Control. 2022 Mar 6:S0196-6553(22)00133-X.
- Peters, A., Schmid, M., Parneix, P. et al. Impact of environmental hygiene interventions on healthcare-associated infections and patient colonization: a systematic review. *Antimicrob Resist Infect Control* 11:38 (2022).
- Peters, A., Carry, J., Cave, C. et al. Acceptability of an alcohol-based handrub gel with superfatting agents among healthcare workers: a randomized crossover controlled study. *Antimicrob Resist Infect Control* 11, 97 (2022).
- Peters, A., Cave, C., Carry, J. et al. Tolerability and acceptability of three alcohol-based handrub gel formulations: a randomized crossover study. J Hosp Infect. 2022 Feb 3:S0195-6701(22)00034-2.
- Peters A, Lotfinejad N, Palomo,R et al. Decontaminating N95/FFP2 masks for reuse during the COVID-19 epidemic: a systematic review. Antimicrob Resist Infect Control (In press)
- Peters, A., Palomo, R., Ney, H. et al. "The COVID-19 pandemic and N95 masks: reusability and decontamination methods". Antimicrob Resist Infect Control 10, 83 (2021)
- Peters, A. Guitart C., Pittet D. "Addressing the global challenge of access to supplies during COVID-19: Mask reuse and local production of alcohol-based handrub" *Environmental and Health Management of Novel Coronavirus Disease* (COVID-19). Elsevier. Dehghani et al. Ed. 2021.

### Prof. Didier Pittet, University of Geneva, Switzerland A Webber Training Teleclass

### Publications in the last 2 years (2):



- Peters A, Frat E, Iten A, Sauser J, Schibler M, Pittet D. "Alcohol-based hand rub and influenza A: the danger of publishing a flawed study with no clinical relevance". J Hosp Infect. 104:1, p120-122, Jan 2020.
- Peters A, Vetter P, Guitart C, Lotfinejad N, Pittet D. "Understanding the emerging coronavirus: what it means for health security and infection prevention". J Hosp Infect. 104:4, p440-448, March 2020. Peters A, Parneix P, Otter J, Pittet D.
- Putting some context to the aerosolization debate around SARS-CoV-2. J Hosp Infect. 2020;105(2):381-382.
- Peters A. Buetti, N. Harbarth S., Pittet D. Der schadliche Effekt von Falschinformationen. Swissnoso. Swiss Federal Office for Public Health (OFSP/ BAG). Nov. 2020.
- Peters, A and Pittet, D. "COVID-19 and health care environmental hygiene". MJA Insight. 27 July 2020.
- Otter, J. Exploring SARS-CoV-2 hospital surface and air contamination in London. Reflections in IPC. July 8, 2020. https://reflectionsipc.com/2020/07/08/exploring-sars-cov-2-hospital-surface-and-air-contamination-in-london/
- Peters, A and Pittet, D. "Clean Hospitals answers to a widely shared piece of fake news about alcohol-based handrub". Press Release. Clean Hospitals. Sept 2020. Peters, A.
- "The Impact of misinformation and fake news on public health during COVID-19". Policy Brief. Clean Hospitals. Sept 2020.
- Hajjar, J., Parneix P. Nonmedical fabric face masks: Why? When? And how? Health& Co. Oct, 2020.
- Bervas, C., Parneix P. "Dossier: Communication & formation Infox: le défi des médias sociaux et du web. Health& Co. Dec, 2020.

75

### Clean Hospitals Day



- 2020 was specifically focused on COVID-19
- 2021 focused on cleaners
- Videos
- Teleclass (21,000 attendees during the live session and 77,109 on-demand attendees)
- Webinars
- Company involvement
- Social media

Clean Hospitals Day 2022 - 20 October

### Clean Hospitals

Where did we start?
What did we do?
Where are we today?
Where do we go?

77

#### Where are we today?



- Continuing our research and academic work
- Expanding our network and connections with industry
- Finding new ways to champion healthcare environmental hygiene and patient safety

### **COVID-19** sensitized the whole world to contact transmission



#### Hands and environment

Hands are a hyper-mobile prolongation of the environment

#### The good news?

**Environmental hygiene and IPC** awareness:

Never "waste" a pandemic...

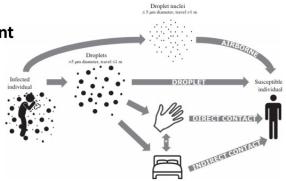


Figure from Otter et al. https://www.journalofhospitalinfection.com/article/S0195-6701(15)00367-9/fulltext

79

Antimicrobial Resistance & Infection Control (2022) 11:38 https://doi.org/10.1186/s13756-022-01075-1

Antimicrobial Resistance and Infection Control



#### REVIEW

**Open Access** 



Impact of environmental hygiene interventions on healthcare-associated infections and patient colonization: a systematic review

Alexandra Peters<sup>1,2</sup>, Marie N. Schmid<sup>2</sup>, Pierre Parneix<sup>3</sup>, Dan Lebowitz<sup>1</sup>, Marlieke de Kraker<sup>1</sup>, Julien Sauser<sup>1</sup>, Walter Zingg<sup>4</sup> and Didier Pittet<sup>1</sup>

#### **Abstract**

Background: Healthcare-associated infections (HAI) are one of the gravest threats to patient safety worldwide. The importance of the hospital environment has recently been revalued in infection prevention and control. Though the literature is evolving rapidly, many institutions still do not consider healthcare environmental hygiene (HEH) very important for patient safety. The evidence for interventions in the healthcare environment on patient colonization and HAI with multidrug-resistant microorganisms (MDROs) or other epidemiologically relevant pathogens was reviewed.

#### **Main Conclusions**

The healthcare environment is important for patient safety

There are numerous HEH interventions that can reduce HAI

We need more and better studies designed to measure colonization/HAI





American Journal of Infection Control 000 (2022) 1-9

Contents lists available at ScienceDirect



American Journal of Infection Control

journal homepage: www.ajicjournal.org



Major Article

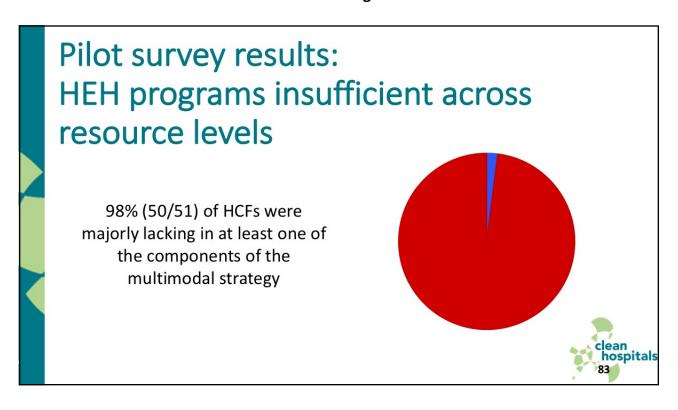
Results of an international pilot survey on health care environmental hygiene at the facility level

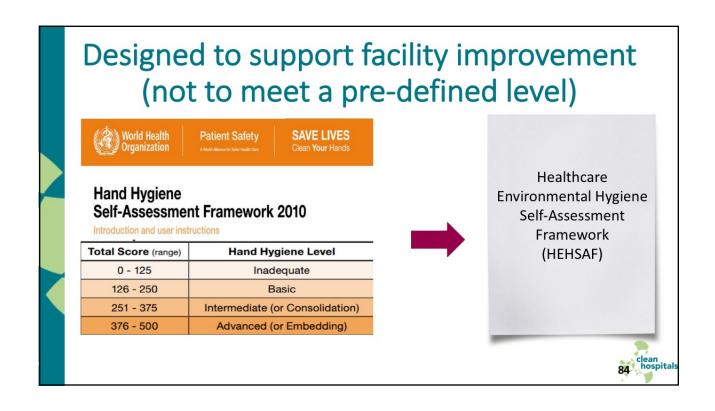
Alexandra Peters MA <sup>a,b</sup>, Marie N. Schmid BS <sup>b</sup>, Marlieke E.A. de Kraker PhD <sup>a</sup>, Pierre Parneix MD <sup>c</sup>, Didier Pittet MD, MS, CBE <sup>a,\*</sup>

- a Infection Control Programme and WHO Collaborating Center on Patient Safety, University of Geneva Hospitals and Faculty of Medicine, Geneva, Switzerland b University of Geneva, Geneva, Switzerland
- <sup>b</sup> University of Geneva, Geneva, Switzerland
- <sup>c</sup> Nouvelle Aquitaine Health Care-Associated Infection Control Centre, Bordeaux University Hospital, Bordeaux, France

Peters A, Schmid MN, Kraker MEA, Pameix P, Pittet D. Results of an international pilot survey on healthcare environmental hygiene at the facility level. Am J Infect Control. 2022 Mar 6:S0196-6553(22)00133-X. doi: 10.1016/j.ajic.2022.02.029. Epub ahead of print. PMID: 35644296.









### Where do we go?



- Continued research and publications: academic and white papers in peer-reviewed journals
- Develop, test, validate and diffuse the Healthcare Environmental Hygiene Self-Assessment Framework (HEHSAF)
- Clean Hospitals Day Conference 20 October 2022
- Programme currently under preparation for 2023

### Steps to take for the future: How can we do better?



- Growing the Clean Hospitals initiative
- Working on addressing gaps in the field
- Develop, test, validate and diffuse the Healthcare Environmental Hygiene Self-Assessment Framework (HEHSAF)
- Working to include relevant stakeholders globally
- Keep the momentum post-pandemic

27

Clean Hospitals Day: TODAY!



# Celebrating Clean Hospitals Day, 20 Oct 2022

1-Day International
Scientific Conference on
Healthcare Environmental Hygiene,
Geneva, Switzerland

- scientific lectures
- meet-the-experts
- industry-sponsored sessions
- industry exposition



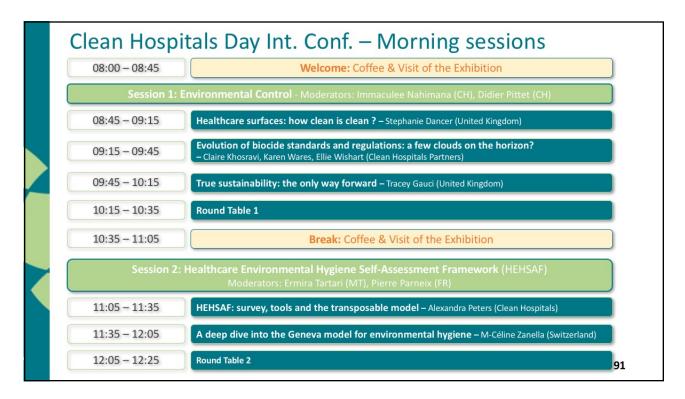
improving environmental hygiene practices

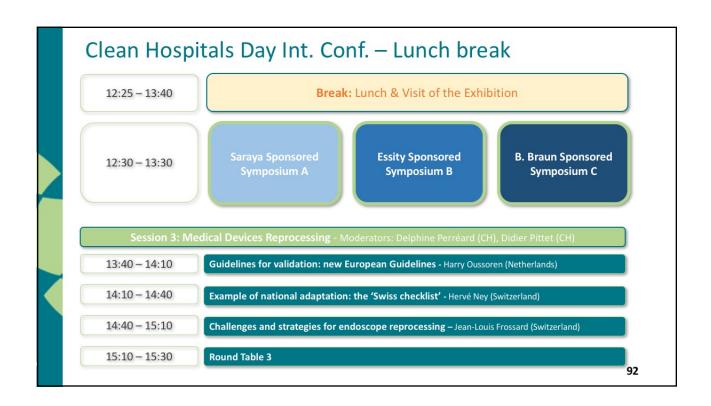
20

# Clean Hospitals Day: 20<sup>th</sup> of October, 2022

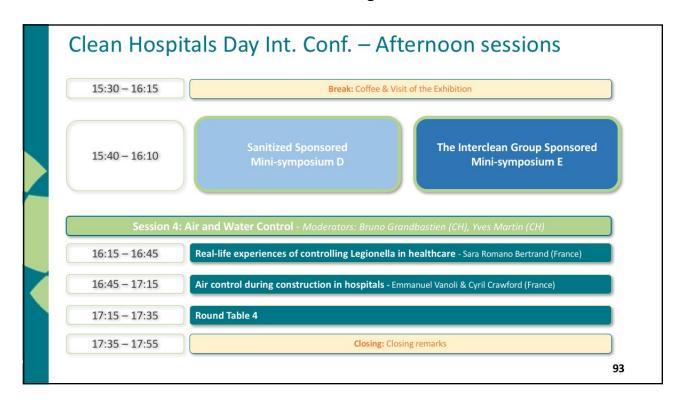








Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com





Hosted by Dr. Pierre Parneix, Hôpital Pellegrin, France www.webbertraining.com

### Spreading the word on social media

Help us spread the word



Follow us on Twitter @Clean\_Hospitals

#CleanHospitalsDay #CleanHospitals



#### The future of HEH...

- Must be flexible, agile, and based on best practices
- Needs to include all types of healthcare facilities, not just hospitals
- Must take into account logistics, production, quality control, communication
- Needs international standards for products and procedures
- Needs to include having plans in place for emergency situations, from the international level to the facility level





# From Clean Hands to Clean Hospitals

Where did we start?
What did we do?
Where are we today?
Where do we go?

97

### Conclusions:

#### From Clean Hands

- Clean Hands showed the way to go from 1995
- Reviewing the evidence and building intervention strategies was critical
- Monitoring performance, progress and time trends ensured improvement and sustainability

### to Clean Hospitals

- Clean Hospitals was launched in 2018
- The model is framed on the Clean Hands model
  - review the evidence
  - develop strategies
  - monitor practices
  - ensure sustainability





www.webbertraining.com/schedulep1.php	
October 27, 2022	BUILDING (ENHANCING) EVIDENCE-BASED ANIMAL-ASSISTED THERAPY PROGRAMS IN HUMAN HEALTHCARE Speaker: Prof. Jason Stull, College of Veterinary Medicine, The Ohio State University
November 3, 2022	( <u>FREE Teleclass)</u> CIC PATHWAYS TO CERTIFICATION Speaker: Sandra Callery, CBIC President, 2022
November 9, 2022	(South Pacific Teleclass) WHERE IS THE STRENGTH OF EVIDENCE? A REVIEW OF INFECTION PREVENTION AND CONTROL GUIDELINES Speaker: Prof. Philip Russo, Cabrini Monash University Department of Nursing Research, President ACIPC
November 10, 2022	(FREE Teleclass) SHARING KNOWLEDGE: LEARNING FROM THOSE WHO HAVE CHALLENGED THE CIC

