

Infection Control - an Overview

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Brief History of Infection Control

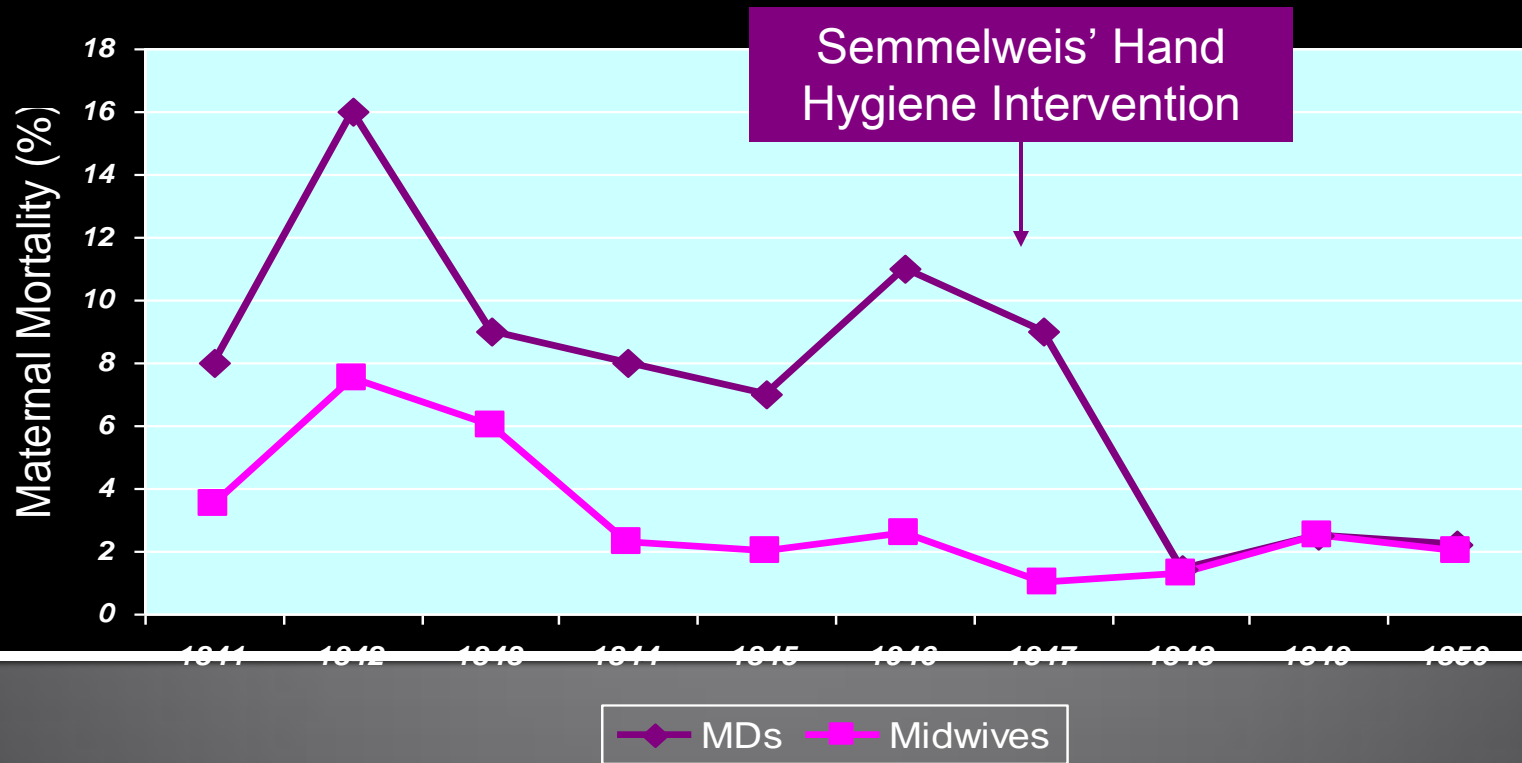
- **1847: Vienna General Hospital, Austria**
- Doctors go from autopsy suite direct to the obstetrics ward
- His theory: puerperal fever, caused by “cadaverous particles” transmitted from the autopsy suite to the obstetrics ward via the hands of students and physicians.
- Infections due to *Streptococcus*



Ignaz Semmelweis,
1815-1865

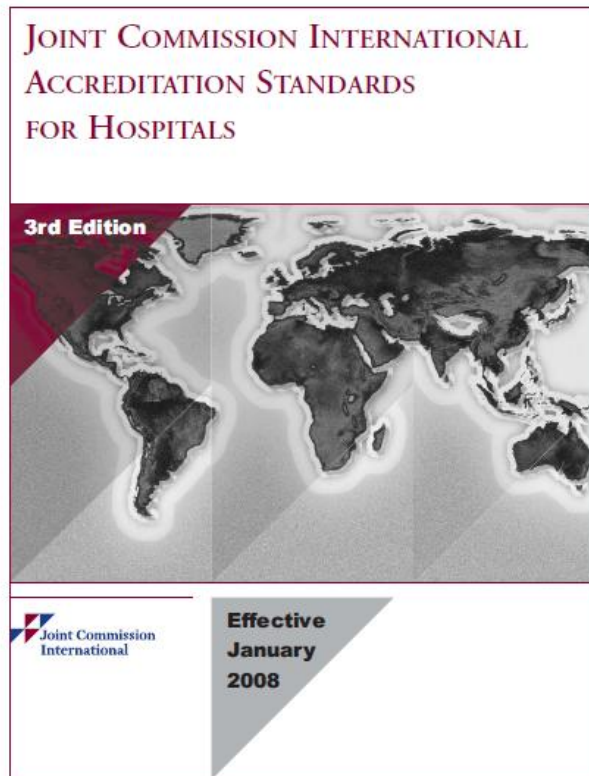
Hand Hygiene: Not a New Concept

Maternal Mortality due to Postpartum Infection General Hospital, Vienna, Austria, 1841-1850



~ Hand antisepsis reduces the frequency of patient infections ~

Infection Control as a Quality Standard



- Created in 1998 as the international arm of The Joint Commission (United States)
- Mission: To improve the safety and quality of patient care around the world.
- Six Goals
 1. Identify Patients Correctly
 2. Improve Effective Communication
 3. Improve the Safety of High-Alert Medications
 4. Ensure Correct-Site, Correct-Procedure, Correct-Patient Surgery
 5. **Reduce the Risk of Health Care–Associated Infections**
 6. Reduce the Risk of Patient Harm Resulting from Falls

HEALTHCARE -ASSOCIATED INFECTIONS

Healthcare Associated Infections (HAI) or noscomial infections are those infections that were neither present nor incubating at the time the patient was admitted to the health care facility.

WHY DO THEY OCCUR?

HEALTHCARE –ASSOCIATED INFECTIONS

- Modern Healthcare has increased the risks
- 1.4 million people worldwide suffer from infectious complications acquired in hospital –

WHO Prevention of Hospital-acquired Infection, 2002.

- Prevalence varies from hospital to hospital
 - 5-15% in modern hospitals – WHO Guideline on Handhygiene 2009
 - Risk of healthcare-associated infections (HAI) in developing countries is estimated to be as high as 25%
 - 2-20 times higher than in developed countries

Health Care-Associated Infections

- Significant global public health problem:
 - High morbidity and mortality
 - High socioeconomic costs
 - Amplification of outbreaks
 - Measles, Diarrhoea, ARD, TB Lassa, VHF
 - Occupational hazards
 - Hepatitis, HIV, TB, Viral Haemorrhagic fevers

Health Care-Associated Infections

- Most common types
 - Surgical Site Infections
 - Blood stream Infections
 - Urinary tract Infections
 - Lower respiratory tract Infections
- Others
 - Gastrointestinal
 - Reproductive system Infections (puerperal sepsis)

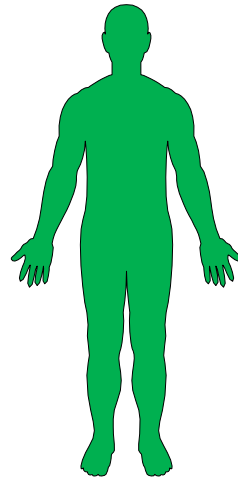
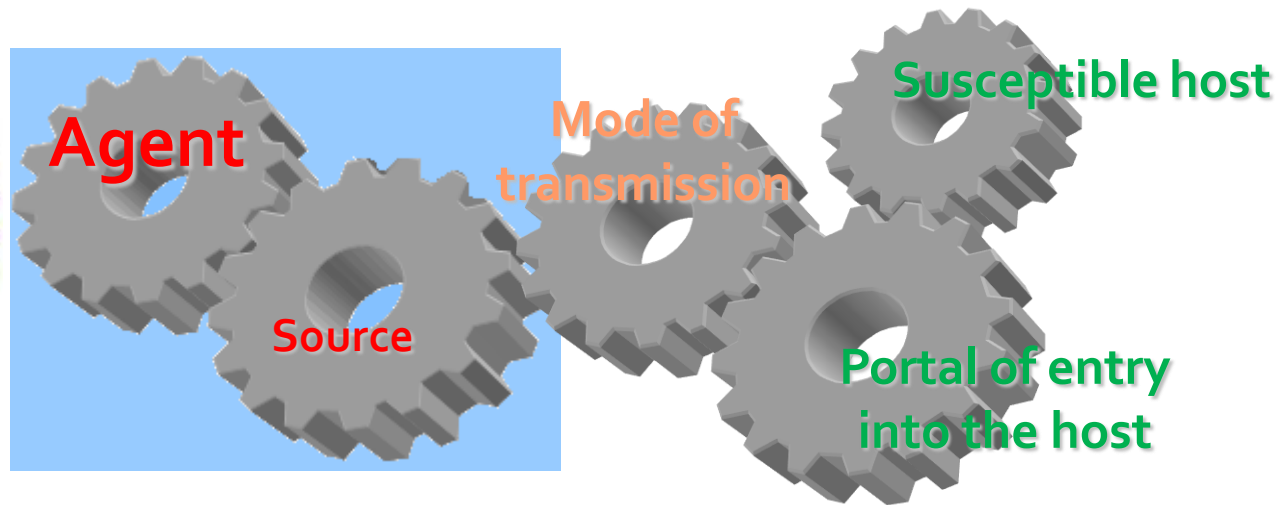
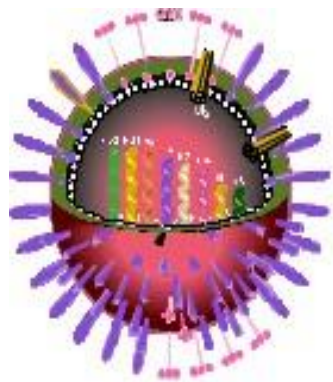
What is Infection Control

- Strategies built around core principles that are designed to protect clients, health care providers and the community from Healthcare associated Infections
- involves issues of quality, risk management, clinical governance and health and safety.
- Infection prevention and control maximize patient outcomes and are part of the government's responsibility to provide effective, efficient and quality health services.

Rationale for IPC

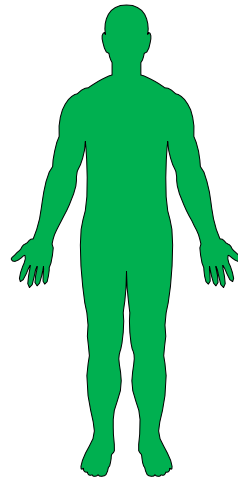
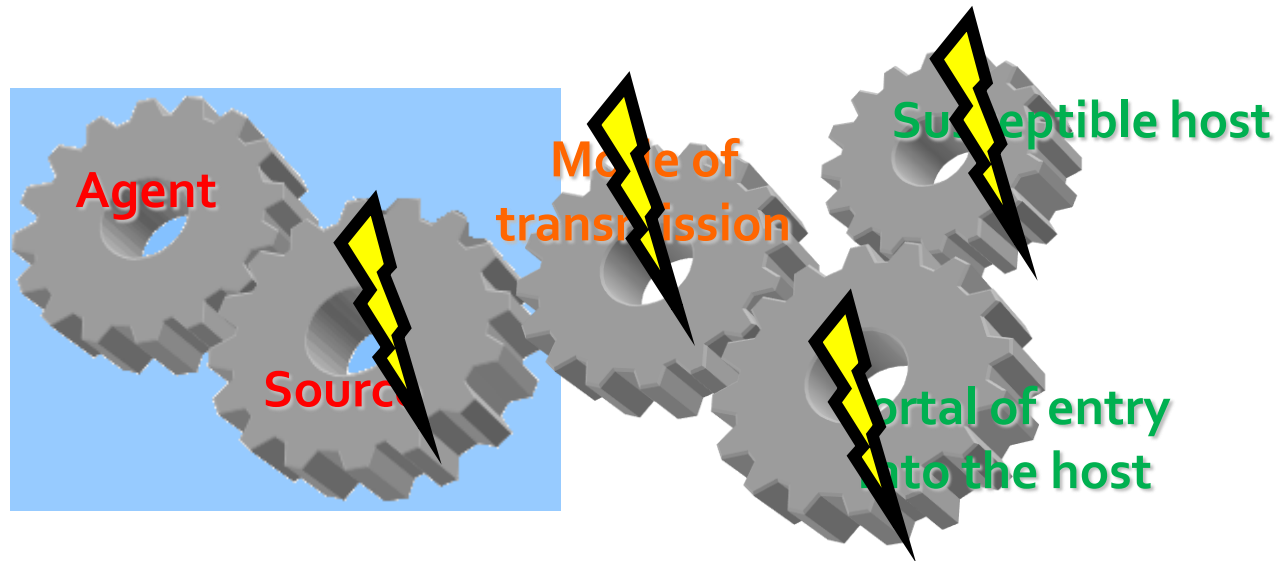
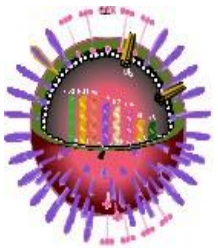
Chain of Infection Transmission

In order to control or prevent infection it is essential to understand that transmission of a pathogen resulting in colonisation or infection requires the following 5 vital links:



Infection Control Strategies

AIM: BREAK LINKS



Sources of Infection

- The organisms come from many possible sources, such as:
 - The patients'
 - Own flora – the mouth, gastrointestinal tract, vagina or the skin;- Endemic
 - Community acquired Infection
 - HCW –
 - The resident microbial flora
 - Transient bacteria carried on the hands of health care workers from one patient to another;
 - Environment
 - Formites, Surfaces,
 - Contaminated instruments, dressings, needles, Infusions, contaminated disinfectants etc.

Sources

- Epidemic-prone diseases
- Less common
- Devastating
 - Faecal-oral diseases (e.g. cholera, rotavirus)
 - Respiratory diseases (e.g. RSV, adenovirus, pneumonic plague, tuberculosis)
 - Vaccine-preventable diseases (e.g. measles)
 - Viral haemorrhagic fevers (e.g. CCHF, Ebola, Lassa, Marburg, novel arenavirus)

HIERARCHY OF INFECTION CONTROL MEASURES

■ **Engineering controls**

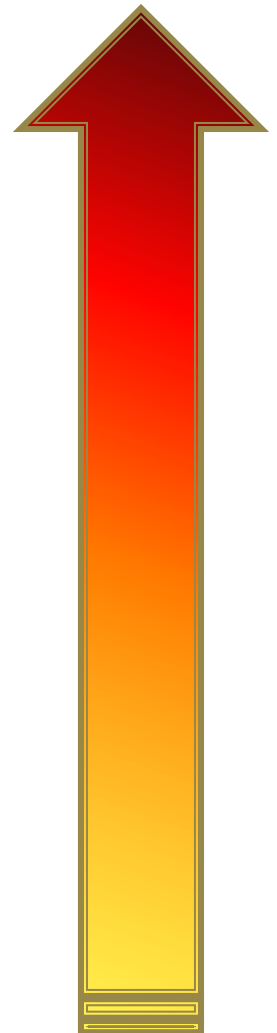
- built into the design (private bathrooms, private rooms, HVAC systems)
- IPC professionals should be involved in the design and planning of new facilities.
- Infection Control Risk assessment should be done to evaluate and mitigate potential risks for microorganism transmission

■ **Administrative controls**

- Policies and Protocols that guide procedure
- Organisation of the programmes
- Administrative oversight

■ **Personal protective equipment (PPE)**

- Least desirable
- Does not eliminate hazards
- Dependent on appropriate use
- Requires educated, knowledgeable staff.



Routine Practice

- Hand hygiene
- Risk assessment related to client symptoms, care and service delivery, eg screening for infectious diseases, fever respiratory symptoms, rash, diarrhea, excretions and secretions
- Risk reduction strategies through use of personal protective equipment (PPE), cleaning of environment, laundry, disinfection and sterilization of equipment or single use equipment, waste management, safe sharps handling, client placement and healthy workplace practices
- Education of health care providers, clients and families/visitors

Risk assessment

SCREENING QUESTIONNAIRE FOR FEBRILE RESPIRATORY ILLNESS (FRI)

EXAMPLE OF CLIENT/ RESIDENT SCREENING QUESTIONNAIRE	
Date: _____	Time: _____
Name: _____	
<input type="checkbox"/> Y <input type="checkbox"/> N	New or worsening cough
<input type="checkbox"/> Y <input type="checkbox"/> N	Shortness of breath (worse than usual)
<input type="checkbox"/> Y <input type="checkbox"/> N	Fever within the past 24 hours
CLINICIAN SHOULD CONSIDER DONNING PERSONAL PROTECTION EQUIPMENT IF FEVER, PLUS ONE OR TWO ABOVE CLIENT SYMPTOMS, ARE PRESENT.	
Client has reported the following symptoms:	
<input type="checkbox"/> Y <input type="checkbox"/> N	Muscle aches
<input type="checkbox"/> Y <input type="checkbox"/> N	Severe fatigue, feeling unwell
<input type="checkbox"/> Y <input type="checkbox"/> N	Severe headache, (worse than usual)
<input type="checkbox"/> Y <input type="checkbox"/> N	New rash associated with fever
<input type="checkbox"/> Y <input type="checkbox"/> N	Recent travel to: _____
<input type="checkbox"/> Y <input type="checkbox"/> N	Contact with sick person with Hx of recent travel
<div style="border: 1px solid red; height: 150px; padding: 10px;"> Notes: </div>	
Completed by: _____	

Download at:
<http://www.peelregion.ca/health/professionals/index.htm>
© 2005 Adapted from BC Centre for Disease Control

- Screen for infectious disease
- Cough, cold, diarrhoea
- At point of entry
- On admission

Risk reduction strategies

- Minimizes exposure to body fluids and mucous membranes.
- Hand hygiene,
- use of personal protective equipment (PPE)
- Client Placement
- cleaning and disinfection of equipment

Risk Reduction Strategies

- Standard Precautions –
 - **Apply to all clients and patients** attending healthcare facilities, and
- Transmission based Precautions - Garner and HICPAC 1996
 - Contact
 - Droplet
 - Airborne

(Common vehicle and vector borne)

Standard Precautions

- Places a physical, mechanical or chemical **barrier** between microorganisms and an individual
- Use for all patient contact
- Minimum standard

AIDE-MEMOIRE

Standard precautions in health care

Background

Standard precautions are meant to reduce the risk of transmission of bloodborne and other pathogens from both recognized and unrecognized sources. They are the basic level of infection control precautions which are to be used, as a minimum, in the care of all patients.

Hand hygiene is a major component of standard precautions and one of the most effective methods to prevent transmission of pathogens associated with health care. In addition to hand hygiene, the use of **personal protective equipment** should be guided by risk assessment and the extent of contact anticipated with blood and body fluids or pathogens.

In addition to practices carried out by health workers when providing care, all individuals (including patients and visitors) should comply with infection control practices in health-care settings. The control of spread of pathogens from the source is key to avoid transmission. Among source control measures, **respiratory hygiene/cough etiquette**, developed during the severe acute respiratory syndrome (SARS) outbreak, is now considered as part of standard precautions.

Widespread escalation of the use of standard precautions would reduce unnecessary risks associated with health care. Promotion of an **institutional safety climate** helps to improve conformity with recommended measures and thus subsequent risk reduction. Provision of adequate staff and supplies, together with leadership and education of health workers, patients, and visitors, are critical for an enhanced safety climate in health-care settings.

Important advice

- Promotion of a safety climate is a cornerstone of prevention of transmission of pathogens in health care.
- Standard precautions should be the minimum level of precautions used when providing care for all patients.
- Risk assessment is critical. Assess all health-care activities to determine the personal protection that is indicated.
- Implement source control measures for all persons with respiratory symptoms through promotion of respiratory hygiene and cough etiquette.

Checklist

Health policy

- Promote a safety climate.
- Develop policies which facilitate the implementation of infection control measures.

Hand hygiene

- Perform hand hygiene by means of hand rubbing or hand washing (see detailed indications in Table).
- Perform hand washing with soap and water if hands are visibly soiled, or exposure to spore-forming organisms is proven or strongly suspected, or after using the restroom. Otherwise, if resources permit, perform hand rubbing with an alcohol-based preparation.
- Ensure availability of hand-washing facilities with clean running water.
- Ensure availability of hand hygiene products (clean water, soap, single use clean towels, alcohol-based hand rub). Alcohol-based hand rubs should ideally be available at the point of care.

Personal protective equipment (PPE)

- ASSESS THE RISK of exposure to body substances or contaminated surfaces BEFORE any health-care activity. Make this a routine.
- Select PPE based on the assessment of risk:
 - clean non-sterile gloves.
 - clean, non-sterile fluid-resistant gown.
 - mask and eye protection or a face shield.

Respiratory hygiene and cough etiquette

- Education of health workers, patients and visitors.
- Covering mouth & nose when coughing or sneezing.
- Hand hygiene after contact with respiratory secretions.
- Spatial separation of persons with acute febrile respiratory symptoms.

Health-care facility recommendations for standard precautions

KEY ELEMENTS AT A GLANCE

1. Hand hygiene¹

Summary technique:

- Hand washing (40–60 sec): wet hands and apply soap; rub all surfaces; rinse hands and dry thoroughly with a single use towel; use towel to turn off faucet.
- Hand rubbing (20–30 sec): apply enough product to cover all areas of the hands; rub hands until dry.

Summary indications:

- Before and after any direct patient contact and between patients, whether or not gloves are worn.
- Immediately after gloves are removed.
- Before handling an invasive device.
- After touching blood, body fluids, secretions, excretions, non-intact skin, and contaminated items, even if gloves are worn.
- During patient care, when moving from a contaminated to a clean body site of the patient.
- After contact with inanimate objects in the immediate vicinity of the patient.

2. Gloves

- Wear when touching blood, body fluids, secretions, excretions, mucous membranes, nonintact skin.
- Change between tasks and procedures on the same patient after contact with potentially infectious material.
- Remove after use, before touching non-contaminated items and surfaces, and before going to another patient. Perform hand hygiene immediately after removal.

3. Facial protection (eyes, nose, and mouth)

- Wear (1) a surgical or procedure mask and eye protection (eye visor, goggles) or (2) a face shield to protect mucous membranes of the eyes, nose, and mouth during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions.

4. Gown

- Wear to protect skin and prevent soiling of clothing during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions.
- Remove soiled gown as soon as possible, and perform hand hygiene.

5. Prevention of needle stick and injuries from other sharp instruments²

Use care when:

- Handling needles, scalpels, and other sharp instruments or devices.
- Cleaning used instruments.
- Disposing of used needles and other sharp instruments.

6. Respiratory hygiene and cough etiquette

Persons with respiratory symptoms should apply source control measures:

- Cover their nose and mouth when coughing/sneezing with tissue or mask, dispose of used tissues and masks, and perform hand hygiene after contact with respiratory secretions.

Health-care facilities should:

- Place acute febrile respiratory symptomatic patients at least 1 metre (3 feet) away from others in common waiting areas, if possible.
- Post visual alerts at the entrance to health-care facilities instructing persons with respiratory symptoms to practise respiratory hygiene/cough etiquette.
- Consider making hand hygiene resources, tissues and masks available in common areas and areas used for the evaluation of patients with respiratory illnesses.

7. Environmental cleaning

- Use adequate procedures for the routine cleaning and disinfection of environmental and other frequently touched surfaces.

8. Linens

Handle, transport, and process used linen in a manner which:

- Prevents skin and mucous membrane exposures and contamination of clothing.
- Avoids transfer of pathogens to other patients and/or the environment.

9. Waste disposal

- Ensure safe waste management.
- Treat waste contaminated with blood, body fluids, secretions and excretions as clinical waste, in accordance with local regulations.
- Human tissues and laboratory waste that is directly associated with specimen processing should also be treated as clinical waste.
- Discard single use items properly.

10. Patient care equipment

- Handle equipment soiled with blood, body fluids, secretions, and excretions in a manner that prevents skin and mucous membrane exposures, contamination of clothing, and transfer of pathogens to other patients or the environment.
- Clean, disinfect, and reprocess reusable equipment appropriately before use with another patient.

¹ For more details, see: WHO Guidelines on Hand Hygiene in Health Care (Advanced draft), at: http://www.who.int/patientsafety/information_center/standard_precautions/index.html.

² The SIGN Alliance at: http://www.who.int/injection_safety/sign/

Standard Precautions *in Practice*

- Hand hygiene
- Personal protective equipment (PPE)
- Disinfection of contaminated equipment and environmental surfaces
- Injection safety
- Proper disposal of infectious waste/sharps
- Respiratory hygiene/cough etiquette

Hand Hygiene



- Cornerstone of infection control
- Single most effective method to prevent the spread of many communicable diseases
- Includes
 - Hand washing: use of plain soap & water to mechanically remove bacteria and viruses and debris
 - Hand antisepsis: use of antimicrobial soap & water, or waterless hand gel to kill bacteria and viruses on hands

How to handwash?

WASH HANDS ONLY WHEN VISIBLY SOILED! OTHERWISE, PREFER HANDRUB!



Duration of the entire procedure: 40-60 sec.



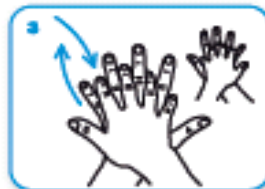
Wet hands with water



apply enough soap to cover all hand surfaces.



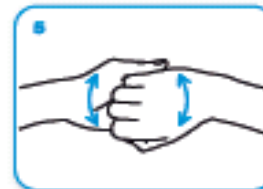
Rub hands palm to palm



right palm over left dorsum with interlaced fingers and vice versa



palm to palm with fingers interlaced



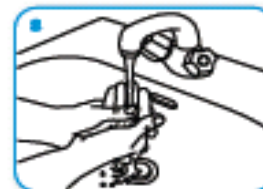
backs of fingers to opposing palms with fingers interlocked



rotational rubbing of left thumb clasped in right palm and vice versa



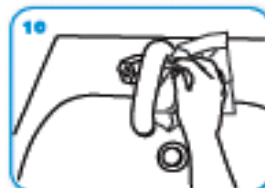
rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa.



Rinse hands with water



dry thoroughly with a single use towel



use towel to turn off faucet

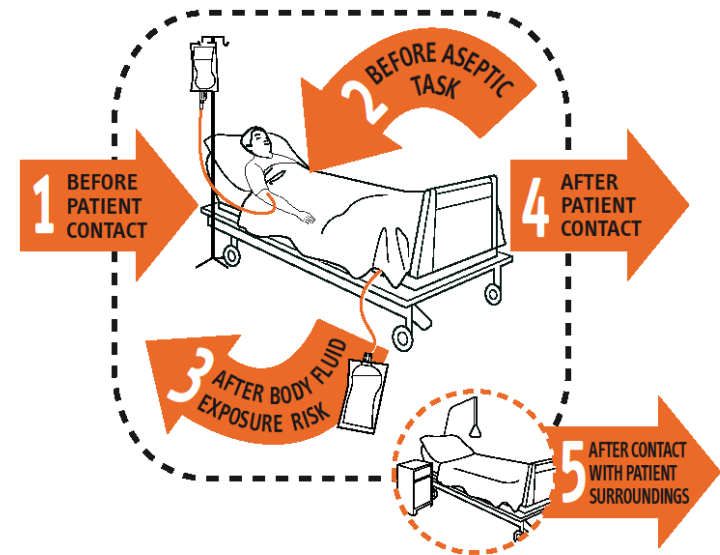


...and your hands are safe.

Hand Hygiene

- Use alcohol-based hand rub at 60-90% concentration ethyl or isopropyl or
- Hand washing with plain liquid soap and running water.
- The use of alcohol-based hand rub is the preferred method of decontamination of hands that are not visibly soiled and should be available at the point of care.
- Use hand hygiene after touching blood, body fluids, excretions and contaminated items in the client/resident's environment

Your 5 moments for HAND HYGIENE



1 BEFORE PATIENT CONTACT	WHEN? Clean your hands before touching a patient when approaching him or her WHY? To protect the patient against harmful germs carried on your hands
2 BEFORE AN ASEPTIC TASK	WHEN? Clean your hands immediately before any aseptic task WHY? To protect the patient against harmful germs, including the patient's own germs, entering his or her body
3 AFTER BODY FLUID EXPOSURE RISK	WHEN? Clean your hands immediately after an exposure risk to body fluids (and after glove removal) WHY? To protect yourself and the health-care environment from harmful patient germs
4 AFTER PATIENT CONTACT	WHEN? Clean your hands after touching a patient and his or her immediate surroundings when leaving WHY? To protect yourself and the health-care environment from harmful patient germs
5 AFTER CONTACT WITH PATIENT SURROUNDINGS	WHEN? Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving - even without touching the patient WHY? To protect yourself and the health-care environment from harmful patient germs



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.



October 2006, version 1.

Personal Protective Equipment

- Types of personal protective equipment (PPE)
 - Gloves: sterile, non-sterile, utility
 - Gowns and aprons
 - Masks
 - Goggles



PPE 1

Gloves

- Use *when touching* blood, body fluids, secretions, excretions, contaminated items, mucous membranes, or nonintact skin
- Avoid touching the environmental surfaces and yourself with contaminated gloves



PPE for Standard Precautions (2)

Gowns

- Use *during procedures and activities* when contact of clothing or exposed skin with blood/body fluids is anticipated
- Fasten securely at back and neck
- Change between patients



PPE for Standard Precautions (3)

Masks, goggles, face shields

- Use during activities likely to generate splashes or sprays of blood, body fluids, secretions, or excretions
- Masks should fully cover nose and mouth
- Goggles should fit snugly over and around eyes
- Face shields should cover forehead, extend below chin and wrap around side of face



Environmental Cleaning and Disinfection

- Patient environments should be cleaned daily, and upon discharge or transfer
- Step One, **Cleaning**: mechanically removes dirt and soilage
 - Use of soap or mild detergent and water
- Step Two, **Disinfection**: destroys harmful infectious agents
 - Chemical process of killing bacteria or viruses
 - Use of disinfectants containing ingredients of chlorine, ammonia, phenols, etc.

Recovery of VRE from Hands and Environmental Surfaces

- Up to 41% of healthcare worker's hands sampled (after patient care and before hand hygiene) were positive for VRE¹
- VRE were recovered from a number of environmental surfaces in patient rooms
- VRE survived on a countertop for up to 7 days²

¹ Hayden MK, *Clin Infect Diseases* 2000;31:1058-1065.

² Noskin G, *Infect Control and Hosp Epidemi* 1995;16:577-581.

The Inanimate Environment Can Facilitate Transmission

X represents VRE culture positive sites



~ Contaminated surfaces increase cross-transmission ~

Abstract: The Risk of Hand and Glove Contamination after Contact with a VRE (+) Patient Environment. Hayden M, ICAAC, 2001, Chicago, IL.

Disinfectant

Environmental measures

- Clean and disinfect frequently-touched surfaces where persons receive care
- Use hospital-grade disinfectant or bleach diluted with water
(bleach to water ratio = 1:100)
**Use a higher concentration for spills (1:10)*
- If using manufactured/diluted product
 - Check concentration if using bleach
 - Reconstitute bleach mixtures daily
 - Follow manufacturer instructions
 - In Nigeria 3.5% Dilute 1:3 to get 1:100



Clean AND Disinfect

Blood and body fluid spills

- Wear gloves (gown if necessary) to clean up spills
- If spill involves broken glass, do not remove glass by hand; use tongs or other device
- Wipe spills w/paper towel and dispose in leak-proof bag
- Clean and disinfect surface with appropriate disinfectant or bleach



Safe Handling of Hospital Laundry and Linens

- Contaminated linens or textiles can be a source of infectious agents and should be handled with care
 - New admissions require clean linen
 - Do not shake used laundry
 - Place used laundry in a leak-proof bag or receptacle that can be tied closed
 - Used linens should be stored in a utility room with other “dirty” items until they can be laundered
- Clean linens should be transported and stored away from dirt and dust



Safe handling of Hospital Laundry and Linens

Linen and Laundry

- Wear gloves when handling soiled linens; gown if contact with skin or clothing likely
- Leak-proof bags
- Laundering removes microbes by 3 factors:
 - Mechanical
 - Chemical
 - Thermal



Infection Control of Bloodborne Pathogens – Injection

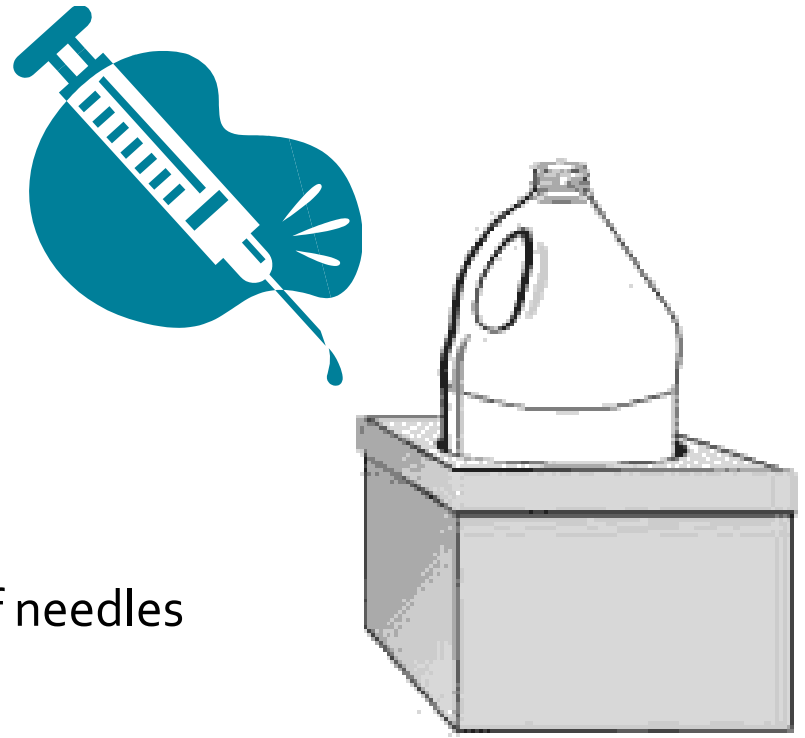
Bloodborne infectious agents potentially transmitted by occupational exposure include:



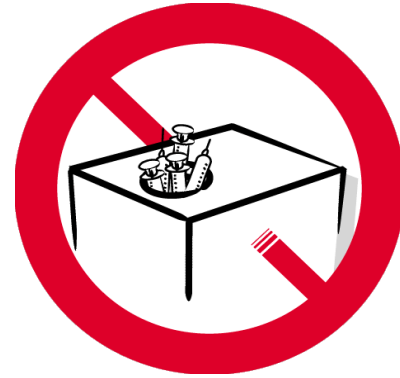
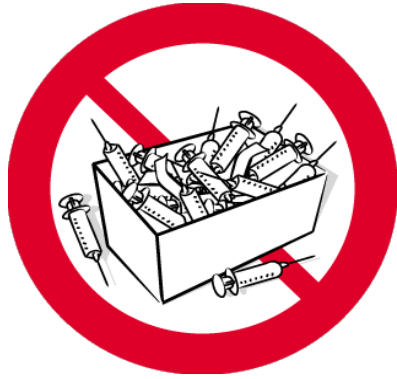
- HIV
- Hepatitis B
- Hepatitis C
- Viral hemorrhagic fevers
- Yellow fever
- Dengue fever
- Syphilis

Safe Practices to Prevent Exposure to Bloodborne Infectious Agents -Sharps

- Exposure to bloodborne pathogens in healthcare facilities are primarily from percutaneous injuries like cuts or needlesticks
 - Improper disposal
 - Accidental collisions
 - Recapping needles
- Safe practices include:
 - Safe handling of sharps
 - Easy access to sharps containers
 - Puncture proof sharps containers
 - Disabling of and bleach disinfection of needles
 - Staying focused on tasks



Prevention of Needlestick Injuries



Components of Respiratory Hygiene and Cough Etiquette

- Healthcare personnel need to instruct persons with signs and symptoms of respiratory infection to:
 - Cover nose and mouth when coughing or sneezing
 - Contain respiratory secretions with disposable tissue and dispose in the waste containers
 - Perform hand hygiene after contact with respiratory secretions, contaminated objects
 - Encourage coughing persons to be seated away from others in common waiting areas (ideally, at least 3 feet from others), or ask them to wait outside



Components of Respiratory Hygiene and Cough Etiquette

. Healthcare facilities should consider

- No-touch waste containers and tissues, if available
- Easy access to hand washing stations or basins with fresh water and soap
- Surgical masks for those with respiratory symptoms and can tolerate masks



. Staff should use precautions

- Wear a surgical mask when examining a patient with respiratory symptoms (especially if they have fever) until infection ruled out



RESPIRATORY ETIQUETTE POSTER

Cover your cough or sneeze



When you cough or sneeze...
Cover your mouth and nose with
a tissue or your upper sleeve.

**Do not use
your hand!**



You may be asked to
put on a surgical mask
to protect others.



Put your used tissue or
mask in the waste
basket after use



You may be asked to sit in a
'cough corner' to stop the
spread of germs.

IMPORTANT NOTICE TO OUR PATIENTS



Stop the spread of
germs that make you
and others sick

Tell staff if you have a:

- Cough • Sneeze
- Fever • Cold
- Flu



Clean your hands with
alcohol-based hand cleaner:

- when you arrive and before
you leave
- after coughing or sneezing



Education

- Educate health care providers regarding infection prevention and control strategies.
- Educate clients/residents/families about hygiene and infection prevention strategies
Infection prevention and control health promotion
- Communicate between all sectors of health care to ensure



Key contact precautions

- ✓ Use clean, unsterilized gloves and disposable or re-usable gown whenever you have direct contact with a patient.
- ✓ Remove safely the gloves and gown immediately following any contact with a patient. Perform hand hygiene immediately after removing any item of PPE.
- ✓ Dedicate specific equipment for use with a single patient and ALWAYS clean and disinfect shared equipment between patient uses.
- ✓ Avoid touching your face, eyes or mouth with either gloved or un-gloved hands as these may be contaminated.
- ✓ Place patients in a single occupancy room whenever possible or alternatively with other patients with the same diagnosis.

Droplet precautions guidelines



- ✓ Wear a medical mask when within a 1 metre range of the patient.
- ✓ Put the patient in a single room or in a room that contains only other patients with the same diagnosis, or with similar risk factors, and ensure that every patient is separated by at least one metre.
- ✓ Ensure that the transportation of a patient to areas outside of the designated room is kept to a minimum.
- ✓ Perform hand hygiene immediately after removing any item of PPE.

Airborne precautions guidelines

- ▶ **Keep patient in well-ventilated area, separated from other patients**
- ▶ **Place patient in airborne precaution room**, with ≥ 12 air changes per hour (ACH) and controlled airflow away from corridor and directly to outside, if possible

NOTE: Airflow can be checked with a piece of tissue paper

- ▶ **Use particulate respirator** when entering high-risk areas, ensuring seal is checked before every use

- ▶ **Limit movement of patient**
- ▶ **Educate patient** about respiratory etiquette and cough hygiene and
- ▶ **Ensure patients wears medical mask** if outside of room
- ▶ **Perform hand hygiene** immediately after removing any item of PPE

Infection Control Program

- Infection Prevention and Control Unit – Can be alone or part of Quality in healthcare unit
- Policy at National, State, Local Government
- Institutional Program
 - Policy
 - Standard Operating procedures
 - IPC committee – sets policy, reviews activities of team, determines training needs
 - IPC team - day to day function

Core activities for IPC for Health care facilities

Core infection prevention and control interventions for health-care facilities at a glance

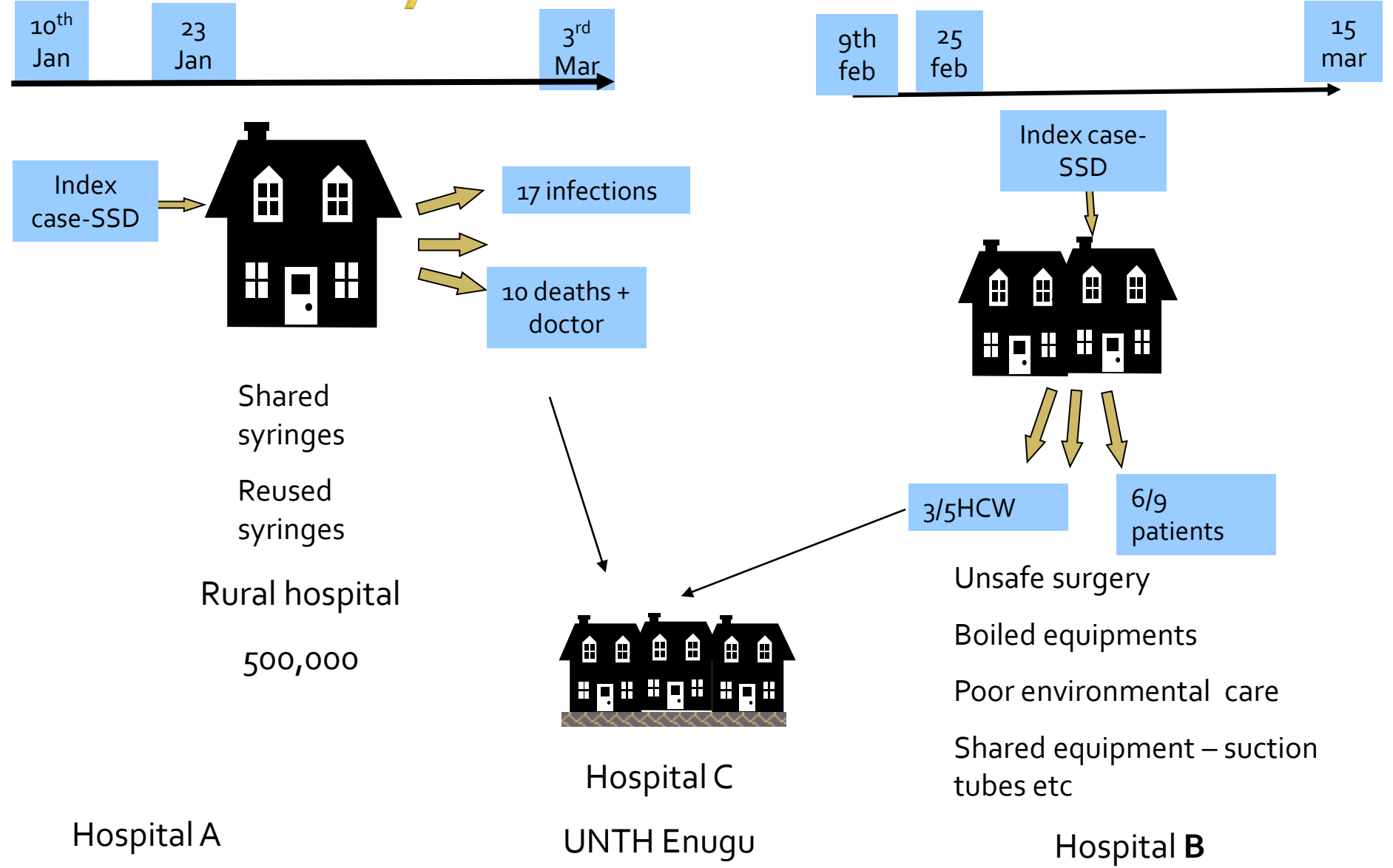
<i>Specific interventions</i>	<i>Target groups</i>	<i>Equipment and supply needs</i>	<i>Critical process indicators for monitoring</i>
Hand hygiene	<ul style="list-style-type: none"> All health-care workers [†] Visitors Patients 	<ul style="list-style-type: none"> Clean running water Soap (mounted preferable) Sinks or basins Towels Alcohol-based solutions 	<ul style="list-style-type: none"> Proportion of staff observed performing hand hygiene before attending patients
Personal protective equipment	<ul style="list-style-type: none"> All health-care workers [†] 	<ul style="list-style-type: none"> Gloves Gowns 	<ul style="list-style-type: none"> Proportion of staff observed wearing gloves when exposure to blood or body fluids is anticipated
Isolation precautions	<ul style="list-style-type: none"> Nurses Physicians Nursing aids Other 	<ul style="list-style-type: none"> Gloves Gowns Masks Eye protection 	<ul style="list-style-type: none"> Average time between admission and isolation for tuberculosis patients
Aseptic technique	<ul style="list-style-type: none"> Nurses Physicians Laboratory technicians Dental surgeons 	<ul style="list-style-type: none"> Antiseptics Sterile gloves Sterile devices and instruments Sterile barrier devices 	<ul style="list-style-type: none"> Proportion of intravenous lines inserted using aseptic technique
Cleaning and disinfection	<ul style="list-style-type: none"> Nurses Nursing aids Housekeeping staff Laboratory staff 	<ul style="list-style-type: none"> Cleaning fluids Cleaning equipment Disinfectant 	<ul style="list-style-type: none"> Proportion of rooms appropriately disinfected after patients' discharge
Sterilization	<ul style="list-style-type: none"> Sterilization staff Nurses Laboratory technicians Dental surgeons 	<ul style="list-style-type: none"> Autoclaves and steam sterilizers Test strips Chemicals 	<ul style="list-style-type: none"> Proportion of sterilized devices whose sterility is documented with test strips
Waste management	<ul style="list-style-type: none"> Health-care workers Waste handlers Logisticians 	<ul style="list-style-type: none"> Sharps boxes and other collection containers Storage space and container for interim storage Final disposal options Personal protection equipment for waste handlers 	<ul style="list-style-type: none"> Presence of health-care waste in the surroundings of the health-care facility
Antibiotic use protocol	<ul style="list-style-type: none"> Physicians 	<ul style="list-style-type: none"> Essential list of antibiotics 	<ul style="list-style-type: none"> Proportion of prescriptions including an antibiotic
Immunization and exposure management	<ul style="list-style-type: none"> All health-care workers [†] 	<ul style="list-style-type: none"> Hepatitis B vaccine and other appropriate vaccines 	<ul style="list-style-type: none"> Three-dose hepatitis B vaccine coverage among nurses, physicians and laboratory technicians

^{*} Key indicator: Proportion of essential supplies stocked out.

[†] Include nursing staff, physicians, dental staff, laboratory staff, housekeeping staff, waste management staff and morgue staff.

Does it concern Me???

Case History – Lassa fever in Imo state



What Nigeria needs to do

- Develop a national programme to support hospitals in reducing the risk of health-care-associated or nosocomial infections.
 - set relevant national objectives consistent with other national healthcare objectives;
 - develop and continually update guidelines for recommended healthcare surveillance, prevention, and practice;
 - develop a national system to monitor selected infections and assess the effectiveness of interventions;
 - harmonize initial and continuing training programmes for health care professionals;
 - facilitate access to materials and products essential for hygiene and safety;
 - Encourage health care establishments to monitor health-care associated infections and to provide feedback to the professionals concerned.
 - Designate an agency to oversee the programme

Thank you for listening.