MEDICAL AND SURGICAL ASEPSIS

Few Reminders

- Attendance
- Q&A
- Listen Carefully / Active Participation
- Quiz this week (Coverage – Members of the Microbial World)
- Discussion of MBP 108 Final Output
- Other Concerns

Learning Objectives

- Differentiate between sepsis and asepsis ;
- Distinguish between medical asepsis and surgical asepsis;
- Enumerate general aseptic procedures followed to maintain a clean environment and prevent the spread of infectious diseases;
- Explain the various isolation precaution measures;
- Identify aseptic measures utilized in the operating room ; and
- Determine general measures that can be used to prevent the development of infection in the community.

Hello!

I am Sir Alex

Let’s continue with our lesson.

Summary of Lessons

- Infection Control
  - Definition of Terms
- Asepsis
- Isolation Precautions
- Transmission-Based Precautions
- Preventing Infection in the Community

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Introduction

INFECTION CONTROL

Infection control

- Is one of the major concerns that healthcare workers in healthcare facilities and hospitals constantly address.
- There are certain terminologies associated with infection control that a healthcare worker must be familiar with.
- The following terminologies are :

Definition of Terms

Chain of Infection

how an individual acquires the infection agents and includes the infectious agent, the source of infection, or its reservoir, how the organism is transmitted, and the organism's portal of entry into the susceptible host.

Mode of Transmission

the manner in which the infectious organism is acquired by the host.

Standard Precautions

the specific measure used to prevent the spread of infection among all patients and healthcare workers, including measures to protect them from contaminated blood and other body fluids.

BREAK THE CHAIN

KEEP EVERYONE SAFE!

Next

Definition of Terms

Contamination

denotes contact of a sterile or aseptic item with microorganisms. Medically aseptic items become contaminated if they get in contact with disease-producing organisms. Sterile items become contaminated if they get in contact with items that are not sterile.

Decontamination

the process where physical or chemical means are used to remove, inactivate, or destroy pathogens on a surface or item making them safe for handling use and incapable of transmitting infectious agents.

Disinfection

the process by using physical or chemical means to destroy pathogens excluding the spores

Definition of Terms

Sterilization

The process by which all pathogens are destroyed, including the spores.

Antiseptic

a chemical solution that inhibits the growth of some microorganisms. Most antiseptics can be used directly on the skin. (e.g. alcohol and iodine)

Health-Associated Infection

any infection that is acquired during the time a patient is admitted in a healthcare facility. The most common healthcare-associated infection is the urinary tract infection (UTI).

Back to Main

Definition of Terms

Iatrogenic Infection

infection that is acquired in the course of undergoing diagnostic tests or therapeutic procedure.

Occupational Exposure

the *acquisition or exposure to an infectious agent of a healthcare worker* during the course of his/her work.

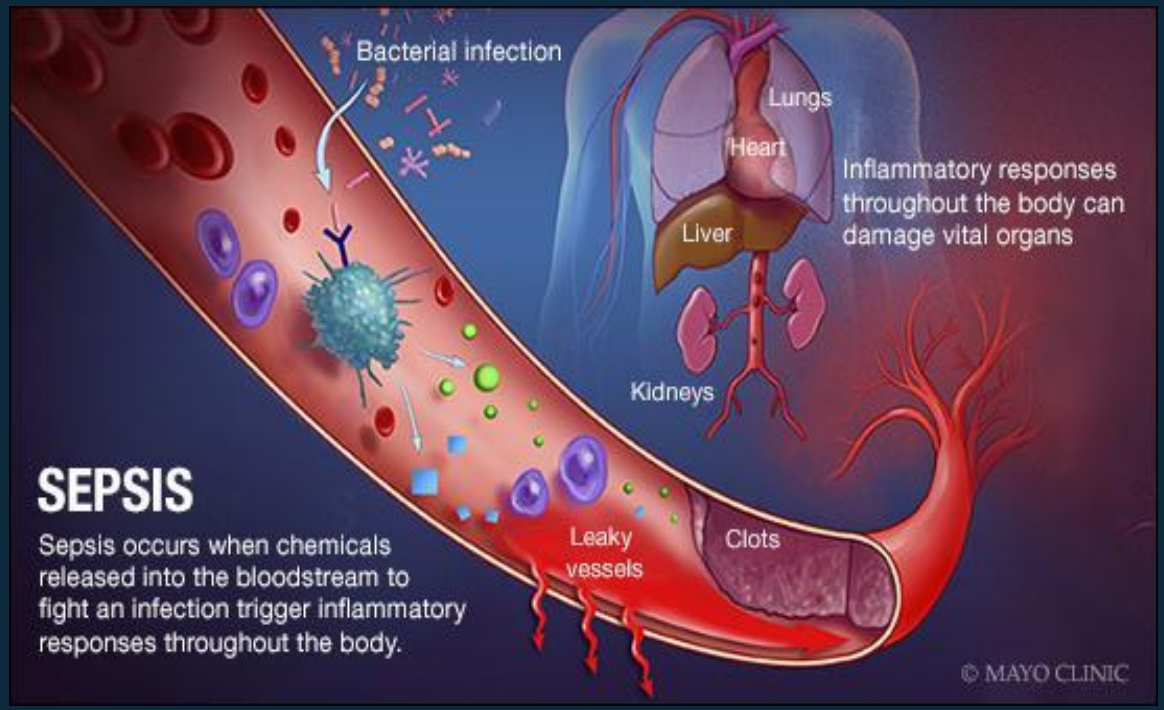
Personal Protective Equipment

specialized equipment and attire used by healthcare workers to protect them from infections. These include gloves, masks, gowns, and goggles.

ASEPSIS

- Refers to a condition in which the individual and his/her surrounding environment are free of any microorganisms.

- **SEPSIS,** the opposite of asepsis, refers to the clinical condition where an individual develops a systemic reaction to a bacterial infection that starts from a localized infection in one part of the body.


Bacterial infection
Lungs
Heart
Liver
Kidneys
Inflammatory responses throughout the body can damage vital organs
SEPSIS
Sepsis occurs when chemicals released into the bloodstream to fight an infection trigger inflammatory responses throughout the body.
Leaky vessels
Clots
© MAYO CLINIC

ASEPSIS

- The goal of asepsis are to protect the patient from a hospital-acquired or nosocomial infections and to prevent the spread of pathogenic microorganisms.

- All patients in healthcare facilities are vulnerable to pathogenic organisms.

Factors that play role in the occurrence of infection among patients include :

1. Suppression of the immune system
2. Prolonged duration of illness
3. Procedures that patients undergo in the healthcare facility

The most commonly occurring pathogenic microorganisms that lead to nosocomial infections :

1. *Escherichia coli*
2. *Staphylococcus aureus*
3. *Pseudomonas aeruginosa*
4. *Candida albicans*
5. *Enterococcus*

The primary locations of infections from these organisms are surgical wounds, urinary tract, respiratory tract, and the bloodstream.

Pathogens may be introduced to the patient through *contact with hospital personnel, hospital environment, or hospital equipment such as respiratory machines, catheters, and intravenous lines or needles.*

Situations that require aseptic measures are *surgery and the insertion of intravenous lines, urinary catheters, and drains.*

ASEPSIS may be classified into :

1. Medical or Clean Asepsis
2. Surgical or Sterile Asepsis

Medical or clean asepsis

refers to the absence of disease-producing microorganisms. It is the infection control process that aims to reduce the spread of infection.

- It involves certain procedures to decrease the number of organisms and prevent their spread in the general clinical setting.

Ex. Proper hand Hygiene, administration of all meds except that are given Intravenously, preparation of patient's skin before administration of subcutaneous medication

Surgical or Sterile Asepsis

Is defined as the absence of all microorganisms.

- It involves procedures that aim to eliminate microorganisms from an area in the body where surgical procedures will be performed as well as the location where the surgical procedure will be carried out.

GENERAL ASEPTIC PROCEDURES THAT HELP PRESERVE AND MAINTAIN A CLEAN MEDICAL ENVIRONMENT

1. Frequent handwashing of hospital personnel (doctors, nurses, medical tech, and orderlies);
2. Prompt and safe disposal of contaminated materials like bandages and needles;*
3. Regular checking and emptying of containers for surgical drains;
4. Prompt cleaning of soiled or moist areas ;
5. Proper labeling of containers regarding the date and time of disposal.

General Aseptic Procedures

HANDWASHING

- The most frequent source of microorganisms leading to outbreaks of infection in health institutions is the hands of the healthcare workers.
- **Most basic means of preventing the spread of pathogenic organisms.**

Reasons for Handwashing

1. Reduce the flora on the healthcare worker's skin
2. Protect the healthcare worker in the event that there is a break in his or her skin ;
3. Reduce risk of contact with infectious agents if gloves worn are punctured ;
4. Reduce the chances of disease transmission.

When should handwashing be done?

1. At the beginning and end of each shift ;
2. When the hands are visibly soiled ;
3. After contact with a possible source of microorganisms such as blood or body fluids, mucous membranes, non-intact skin, or contaminated objects ;
4. Before and after performing invasive procedures;
5. Before and after using of gloves

Proper hand washing

- > friction and regular soap and water ;
  > hands thoroughly washed with vigorous scrubbing, special attention to the areas around the nail beds and between the fingers;
  (high in bacterial load)
  > fingernails should be kept short and clean.

Proper hand washing

- Alcohol-based sanitizing antimicrobial solutions or hand cleansers must not be used as substitute for proper handwashing.

However, if no water and soap, one may use it.

PPE's

PERSONAL PROTECTIVE EQUIPMENT

PPEs

are specialized equipment and attire used in healthcare facilities to protect not only the healthcare workers but also the patients and visitors against infections. **These include masks, gowns and goggles.**

Gloves

- Among the various PPEs in use, gloves are the most commonly used.
- Used during medical procedures – two most commonly used :

  a. Examination gloves
  b. Surgical gloves (sterile)

Gloves

- Serve as a protective barrier when handling our touching open wounds, blood or body fluids.
- Protection from microorganisms and help prevent the spread of infectious agents from one person to another.
- Sterile, disposable gloves must be provided to all personnel in healthcare facilities, particularly those who have direct contact with patients.
- The gloves must be disposed of immediately after use.

WORLD HEALTH ORGANIZATION (WHO) : GUIDELINES FOR PROPER USE OF GLOVES IN HEALTH CARE FACILITIES.

1. Gloves are not meant to replace observance of proper hand hygiene. The practice of hand hygiene must still be observed before and after wearing of gloves.

2. Gloves must be worn if contact with blood or body fluids, mucous membranes, open wounds, or potentially infectious material is anticipated.

3. Gloves must be removed and disposed of after caring for a patient. Healthcare workers must not wear the same gloves if caring for more than one patient.

4. Gloves must be removed or changed if moving from a contaminated body site to another body site in the course of caring for a patient.

5. Re-using of gloves after decontamination is not recommended.

Masks

- The mask must cover the mouth and nose.
- It must be tied in a way that there should be minimal gaps between the face and the mask.
- The moment it becomes damp, it should be replaced with a clean, and dry one.
- Remember that mask are supposed to be single-use items – disposed and discarded of as clinical waste.
- Recommended that hands are decontaminated with soap and water after mask is disposed.

Sterile Gowns

- Healthcare workers are recommended to wear gowns or aprons when there is probability of contact with blood, body secretions excluding sweat, or other body substances.

- Likewise wearing gowns is recommended if the healthcare worker has close contact with patients, equipment, or materials that can introduce infectious agents to the healthcare worker's skin, uniform and or other clothing.

Sterile Gowns

- **Fluid-resistant apron or gown :**
  - Is recommended if there is a risk for body substances, blood or body secretions to contaminate the clothing or skin of the healthcare worker.

- **Clean, non-sterile gowns or aprons**
  - generally sufficient to protect the skin and prevent soiling of clothing during procedures or other in-patient activities that may lead to splashing or spraying of blood and body substances.

Main

Sterile Gowns

- Fluid-resistant gowns or aprons **are always worn with gloves and other personal protective equipment.**
- Healthcare workers must make sure that they **change gowns or aprons in between treating different patients.**

Critical Shortage!

ISOLATION PRECAUTIONS

Isolation Precautions

- Isolation is the process of separating an individual with an infectious disease from the rest of the healthy population to prevent the spread of the infection to other individuals.

- Universal Precautions – are geared towards handling of patients with an infection from an unknown pathogen to decrease the risk of transmission.


QUARANTINE
AUTHORIZED PERSONAL ONLY
CAUTION
OUTBREAK ALERT

HOSPITAL ISOLATION ROOMS READY FOR CORONAVIRUS CASES

Transmission Based Precautions

Transmission-based precautions

- Transmission-based precautions have been developed to further prevent the spread of infectious agents. These precautions are based on the mode of transmission of the infectious agents and are classified into :

1. Contact Precautions
2. Droplet Precautions
3. Airborne Precautions

Contact precautions

- **Contact Precautions**

- Are used to prevent the spread of infections or infectious agents that are transmitted through touching of patients or items in the room where the infectious agents may be deposited (called fomites).

- Ex. MRSA, viruses such as respiratory syncytial virus, agents that cause diarrhea whether viral or bacterial, and open wounds.

  All individuals whether healthcare personnel or non-healthcare personnel, must wear gowns and gloves.

Droplet Precautions

- are used for diseases or infectious agents that are spread in tiny droplets caused by coughing and sneezing. These are used to prevent contact with secretions from the respiratory tract.
  - these droplets can travel a distance of approx 3 feet (90 centimeters)

  Ex : influenza, mumps or pertussis (whooping cough).

- All persons entering the rooms of these patients are required to wear a surgical mask.

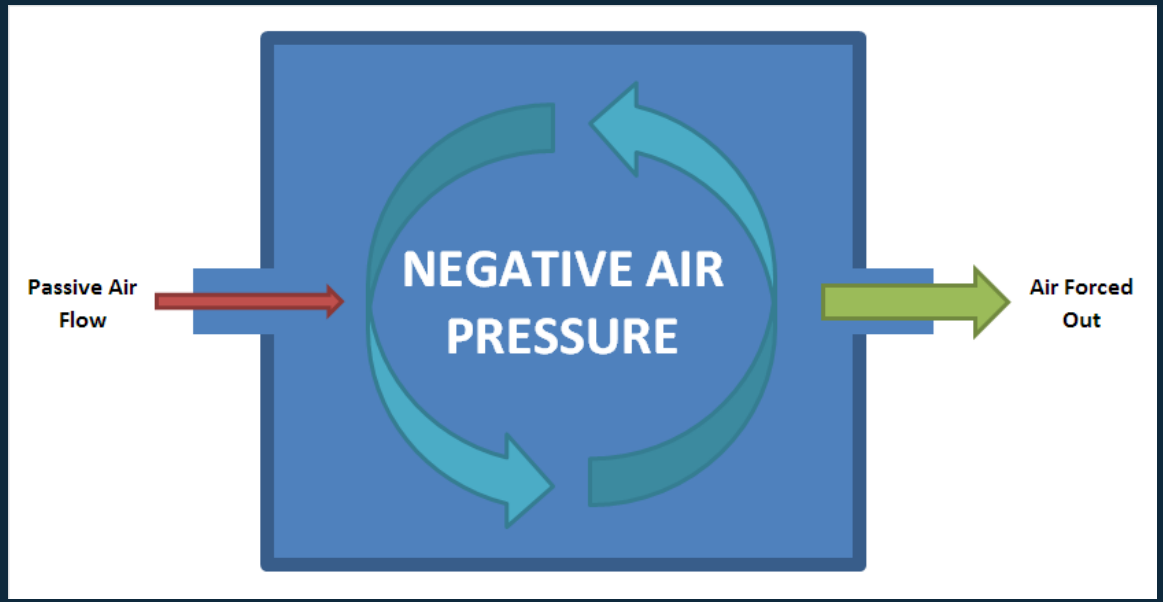
- The door must remain closed at all times and all individuals entering the room must wear a protective mask. This is called *reverse isolation.*

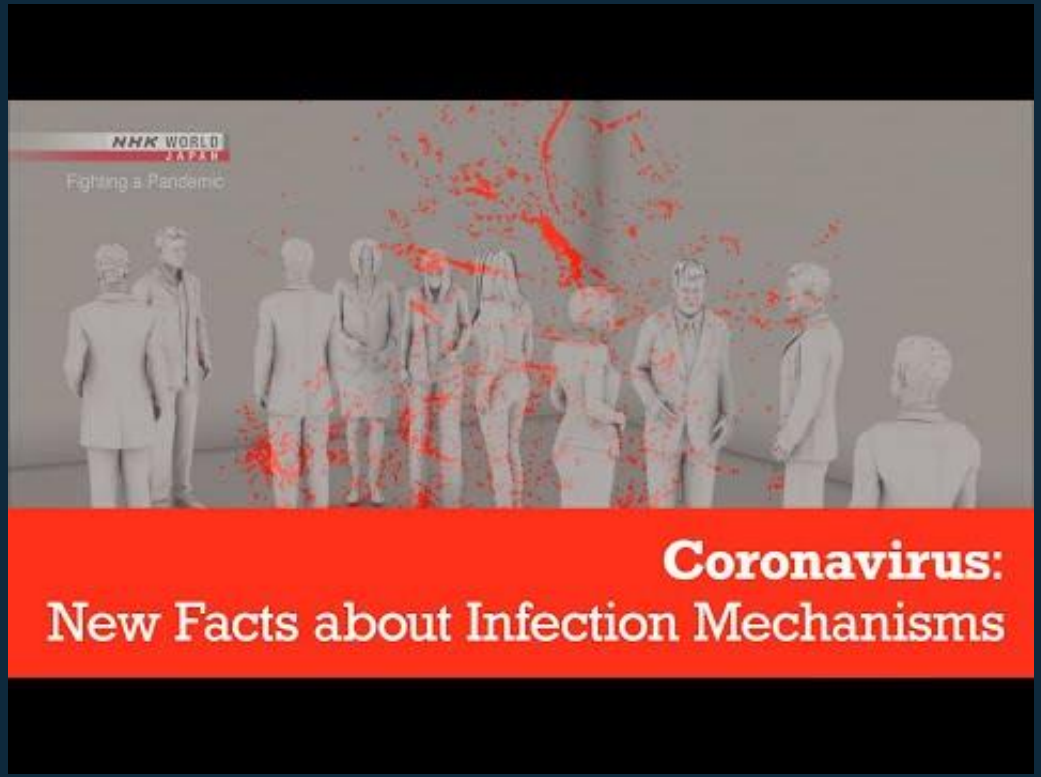
Airborne-Precautions

- Spread through the air from one person to another.
  - These microorganisms can float in the air and travel long distances.

  Ex. Chicken pox, measles, and tuberculosis

- Patients who are admitted to the hospital with the said infections must be placed in a room with negative air pressure where the air is gently sucked out and not allowed to flow into the hallway thereby preventing contact with the outside environment.


Passive Air Flow
NEGATIVE AIR PRESSURE
Air Forced Out



Coronavirus: New Facts about Infection Mechanisms - NHK Documentary

Preventing Infection in the Community

- Infection control in the community includes sanitation techniques, improvement of health practices, and vaccination.
- Sanitation techniques : water purification, proper sewage disposal
- Improvement of health practices : educating members of the community on the proper handling, storage and preparation of food
- VACCINATION : immunizations awareness

End

- MBP 108 Discussion of MBP 108 Final Output (Midterm)
- MBP 108 Laboratory Activity 3

Thanks!

Any questions?

You can email me 2

- alex.borromeo@bulsu.edu.ph
- Messenger : @akosialex

Credits

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by SlidesCarnival
- Photographs by Unsplash

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Chain of Infection

Next Sick Person

(Susceptible Host)

- Babies
- Children
- Elderly
- People with a weakened immune system
- Unimmunized people
- Anyone

Germs

(Agent)

- Bacteria
- Viruses
- Parasites

How Germs Get In

(Portal of Entry)

- Mouth
- Cuts in the skin
- Eyes

Where Germs Live

(Reservoir)

- People
- Animals/Pets (dogs, cats, reptiles)
- Wild animals
- Food
- Soil
- Water

Germs Get Around

(Mode of Transmission)

- Contact (hands, toys, sand)
- Droplets (when you speak, sneeze or cough)

How Germs Get Out

(Portal of Exit)

- Mouth (vomit, saliva)
- Cuts in the skin (blood)
- During diapering and toileting stool)

Volume 26, Number 7—July 2020

Research Letter

COVID-19 Outbreak Associated with Air Conditioning in Restaurant, Guangzhou, China, 2020

Jianyun Lu[1], Jieni Gu[1], Kuibiao Li[1], Conghui Xu[1], Wenzhe Su, Zhisheng Lai, Deqian Zhou, Chao Yu, Bin Xu✉, and Zhicong Yang✉

Author affiliations: Guangzhou Center for Disease Control and Prevention, Guangzhou, China (J. Lu, K. Li, C. Xu, W. Su, C. Yu, Z. Yang); Guangzhou Yuexiu District Center for Disease Control and Prevention, Guangzhou, China (J. Gu, Z. Lai, D. Zhou, B. Xu)

Cite This Article

Abstract

During January 26–February 10, 2020, an outbreak of 2019 novel coronavirus disease in an air-conditioned restaurant in Guangzhou, China, involved 3 family clusters. The airflow direction was consistent with droplet transmission. To prevent the spread of the virus in restaurants, we recommend increasing the distance between tables and improving ventilation.

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Conclusions

Based on the available evidence, including the recent publications mentioned above, WHO continues to recommend droplet and contact precautions for those people caring for COVID-19 patients. WHO continues to recommend airborne precautions for circumstances and settings in which aerosol generating procedures and support treatment are performed, according to risk assessment.[13] These recommendations are consistent with other national and international guidelines, including those developed by the European Society of Intensive Care Medicine and Society of Critical Care Medicine[14] and those currently used in Australia, Canada, and United Kingdom.[15-17]

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Keep all sterile equipment and sterile gloves above waist level.

Touch only sterile items

Pass back to back

Back

Physical and Chemical Methods of Sterilization

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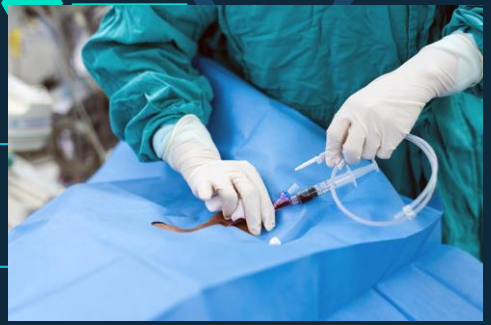
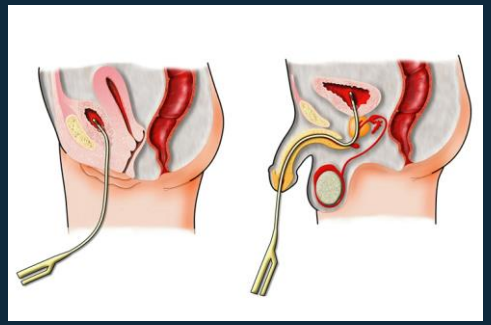
Examples of disinfectants

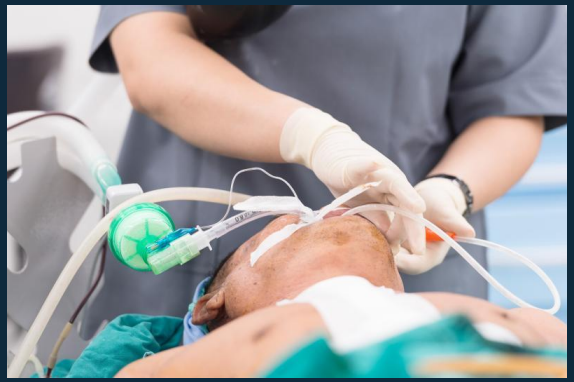


Central line-associated bloodstream infections (CLABSI)

Surgical site infections (SSI)



Catheter-associated urinary tract infections (CAUTI)



Ventilator-associated pneumonia (VAP)

Types of Healthcare Associated Infections

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Iatrogenic Illness : 250,000 deaths of people a year

thebmj covid-19 Research Education News & Views Campaigns Jobs

Analysis

Medical error—the third leading cause of death in the US

BMJ 2016 ; 353 doi: https://doi.org/10.1136/bmj.i2139 (Published 03 May 2016)
Cite this as: *BMJ* 2016;353:i2139

BMJ talk medicine
Medical error–the third leading cause of death in the US
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RISK EXPOSURE OF HEALTH-CARE WORKERS PROTOCOL according to the WHO

Table 1. Workplace risk levels, job tasks and corresponding measures for primary prevention and mitigation of occupational exposure to SARS-CoV-2 among health workers

Risk level	Examples of job tasks	Sample prevention and mitigation measures[iii]
Lower risk (caution)	Administrative tasks that do not involve contact with patients and visitors or close contact with other co-workers. For example, telehealth services, remote interviewing of suspected or confirmed COVID-19 patients or their contacts, working in individual or low-density offices.	Health facilities: • organize remote work and teleservices, wherever possible and appropriate; • provide natural or mechanical ventilation without recirculation; • organize regular environmental clean-up and disinfection; • introduce measures for avoiding crowding and social mixing and encourage workers to observe safe physical distancing; • introduce measures preventing the sharing of work stations and equipment; • establish flexible sick leave policies. Workers: • stay home if unwell; • observe hand and respiratory hygiene; • use fabric masks in common areas and face-to-face meetings.

Risk level	Examples of job tasks	Sample prevention and mitigation measures[iii]
Medium risk	Jobs or tasks with close frequent contact with patients, visitors, suppliers and co-workers but that do not require contact with people known or suspected of being infected with SARS-CoV-2. In settings with known or suspected community transmission of SARS-CoV-2, this risk level may apply to workers who have frequent and close work-related contact with other people within a health-care facility or in the community where safe physical distance may be difficult to maintain. In settings without community transmission, this scenario may include close frequent contact with people coming from areas with known or suspected community transmission.	Health facilities: • consider alternatives to face-to-face outpatient visits using telehealth services wherever feasible and appropriate; • provide sneeze screens, barriers, workplace modifications and natural or mechanical ventilation without recirculation; • organize screening and triage for early recognition of patients with suspected COVID-19 and rapid implementation of source control measures; • organize regular environmental clean-up and disinfection; • introduce measures to avoid crowding and social mixing, such as restricting visitors and designating areas where patients are not allowed; • encourage workers to observe safe physical distancing when not wearing PPE (e.g. in break rooms and cafeterias); • provide IPC training and adequate PPE in sufficient quantity and quality; • establish flexible sick leave policies. Workers: • stay home if unwell; • observe hand and respiratory hygiene; • wear medical masks and other PPE according to their tasks and apply standard precautions in providing patient care.
High risk	Clinical triage with in-person interviewing of patients with signs and symptoms of COVID-19; cleaning areas for screening and isolation; entering rooms or isolation areas occupied by patients with known or suspected COVID-19; conducting a physical examination and providing direct care not involving aerosol-generating procedures for patients with known or suspected COVID-19; manipulation of respiratory samples; handling respiratory secretions, saliva or waste from COVID-19 patients; transportation of people known or suspected of having COVID-19 without physical separation between the driver and the passenger; cleaning between transports of patients with suspected COVID-19.	Health facilities: • implement engineering, environmental and administrative controls for IPC, and provide adequate PPE in sufficient quantity and quality; • provide enhanced ventilation without recirculation, with "clean to less clean" directional design for airflows; • organize regular environmental clean-up and disinfection; • introduce measures for avoiding crowding and social mixing and restricting non-essential workers and visitors; • provide regular IPC training, including on the use of PPE; • establish flexible sick leave policies. Workers and caregivers: • use PPE based on transmission-based precautions (medical mask, gown, gloves, eye protection) and apply standard precautions in providing patient care; • stay home if unwell; • observe hand and respiratory hygiene. Patients, visitors and suppliers: • wear medical or fabric masks; • observe hand and respiratory hygiene.
Very high risk	Work with COVID-19 patients where aerosol-generating procedures (e.g. tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, sputum induction, bronchoscopy, autopsy procedures, dental procedures that use spray-generating equipment) are frequently performed; work with infected people in indoor, crowded places without adequate ventilation.	Health facilities: • implement engineering, environmental and administrative controls for IPC and provide adequate PPE in sufficient quantity and quality; • provide mechanical ventilation with high efficiency particulate air (HEPA) filters without recirculation; • introduce measures for avoiding crowding and social mixing and for restricting access of non-essential workers and visitors; • provide regular IPC training, and training in donning and doffing PPE; • establish flexible sick leave policies. Workers: • stay home if unwell; • observe hand and respiratory hygiene; • use PPE (respirator N95 or FFP2 or FFP3, gown, gloves, eye protection, apron) and apply standard precautions in providing patient care.

IPC: infection prevention and control; PPE: personal protective equipment.

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EXAMPLES OF PPE

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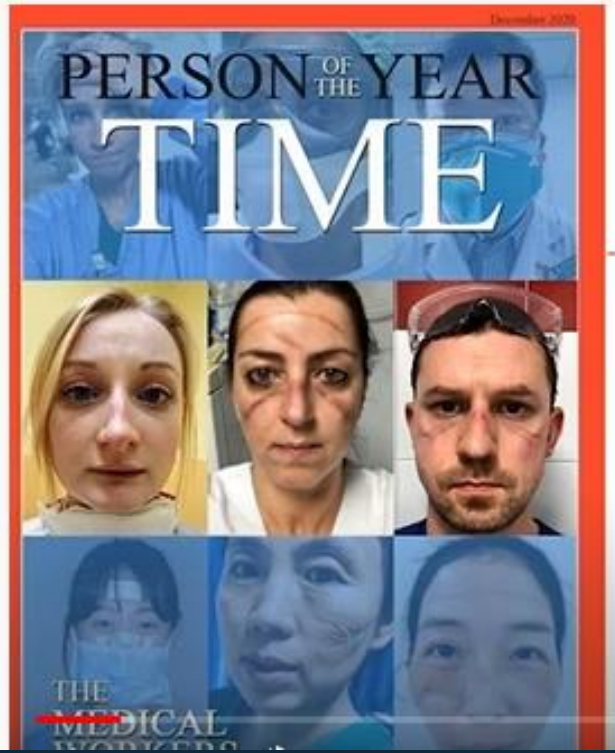

PPE related skin injuries

In the Media

- It has been reported that increased duration of PPE use is associated with skin irritation and breakdown.
- Symptoms including burning, itching, stinging, erythema, papules, maceration and scaling have been associated with the prolonged use of PPEs
- Their most common areas are the:
  - nasal bridge
  - cheeks
  - forehead
  - hands

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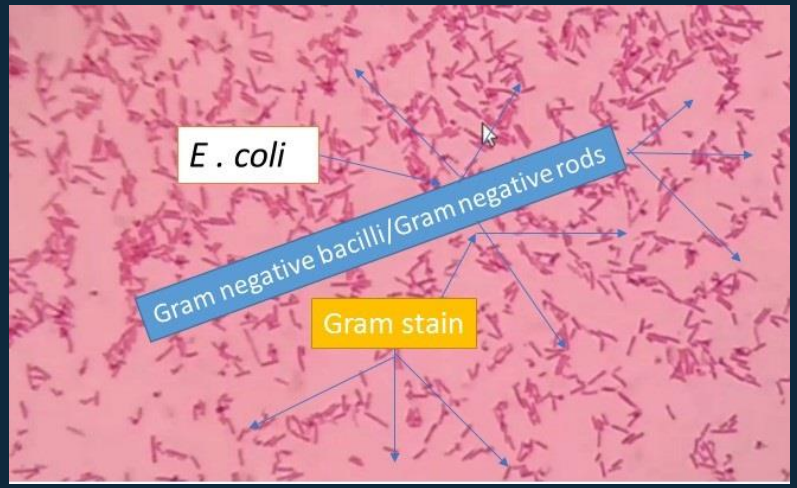
Escherichia coli



- Lives in your intestines
- Most E.coli are harmless
- Oral-fecal route
- Catheterization acquired urinary tract infections (CAUTI)

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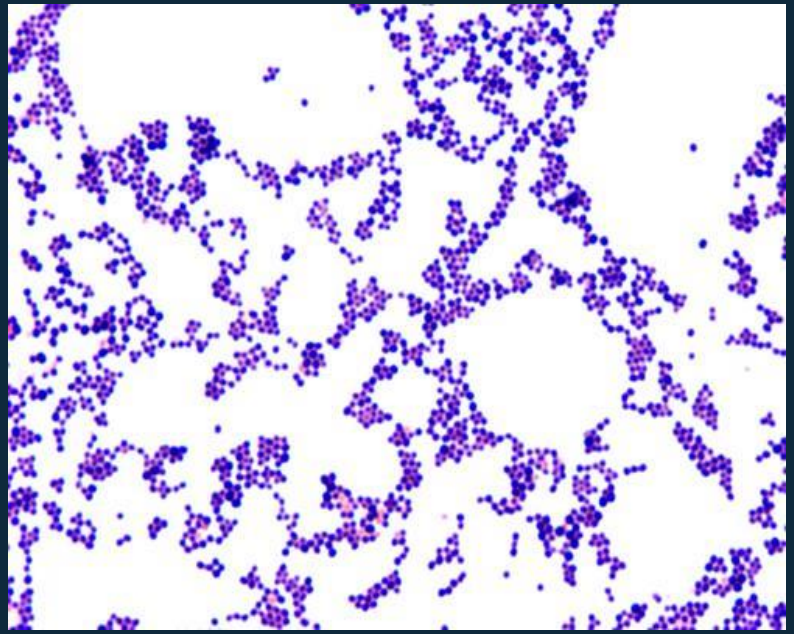
Staphylococcus aureus



- Gram-positive bacteria; sphere shaped
- found on human skin, in the nose, armpit, groin, and other areas
- Among staphylococcal bacteria, *S. aureus* is the most dangerous.
- Can cause SEPSIS once it enters the bloodstream
- Can spread locally and systemically
- Resistance to antibacterial agents (MRSA)

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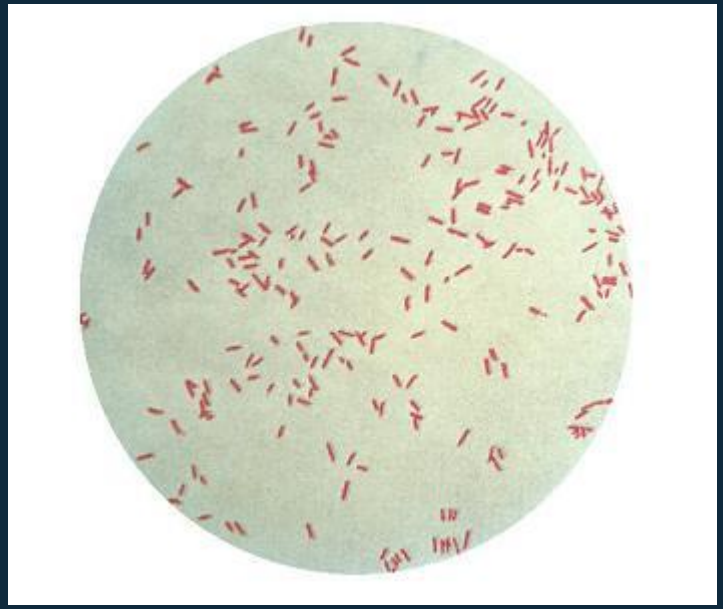
Pseudomonas aeruginosa



- Encapsulated, Gram-negative rod shaped bacteria
- Bacteria commonly found in the environment, such as soil, water and plants.
- An opportunistic, nosocomial pathogen of immunocompromised individuals
- Infects airway, urinary tract, burns, wounds and also cause other blood infections.

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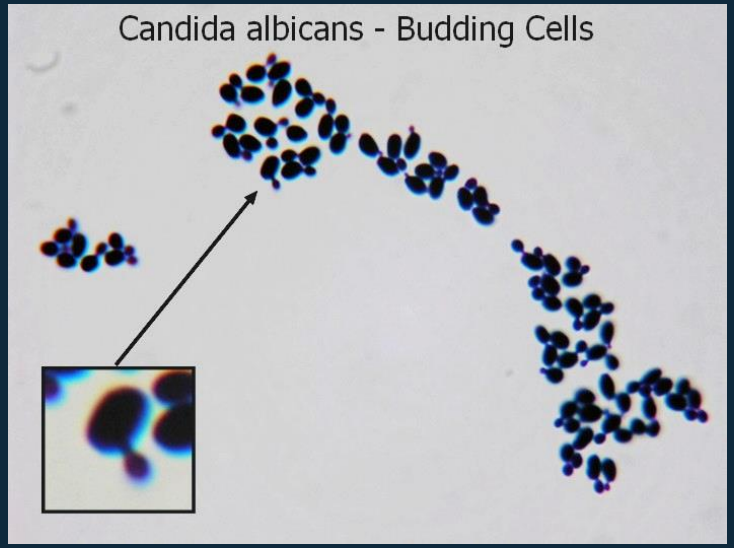
Candida albicans



- Is an opportunistic fungal pathogen of humans.
- Normal part of the gastrointestinal flora.
- The sixth most common cause of nosocomial (hospital acquired) infections – on a global scale
- Commensal relationship – however can advance to pathogenic
- Prolonged hospital ; antibiotics ; immunocompromised

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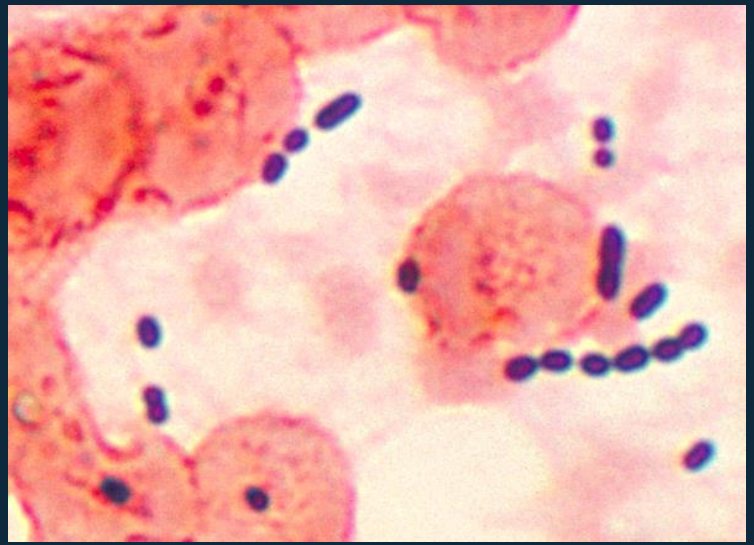
Enterococcus



gram -positive cocci; often in pairs (diplococci) or short chains

difficult to distinguish from streptococci on physical characteristics alone.

Two species are common commensal organisms in the intestines of humans: *E. faecalis* (90–95%) and *E. faecium* (5–10%)

Microbial infection - open wound, surgical procedure, infected needle / substances while using illicit drugs

Infections caused (next slide)

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Open access peer-reviewed chapter

Enterococci: An Important Nosocomial Pathogen

By Sonia Bhonchal Bhardwaj

Submitted: March 26th 2019 Reviewed: November 19th 2019 Published: December 16th 2019

DOI: 10.5772/intechopen.90550

Nosocomial infections by Enterococci are Urinary tract infection, endocarditis, bacteremia, catheter related infections, wound infections, intra- abdominal and pelvic infections and recently even oral infections have been reported.

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5 Moments
Next Slide

How to Handwash?

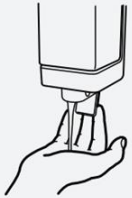
WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds

0

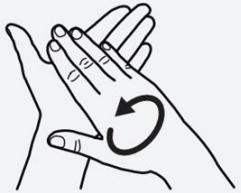
Wet hands with water;

1



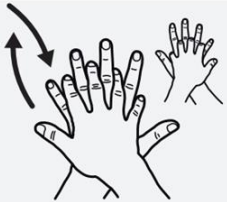
Apply enough soap to cover all hand surfaces;

2



Rub hands palm to palm;

3



Right palm over left dorsum with interlaced fingers and vice versa;

4

Palm to palm with fingers interlaced;

5

Backs of fingers to opposing palms with fingers interlocked;

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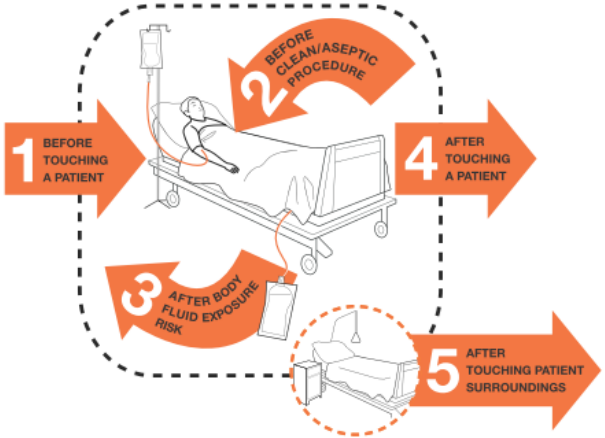
Your 5 Moments for Hand Hygiene



1	BEFORE TOUCHING A PATIENT	WHEN?	Clean your hands before touching a patient when approaching him/her.
		WHY?	To protect the patient against harmful germs carried on your hands.
2	BEFORE CLEAN/ ASEPTIC PROCEDURE	WHEN?	Clean your hands immediately before performing a clean/aseptic procedure.
		WHY?	To protect the patient against harmful germs, including the patient's own, from entering his/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 TOUCHING A PATIENT	WHEN?	Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
5	AFTER TOUCHING PATIENT SURROUNDINGS	WHEN?	Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving – even if the patient has not been touched.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

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.

May 2009

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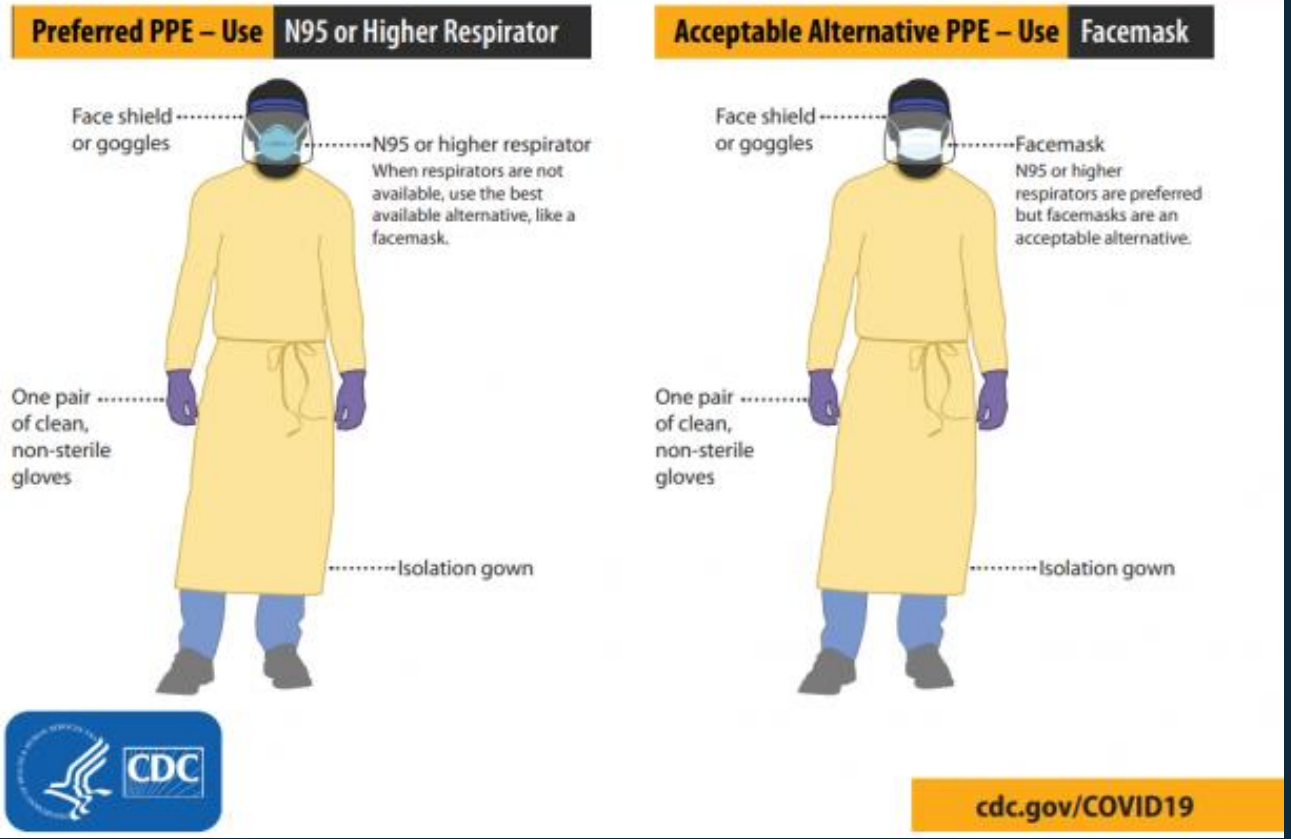
COVID-19 Personal Protective Equipment (PPE) for Healthcare Personnel



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World Health Organization

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Home / News / Shortage of personal protective equipment endangering health workers worldwide

Shortage of personal protective equipment endangering health workers worldwide

3 March 2020 | News release | Geneva | Reading time: 2 min (471 words)

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NEWS / METRO / Healthcare workers still struggling with PPE shortage

SHARES

Metro, News

Healthcare workers still struggling with PPE shortage

Published July 19, 2020, 6:55 PM
by Gabriela Baron

(JANSEN ROMERO / MANILA BULLETIN)

Healthcare-associated infections rose in 2020, CDC says

Filed Under: Healthcare-Associated Infections; Antimicrobial Stewardship; COVID-19; MRSA

Chris Dall | News Reporter | CIDRAP News | Sep 02, 2021

A new study by researchers with the Centers for Disease Control and Prevention (CDC) shows that, after years of decline, US hospitals saw significant increases in healthcare-associated infections (HAIs) in 2020, largely as a result of the COVID-19 pandemic.

dimarik / iStock

Published today in *Infection Control and Hospital Epidemiology,* the analysis of National Healthcare Safety Network (NHSN) data from acute care hospitals in 12 states found that rates of central-line–associated bloodstream infections (CLABSIs), catheter-associated urinary tract infections (CAUTIs), and ventilator-associated events (VAEs) saw significant increases in 2020 compared with 2019, particularly in the second half of the year.

There was also a significant rise in methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia.

Prior to 2020, rates of HAIs in US hospitals had been declining since 2015, a decrease that has been attributed to improved infection prevention and control measures. But the surge of COVID-19 patients in 2020—and the diversion of hospital staff and resources to focus on care of those patients—clearly put a dent in those efforts.

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News | Infection Control News

Urgent infection control reform needed in hospitals worldwide

1st June 2020

iStock-FatCamera

Infection control reform in hospitals and care homes across the globe is needed urgently, say experts.

The COVID-19 pandemic has presented new challenges for healthcare systems across the globe, and whilst governments ensure sufficient measures are taken to stop the spread of

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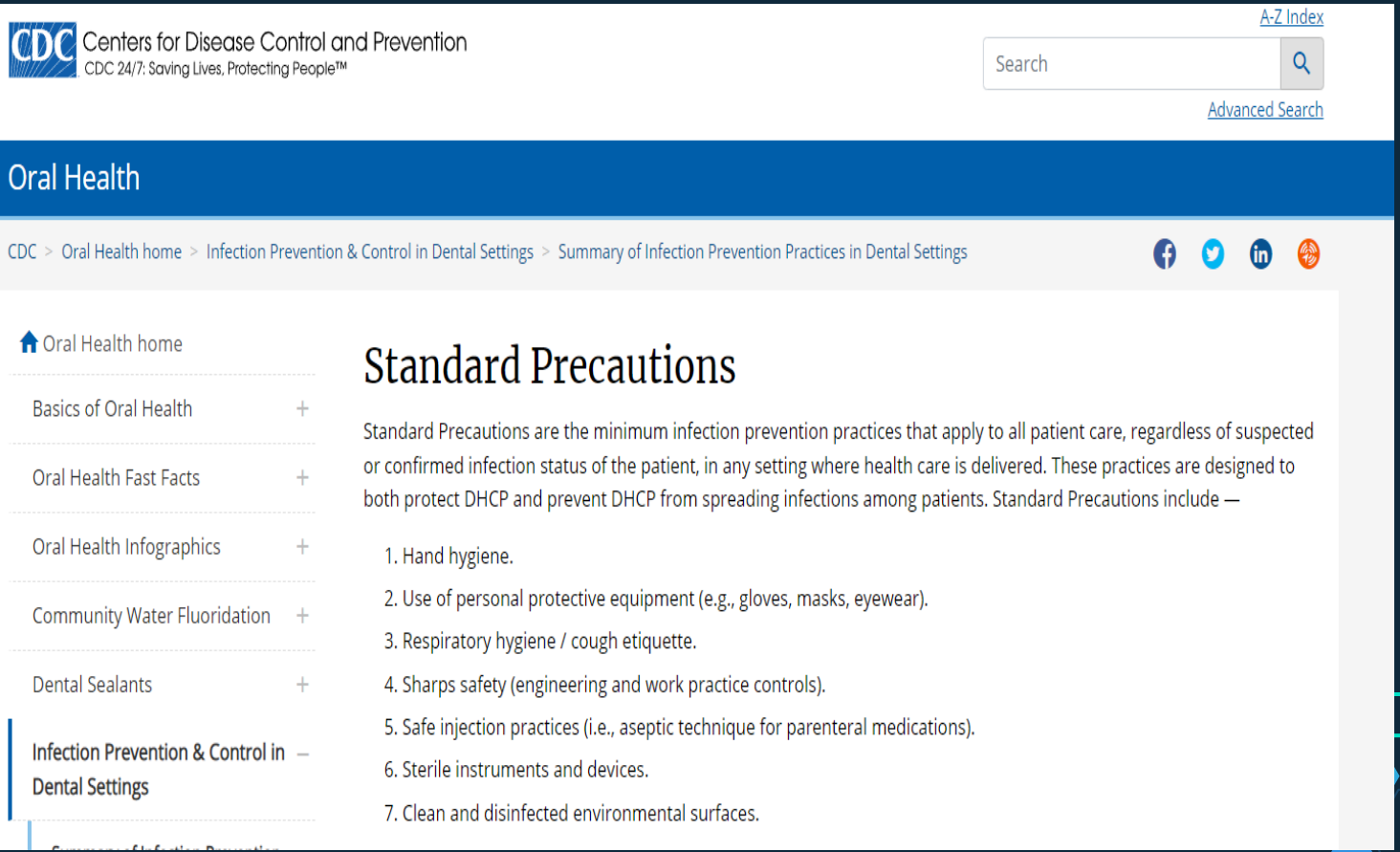

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

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Dental Sealants +

Infection Prevention & Control in Dental Settings –

Standard Precautions

Standard Precautions are the minimum infection prevention practices that apply to all patient care, regardless of suspected or confirmed infection status of the patient, in any setting where health care is delivered. These practices are designed to both protect DHCP and prevent DHCP from spreading infections among patients. Standard Precautions include —

1. Hand hygiene.
2. Use of personal protective equipment (e.g., gloves, masks, eyewear).
3. Respiratory hygiene / cough etiquette.
4. Sharps safety (engineering and work practice controls).
5. Safe injection practices (i.e., aseptic technique for parenteral medications).
6. Sterile instruments and devices.
7. Clean and disinfected environmental surfaces.

Examples of Iatrogenic Events

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Iatrogenic infection

Iatrogenic injury

Iatrogenic effect

Iatrogenic illness

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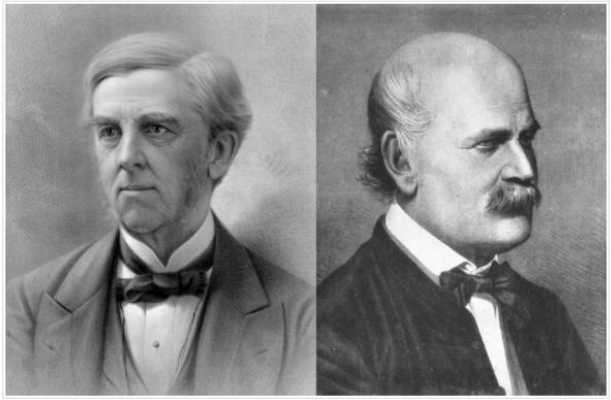
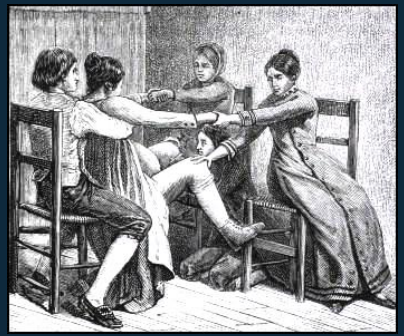
Historical perspective on hand hygiene in health care



Oliver Wendell Holmes, Sr., on the left, and Ignaz Philipp Semmelweis on the right. Images shamelessly taken from their wikipedia pages.



puerperal fever

3% Drop ; Mortality Rate

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Colour Coding for Biomedical Waste Management in Hospitals

Segregate Waste in Colour Coded Bins

RED BAGS	BLUE BAGS	YELLOW BAGS	BLACK BAGS
Plastics waste such as catheters, injections, syringes, tubings i.v, bottels	All type of glass bottels and articles, outdated & discarded medicines	Infectious waste, bandages,gauzes, cotton or any other things in contect with body fluids, human body parts,placenta	Needles without syringes, blades, sharps and all metal articals

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Photo Credit: Adobe Stock/guidenuk

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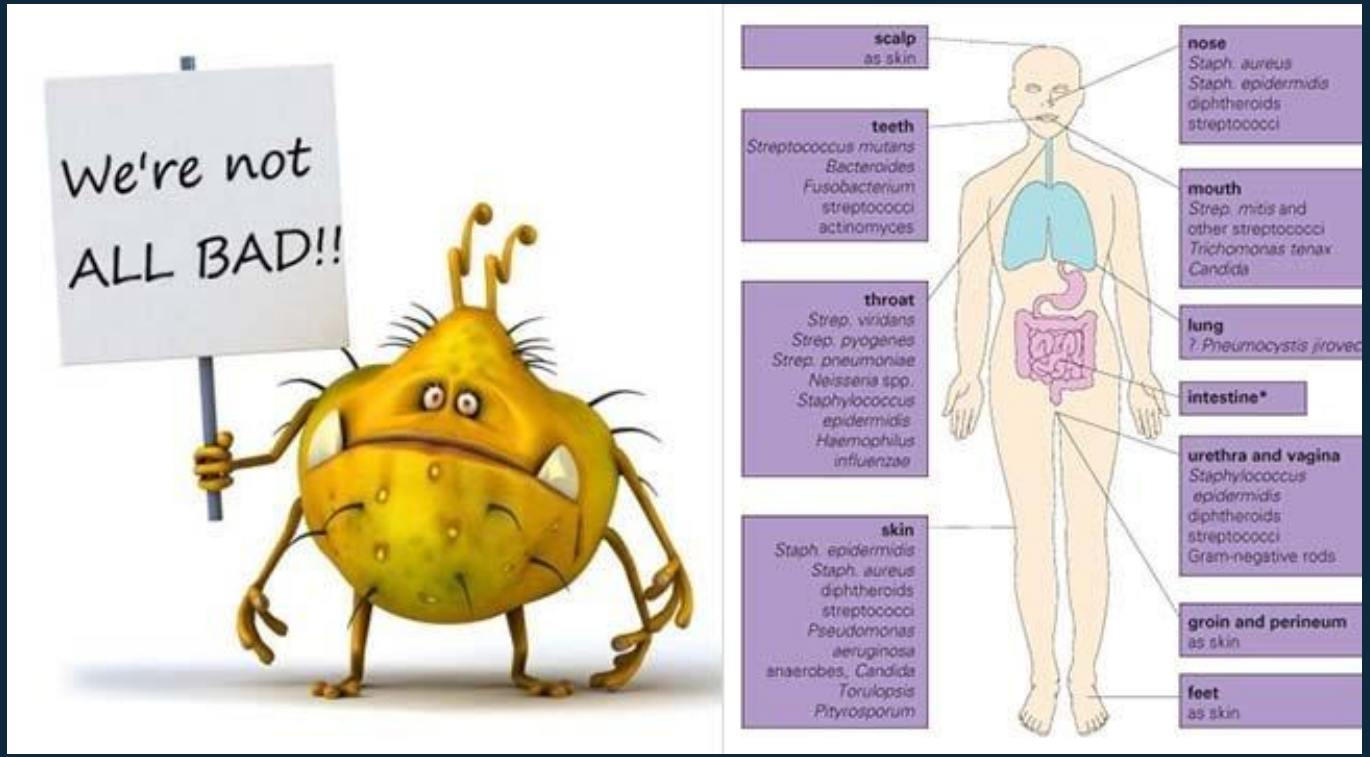
We're not
ALL BAD!!
scalp
as skin
teeth
Streptococcus mutans
Bacteroides
Fusobacterium
streptococci
actinomyces
throat
Strep. viridans
Strep. pyogenes
Strep. pneumoniae
Neisseria spp.
Staphylococcus
epidermidis
Haemophilus
influenzae
skin
Staph. epidermidis
Staph. aureus
diphtheroids
streptococci
Pseudomonas
aeruginosa
anaerobes, Candida
Torulopsis
Pityrosporum
nose
Staph. aureus
Staph. epidermidis
diphtheroids
streptococci
mouth
Strep. mitis and
other streptococci
Trichomonas tenax
Candida
lung
?Pneumocystis jiroveci
intestine*
urethra and vagina
Staphylococcus
epidermidis
diphtheroids
streptococci
Gram-negative rods
groin and perineum
as skin
feet
as skin

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Examination Gloves

Sterile Gloves