

# World Health Organization Hand Hygiene Guidelines

Professor Didier Pittet, University of Geneva

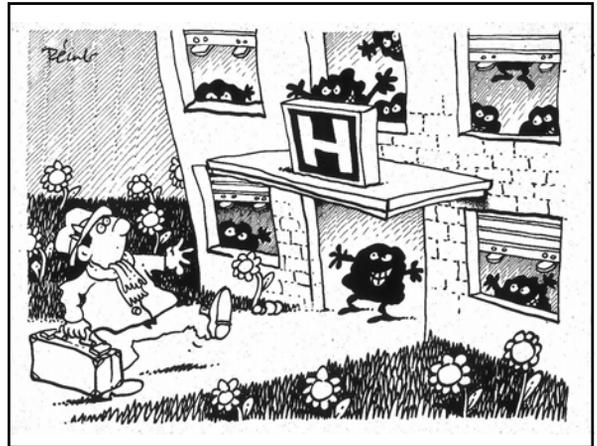
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**WHO Global Challenge 2005-06**  
**Preventing Health Care-Associated Infection**

**Professor Didier Pittet**  
Director, Infection Control Programme  
Geneva's University Hospitals  
and  
Lead, Global Patient Safety Challenge,  
WHO World Alliance for Patient Safety

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Average infection rate:  
8-12 % of patients in acute care hospitals in developed countries  
Risk is higher in critical care (15-40 %)  
Risk is 2 to 20 fold higher in developing countries



Burden of disease outside hospitals is unknown  
No hospital, no country, no health-care system in the world can claim to have solved the problem

Health care-associated infections

Every year in the US, preventable diseases, including nosocomial infections, are responsible for 44'000-98'000 deaths

In UK, nosocomial infections may be responsible for > 5'000 deaths/year

6

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## Health care-associated infections

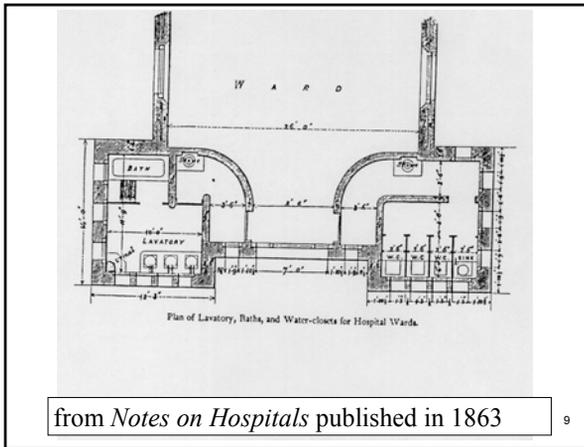
Every year in the US,  
preventable diseases

US\$17 to US\$29 billion / year  
responsible for 44'000-98'000  
deaths

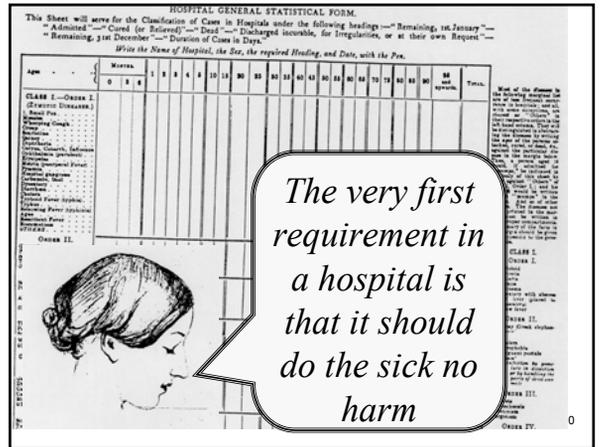
In UK, nosocomial infections  
at least £ 1 billion / year  
responsible for > 5'000 deaths/year



Florence Nightingale, 1820 - 1907



from *Notes on Hospitals* published in 1863



## Health care-associated infections

- affect hundreds of millions of patients worldwide every year
- more serious illness
- prolong hospital stay

## Health care-associated infections

- long-term disability
- excess deaths
- massive additional financial burden
- high costs on patients and their families



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## 1<sup>st</sup> CHALLENGE of the Alliance

Global Patient Safety Challenge  
for 2005-2006: Clean Care is Safer Care

*Why health care-associated infection  
as a first priority for patient safety ?*

13



14

Health care-associated infection  
is a major patient safety problem

- Affects a large number of individuals worldwide
- Multifaceted causation related to
  - systems and processes of care provision
  - economical constraints on systems and countries
  - human behaviour

15

Health care-associated infection  
is a major patient safety problem

- Data to assess the size and nature of the problem and to create the basis for monitoring the effectiveness of actions
- Patient safety gap  
Some healthcare institutions and systems control the risk to patients much better than others

16

Health care-associated infection:  
solutions to the problem

- Prevention strategies reduce infections in developed, transitional and developing countries
- Most solutions are simple and not resource-demanding
- Several health-care settings have succeeded in reducing the risk to patients, but others have not

17

Health care-associated infection:  
solutions to the problem

- Gaps in patient safety arise because existing tools and interventions are not being implemented widely
- Gaps not only between countries, but also within the same country  
... *both in developed and developing countries*

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## Infection control in developing countries



## Infection control in developing countries: main issues

- Unfavourable social background
- Badly structured and equipped facilities
- Technological gap

20

## Lack of adequate conditions in hospitals

- Inadequate hygiene conditions
- Inadequately / insufficiently equipped
- Lack of microbiological information
- Understaffing
- Overcrowding
- Low staff preparedness

21

## Consequences

- Unsafe invasive procedures
- Nosocomial outbreaks of introduced community pathogens
- Spread of multiresistant organisms
- Higher health care-associated infection rates (2 to 20-fold)

22



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## WHO strategy 1: Clean products

### *Blood safety*



26

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- Promotion of optimal hand hygiene associated with procedures for collection, processing and use of blood products
- Promotion of donor skin antiseptics to prevent blood contamination
- In-service education and training on safe transfusion practices at the bedside



27

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## WHO strategy 2: Clean equipment

### *Injection Safety*



<http://www.who.int/patientsafety>

28

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## ■ WHO Injection Safety

### ■ Safe Injection Global Network (SIGN)

- Promotion of optimal hand hygiene practices at time of injections and immunization
- Promotion of donor skin antiseptics to prevent blood contamination
- In-service education and training on safe transfusion practices at the bedside
- Strengthening of high-level commitment within countries to use auto-disable syringes
- Actions to ensure the safe disposal of sharps as part of integrated waste management in health care

29

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## WHO strategy 3: Clean practices

### *Clinical Procedures Safety*



<http://www.who.int/patientsafety>

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## Emergency and Essential Surgical Care

- Specific education programmes promoting safety in surgical procedures, tailored to the needs of health-care facilities
- Surgical hand preparation using either antimicrobial soap and water or alcohol-based hand rub
- Access to safe emergency and essential surgical care including the availability and use of best practice protocols on clinical procedures and equipment

31

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## WHO strategy 4: Clean Environment

*Safe water, waste disposal and sanitation in health-care*



<http://www.who.int/patientsafety>

32

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## Water, Sanitation and Health unit

### Protection of the Human Environment

- Ensuring access and water quality to support hygiene, and hand hygiene in particular, at the level of health care facilities
- Ensuring sound management of waste, particularly of highly infectious health care waste such as syringes and sharps

33

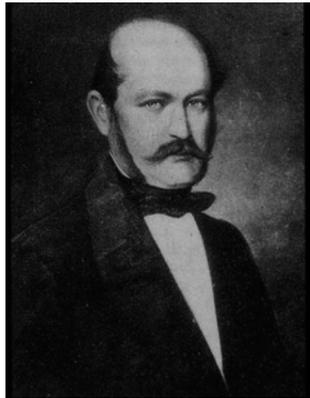
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## 1<sup>st</sup> Challenge:

### *Clean Care is Safer Care*

- Improve hand hygiene
- Blood safety
- Injection & immunization safety
- Safe surgical procedures
- Water, sanitation & waste management

34



Ignaz Philipp Semmelweis

Vienna

*Fighting puerperal fever*

36

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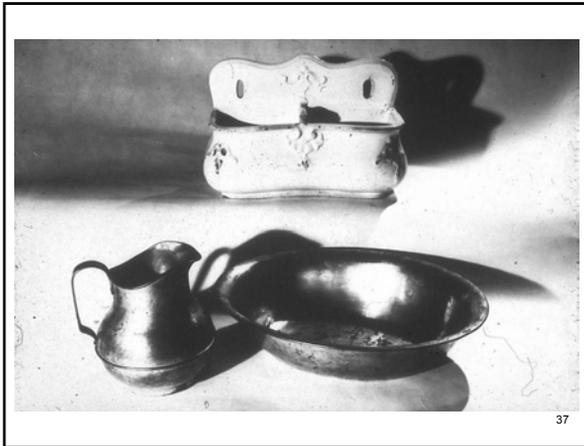
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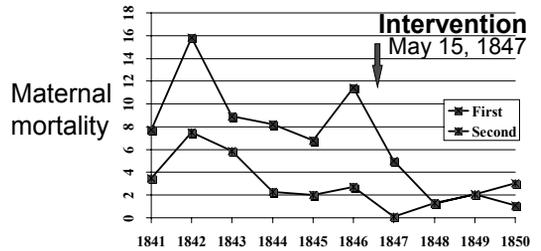
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37

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



Semmelweis IP, 1861

38

Health-care workers' compliance with hand hygiene practices is less than 40% on average



## Reasons for not cleansing hands *Time and system constraints*

- High demand for hand hygiene is associated with low compliance
- Full compliance with conventional guidelines is unrealistic

Voss and Widmer - *ICHE* 1997; 18:205  
Pittet et al, *Annals Intern Med* 1999; 130:126

40

Time constraint = major obstacle for hand hygiene



handwashing  
hand antiseptics

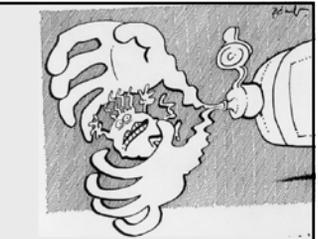
1 to 1.5 min

alcohol-based  
hand rub

15 to 20 sec

41

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



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

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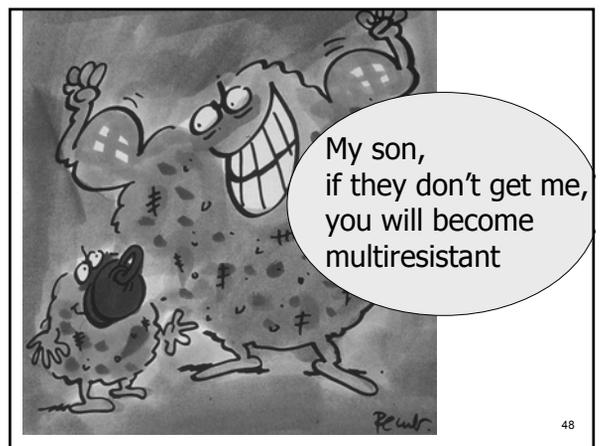
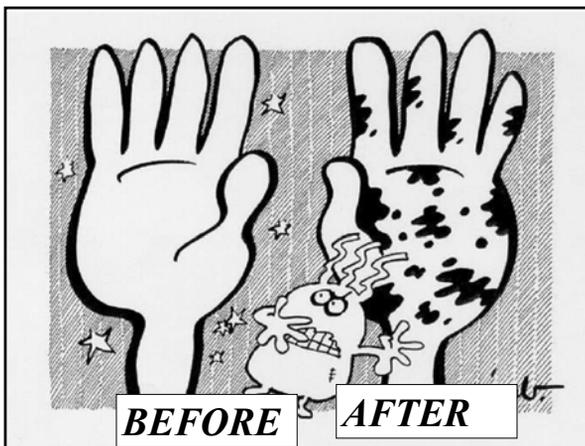
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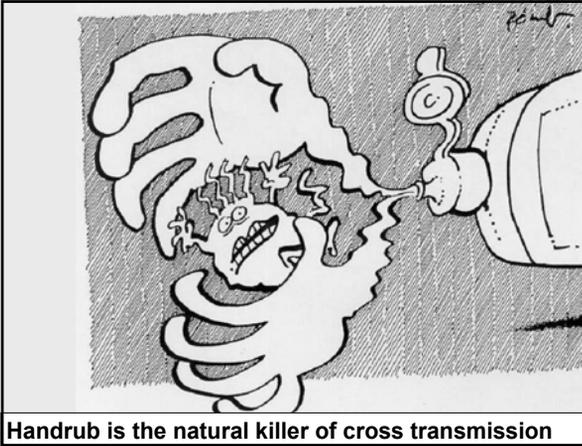
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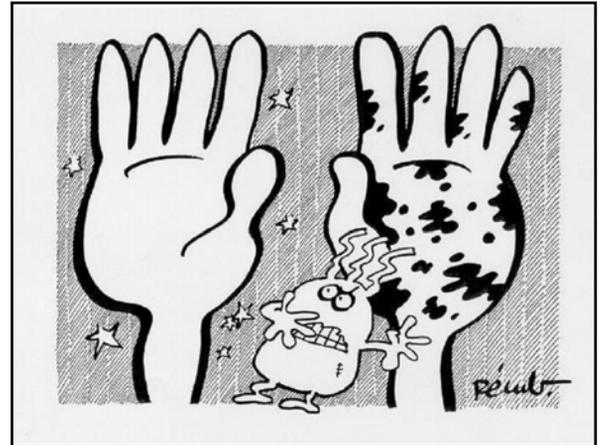
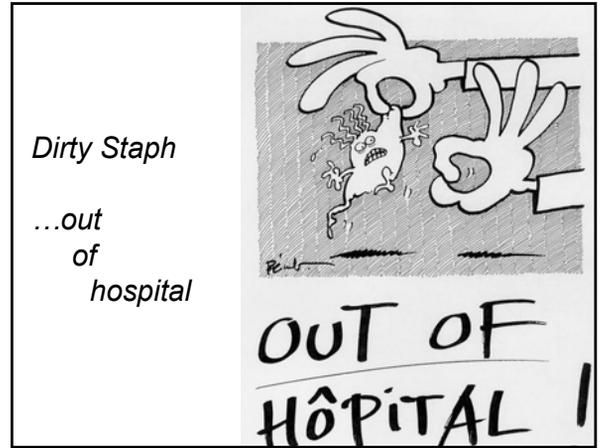
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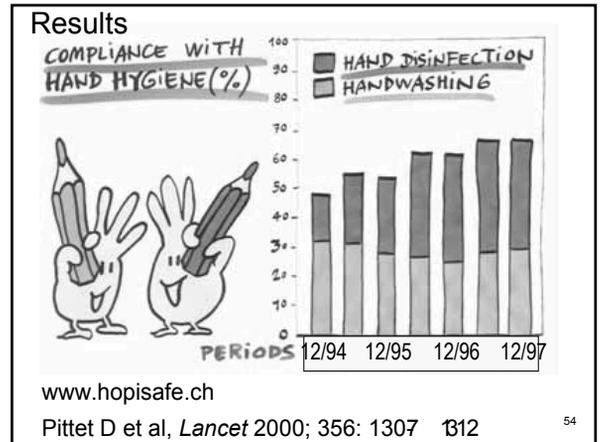
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Handrub is the natural killer of cross transmission



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



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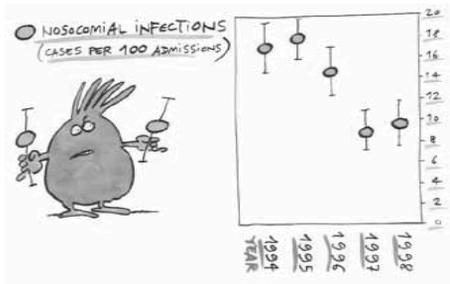
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## Hospital-wide nosocomial infections; trends 1994-1998



[www.hopisafe.ch](http://www.hopisafe.ch)

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

55

## Key parameters for success

- System change
- Administrative support
- Education of health-care workers
- Monitoring and feedback of performance
- Change in behaviour
- Associated with reduction in cross-transmission and infection rates

56



Pittet D et al, *Inf Control Hosp Epi* 2004; 25:264

57



Global Patient Safety Challenge for 2005-2006:

To reduce health care associated infections worldwide



Clean Care is Safer Care

58



## Hand Hygiene

is the primary measure to prevent health care-associated infection and to reduce the spread of multi-resistant microorganisms

59



## The Guidelines



<http://www.who.int/patientsafety>

60

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- Handwashing with soap and water when hands are visibly dirty
- Adoption of alcohol-based hand rub is the gold standard in all other clinical situations, whenever possible



67

Solution alcoolique pour la désinfection des mains  
Alcohol-based hand rub

1st Global Challenge 2005 - 2006

**Clean Care is Safer Care**



HUG  
Hauts Études Universitaires de Genève

As part of the World Alliance, WHO has launched the Global Challenge in collaboration with HUG

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World Health Organization

68

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## Hand hygiene promotion

Use **multi-modal strategies**:

- education and motivation of caregivers
- system change: hand hygiene agents **available at the point of care**
- leadership and clinical governance
- administrative support
- patient participation
- monitoring by performance indicators

69

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## The Implementation of the WHO Guidelines is a *global challenge*

To develop strategies at country level including hand hygiene campaigns and other actions, to reduce health care-associated infections worldwide, **regardless of the health-care setting and level of development**

<http://www.who.int/patientsafety>

## Regions in which District testing may occur



**Such a CHALLENGE is quite a challenge**

challenge:

Clean Care is Safer Care

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Access to water

Water quality



73



Zinder, Niger, Africa, - January 2005

Unusual ward with only 1 children per bed

... overcrowding

74



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## Current Task Forces

WHO Hand Hygiene in Health Care

- Patient involvement
- Education
- Religious and cultural aspects of hand hygiene
- Global implementation of the WHO alcohol-based formulation

75



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## Current Task Forces

WHO Hand Hygiene in Health Care

- Glove use and re-use
- Water quality for handwashing
- Communication and campaigning
- National Guidelines on Hand Hygiene
- Frequently asked questions developed

76



Kiremba Hospital, Ngozi, Burundi, 2004



Zinder, Niger, Africa, - January 2005

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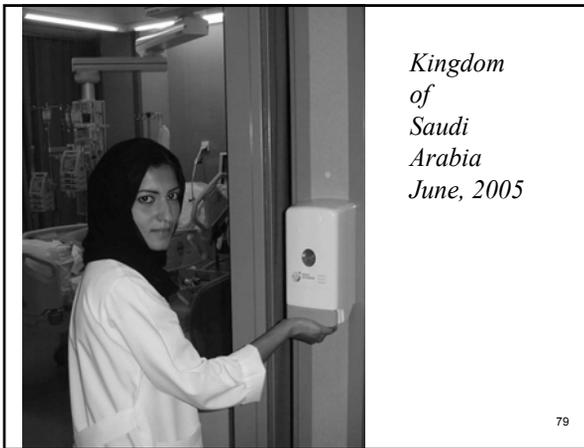
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Impact of hand hygiene education in the community in a developing country

Luby et al. *Lancet* 2005; 366: 225-233

- Cluster-randomized study (villages)
- Rural community in Pakistan
- Intervention: education with focus on hand hygiene and distribution of soap

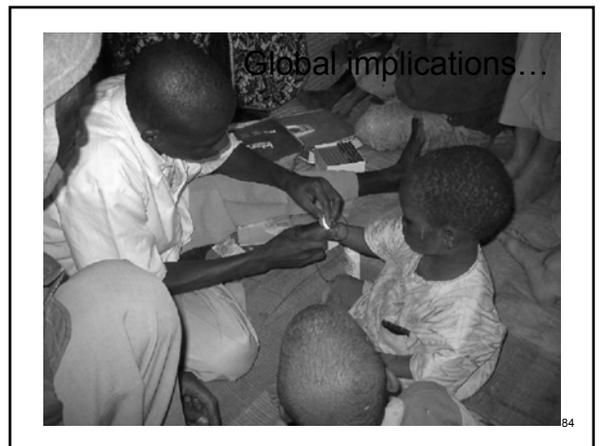
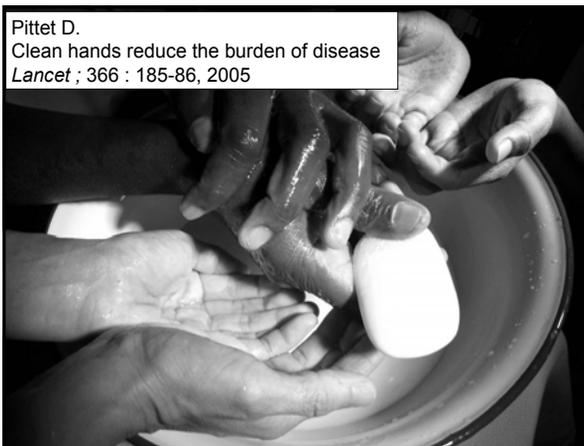
81

Impact of hand hygiene education in the community in a developing country

Luby et al. *Lancet* 2005; 366: 225-233

- Results
  - ↓ diarrhoea
  - ↓ skin infections
  - ↓ respiratory infections
  - ↓ mortality among children

82



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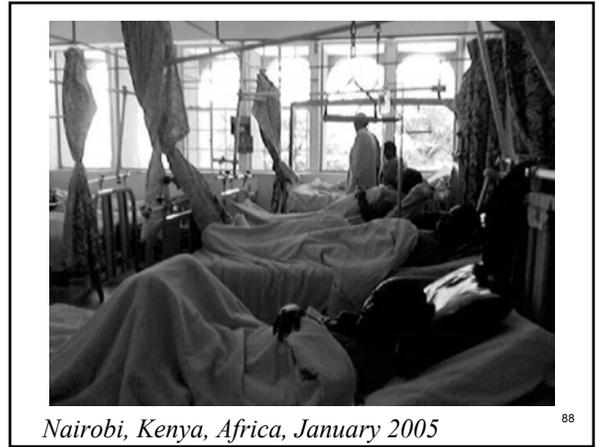
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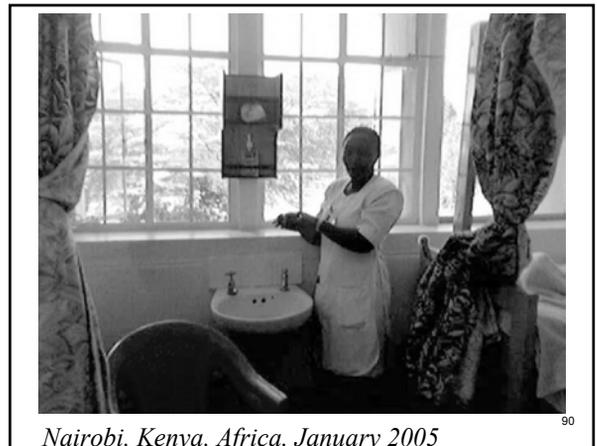
*Nairobi, Kenya, Africa, January 2005*



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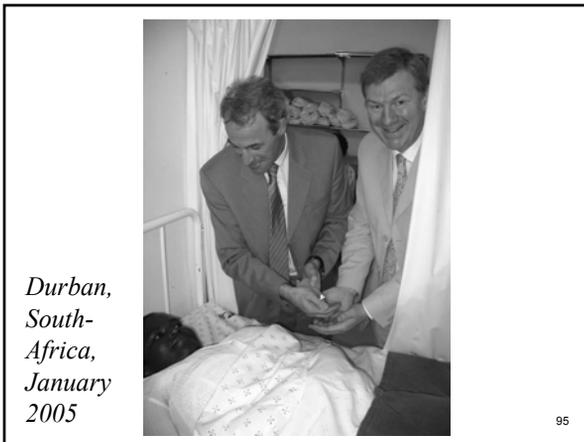
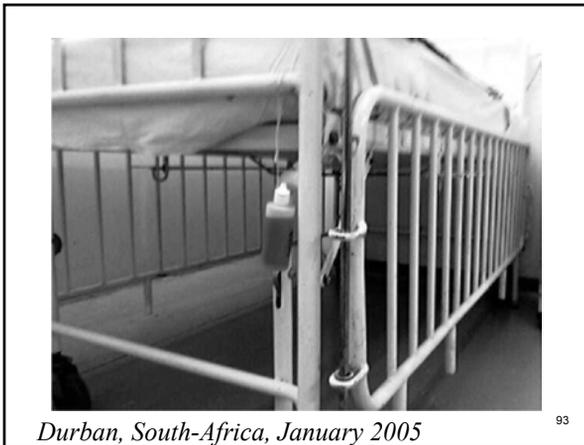
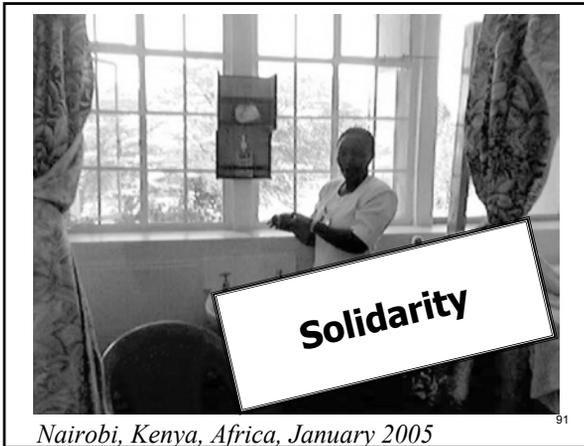


*Nairobi, Kenya, Africa, January 2005*

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*"It is our duty to patients, their families,  
and health-care workers..."*

*Let us move forward together!*

*Each of us can make a small difference;  
significant improvement requires an  
effort from all of us."*

Sir Liam Donaldson – Professor Didier Pittet

97



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**Thank you all ...**