

Introduction to IPC in Health Care Settings

Module 2

Learning Objectives

By the end of this module, the participants should be able to:

- Define infection prevention and control and healthcare associated infections
- Describe the historic evolution of IPC
- Explain the benefits of adherence to IPC practices
- Describe structures for management and coordination of IPC

Definition of terms

- **Infection Prevention and Control** : a set of practices, protocols, and procedures that are put in place to prevent infections that are associated with health care service provision settings'
- **Healthcare associated Infections**: are infections that patients develop during the course of receiving healthcare treatment for other conditions

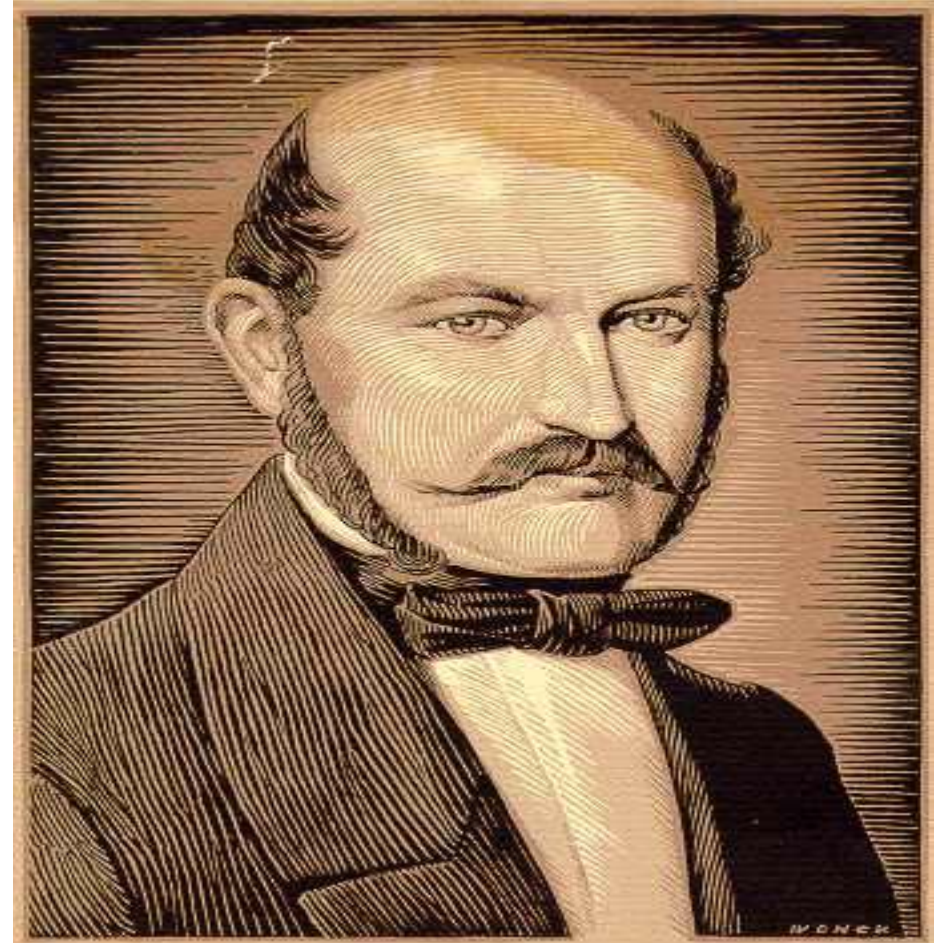
Introduction

- Healthcare facilities are ideal settings for the transmission of infections
- Patients have infections they can transmit to other patients and health workers.
- Sick patients are more susceptible to infections.
- Procedures increase patient risk of infection.
- Health-care associated infections affect patients, health workers, their families, and communities.
- IPC addresses reduction of risks to the environment.

Historical Evolution of IPC

History: Ignaz Semmelweis

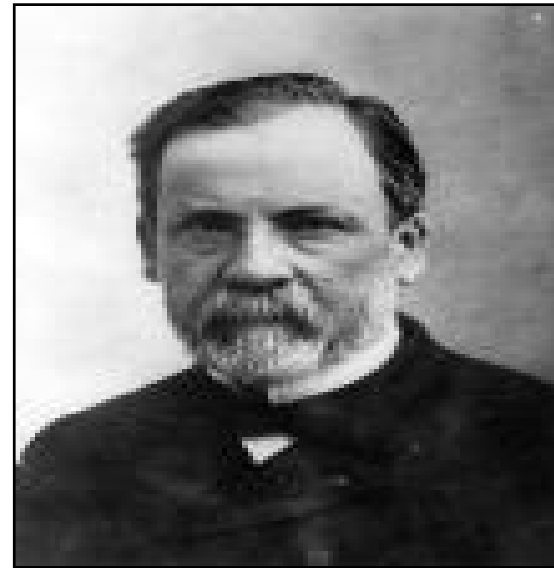
- At the Vienna Lying-in Hospital
 - Women who delivered on the street had less risk of developing puerperal fever
 - Much higher risk of puerperal fever in women delivered by physicians or medical students as opposed to those delivered by midwives
- Required that hands be washed with chlorinated lime after autopsies & between exams of pregnant women
 - Maternal mortality decreased from 18% to 3%



History: Florence Nightingale and Louis Pasteur

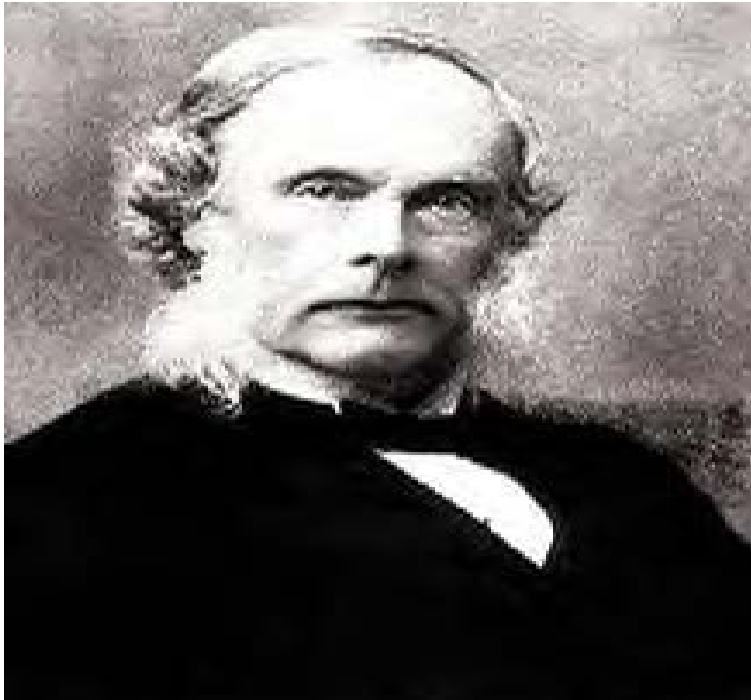


- Importance of unsanitary hospital conditions and post operative complications



- Developed the germ theory of disease in the late 1800s

History: Advances in Surgical Infection Control



Joseph Lister introduced antiseptics in 1867

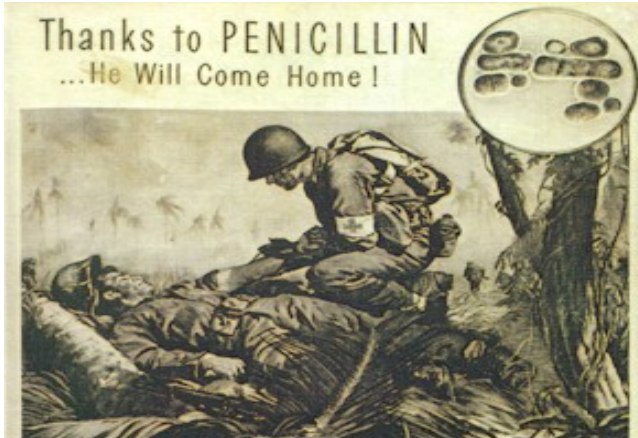


William Halstead introduced gloves in 1890



Johannes Mikulicz introduced masks in 1897

Infection Control Timeline: *The Modern Era*



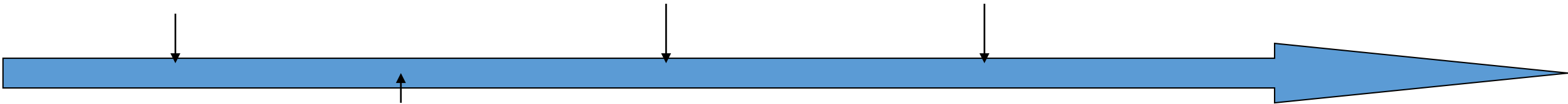
First antibiotics, sulfonamides & penicillin, developed in the late 1930s



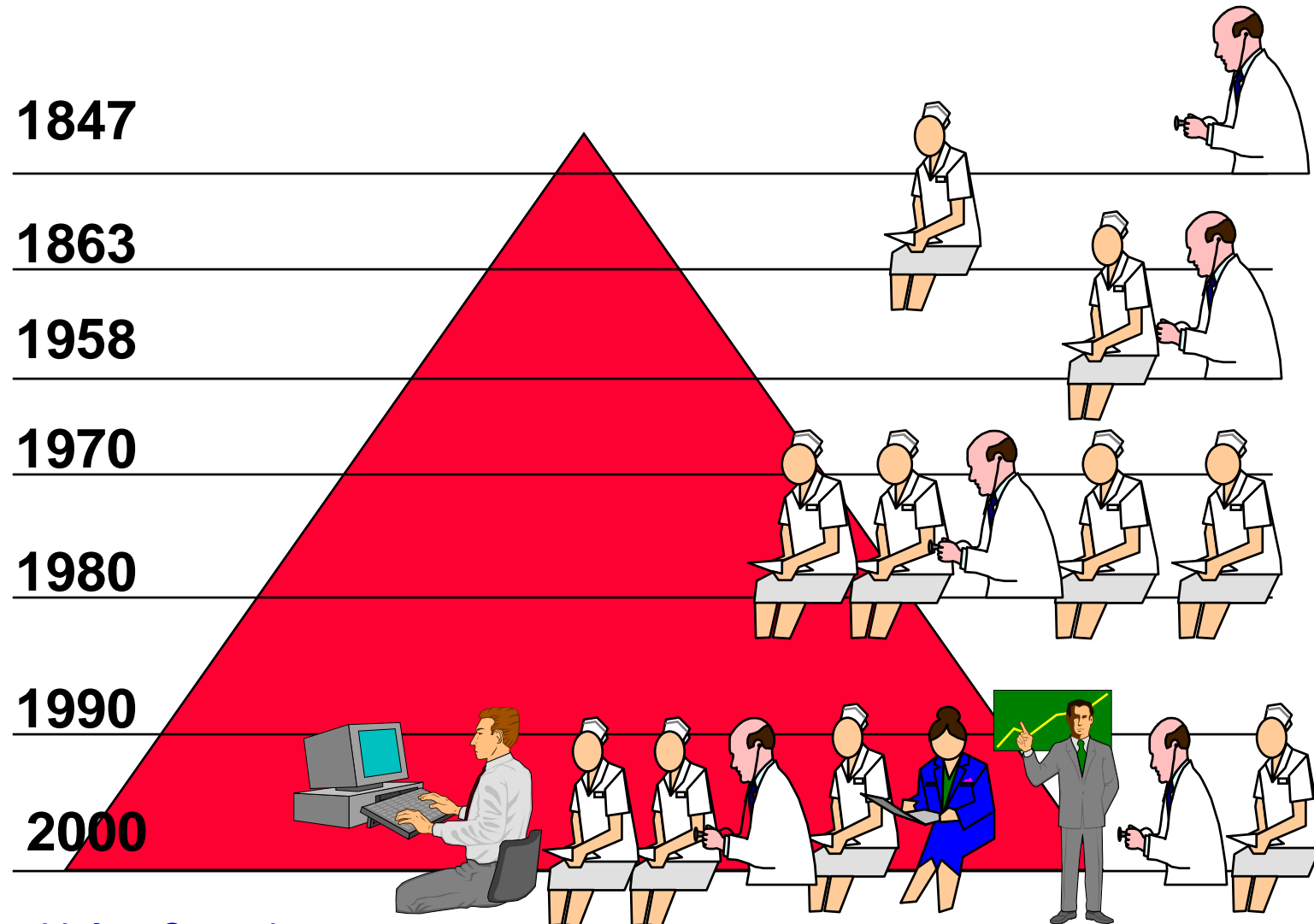
Robert Haley, MD 1970's
SCENIC Study
Hospitals with active infection control programs have a 32% lower incidence of nosocomial infections



R.P Wenzel MD, MSc
1980: Founded Society of Healthcare Epidemiology;
applied epidemiologic techniques to infection control



Multidisciplinary team approach



So where are we now and what happens next?

Healthcare Associated Infections

- Burden of HAIs and risk of AMR is increasing
- HAI inpatient rate of estimated at 20% (conservative)
 - Some research indicates it may be as high as 40% in sub-Saharan Africa
 - Extent of HAIs in Kenya is unknown
- Actual extent of AMR in Kenya is also not fully determined
 - Observed trend in a few research sites indicate a rapid increase of AMR

Healthcare Associated Infections

High cost of HAIs;

- Direct cost to hospitals for:
 - extended hospital stay, extra resources, extra treatment, extra equipment, and extra community care costs if discharged needing follow-up
- Direct cost to patient/family for:
 - pain and scarring, extended stay away from family, working days lost, family income loss, financial strain - increased visiting etc, increased morbidity, increased mortality

HAIs

The benefits of adherence to the infection prevention and control policies and guidelines include;

- Quality of health care improves
- With fewer HAIs, hospitals are less crowded and congested
- Improves healthcare workers health
- Saves cost of healthcare

What causes infections?

- Normal flora: Microorganisms normally found on and in the body. These are not harmful.
 - Normal flora can also lead to infection under special circumstances. For example, when entering internal organs during surgery or in an immuno-compromised person.
- Pathogens: Microorganisms not normally found on or in the human body. These are associated with disease and include bacteria, viruses, fungi, protozoa, helminthes and prions.
 - Infections are caused when the pathogens enter the body, reproduce and cause diseases.

Modes of infection transmission

- **Contact:** Direct transfer of microorganisms through touch of bodily fluids.
- **Vehicle:** The material that serves as the mode of transfer of microorganisms, such as food, water, or air.
- **Vector:** An organism that carries or transmits a pathogen. These include insects, such as mosquitoes or fleas.

IPC Practices

- IPC practices to prevent HAIs are broadly categorized into 2;
 - Standard precautions
 - Additional precautions

Standard Precautions

- Strategies for standard precautions include;
 - Hand hygiene
 - Use of PPEs
 - Prevention of needle stick and injuries from other sharp instruments
 - Respiratory hygiene and cough etiquette
 - Environmental cleaning
 - Management of linen
 - Management of healthcare waste
 - Management of patient care equipment

Additional precautions

Standard precautions plus

- Contact precautions
- Droplet precautions
- Airborne precaution

Core Chapters in the National IPC Guidelines for Healthcare Services in Kenya

- Coordination of IPC programs
- Standard Precautions
- Additional precautions
- Isolation
- Environmental management practices
- Traffic flow and activity pattern in the health care facility
- Instrument and equipment processing
- Clinical and laboratory safety precautions
- Laundry and linen processing
- Employee occupational health and safety
- Prevention of common HAIs
- IPC in specialized areas
- SOPS

Coordination and Management of IPC

- National Level
 - National IPC advisory Committee
 - National IPC Technical Working Group
 - MoH IPC program
- County Level
 - County IPC Committee
 - County/Sub-County IPC Coordinator(s)
 - Hospital IPC Committee
 - Hospital IPC focal person
 - Primary facility IPC focal person

- Each institution is unique and its specific needs must be considered when developing or reorganising an infection prevention and control (IP&C) program
- Appropriate arrangements must be in place for effective IP&C practices
- There is an Infection Prevention and Control Committee (IPCC)

ICC Membership

- Chief Executive/Administrator or nominated representative
- Infection Control Officer/Doctor/Microbiologist who may act as chairperson
- Infection Control Nurse (ICN)
- Infectious Disease Physician (if available)
- Director of Nursing or his/her representative
- Representatives of pharmacy, central supply, maintenance, housekeeping, training services, engineering/design
- Occupational Health Physician (if available)
- Representatives from the major clinical specialties

Infection Prevention and Control Committee (IPCC)

- Provides a forum for multidisciplinary input, cooperation, and information sharing
- Is responsible for the planning, implementation, prioritisation, and resource allocation of all matters relating to IP&C
- Acts as a liaison between departments responsible for patient care and support services



IPC focal person

- Appointed for every health care facility to coordinate the implementation of IPC activities at the facility (Preferred is a nurse, Alternative microbiologist or clinician).
- Should be a highly motivated and self-driven person
- Liaison between ward staff and Infection control committee
 - Notify infection control committee and Med. Sup. of infected patient and take appropriate precaution
 - Provide information to assist surveillance in the early detection of outbreaks
- Knowledgeable in the use of equipment in their clinical area in relation to disinfection, sterilization and storage
- Work in conjunction with the Occupational Health Service on aspects related to infectious disease contact, sharps injury exposure

IPC Focal person

- A member of hospital quality, healthcare waste management and OHS committee
- Undertake clinical audit
- Carry out hand hygiene program
- Provide CMEs on IPC
- Compile monthly reports on IPC

Training qualifications

- Infection control practice
- Interpersonal, presentation and management skills, as these skills are crucial in the process of negotiating change with the rest of the ward-based team
- Create a group of clinical “opinion-leader”
- Learning how to manage change

What We Have Learnt...

- The importance of infection prevention and control
- Definition of IPC, healthcare associated infections
- Historic perspective of IPC
- The benefits for adhering to the IPC practices
- Briefly mentioned the governance structure for IPC

Thank you