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Hand hygiene in primary care

A collaborative project between
**WHO Patient Safety, Spain Ministry of Health,
and Geneva WCC on Patient Safety**

B. Allegranzi



Outline

- Introduction
- Background and objective of this project
- Definitions
- Results of literature searches and reviews
- Hand hygiene concepts in primary care
- Guide drafting progress so far

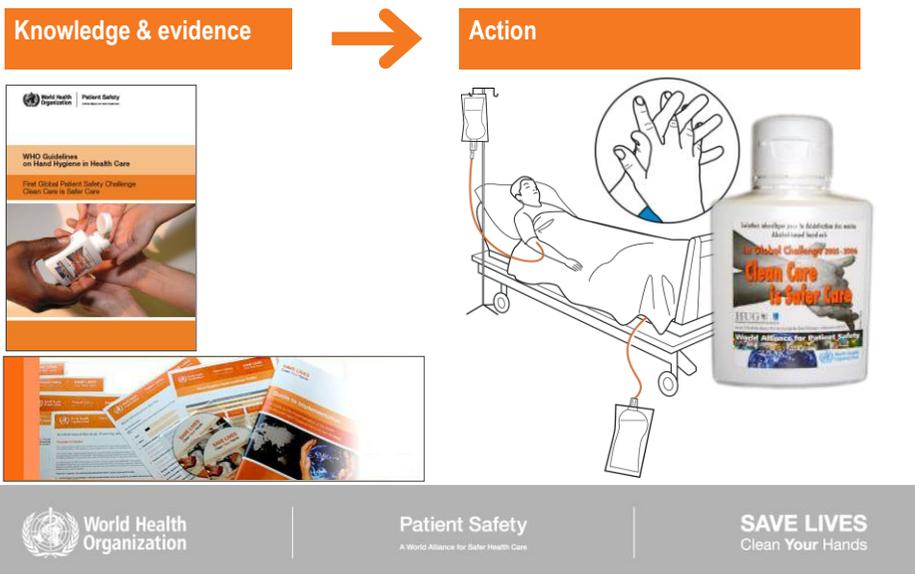


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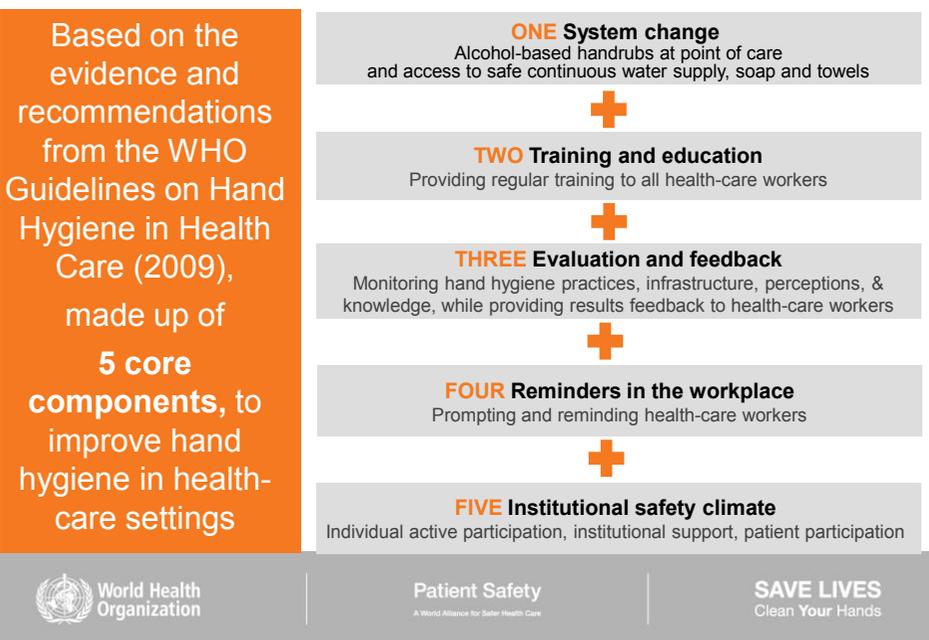
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Implementation strategy and toolkit for the WHO Guidelines on Hand Hygiene in Health Care



What is the WHO Multimodal Hand Hygiene Improvement Strategy?



WHY to focus on hand hygiene in settings other than the hospital?

Questions from the field...

- Evidence of hand hygiene effectiveness in these settings?
- Is every patient defined as “potentially infectious” and how exactly is “contact” defined (e.g. social activities)?
- Are patients who attend these areas (excluding dialysis) are at the same risk of acquiring HAIs as patients in acute facilities?
- The most challenging issue is the definition of the "patient zone" and the "healthcare area" in non-hospital settings
- Difficulties to apply the 5 Moments in high-frequency procedures
- How to implement Moment 5?
- The measurement of compliance is particularly difficult in non-hospital settings



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Main objective of this project

- To develop a WHO guidance document on Hand Hygiene in Outpatient (including Primary) Care
- The Guide aims to:
 - discuss the available evidence on hand transmission risk of healthcare-associated pathogens during procedures typically undertaken in outpatient settings
 - provide concepts and practical explanations on the implementation of the "My 5 moments for hand hygiene" approach and the WHO multimodal hand hygiene improvement strategy
 - address some issues that are specific to such settings in order to make implementation easier and to obtain maximum compliance with hand hygiene recommendations



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To answer these and other questions:

- Definition of the setting
- **Risk assessment**
 - Hand contamination
 - Transmission/infection risk in these settings
 - Infection control/hand hygiene situation in these settings
- Hand hygiene concepts adaptation
- Practical examples



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Definitions (1)

- **Primary care (Declaration of Alma-Ata):** the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.
- **Primary care (Spain MoH):** first and basic level of healthcare, which guarantees the global assistance and the continuity of care throughout the patient's life, acting as case manager and coordinator and controlling health care demand. It will include activities directed towards health promotion and education, disease prevention, health care provision, health preservation and recovery as well as physical rehabilitation and social work.
- **Outpatient (ambulatory) care (CDC):** care provided in facilities where patients do not remain overnight (e.g., hospital-based outpatient clinics, non-hospital based clinics and physician offices, urgent care centers, ambulatory surgical centers, public health clinics, imaging centers, oncology clinics, ambulatory behavioral health and substance abuse clinics, physical therapy and rehabilitation centers).



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Draft definition adopted for the WHO Guidance (2)

- **Outpatient (ambulatory) care:** any medical service provided to patients who are not admitted as inpatients in a hospital. Examples of outpatient care settings: **primary healthcare settings** (usually dedicated to first patient contact for unselected health problems or preventive medicine or social assistance), outpatient departments of hospitals, 'poly' clinics, specialized clinics, emergency departments, outpatient surgical centres, physical therapy, rehabilitation centres, diagnosis laboratories, and dental care.
- This care can be for **health promotion, prevention, palliation, cure or rehabilitation, and specialized assistance** (e.g., dialyses units, oncology centers).
- It includes **home care**



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Literature searches and reviews

Transmission of pathogens by hands in outpatient setting (Geneva)

Keywords: outpatient settings, "disease transmission, infectious[MeSH Terms]", hand hygiene, disease outbreak[MeSH]

Source: PubMed No language or time restriction

Summaries reviewed: 633

Full-texts reviewed: 32

Final selection: 10 articles (+ 14 German titles + 1 Danish)

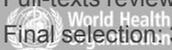
Hand hygiene in primary health care (Spain)

Keywords: primary care settings, "disease transmission, infectious[MeSH Terms]", hand hygiene

Source: PubMed, EMBASE, COCHRANE Time restriction: 2004 – July 2011

Summaries reviewed: 818

Full-texts reviewed: 60
Final selection: 35 articles



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HAI in outpatient care

- Most of reported outbreaks of healthcare-associated infections in outpatient care are related to **invasive medical procedures**
- Literature review 1960-1990: 53 reports with transmission in general medical offices, clinics, and emergency departments (23); ophthalmologists' offices and clinics (11); dental offices (13); and alternative-care settings (6)
- Transmission means: common source (29), person-to-person (14), airborne or droplet (10) (Goodmann et al. JAMA 1991)
- Most frequent agents: *Mycobacterium* spp, HBV, measles, rubella, adenovirus
- Another narrative review paper focused on HBV, HIV, *M. tuberculosis*, measles, adenovirus (Herwaldt et al. ICHE 1998)
- SSI following ambulatory surgery (mail/phone surveys): 0.022-16.0% (Nafziger et al. Infect Dis Clin North America 1997)



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APEAS study on Adverse Events (AE) in Primary Healthcare - Spain

- Prevalence of AE in Primary Healthcare: **1.1%** (1,074 AE/96,047 consultations) (95% CI: 1.0%-1.2%)
- 55.5% (n=429) related to medications
- **7.4% (n=57) were HAI**
 - surgical and/or trauma wound infection (5.1%)
- 64.3% of AE and 78.9% of HAI considered clearly preventable



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Healthcare workers' hand contamination (1)

- Primary pediatric care, doctors hands contamination: Staph spp 85.4%, S. aureus 56.4%, MRSA 9.1% (Cohen et al. Infection 1998)
- Outpatient dermatology clinics, doctors hands contamination: Staph spp 84.6%, S. aureus 69.2%, MRSA 7.7% (Cohen et al. Dermatology 2002)
- GPs' offices: 14/150 (9%) contaminated samples (hands, stethoscopes and tension cuff); 10/50 GPs (Girier et al. Med Mal Inf 2000)
- Ophthalmologists: 97.2% were culture positive for at least one resident organism and 22.2% for at least one transient organism (Lam et al. Investigative Ophthalmology & Visual Science 2005)



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Healthcare workers' hand contamination (2)

- HCV-RNA retrieved on dialysis personnel hands: positive in
 - 19 (23.7%) of samples from HCWs caring for HCV+ patients;
 - 8 (8%) of samples from HCWs caring for HCV- patients ($p < 0.003$)
 - 2 (3.3%) of samples from HCWs entering the dialysis unit

(Alfurayh et al. Am J Nephrol 2000)



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Patients' hand contamination

- Cystic fibrosis patients: *Pseudomonas* and *S. aureus*, including MRSA, were cultured from patients' hands (7%), the exam room air (8%), and environmental surfaces (1%) (Zuckerman et al. J Cistic Fib 2009)
- VRE colonized patients in haemodialysis: hands colonized with VRE (36%); VRE contaminated haemodialysis chairs (58%), outpatient consultation couches (48%), HCW gowns (20%) (Grabsch et al. ICHE 2006)



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Hand transmission in outpatient care settings

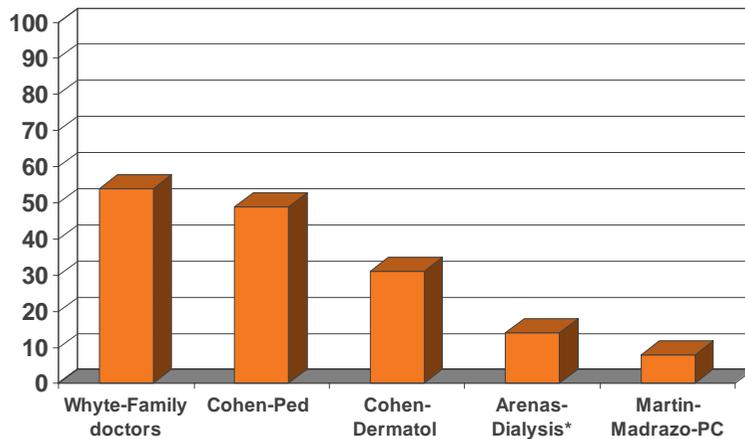
- Contaminated hands are considered either one of the possible causes or the first suspected factor or the proven cause of transmission
- **One of the possible causes:**
 - Candidemia in pediatric patients receiving parenteral nutrition (Cano et al. Med Mycology 2005)
 - A case of tuberculosis otitis media (Katcher et al. J Infect 2010)
- **First suspected factor:** C-MRSA skin infections among HCWs in an outpatient clinic (Johnston et al. ICHE 2006)
- **Proven cause of transmission:** nurse's artificial fingernails carrying the same germs that caused BSI in 5 patients who received dialysis via tunneled catheters (Gordin et al. ICHE 2007)



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Hand hygiene compliance in different outpatient settings



* Before patient contact



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Self-evaluation (1)

- **Dentists:** at the start of the practice day, 71% often/almost always/always washed with soap but never/almost never used ABHR. 22% often/almost always/always washed with soap and disinfected with alcohol-based hand sanitizers

Myers et al. J Am Dent Assoc 2008



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Self-evaluation (2)

- Telephone interviews with 200 GPs asked about HW after pt contact
- 126/200 (63%) HW after each consultation (79/126 (62.7%) used water and soap; only 21 used a disposable towel)
- 43/200 (21.5%) HW after each home visit

Reasons	Consultation (n=74)	Home visit (n=157)
<u>Too complicated to ask patients for facilities</u>	N/A	49%
Washed hands in car or consultation room after visit	N/A	10%
<u>No infectious contact</u>	46%	16%
Hand washing not a habit	15%	10%
Lack of time	12%	6%
Forgotten	14%	3%
Afraid of irritation of the hands	5%	0
No idea or no answer	8%	6%

N/A=not applicable.

Michiels et al. BMJ 2000



Infection control practices in 68 Ambulatory Surgical Centers in the USA

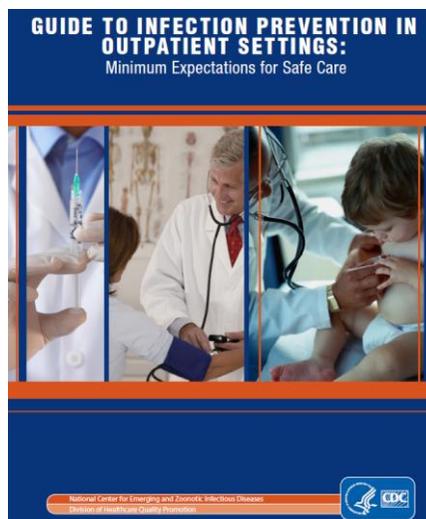
- Overall, 67.6% (95%CI 55.9%-77.9%) ASCs had at least 1 lapse in infection control
- 17.6% (95% CI, 9.9%-28.1%) ASCs had lapses in ≥ 3 of the 5 infection control categories
- **Common lapses:** lapses in handling of blood glucose monitoring equipment (46.3%); using single-dose medication vials for more than 1 patient (28.1%); failing to adhere to recommended practices for equipment reprocessing (28.4%); **lapses in hand hygiene performance** before and after the surgical procedure (**17.7%**)

Schaefer et al. JAMA 2010



Infection control and outpatient care: a role for containing resistance spread?

- What is the role of infection control in AMR and HAI spread in outpatient care?
- Is transmission different?
- Are there different levels of risk?
- Who should be the target of IC education?
- What are the boundaries between the community life and outpatient health care?
- Patient/community participation in infection control?
- Indicators to monitor improvement?



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Hand hygiene in the community setting

- Important trials (some RCT) demonstrated a very significant impact of:
 - Hand washing to reduce upper respiratory pulmonary infection, diarrhoea, and impetigo among children in community settings
 - Hand washing/hand rubbing to reduce the incidence of gastrointestinal and/or respiratory diseases and absenteeism attributable to these causes in schools
 - Hand hygiene to prevent influenza transmission in households and among young adults



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Critical elements for evaluation of hand hygiene opportunities in outpatient care situations

- Transmission risk according to procedure
- Infection risk for the patient
- Infection risk for the healthcare worker
- Patients' susceptibility status
- Patients' colonization status
- Frequency of the procedure



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Table of contents of the WHO Guide

- Introduction or background
- Objectives
- Scope and target audience
- Why HH is important in outpatient care? Risk of germ transmission
- Applying "My 5 moments for hand hygiene" approach in outpatient care
- Applying the WHO multimodal HH improvement strategy and the accompanying toolkit in outpatient care
- Practical examples of hand hygiene requirements in a broad range of outpatient care settings



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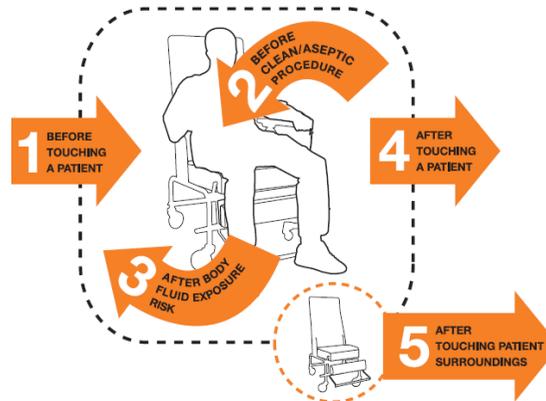
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The concept of the Five Moments does not change

Your 5 Moments for Hand Hygiene



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The patient zone concept

- The geographical distinction between patient zone and health-care area as far as hand hygiene performance is concerned, helps prevent microbial transmission between patients and health-care environment contamination
- **Patient zone:** the patient and some surfaces and items in his/her surroundings that are temporarily and exclusively dedicated to him or her and his or her personal belongings
- **Health-care area:** all physical surfaces outside the patient zone of patient X, including the other patients and their patient zones and the wider health-care environment



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The patient zone concept in primary care

- In primary care settings, in many cases no "zone" is **temporarily** dedicated to a patient **exclusively**
- The patient's access to health-care is limited to a short time and the space allocated to care delivery accommodates numerous successive patients
- The time required for actual contamination of the surroundings by patient's flora is basically unknown
- ***In these conditions the concept of patient zone coincides with the patient him/herself***
- ***In any outpatient settings, the health-care environment is contaminated by germs brought by patients and health-care workers, which can carry harmful resistance patterns***



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Practical examples in primary care

- Vaccination setting
- Blood drawing procedure
- GP's visit
- Wound dressing in home care
- Mother and child for a paediatric check



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A procedure-focused approach and the importance of understanding hand hygiene within the workflow

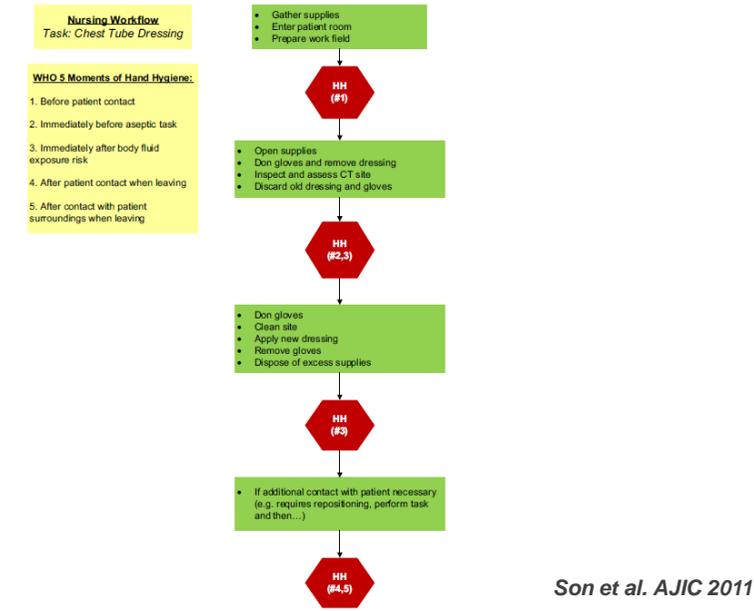


Fig 2. Sample nursing workflow with indications for hand hygiene.

Thank you and



WHO Clean Care is Safer Care



Find all information at www.who.int/gpsc/5may

Send enquiries to savelives@who.int

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In particular, great thanks to

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