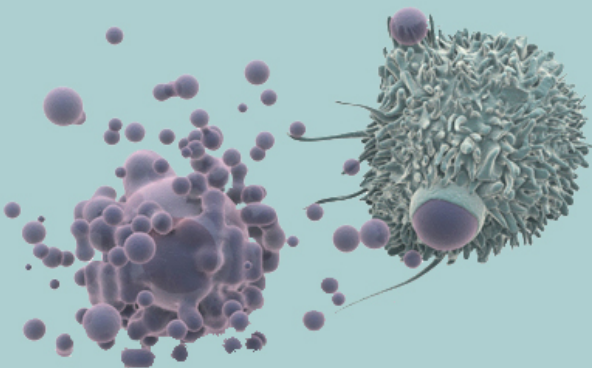


Infection Prevention and Control



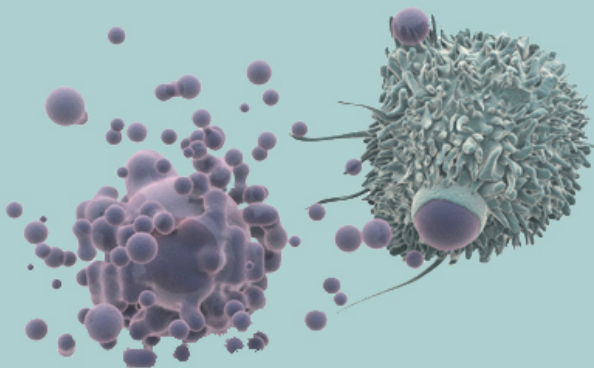
CONSOLE

Presented By
Haifa H. Altalhi, MSc, BMT, CIC
Head, Infection Control Department
KSUMC



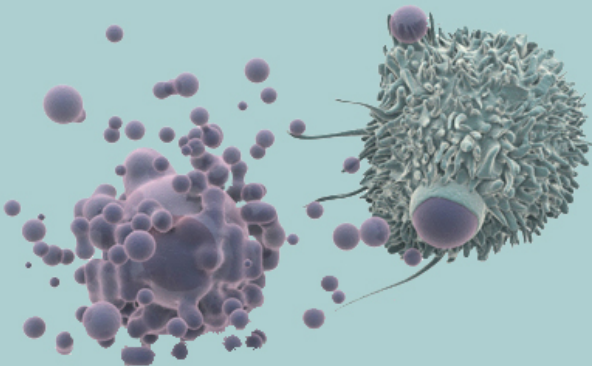
What is Infection Prevention and Control?

- Infection Control is the prevention of the spread of clinically significant microorganisms that cause infection; or the potential to cause disease.



What is Focus of Infection Control?

- Protect the patient
- Protect healthcare staff
- Protect the visitors
- In a cost effective manner.



Infection Prevention and Control

Susceptible host

A person who is potentially vulnerable to an infection



Portal of entry

Site through which a pathogen can enter the susceptible host and cause infection, such as a urinary catheter or central line



Understanding
the chain
of infection

Infectious agents

Pathogenic (disease-causing) microbes such as bacteria, parasites, viruses, or fungi



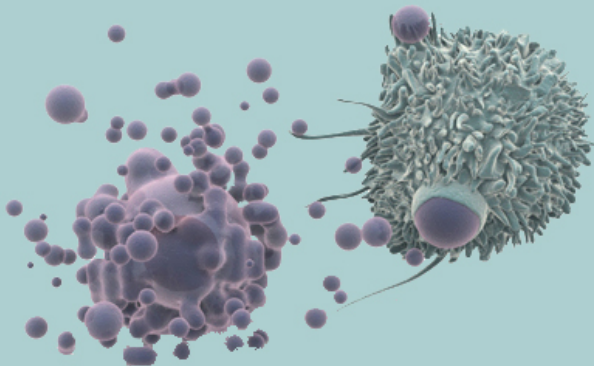
Reservoirs

Hosts or habitats - such as humans, animals, or environment - where infectious agents live and reproduce



Elements Of Standard Precaution

1. Hand Hygiene
2. Gown
3. Mask
4. Face Protection
5. Gloves
6. Safe injection practices
7. Patient Care Equipment/
Devices
8. Worker Safety
11. Patient Placement and
Transport
12. Respiratory Hygiene / Cough
Etiquette



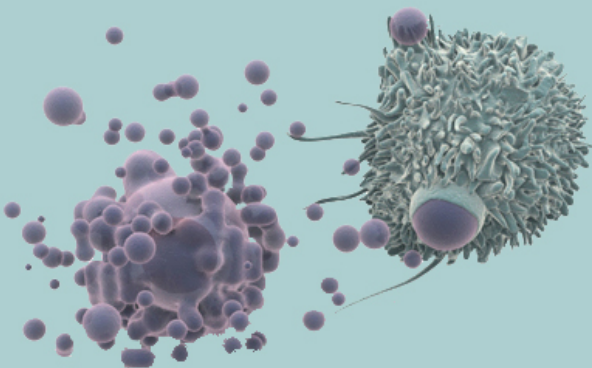
[2 A very serious message about hand hygiene in hospitals.mp4](#)

Hand Hygiene

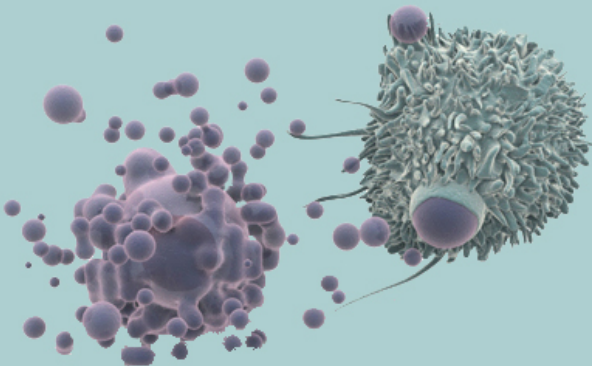
- Healthcare-associated pathogens are most often transmitted from patient to patient through the hands of healthcare workers.



- Hand Hygiene is the single most important measure for preventing the spread of microorganisms in healthcare settings.



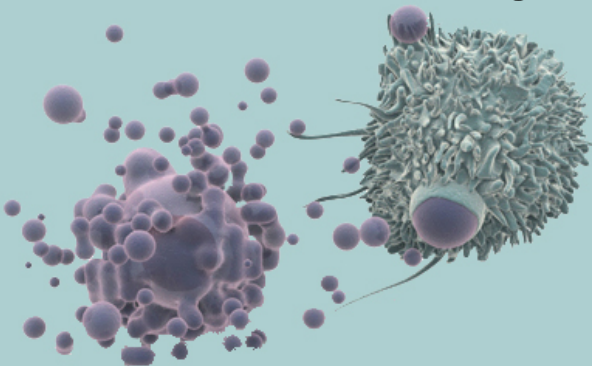
Hand hygiene is the
single most effective measure to
reduce health care associated
infections

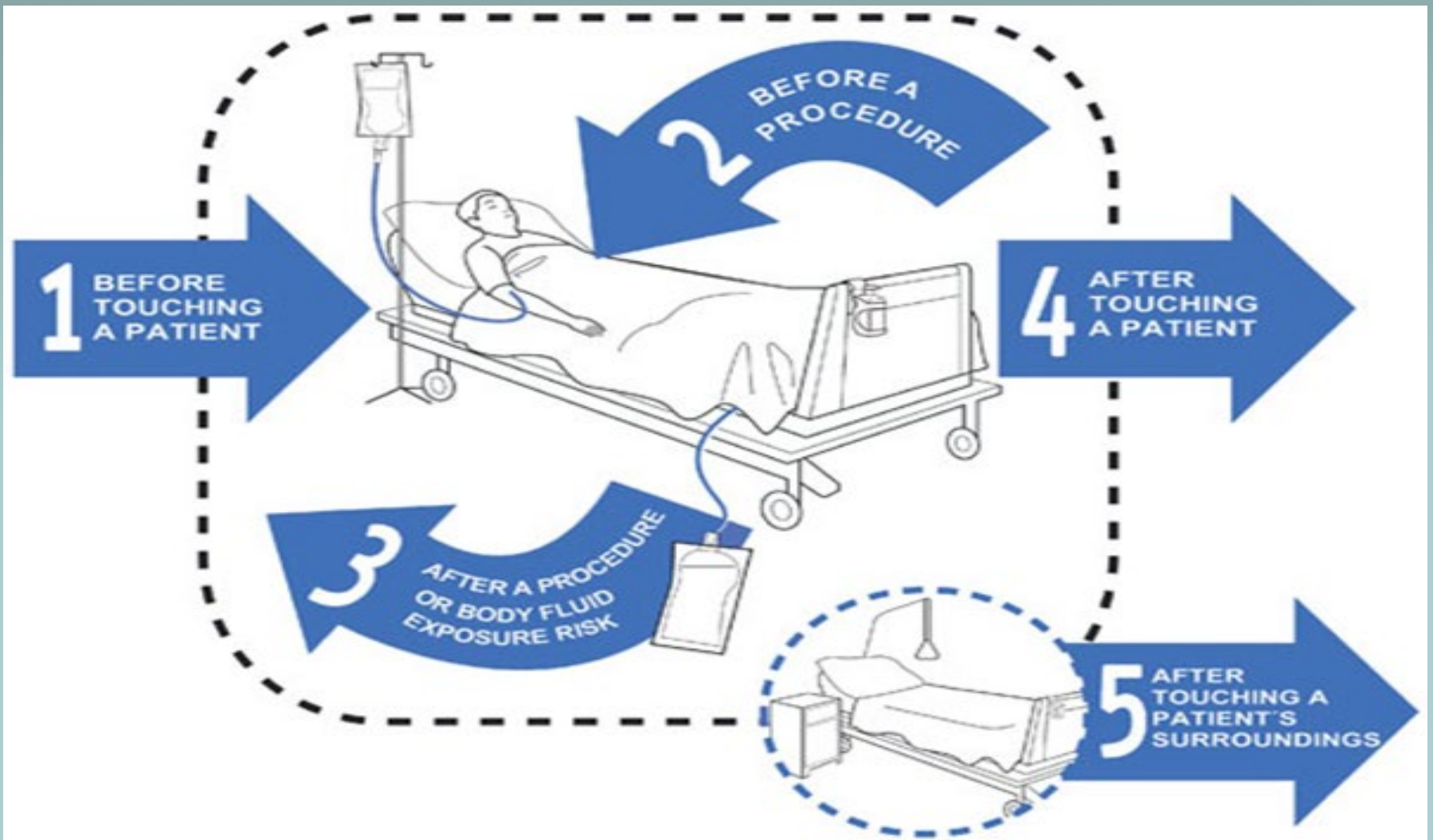


Hand Hygiene

WHO “My five (KEY) Moments for Hand Hygiene”

1. Before touching a patient.
2. Before clean/aseptic procedure.
3. After body fluid exposure risk.
4. After touching a patient.
5. After touching patient surroundings.





What , When, How ?

What are types of Hand Hygiene?

- **Hand washing.**

40-60 seconds

- ✓ for visibly soiled hands & after using alcohol gel several times
- ✓ when handling patients colonized/infected with spore-forming organisms

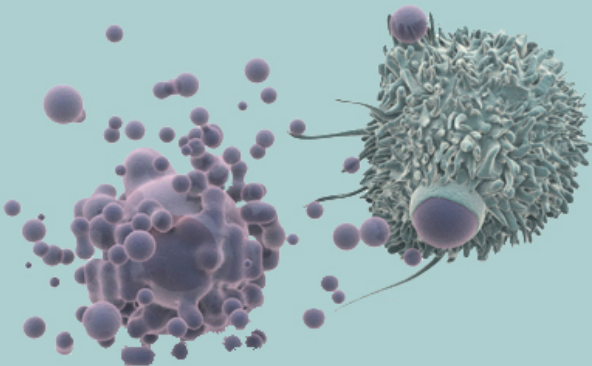
- **Use of alcohol rubs/gels.**

20-30 seconds

- ✓ for hands that are not visibly soiled.

- **Surgical hand 'scrub.**

- ✓ brush and nail file
- ✓ **5 minutes** (first wash of the day); **2-3 minutes** (in between operations)



Hand Rub

1



Rub palm to hand

2



Rub left palm over back of right hand then vice versa

3



Rub palm to palm with fingers interlaced

4



Rub backs of fingers in opposing palms, with fingers interlocked

5



Rotational rubbing of left thumb clasped in right palm, then vice versa

6



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

Hand Wash



(a) Wet hands under running water



(b) Apply soap and rub palms together to ensure complete coverage



(c) Spread the lather over the backs of the hands



(d) Make sure the soap gets in between the fingers



(e) Grip the fingers on each hand



(f) Pay particular attention to the thumbs



(g) Press fingertips into the palm of each hand



(h) Dry thoroughly with a clean towel

Personal Protective Equipment

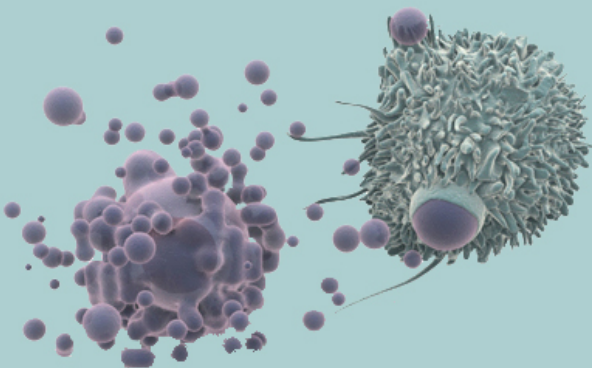
A variety of barriers to protect both the patient and HCW's from the potential risks of cross infection whenever blood/body fluid splashes are expected to come in contact with mucous membranes, airways, skin and clothing



[4 PPE - Donning and Doffing.mp4](#)

Safe Injection Practices

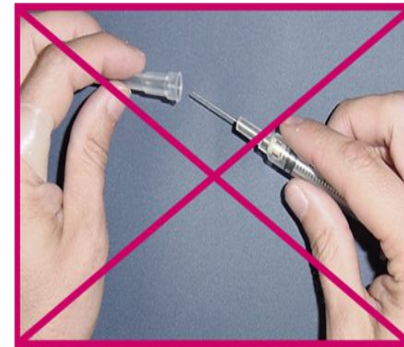
- **Do not recap, bend, break, or hand-manipulate used needles.**
- **If recapping is required, use a one-handed scoop technique only.**
- **Place used sharps in puncture-resistant container.**





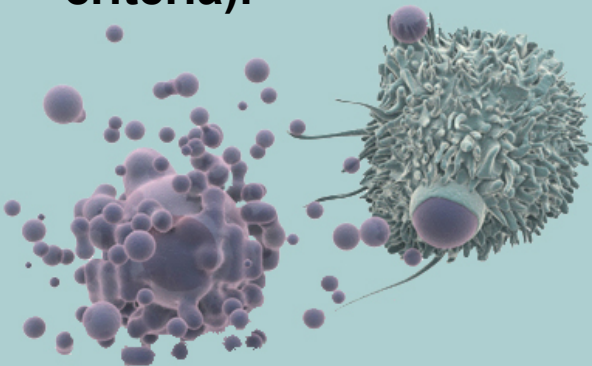
Finishing the Procedure

- Discard the needle in sharps container
- NEVER REUSE!!!
- NEVER RECAP!!
- Remove gloves and wash your hands!!!



Patient Care Equipment

- Handle used patient care equipment soiled with blood, body fluids in a manner that prevents transfer of microorganisms to one's self, other patients and environments.
- Single use, disposable items must be disposed properly.
- Reusable items have to be cleaned and reprocessed appropriately, prior to use on another patient based on the manufacture recommendation and the intended use (Spaulding criteria).



Respiratory Hygiene / Cough Etiquette

COVER UP **COUGHING AND SNEEZING**

- Turn your head away from others
- Use a tissue to cover your nose and mouth
- Drop your tissue into a waste bin
- No tissues? Use your sleeve
- Clean your hands after discarding tissue using soap and water or alcohol gel for at least 15 seconds

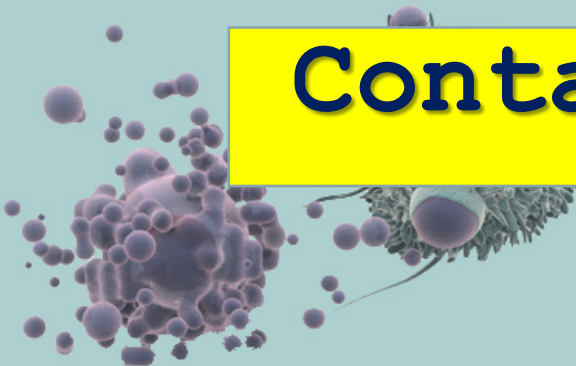


TRANSMISSION-BASED PRECAUTIONS

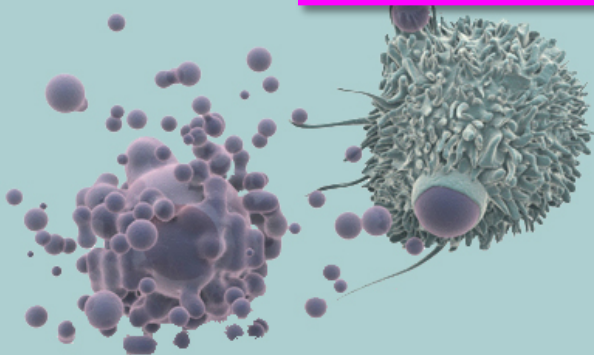
Airborne Precautions

Droplet Precautions

Contact Precautions



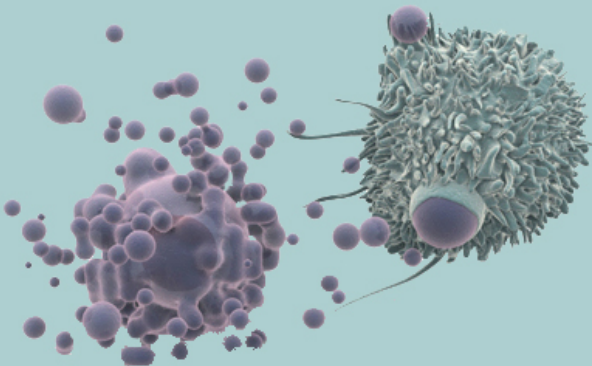
Airborne precautions



Causative agents of diseases under airborne precaution are **less than 5 μm** , thus can be carried away by air currents

Diseases under airborne precaution

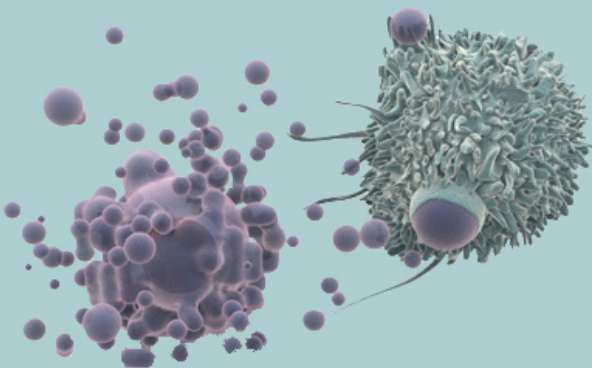
- **Measles**
- **Tuberculosis
(Pulmonary/Laryngeal)**
- **Varicella**



Airborne Precautions

Patient Placement

- Single room with negative air pressure
- 12 air changes per hour
- Room door closed



Airborne Precautions



Protection for HCW (health care worker)

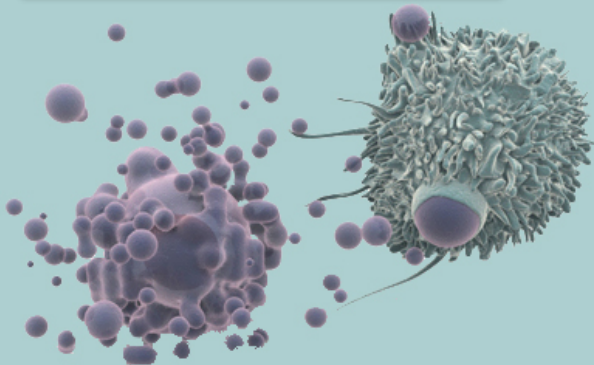
✓ Standard Precautions

✓ N95 respirator

Patient Transport

✓ Limit movement

✓ Mask the patient with surgical mask



ISOLATED Patient Transfer

STOP

sufficient information
on the patients
infection status
must be given to
the receiving area.

Following transport,
trolleys/ chairs
should be disinfected.

AIRBORNE PRECAUTIONS



Hand Hygiene

Mask the patient
With surgical mask
before transfer.



Wear PPEs
N95 RESPIRATOR

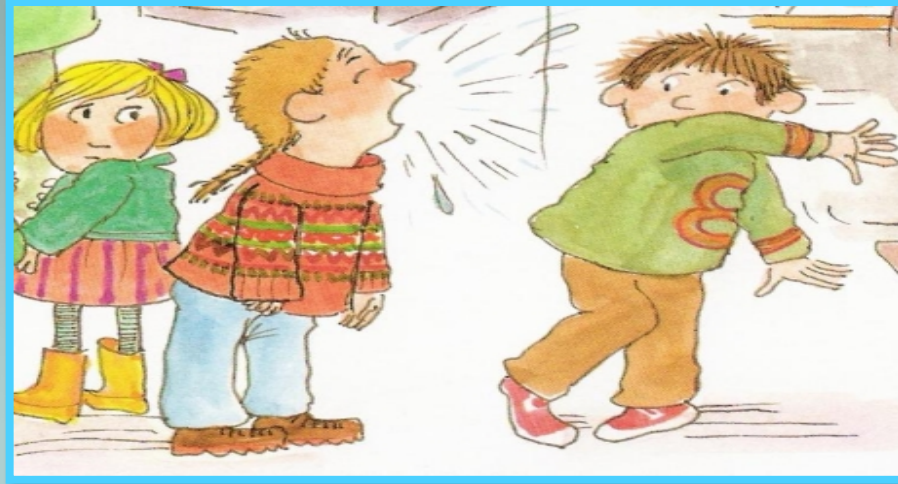


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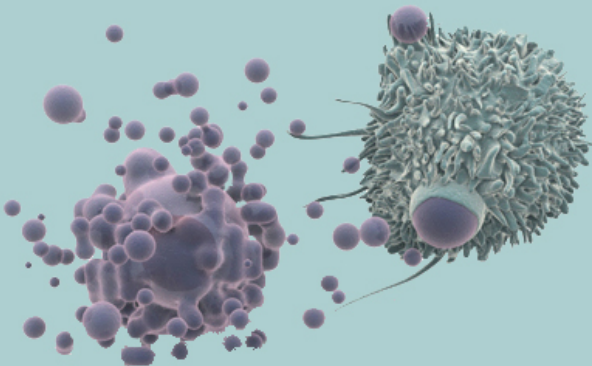


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Droplet Precautions

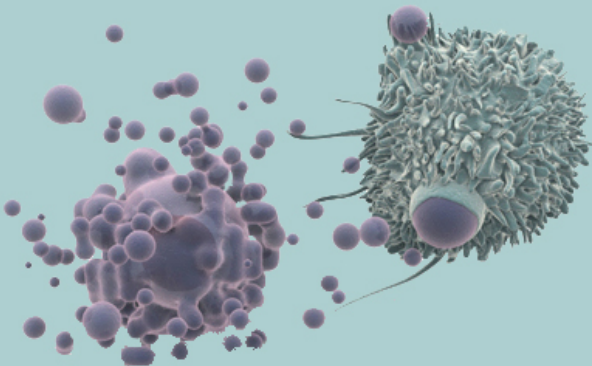


Causative agents of diseases under droplet precaution are **greater than 5 μm** . They can travel up to 3 feet (1mtr)



Diseases under droplet precaution

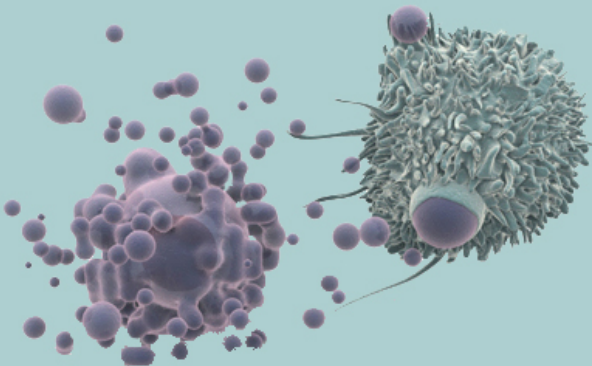
- ***Haemophilus influenzae* type B** disease, including meningitis, pneumonia, sepsis
- ***Streptococcal* (group A)**, scarlet fever in infants and young children
- **Influenza, Mumps**



Droplet Precautions

Patient placement

- Private room
- Cohort nursing



Droplet Precautions

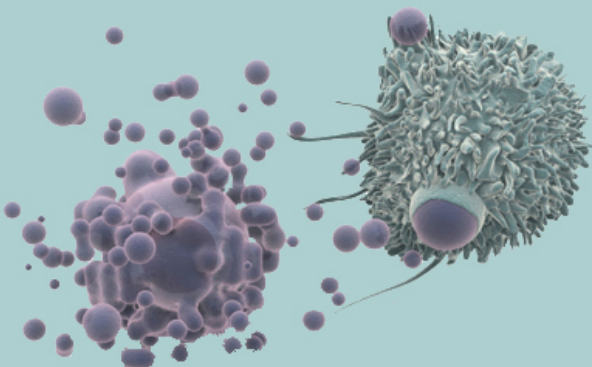


Protection for HCW

- Standard precautions
- Surgical mask if working within 3 feet of the patient

Patient Transport

- Limit movement
- Mask the patient with surgical mask



ISOLATED Patient Transfer

STOP

sufficient information
on the patients
infection status
must be given to
the receiving area.

Following transportation,
trolleys/ chairs
should be disinfected.

DROPLET PRECAUTIONS



Hand Hygiene



Mask the patient
With surgical mask
before transfer..



Wear PPEs.
Surgical Mask



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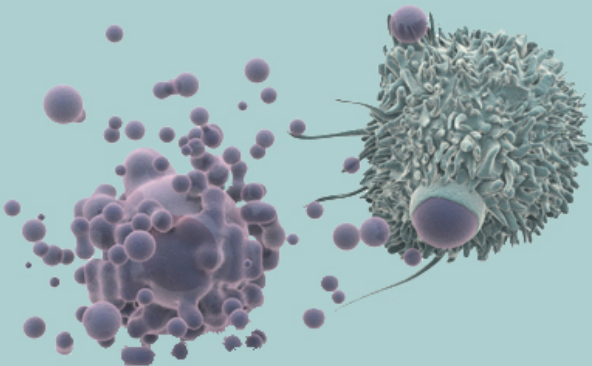


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Contact Precautions

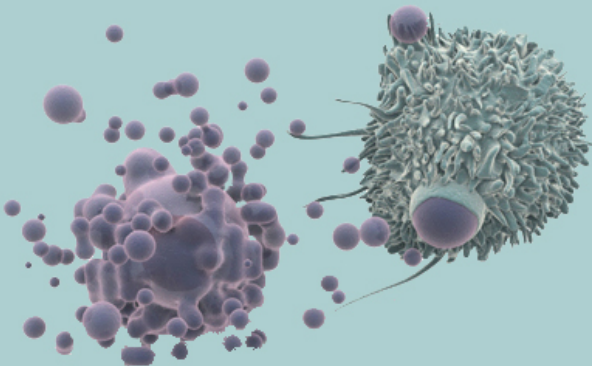


Use In addition to standard precaution, for patients known or suspected to have serious illness transmitted through contact



Diseases under contact precaution

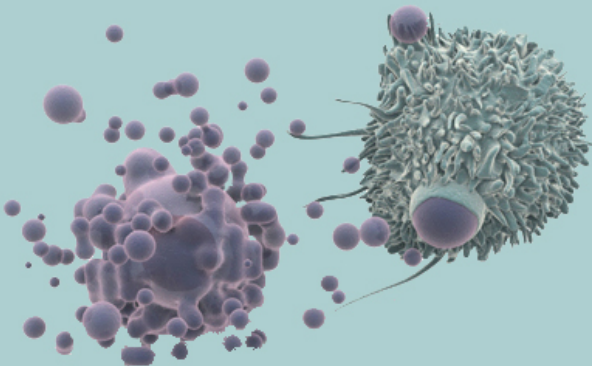
- **Multi-drug resistant microorganisms (MDRO's), VRE, MRSA, ESBL, *B.cepacia***
- **RSV infection in infants, young children and immunocompromised patients**
- **Clostridium defficile enterocolitis**



Contact Precautions

Patient placement

- Private room
- Cohort nursing



Contact Precautions

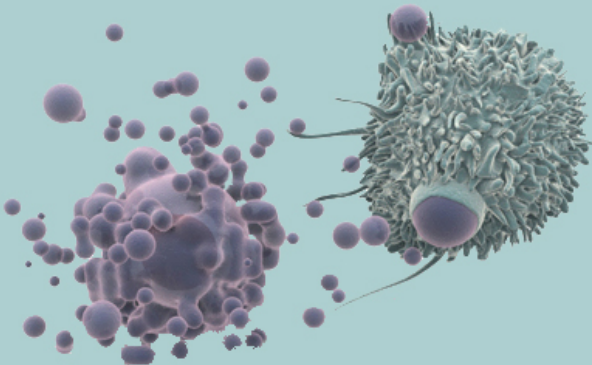


Protection for HCW

- Handwashing
- Gloves
- Gown

Patient Transport

- Limit movement



ISOLATED Patient Transfer

STOP

sufficient information
on the patients
infection status
must be given to
the receiving area.

Following transportation,
trolleys/ chairs
should be disinfected.

Wear PPEs.
Gown & Gloves



Hand Hygiene

CONTACT PRECAUTIONS



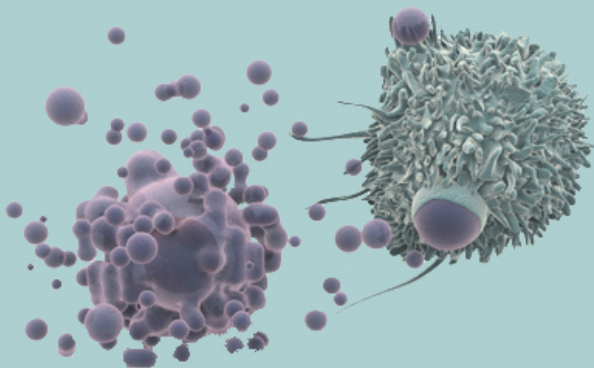
contain the patient's
source of infection
before transfer.

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Hospital Acquired Infections



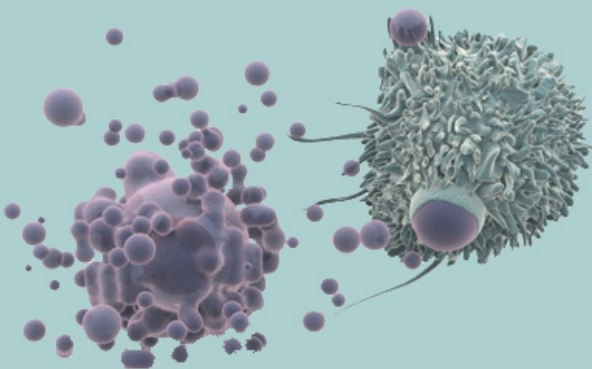
Definition of Infection

Presented on Admission (POA) (Community Acquired)

Infection that presented or incubating at the time of admission to the hospital at the first 2 calendar days from admission and according to each disease case definition

Health Care - Associated (*nosocomial*)

It is presented after 2 calendar days of admission or within a defined period after hospital discharge according to the disease incubation period



Categories of Nosocomial Infection

Surgical Site Infection (SSI)

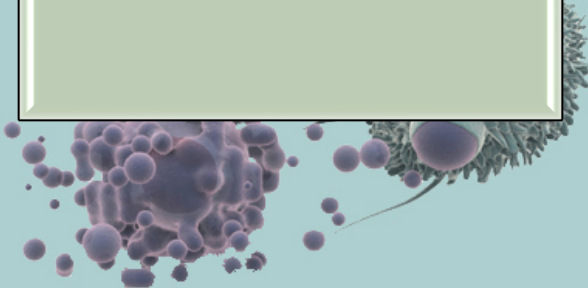
Pneumonia

Urinary Tract Infection (UTI)

Bacteremia

Device Related Infection (VAP-CLABSI-CAUTI)

Gastro – intestinal Tract Infection



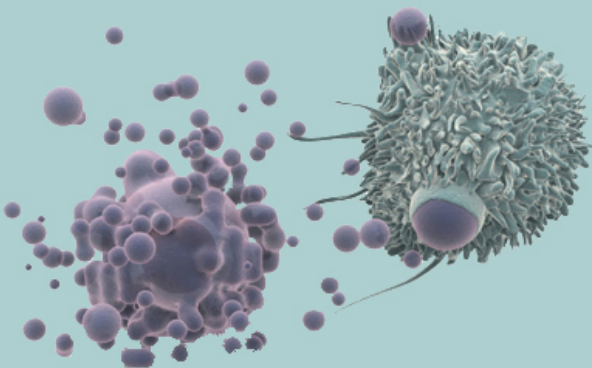
Surgical Site Infection (SSI)

Clinical Definition

- A surgical site infection is an infection that occurs after surgery in the part of the body where the surgery took place.
- Surgical site infections can sometimes be superficial infections involving the skin only.

Epidemiological Definition

- An infection arising after an eligible operative procedure, including incision, bur hole or laparoscopic approach, done in an operation room (that meets FGI/AIA requirements)



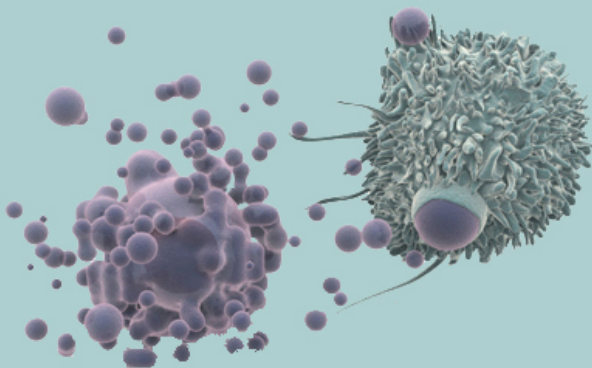
Pneumonia

Clinical Definition

Pneumonia is an infection in one or both lungs. It can be caused by bacteria, viruses, or fungi. Bacterial pneumonia is the most common type in adults. Pneumonia causes inflammation in the air sacs in your lungs

Epidemiological Definition

A pneumonia that meets the surveillance criteria according to a combination of imaging, clinical and laboratory criteria, after the 3rd calendar day of admission..



Infection Window Period		3 days before
	Date of first positive diagnostic test that is used as an element of the site-specific criterion	
	OR	
	In the absence of a diagnostic test, use the date of the first documented <u>localized</u> sign or symptom that is used as an element of the site-specific criterion	
		3 days after

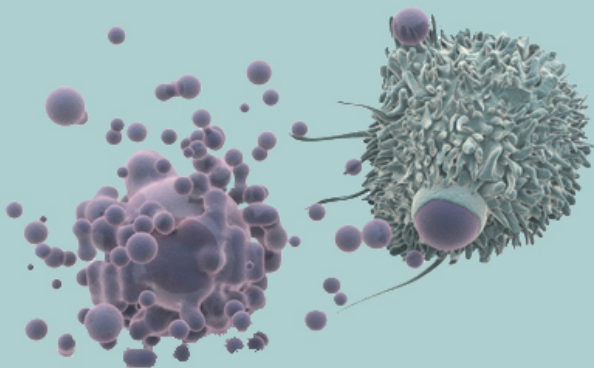
Urinary Tract Infection (UTI)

Clinical Definition

An infection in any part of your urinary system (kidneys, ureters, bladder and urethra. Most infections involve the lower urinary tract (the bladder and the urethra).

Epidemiological Definition

Hospital Acquired UTI: A UTI that meets the surveillance criteria that manifested after the 3rd calendar of admission to the hospital.



Infection Window Period		3 days before
	Date of first positive diagnostic test that is used as an element of the site-specific criterion	
	OR	
	In the absence of a diagnostic test, use the date of the first documented <u>localized</u> sign or symptom that is used as an element of the site-specific criterion	
		3 days after

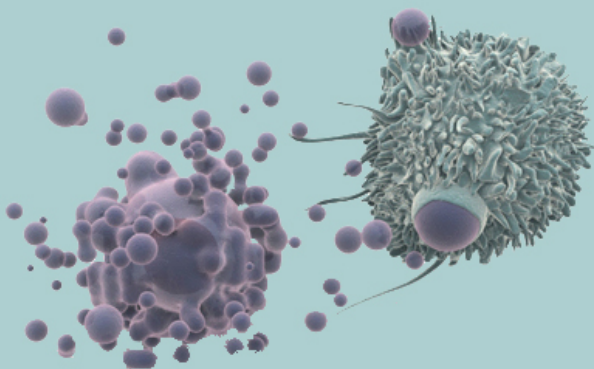
Bacteremia

Clinical Definition

is the presence of bacteria in the bloodstream

Epidemiological Definition

A Laboratory Confirmed Bloodstream Infection (LCBI) that is not secondary to an infection at another body site, after the 3rd calendar day of admission



Infection Window Period		3 days before
	Date of first positive diagnostic test that is used as an element of the site-specific criterion	
	OR In the absence of a diagnostic test, use the date of the first documented <u>localized</u> sign or symptom that is used as an element of the site-specific criterion	
		3 days after

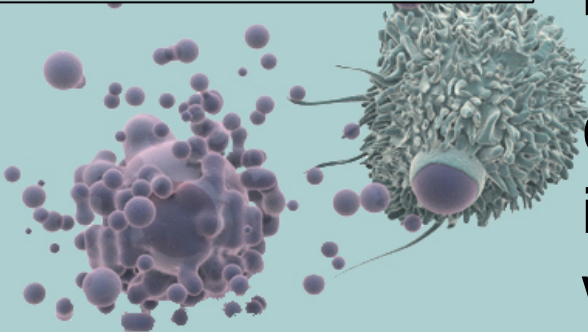
Any of the hospital acquired infections in which the use of a medical device is a risk factor

VAP (Ventilator-associated pneumonia) is a lung infection that develops in a person who is on a mechanical ventilator

Device Related
Infection (VAP-
CLABSI-CAUTI)

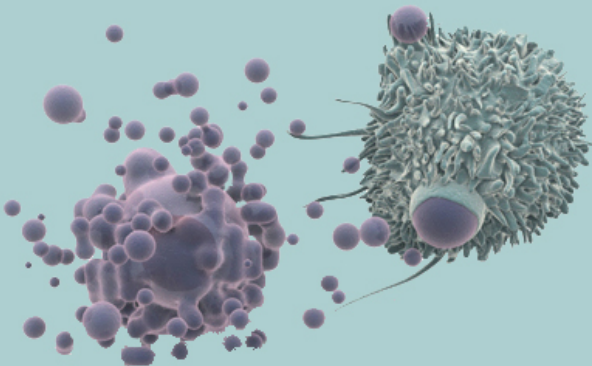
CLABSI (Central line-associated bloodstream infections) primary laboratory confirmed bloodstream infection in a patient with a central line

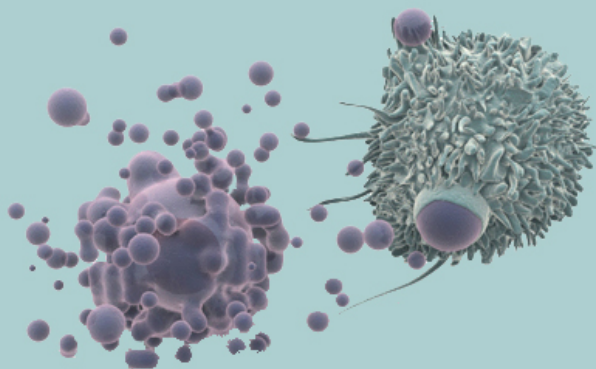
CAUTI (catheter-associated urinary tract infections) is a hospital acquired UTI where an indwelling urinary catheter was in place for more than two days



Patients at risk

1. Immuno-compromised patients (oncology, dialysis, diabetic)
2. Prolonged hospital stay (Long stay patients)
3. Use of invasive devices (ICU)
4. Post procedures (Surgical)





Thank You