World Health Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES

Clean **Your** Hands

Education Session for Trainers, Observers and Health-Care Workers

User instructions (1)

- This presentation is intended to give the key messages related to the topics listed in the outline. These concepts are also included in the Hand Hygiene Why, How and When Brochure and in the Hand Hygiene Technical Reference Manual.
- This presentation should be used:
  - to make trainers aware of the key messages to transmit to health-care workers
  - to conduct education sessions for health-care workers
  - to train observers to understand the background and aims of observation

User instructions (2)

- The presentation can be either given in a single session of approximately 2 hours or split into different shorter sessions according to its different parts. More than one session is recommended especially for observers' training.

- Trainers are encouraged to add/adapt some slides with local figures as well so as to make sure that the main messages of this presentation are transmitted to health-care workers.

User instructions (3)

- During the session, the discussion and health-care worker participation should be stimulated as much as possible in order to achieve an optimal understanding of the key messages.

- Following the present teaching session, practical sessions either at the patient bedside or by simulation should be organized with small groups of health-care workers. During these sessions, under the supervision of the trainer, health-care workers and/or observers should observe ongoing care procedures and identify the moments when hand hygiene should be performed.

Outline

Introduction	WHO Patient Safety and the First Global Patient Safety Challenge
Part 1	Definition, impact and burden of health care-associated infection (HCAI)
Part 2	Major patterns of transmission of health care-associated germs with a particular focus on hand transmission
Part 3	Hand Hygiene and prevention of HCAI
Part 4	WHO Guidelines on Hand Hygiene in Health Care (2009) and their implementation strategy and tools
Part 5	Why, when and how to perform hand hygiene in health care
Part 6	How to observe hand hygiene practices among health-care workers (only for observers, in addition to parts 1–5)

WHO Patient Safety

- WHO Patient Safety was launched in October 2004 with the mandate to reduce the adverse health and social consequences of unsafe health care
- An essential element of WHO Patient Safety is the formulation of a Global Patient Safety Challenge: a topic that covers a significant aspect of risk to patients receiving health care, relevant to every WHO Member State
- The First Global Patient Safety Challenge was launched in 2005

Through the promotion of best practices in hand hygiene and infection control, the First Global Patient Safety Challenge aims to reduce health care-associated infection (HCAI) worldwide

Other WHO programmes contribute to the efforts to reduce HCAI

- Blood safety
- Injection safety
- Clinical procedures safety
- Water, sanitation and waste management safety
- Infection prevention and control in health care - Biorisk reduction for dangerous pathogens
- Disease-specific programmes
- Occupational health

Political commitment is essential to achieve improvement in infection control

Ministerial pledges to the First Global Patient Safety Challenge

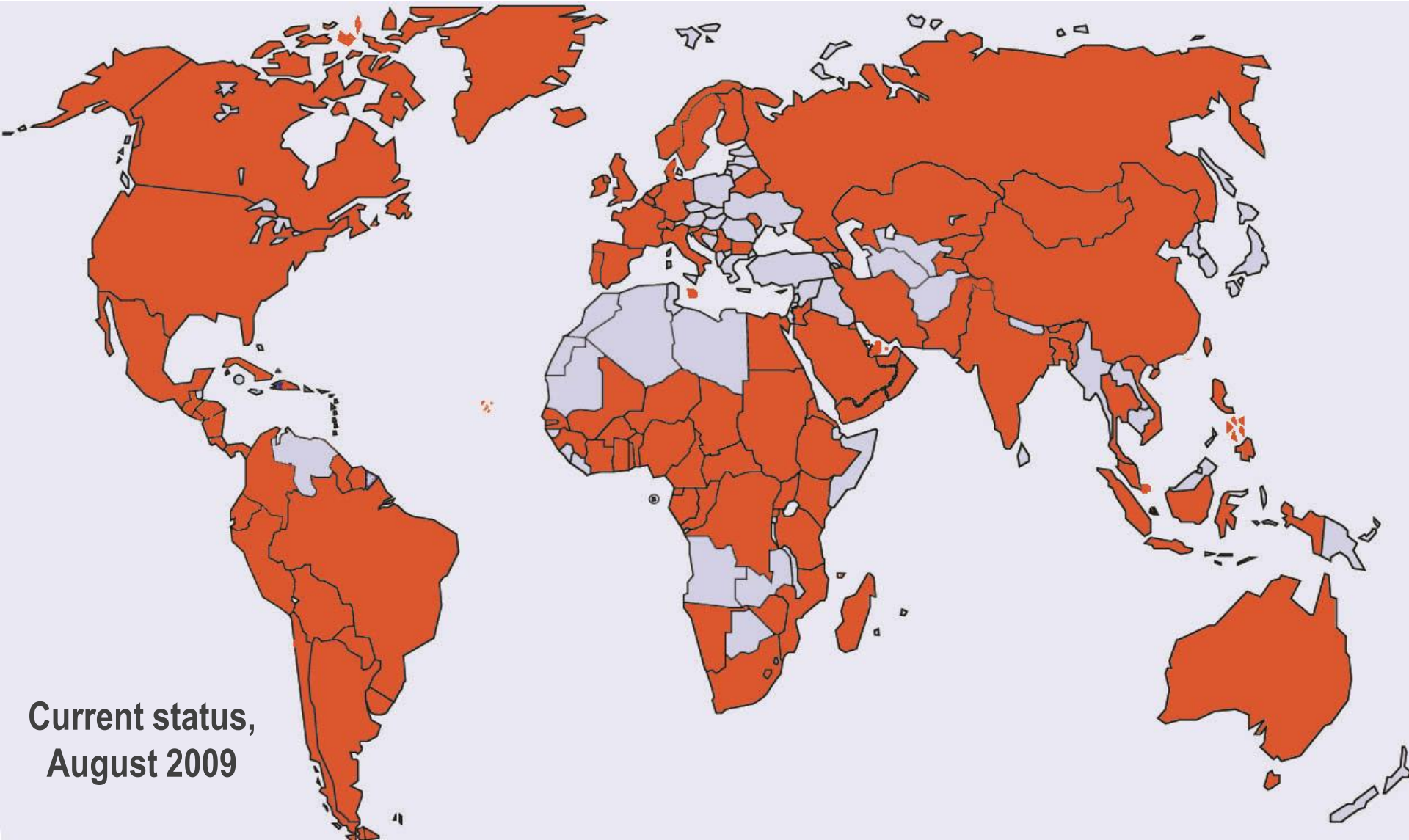
I resolve to work to reduce health care-associated infection (HCAI) through actions such as:

- acknowledging the importance of HCAI;
- hand hygiene campaigns at national or sub-national levels;
- sharing experiences and available surveillance data, if appropriate;
- using WHO strategies and guidelines…


A STATEMENT PLEDGING SUPPORT TO ADDRESS HEALTHCARE ASSOCIATED INFECTION

Ministerial signature

121 countries committed to address HCAI
87% world population coverage



Clean Care is Safer Care

The First Global Patient Safety Challenge

SAVE LIVES: Clean Your Hands
5 May 2009–2020

Through an annual day focused on hand hygiene improvement in health care, this initiative promotes continual, sustainable best practice in hand hygiene at the point of care in all health-care settings around the world

Part 1

Definition, impact and burden of health care-associated infection

Definition

Health care-associated infection (HCAI)

- Also referred to as “nosocomial” or “hospital” infection

  *“**An infection occurring in a patient during the process of care in a hospital or other health-care facility** which was not present or incubating at the time of admission. This includes infections acquired in the health-care facility but appearing after discharge, and also **occupational infections among health-care workers of the facility**”*

HCAI: the worldwide burden

- Estimates are hampered by limited availability of reliable data
- The burden of disease both outside and inside health-care facilities is unknown in many countries
- No health-care facility, no country, no health-care system in the world can claim to have solved the problem

Estimated rates of HCAI worldwide

- HCAI affects hundreds of millions of people worldwide and is a major global issue for patient safety.
- In modern health-care facilities in the developed world: 5–10% of patients acquire one or more infections
- In developing countries the risk of HCAI is 2–20 times higher than in developed countries and the proportion of patients affected by HCAI can exceed 25%
- In intensive care units, HCAI affects about 30% of patients and the attributable mortality may reach 44%

HCAI burden in USA

- Incidence: 5–6%; 1.7 million affected patients
  - Urinary Tract Infection: 36%; 561,667 episodes, 13,088 deaths
  - Surgical Site Infection: 20%; 274,098 episodes (1.98%)
  - Catheter Related Bloodstream Infections: 11%; 250,000 episodes, 28,000 deaths
  - Ventilator Associated Pneumonia: 11%; 5.4/1000 ventilator-days
- Attributable mortality: 3.6%, approximately 99,000 deaths
- Annual economic impact: about US$ 4,5 billion

Klevens RM, et al. *Public Health Reports* 2007

Surveillance network, study period, setting	CR-BSI*	VAP*	CR-UTI*
NNIS, 2006–2007, PICU	2.9	2.1	5.0
NNIS, 2006–2007, Adult ICU (med/surg)	1.5	3.1	2.3

* Overall (pooled mean) infection rates/1000 device-days

NHSN report. *Am J Infect Control* 2008

HCAI burden in Europe

- EU: prevalence 3.5–14.8%
- Norway: nation-wide prevalence of 5.7% in 2007 (Eurosurveillance)
- France: in a 4-year multicentre study (2001–2004), HCAI prevalence of 6.1%, varying from 1.9% (low risk patients) to 15.2% (high risk patients) (Floret N, et al. *JHI* 2004)
- Italy: in a region-wide prevalence study in in 2003, HCAI prevalence of 7.6% (Pellizzer P, et al. *Infection* 2008)
- Switzerland: in 18 health-care facilities across the country, overall HCAI prevalence of 10.1%; 70,000 cases/year; annual cost: CHF 230-300 mio (Sax H, et al. *Arch Int Med* 2002)
- UK: incidence 7.2%; 100,000 cases/year; 5,000 deaths/year (Mayor S. *BMJ* 2000)

HCAI rates reported from developing countries

Type of survey	Prevalence (%)	Incidence (%)	Incidence (per 1000 patient-days)	Incidence (per 1000 device-days)
Hospital-wide	4.6–19.1	2.5–5.1	9.7–41.0	
Adult ICU	18.4–77.2	4.1–38.9	18.2–90.0	
Neonatal ICU		2.9–57.7	2.6–62.0	
SSI		1.2–38.7		
VAP				2.9–23.0
CR*-BSI				1.7–44.6
CR*-UTI				3.2–51.0

WHO Guidelines on Hand Hygiene in Health Care (2009)

Device-associated infection rates in ICUs in developing countries compared with NHSN rates

Surveillance network, study period, country	Setting	N° patients	CLA-BSI*	VAP*	CR-UTI*
INICC, 2002–2007, 18 developing countries†[1]	PICU	1,808	6.9	7.8	4.0
NHSN, 2006–2007, USA[2]	PICU	/	2.9	2.1	5.0
INICC, 2002–2007, 18 developing countries†[1]	Adult ICU #	26,155	8.9	20.0	6.6
NHSN, 2006–2007, USA[2]	Adult ICU#	/	1.5	2.3	3.1

* Overall (pooled mean) infection rates/1000 device-days
INICC = International Nosocomial Infection Control Consortium; NHSN = National Healthcare Safety Network; PICU = paediatric intensive care unit; CLA-BSI = central line-associated bloodstream infection; VAP = ventilator-associated pneumonia; CR-UTI = catheter-related urinary tract infection.

1 Rosenthal V et al. *Am J Infect Control* 2008
2 NHSN report. *Am J Infect Control* 2008
† Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, El Salvador, India, Kosova, Lebanon, Macedonia, Mexico, Morocco, Nigeria, Peru, Philippines, Turkey, Uruguay
# Medical/surgical ICUs

The impact of HCAI

HCAI can cause:

- more serious illness
- prolongation of stay in a health-care facility
- long-term disability
- excess deaths
- high additional financial burden
- high personal costs on patients and their families

Frequency and impact by type of HCAI (USA and EU)

HCAI Type	Average attributable mortality (%)	Average increased LOS (days)	Attributable Costs in US Dollars		Range	
			Mean	SD	Minimum	Maximum
Bloodstream infection	20	8.5	36,441	37,078	1,822	107,156
Surgical site infection	4.3	6.5	25,546	39,875	1,783	134,602
Ventilator associated pneumonia	27	5	9,969	2,920	7,904	12,034
Urinary tract infection	/	/	1,006	503	650	1,361

Bennett and Brachman's, Hospital Infections, 5th Edition

Most frequent sites of infection and their risk factors

URINARY TRACT INFECTIONS — **34%**

Urinary catheter
Urinary invasive procedures
Advanced age
Severe underlying disease
Urolitiasis
Pregnancy
Diabetes

13% — **LOWER RESPIRATORY TRACT INFECTIONS**

Mechanical ventilation
Aspiration
Nasogastric tube
Central nervous system depressants
Antibiotics and anti-acids
Prolonged health-care facilities stay
Malnutrition
Advanced age
Surgery
Immunodeficiency

LACK OF HAND HYGIENE

Most common sites of health care-associated infection and the risk factors underlying the occurrence of infections

SURGICAL SITE INFECTIONS

Inadequate antibiotic prophylaxis
Incorrect surgical skin preparation
Inappropriate wound care
Surgical intervention duration
Type of wound
Poor surgical asepsis
Diabetes
Nutritional state
Immunodeficiency
Lack of training and supervision

17%

BLOOD INFECTIONS

Vascular catheter
Neonatal age
Critical care
Severe underlying disease
Neutropenia
Immunodeficiency
New invasive technologies
Lack of training and supervision

14%

Part 2

Major patterns of transmission of health care-associated germs with a particular focus on hand transmission

Major patterns of transmission of health care-associated germs (1)

Mode of transmission	Reservoir / source	Transmission dynamics	Examples of germs
Direct contact	Patients, health-care workers	Direct physical contact between the source and the patient (person-to-person contact); e.g. transmission by shaking hands, giving the patient a bath, abdominal palpation, blood and other body fluids from a patient to the health-care worker through skin lesions	*Staphylococcus aureus*, Gram negative rods, respiratory viruses, HAV, HBV, HIV

Major patterns of transmission of health care-associated germs (2)

Mode of transmission	Reservoir / source	Transmission dynamics	Examples of germs
Indirect contact	Medical devices, equipment, endoscopes, objects (shared toys in paediatric wards)	Transmission of the infectious agent from the source to the patient occurs passively via an intermediate object (usually inanimate); e.g. transmission by not changing gloves between patients, sharing stethoscope	*Salmonella* spp, *Pseudomonas* spp, *Acinetobacter* spp, *S. maltophilia,* Respiratory Syncytial Virus

Major patterns of transmission of health care-associated germs (3)

Mode of transmission	Reservoir / source	Transmission dynamics	Examples of germs
Droplet	Patients, health-care workers	Transmission via large particle droplets (> 5 µm) transferring the germ through the air when the source and patient are within close proximity; e.g. transmission by sneezing, talking, coughing, suctioning	Influenza virus, *Staphylococcus aureus, Neisseria meningitidis*, SARS-associated coronavirus

Major patterns of transmission of health care-associated germs (4)

Mode of transmission	Reservoir / source	Transmission dynamics	Examples of germs
Airborne	Patients, health-care workers, hot water, dust	Propagation of germs contained within nuclei (< 5 µm) evaporated from droplets or within dust particles, through air, within the same room or over a long distance; e.g. breathing	*Mycobacterium tuberculosis, Legionella* spp

Major patterns of transmission of health care-associated germs (5)

Mode of transmission	Reservoir / source	Transmission dynamics	Examples of germs
Common vehicle	Food, water or medication	A contaminated inanimate vehicle acts as a vector for transmission of the microbial agent to multiple patients; e.g. drinking contaminated water, unsafe injection	*Salmonella* spp, HIV, HBV, Gram negative rods

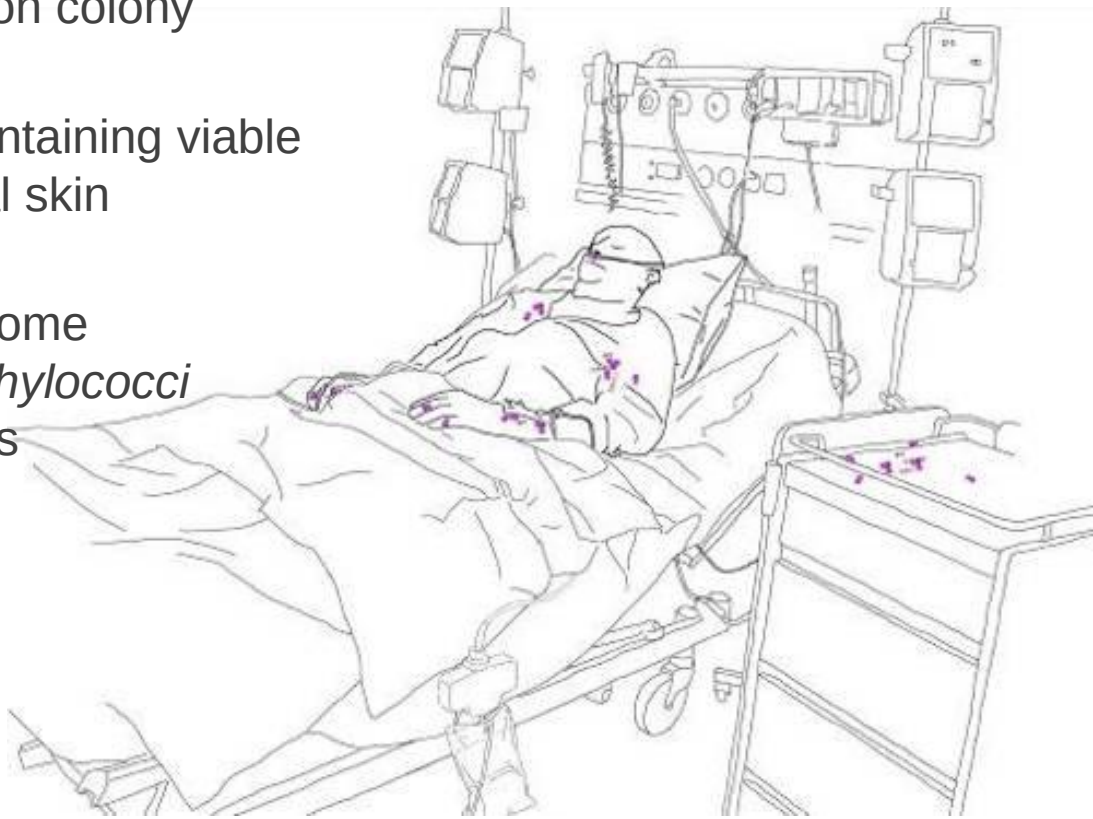
Hand transmission

- Hands are the most common vehicle to transmit health care-associated pathogens
- Transmission of health care-associated pathogens from one patient to another via health-care workers' hands requires **5 sequential steps**

Hand transmission: Step 1

Germs are present on patient skin and surfaces in the patient surroundings

- Germs (*S. aureus, P. mirabilis, Klebsiella* spp. and *Acinetobacter* spp.) present on intact areas of some patients' skin: 100^{-1} million colony forming units (CFU)/cm^2
- Nearly 1 million skin squames containing viable germs are shed daily from normal skin
- Patient immediate surroundings (bed linen, furniture, objects) become contaminated (especially by *staphylococci* and *enterococci*) by patient germs

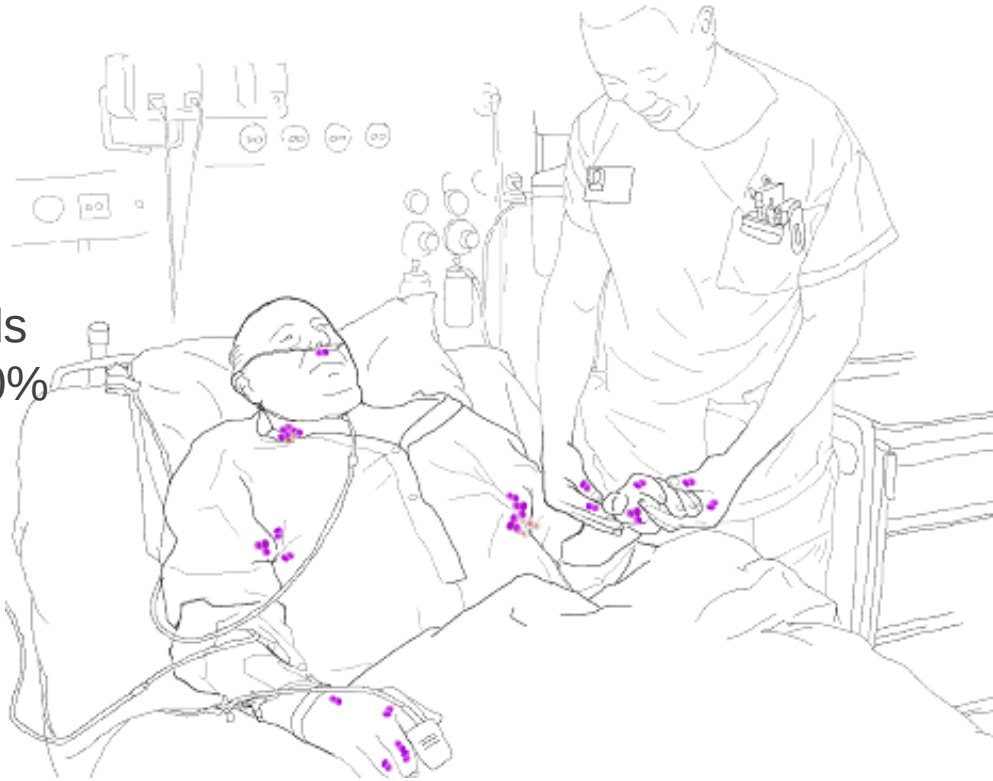


Pittet D et al. *The Lancet Infect Dis* 2006

Hand transmission: Step 2

By direct and indirect contact, patient germs contaminate health-care workers' hands

- Nurses could contaminate their hands with 100–1,000 CFU of *Klebsiella* spp. during “clean” activities (lifting patients, taking the patient's pulse, blood pressure, or oral temperature)
- 15% of nurses working in an isolation unit carried a median of 10,000 CFU of *S. aureus* on their hands
- In a general health-care facility, 29% nurses carried *S. aureus* on their hands (median count: 3,800 CFU) and 17–30% carried Gram negative bacilli (median counts: 3,400–38,000 CFU)

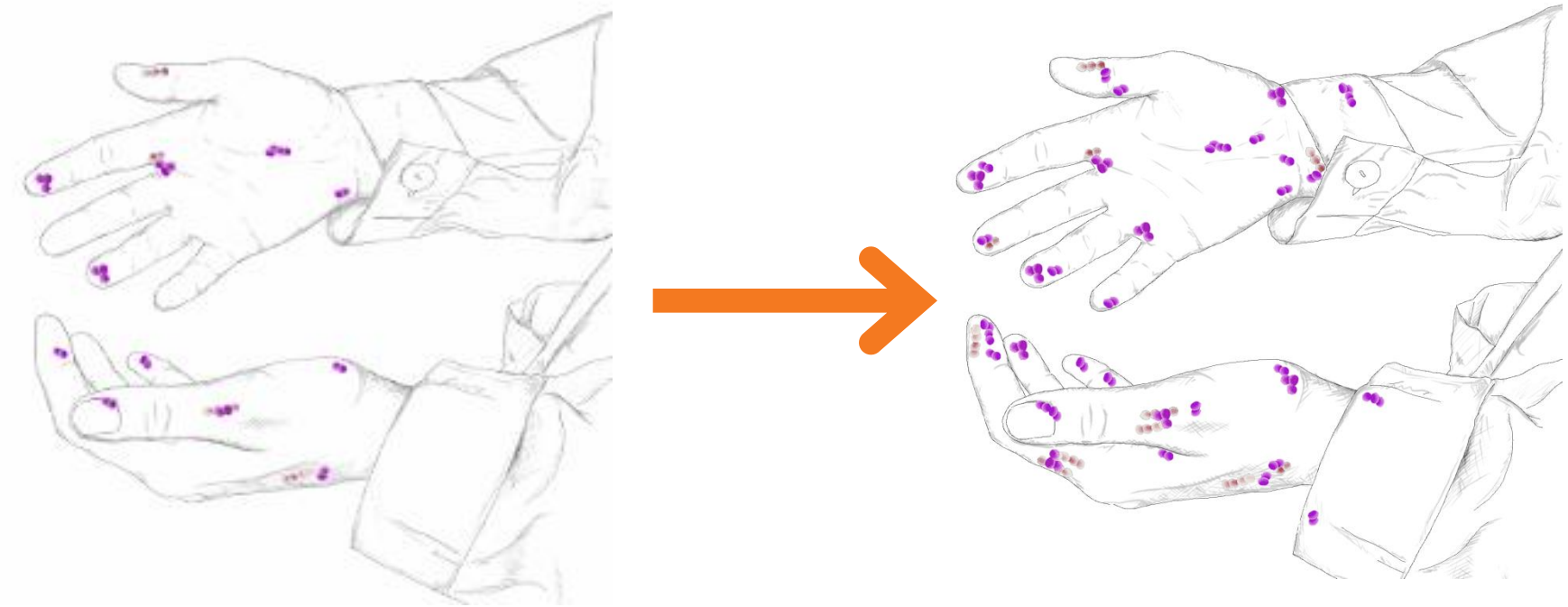


Pittet D et al. *The Lancet Infect Dis* 2006

Hand transmission: Step 3

Germs survive and multiply on health-care workers' hands

- Following contact with patients and/or contaminated environment, germs can survive on hands for differing lengths of time (2–60 minutes)
- In the absence of hand hygiene action, the longer the duration of care, the higher the degree of hand contamination

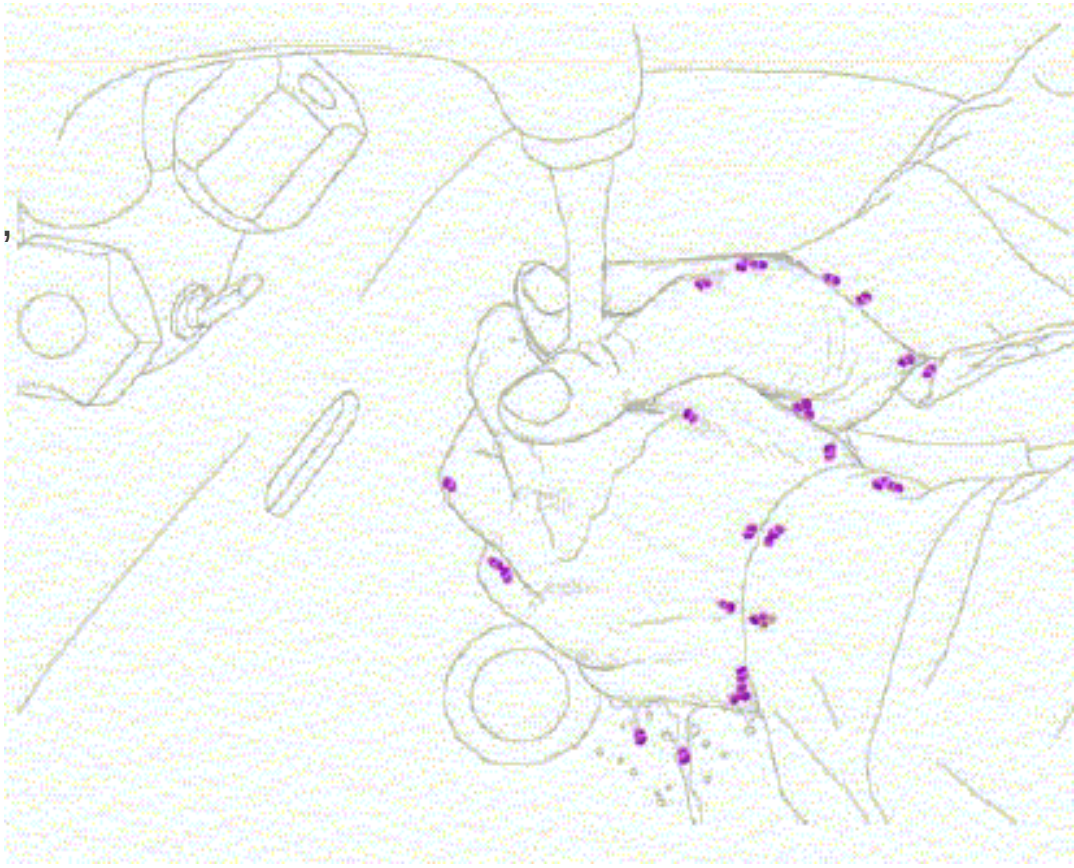


Pittet D et al. *The Lancet Infect Dis* 2006

Hand transmission: Step 4

Defective hand cleansing results in hands remaining contaminated

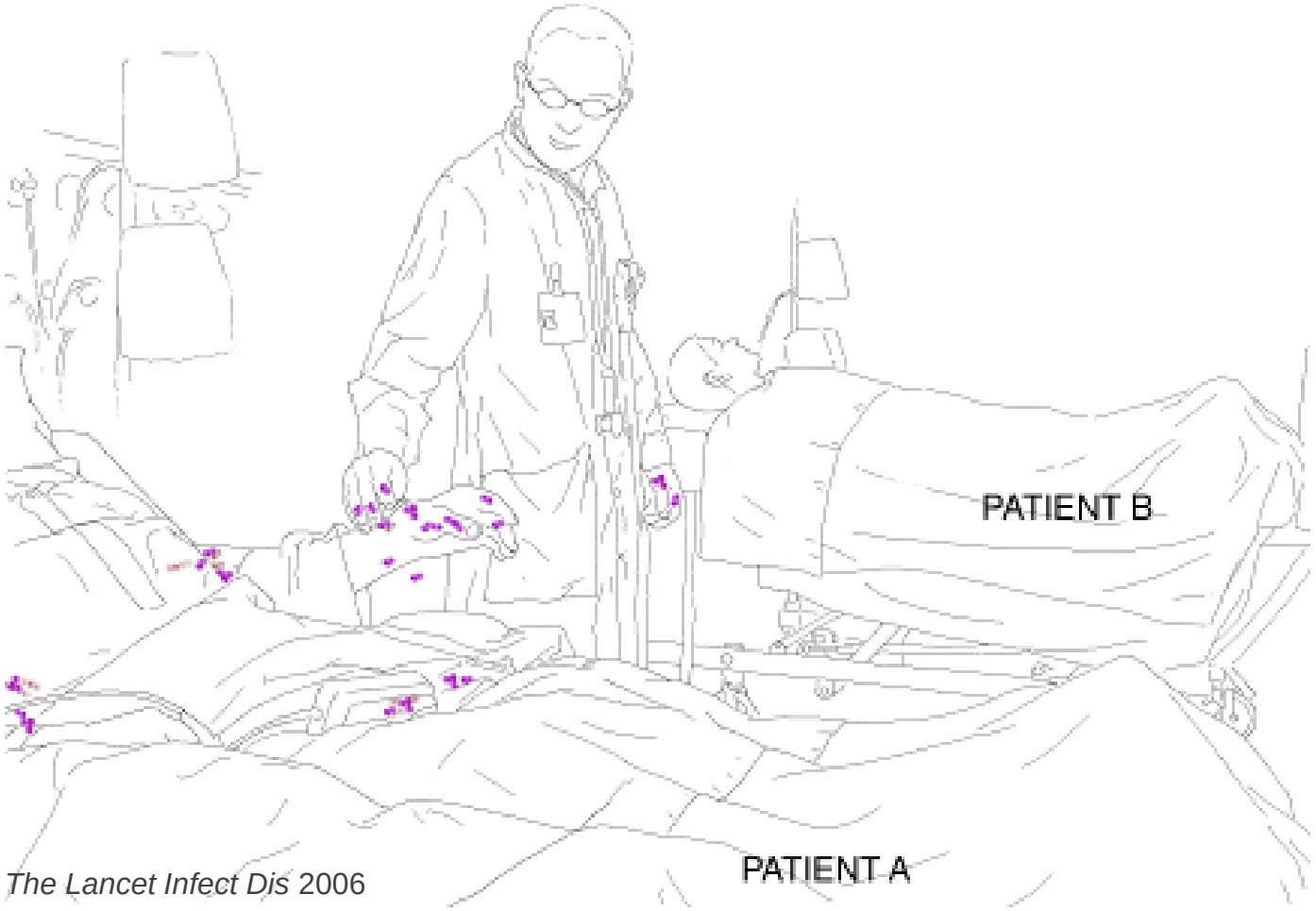
- Insufficient amount of product and/or insufficient duration of hand hygiene action lead to poor hand decontamination
- Transient microorganisms are still recovered on hands following handwashing with soap and water, whereas handrubbing with an alcohol-based solution has been proven significantly more effective



Pittet D et al. *The Lancet Infect Dis* 2006

Hand transmission: Step 5

Germ cross-transmission between patient A and patient B via health-care worker's hands



Pittet D et al. *The Lancet Infect Dis* 2006

Hand transmission: Step 5

Manipulation of invasive devices with contaminated hands determines transmission of patient's germs to sites at risk of infection

Pittet D et al. *The Lancet Infect Dis* 2006

Part 3

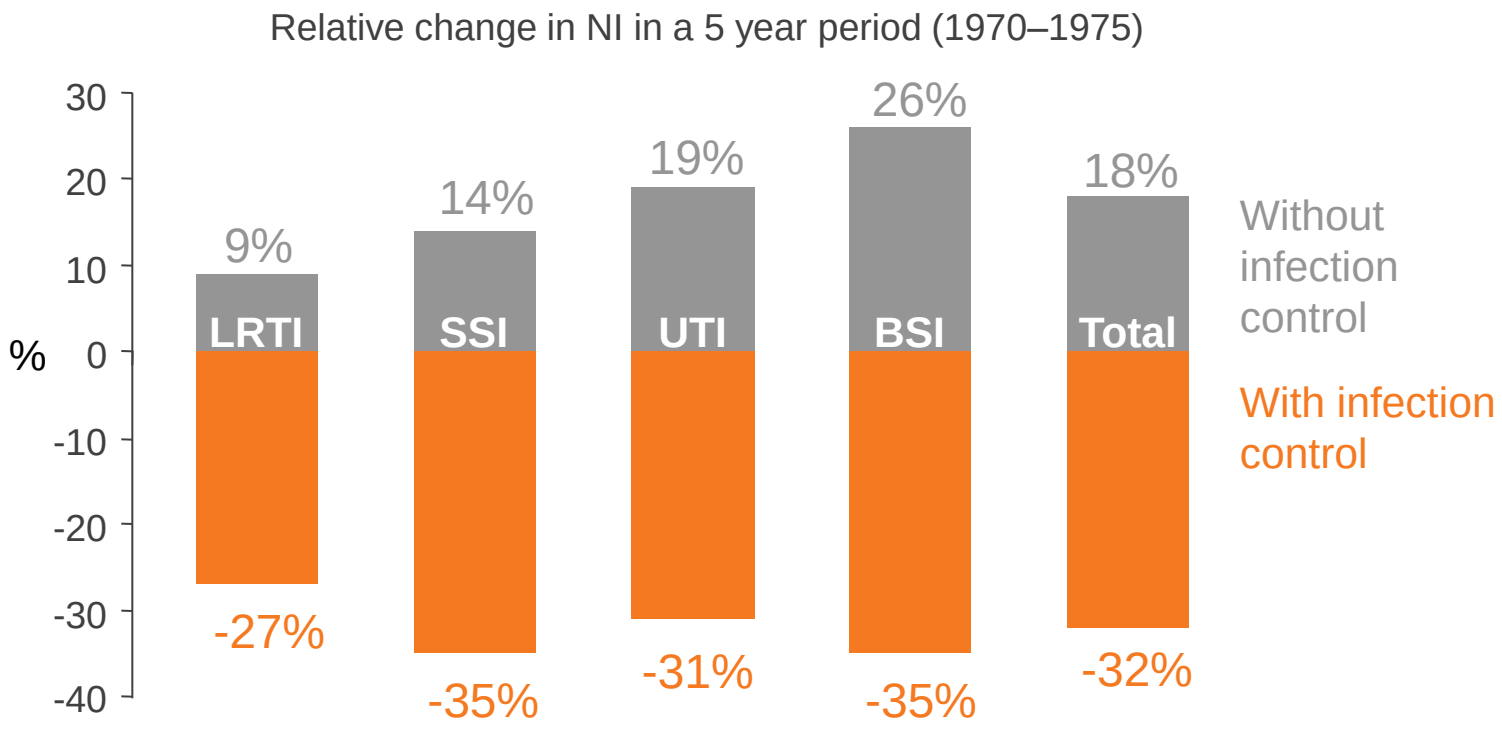
Hand hygiene and prevention of health care-associated infection

Prevention of health care-associated infection

- Validated and standardized prevention strategies have been shown to reduce HCAI
- At least 50% of HCAI could be prevented
- Most solutions are simple and not resource-demanding and can be implemented in developed, as well as in transitional and developing countries

SENIC study: Study on the Efficacy of Nosocomial Infection Control

- >30% of HCAI are preventable



Haley RW et al. *Am J Epidemiol* 1985

Strategies for infection control

- General measures
  - surveillance
  - standard precautions
  - isolation precautions
- Antibiotic control
- Specific measures
- Specifically targeted against:
  - urinary tract infections
  - surgical site infections
  - respiratory infections
  - bloodstream infections

Standard and isolation precautions (CDC, 2007)

Features	Standard precautions	Contact precautions	Droplet precautions	Airborne precautions
Patient room	Standard	Single room	Single room	Single room; door closed; negative pressure; 6–12 air changes/hour; appropriate discharge of air outdoors or air filtration
Hand hygiene	Before and after patient contact, after contact with blood, body fluids, excretions, mucous membranes, non-intact skin, wound dressings, between a contaminated body site and a clean body site, after contact with objects in patient surroundings, after glove removal	Standard	Standard	Standard

Standard and isolation precautions (CDC, 2007)

Features	Standard precautions	Contact precautions	Droplet precautions	Airborne precautions
Gloves	Before contact with body fluids and contaminated items; non-sterile, examination gloves	Upon entering the room; non-sterile, examination gloves	Standard	Standard
Isolation gown	If contact with blood or body fluids is anticipated	Standard; upon entering the room when contact with the patient or environmental surfaces is anticipated, or if the patient has diarrhoea, open wound drainage, secretions	Standard	Standard

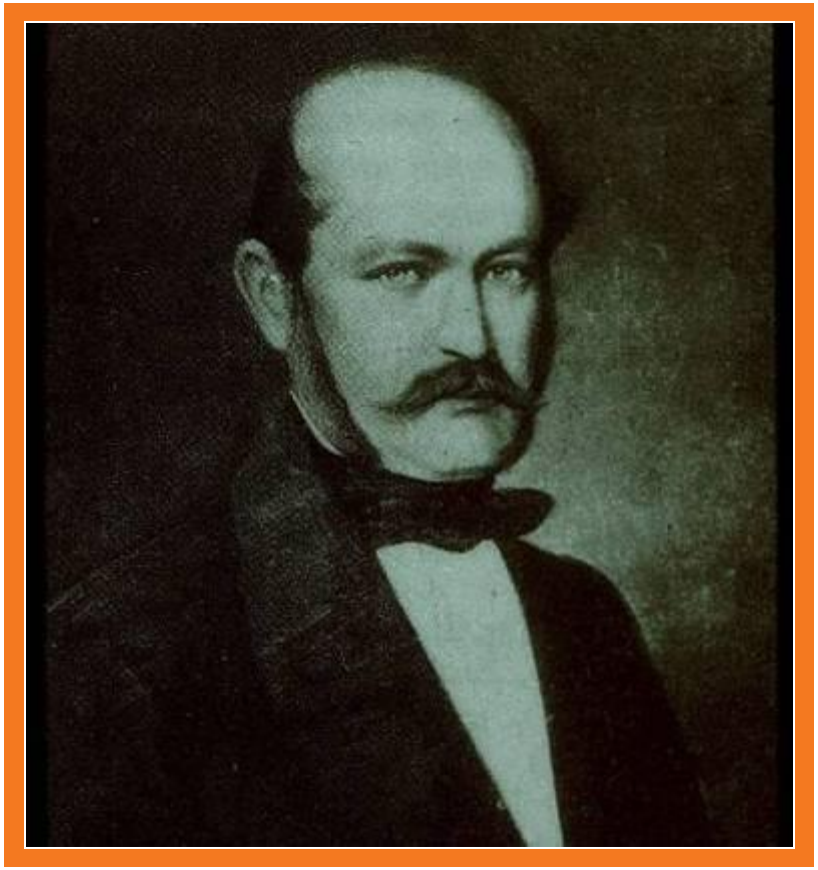
Standard and isolation precautions (CDC, 2007)

Features	Standard precautions	Contact precautions	Droplet precautions	Airborne precautions
Mask or face shield/ goggles	Before procedures likely to generate splashes or sprays of blood, body fluids, secretions or excretions	Standard	Mask upon entering the room; standard for eye protections	Fit-tested, NIOSH-approved N95 respirator when entering the room
Examples	All patients, regardless of suspected or confirmed infectious status, in any setting where health-care is delivered	Multidrug-resistant bacteria (MRSA, VRE), *Clostridium difficile*, diarrhoea, RSV infection	Meningitis, pertussis, influenza, mumps, rubella, diphtheria	Tuberculosis, smallpox. No recommendation on the type of mask to be used in case of measles, chickenpox.

Simple evidence…

Hand hygiene is the single most effective measure to reduce HCAIs

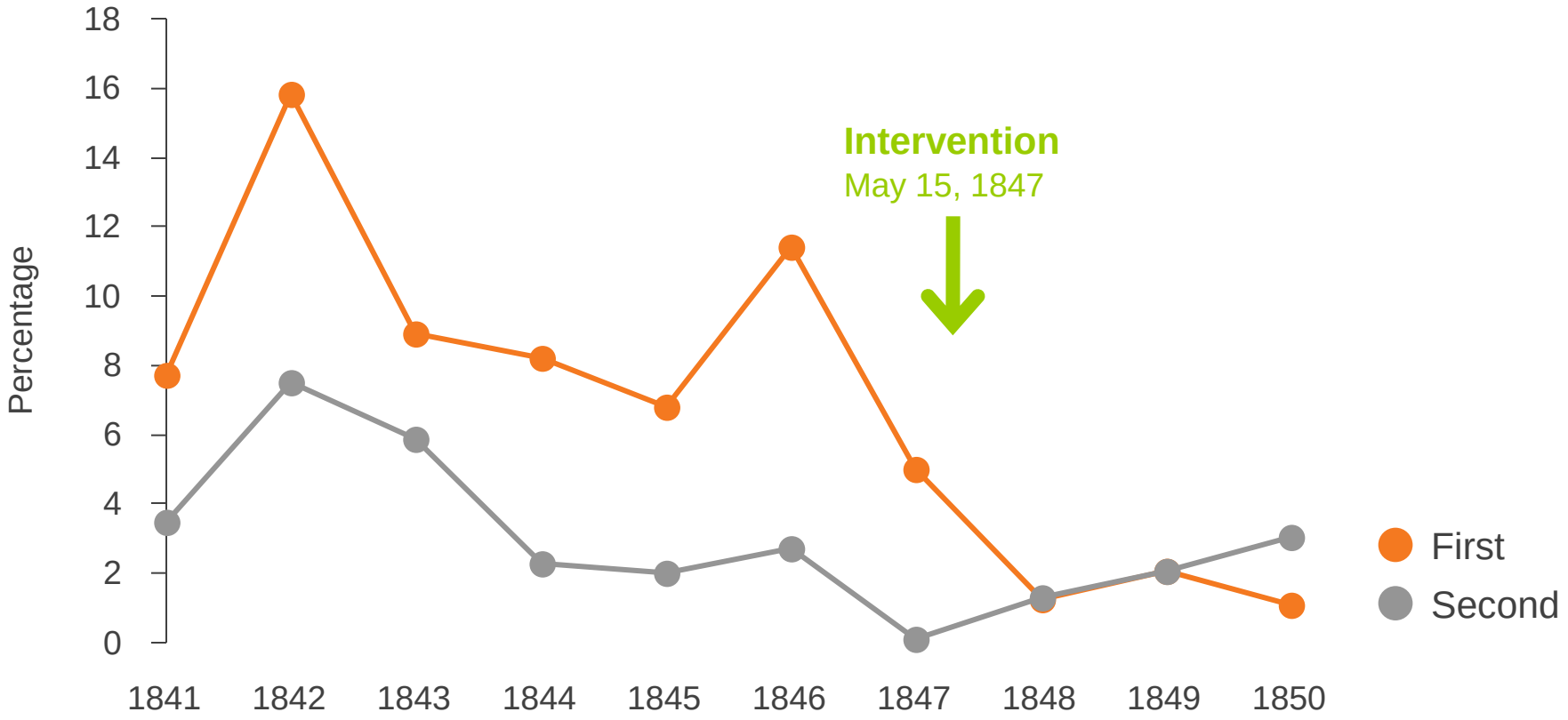
Ignaz Philipp Semmelweis
Pioneer of hand hygiene



Vienna, Austria
General Hospital,
1841–1850

Fighting puerperal fever

Maternal mortality rates, first and second obstetrics clinics, General Hospital of Vienna



Semmelweis IP, 1861

Impact of hand hygiene promotion

- In the last 30 years, 20 studies demonstrated the effectiveness of to reduce HCAIs.
- Some examples are listed in the table below:

Year	Hospital setting	Increase of hand hygiene compliance	Reduction of HCAI rates	Follow-up	Reference
1989	Adult ICU	From 14% to 73% (before pt contact)	HCAI rates: from 33% to 10%	6 years	Conly et al
2000	Hospital-wide	From 48% to 66%	HCAI prevalence: from 16.9% to 9.5%	8 years	Pittet et al
2004	NICU	From 43% to 80%	HCAI incidence: from 15.1 to 10.7/1000 patient-days	2 years	Won et al
2005	Adult ICUs	From 23.1% to 64.5%	HCAI incidence: from 47.5 to 27.9/1000 patient-days	21 months	Rosenthal et al
2005	Hospital-wide	From 62% to 81%	Significant reduction in rotavirus infections	4 years	Zerr et al
2007	Neonatal unit	From 42% to 55%	HCAI incidence: overall from 11 to 8.2 infections/1000 patient-days) and in very low birth weight neonates from 15.5 to 8.8 infections /1000 patient-days	27 months	Pessoa-Silva et al
2007	Neurosurgery	NA	SSI rates: from 8.3% to 3.8%	2 years	Thu et al
2008	1) 6 pilot health-care facilities 2) all public health-care facilities in Victoria (Aus)	1) from 21% to 48% 2) from 20% to 53%	MRSA bacteraemia: 1) from 0.05 to 0.02/100 patient-discharges per month; 2) from 0.03 to 0.01/100 patient-discharges per month	1) 2 years 2) 1 year	Grayson et al
2008	NICU	NA	HCAI incidence: from 4.1 to 1.2/1000 patient-days	18 months	Capretti et al

Compliance with hand hygiene in different health-care facilities

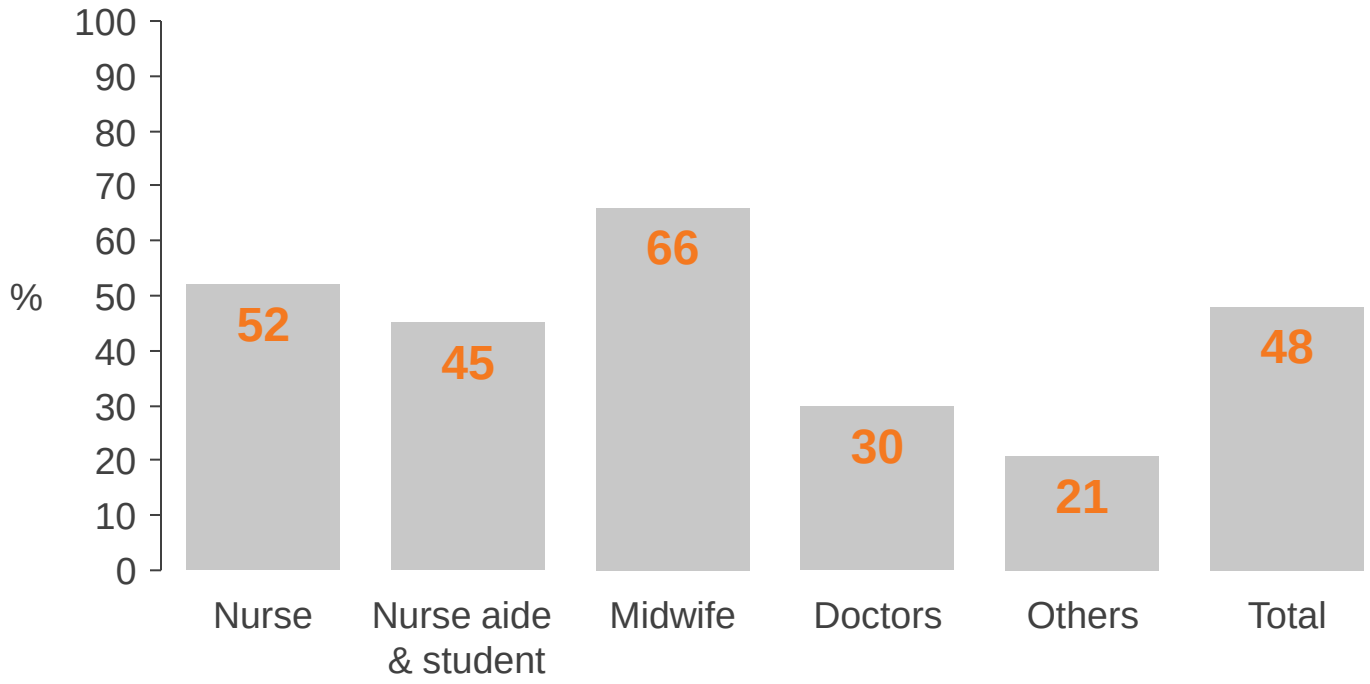
Author	Year	Sector	Compliance
Preston	1981	General Wards	16%
		ICU	30%
Albert	1981	ICU	41%
		ICU	28%
Larson	198	ospit -wid	45%
Donowitz	1 7	N onal ICU	30
Graham	1990	IC	32
Dubbert		ICU	81
Pettinger	1991	Surgical IC U	51
Larson	1992	Neonatal Unit	29
Doebbeling	1992	ICU	40
Zimakoff	1993	ICU	40
Meengs	1994	Emergency Room	32
Pittet	1999	Hospital-wide	48

<40%

Pittet and Boyce. *Lancet Infectious Diseases* 2001

Compliance and professional activity

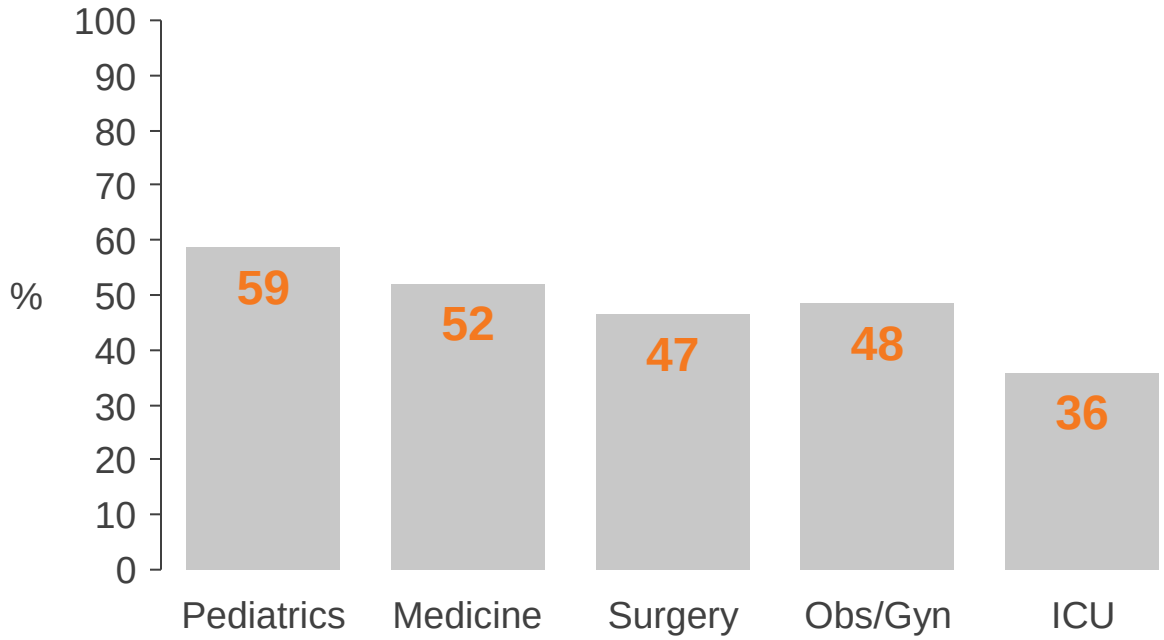
- At the University Hospitals of Geneva, compliance with hand hygiene was higher among midwives and nurses, and lower among doctors



Pittet D, et al. *Ann Intern Med* 1999

Compliance and health-care facility department

- At the University Hospitals of Geneva, the lowest compliance with hand hygiene was observed in intensive care unit (ICU), where patients at highest risk of infection are admitted



Pittet D, et al. *Ann Intern Med* 1999

Hand hygiene compliance
University Hospitals of Geneva, 1999

- **Risk factors for poor compliance**
  - Morning and weekday shift
  - High risk of contamination
  - Being a physician
  - Working in intensive care
- **Main reasons for non-compliance reported by health-care workers**
  - Too busy
  - Skin irritation
  - Glove use
  - Don’t think about it

Pittet D, et al. *Ann Intern Med* 1999

Time constraint = major obstacle for hand hygiene

Adequate handwashing with water and soap requires **40-60 seconds**

Average time usually adopted by health-care workers: <10 seconds

Other relevant obstacles in some settings

Lack of facilities (sinks) and of continuous access to clean water, soap and paper towels at the point of care




Handrubbing is the solution to obstacles to improve hand hygiene compliance

Handwashing with soap and water when hands are visibly dirty or following visible exposure to body fluids

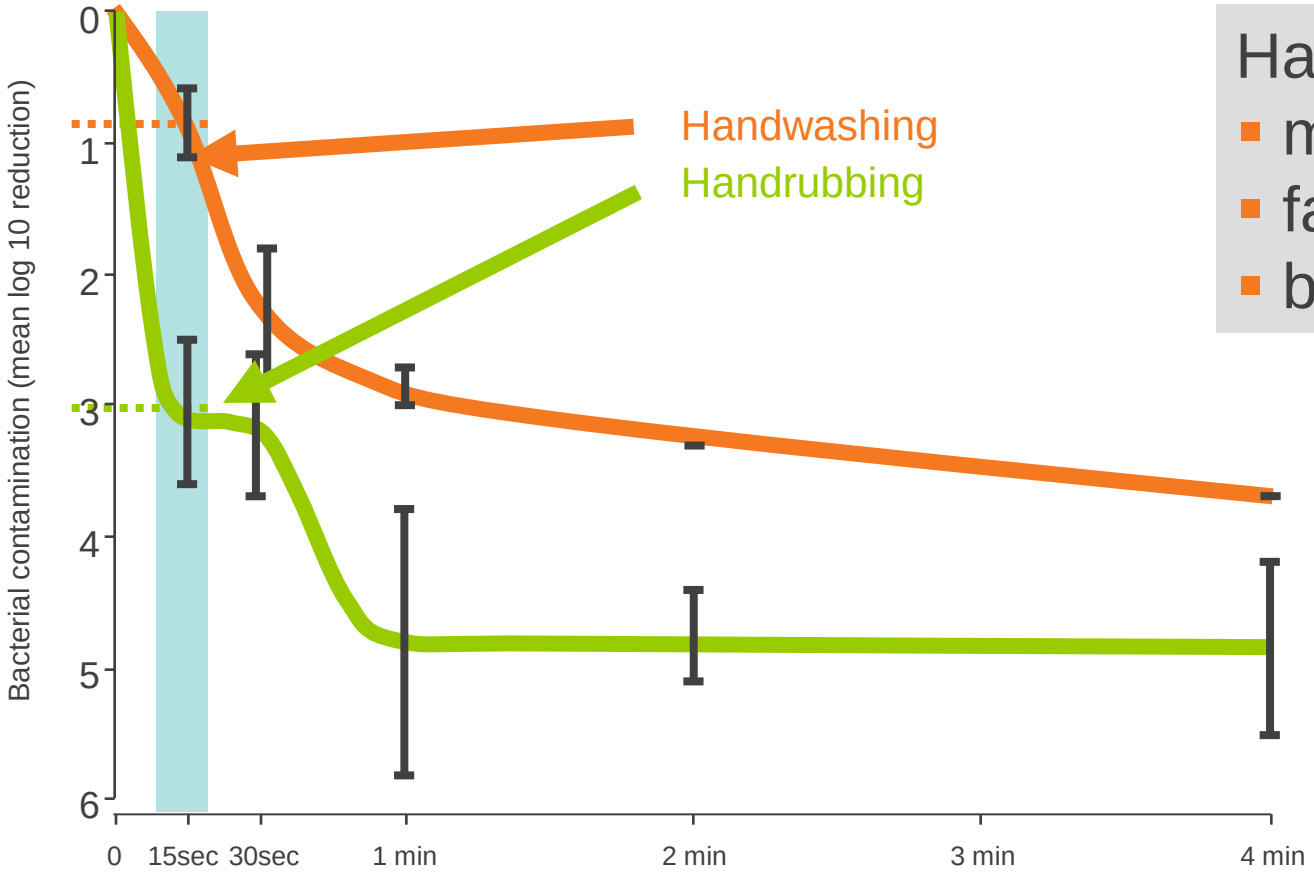
Adoption of alcohol-based handrub is the gold standard in all other clinical situations

Time constraint = major obstacle for hand hygiene

Handwashing: 40-60 seconds

Alcohol-based handrubbing: 20–30 seconds

Application time of hand hygiene and reduction of bacterial contamination



Handrubbing is:

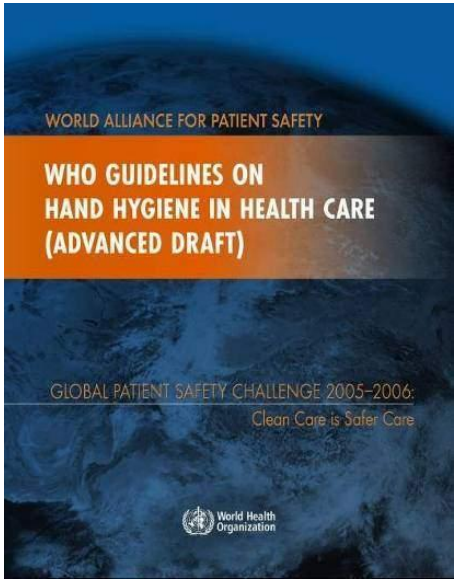
- more effective
- faster
- better tolerated

Pittet and Boyce. *Lancet Infectious Diseases* 2001

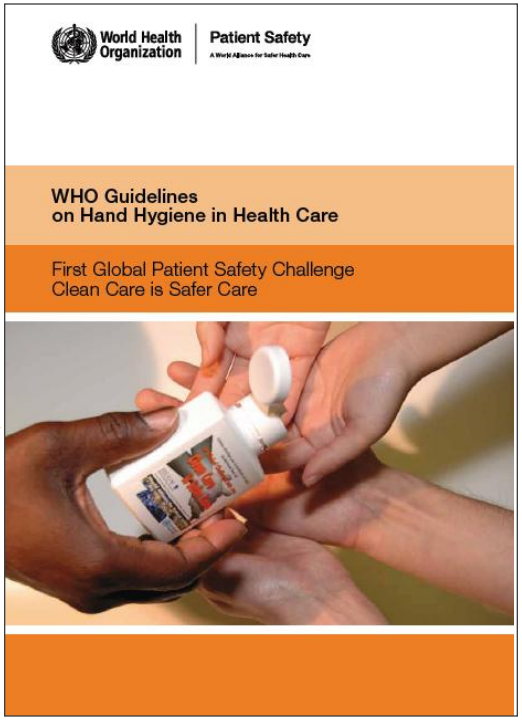
Part 4

WHO Guidelines on Hand Hygiene in Health Care and their implementation strategy and tools

WHO Guidelines on Hand Hygiene in Health Care



ADVANCED DRAFT
April 2006



FINAL VERSION
May 2009

- Based on evidence and expert consensus (>100 international experts)
- Summary translated in the UN official languages
- Implementation strategy and tool package tested in 2007-2008
- Final version including evidence update and lessons learned from testing

What is the WHO Multimodal Hand Hygiene Improvement Strategy?

Based on the evidence and recommendations from the WHO Guidelines on Hand Hygiene in Health Care (2009),

made up of

5 core components, to improve hand hygiene in health-care settings

ONE System change
Alcohol-based handrubs at point of care
and access to safe continuous water supply, soap and towels

TWO Training and education
Providing regular training to all health-care workers

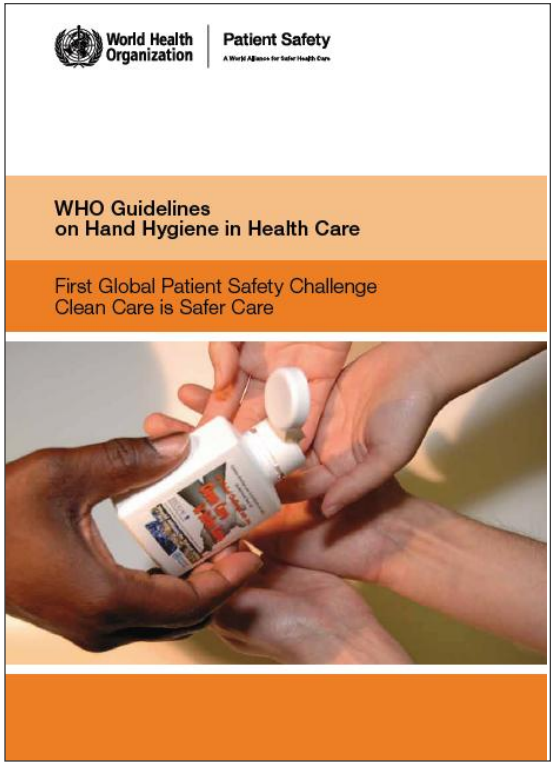
THREE Evaluation and feedback
Monitoring hand hygiene practices, infrastructure, perceptions, & knowledge, while providing results feedback to health-care workers

FOUR Reminders in the workplace
Prompting and reminding health-care workers

FIVE Institutional safety climate
Individual active participation, institutional support, patient participation

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

Knowledge



Action

Implementation tools: Key tools

- Guide to Implementation of the WHO Multimodal Hand Hygiene Improvement Strategy
- Template Action Plan

Implementation 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

Implementation tools for Training / Education (1)

- 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

Implementation tools for Training / Education (2)

- Hand Hygiene Why, How and When Brochure
- Glove Use Information Leaflet
- Your 5 Moments for Hand Hygiene Poster
- Frequently Asked Questions
- Key Scientific Publications
- Sustaining Improvement – Additional Activities for Consideration by Health-Care Facilities

Implementation tools for Evaluation and Feedback (1)

- Hand Hygiene Technical Reference Manual
- 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

Implementation tools for Evaluation and Feedback (2)

- 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

Implementation 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

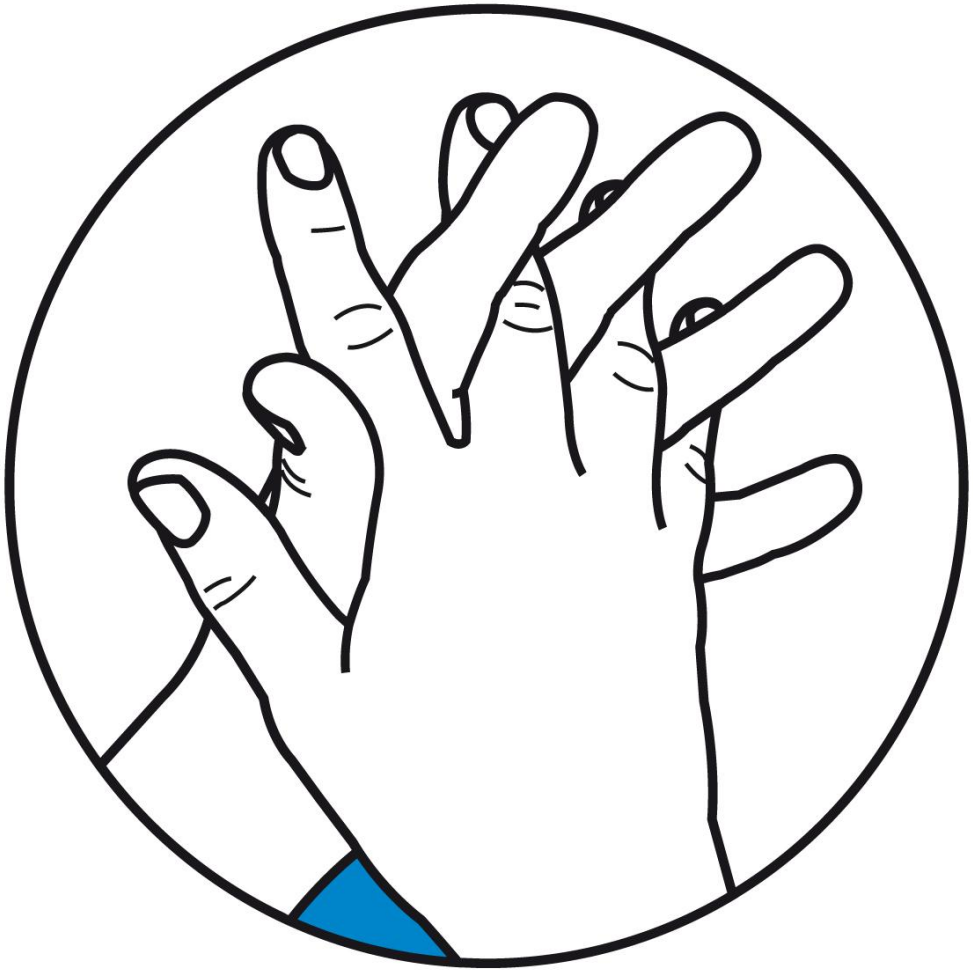
Implementation tools for Institutional Safety Climate

- 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

Part 5

Why, when and how you should perform hand hygiene in health care

Are your hands clean?



SAVE LIVES

Clean Your Hands

Why should you clean your hands?

- Any health-care worker, caregiver or person involved in patient care needs to be concerned about hand hygiene
- Therefore hand hygiene does concern **you**!
- **You** must perform hand hygiene to:
  - **protect the patient** against harmful germs carried on **your** hands or present on his/her own skin
  - **protect yourself** and the health-care environment from harmful germs

The golden rules for hand hygiene

Hand hygiene must be performed exactly where **you** are delivering health care to patients (at the point-of-care)

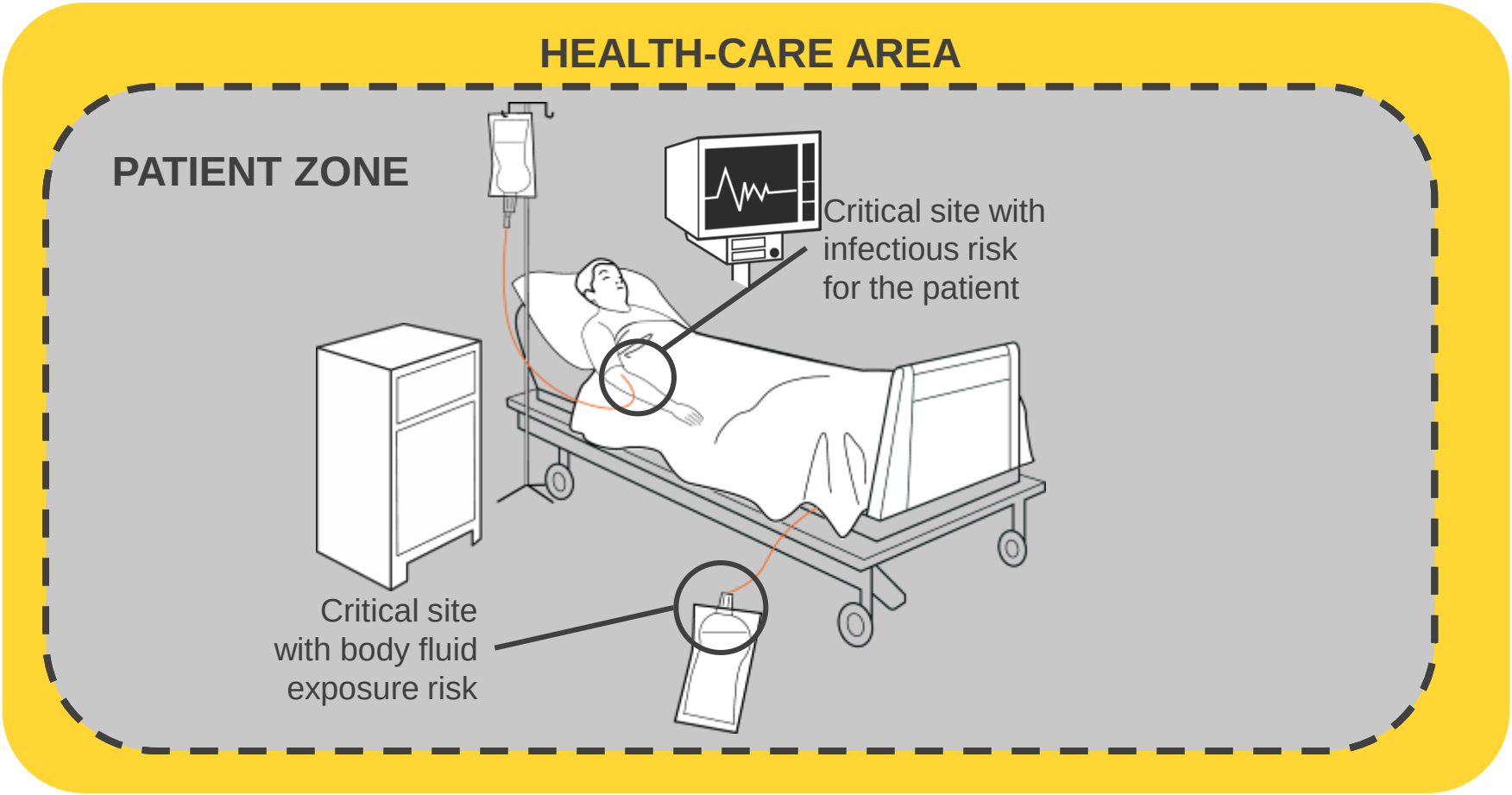
During health care delivery, there are 5 moments (indications) when it is essential that **you** perform hand hygiene ("**My 5 Moments for Hand Hygiene**" approach)

To clean your hands, **you** should prefer **handrubbing** with an alcohol-based formulation, if available. Why? Because it makes hand hygiene possible right at the point-of-care, it is faster, more effective, and better tolerated.

You should wash your hands with soap and water when visibly soiled

You must perform hand hygiene using the appropriate technique and time duration

The geographical conceptualization of the transmission risk



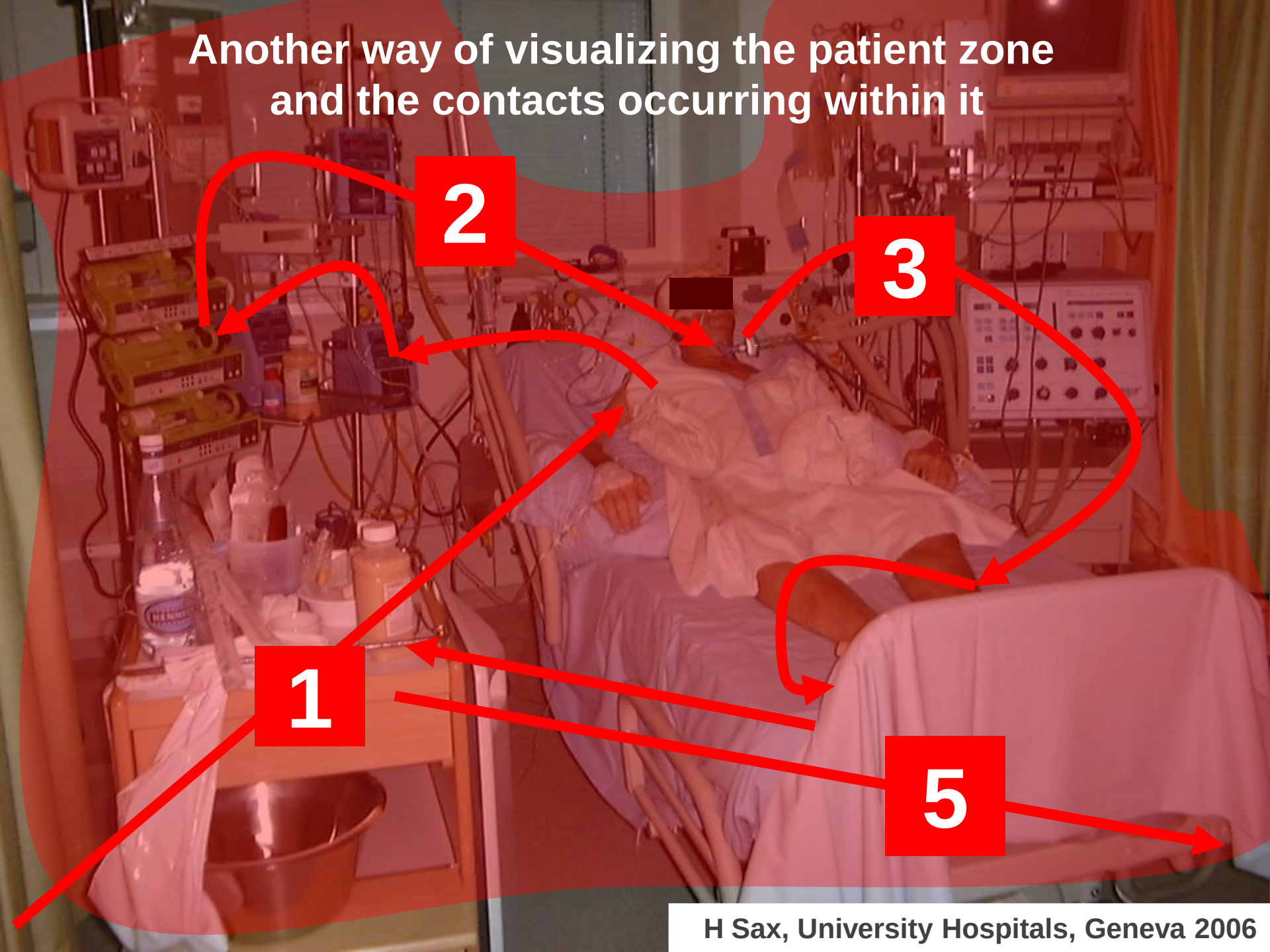
Definitions of patient zone and health-care area (1)

- Focusing on a single patient, the health-care setting is divided into two virtual geographical areas, the **patient zone** and the **health-care area.**
- **Patient zone**: it includes the patient and some surfaces and items that are temporarily and exclusively dedicated to him or her such as all inanimate surfaces that are touched by or in direct physical contact with the patient (e.g. bed rails, bedside table, bed linen, chairs, infusion tubing, monitors, knobs and buttons, and other medical equipment).

Definitions of patient zone and health-care area (2)

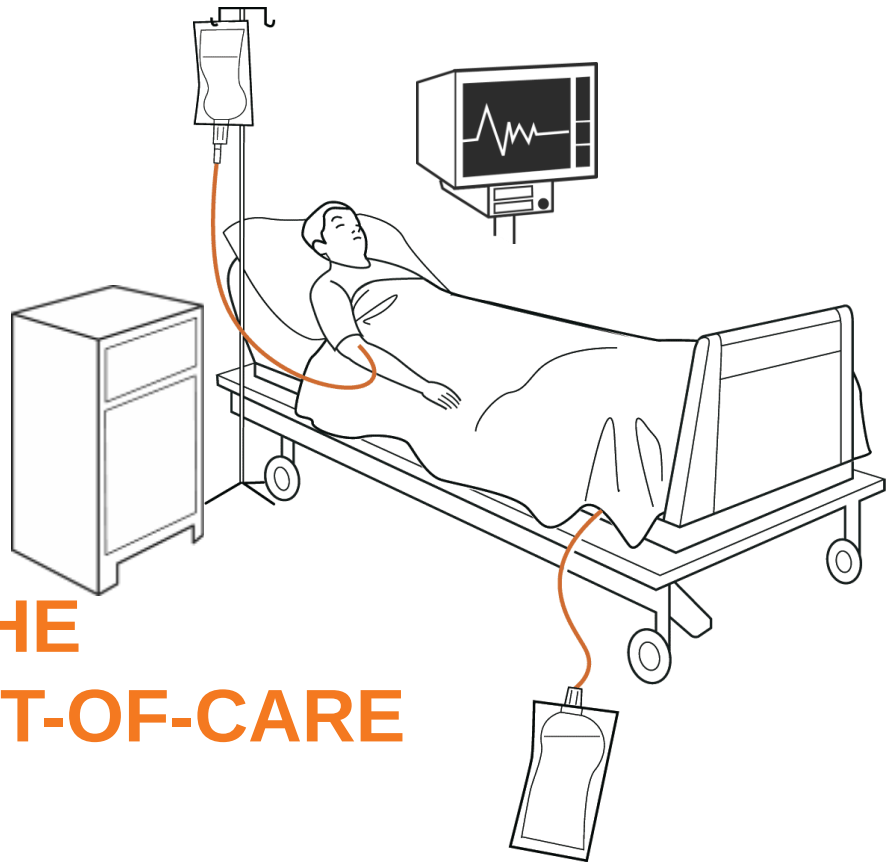
- **Health-care area**: it contains all surfaces in the health-care setting outside the patient zone of patient X. It includes: other patients and their patient zones and the wider health-care facility environment. The health-care area is characterized by the presence of various and numerous microbial species, including multi-resistant germs.

Another way of visualizing the patient zone and the contacts occurring within it



H Sax, University Hospitals, Geneva 2006

OPTIMAL HAND HYGIENE SHOULD BE PERFORMED



AT THE POINT-OF-CARE

Definition of point-of-care (1)

- Point-of-care – refers to the place where three elements occur together: the patient, the health-care worker, and care or treatment involving patient contact (within the patient zone)
- The concept embraces the need to perform hand hygiene at recommended moments exactly where care delivery takes place
- This requires that a hand hygiene product (e.g. alcohol-based handrub, if available) be easily accessible and as close as possible (e.g. within arm's reach), where patient care or treatment is taking place. Point-of-care products should be accessible without having to leave the patient zone

Definition of point-of-care (2)

- This enables health-care workers to quickly and easily fulfil the 5 indications (moments) for hand hygiene (explained below)
- Availability of alcohol-based hand-rubs in point-of-care is usually achieved through health-care worker-carried hand-rubs (pocket bottles), wall-mounted dispensers, containers fixed to the patient's bed or bedside table or hand-rubs affixed to the patient's bed or bedside table or to dressing or medicine trolleys that are taken into the point-of-care

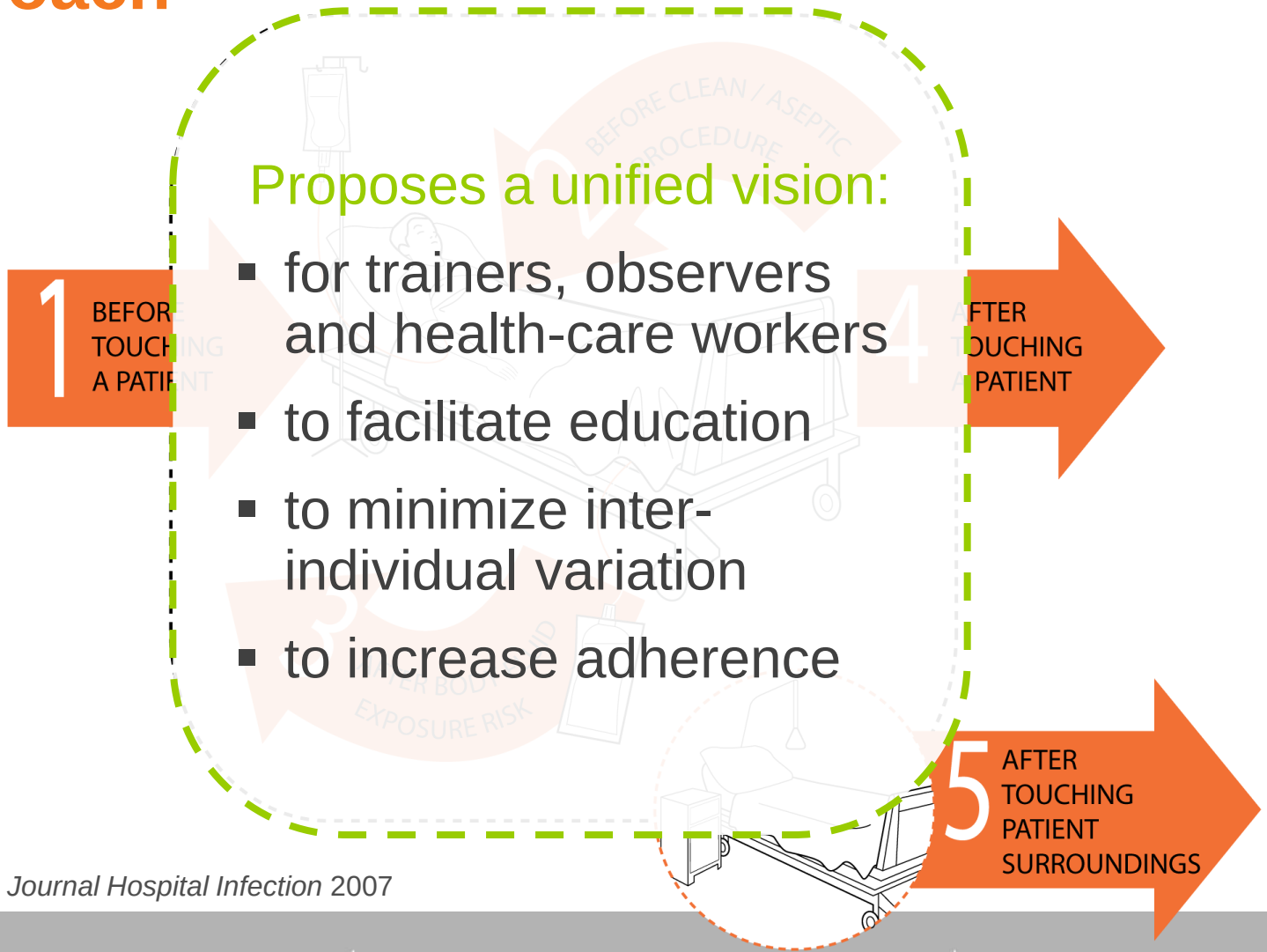
Examples of hand hygiene products easily accessible at the point-of-care





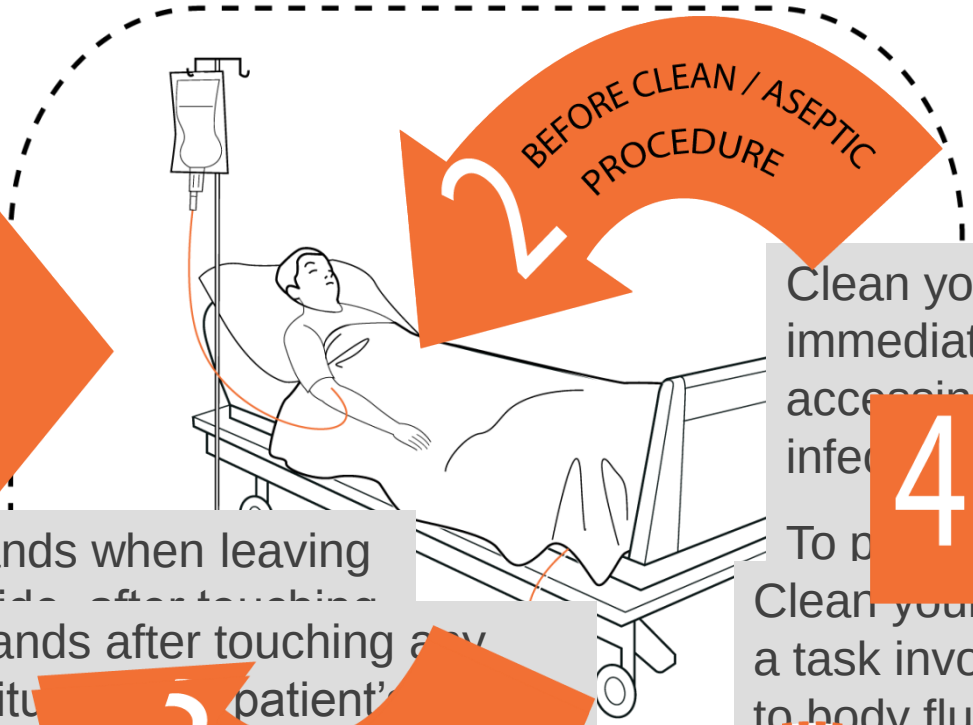


The “My 5 Moments for Hand Hygiene” approach



Sax H et al. *Journal Hospital Infection* 2007

Your 5 Moments for Hand Hygiene



1 BEFORE TOUCHING A PATIENT

Clean your hands when leaving the patient's side, after touching any object or furniture in the patient's immediate surroundings, without having touched the patient.

To protect yourself and the healthcare environment against germ spread!

2 BEFORE CLEAN / ASEPTIC PROCEDURE

Clean your hands immediately before accessing a critical site with infection risk for the patient!

To protect the patient against harmful germs carried on your hands!

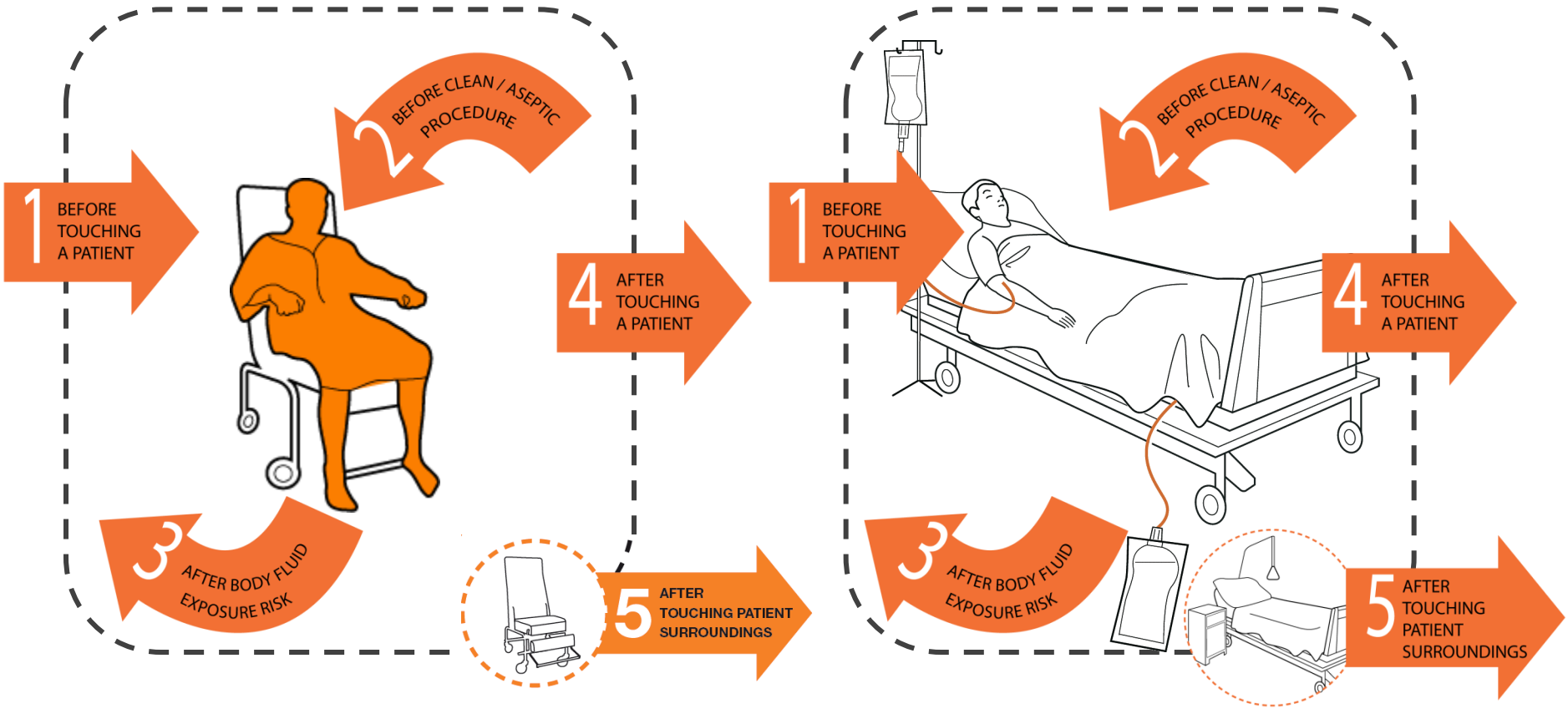
3 AFTER BODY FLUID EXPOSURE RISK

Clean your hands as soon as a task involving exposure risk to body fluids has ended (and after glove removal)!

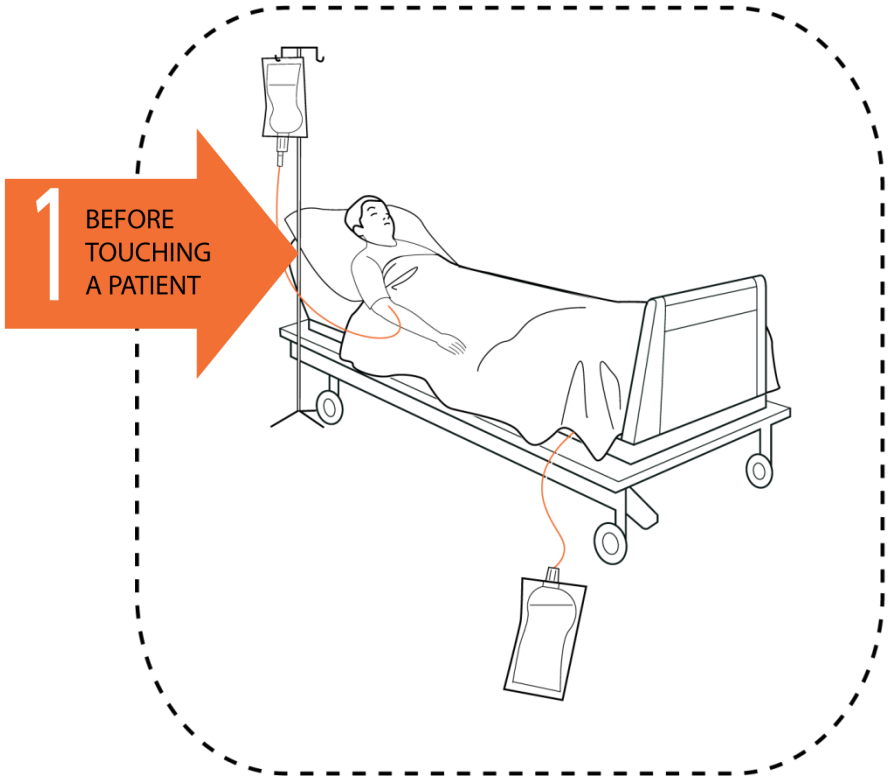
4 AFTER TOUCHING A PATIENT

5 AFTER TOUCHING PATIENT SURROUNDINGS

The 5 Moments apply to any setting where health care involving direct contact with patients takes place



Can you identify some examples of this indication during your everyday practice of health care?



Situations illustrating direct contact:

- shaking hands, stroking a child's forehead
- helping a patient to move around, get washed
- applying oxygen mask, giving physiotherapy
- taking pulse, blood pressure, chest auscultation, abdominal palpation, recording ECG

Can you identify some examples of this indication during your everyday practice of health care?

Situations illustrating clean/aseptic procedures:

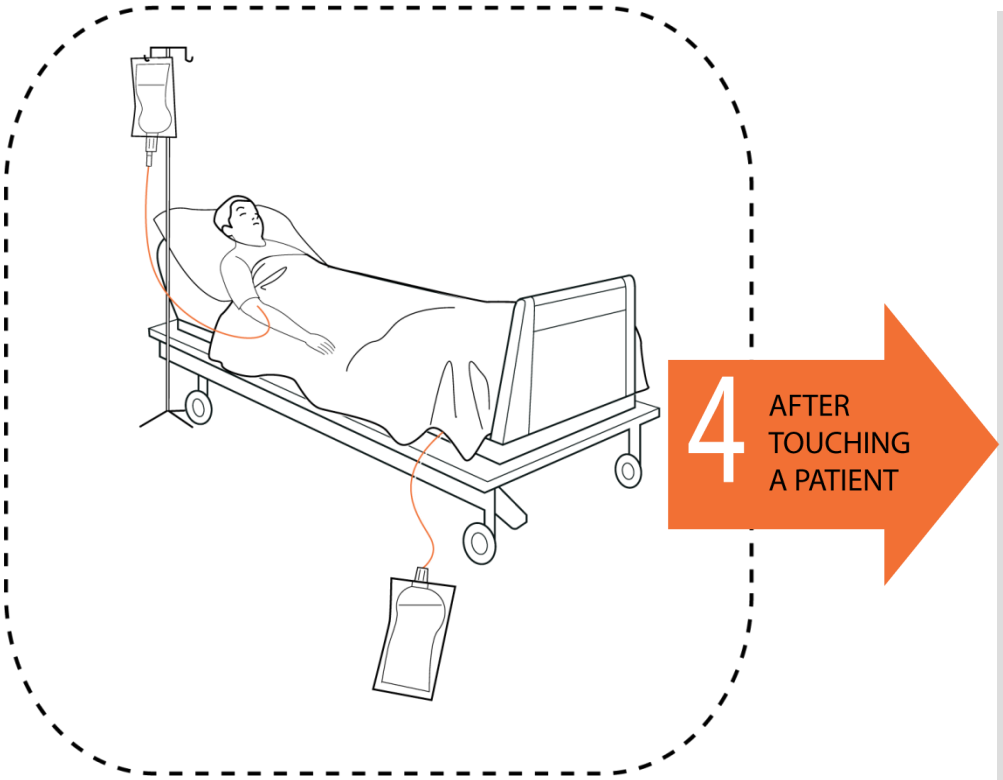
- brushing the patient's teeth, instilling eye drops
- skin lesion care, wound dressing, subcutaneous injection
- catheter insertion, opening a vascular access system or a draining system, secretion aspiration
- preparation of food, medication, pharmaceutical products, sterile material.

Can you identify some examples of this indication during your everyday practice of health care?

Situations illustrating body fluid exposure risk:

- brushing the patient's teeth, instilling eye drops, secretion aspiration
- skin lesion care, wound dressing, subcutaneous injection
- drawing and manipulating any fluid sample, opening a draining system, endotracheal tube insertion and removal
- clearing up urines, faeces, vomit, handling waste (bandages, napkin, incontinence pads), cleaning of contaminated and visibly soiled material or areas (soiled bed linen lavatories, urinal, bedpan, medical instruments)

Can you identify some examples of this indication during your everyday practice of health care?



Situations illustrating direct contact :

- shaking hands, stroking a child forehead
- helping a patient to move around, get washed
- applying oxygen mask, giving physiotherapy
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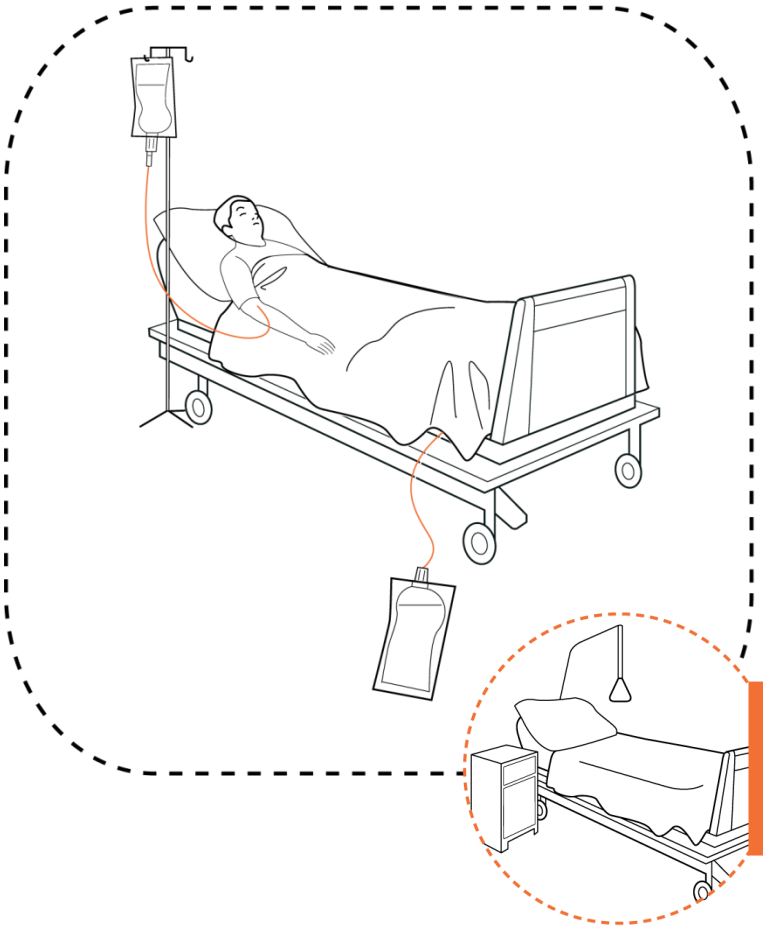
- abdominal palpation, recording ECG

Can you identify some examples of this indication during your everyday practice of health care?



Situation illustrating contacts with patient surroundings:

- changing bed linen, with the patient out of the bed
- perfusion speed adjustment
- monitoring alarm
- holding a bed rail, leaning against a bed, a night table
- clearing the bedside table

5 AFTER TOUCHING PATIENT SURROUNDINGS

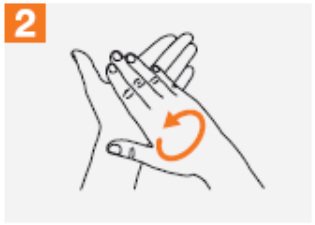
WHO recommendations are concentrated on 5 moments (indications)

The 5 Moments	Consensus recommendations *WHO Guidelines on Hand Hygiene in Health Care 2009*
1. Before touching a patient	D.a) before and after touching the patient (IB)
2. Before clean / aseptic procedure	D.b) before handling an invasive device for patient care, regardless of whether or not gloves are used (IB) D.d) if moving from a contaminated body site to another body site during care of the same patient (IB)
3. After body fluid exposure risk	D.c) after contact with body fluids or excretions, mucous membrane, non-intact skin or wound dressing (IA) D.d) if moving from a contaminated body site to another body site during care of the same patient (IB) D.f) after removing sterile (II) or non-sterile gloves (IB)
4. After touching a patient	D.a) before and after touching the patient (IB) D.f) after removing sterile (II) or non-sterile gloves (IB)
5. After touching patient surroundings	D.e) after contact with inanimate surfaces and objects (including medical equipment) in the immediate vicinity of the patient (IB) D.f) after removing sterile gloves (II) or non-sterile gloves (IB)

Table of correspondence between the indications and the WHO recommendations

How to handrub

Apply a palmful of the product in a cupped hand, covering all surfaces;



Rub hands palm to palm;

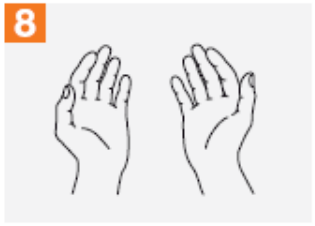
Right palm over left dorsum with interlaced fingers and vice versa;

Palm to palm with fingers interlaced;

Backs of fingers to opposing palms with fingers interlocked;

Rotational rubbing of left thumb clasped in right palm and vice versa;

Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Once dry, your hands are safe.

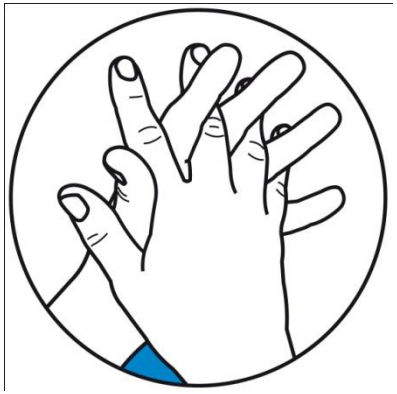
To effectively reduce the growth of germs on hands, **handrubbing** must be performed by following all of the illustrated steps.

This takes only 20–30 seconds!

How to handwash

To effectively reduce the growth of germs on hands, **handwashing must last 40–60 secs** and should be performed by following all of the illustrated steps.

Hand hygiene and glove use



GLOVES PLUS

HAND HYGIENE

= CLEAN HANDS

GLOVES WITHOUT

HAND HYGIENE

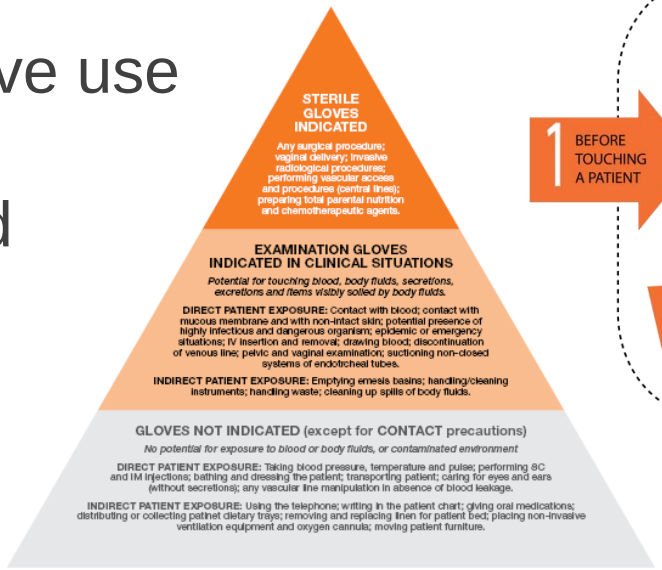
= GERM TRANSMISSION

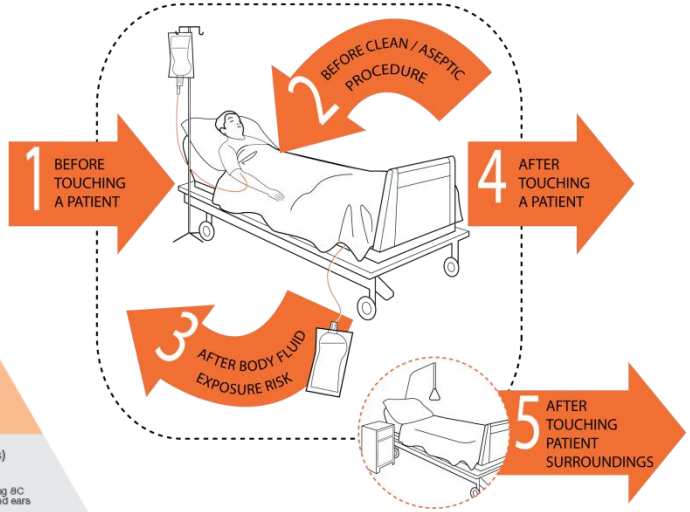
Hand hygiene and glove use

- The use of gloves does not replace the need for cleaning your hands!
- You should remove gloves to perform hand hygiene, when an indication occurs while wearing gloves
- You should wear gloves only when indicated (see the Pyramid in the Hand Hygiene Why, How and When Brochure and in the Glove Use Information Leaflet) – otherwise they become a major risk for germ transmission

Key points on hand hygiene and glove use (1)

- Indications for glove use do not modify any indication for hand hygiene





- Glove use does not replace any hand hygiene action

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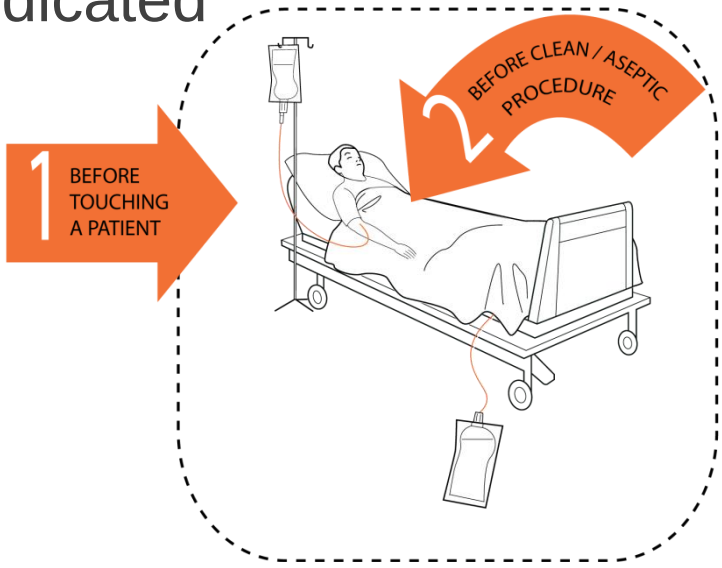
Key points on hand hygiene and glove use (2)

When indications for gloves use and hand hygiene apply concomitantly

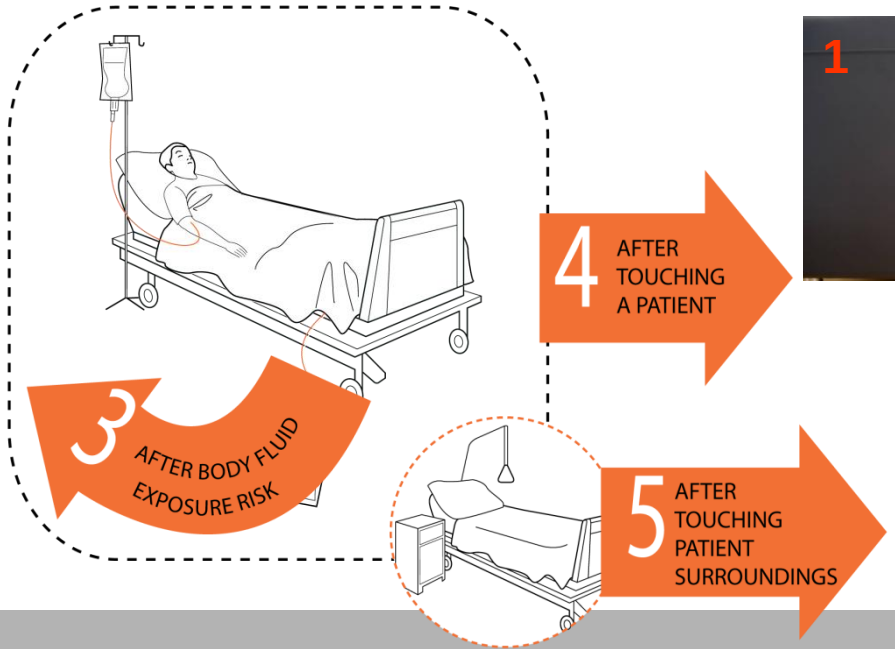
- Regarding the "before" indications, hand hygiene should immediately precede glove donning, when glove use is indicated



Key points on hand hygiene and glove use (3)

When indications for gloves use and hand hygiene apply concomitantly

- Regarding the indications "after", hand hygiene should immediately follow glove removal, when the indication follows a contact that has required gloves



Key points on hand hygiene and glove use (4)

When an indication for hand hygiene applies while gloves are on, then gloves must be removed to perform hand hygiene as required, and changed if needed.

It is now possible to improve hand hygiene in your facility!

It’s your duty, to protect patients and yourself!

You can make a change!

Easy infection control for everyone… simple measures save lives!

Part 6

How to observe hand hygiene practices among health-care workers

Observers should carefully read the "Hand Hygiene Technical Reference Manual" before undergoing this training session

The Hand Hygiene Technical Reference Manual

- For health-care workers, trainers and observers

- The manual helps to understand:
  - the importance of HCAI
  - the dynamics of cross-transmission
  - the "My five moments for hand hygiene" approach
  - the correct procedures for handrubbing and handwashing
  - the WHO observation method

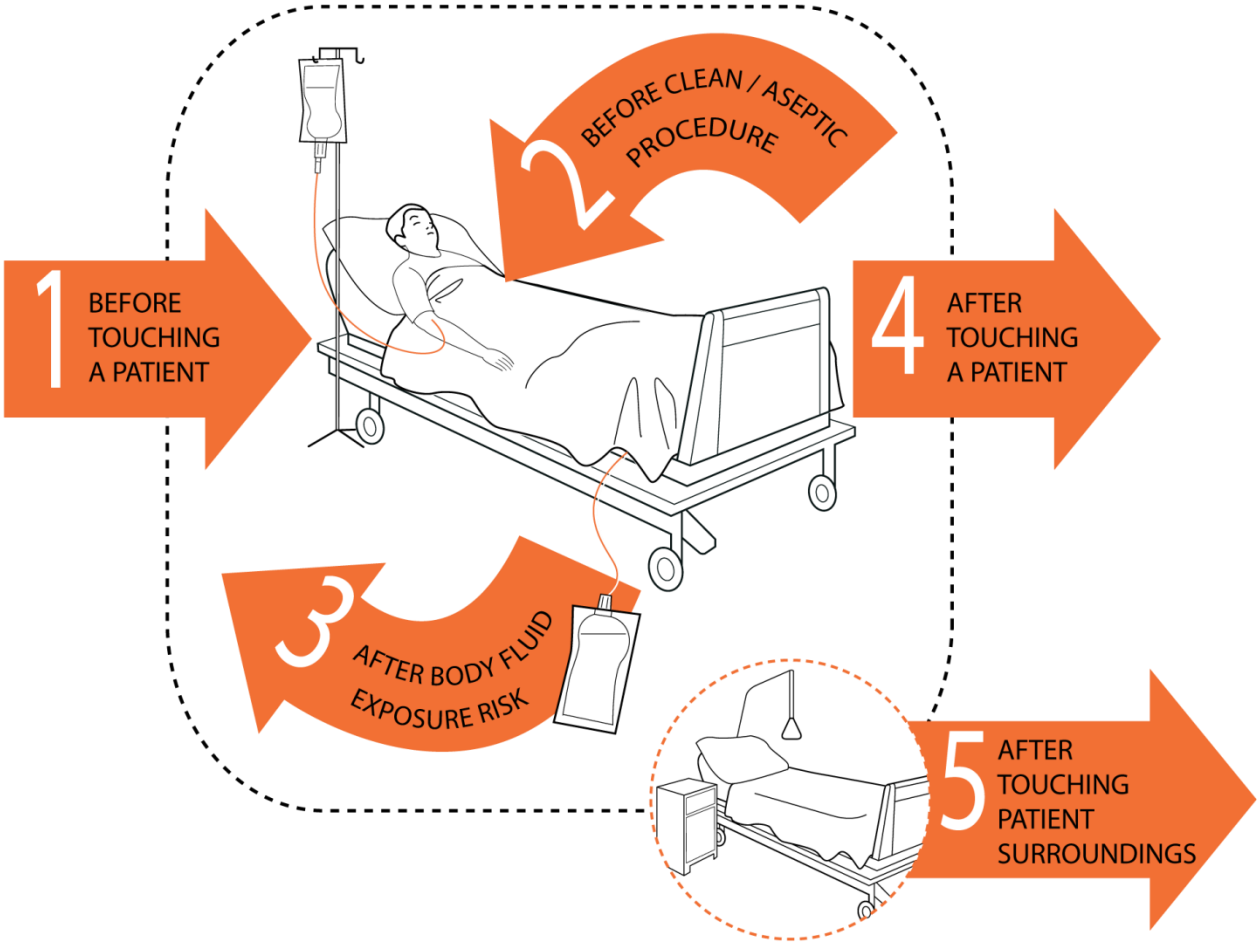
Why observe hand hygiene practices?

- The purpose of observing hand hygiene is to determine the degree of compliance with hand hygiene practices by health-care workers
- The results of the observation should help to identify the most appropriate interventions for hand hygiene promotion, education and training
- The results of observation (compliance rates) can be reported to health-care workers, either to explain the current practices of hand hygiene in their health-care setting and to highlight the aspects that need improvement, or to compare baseline with follow-up data to show possible improvements resulting from the promotion efforts

How to observe hand hygiene?

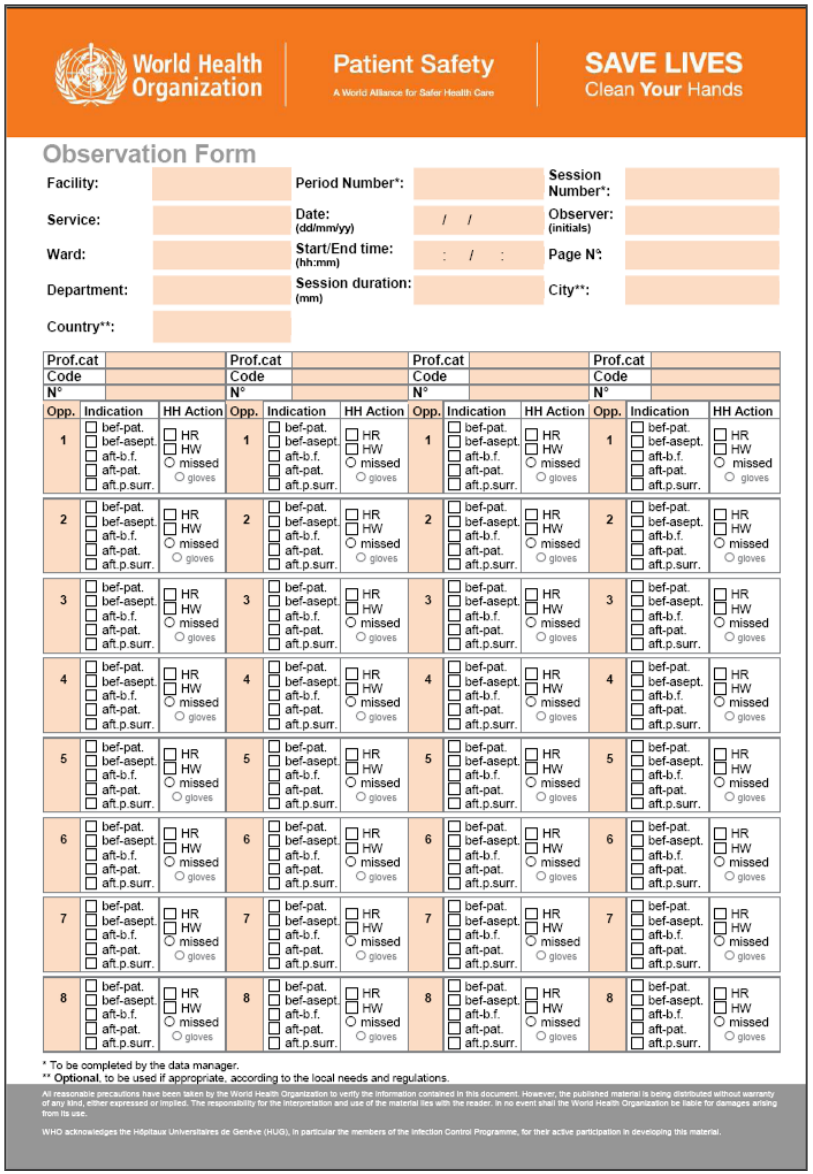
- Direct observation is the most accurate methodology
- The observer must familiarize him/herself with the methods and tools used in a promotion campaign and must be trained (and validated) to identify and distinguish the indications for hand hygiene occurring during health care practices at the point-of-care
- The observer must conduct observations openly, without interfering with the ongoing work, and keep the identity of the health-care workers confidential
- Compliance should be detected according to the "My 5 Moments for Hand Hygiene" approach recommended by WHO

The “My 5 Moments for Hand Hygiene” approach



Observation Form

- Detailed instructions are available on the back of the form, to be consulted during observation



World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES — Clean Your Hands

Observation Form

Facility:		Period Number*:		Session Number*:	
Service:		Date: (dd/mm/yy)	/ /	Observer: (initials)	
Ward:		Start/End time: (hh:mm)	: / :	Page N°:	
Department:		Session duration: (mm)		City**:	
Country**:					

Prof.cat		Prof.cat		Prof.cat		Prof.cat	
Code		Code		Code		Code	
N°		N°		N°		N°	

Opp.	Indication	HH Action	Opp.	Indication	HH Action	Opp.	Indication	HH Action	Opp.	Indication	HH Action
1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
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6	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	6	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	6	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	6	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
7	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	7	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	7	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	7	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
8	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	8	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	8	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	8	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves

* To be completed by the data manager.
** **Optional**, to be used if appropriate, according to the local needs and regulations.

WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

Crucial concepts for observing hand hygiene
Indication and opportunity

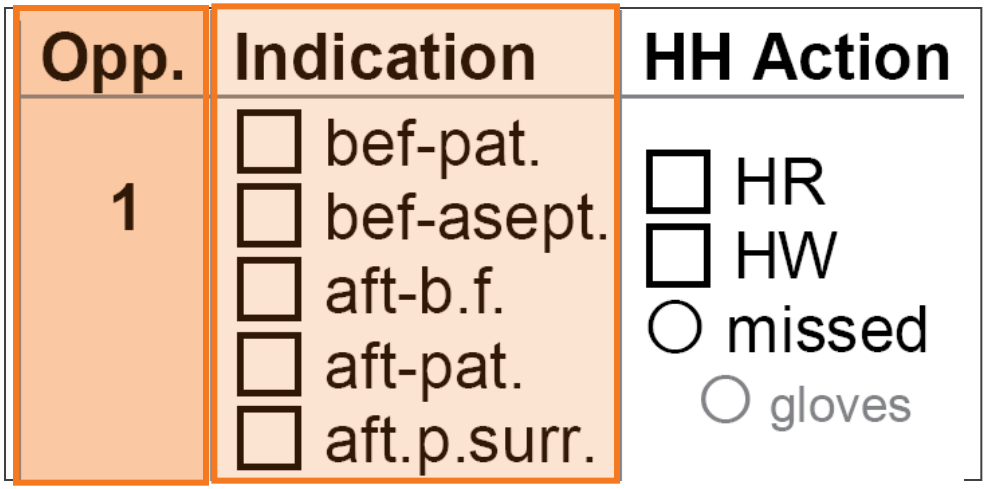
- **Health care activity** = a succession of tasks during which health-care workers' hands touch different types of surfaces: the patient, his/her body fluids, objects or surfaces located in the patient surroundings and within the care environment
- Each contact is a potential source of contamination for health-care workers' hands
- **Indication:** the reason why hand hygiene is necessary at a given moment. It is justified by a **risk of germ transmission** from one surface to another

…→ **contact 1** → [indication(s)] → **contact 2** → [indication(s)] → **contact 3** → [indication(s)] →…

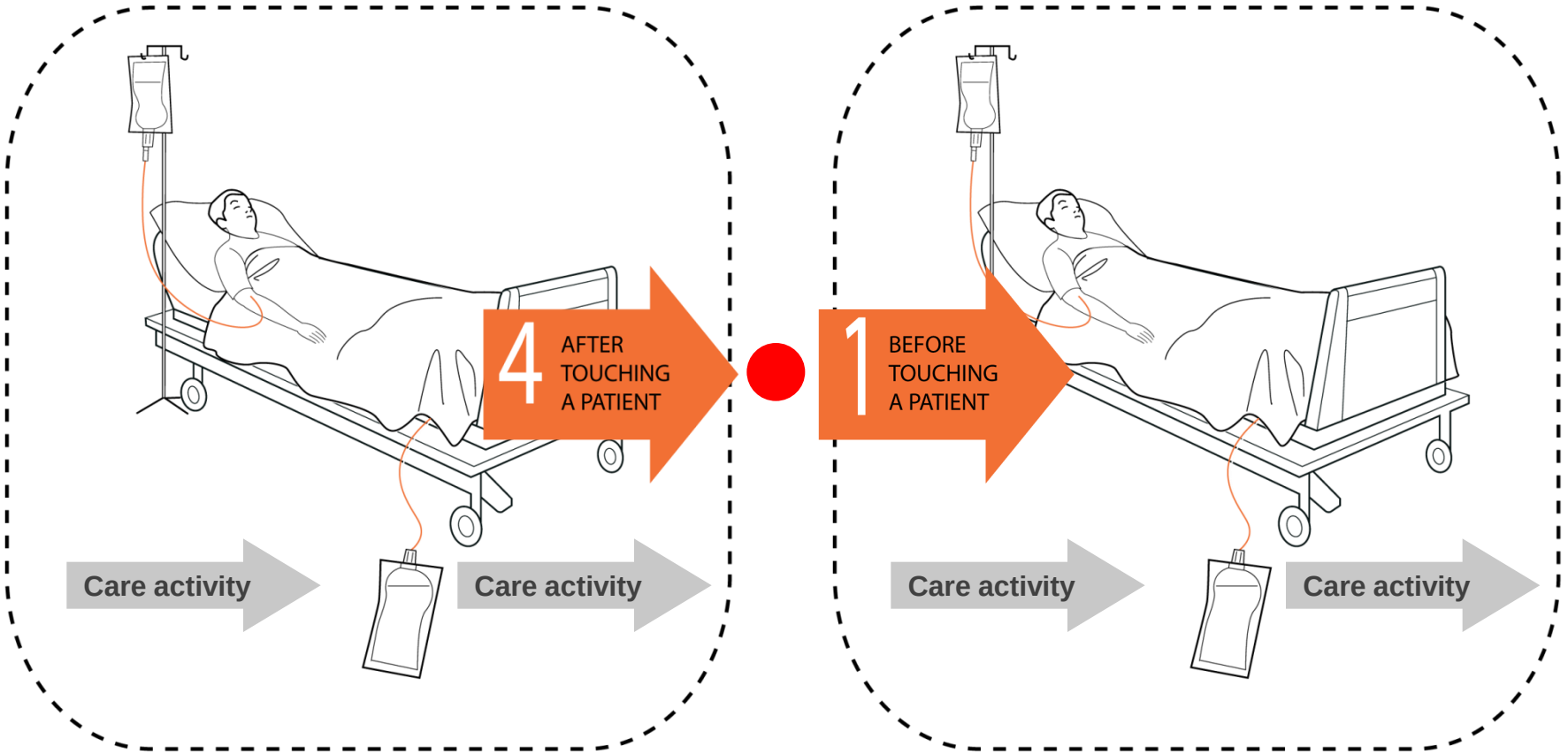
- **Opportunity:** moment when a hand hygiene action is necessary during health-care activities, to interrupt germ transmission by hands
- A hand hygiene action must correspond to each opportunity
- Multiple indications may come together to create a single opportunity

The observer point of view
Indications and opportunity for hand hygiene

- The opportunity is the number of times hand hygiene is necessary
- Indications are the reasons for hand hygiene
- Indications are not exclusive and may be single or multiple at a time
- At least one indication defines the opportunity
- Multiple indications may define one opportunity



Coincidence of two indications



Key points for the observer about coincidence of indications

Opp.	Indication	HH Action	Opp.	Indication	HH Action	Opp.
1	☒ bef-pat. ☒ bef-asept. ☐ aft-b.f. ☒ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	1	☒ bef-pat. ☒ bef-asept. ☒ aft-b.f. ☐ aft-pat. ☒ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	1
2	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☒ aft-pat. ☒ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	2	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	2

- All double, triple, quadruple indications combinations may be observed
- Except one! The indications after patient contact and after contact with patient surroundings can never coincide in the same opportunity

The observer point of view
Opportunity and hand hygiene action

Opp.	Indication	HH Action
1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves

- The observer must detect at least one indication to count an opportunity (multiple indications simultaneously occur and determine one opportunity)
- The hand hygiene action should correspond to a counted opportunity
- The hand hygiene action is performed either by handrubbing or handwashing; if it is not performed when indicated, it must be recorded as "missed"
- An observed hand hygiene action not corresponding to an actual indication should not be recorded

The observer point of view
Compliance with hand hygiene (1)

COMPLIANCE

performed
hand hygiene actions (x 100)

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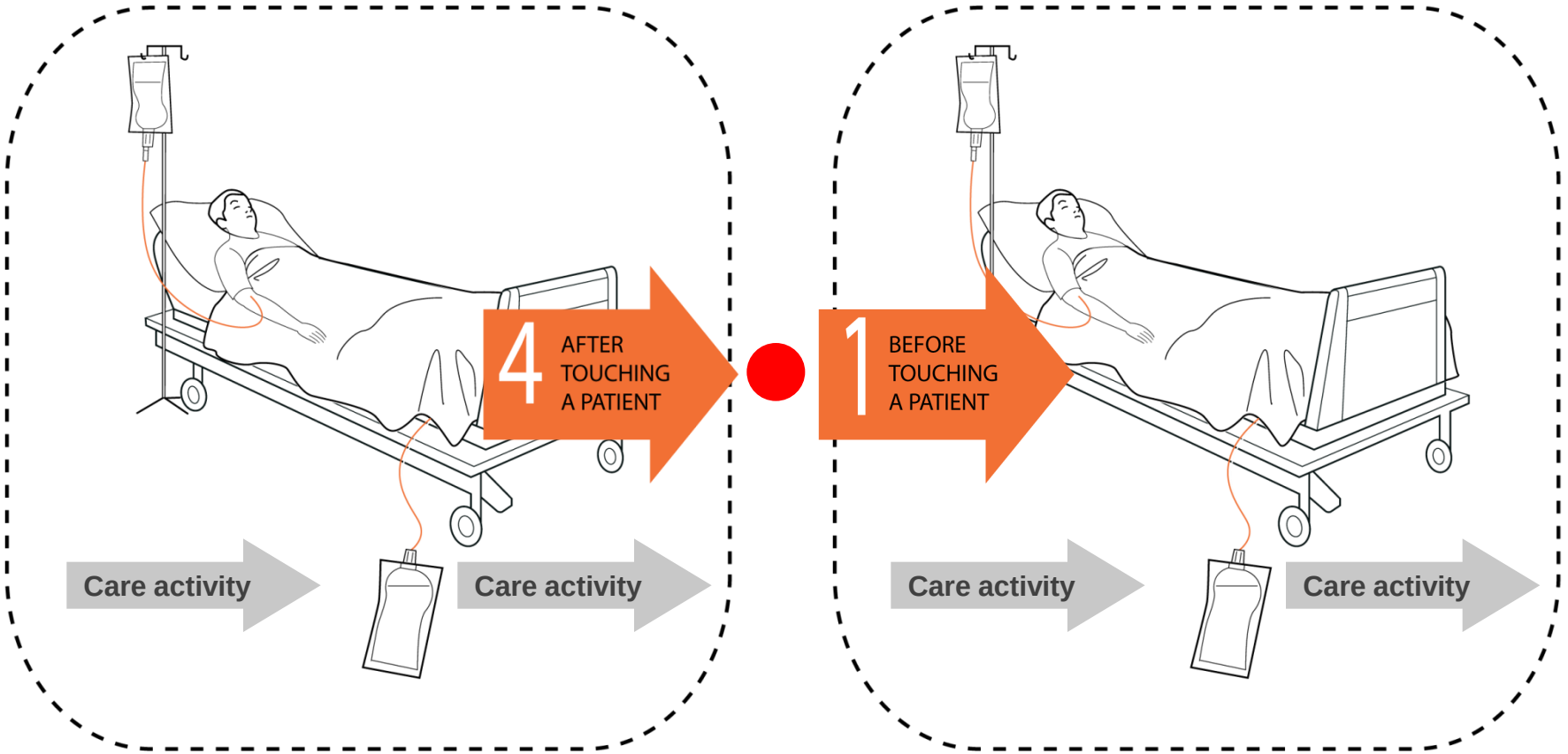
required hand hygiene actions
(opportunities)

Coincidence of two indications



The observer point of view
Compliance with hand hygiene (2)

Opp.	Indication	HH Action
1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☒ aft-pat. ☐ aft.p.surr.	☒ HR ☐ HW ○ missed ○ gloves
2	☒ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves

$$\frac{1 \text{ hand hygiene action} \times 100}{2 \text{ indications}} = 50\%$$

The observer point of view
Compliance with hand hygiene (3)

Opp.	Indication	HH Action
1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☒ aft-pat. ☐ aft.p.surr.	☐ HR ☒ HW ○ missed ○ gloves
2	☒ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves

$$\frac{\text{1 hand hygiene action x 100}}{\text{2 indications}} = 50\%$$

Opp.	Indication	HH Action
1	☒ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☒ aft-pat. ☐ aft.p.surr.	☒ HR ☐ HW ○ missed ○ gloves
2	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves

$$\frac{\text{1 hand hygiene action x 100}}{\text{1 opportunity}} = 100\%$$

Recording the information: the header of the Observation Form

Facility:		**Period Number*:**		**Session Number*:**	
Service:		**Date:** (dd/mm/yy)	/ /	**Observer:** (initials)	
Ward:		**Start/End time:** (hh:mm)	: / :	**Page Nº:**	
Department:		**Session duration:** (mm)		**City**:**	

- The **header** allows observations to be precisely located in time and place (setting, date, session duration and observer) and the data to be classified and recorded (period, session)
- Before observing, the header should be completed
- After observing data should be complemented and checked
- Period and session numbers may be completed at the data entry moment

Recording the information: the grid of the Observation Form (1)

Prof.cat		
Code		
N°		
Opp.	**Indication**	**HH Action**
1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
2	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
3	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
4	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
5	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
6	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
7	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
8	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves

- Each **column** can be dedicated either to a professional category (in this case different health-care workers of that category are recorded in the column) or to an individual health-care worker whose category is mentioned
- The codes of professional categories are listed on the back of the form
- Where data is classified by professional category, the number of health-care workers observed in each category during each session must be specified. This is done by inserting a vertical mark **(I)** in the item "**Nº**" each time a new health-care worker in the category is observed
- Where data is classified by health-care worker, a maximum of four can be included in the same form
- Several health-care workers may be observed at the same time (when they are working with the same patient or in the same room). Nevertheless, it is not advisable to simultaneously observe more than three health-care workers; in Intensive Care Units, it is recommended to observe only 1–2 health-care workers at once

Recording the information: the grid of the Observation Form (2)

Prof.cat			Prof.cat			Prof.cat			Prof.cat		
Code			Code			Code			Code		
N°			N°			N°			N°		
Opp.	**Indication**	**HH Action**	**Opp.**	**Indication**	**HH Action**	**Opp.**	**Indication**	**HH Action**	**Opp.**	**Indication**	**HH Action**
1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	1	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves
2	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	2	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	2	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves	2	☐ bef-pat. ☐ bef-asept. ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves

Each **row** of the column corresponds to an opportunity where the indications (the 5 indications recommended by WHO) and actions (hand hygiene) observed are entered

☐ means that no item is exclusive (if several indications apply to the opportunity, they should all be marked)

○ means that the action (hand hygiene) was missed

Recording the information: summary of the Observation Form

Facility:		Period Number*:		Session Number*:	
Service:		Date: (dd/mm/yy)	/ /	Observer: (initials)	
Ward:		Start/End time: (hh:mm)	: / :	Page Nº:	
Department:		Session duration: (mm)		City**:	

Opp.	Indication	HH Action
1	☐ bef-pat. ☐ bef-asept ☐ aft-b.f. ☐ aft-pat. ☐ aft.p.surr.	☐ HR ☐ HW ○ missed ○ gloves

Determining the time and scope of the observation:

- Period: the time window during which compliance is measured in a certain setting
- Session: the time when the observation takes place in a precise setting (ward); it is numbered and timed (start and end times) in order to calculate its duration. It should last 20 minutes (+10 min)
- Setting: institution-wide, department, service, ward sectors
- Professional category: observed health-care workers are classified according to four main professional categories
- Number of opportunities: sample size should be sufficient to undertake stratification and compare results from different periods in the same setting
- Indications: all 5 indications or selected ones only
- Action: hand hygiene action performed (handrubbing or handwashing) or missed