



A Destiny of Success



TRAINING  
EDUCATION  
QUALITY IMPROVEMENT  
HEALTHCARE EXCELLENCE

- 
- The infection control certification examination is the standardized measure of the basic knowledge, skills and abilities expected of professionals working in infection prevention and control. The initial certification examination is offered five to seven days a week at testing centers throughout the United States, Canada, and select international sites. The initial certification exam is available in English and Canadian French

- The initial certification exam is an objective, multiple-choice examination consisting of 150 questions (135 of these questions are used in computing the score, as discussed later in this handbook). The examination content is based upon results of a practice analysis, which is a survey of practicing professionals in infection prevention and control that is conducted by the Certification Board of Infection Control and Epidemiology, Inc. (CBIC®) every 4-5 years. The most recent practice analysis was conducted in 2014. The practice analysis determines the scope of knowledge and responsibilities that are currently required by, and are representative of, individuals practicing infection prevention and control. It is important to recognize that examination content is based on this information, even though all elements of the examination may not seem to be directly relevant to every individual taking the exam.

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- CBIC is responsible for determining the examination content outline, developing and maintaining an item bank of approved examination questions, approving individual exam applications, and setting the standard for minimum competency in the form of the exam passing score.

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- CBIC is a Charter member of the Institute for Credentialing Excellence (ICE). CBIC is accredited by the National Commission for Certifying Agencies (NCCA). NCCA accreditation signifies that CBIC has met the highest standards for establishing a valid, reliable, and secure certification process.

- How many questions are on the exam? There are 150 multiple-choice questions on the exam, 135 of which are scored.

# Preparing for the Examination

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- 2017 Examination Content Outline
- 1) Identification of Infectious Disease Processes (22 items)
  - a. Interpret the relevance of diagnostic and laboratory reports
  - b. Identify appropriate practices for specimen collection, transportation, handling, and storage
  - c. Correlate clinical signs and symptoms with infectious disease process
  - d. Differentiate between colonization, infection and contamination
  - e. Differentiate between prophylactic, empiric and therapeutic uses of antimicrobials

## 2) Surveillance and Epidemiologic Investigation (24 items)

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- a. Design of Surveillance Systems
- 1. Conduct a risk assessment on the population served, services provided, and regulatory or other requirements
- 2. Develop goals and objectives based upon the risk assessment
- 3. Develop a surveillance plan based on the goals identified from the risk assessment
- 4. Evaluate periodically the effectiveness of the surveillance plan and modify as necessary
- 5. Create a notification system based on surveillance plan including epidemiologically significant findings
- 6. Integrate surveillance activities across health care settings (e.g., ambulatory, home health, long term care, acute care)
- 7. Establish mechanisms for identifying individuals with communicable diseases requiring follow-up and/or transmission based precautions

- b. Collection and Compilation of Surveillance Data
- 1. Use a systematic approach to record surveillance data
- 2. Organize and manage data in preparation for analysis
- 3. Calculate the incidence or prevalence of infections
- 4. Calculate specific infection rates/ratios (e.g., provider-specific, unit-specific, device specific, procedure-specific, Standardized Infection Ratio)
- 5. Use of standardized definitions

- 
- c. Interpretation of Surveillance Data
    - 1. Generate, and validate surveillance data
    - 2. Use basic statistical techniques to describe data (e.g., mean, standard deviation, rates, ratios, proportions)
    - 3. Monitor and interpret the relevance of antimicrobial susceptibility patterns
    - 4. Compare surveillance results to published data and/or other relevant benchmarks
    - 5. Analyze and interpret data using appropriate methods
    - 6. Prepare and present findings in an appropriate format that is relevant to the audience/stakeholders (e.g., graph, tables, charts)
    - 7. Develop and facilitate corrective action plans based on surveillance findings
    - 8. When to implement an epidemiological study to investigate a problem (e.g., case control, cohort studies)

- 
- d. Outbreak Investigation
  - 1. Verify existence of outbreak
  - 2. Collaborate with appropriate persons to establish the case definition, period of investigation, and case-finding methods
  - 3. Define the problem using time, place, person, and risk factors
  - 4. Formulate hypothesis on source and mode of transmission
  - 5. Implement and evaluate control measures, including ongoing surveillance
  - 6. Prepare and disseminate reports

### 3) Preventing/Controlling the Transmission of Infectious Agents (25 items)

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- a. Develop evidence-based/informed infection prevention and control policies and procedures
- b. Collaborate with relevant groups and agencies in planning community/facility responses to biologic threats and disasters (e.g., public health, anthrax, influenza)
- c. Identify and implement infection prevention and control strategies

# 7 strategies related to:

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- 1. Hand hygiene
- 2. Cleaning, disinfection, and sterilization
- 3. Wherever healthcare is provided (e.g., patient care units, operating room, ambulatory care center, home health, pre-hospital care)
- 4. Infection risks associated with therapeutic and diagnostic procedures and devices (e.g., dialysis, angiography, bronchoscopy, endoscopy, intravascular devices, urinary drainage catheter)
- 5. Recall of potentially contaminated equipment, food, medications, and supplies
- 6. Transmission-based Precautions
- 7. Appropriate selection, use, and disposal of Personal Protective Equipment

- . Patient placement, transfer, and discharge
- 9. Environmental pathogens (e.g., Legionella, Aspergillus)
- 10. Use of patient care products and medical equipment
- 11. Immunization programs for patients
- 12. The influx of patients with known/suspected communicable diseases (e.g., bioterrorism, emerging infectious diseases, syndromic surveillance)

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- 13. Principles of safe injection practices (e.g., parenteral medication administration, single use of syringes and needles, appropriate use of single and multi-dose vials)
  - 14. Identifying, implementing and evaluating elements of Standard Precautions/Routine Practices (e.g., respiratory hygiene/cough etiquette)
  - 15. Antimicrobial stewardship

## 4) Employee/Occupational Health (11 item)

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- a. Review and/or develop screening and immunization programs
- b. Collaborate regarding counseling, follow up, and work restriction recommendations related to communicable diseases and/or exposures
- c. Collaborate with occupational health to evaluate infection prevention-related data and provide recommendations
- d. Collaborate with occupational health to recognize healthcare personnel who may represent a transmission risk to patients, coworkers, and communities
- e. Assess risk of occupational exposure to infectious diseases (e.g., *Mycobacterium tuberculosis*, bloodborne pathogens)

## 5) Management and Communication (13 items)

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- a. Planning
- 1. Develop, evaluate, and revise a mission and vision statement, goals, measurable objectives, and action plans for the Infection Prevention and Control Program
- 2. Assess needs then recommend specific equipment, personnel, and resources for the Infection Prevention and Control Program
- 3. Participate in cost benefit assessments, efficacy studies, evaluations, and standardization of products
- 4. Recommend changes in practice based on current evidence, clinical outcomes, and financial implications
- 5. Incorporate business modeling to assign value to prevention of and/or presence of healthcare-associated infection (e.g., cost/benefit analysis, return on investment)

- 
- b. Communication and Feedback
  - 1. Provide infection prevention and control findings, recommendations, and reports to appropriate stakeholders
  - 2. Facilitate implementation of policies, procedures, and recommendations
  - 3. Communicate effectively with internal and external stakeholders (e.g., transitions of care, reporting of notifiable diseases)
  - 4. Collaborate with internal and external stakeholders in the identification and review of adverse and sentinel events
  - 5. Evaluate and facilitate compliance with accreditation standards/regulatory requirements
  - 6. Perform and create a personalized development plan. (e.g., set goals, maintain competence)

## c. Quality Performance Improvement and Patient Safety

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- 1. Participate in quality/performance improvement and patient safety activities related to infection prevention and control (e.g., failure mode and effects analysis, plan-do-studyact)
- 2. Develop, monitor, measure, and evaluate performance indicators to drive quality improvement initiatives
- 3. Select and apply appropriate quality/performance improvement tools (e.g., “fishbone” diagram, Pareto charts, flow charts, Strengths-Weaknesses-Opportunities-Threats, Gap Analysis)

## 6) Education and Research (11 items)

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- a. Education
- 1. Assess needs, develop goals and measurable objectives for preparing educational offerings
- 2. Prepare, present, or coordinate educational content that is appropriate for the audience
- 3. Provide immediate feedback, education, and/or training when lapses in practice are observed
- 4. Evaluate the effectiveness of education and learner outcomes (e.g., observation of practice, process measures)
- 5. Facilitate effective education of patients, families, and others regarding prevention and control measures
- 6. Implement strategies that engage the patient, family, and others in activities aimed at preventing infection

- b. Research
  - 1. Conduct a literature review
  - 2. Critically appraise the literature
  - 3. Facilitate incorporation of applicable research findings into practice

## 7) Environment of Care (14 items)

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- a. Recognize and monitor elements important for a safe care environment (e.g., Heating Ventilation-Air Conditioning, water standards, construction)
- b. Assess infection risks of design, construction, and renovation that impact patient care settings
- c. Provide recommendations to reduce the risk of infection as part of the design, construction, and renovation process
- d. Collaborate on the evaluation and monitoring of environmental cleaning and disinfection practices and technologies
- e. Collaborate with others to select and evaluate environmental disinfectant products

## **8) Cleaning, Sterilization, Disinfection, Asepsis (15 items)**

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- a. Identify and evaluate appropriate cleaning, sterilization and disinfection practices
- b. Collaborate with others to assess products under evaluation for their ability to be reprocessed
- c. Identify and evaluate critical steps of cleaning, high level disinfection, and sterilization



# Application and Order Forms

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- Online Application Form Please visit [www.cbic.org/certification](http://www.cbic.org/certification) to apply online  
Paper Application Form
- Initial Certification Examination
- Recertification Examination
- How long does it take to process applications
- Applications take up to seven business days to process

- 
- Can applications be emailed? Applications may be emailed to [info@cbic.org](mailto:info@cbic.org).
  - Can I fax my application? Applications can be faxed to (414) 276-3349. Please email or call to confirm all faxes.

# Sample Examination Questions

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- 1. In an outbreak of probable foodborne illness, patients developed symptoms two to four hours after eating turkey salad. The MOST likely causative organism is:
  - a. *Salmonella enteritidis*.
  - b. *Staphylococcus aureus*.
  - c. *Vibrio parahaemolyticus*.
  - d. *Clostridium perfringens*.

- 2. The presence of which of the following antibodies to hepatitis A virus confirms the diagnosis of acute hepatitis A?
  - a. IgG
  - b. IgM
  - c. IgE
  - d. IgD

- 
- 3. In investigating an epidemic, cases should be categorized according to:
    - a. time, place, and person.
    - b. agent, host, and environment.
    - c. agent, host, and date of onset.
    - d. time, person, and date of onset.

- 
- 4. The lengths of stay for patients with healthcare associated infections are 12, 12, 12, 13, 15, 15, 16, 20, and 30 days. What is the median length of stay?
    - a. 12 days
    - b. 15 days
    - c. 16 days
    - d. 25 days

- 
- 5. The risk of healthcare-associated urinary tract infections in spinal cord injury patients is BEST reduced by:
    - a. prophylactic antibiotics.
    - b. bladder instillation of antiseptic.
    - c. intermittent catheterization.
    - d. placement of all patients with urinary catheters in the same area.

- 6. Which of the following precautions MUST be taken when using respiratory ventilators?
  - a. Use gloves while assembling equipment.
  - b. Use only disposable equipment.
  - c. Use only sterile fluids in reservoirs.
  - d. Discard unused portions of medication daily.

- 
- 7. A student demonstrates appropriate tracheostomy suctioning technique to an instructor. This is an example of:
    - a. cognitive learning.
    - b. psychomotor learning.
    - c. affective learning.
    - d. theoretical learning.

- 
- 8. A long-term care facility has 180 residents, 50 of whom have indwelling urinary catheters. An infection preventionist (IP) notes 15 catheterized residents have developed urinary tract infections during 1 month. Which of the following is the attack rate?
    - a. 3.0%
    - b. 8.3%
    - c. 28.0%
    - d. 30.0%

- 
- ANSWER KEY:
  - 1. B
  - 2. B
  - 3. A
  - 4. B
  - 5. C
  - 6. C
  - 7. B
  - 8. D

THANK  
YOU

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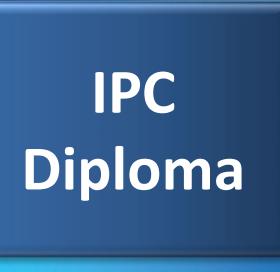
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# **INFECTION CONTROL PROGRAM**

# **What is infection prevention and control?**

Infection prevention and control is:

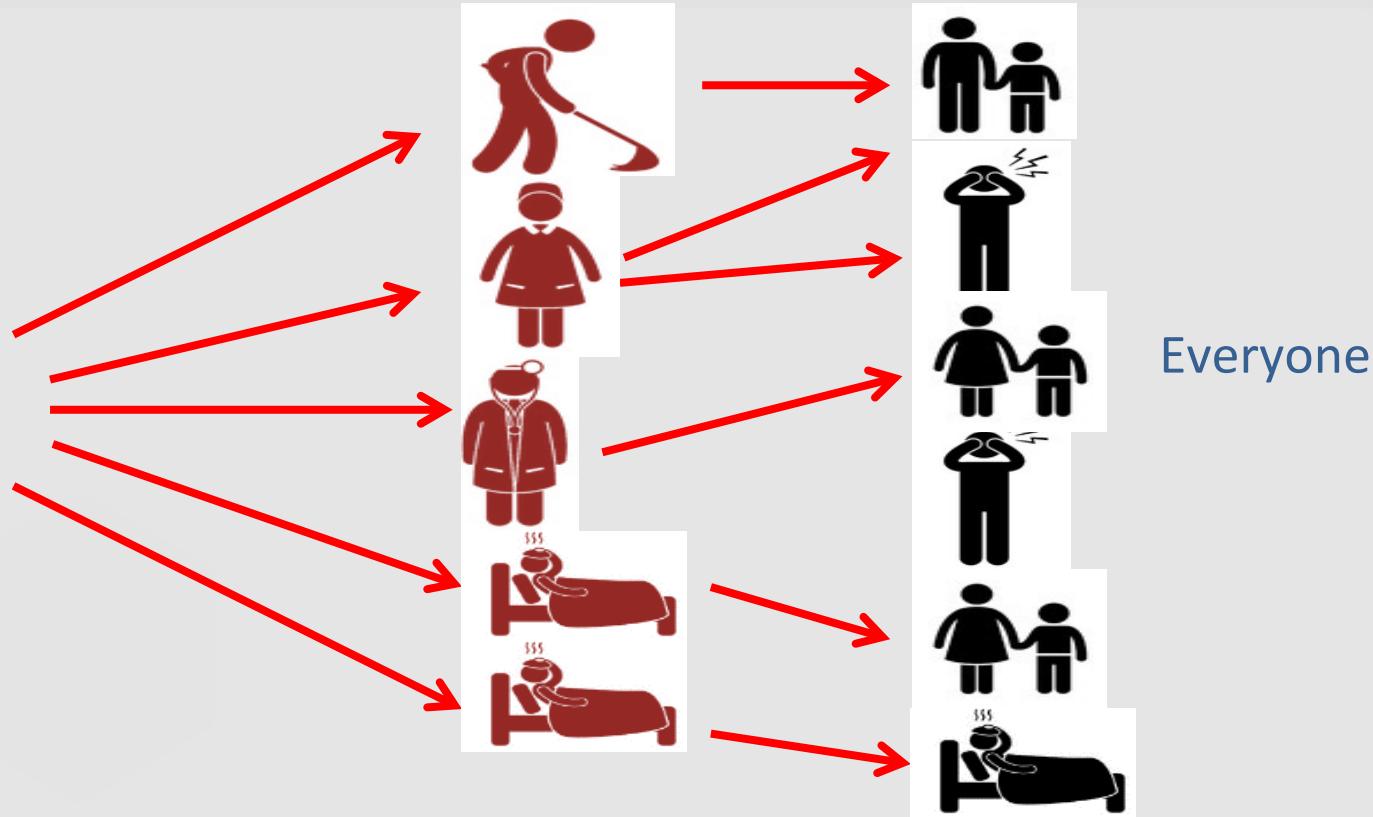
a scientific approach with

practical solutions designed to prevent harm, caused by infections, to patients  
and health care workers

grounded in principles of infectious disease, epidemiology, social science and  
health system strengthening, and

rooted in patient safety and health service quality

# Who is at risk of infection?



# Benefits of IPC



Protecting yourself



Protecting your patients



Protecting your family, community & environment

## IPC goals in outbreak preparedness



- 1. To reduce transmission of health care associated infections**
- 2. To enhance the safety of staff, patients and visitors**
- 3. To enhance the ability of the organization/health facility to respond to an outbreak**
- 4. To lower or reduce the risk of the hospital (health care facility) itself amplifying the outbreak**

## **Role of the IPC focal point, team or committee**

- Knowledge: have an understanding of the IPC strategies needed for/ outbreaks/epidemics, etc
- Assessment, preparedness and readiness
- Policy and SOPs development
- Participate in response and recovery
- Participate in surveillance & monitoring
- Patient management
- Infrastructure for patient management
- Education

# IPC strategies

Novel  
Coronavirus  
**COVID-19**



# IPC strategies for preventing/limiting the spread of COVID-19

Applying standard precautions for all patients

Ensuring triage, early recognition, and source control

Implementing empiric additional precautions for suspected cases of COVID-19 infection

Implementing administrative controls

Using environmental and engineering controls.

# Risk Assessment and Standard Precautions

**Risk assessment:** risk of exposure and extent of contact anticipated with blood, body fluids, respiratory droplets, and/or open skin

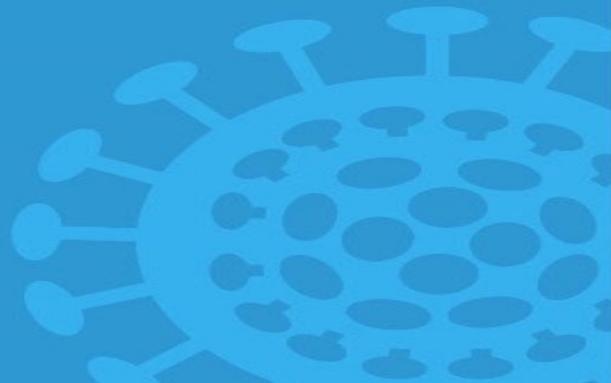
Select which PPE items to wear based on this assessment

Perform hand hygiene according to the WHO “5 Moments”

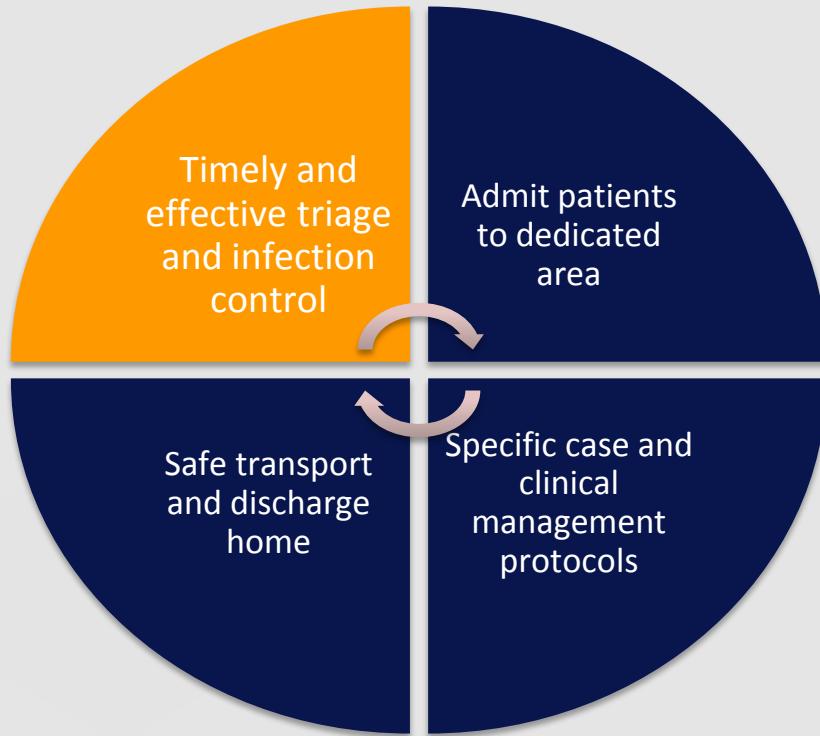
Should be done for each patient, each time

**Make this routine!**

# **Triage, early recognition, and source control**



# Manage ill patients seeking care



Use clinical **triage** in health care facilities for early identification of patients with acute respiratory infection (ARI) to prevent the transmission of pathogens to **health care workers** and other patients.

# Triage (1)



Prevent overcrowding.  
Conduct rapid triage.  
Place ARI patients in dedicated waiting areas with adequate ventilation.  
In addition to standard precautions, implement **droplet precautions** and **contact precautions** (if close contact with the patient or contaminated equipment or surfaces/materials).  
Ask patients with respiratory symptoms to perform **hand hygiene**, **wear a mask** and perform **respiratory hygiene**.  
Ensure at least 1 m distance between patients

# Triage (2)

The triage or screening area requires the following equipment:

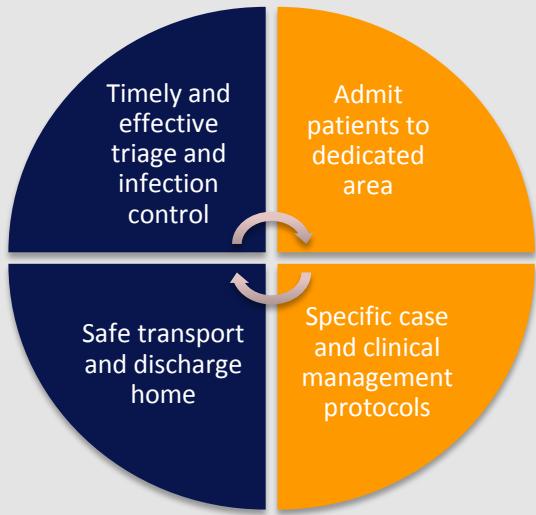
- Screening questionnaire
- Algorithm for triage
- Documentation papers
- PPE
- Hand hygiene equipment and posters
- Infrared thermometer
- Waste bins and access to cleaning/disinfection
- Post signage in public areas with syndromic screening questions to instruct patients to alert HCWs.

# Triage (3)

Set up of the area during triage:

1. Ensure adequate space for triage (maintain **at least 1 m** distance between staff screening and patient/staff entering)
2. Waiting room chairs for patients should be 1m apart
3. Maintain a **one way flow** for patients and for staff
4. Clear **signage** for symptoms and directions
5. Family members should wait outside the triage area-prevent triage area from overcrowding

# Hospital admission



Place patients with ARI of potential concern in single, well ventilated room, when possible

Cohort patients with the same diagnosis in one area

Do not place suspect patients in same area as those who are confirmed.

Assign health care worker with experience with IPC and outbreaks.

# **Additional Precautions**

# Infection control risk assessment & infection control plan



# Risk Assessment

Event	Probability of Occurrence				Potential Severity/Risk Level of Failure				Potential Change in Care, Treatment, Services				Preparedness			Risk Level	
	High	Med	Low	None	Life Threatening	Permanent Harm	Temp Harm	None	High	Mod	Low	None	Poor	Fair	Good		
	Score:	3	2	1	0	3	2	1	0	3	2	1	0	3	2	1	
<b>GEOGRAPHY AND COMMUNITY</b>																	
Increasing Population with TB	3					2				2					1		8
Hurricanes		2			3				3					2			10
<b>POTENTIAL INFECTION</b>																	
Surgical Site Infection		2			3				3					2			10
Vent Associated Pneumonia		2			3				3					2			10
Central Line Related Blood Stream Infection (CLBSI)	3				3				3					2			11
VRE (hospital acquired)		2						1			1			2			6
<b>COMMUNICATION</b>																	

## Risk Assessment

Event	Probability of Event Occurrence				Potential Severity/Risk Level of Failure				Current State of Preparedness			Risk Level For Org
	H 4	M 3	L 2	N 1	Life Threatening 4	Permanent Harm 3	Temp Harm 2	None 1	P 3	F 2	G 1	
Emergency preparedness												
Water Supply Unavail		X					X			X	6	
Patient Care Supplies Unavail		X				X			X		27	
Evacuation Required			X		X					X	8	
Hi Risk Procedures and Processes	H 4	M 3	L 2	N 1	Life Threatening 4	Permanent Harm 3	Temp Harm 2	None 1	P 3	F 2	G 1	
Hand Hygiene Compliance <90%			X			X				X	12	
Endoscope Contamination			X			X				X	6	
Unauthorized Use of SUDs			X	X						X	8	
Inadequate Cleaning/Disinfection of patient care equipment				X		X				X	3	
Inappropriate use of Isolation		X				X			X		27	

## MDRO RISK ASSESSMENT

Risk Event	Probability the Risk will Occur				Potential Severity if the Risk Occurs				How Well Prepared is the Organization to Address this Risk?			Risk Priority
	High	Med	Low	None	Life Threatening	Permanent Harm	Temp Harm	None	Poorly	Fairly Well	Well	
	Score:	4	3	2	1	4	3	2	1	3	2	1
Increasing incidence of Infections with MDROs												
Methicillin Resistant <i>Staphylococcus aureus</i> (MRSA)	X				X						X	16
Vancomycin Resistant Enterococci (VRE)		X				X				X		18
Clostridium difficile	X					X			X			36
Multidrug Resistant (MDR) Pseudomonas			X			X				X		12
MDR Enterobacter ssp			X			X					X	6
MDR Klebsiella			X			X					X	6
MDR Acinetobacter		X			X					X		24

# Risk Assessment

## SWOT ANALYSIS –

### STRENGTHS

- Staff Competent
- Policy evidence-based and current
- Hand hygiene compliance

### WEAKNESSES

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- Equipment not always available
- Physicians do not adhere to maximal sterile barriers
- Many non subclavian sites selected

### OPPORTUNITIES

- Education of staff
- Identify nurse and physician champions- empower
- Revise procedure and supplies to enhance compliance
- Require physicians to adhere

### THREATS

- Abuse to nurses who use authority
- Lack of insertion technique in subclavian vein – patient safety
- Interruption of supplies from vendors

Strengths, Weaknesses, Opportunities, Threats

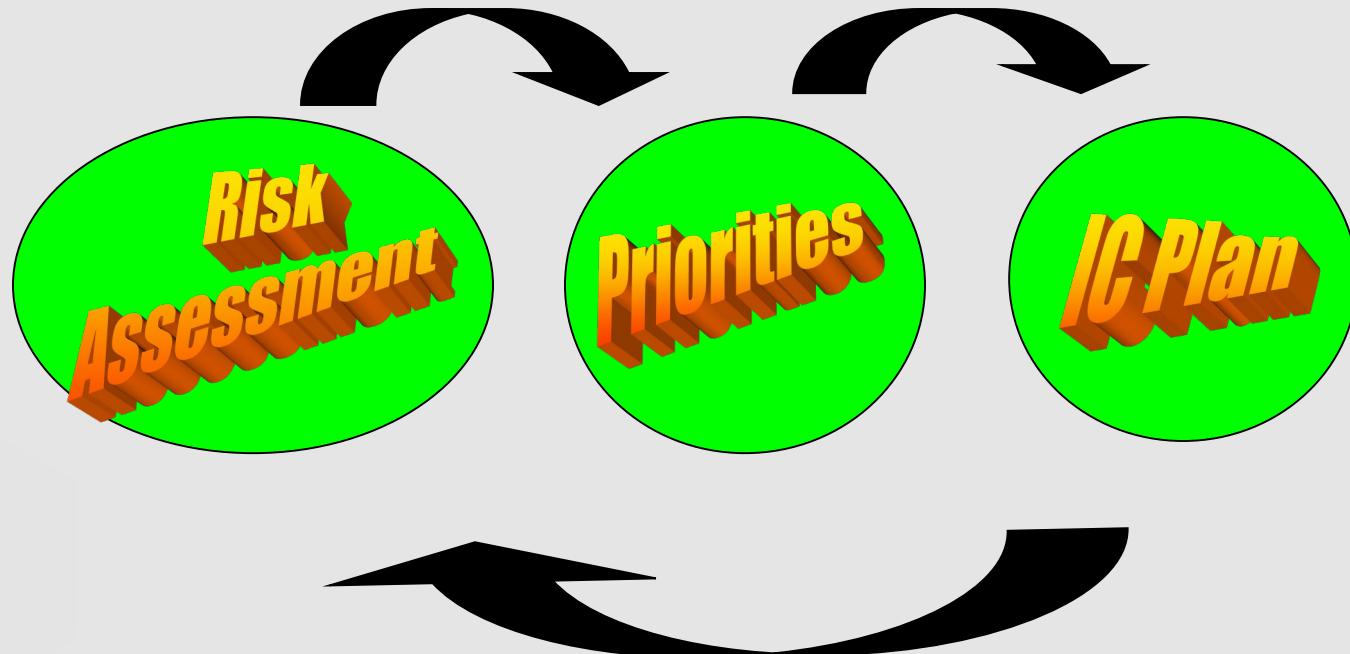
# Infection Prevention Gap Analysis for Risk Assessment

Area/Issue/ Topic /Standard	Current State	Desired State	Gap Between Current and Desired (Describe)	Action Plan and Evaluation
The Infection Program is based on current accepted practice guidelines	WHO Hand Hygiene Guideline approved by ICC. Not fully implemented in organization	Full implementation throughout the organization by December 09	Only 40 % of units and services are following the CDC Hand hygiene guideline.	<ul style="list-style-type: none"> <li>•Develop proactive implementation plan</li> <li>•Make leadership priority</li> <li>•Get all necessary supplies</li> <li>•Monitor and provide feedback to staff every 2 weeks</li> <li>•Evaluate existing hand hygiene compliance with WHO guideline against participation in the hospital in 4 months.</li> </ul>
There is systematic and proactive surveillance activity to determine usual endemic rates of infections	Current surveillance is periodic retrospective chart review of a few infections.	Proactive surveillance for selected infections in populations on an ongoing basis	<ul style="list-style-type: none"> <li>•Lack of IC staff and computer support to perform ongoing surveillance.</li> <li>•Absence of well designed surveillance plan</li> <li>•Difficult to access laboratory data</li> </ul>	<ul style="list-style-type: none"> <li>•Involve ICC in designing surveillance plan, methods for analysis.</li> <li>•Request computer and software to enter and analyze data</li> <li>•Teach IC staff about surveillance methodologies</li> <li>•Work with Laboratory Director to design access system for microbiology and other reports.</li> <li>•Determine if program exists in 6 month.</li> </ul>
Catheter-related bloodstream infections (CRBSI) are very high.	Catheter-related bloodstream infections in medical ICU at 75% percentile of the NHSN benchmark	Reduce CRBSI to 10 <sup>th</sup> NHSN benchmark or lower. Strive for zero BSI in MICU for a period of at least 6 months	Processes to prevent CRBSI are not followed consistently among staff	<ul style="list-style-type: none"> <li>•Implement the BSI Bundle from IHI.</li> <li>•Form team with MICU, IC, MDs, Others</li> <li>•Evaluate the bundle processes and the outcomes and report to leadership and ICC monthly</li> </ul>
Needle sticks in Employees	The incidence of needle sticks among environmental services staff is 3% for all personnel. Analysis shows that greatest risk is during changing of needle containers.	Reduce needle sticks overall to equal to or less than 1% during next 6 months and 5% thereafter among all environmental services staff	Observations show that needle containers are overflowing. There is confusion among nursing and housekeeping staff about responsibility and timing for emptying or changing containers. Nursing supervisors not aware of issue	<ul style="list-style-type: none"> <li>•Clarify the policy and repeat education to staff about criteria for filling /changing needle containers</li> <li>•Discuss situation with nurse managers-emphasize responsibility</li> <li>•Display ongoing data to show number of weeks without needle sticks</li> <li>•Celebrate successes</li> </ul>

# High Priority Risk Issues for IPC

- Fill in the blanks for your organization....
  - MDROs
  - Staff
  - Environmental Services
  - SSI, CLABSI, CAUTI
  - Infrastructure
  - Physician Involvement
  - Leadership Support

# From Risks to Priorities to Plan





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Karen Juras

# Objectives :

- 1. The goals on infection control implementation**
- 2. The meaning of the infection chain**
- 3. The meaning & types of the healthcare acquired infections ( HAI )**
- 4. The meaning of the bundle & bundle types**
- 5. Types of standard precautions**
- 6. Types of expanded ( isolation ) precautions**
- 7. Medical waste management**

- a. Prevention, including Clinical Bundles and Checklists
- b. Control, including precautions, environmental cleaning and disinfection
- c. Dealing with an Outbreak, in Acute and Long Term Care Settings

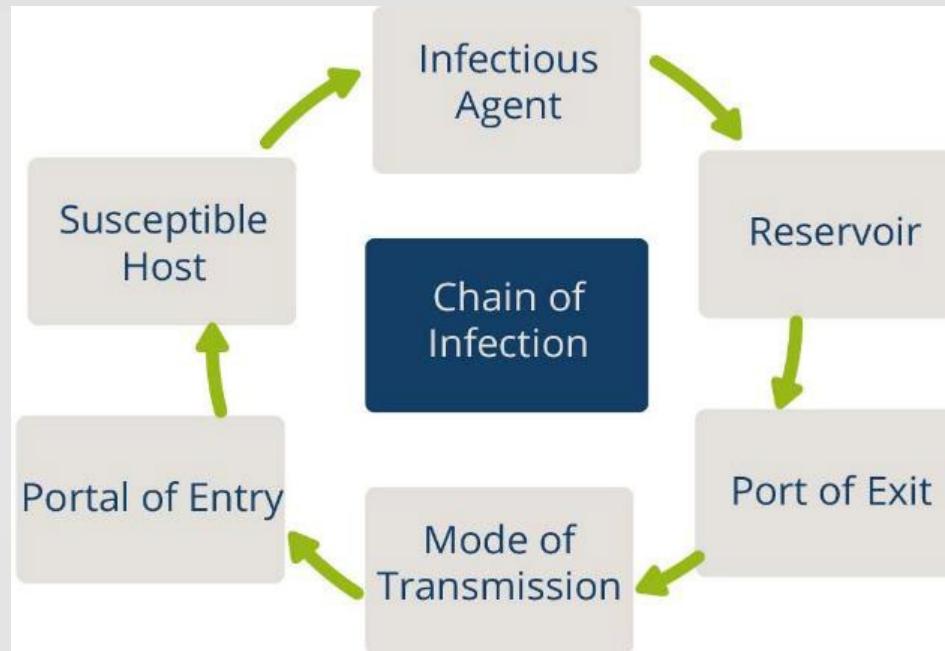
# Aim Of Infection Control

- The Aim Of Infection Control In Healthcare Facilities Is To “ Prevent Infection Transmission Between Patients , Staff & Visitors

# infection control responsibility

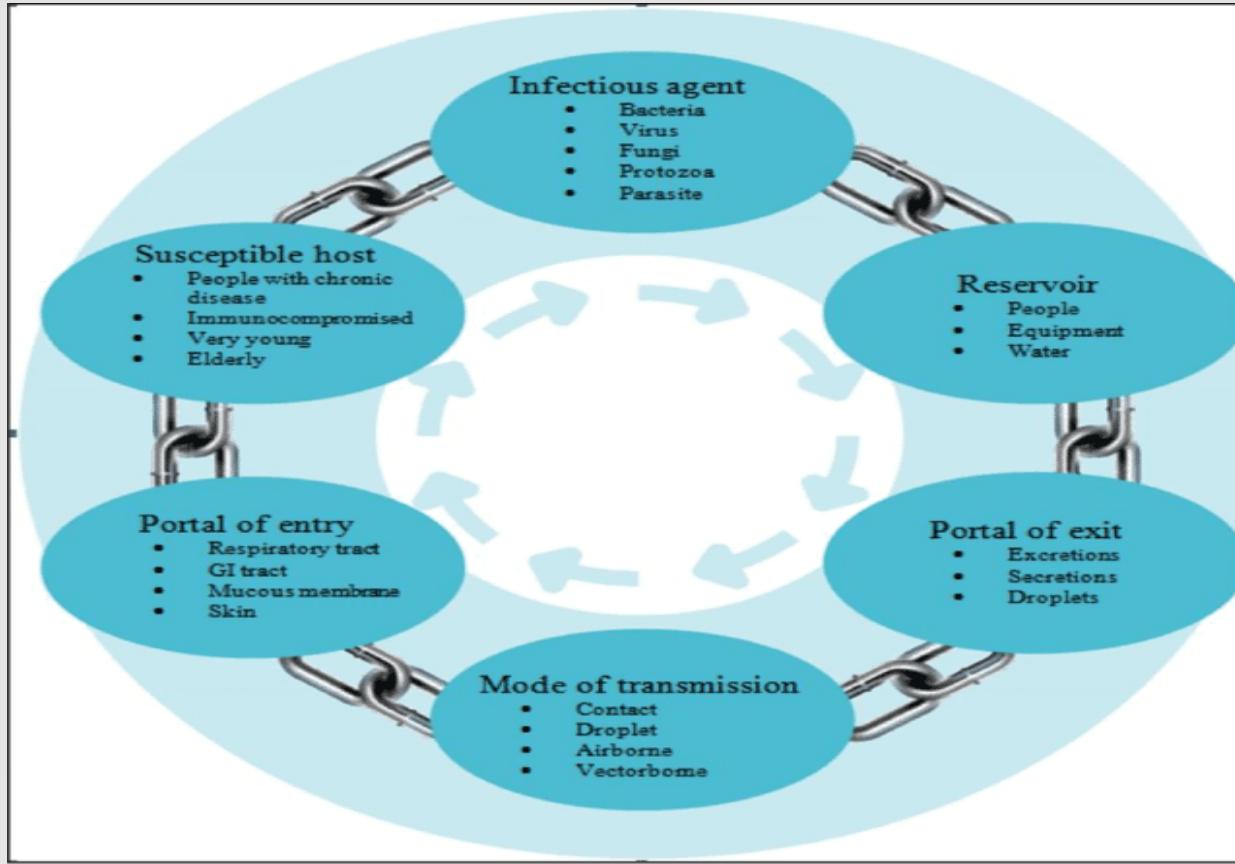
- Every body business

# Chain of Transmission



- For an infection to spread, all links must be connected
- Breaking any one link, will stop disease transmission!

# Chain of Infection



## Susceptible Host

- Elderly
- Infants
- Immunocompromised
- ANYONE!



## Pathogen

- Bacteria
- Virus
- Fungi
- Parasite

## Portal of Entry

- Mouth
- Nose
- Eyes
- Cuts in skin

## Mode of Transmission

- Direct Contact
- Indirect Contact
- Vectors

## Reservoir

- People
- Animals
- Soil
- Food
- Water

## Portal of Exit

- Coughing/Sneezing
- Bodily Secretions
- Feces

# Healthcare Acquired Infection (HAI)

- It's The Infection Occurred To The Patient At The 3<sup>rd</sup> Calendar Day From Admission Not Found Or Incubated On The Admission Time .

**Central Line-associated Bloodstream Infection (CLABSI)**  
Resources for Patient, Provider and State Health Departments, FAQ's about Catheters, Monitoring...

**Catheter-associated Urinary Tract Infections (CAUTI)**  
Guidelines, Resources for Patient, Provider and State Health Departments, Monitoring...

## Surgical Site Infection (SSI)

What You Should Know Before Having Surgery, Resources for Patient, Provider and State Health Departments, Monitoring...

## Ventilator-associated Pneumonia (VAP)

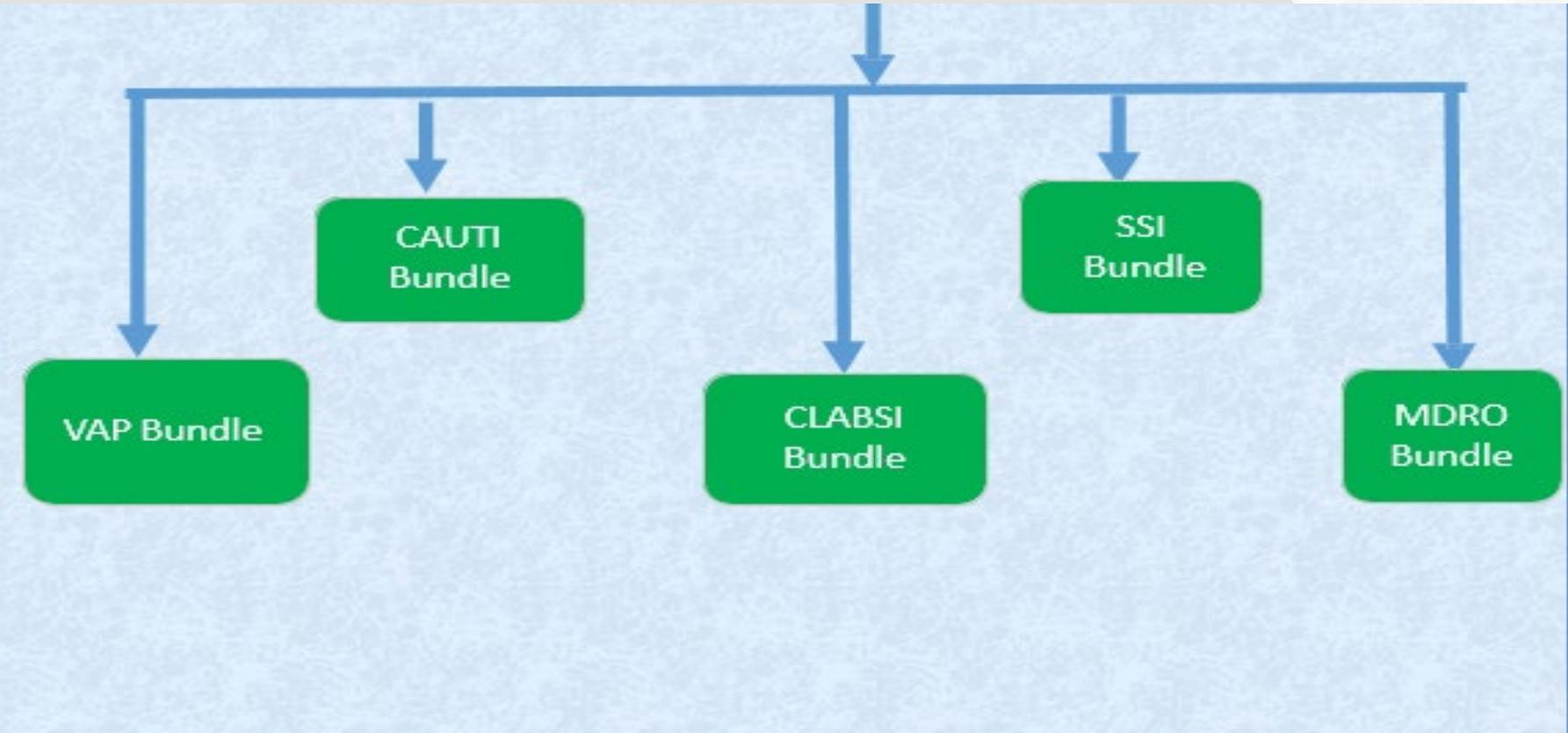
Resources for Patient, Provider and State Health Departments, FAQ's, Monitoring...

# HAI Bundles

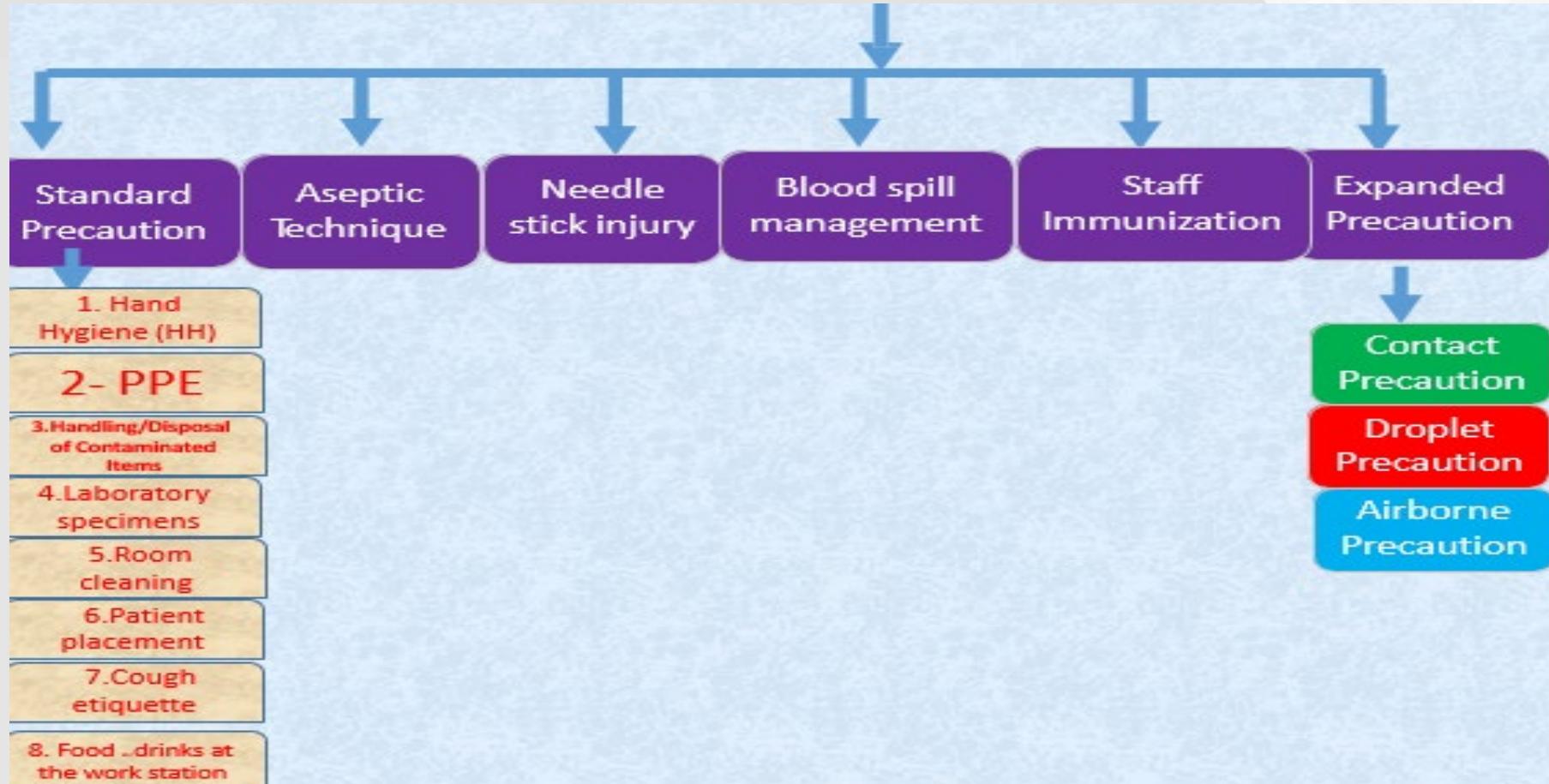
- **Care “Bundles” Are Simple Sets Of Evidence-based Practices That, When Implemented Collectively, Improve The Reliability Of Their Delivery and improve patient outcomes & prevent HAI**



# BUNDLE TYPES



# The Basics of IPC practices



# Standard precautions:

## 1. Hand hygiene

- ✓ Indications ( 5 moments )
- ✓ Types
- ✓ Procedure
- ✓ Duration



# Hand Hygiene: Compliance Monitoring



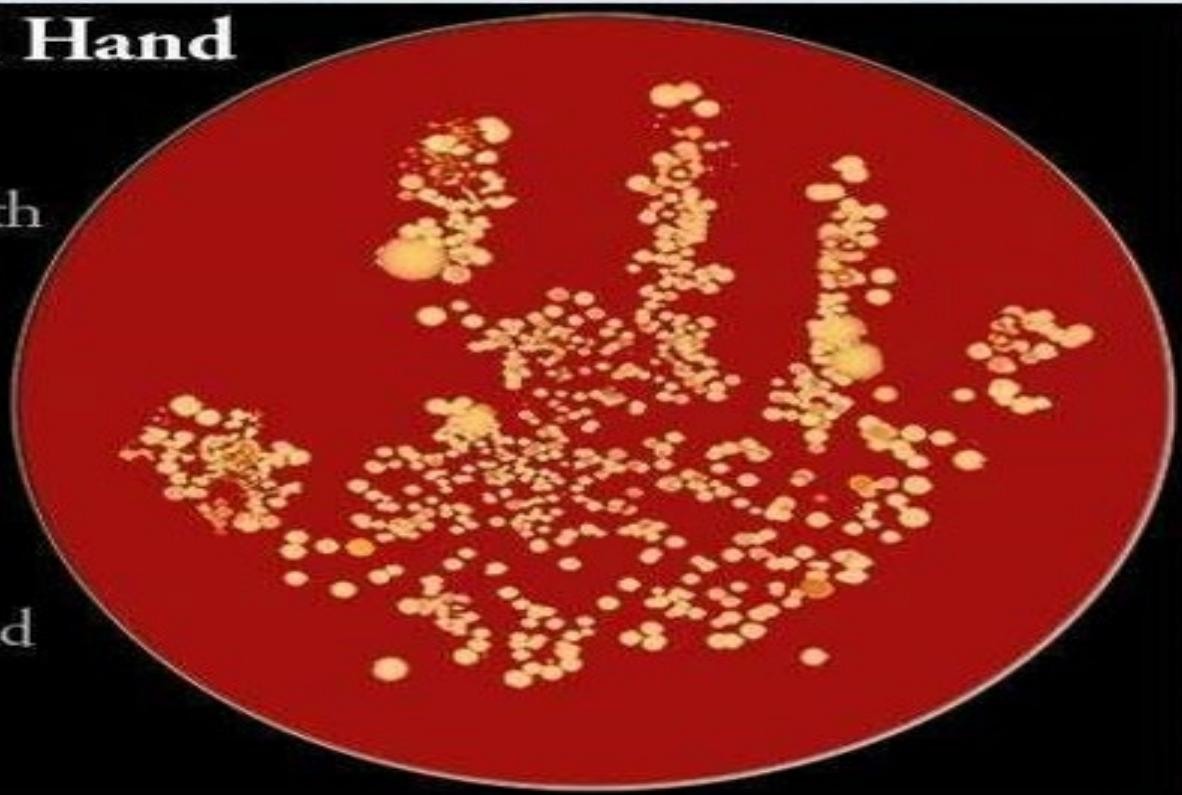
*Be seen being clean!*

Your patients are watching  
Your co-workers are watching  
Families and visitors are watching

# OUR Hands Without Hand Hygiene

## **Unwashed Hand**

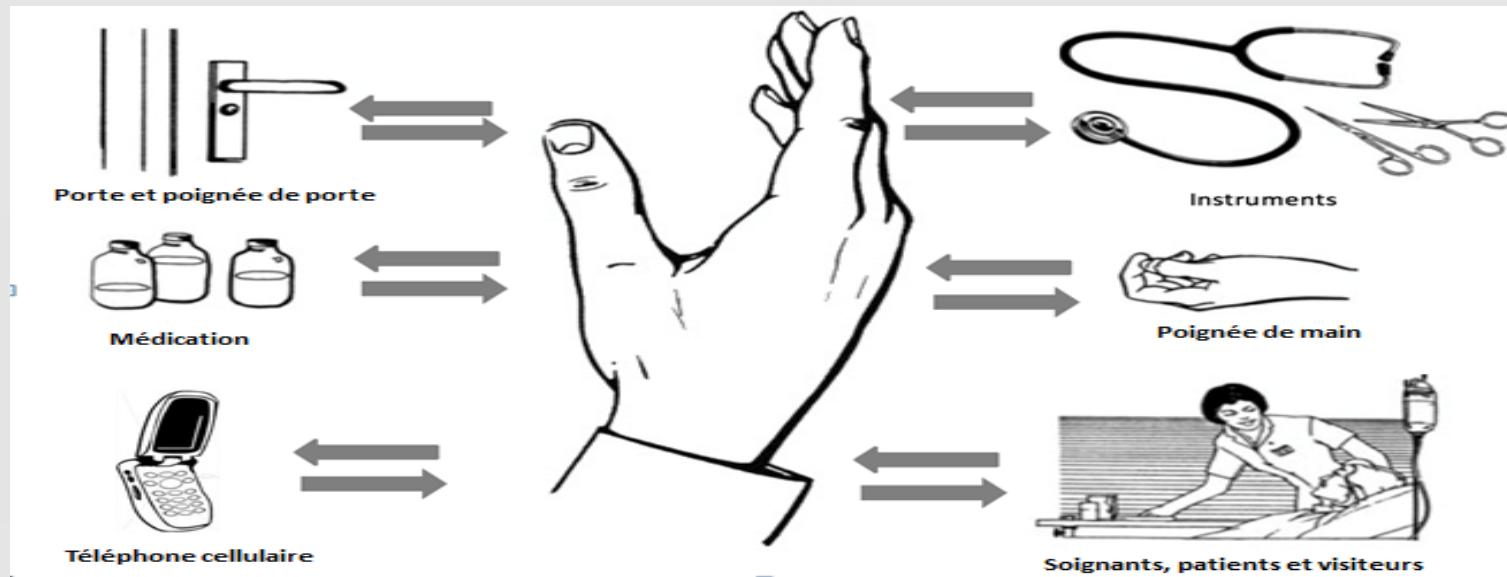
Culture plate  
showing growth  
of bacteria  
24 hours  
after a nurse  
placed her  
unwashed hand  
on the plate.



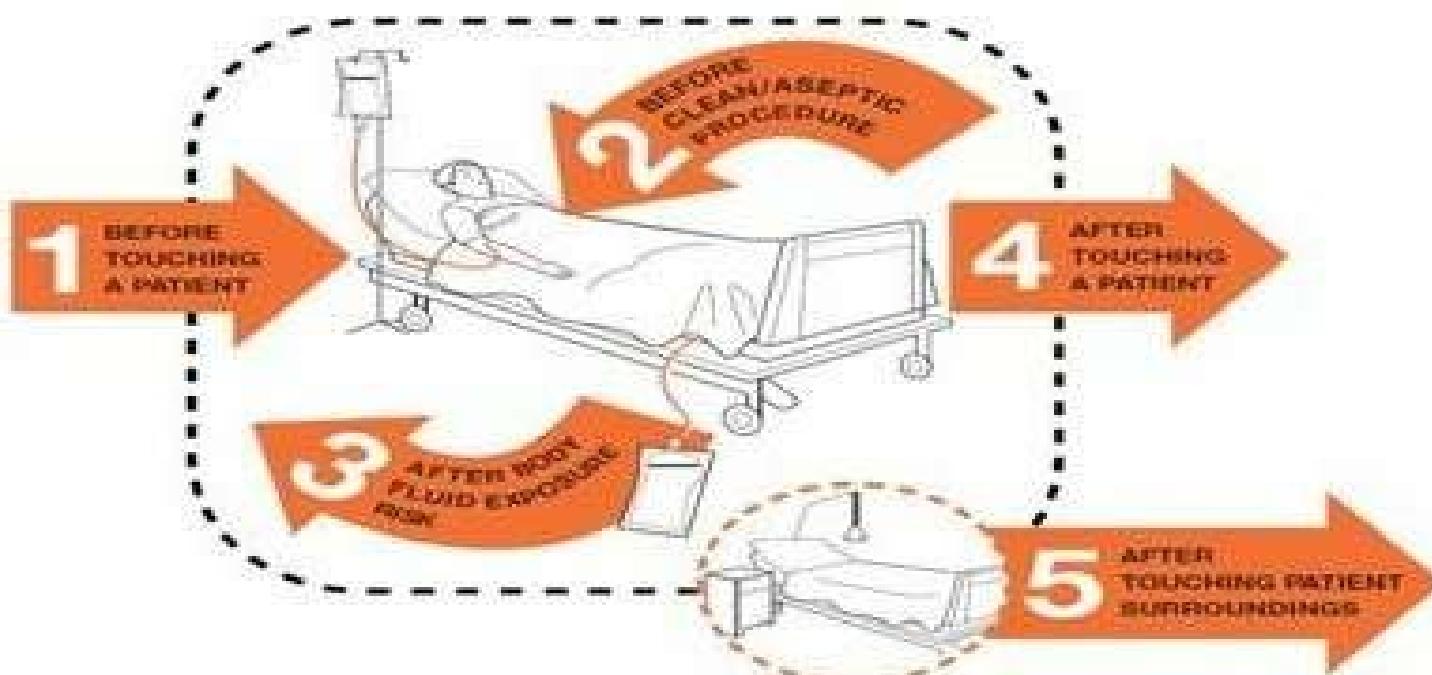
# Hand Hygiene

Best way to prevent the spread of germs in the health care setting and community

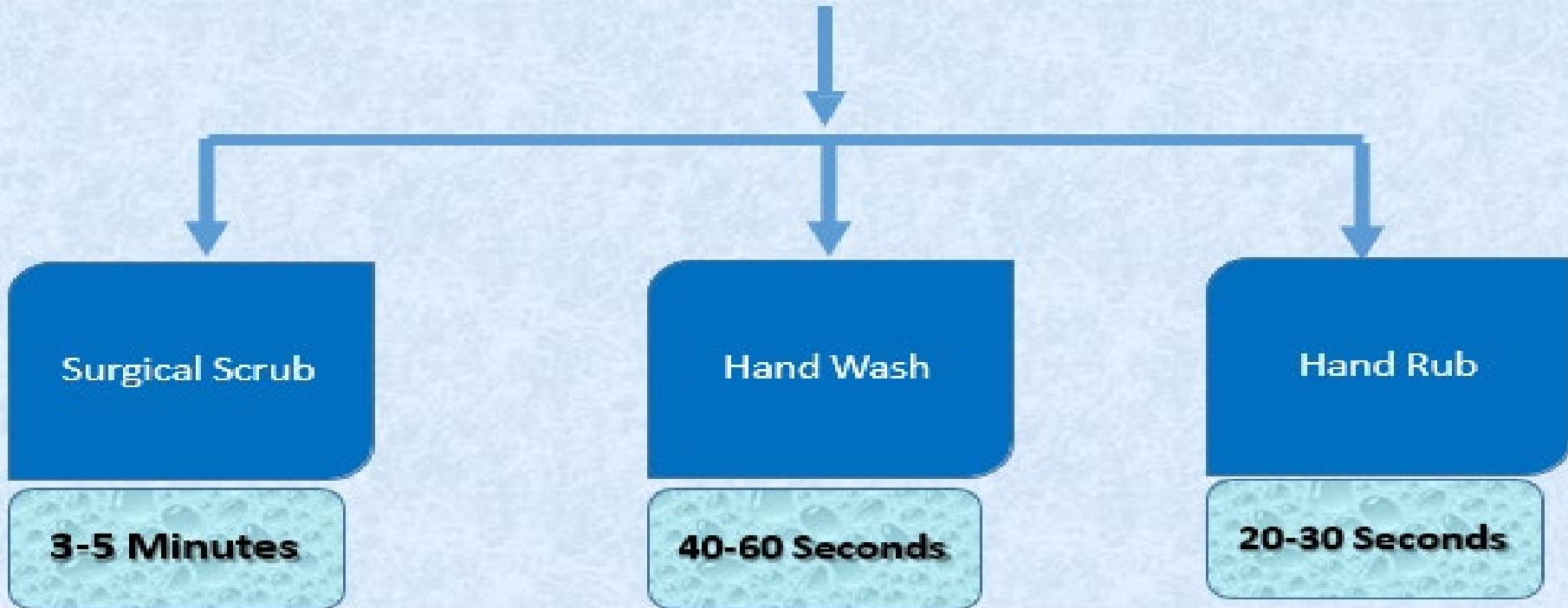
Our hands are our main tool for work as health care workers-and they are the key link in the chain of transmission



# Your 5 Moments for Hand Hygiene



# Types of Hand Hygiene



# 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;

6



Rotational rubbing of left thumb clasped in right palm and vice versa;

7



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

8



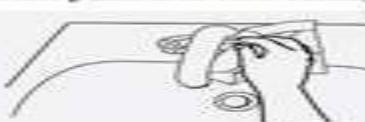
Rinse hands with water;

9



Dry hands thoroughly with a single use towel;

10



Use towel to turn off faucet;

11



Your hands are now safe.



World Health Organization

Patient Safety  
A WHO Initiative for Better Health Care

**SAVE LIVES**  
Clean Your Hands

# How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED.

Duration of the entire procedure: 20-30 seconds



Apply a palmful of the product in a clasped hand, covering all surfaces.



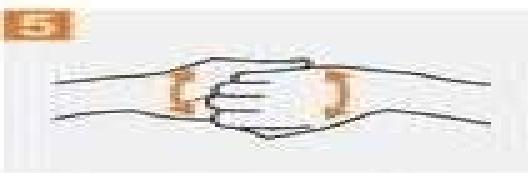
Rub thumbs (palms to palms).



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, backhands and forehands with clasped fingers of right hand in left palm and vice versa.



Check that your hands are clean.



World Health  
Organization

Patient Safety

SAVE LIVES  
Clean Your Hands

The handrubbing technique for surgical hand preparation must be performed on perfectly clean, dry hands.  
On arrival in the operating theatre and after having donned theatre clothing (cap/hat/bonnet and mask), hands must be washed with soap and water.  
After the operation when removing gloves, hands must be rubbed with an alcohol-based formulation or washed with soap and water if any residual talc or biological fluids are present (e.g. the glove is punctured).

Surgical procedures may be carried out one after the other without the need for handwashing, provided that the handrubbing technique for surgical hand preparation is followed (Images 1 to 17).



1 Put approximately 5ml (3 doses) of alcohol-based handrub in the palm of your left hand, using the elbow of your other arm to operate the dispenser



2 Dip the fingertips of your right hand in the handrub to decontaminate under the nails (5 seconds)



3 Images 3–7: Smear the handrub on the right forearm up to the elbow. Ensure that the whole skin area is covered by using circular movements around the forearm until the handrub has fully evaporated (10–15 seconds)



4 See legend for Image 3



5 See legend for Image 3



6 See legend for Image 3



7 See legend for Image 3



8 Put approximately 5ml (3 doses) of alcohol-based handrub in the palm of your right hand, using the elbow of your other arm to operate the dispenser



9 Dip the fingertips of your left hand in the handrub to decontaminate under the nails (5 seconds)



10 Smear the handrub on the left forearm up to the elbow. Ensure that the whole skin area is covered by using circular movements around the forearm until the handrub has fully evaporated (10–15 seconds)



11 Put approximately 5ml (3 doses) of alcohol-based handrub in the palm of your left hand, using the elbow of your other arm to operate the distributor. Rub both hands at the same time up to the wrists, and ensure that all the steps represented in Images 12–17 are followed (20–30 seconds)



12 Cover the whole surface of the hands up to the wrist with alcohol-based handrub, rubbing palm against palm with a rotating movement



13 Rub the back of the left hand, including the wrist, moving the right palm back and forth, and vice-versa



14 Rub palm against palm back and forth with fingers interlinked



15 Rub the back of the fingers by holding them in the palm of the other hand with a sideways back and forth movement

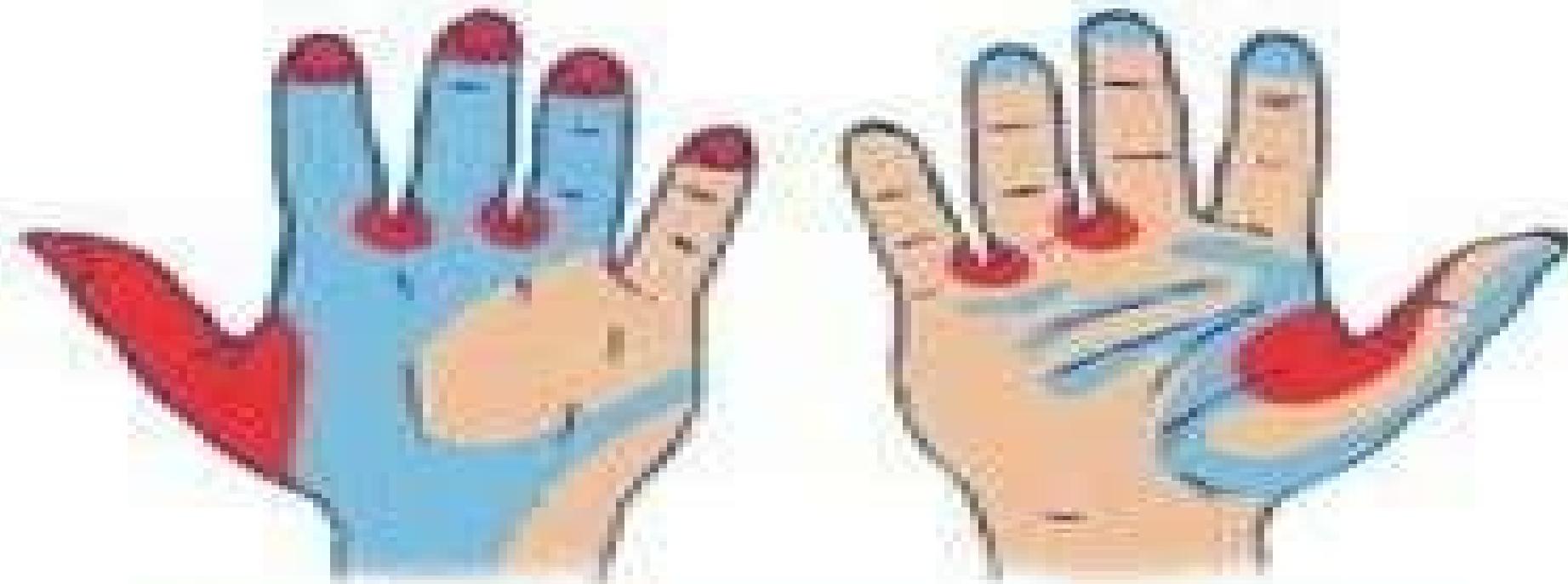


16 Rub the thumb of the left hand by rotating it in the clasped palm of the right hand and vice versa



17 When the hands are dry, sterile surgical clothing and gloves can be donned

Repeat the above-illustrated sequence (average duration, 60 sec) according to the number of times corresponding to the total duration recommended by the manufacturer for surgical hand preparation with an alcohol-based handrub.



Areas most frequently missed  
during hand washing

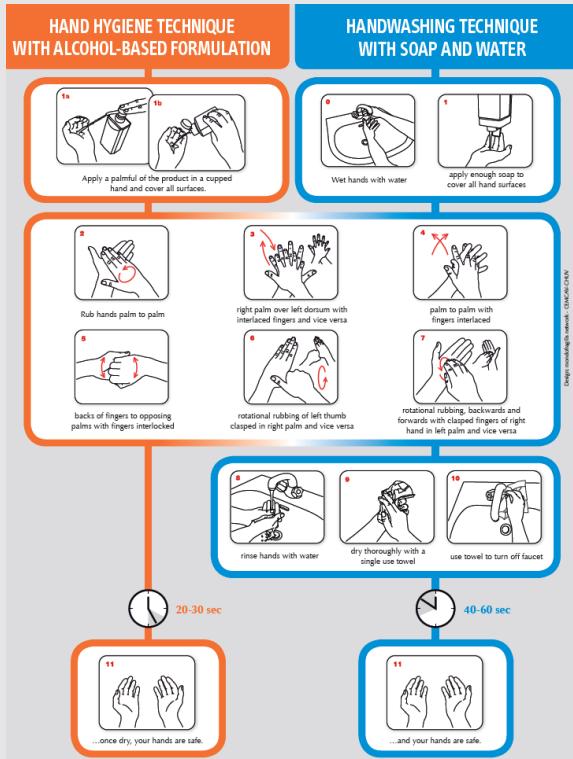


Less frequently missed



Not missed

# Hand hygiene: HOW



Use appropriate product and technique  
An alcohol-based hand rub product is preferable, if hands are not visibly soiled

**Rub hands for 20–30 seconds!**

Soap, running water and single use towel, when visibly dirty or contaminated with proteinaceous material

**Wash hands for 40–60 seconds!**

# Standard precautions

## 2 - Personal Protective Equipments PPE



# PPE Indications

- PPE Is Used To Create A Barrier Between HCWs And Patients, Body Substances, Or Surfaces. Use Appropriate PPE (Gloves/Gowns/Plastic Aprons/Eye Protection) To Prevent Skin And Mucous Membrane Exposure. Use One Or More Of These Items Based On The Degree And Risk Of Exposure.

# PPE Indications

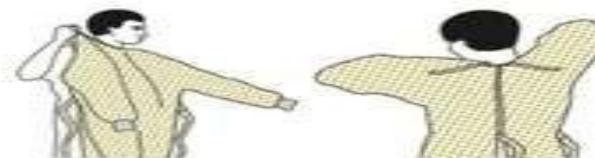
- All PPE Should Be Used Only During Patient Care As Indicated & Should Be Discarded Immediately After Patient Care
- Not Allowed To Get Out From The Patient Room With PPE
- Not Allowed To Use The Same PPE To Give The Care For Other Patient

# PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

## 1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



## 2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



## 3. GOOGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



## 4. GLOVES

- Extend to cover wrist of isolation gown



## USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



# SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE)

Except for respirator, remove PPE at doorway or in anteroom. Remove respirator after leaving patient room and closing door.

## 1. GLOVES

- Outside of gloves is contaminated!
- Grasp outside of glove with opposite gloved hand; peel off
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist
- Peel glove off over first glove
- Discard gloves in waste container



## 2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield is contaminated!
- To remove, handle by head band or ear pieces
- Place in designated receptacle for reprocessing or in waste container



## 3. GOWN

- Gown front and sleeves are contaminated!
- Unfasten ties
- Pull away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard



## 4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated  
— DO NOT TOUCH!
- Grasp bottom, then top ties or elastics and remove
- Discard in waste container



**PERFORM HAND HYGIENE BETWEEN STEPS  
IF HANDS BECOME CONTAMINATED AND  
IMMEDIATELY AFTER REMOVING ALL PPE**



## **STERILE GLOVES INDICATED**

Any surgical procedure;  
vaginal delivery; invasive  
radiological procedures;  
performing vascular access  
and procedures(central line);  
preparing total parenteral nutrition  
and chemotherapeutic agents.

## **EXAMINATION GLOVES INDICATED IN CLINICAL SITUATIONS**

Potential for touching blood, body fluids, secretions,  
excretions and items visibly soiled by body fluids.

**DIRECT PATIENT EXPOSURE:** Contact with blood; contact with  
mucous membrane and with non-intact skin; potential presence of  
highly infectious and dangerous organism; epidemic or emergency  
situations;IV insertion and removal;drawing blood;discontinuation  
of venous line;pelvic and vaginal examination;suctioning non-closed  
systems of endotracheal tubes.

**INDIRECT PATIENT EXPOSURE:** Emptying emesis basins;handling/cleaning  
instruments;handling waste;cleaning up spills of body fluids.

## **GLOVES NOT INDICATED (except for CONTACT precautions)**

No potential exposure to blood and body fluids, or contaminated environment

**DIRECT PATIENT EXPOSURE:** Taking blood pressure, temperature and pulse;performing SC  
and IM injections; bathing and dressing patient;transporting patient;caring for eyes and ears  
(without secretions); any vascular line manipulation in absence of blood leakage.

**INDIRECT PATIENT EXPOSURE:** Using telephone; writing in the patient chart; giving oral medications;  
distributing or collecting patient dietary trays; removing and replacing linens for patient bed; placing non-invasive  
ventilation equipment and oxygen cannula;moving patient furnitures.

# Principles for using PPE (1)

Always clean your hands before and after wearing PPE  
PPE should be available where and when it is indicated

- in the correct size

- select according to risk or per transmission based precautions

Always put on before contact with the patient

Always remove immediately after completing the task and/or leaving the patient care area

NEVER reuse disposable PPE

Clean and disinfect reusable PPE between each use

## Principles for using PPE (2)

Change PPE immediately if it becomes contaminated or damaged

PPE should not be adjusted or touched during patient care; specifically

never touch your face while wearing PPE

if there is concern and/or breach of these practices, leave the patient care area when safe to do so and properly remove and change the PPE

Always remove carefully to avoid self-contamination (from dirtiest to cleanest areas)

**“TAKE CAUTION, USE PRECAUTIONS”**



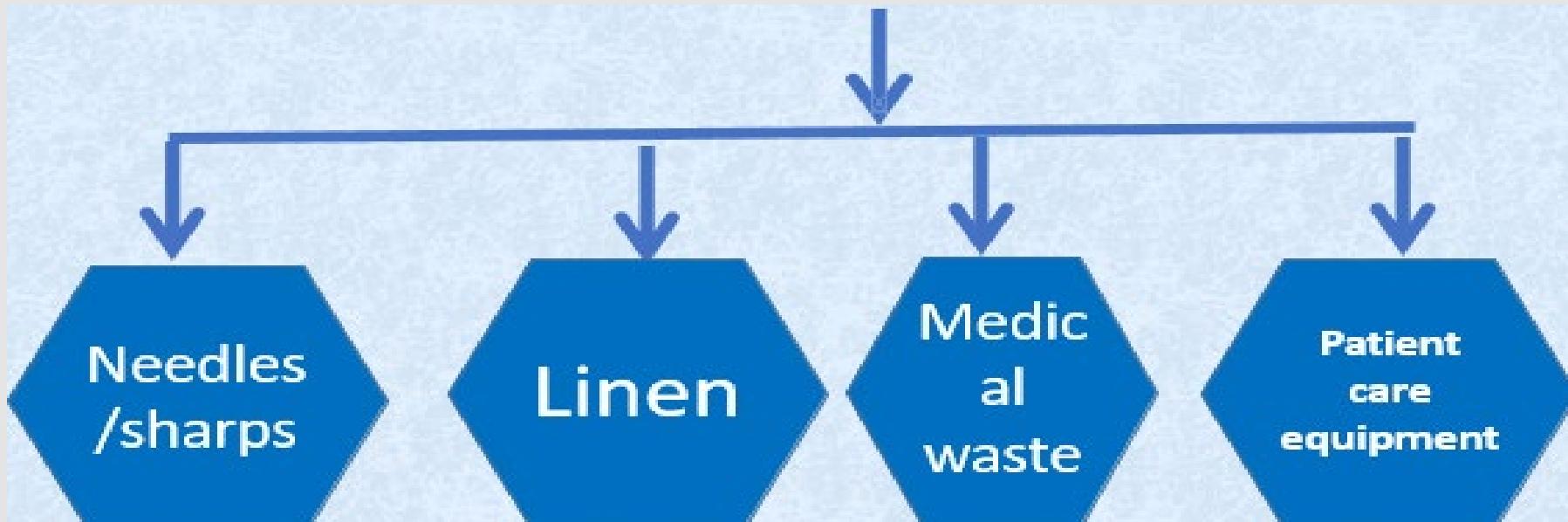
# Types of the mask

1. Mask surgical
2. Mask N95 ( need FIT TEST )



# Standard precautions

## 3. Handling/Disposal of Contaminated Items



# 1- Handling of needles & sharps



# 1- Handling of needles & sharps

- A. Dispose Used Sharp Items Into An Approved Puncture-resistant Container Immediately After Use, At The Point Of Use, Or As Close To Point Of Use, As Possible.
- B. Do Not Place Used Sharp Items On Any Environmental Surface.
- C. Do Not Recap Or Manipulate Needles Using Both Hands Because This Increases The Risk Of Injury. If Recapping Or Manipulating The Needle Is Deemed Essential, Then Use Either A One-handed “Scoop” Technique Or A Mechanical Device Designed To Hold The Needle Sheath.
- D. Close Sharps Containers When  $\frac{3}{4}$  Full And Remove For Incineration.

## 2- Handling of the linen

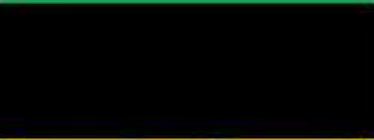
- a. Handle and transport linen in a manner that will prevent skin/mucous membrane exposure and contamination of clothing or transferring microorganisms to other patients or the environment.
- b. Place wet/heavily soiled linen in a designated impermeable bag and close the bag securely or wrap wet linen in another piece of linen to avoid soaking of the bag.



### 3- Handling of the medical waste

- a. Place biomedical waste in identifiable (color-coded) bags or appropriate containers.
- b. Securely tie or close bags/containers and remove for appropriate disposal.

## Medical Waste Segregation Color Coding

Color اللون	Description الوصف	Usage الاستخدام
	Green bag كيس اخضر	<b>Used contaminated linens</b> للملابس المستعملة ملوثة
	Black bag كيس اسود	<b>Domestic waste (not infected or contaminated).</b> * the light blue plastic is used now in the small baskets.  النفايات العادية (غير ملوثة)
	Yellow bag labeled By Biohazard كيس اصفر عليه علامة التفافات الحيوية	Clinical or infected waste.  المخلفات المعدية الملوثة او التي ينبع منها تلوثها بسوائل الجسم و كذلك المستلزمات الطبية المستخدمة (مثل القسطرة و جهاز المحلول)
	Red bag labeled By Biohazard كيس احمر عليه علامة التفافات الحيوية	<b>Human tissue, placenta, surgically excised tumors, masses and histopathological waste.</b>  اجزاء جسم الانسان و الانسجة الموجودة به مثل المتباعدة و الارقام المعقولة و مخلفات معامل الباكتولوجيا.
	yellow box labeled By Biohazard صندوق خاص اصفر عليه علامة التفافات الحيوية	It includes any object that can cause puncture, scratch or cutting the skin e.g.: (i.e. needles, syringes, scalpels, razors, glass lab slides).  اعداة يمكنها خدش الجلد او اختراقه مثل الإبر و المضارط و الشراكات الزجاجية و اعطليتها . و الدهانات المكسورة و المشرحة من الأسانك المستخدمة في عيادة الأسنان .
	Orange البرتقالي	<b>For Chemical waste</b> للتنيفيات الكيماوية

## 4. Handling of Patient care Equipment

- a. Handle used patient care equipment in a manner that prevents skin and mucous membrane exposure, contamination of clothing and transfer of microorganisms to other patients or the environment.
- b. Commonly used equipment must be clean and disinfected between patients.
- c. **Do not reuse single-use items.**
- d. Remove organic material from critical and semi-critical instruments/devices using recommended cleaning agents before transfer to CSSD for high-level disinfection or sterilization.
- e. Ensure that reusable equipment is properly transported in leak-proof containers to CSSD for reprocessing before use with another patient.

# Cleaning and disinfection of medical instruments

## Remember:

- ✓ All Decontamination, Cleaning, And Sterilization Of Medical Equipments Should Be Done In Central Sterilization Service, None In The Respective Departments.
- ✓ Only Soak The Used Instruments In The Suitable Detergent –Disinfectant And Send To The Cssd In A Closed Container.

# Standard precautions

## 4. Laboratory specimens

1. Wear Gloves Before Obtaining Laboratory Specimens.
2. Place Laboratory Specimens In Designated Containers And Seal Appropriately.
3. Remove Gloves And Perform Hand Hygiene Once All Laboratory Specimens Are In The Appropriate Containers.
4. Label Containers With Appropriate Patient Data.
5. Transfer To The Laboratory In An Upright Position As Much As Possible And As Promptly As Possible.
6. Ensure No Leakage Of The Laboratory Specimens.
7. Ensure That The Requisition Has The Complete Information As This Is Critical For Laboratory Analysis And Clinical Interpretation.

# Standard precautions

## 5. Room Cleaning

1. Rooms Should Be Cleaned Daily And After Patient Discharge.
2. Cleaning Is Required As Per Housekeeping Policies.
3. Cleaning Schedule Should Be Available Everywhere & Implemented



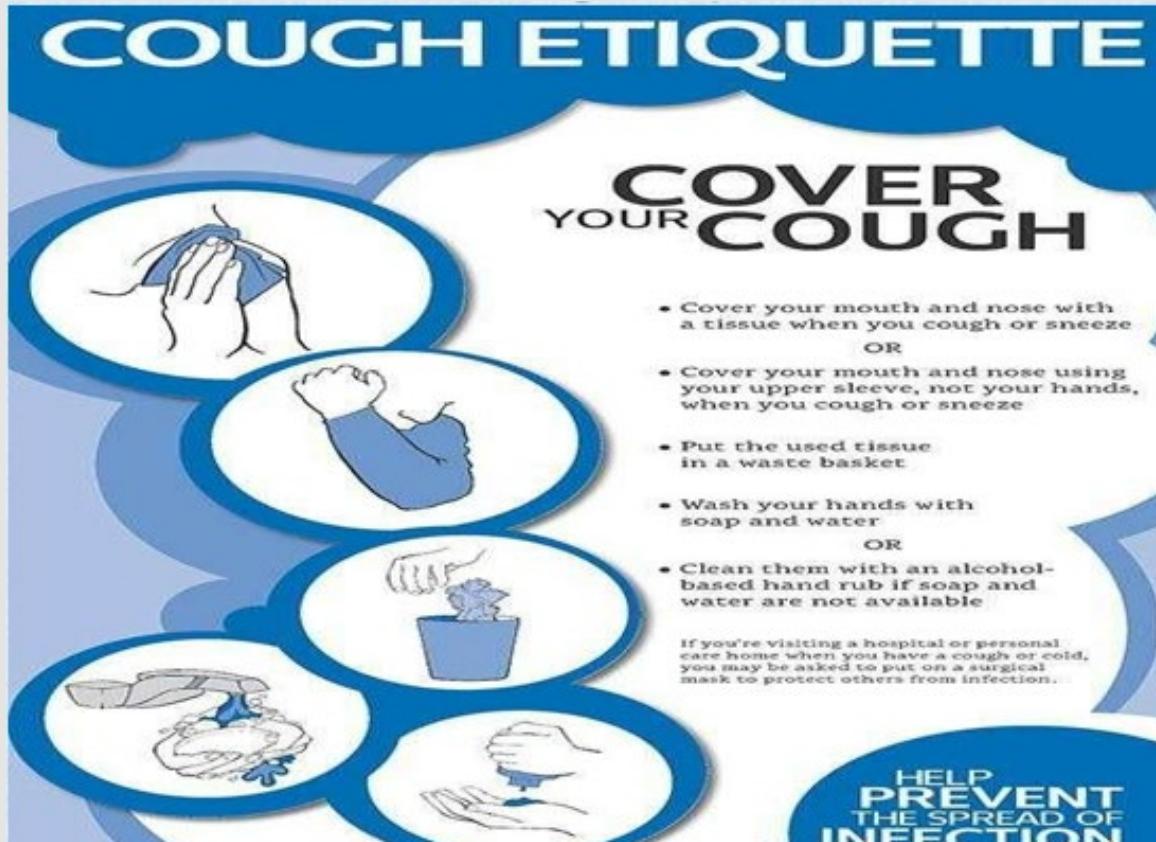
# Standard precautions

## 6. Patient placement

- Place Patients Who Pose As Risk Of Transmission To Others (eg., Those With Uncontained Secretions, Excretions, Or Wound Drainage) In Single-patient Rooms When Available. If A Single Room Is Not Available, Ensure Contact Isolation Precautions Are Applied In A Shared Room.

# Standard precautions

## 7. Cough etiquette



# Respiratory hygiene/etiquette

Reduces the spread of microorganisms (germs) that cause respiratory infections (colds, flu).

Turn head away from others when coughing/sneezing

Cover the nose and mouth with a tissue.

If tissues are used, discard immediately into the trash

Cough/sneeze into your sleeve if no tissue is available

Clean your hands with soap and water or alcohol based products

Do not spit here and there



# Promoting respiratory hygiene

Encourage handwashing for patients with respiratory symptoms

Provide masks for patients with respiratory symptoms

Patients with fever + cough or sneezing should be kept at least 1m away from other patients

Post visual aids reminding patients and visitors with respiratory symptoms to cover their cough



# PPE for use in health care for COVID-19

**Face Mask**



Nose + mouth

**N95 Mask**



Nose + mouth

**Face shield**



Eyes + nose + mouth

**Goggle**



Eyes

**Gown**



Body

**Apron**



Body

**Gloves**



Hands

**Head cover**



Head + hair

# Standard precautions

## 8. Food and drinks at the work station

- Consumption Of Food And Drinks In Clinical Areas With Potential For Exposure To Blood Or Other Infectious Material Or Where The Potential For Contamination Of Work Surfaces Exist Are Prohibited. However, Water Bottles With Protective Lids, Properly Labeled With The Employees Name Are Allowed.

- Isolation precautions:
  - EXPANDED Precautions
- Types of isolation: Based on the mode of transmission of the microorganisms

- ✓ Contact
- ✓ Droplet .
- ✓ Airborne

# Expanded Precautions

- Contact Isolation: **GOWN + GLOVES**
- Droplet Isolation: **Surgical MASK**
- Airborne Isolation: **RESPIRATOR N95**

# Contact Precautions

## 1- Contact Transmission:

- **A) Direct-contact:** Direct Body Surface-to-body Surface Contact And Physical Transfer Of Microorganisms Between Susceptible Host And Infected Or Colonized Person.
- **B) Indirect-contact:** Contact Of A Susceptible Host With A Contaminated Intermediate Object, Usually Inanimate, Such As A Contaminated Instrument, Needle, Or Dressing, Or Contaminated Hands Of HCW.

# Contact Precautions

**Examples of diseases transmitted by Contact:**

1. MRSA
2. VRE
3. Herpes simplex
4. Zoster (Shingles)
5. Discharging wounds or lesions



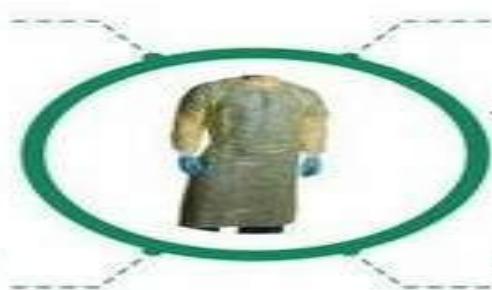
## احتياطات العزل التلامسي CONTACT PRECAUTIONS

يجب على الزوار مراجعة مكتب التمريض قبل الزيارة  
VISITORS : Report to nurse's station before entering the room

All HCWs and visitors  
must do the following:

before patient room or care  
area entry :

- 1- Practice hand hygiene.
- 2- Wear isolation gown and gloves.



before exit from patient room  
or care area :

- 1- Remove gown and gloves  
and discard as medical waste.
- 2- Practice hand hygiene.

على جميع الممارسين  
الصحيين و الزوار اتباع التالي:

قبل دخول الغرفة او منطقة  
المريض:

- 1- ممارسة نظافة اليدين.
- 2- ارتداء مزيول العزل و القفازات.

قبل الخروج من غرفة المريض او  
منطقة المريض:

- 1- يتم خلع مزيول العزل و القفازات  
و التخلص منها في حاوية النفايات  
الطبية.
- 2- ممارسة نظافة اليدين.

# TRANSPORTATION CARD

## CONTACT PRECAUTIONS

### العزل التلامسي

- 1** > Notify the receiving unit/ward/department (Diagnosis, Type of Isolation Precautions).



- 2** > Prepare the patient for transportation :
- ◆ Dress wounds with impervious dressings.
  - ◆ Dress the patient in a clean gown.
  - ◆ Cover patient with clean sheet.
  - ◆ HCW should wear clean gloves and perform hand hygiene after taking off .

- 3** > Staff should disinfect the patient's bed / wheeled chair using MOH approved disinfectant.

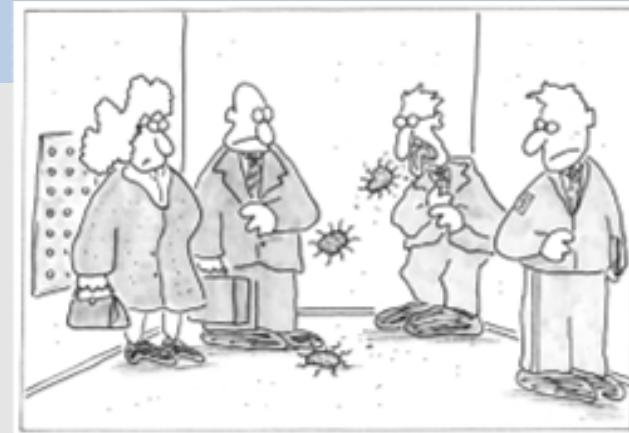
- 1** < إبلاغ القسم المستلم (التخدير - نوع العزل).

- 2** < يتم تحضير المريض للنقل كما يلي:
- ◆ تغطية جروح المريض بضماد غير منفذ للسوائل.
  - ◆ إرتداء المريض لداء طبي نظيف.
  - ◆ تغطية المريض بملاءة نظيفة.
  - ◆ يجب على الممارس الصحي إرتداء المقاواط النظيفة ونزعها بعد الانتهاء من نقل المريض وممارسة تطهير الأيدي.

- 3** < يجب على الممارس الصحي تطهير السرير / الكرسي المتحرك المستخدم لنقل المريض بعد النقل باستخدام المطهرات المعتمدة بوزارة الصحة.

# Droplet Precautions

- Droplets Generated By The Infected Person By Cough, Sneeze, Talking, Or During A Procedure Such As Suctioning The Person's Respiratory Tract Travel A Short Distance (1-2 Meters) And Are Deposited On A Susceptible Host's Conjunctivae, Nasal Mucosa, Or Mouth.



# Droplet Precautions

- » Examples of droplet diseases include:

1. Influenza
2. Pneumonia
3. Mumps
4. Common Cold
5. Bronchitis
6. Respiratory MRSA
7. Rubella
8. Meningococcal Meningitis



## احتياطات العزل الرذاذى DROPLET PRECAUTIONS

يجب على الزوار مراجعة مكتب التمريض قبل الزيارة  
VISITORS : Report to nurse's station before entering the room

All HCWs and visitors  
must do the following:

before patient room or care area  
entry :

- 1- Practice hand hygiene .
- 2- Wear a surgical Mask .



before exit from patient room or  
care area :

- 1- Surgical Mask must be removed and discarded as medical waste.
- 2- Practice hand hygiene .

على جميع الممارسين  
الصحيين و الزوار اتباع التالي:

قبل دخول الغرفة أو منطقة  
المريض :

- 1- ممارسة نظافة الأيدي .
- 2- ارتداء الكمامـة الجراحـي العـادـي .

قبل الخروج من غرفة المريض أو  
منطقة المريض :

- 1- يتم خلع الكمامـة الجراحـي العـادـي  
والتخلص منه في حاوية النفايات  
الطبيـة .
- 2- ممارسة نظافة الأيدي .



# TRANSPORTATION CARD

## DROPLET PRECAUTIONS

## العزل الرذاذى

- 1** > Notify the receiving unit/ward/department (Diagnosis, Type of Isolation Precautions).

**١** ابلاغ القسم المستلم (التخديص - نوع العزل).

**2** > Prepare the patient for transportation :

- Patient should wear a surgical mask.
- Educate the patient about respiratory hygiene (Cough Etiquette).
- HCW should perform hand hygiene after patient transport.

**٢** يجب أن يتم تحضير المريض للنقل كما يلي:

- أن يستخدم المريض الكمام الجراحي العادي أثناء نقله.
- تغليف المريض عن العناية التنفسية (أداب السعال).
- يجب على الممارس الصحي ممارسة نظافة اليد بعد الإنتهاء من نقل المريض.

- 3** > If the patient can not tolerate wearing a surgical mask, HCW should wear a surgical mask during transportation.

**٣** يجب على الممارس الصحي استخدام الكمام الجراحي العادي أثناء عملية النقل في حالة عدم امكانية إرتداء المريض للكمام الجراحي الطبي العادي.



## Airborne Precautions

- Dissemination Of Either Droplet Nuclei (Small Particle Residue <5 Microns) Or Dust Particles Containing Microorganisms Into The Air Are Then Inhaled By A Susceptible Host.
- This Can Occur Over Significant Distances Via Normal Air And Ventilation Systems.

» Examples of airborne diseases include:

1. Pulmonary Tuberculosis (TB)
2. Measles
3. Chicken Pox ( Varicella Zoster)
4. SARS



## احتياطات العزل الهوائي

### AIRBORNE PRECAUTIONS

يجب على الزوار مراجعة مكتب التمريض قبل الزيارة  
VISITORS : Report to nurse's station before entering the room

All HCWs and visitors  
must do the following:

Before patient room entry :

- 1- Practice hand hygiene .
- 2- Wear N95 respirator .

Before exit from patient room :

- 1- All personal protective equipment must be removed except N95 respirator and discarded as medical waste.

After exit from patient room :

- 1- Remove N95 respirator and discard as medical waste.
- 2- Practice hand hygiene .

على جميع الممارسين  
الطبيين و الزوار اتباع التالي:

قبل دخول الغرفة :

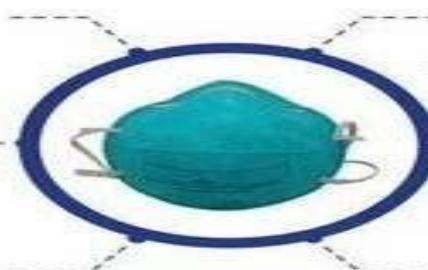
- 1- ممارسة نظافة الابدأ.
- 2- ارتداء الكمامـة التنفسـي عاليـة الكـفاءـة .

قبل الخروج من غرفة المريض :

- 1- يتم خلع مستلزمات الوقاية الشخصية ماعدا الكمامـة التنفسـي عاليـة الكـفاءـة و التخلص منها في حاوية النفايات الطبيعـية .

بعد الخروج من غرفة المريض :

- 1- يتم خلع الكمامـة التنفسـي عاليـة الكـفاءـة و التخلص منه في حاوية النفايات الطبيعـية .
- 2- ممارسة نظافة الابدأ.

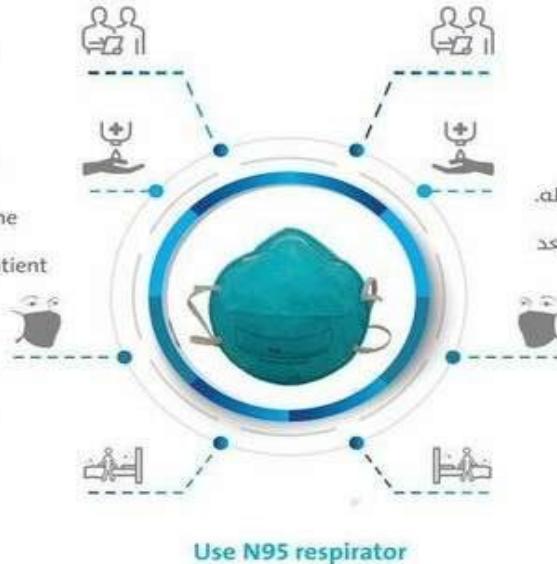


# TRANSPORTATION CARD

## AIRBORNE PRECAUTIONS

العزل الهوائي

- 1** Notify the receiving unit/ward/department (Diagnosis, Type of Isolation Precautions).



- 1** ابلاغ القسم المستلم (التخديص - نوع العزل).

- 2** Prepare the patient for transportation :
- Patient should wear surgical mask.
  - Educate the patient about respiratory hygiene (Cough Etiquette).
  - HCW should perform hand hygiene after patient transport.

- 2** يجب أن يتم تحضير المريض للنقل كما يلى:  
أن يستخدم المريض الكمام الجراحي العادي أثناء نقله.  
تنقيف المريض عن العناية التنفسية (آداب السعال).  
يجب على الممارسين الصحي ممارسة نظافة الأيدي بعد الإنتهاء من نقل المريض.

- 3** If the patient can not tolerate wearing a surgical mask, during transportation healthcare workers should wear the fitted N95 respirator.

- 3** في حالة عدم إمكانية إرتداء المريض للكمام الجراحي الطبي العادي يجب على الممارس الصحي استخدام الكمام التنفسى عالي الكفاءة (N95) أثناء عملية النقل.

- 4** Staff should disinfect the patient bed/wheeled chair using MOH approved disinfectant.

- 4** يجب على الممارسين الصحي تطهير السرير أو الكرسي المتحرك المستخدم لنقل المريض بعد النقل باستخدام المطهرات المعتمدة في وزارة الصحة.

# **Patients suspected or confirmed COVID-19 (1)**

**Contact and droplet precautions** for all patients with suspected or confirmed COVID-19

Airborne precautions are recommended **only for aerosol generating procedures** (i.e. open suctioning of respiratory tract, intubation, bronchoscopy, cardiopulmonary resuscitation).

Preferably patient should be in a single room:

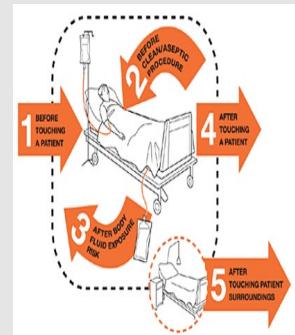
natural ventilation with air flow of at least 160 L/s per patient or  
in negative pressure rooms with at least 12 air changes per hour and controlled direction of air flow when using mechanical ventilation

Cohort: All patients with respiratory illness should be in a single room, or **minimum 1m away from other patients** when waiting for a room

Dedicated & trained HCW

**HCW to wear PPE:** a medical mask, goggles or face shield, gown, and gloves

**Hand hygiene** should be done **any time the WHO “5 Moments” apply**, and **before PPE** and **after removing PPE**



# Patients suspected or confirmed COVID-19 (2)

Equipment should be **single use** when possible, dedicated to the patient and disinfected between uses

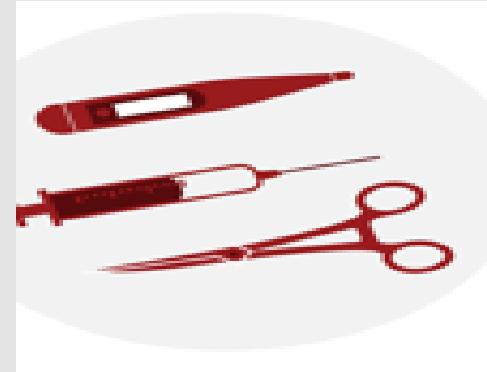
**Avoid transporting** suspected or confirmed cases – if necessary, have patients wear masks. HCW should wear appropriate PPE.

Routine cleaning of the environment is crucial

**Limit** the number of HCW, visitors, and family members who are in contact with the patient. If necessary, everyone must wear PPE.

All persons entering the patients room (including visitors) should be recorded (for contact tracing purposes).

Precautions should continue until the patient is asymptomatic.



# Outpatient Care

The basic principles of IPC and standard precautions should be applied in all health care facilities, including outpatient care and primary care.



## Triage and early recognition

emphasis on **hand hygiene, respiratory hygiene** and **medical masks** to be used by patients with respiratory symptoms (consider having signage);

if possible – place patients in separate rooms or away from other patients in the waiting rooms, and wear mask, gloves and gown if possible when seeing them in the clinic (as much of contact and droplet precautions as possible);

when symptomatic patients are required to wait, ensure they have a separate waiting area (**1m separation**);

**prioritization of care of symptomatic patients;**

educate patients and families about the early recognition of symptoms, basic precautions to be used and which health care facility they

# **Additional Control Measures**



Most effective

# Hierarchy of Controls

**Elimination**

Physically remove the hazard

**Substitution**

Replace the hazard

**Engineering Controls**

Isolate people from the hazard

**Administrative Controls**

Change the way people work

**PPE**

Protect the worker with Personal Protective Equipment

Least effective

# Administrative Controls

Provision of adequate **training** for HCWs;  
Ensuring an adequate **patient-to-staff** ratio;  
Establishing a **surveillance** process for acute respiratory infections potentially caused by COVID-19 among HCWs;  
Ensuring that HCWs and the public understand the importance of promptly seeking medical care;  
**Monitoring HCW compliance** with standard precautions and providing mechanisms for improvement as needed.

- Aseptic technique and device management for clinical procedures
- Intravenous infusion procedures
- Catheter care
- Suctioning policy
- Wound care
- Cleaning of ventilators



# ASEPTIC TECHNIQUE

- Definition: Some Of Practices To Reduce The Number Of Microorganisms On Hands, Supplies And Equipment During Patient Care Procedures.

# ASEPTIC TECHNIQUE

- Aseptic Technique Involves Using Barriers, Such As Sterile Gloves, Sterile Gowns, Masks, And Sterile Drapes, To Prevent The Transfer Of Microorganisms From Care Providers And The Environment To The Patients During The Procedure Being Performed.

## A) Aseptic Technique Component

**1- Appropriate attire** is based on the risk of the procedure

**2- Hand hygiene**

**3Skin antisepsis:** ensuring skin is clean before the procedure with the adherence for antiseptic contact and drying time.

**4Single-use devices, equipment, and supplies:** for reprocessed supplies ensure an intact seal and confirm that sterilization indicators with expiration date are verified.

**5Environmental cleaning:** By Using Hospital-approved Disinfectants & Clean Equipment And Supplies (I.E., Mops, Water, Cleaning Cloths) For Environmental Hygiene.

## B) Clean Technique

1. Wear clean gloves instead of sterile gloves after hand antisepsis where clean technique is indicated.
2. Use the “no-touch” dressing technique to prevent contamination of sterile dressings, depending on the type and extent of the procedure.
3. Use clean gloves for routine changing of surgical site dressings, tracheostomy care, and maintenance of intravascular lines, as long as you use techniques that prevent the transfer of new organisms or movement from one site to another site in the same patient.
4. Wear a clean gown to minimize contamination of clothing, following standard precaution guidelines.

# Multi-dose medication management

## **Safe Injection Practices: Multiple-Dose Vials**

- Use single dose vials whenever possible.
- If multiple-dose (“multi-dose”) vials must be used:
  - Designate to a **single person** whenever possible.
  - Both the needle **and** syringe used to access the vial must be sterile.
- Do not keep multi-dose vials in the immediate patient/resident treatment area (e.g., patient’s room).
  - Store them in accordance with the manufacturer’s recommendations.
  - Discard vial if sterility is compromised or questionable.

# The seven steps to safe injections

1 Clean work space

2 Hand hygiene

3 Sterile safety-engineered syringe

4 Sterile vial of medication and diluent

5 Skin cleaning and antisepsis

6 Appropriate collection of sharps

7 Appropriate waste management



# Standard Precautions

- Assume that **anyone** might be infected with a bloodborne pathogen
- Basic infection control principles that apply **everywhere** and **every time** healthcare is delivered
- **Safe Injection Practices**
  - Never administer medications from the same syringe to more than one patient
  - Do not enter a vial with a used syringe or needle
  - Minimize the use of shared medications
  - Maintain aseptic technique at all times



**MULTI-DOSE VIAL**

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**Expiration Date**

**Discard 28 days  
after opening.**

# Needle Stick Injury Management

- 1. No Squeezing To The Injury**
- 2. Encourage The Wound To Bleed**
- 3. Disinfect your injury**
- 4. Notify your supervisor**
- 5. Notify Infection Control Department**
- 6. Submit Incidence Report**



## High Risk Activities

- Inserting or withdrawing a needle
- Inserting needles into IV lines
- Handling or passing sharps
- Recapping a used needle
- Transferring or processing specimens
- Disposing of sharps into proper containers
- Cleaning up after a procedure
- Sharps left on floors and tables or found in linen, beds, or waste containers

**1 Needle**

**1 Syringe**

**+ 1 Time**

---

**0 Infections**

# Minimize direct unprotected exposure to blood and body fluids

SCENARIO	HAND HYGIENE	GLOVES	GOWN	MEDICAL MASK	EYE-WEAR
Always before and after patient contact, and after contaminated environment	x				
If direct contact with blood and body fluids, secretions, excretions, mucous membranes, non-intact skin	x	x			
If there is risk of splashes onto the health care worker's body	x	x	x		
If there is a risk of splashes onto the body and face	x	x	x	x	x

# **•Management of spillage**

- ✓ There must be a system to handle spills.
- ✓ Hospital staff working in patient care areas are professional in cleaning of blood/ body fluid spill
- ✓ there is a blood spill kit in every patient care unit that include all necessary equipments
- ✓ Policies on spill kit use should be written.



# 10 STEPS TO CLEAN A BLOOD SPILL

1



Control access to area: Prevent people from walking through affected area.

3



Use plastic scoop or other mechanical means to remove any broken glass or other sharp objects from the spill area, and dispose into the sharp container.

5



Contain spill: Use absorbent granules or absorbent pads to contain the spill. Sprinkle absorbent granules over the spill and leave for two minutes or as per the manufacturer's recommended contact time. Allow the spill to solidify before removing.

7



Use disposable wiping cloth to wipe up all the disinfectant, and then discard into the yellow plastic bag.

9



Place all items including PPE into yellow biohazard plastic bag.

2



4



6



8



10

Finally, Hand Hygiene

## Employee Health:

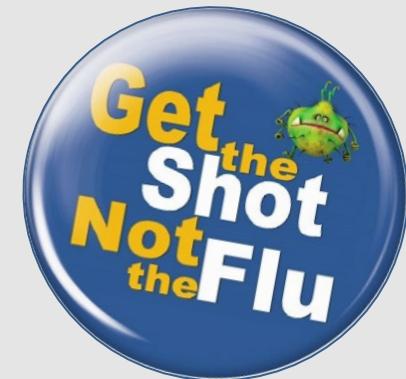
- Screens employees on hire for potentially infectious diseases—TB tests per MOH , CDC & OSHA
- Provides immunizations—Tdap, flu, etc.
- Report exposures to communicable diseases:
  - We know you are immune now but if you are exposed later, please report to Employee Health so your immunity can be verified
  - This protects our patients and your co-workers

# Staff Immunization

1. All Employees Have Baseline Screening For Hepatitis B, C, HIV, And Tuberculosis.
2. The Immune Status Of Newly Hired Staff Against Hepatitis B, Measles, Mumps, Rubella, And Varicella Is Determined By Serological Testing. Appro
3. Response To Hepatitis B Vaccination Is Monitored In Vaccinated Employees Four Weeks After Completing Vaccine Series. Non-responders To Hepatitis B Vaccine Are Offered At Least A Second Series Of The Vaccine.
4. Newly Hired Staff Are Screened For Tuberculosis Upon Contracting With PPD Test, And The Test Is Repeated Annually For Those Who Are Non-reactive.
5. PPD Conversion Rates Are Calculated And Monitored. Private Vaccine(s) Is Administered To Those Who Are Susceptible.

## Influenza: the “Flu”

- Highest risk time is from September through April
- Vaccination is the best way to prevent infection—for you, your patients and your family
- Flu vaccine clinics are held frequently in the fall
- Remember to *cover your cough* and *clean your hands!*



# Exposure Control Plan

The Exposure Control Plan (ECP) is in Policy Manager on the hospital Intranet, you may also request a printed copy from Employee Health or Infection Control

The ECP must be reviewed by all employees at least every 12 months

The ECP contains important information on how to protect yourself from a critical exposure

# Environment cleaning, disinfection

It is important to ensure that environmental cleaning and disinfection procedures are followed consistently and correctly.

Thorough cleaning environmental surfaces with water and detergent and applying commonly used hospital level disinfectants (such as sodium hypochlorite, 0.5%, or ethanol, 70%) are effective and sufficient procedures.

Medical devices and equipment, laundry, food service utensils and medical waste should be managed in accordance with safe routine procedures.

## Contracted Services

Need **documentation** of your **evaluation** and **oversight** of contracted services (e.g., environmental services and linen)  
Need to evaluate the **safety** and **effectiveness** of those services

# Patient and Family Education

Patients and families should receive educational materials about their MDRO and control measures to follow when they are home

# Resources

WHO Coronavirus Homepage

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

All coronavirus (COVID-19) technical guidance documents

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance>

IPC documents

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control>

<https://www.who.int/infection-prevention/publications/en/>

Questions and Answers

<https://www.who.int/news-room/q-a-detail/q-a-coronaviruses>

THANK  
YOU

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