

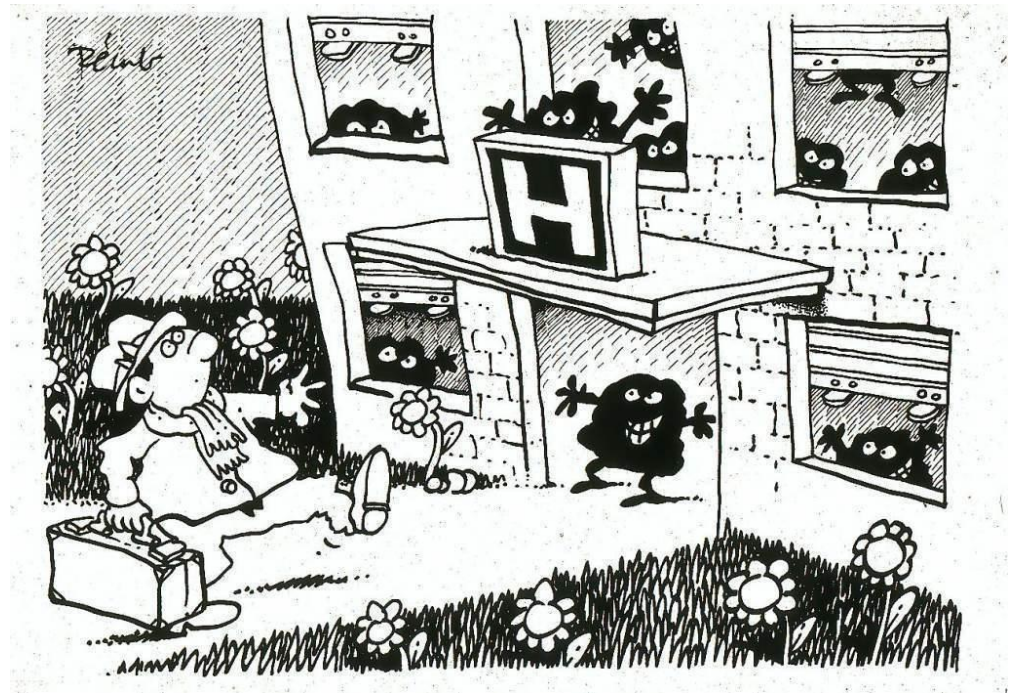
Almost three decades of hand hygiene promotion at the University of Geneva Hospitals

Train the Trainers: Training in Hand Hygiene Carolina Fankhauser

On behalf of Prof. Didier Pittet and collaborators
Faculty of Medicine, Geneva, Switzerland

Rio de Janeiro, Brazil, October 31-November 2, 2022

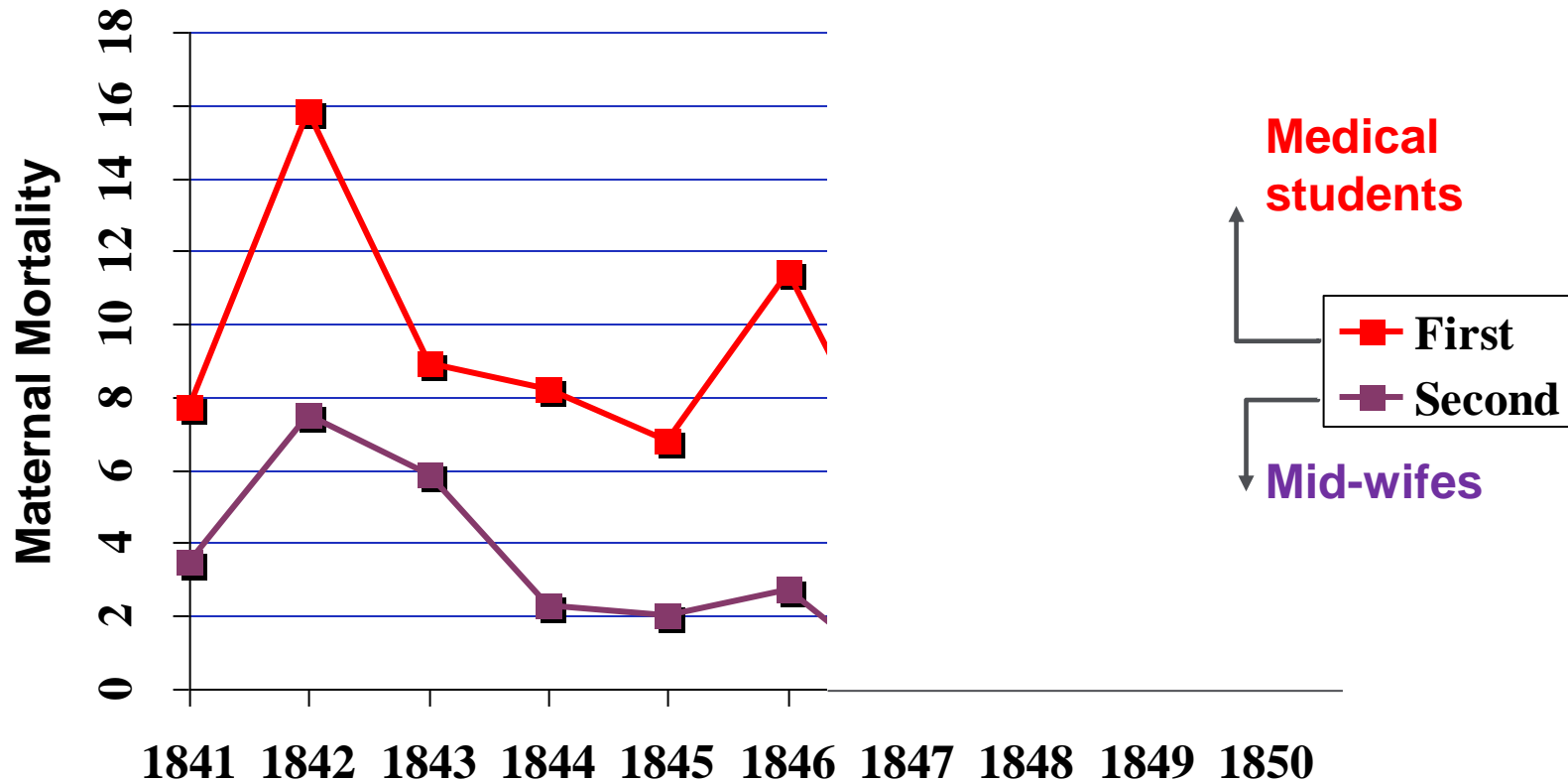
A little bit of history





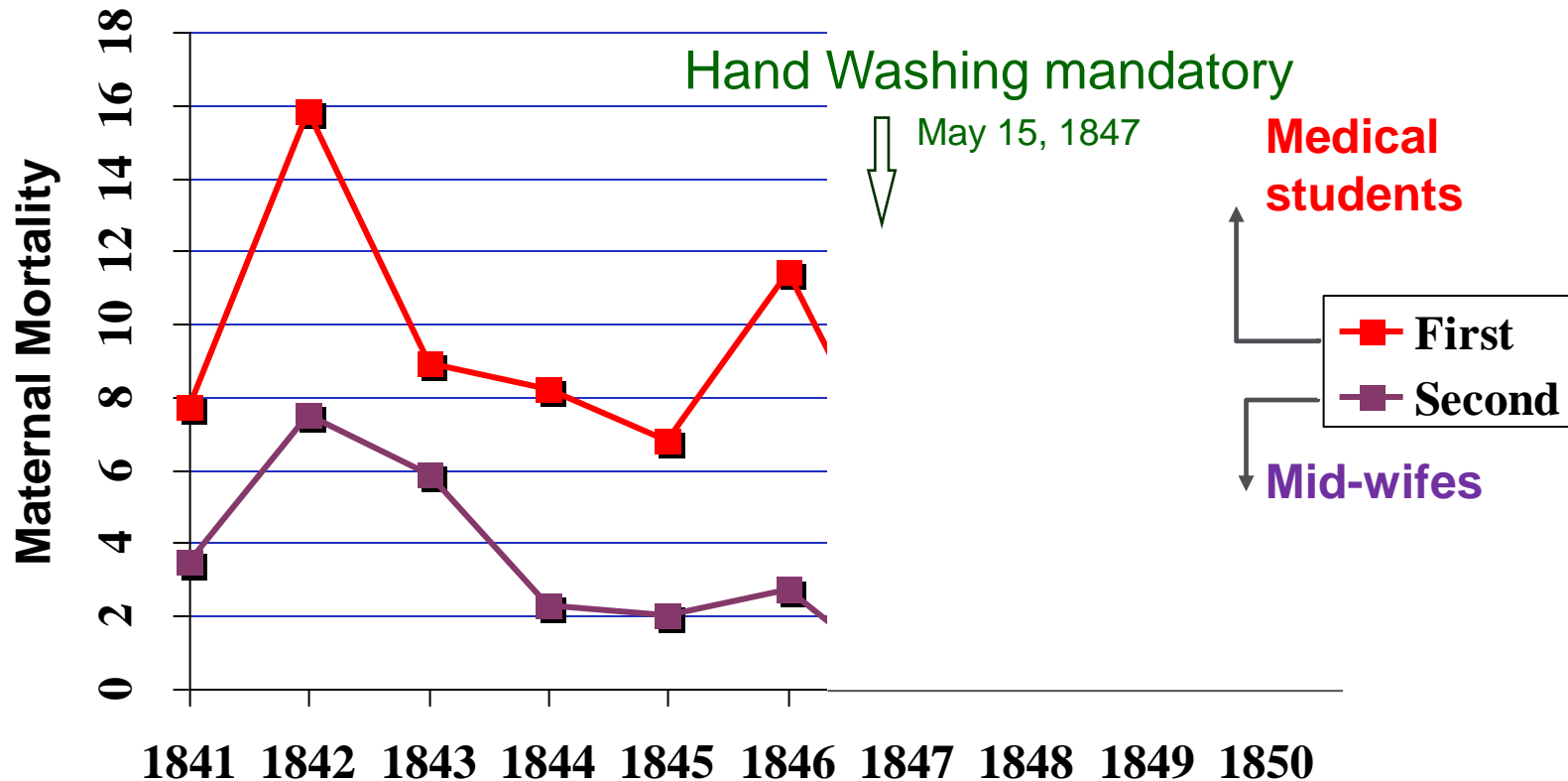
**Dr Ignaz Philipp
Semmelweis**

Maternal mortality rates, First and Second Obstetric Clinics, GENERAL HOSPITAL OF VIENNA, 1841-1850



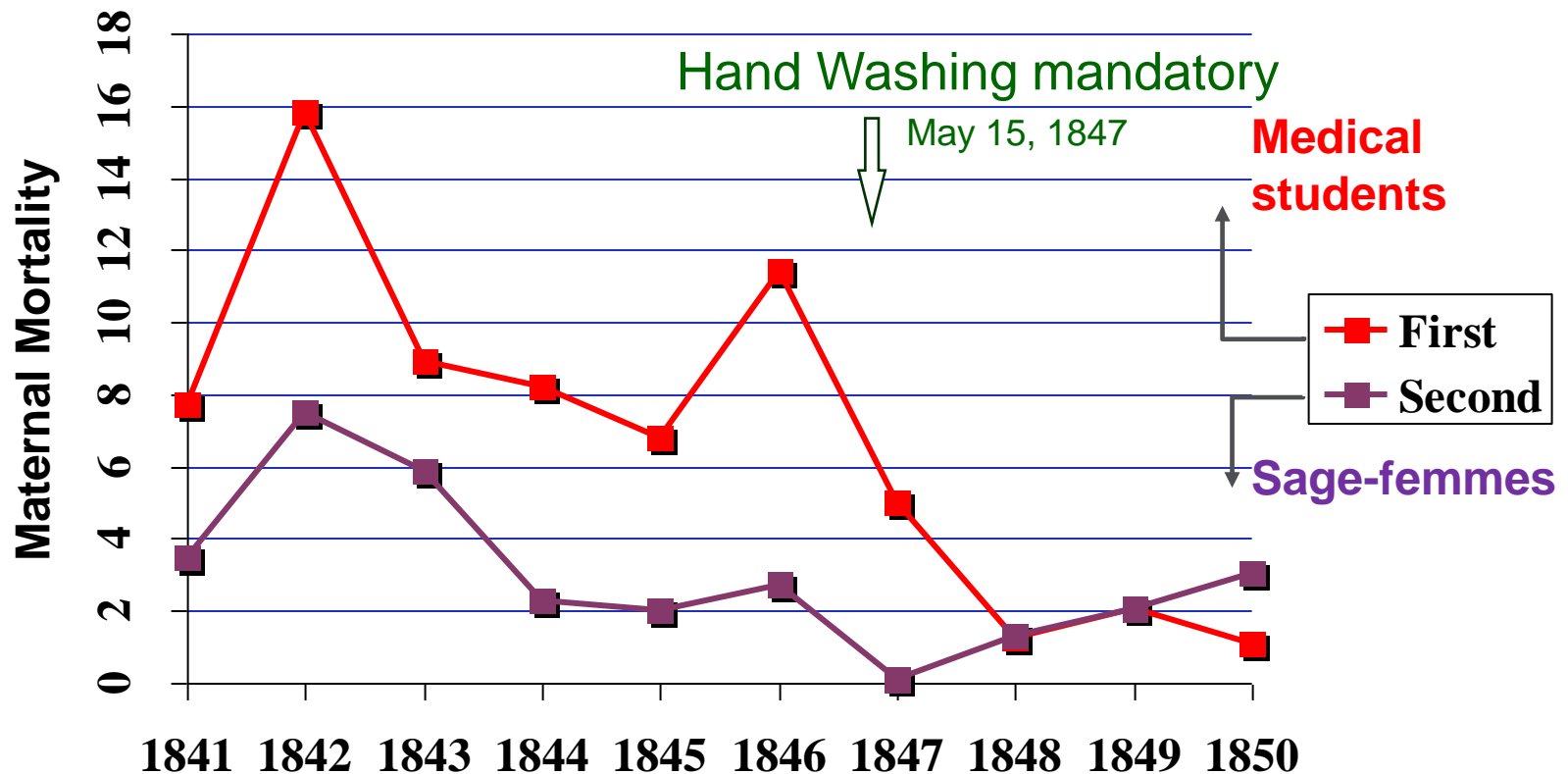
Semmelweis IP, 1861

Maternal mortality rates, First and Second Obstetric Clinics, GENERAL HOSPITAL OF VIENNA, 1841-1850



Semmelweis IP, 1861

Maternal mortality rates, First and Second Obstetric Clinics, GENERAL HOSPITAL OF VIENNA, 1841-1850



Semmelweis IP, 1861

150 years later in Geneva ...



IPC UNIT - UHG

But before that,

- ▲ Unfortunately, Semmelweiss' work did not lead to widespread changes in practice or appreciation of the significance of HH
- ▲ Exception, surgery, aseptic technique
- ▲ USA, around 1950, the hospital –based clusters of staphylococcal infections ; the '60 and '70 period of rapid development of IPC
- ▲ In the 60's, several studies confirmed the role of HCW's hands in the transmission of *S. aureus*
- ▲ Mortimer et al. Handwashing after caring for an index case
- ▲ CDC, 1975 – Guidelines –»Handwasing is generally considered the most important procedure in preventing nosocomial infections»
- ▲ By the mid '80s handwashing was a central focus of formal CDC guidelines on prevention of HCAI

The beginning of the the Observational method

First hand hygiene observations.....

Observation method :

- **5 trained and validated observers**
- **Opportunities observed:**
 - **Before and after patient contact**
 - **Between patient**
 - **Before aseptic care**
 - **After contact with body fluid**
 - **After contact with soiled material**
- **During each shift (morning, afternoon, night and week end)**
- **In all wards of the hospital**

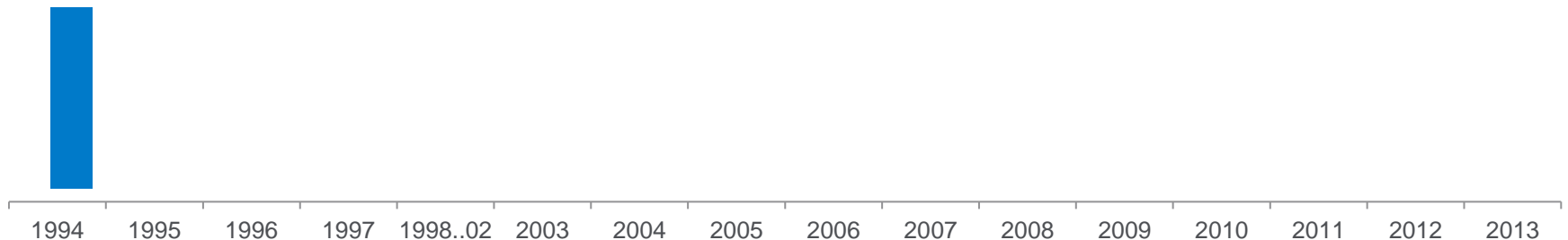
First hand hygiene observations.....

Observation method (cont):

- **Actions observed:** Hand Washing, Hand Rub disinfection, gloves wear, or no action
- **Presence or lack of the hand rub solution at the bedside**
- **Parameters also collected:** Workload, professional category, duration of observation (20 minutes period), date, ID of the ward, ID of the observer



HH
Compliance
%

48%



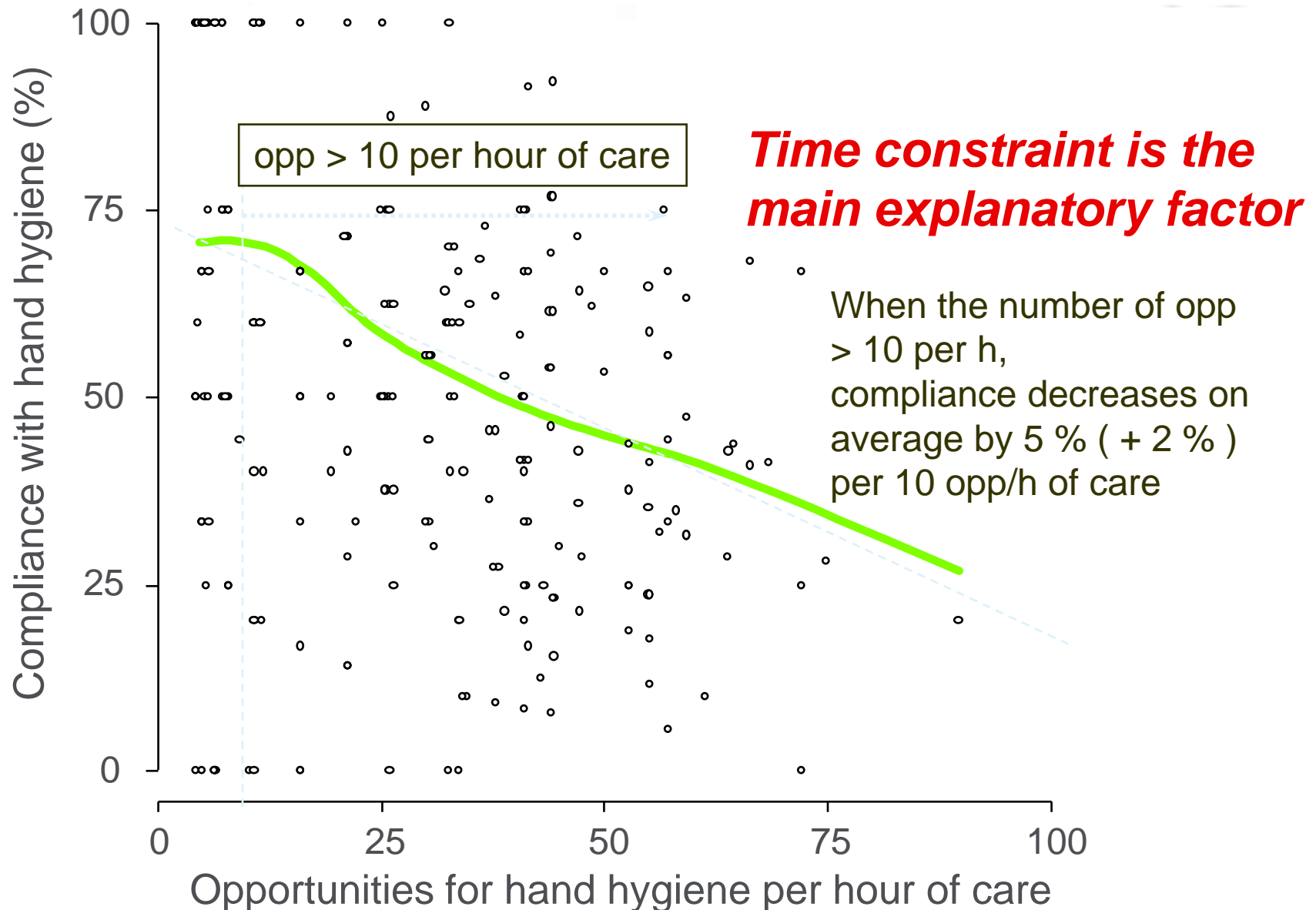
Compliance and Professional Activity

Pittet et al, Ann Intern Med 1999, 130:126

	N	Opportunities	Compliance
Nurse	(520)	1875 (66 %)	 52 %
Student nurse	(48)	131 (4.7 %)	43 %
Nurses' aide	(166)	378 (13 %)	47 %
Mid-wife	(14)	35 (1.3 %)	66 %
Physician	(158)	281 (10 %)	 30 %
Phys/Resp therapist	(23)	48 (1.7 %)	28 %
Radiology Technician	(4)	12 (0.4 %)	8 %
Others	(58)	74 (2.7 %)	27 %
TOTAL		2,834 (100 %)	48 %

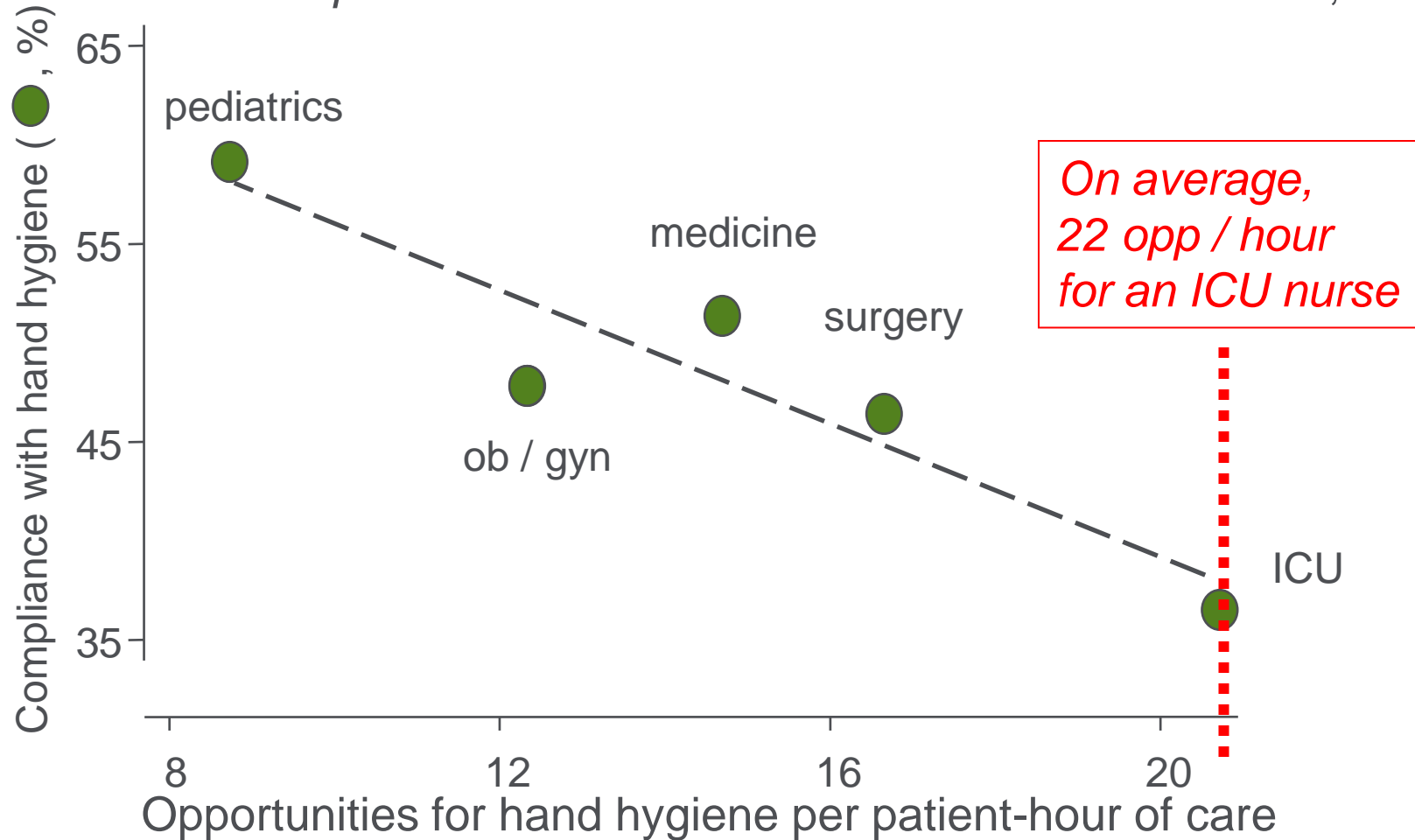
NON COMPLIANCE WITH HAND HYGIENE HUG 1994

Pittet et al, Ann Intern Med 1999, 130:126



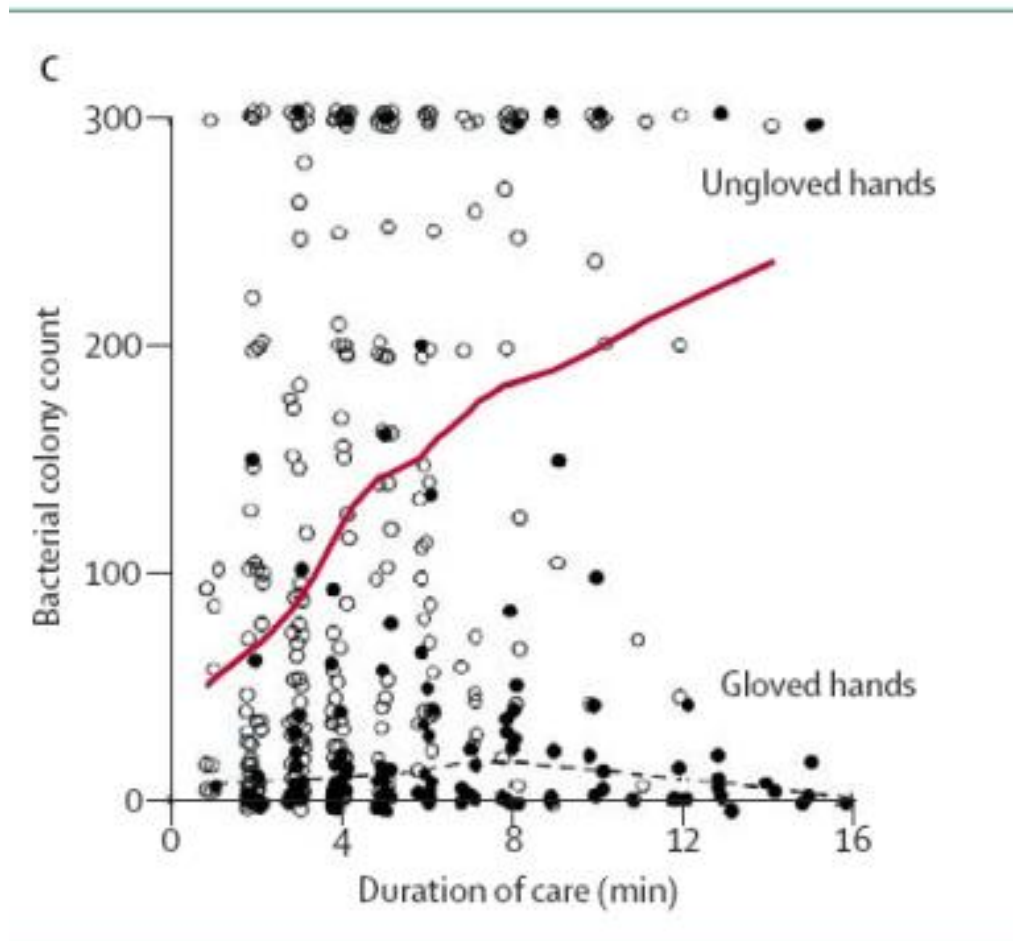
Relation between opportunities for hand hygiene for nurses and compliance across hospital wards

adapted from Pittet D et al. Annals Intern Med 1999; 130:126



BACTERIAL CONTAMINATION OF THE HANDS OF HOSPITAL STAFF DURING ROUTINE PATIENT CARE HUG 1996

Pittet et al, Arch Intern Med 1999, 159:821



Relationship between duration of care and bacterial contamination of hands of hospital staff

Resistance to change

*Pittet et al, Infect Control Hosp Epidemiol
2000, 21:381*

TABLE 2
MAIN REASONS FOR POOR COMPLIANCE WITH HAND HYGIENE

	Self- Report- ed	Observed
1. Skin irritation by hand-hygiene agents	X*	X
2. Inaccessible hand-hygiene supplies	X	(X) [†]
3. Interference with HCW-patient relationship	X	?
4. Patient needs take priority	X	?
5. Wearing of gloves	X	X
6. Not thinking about it or forgetfulness	X	(X)
7. Lack of knowledge of guidelines	X	(X)
8. Lack of scientific information on effect of hand hygiene on nosocomial infection rates	X	(X)
9. Too busy or insufficient time for hand hygiene	X	(X)
10. High work load [‡] or lack of appropriate staffing	X	X
11. Being a physician (rather than a nurse)	X	X
12. Male (rather than female) gender	X	(X)
13. Working in high-risk areas (ie, ICUs)	X	X
14. Activities with high risk for cross-transmission		X
15. Working on weekdays (vs weekends)		X
16. Lack of hand-hygiene promotion at individual or institutional level	(X)	(X)
17. Lack of role model for hand hygiene	X	(X)
18. Lack of institutional priority for hand hygiene	X	(X)
19. Lack of administrative sanction of noncompliers or rewarding of compliers	X	
20. Lack of institutional safety climate	(X)	

TABLE 3
HAND HYGIENE: DISTRIBUTION OF FACTORS ASSOCIATED WITH
NONCOMPLIANCE

Individual level

- Lack of education or experience
- Being a physician
- Male gender
- Lack of knowledge of guidelines
- Being a refractory noncomplier

Group level

- Lack of education or lack of performance feedback
- Working in critical care (high work load)
- Downsizing or understaffing
- Lack of encouragement or role model from key staffs

Institutional level

- Lack of written guidelines
- Lack of suitable hand-hygiene agents
- Lack of skin-care promotion or agent
- Lack of hand-hygiene facilities
- Lack of culture or tradition of compliance
- Lack of administrative leadership, sanction, rewards, or support

Geneva's First Hand Hygiene campaign

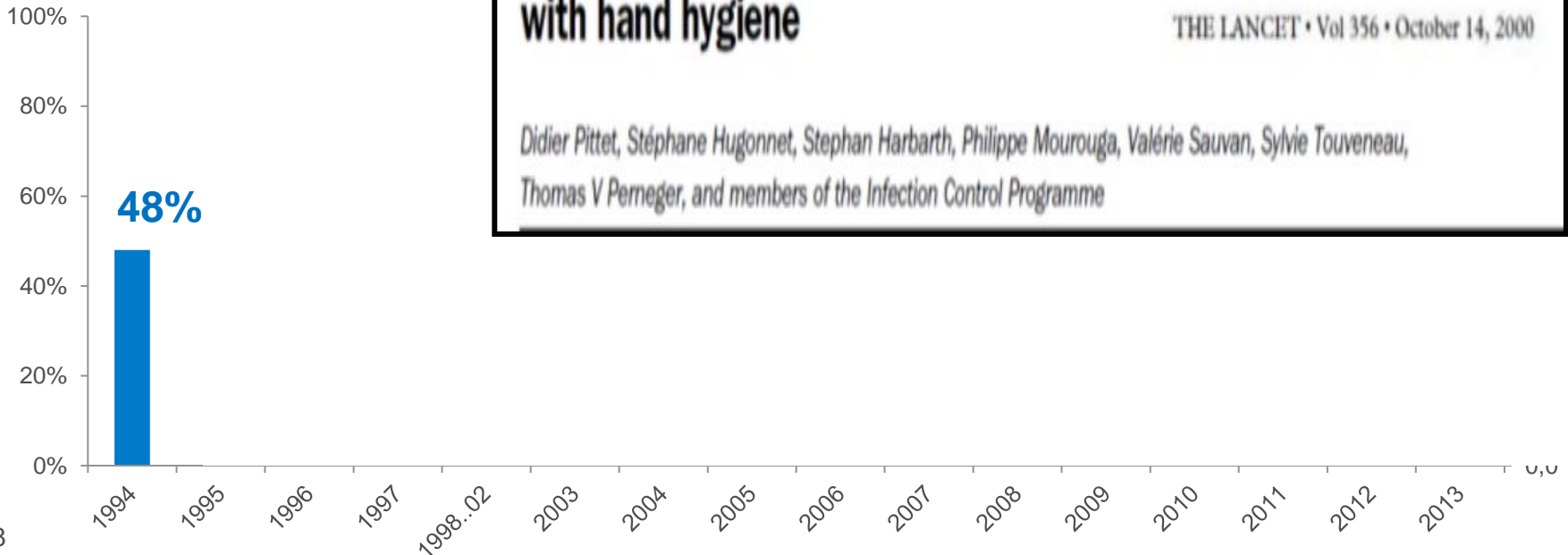
December 1994 to 1998

Launch of the hand hygiene promotion

HH campaign



HH
compliance %



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

THE LANCET • Vol 356 • October 14, 2000

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

Time constraint = major obstacle for hand hygiene



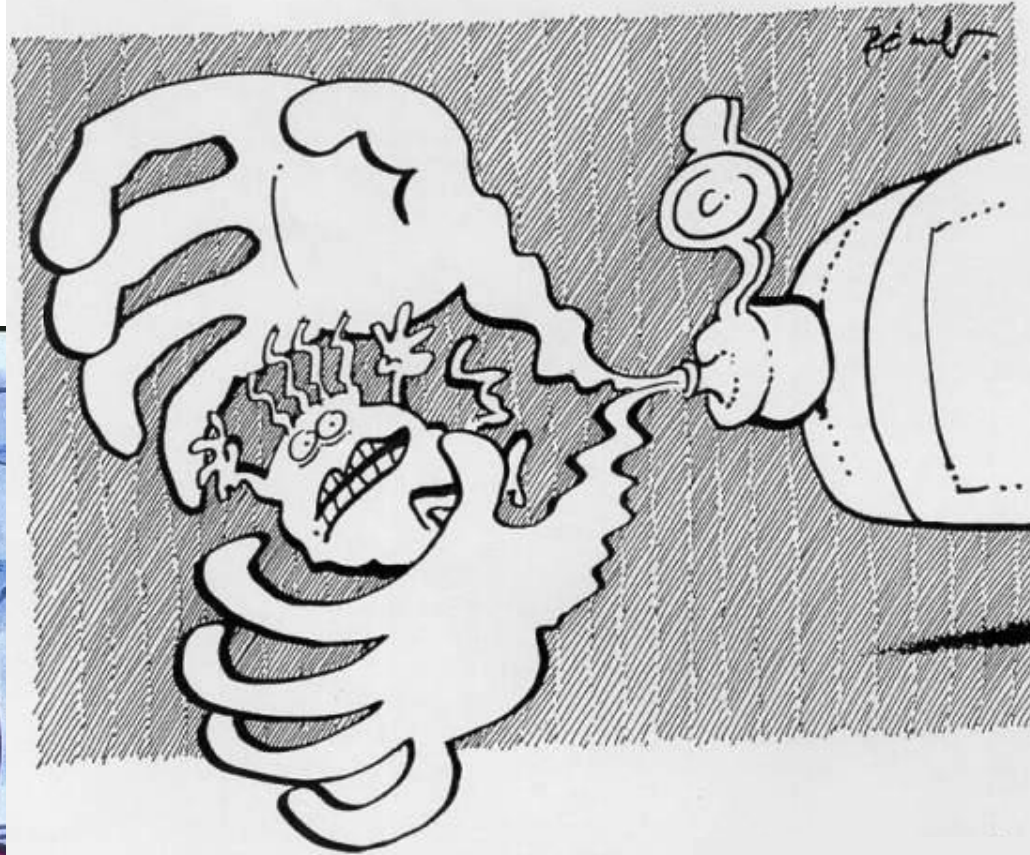
handwashing
soap + water

1 to 1.5 min

alcohol-based
hand rub

15 to 20 sec

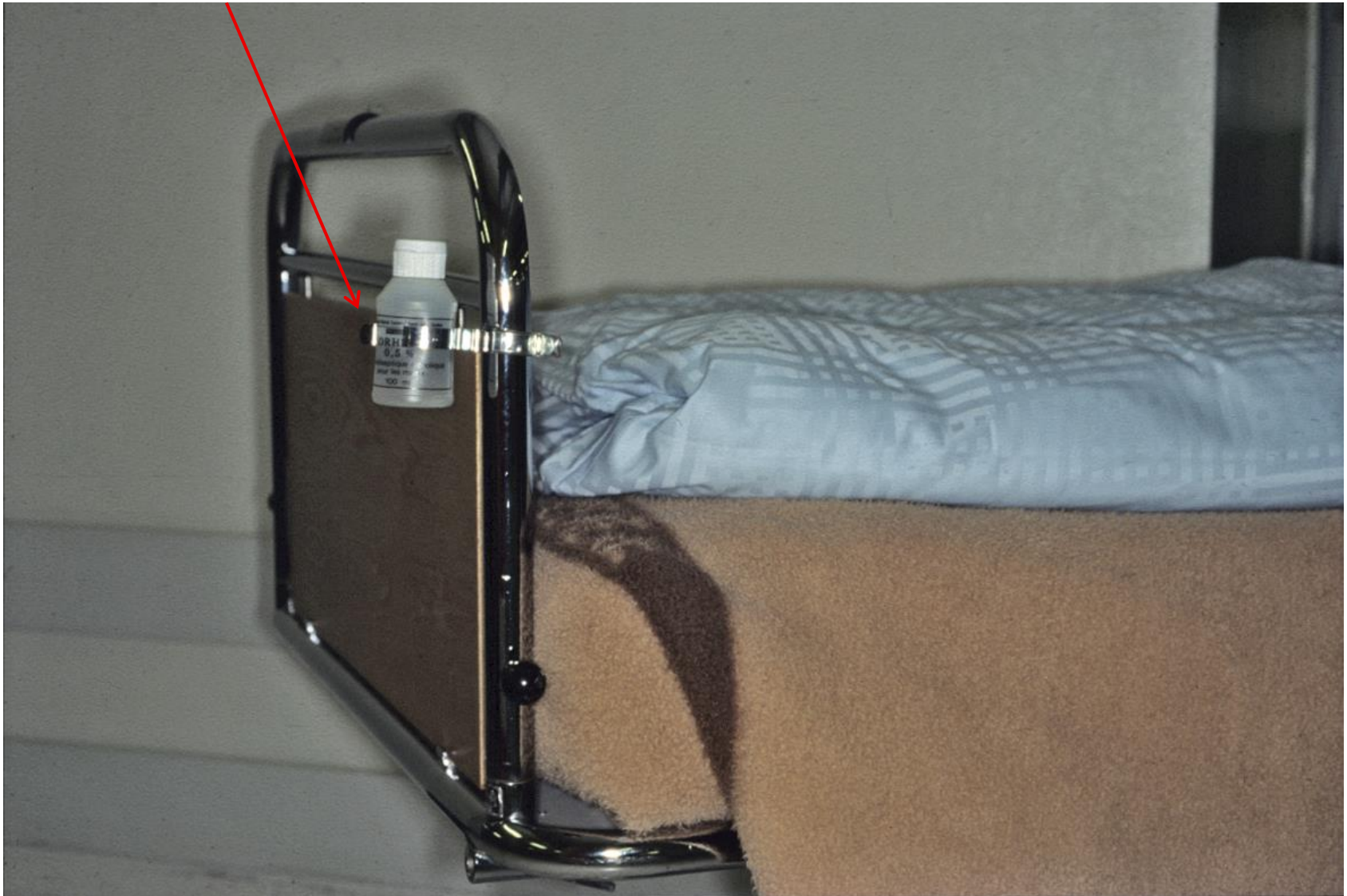
*Handwashing ...
an action of the past
(except when hands are visibly soiled)*



**Alcohol-based
hand rub
is standard of care**

How did we proceed?

Holder for handrub at the bedside



Alcohol-based
hand rub at the
point of care

HUG



*The University
of Geneva
Hospitals, 1995*



Before and after any patient contact
After glove use
In between different body site care

System change



Promotional material/posters

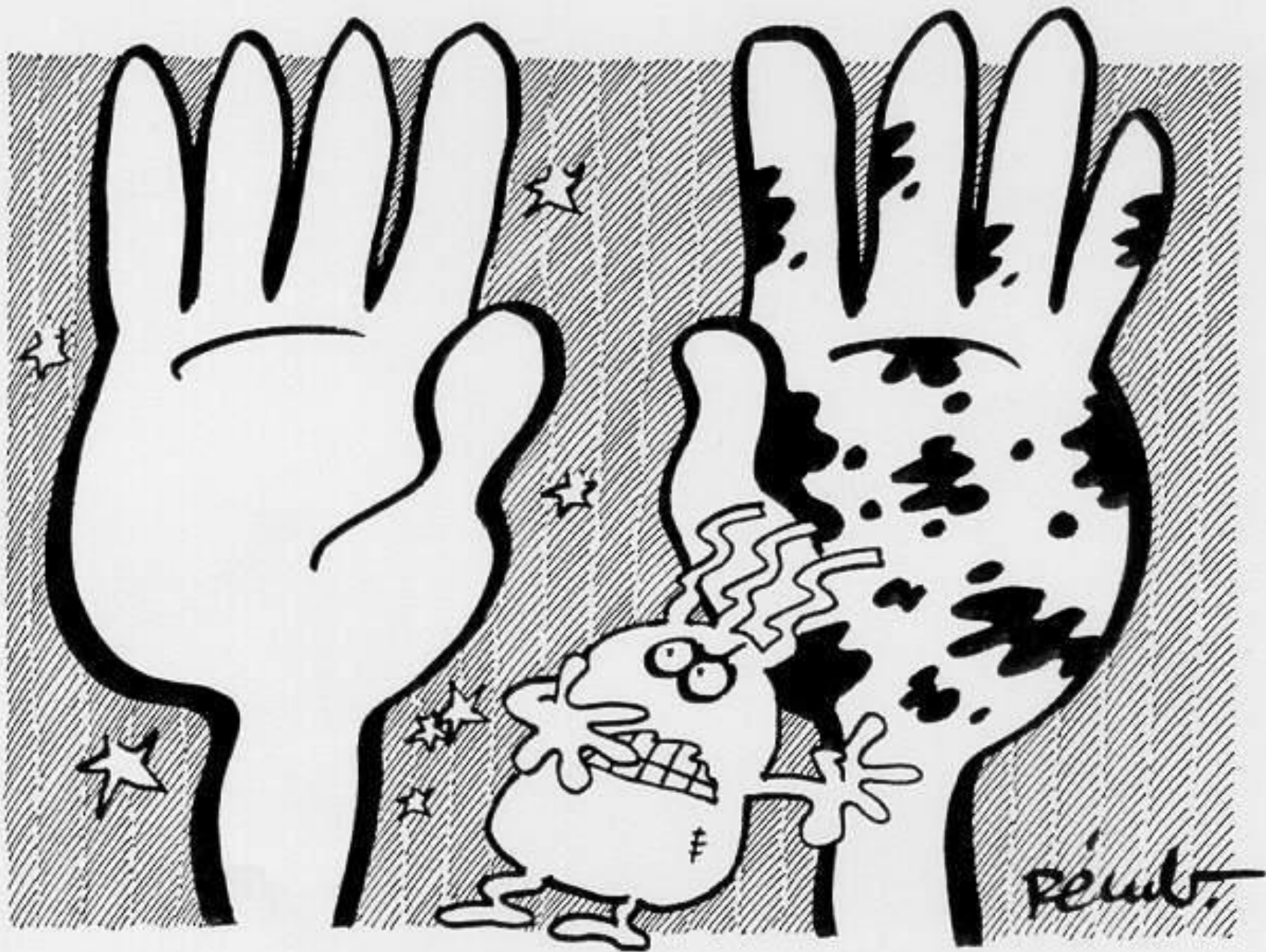
▲ **Creation of working group**

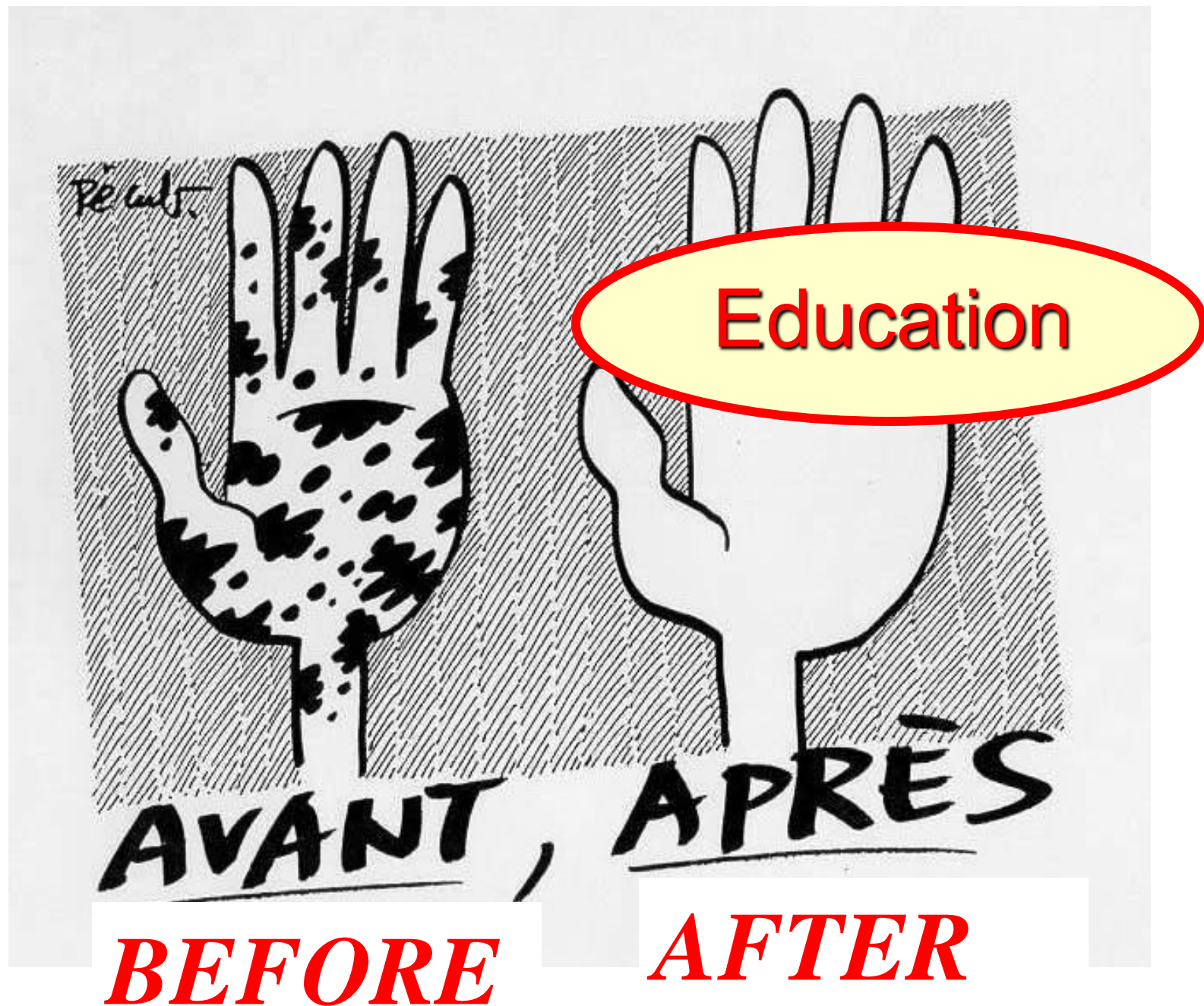
- with the skills of leaders, champions, and role models
 - to convince HCWs to improve their HH observance
 - to support the different aspects of the campaign

▲ **Included representatives** : senior nurse and doctor from each medical departement, senior administrative manager and representative from other hospital service departements.

▲ **Associated** with an artist: **Pecub**









My son,
if they don't get me,
you will become
multiresistant

« Talking walls »





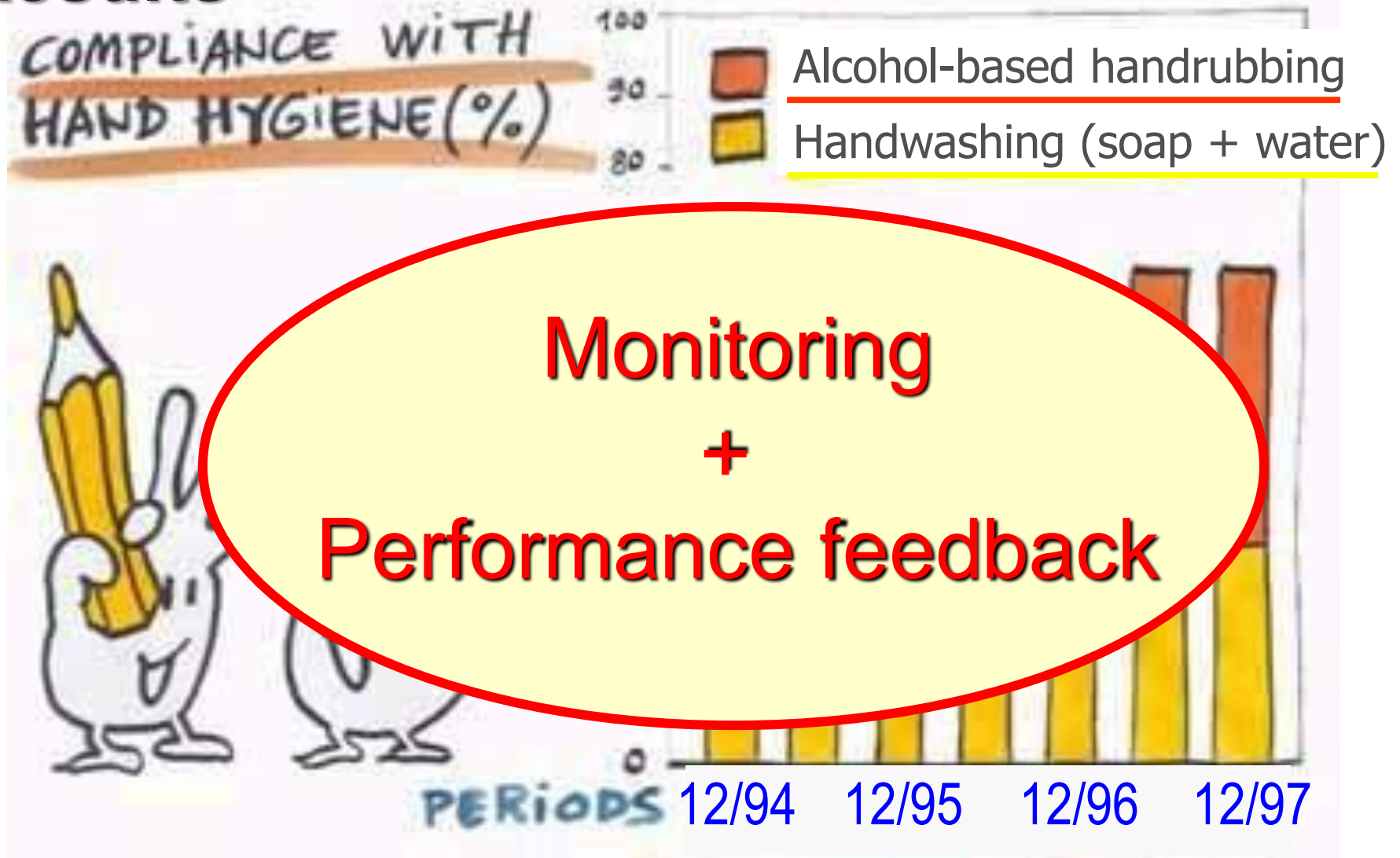
HÔPITAL CANTONAL DE GENÈVE
CONTRE STAPH LE SÂLE,
LES HOSTILITÉS VONT
COMMENCER !

*Doctor Freud,
in this hospital,
it's become impossible
to cause infections
any more !*

Safety culture

Geneva's University
Hospitals against
Dirty Staph :
war has been
declared

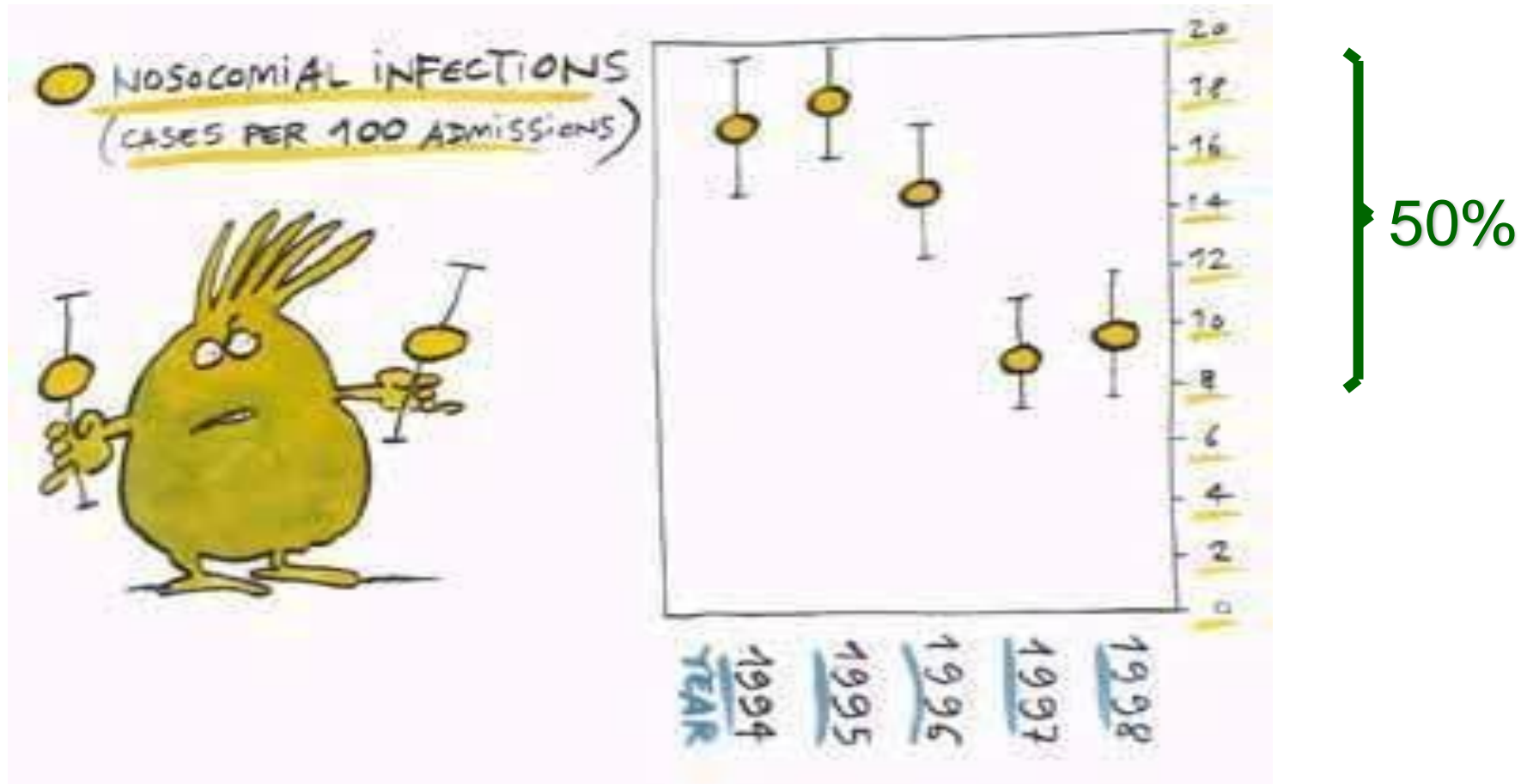
Results



www.hopisafe.ch

Pittet D et al, *Lancet* 2000; 356: 1307-1312

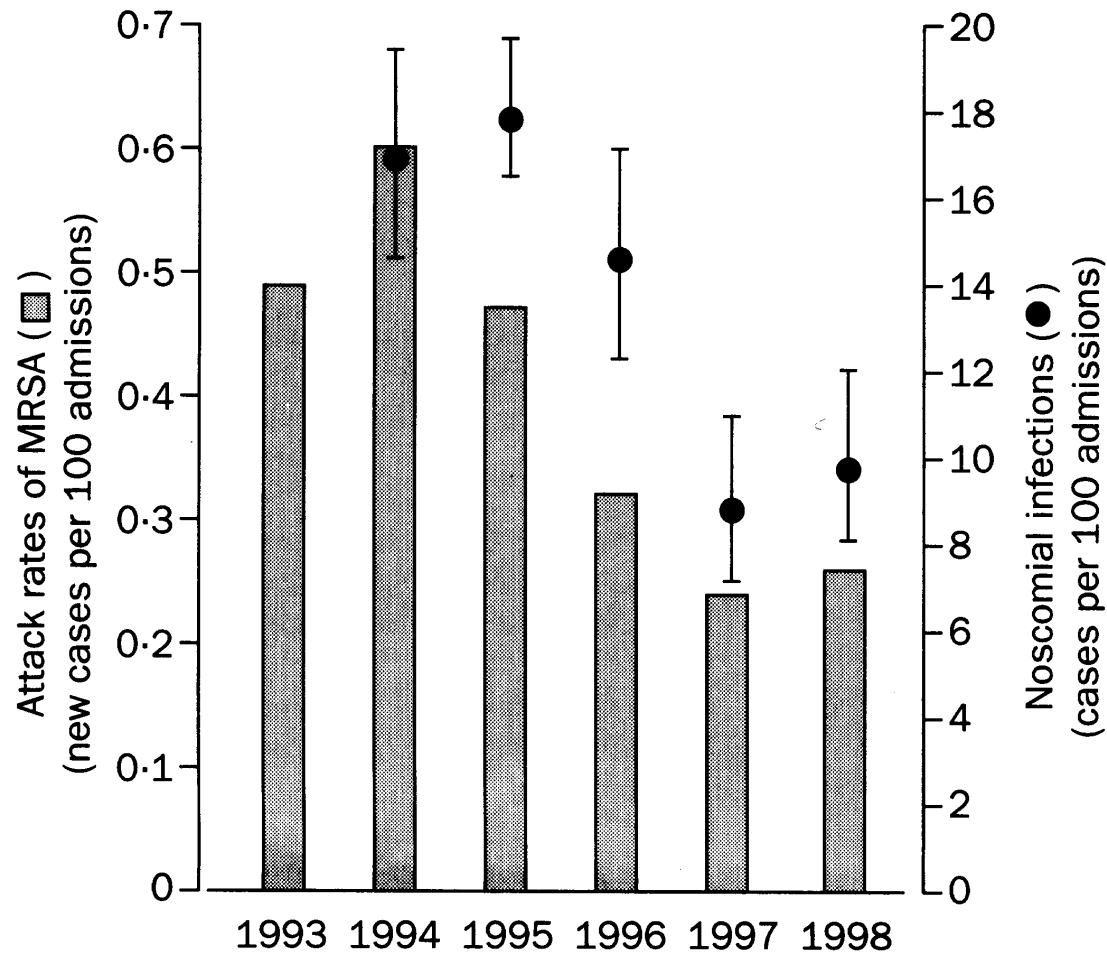
Hospital-wide nosocomial infections; trends 1994-1998



www.hopisafe.ch

Pittet D et al, *Lancet* 2000; 356: 1307-1312

Trends in prevalence of nosocomial infections and MRSA cross-transmission, HUG 1993-1998



Pittet et al. Lancet 2000 356:1307



Rub
hands...
it saves
money

Data collection

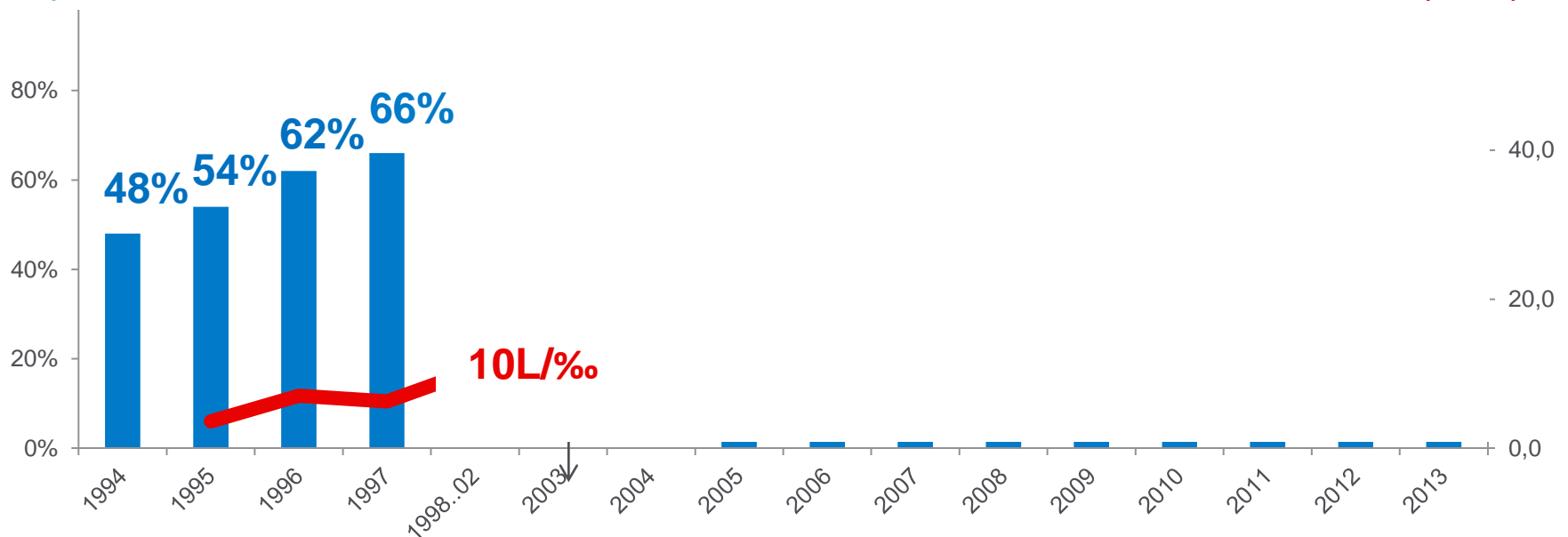
Two decades of hand hygiene promotion

HH
campaign



HH
compliance %

Hand rub solution
consumption
l/‰ days of hospitalization



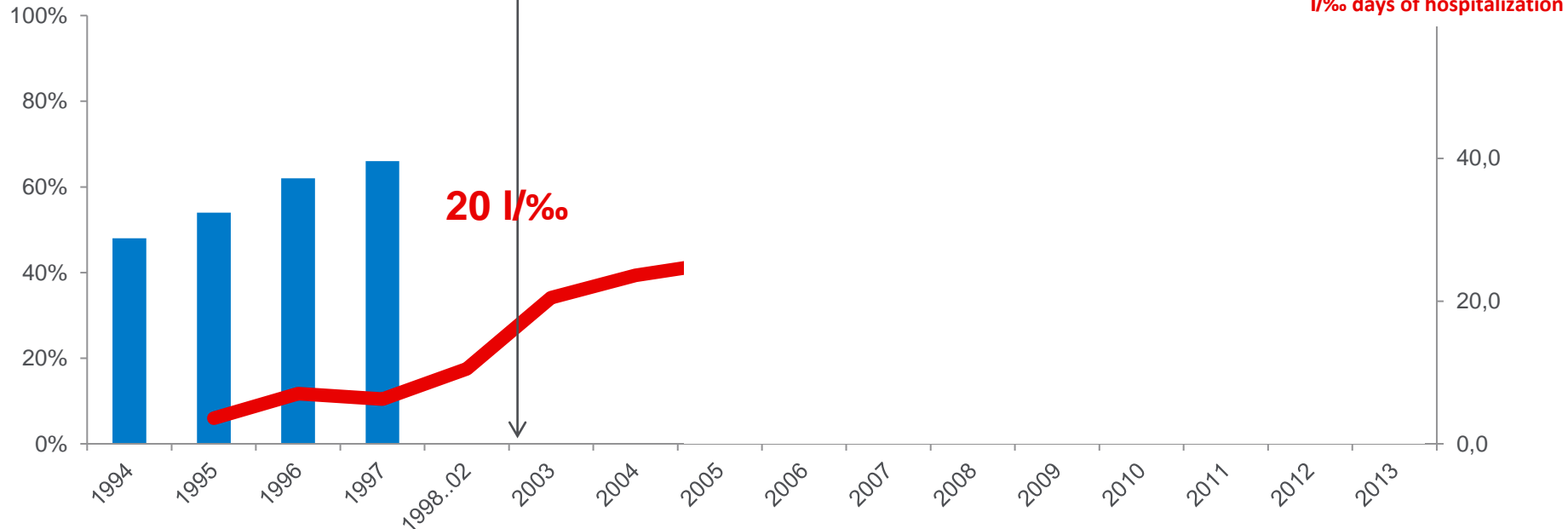
Two decades of hand hygiene promotion



HH
campaign



HH
compliance %





VigiGerme®

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de base

Mesures
Spécifiques

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Mission

Charte



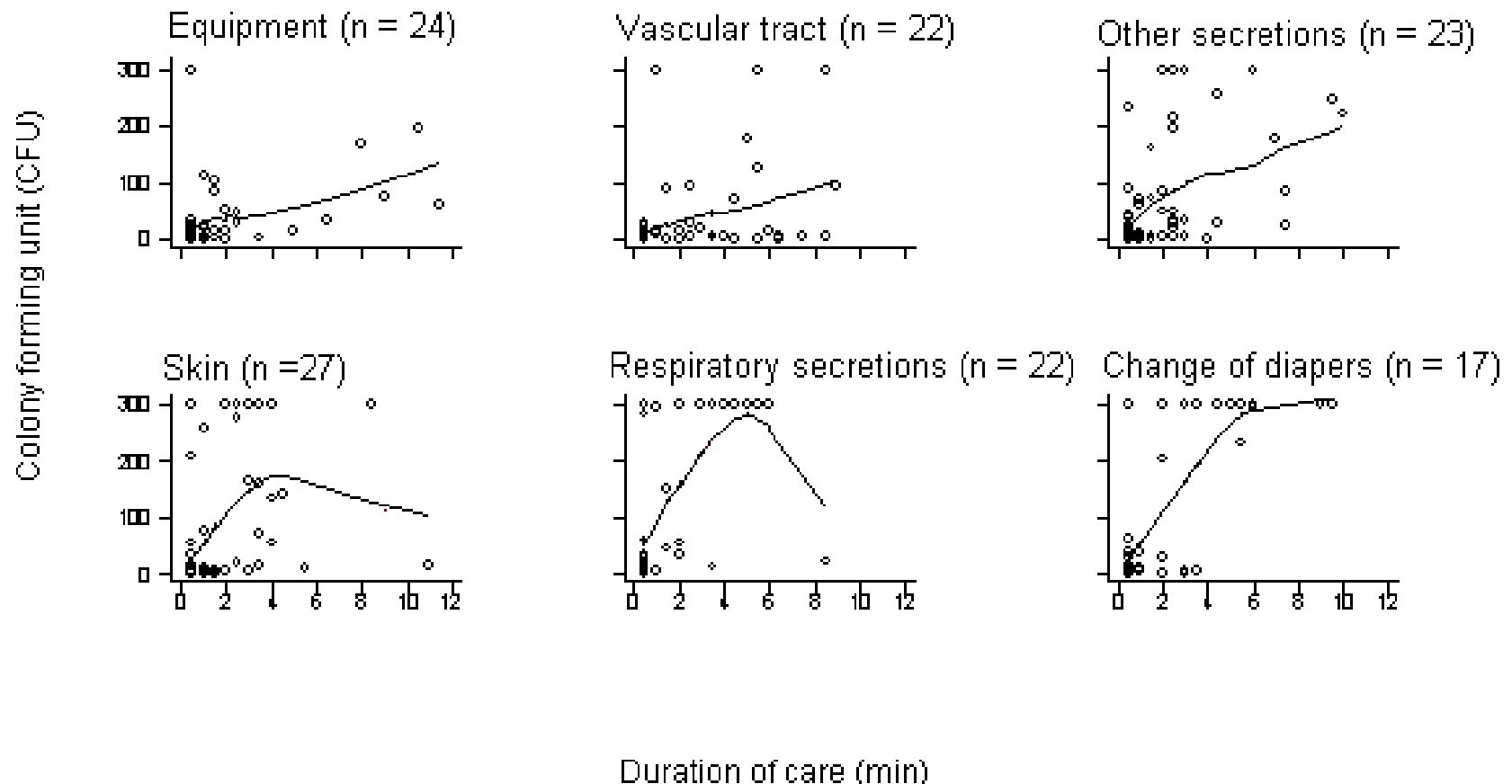
2001 to 2004, promotion of HH during neonatal care



Dynamics of bacterial contamination of HCW's hands during routine neonatal care

Pessoa-Silva et al. *Infect Control Hosp Epidemiol* 2004; 25:192

All sequences without the use of gloves (n=135)



Attitudes and Perceptions Toward Hand Hygiene Among Healthcare Workers Caring for Critically Ill Neonates

Pessoa-Silva et al. *Infect Control Hosp Epidemiol* 2005; 26:305

TABLE 3

RESULTS OF BIVARIATE ANALYSIS OF PERCEPTIONS AND BELIEFS ASSOCIATED WITH INTENTION TO COMPLY WITH HAND HYGIENE AMONG NEONATAL HEALTHCARE WORKERS AT THE UNIVERSITY OF GENEVA HOSPITALS

	No.	Mean Individual Score (\pm SD)	OR* (CI ₉₅)	P
Attitude toward hand hygiene	61	6.3 [†] (\pm 0.6)	3.32 (1.17–9.39)	.02 [‡]
Perception of ease to comply with hand hygiene	61	6.0 [†] (\pm 0.6)	4.01 (1.49–10.82)	.01 [‡]
Subjective norms toward hand hygiene	59	6.2 [†] (\pm 0.7)	3.37 (1.32–8.58)	.01 [‡]
Behavioral norms toward hand hygiene	53	5.7 [†] (\pm 0.9)	0.60 (0.33–1.10)	.10 [‡]
Adequate perception of risk of transmission	61	63.9 [§]	1.02 (0.34–3.03)	.86
Motivation	61	75.4	0.57 (0.16–2.05)	.39

TABLE 4

REPORTED BARRIERS TO APPROPRIATE HAND HYGIENE AMONG NEONATAL HEALTHCARE WORKERS AT THE UNIVERSITY OF GENEVA HOSPITALS

Reported Barrier	No. of Respondents	No.* ()
My hands are damaged	61	35 (57.4)
I prefer to use gloves	60	32 (53.3)
I don't remember that I have to perform hand hygiene	61	31 (50.8)
There's no time because the duration of neonatal care should be short	61	25 (41.0)
The sink is far away	60	25 (41.0)
We don't have enough handrub solution in stock	61	21 (34.4)
Hand hygiene interferes with the practice of care	60	11 (18.3)

*Number referring to the barrier.

Influential factors in case of HH compliance during neonatal care

Variable	Effet	Signifiacnce
NICU	+	< 0.001
Change of diapers	+	0.002
Night shift	+	0.005
Workload	-	< 0.001
Contact with patient's equipment	-	< 0.001

2001 to 2004, promotion of HH during neonatal care

Pessoa-Silva CL, et al. *Pediatrics*. 2007;120:e382.

Intervention study among all of the health care workers at the neonatal unit of the Children’s hospital, University of Geneva Hospitals, between March 2001 and February 2004

Intervention: multifaceted hand hygiene education program

Results:

Variables	Phase 1 Baseline	Phase 2 Intervention	Phase 3 Follow-up
Hand hygiene compliance	42%	45%	55%
Rates of health care–associated infection per 1000 patient-days	11.1	7.9	8.2
Rates of health care–associated infection per 1000 patient-days among VLBW neonates	15.5	10.7	8.8

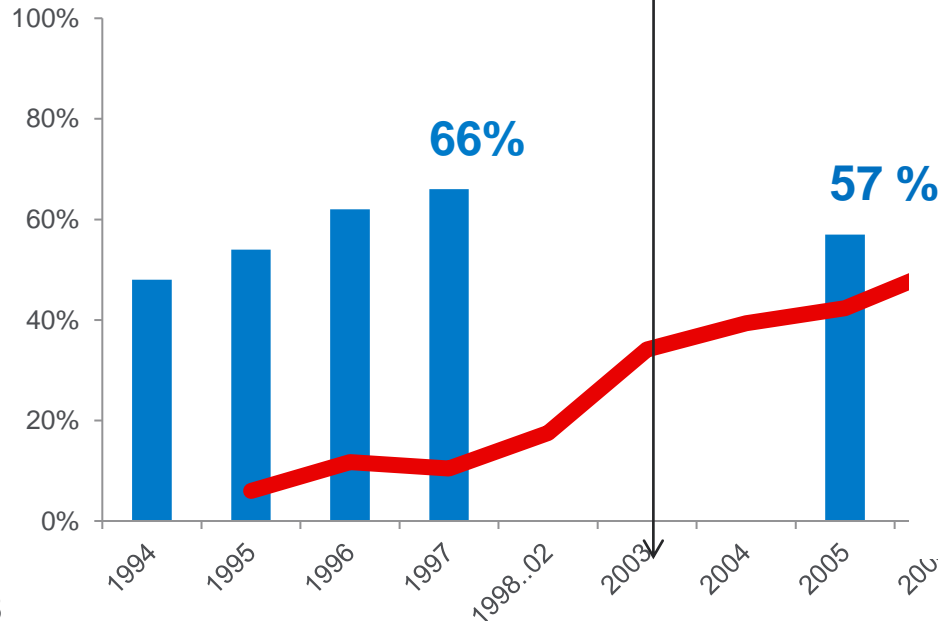
VLBW infants represented only 19.2% of the study population but acquired most of the later infections (69%). Overall, 28.5% of VLBW neonates had 1 health care–associated infection as compared with only 4.2% of heavier infants.

Two decades of hand hygiene promotion

HH
campaign



HH
compliance %



Hand rub solution
consumption
l/‰ days of hospitalization

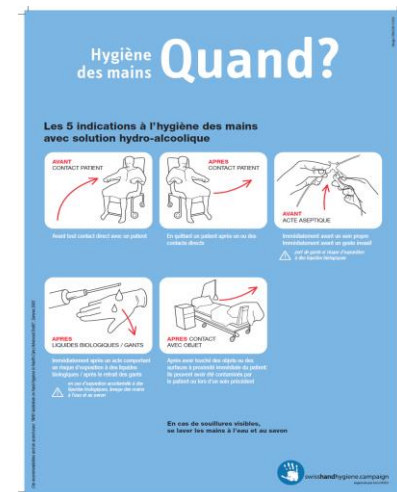


Creation of a new approach at the national level

2005-2006....Swiss hand hygiene campaign

▲ National campaign of hand hygiene promotion

▲ 108 hospitals were involved for the hand hygiene observation



swisshandhygiene.campaign.2005|2006
organisée par SwissNOSO

**And then at the
international level,
worldwide**



1st GLOBAL PATIENT SAFETY CHALLENGE



To reduce
health care-associated infections
Hand hygiene as the cornerstone

Launch of the
1st Global Patient Safety Challenge
WHO HQ, 13 October 2005



Objectives of the Challenge

At the global level

1. Awareness

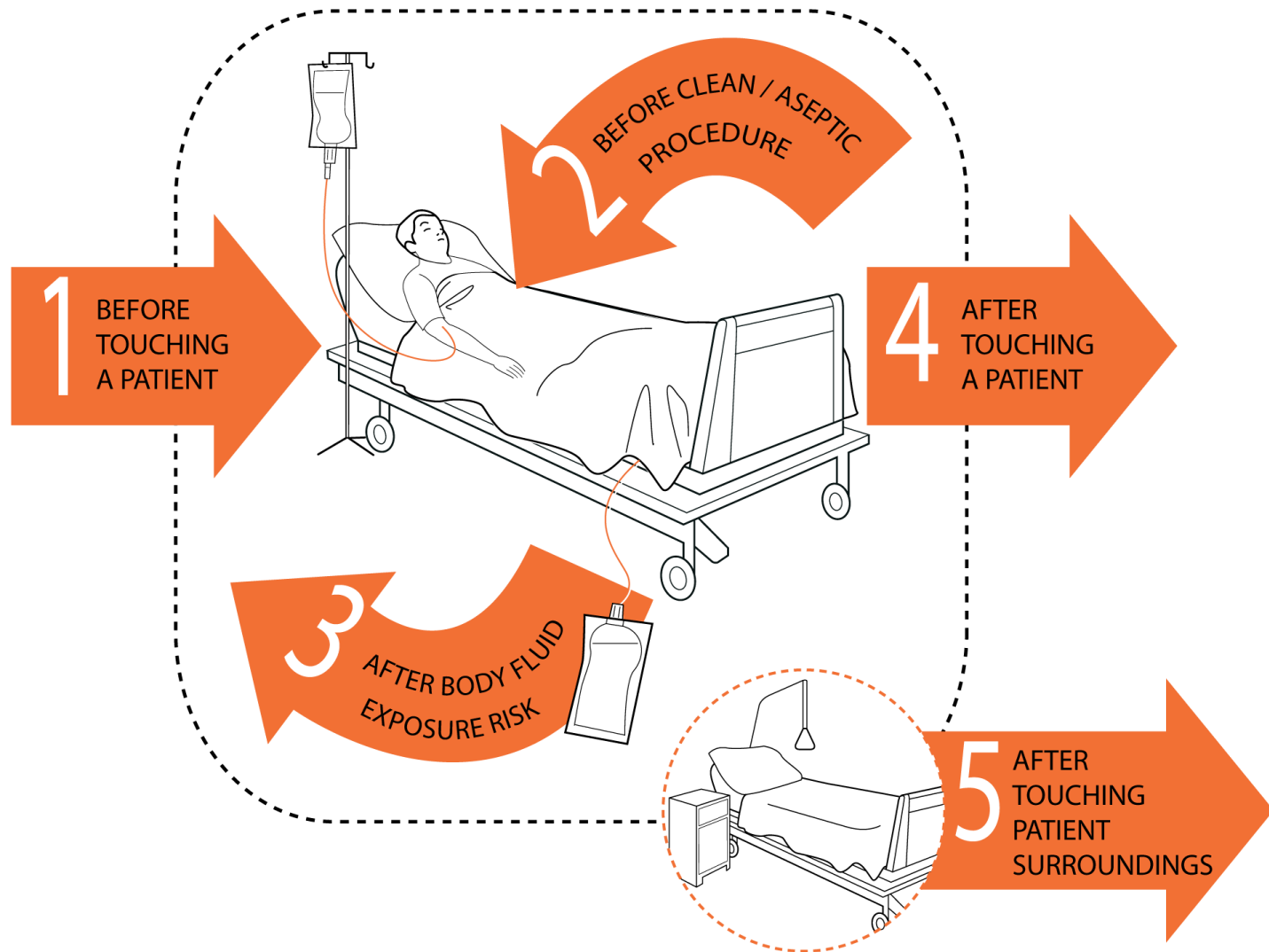
At the political level

2. Mobilizing nations

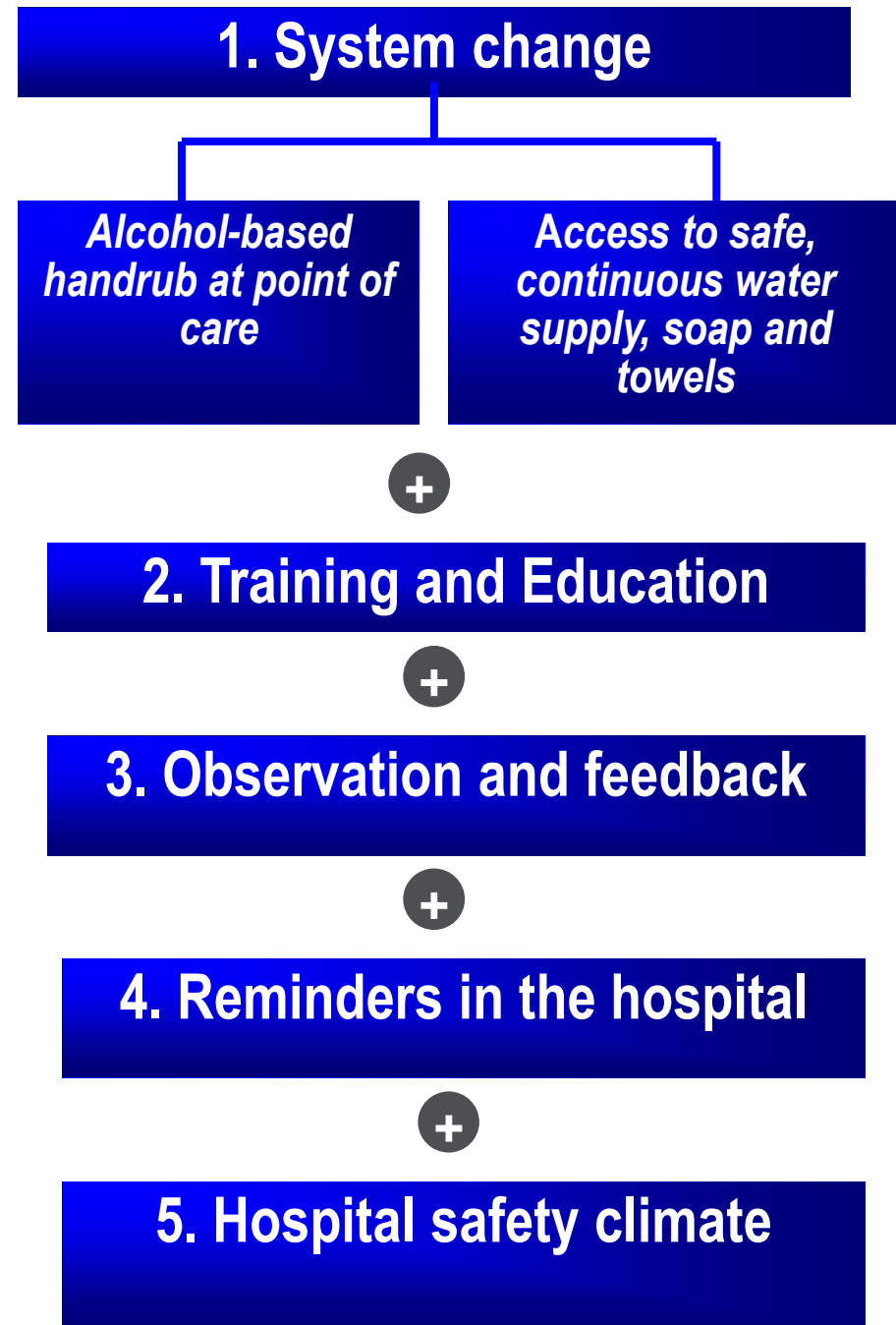
For health care
settings

3. Technical
guidelines and tools

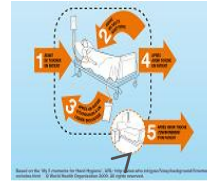
“My 5 Moments for Hand Hygiene”



▲ The **5** core components of the WHO Multimodal Hand Hygiene Improvement Strategy



Two decades of hand hygiene promotion

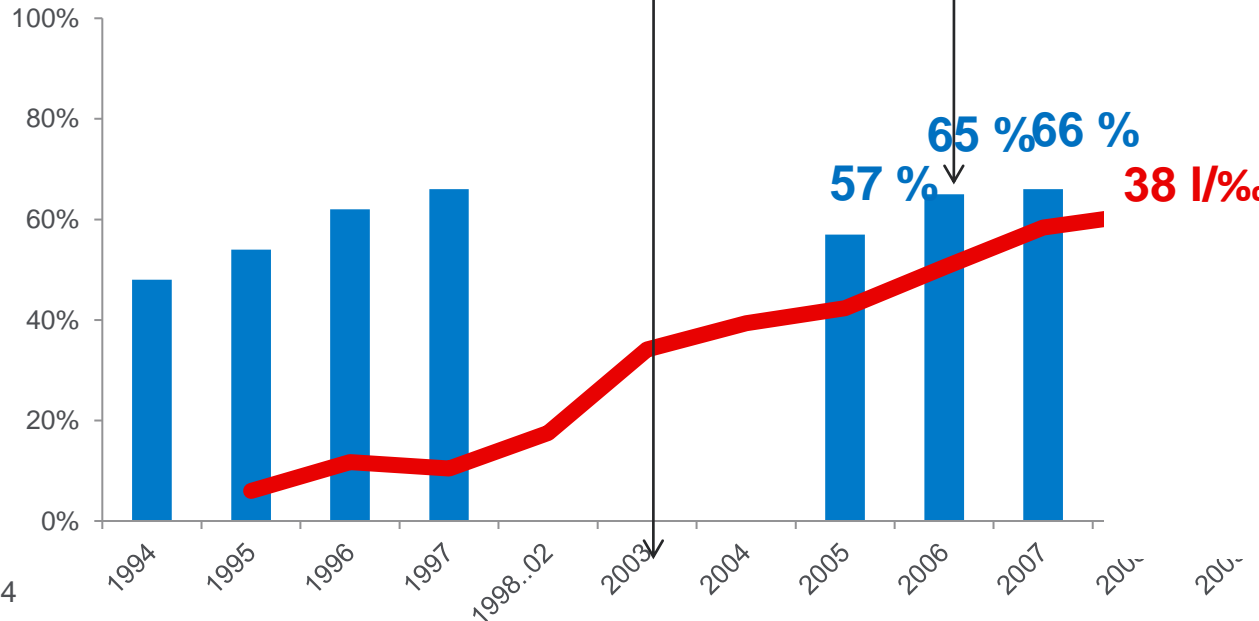


**Campaign
of HH**



**National
campaign
Swiss Noso**

**HH
compliance %**



**Hand rub solution
consumption
l/‰ days of hospitalization**



And celebration...

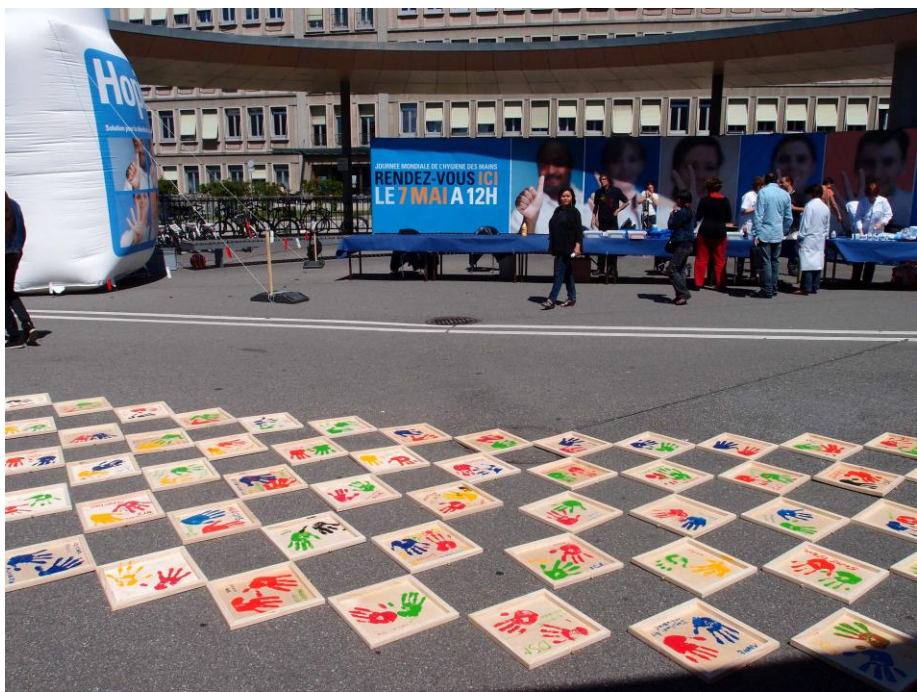
The first HH day in 2009



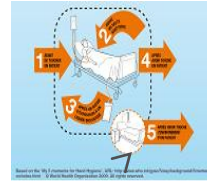
**KEEP
CALM
AND**

JOIN US FOR

WORLD HAND HYGIENE DAY



2009 :H1N1



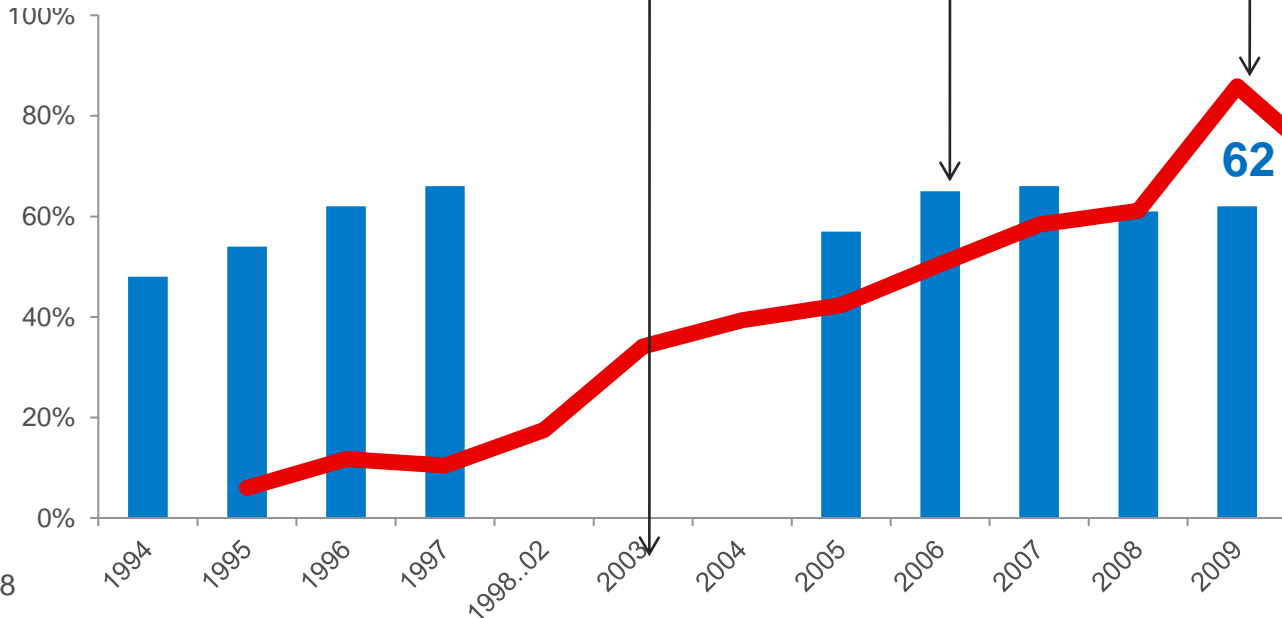
The five moments

HH Campaign

National HH campaign Swiss Noso

H1N1

HH compliance %



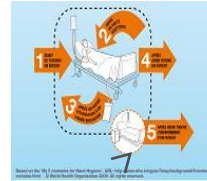
Hand rub solution consumption l/% days of hospitalization

62 % > 50l/%



**Improving our results by
including new
stakeholders**

Two decades of hand hygiene promotion



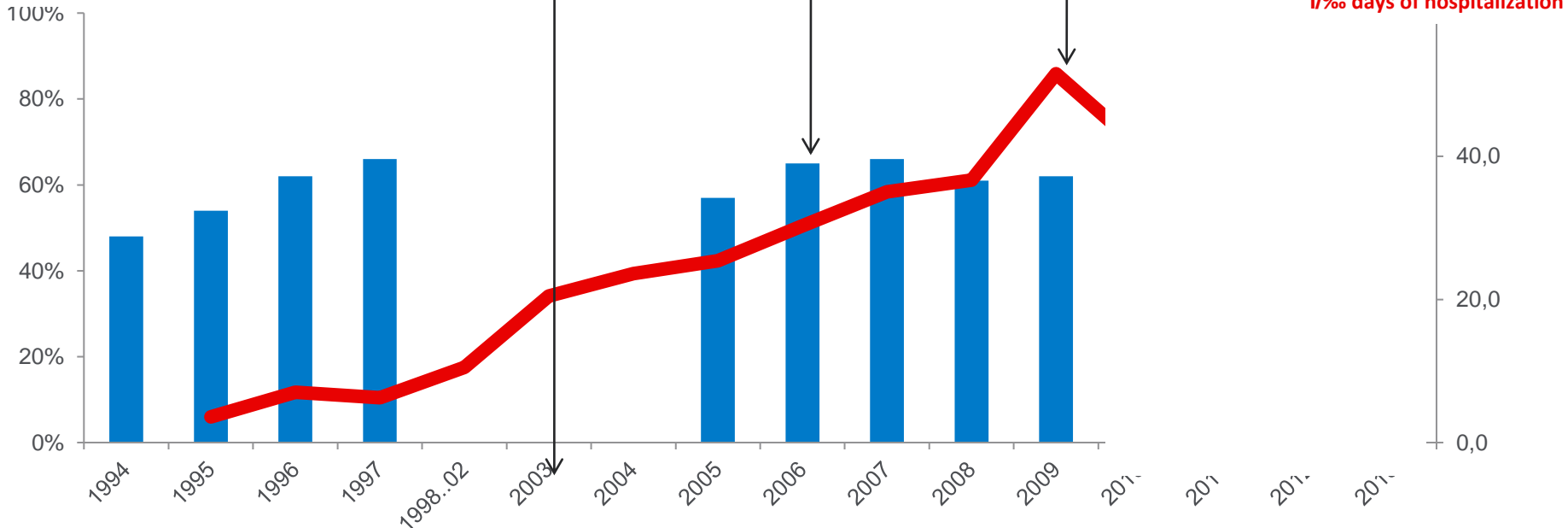
The five moments

HH Campaign

National HH campaign Swiss Noso

H1N1 « Multimodal HH promotion »

HH compliance %



**Enhanced performance feedback and patient participation
to improve hand hygiene compliance of health-care workers
in the setting of established multimodal promotion:
a single-centre, cluster randomised controlled trial**



Andrew James Stewardson, Hugo Sax*, Angèle Gayet-Ageron, Sylvie Touveneau, Yves Longtin, Walter Zingg, Didier Pittet*

Aim of the study: to assess the effect of 2 new interventions on HH compliance.

3 arms:

1-Control arm

2-Enhanced performance feedback

3-Enhanced performance feedback and patient participation

****Standard multimodal hand hygiene promotion was done hospital-wide throughout the study.**

Enhanced performance feedback and Patient Participation

A mutual HH reminder between
patients and HCWs



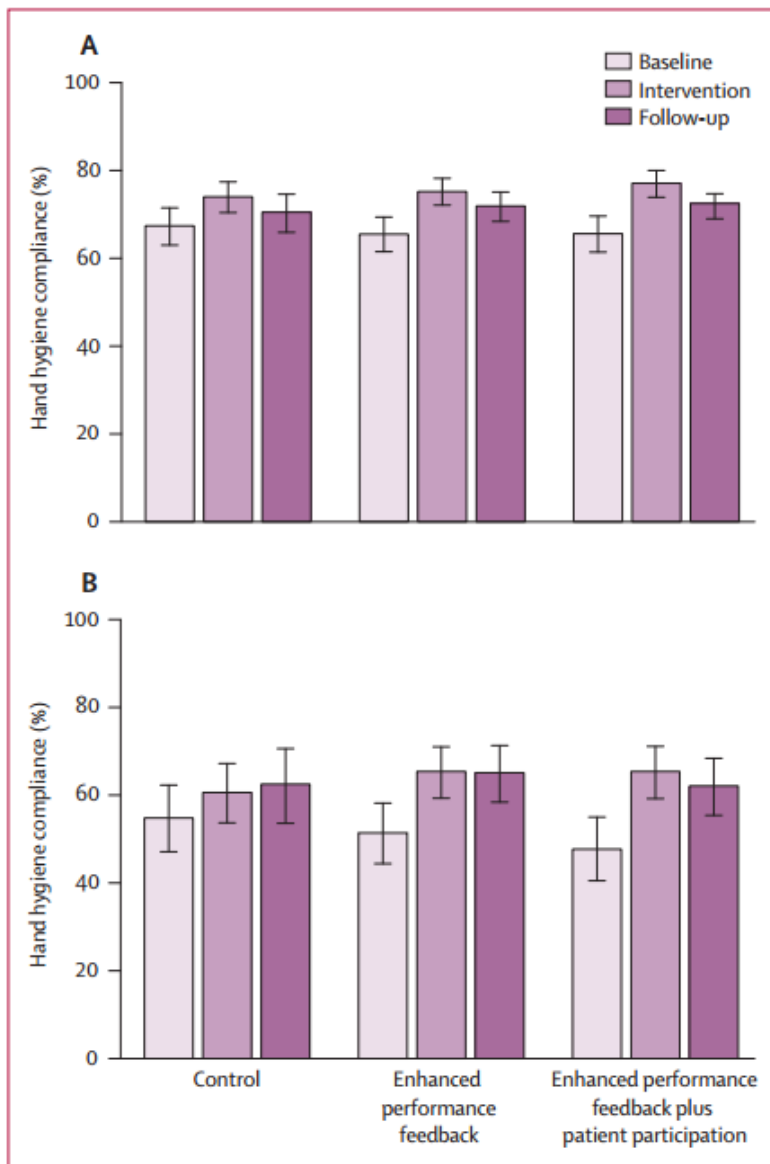
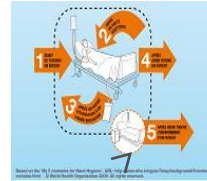


Figure 2: Overall hand hygiene compliance (A) and hand hygiene compliance before touching a patient (WHO Moment 1; B)
Error bars indicate 95% CIs.

- HH compliance improved in all study groups
- *Neither intervention had a clinically significant effect compared with control*

Two decades of hand hygiene promotion



The five moments

HH Campaign



National HH
campaign
Swiss Noso

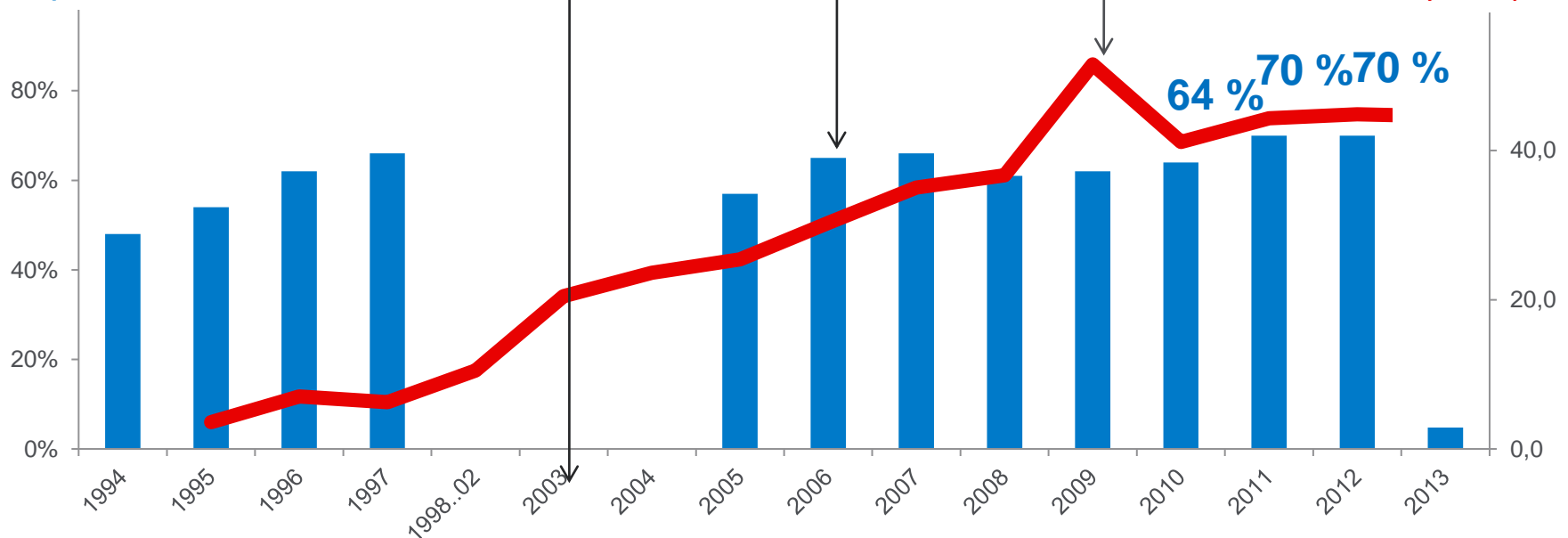
H1N1

« multimodal HH
promotion »



HH
compliance %

Hand rub solution
consumption
l/1000 days of hospitalization



And today in Geneva...

E-learning

Saba - Internet Explorer fourni par Hôpitaux universitaires de Genève

HUG
Hôpitaux Universitaires de Genève

[Site du centre de formation](#) | [Besoin d'aide](#) | [Imprimer](#)

Sommaire

- Vigigerme - e-learning ☐
- Accueil ☒
- Introduction à Vigigerme ☒
- [L'Hygiène des mains \(ieu\)](#) ☒
- Autres mesures de base ☒
- Mesures spécifiques ☒
- Cas pratiques ☐
- Procédures invasives ☒
- Conclusion ☒

Introduction

VIGIGERME Hygiène des mains

Dans ce module d'immersion, nous vous invitons à participer activement à l'hygiène des mains en milieu de soins. Vous allez suivre trois visites médicales. Dans ces différents scénarios, vous prendrez la place du Docteur Sacks, médecin chef, aux mains douteuses et aux idées confuses sur les bonnes pratiques en matière d'hygiène des mains et d'utilisation de gants de protection.

Vous l'aurez compris, le médecin interne et les infirmières n'ont pas besoin de se désinfecter les mains car ils ne touchent ni le patient, ni son environnement immédiat.

Objectifs

- 1 Savoir se frictionner les mains avec la solution hydro-alcoolique au bon moment lors des activités quotidiennes du médecin.
- 2 Savoir mettre et enlever des gants non-stériles au bon moment durant l'activité quotidienne du médecin.

Visite n°1 Visite n°2 Visite n°3

Cliquez sur la visite que vous souhaitez réaliser

Conception **e-teach**

HUG Centre de Formation

66

FR 10:00 28.05.2014

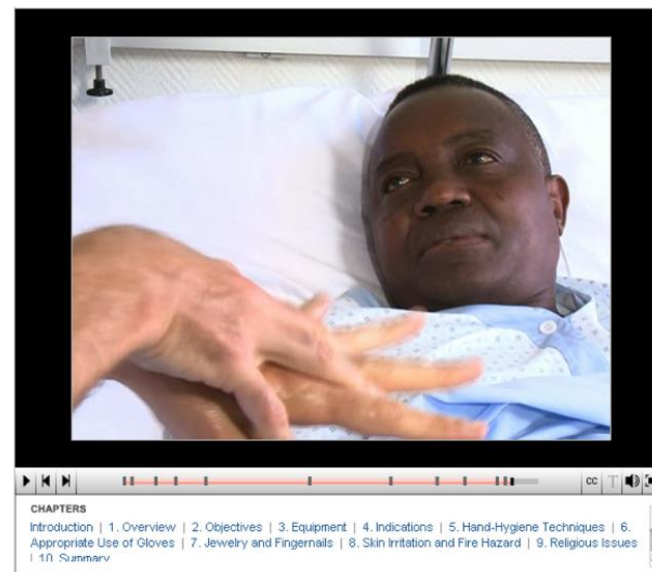
Hand Hygiene

Yves Longtin, M.D., Hugo Sax, M.D., Benedetta Allegranzi, M.D., Franck Schneider, and Didier Pittet, M.D.
N Engl J Med 2011; 364:e24 | March 31, 2011

VIDEOS IN CLINICAL MEDICINE

Hand Hygiene

Yves Longtin, M.D., Hugo Sax, M.D., Benedetta Allegranzi, M.D.,
Franck Schneider, and Didier Pittet, M.D.



OVERVIEW

Health-care associated infections are a threat to patient safety and the most common adverse events resulting from a stay in the hospital.¹ Approximately 5 to 10% of hospitalized patients in the developed world acquire such infections, and the burden of disease is even higher in developing countries. Proper use of hand hygiene is a critical to the prevention of these infections, but compliance among health care workers is most often below 40%.

Hand hygiene serves many purposes in the health care setting.¹ It prevents both endogenous and exogenous infections in patients, contamination of the hospital environment with potential pathogens, and cross-transmission of microorganisms between patients. When used in conjunction with the appropriate protective equipment, it also protects health care workers from the hazards of occupational infections.

EQUIPMENT

Essential equipment for the performance of adequate hand hygiene includes an al-

From the Infection Control Program, University of Geneva Hospitals and Faculty of Medicine (Y.L., H.S., D.P.); World Health Organization (WHO) Patient Safety, WHO Headquarters (B.A., D.P.); and the Communication Service (F.S.) and WHO Collaborating Center for Patient Safety (D.P.) — all in Geneva. Address reprint requests to Dr. Pittet at the Infection Control Program, University of Geneva Hospitals and Faculty of Medicine, 4 Rue Gabrielle-Perret Gentil, 1211 Geneva 14, Switzerland, or at didier.pittet@hcuge.ch.

*Drs. Longtin and Sax contributed equally to this article.

N Engl J Med 2011;364:e24.

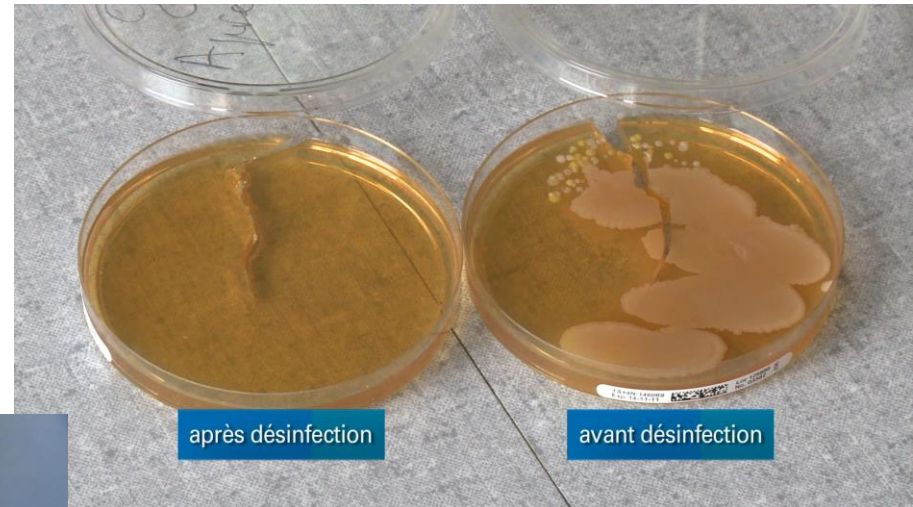
Copyright © 2011 Massachusetts Medical Society.

HH and COVID-19

EDUCATION



EDUCATION

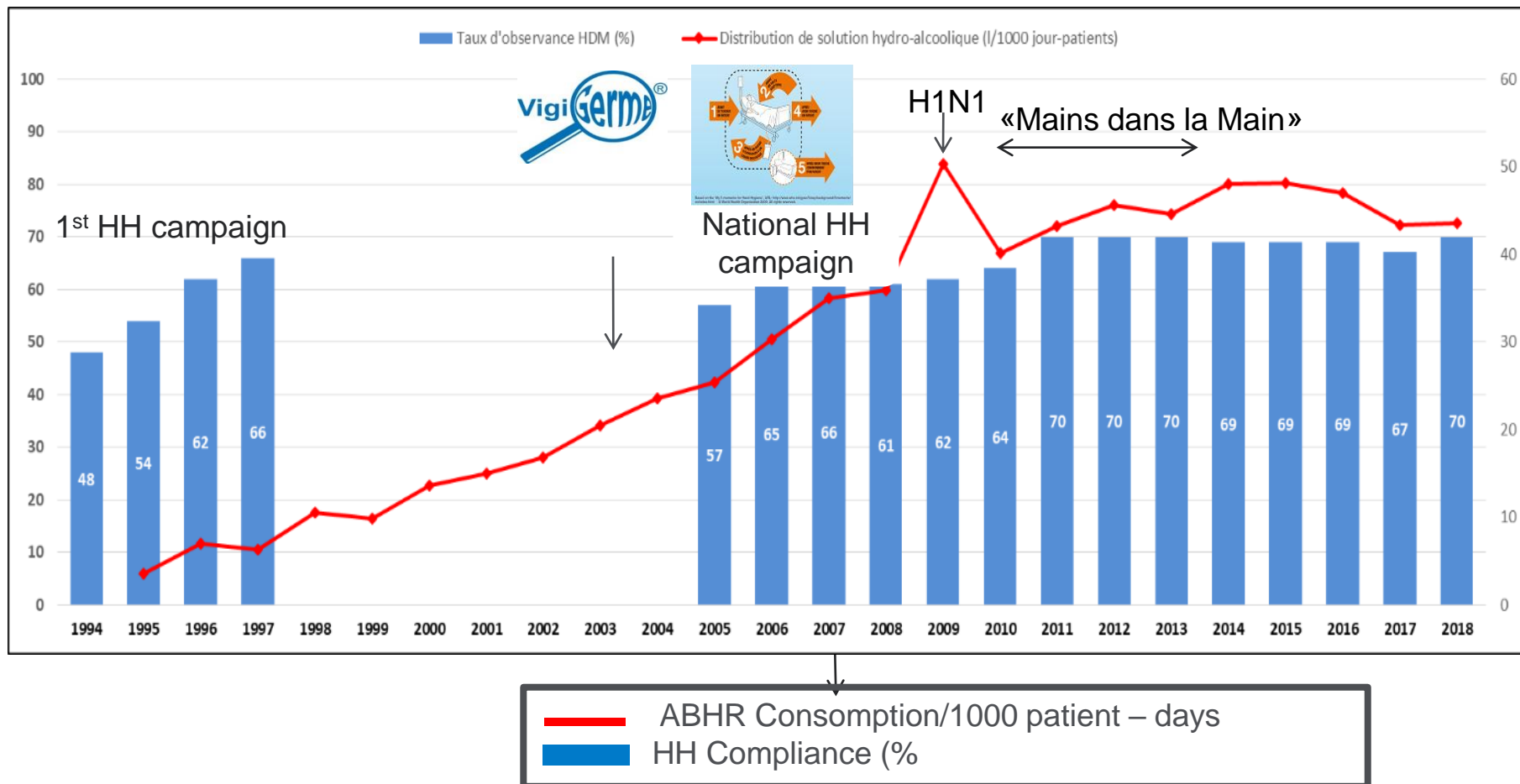


VigiSmig



Education: summary with activities performed – courses, continuous education

Two decades of hand hygiene promotion



Key parameters for success

- ▲ System change
- ▲ Education of healthcare workers
- ▲ Monitoring and feedback of performance
- ▲ Administrative support
- ▲ Leadership and culture change
- ▲ Involvement of HCWs

For the reduction in cross-transmission and infection rates



**Thank
you for
your
attention !**