

ISOLATION MANUAL

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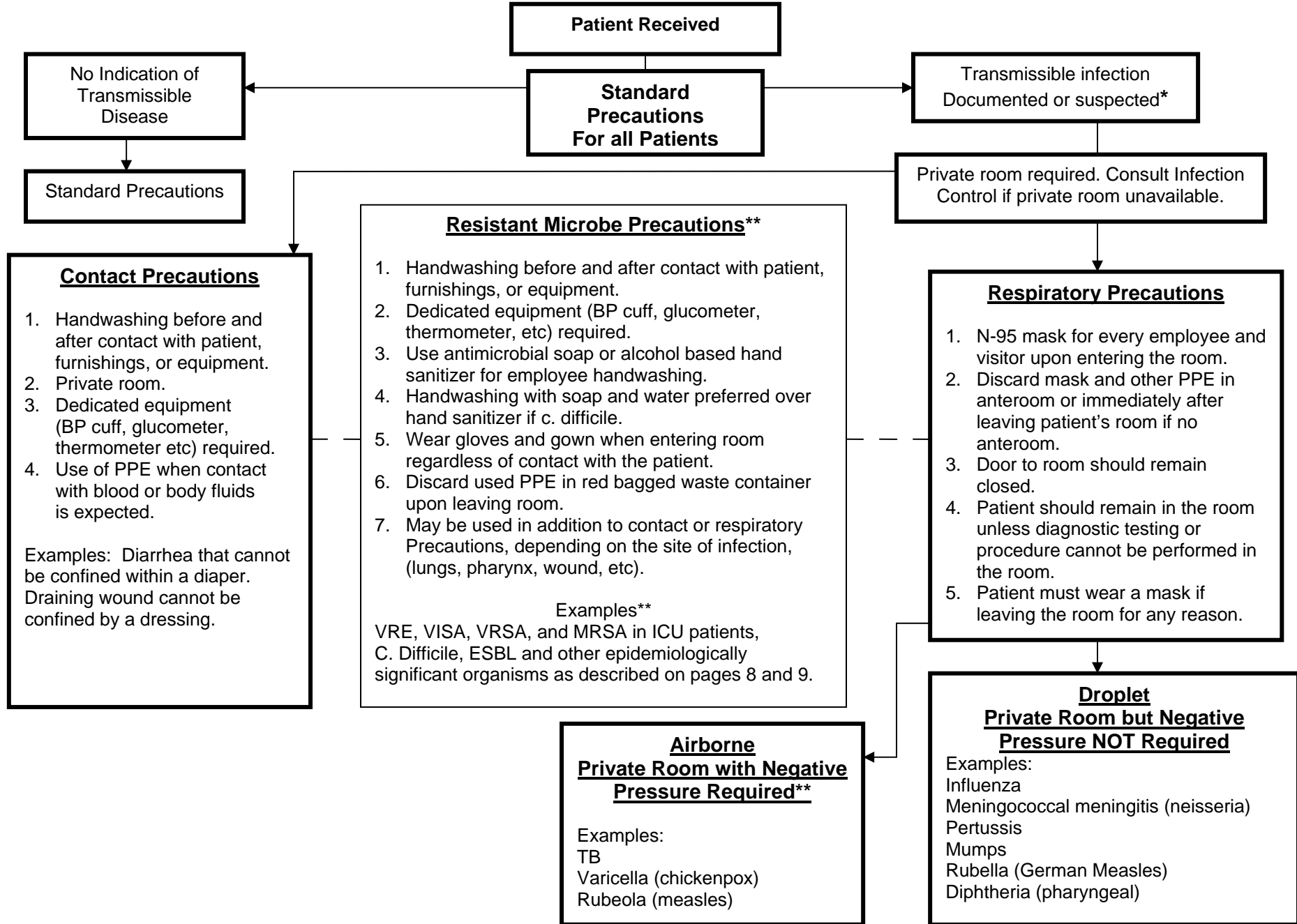
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# ISOLATION MANUAL

## Table of Contents

Algorithm for Placement of Patients with Transmissible Disease.....	3
Patient Assessment and Placement.....	4
Responsibility for Carrying out Isolation Precautions.....	4
Instructions for Setting Up Isolation .....	4
Isolation Types.....	5
Standard Precautions.....	5
Contact Precautions .....	5
Respiratory Precautions .....	6
Respiratory Hygiene/Cough Etiquette .....	8
Resistant Microbe Precautions.....	8
Neutropenic Precautions (Reverse Isolation).....	10
Discontinuing Isolation.....	10
Agents of Bioterrorism .....	10
Managing Visitors of Patients in Isolation.....	10
Additional Clinical Syndromes or Conditions (Table 1) .....	11
Transport of Infected/Colonized Patients .....	12
Patient Care Equipment and Articles.....	12
Linen and Laundry .....	12
Eating Utensils.....	13
Patients' Immediate Environment.....	13
Urine and Feces.....	13
Discarding Blood and Body Fluids.....	13
Laboratory Specimens .....	13
Clothing.....	13
Contaminated Trash/Waste.....	14
Pediatric Patients.....	15
Routine and Terminal Cleaning.....	16
Postmortem Handling of Bodies.....	16
Type and Duration of Precautions Needed for Selected Infections and Conditions.....	17
References.....	43
Appendices.....	44
Appendix A-Severe Acute Respiratory Syndrome.....	44
Appendix B-Avian Influenza (Bird Flu)/Pandemic Flu.....	45
Appendix B2-Novel A (H1N1) Influenza/Pandemic Flu .....	48
Appendix C-Sanitary Code-State of Louisiana-Reportable Diseases.....	50
Appendix D-Isolation Signs.....	51
Resistant Microbe Precautions.....	51
Respiratory Precautions-Airborne/Droplet.....	53
Contact Precautions .....	55
Neutropenic Precautions .....	57
Appendix E-Agents of Bioterrorism Fact Sheets.....	59

## Placement of Patients with Transmissible Disease



\*Refer to Type and Duration of Precautions Chart page 16 of the Infection Control BIT.\*\*For Resistant Microbe specific requirements refer to page 8.

## I. PATIENT ASSESSMENT AND PLACEMENT

The patient is assessed on admission and thereafter daily to determine isolation requirements. The physician and nurse assess the patient to determine if the patient has a transmissible disease, history of exposure to any infectious disease, the possibility of a sub-clinical infection, or the presence of secretions/excretions that cannot be confined and contained. **Appropriate isolation guidelines are immediately implemented if the patient is known or suspected to have a transmissible disease.**

Place a patient with uncontrollable diarrhea, wound drainage that cannot be confined with a bandage, or who does not assist in maintaining appropriate hygiene or environmental sanitation in contact precautions. If a private room is not available, consult with infection control professionals regarding other alternatives.

## II. RESPONSIBILITIES FOR INSTITUTING AND CARRYING OUT ISOLATION PRECAUTIONS

1. The patient's physician and/or the charge nurse are responsible for placing the patient in isolation.
2. All personnel are responsible for complying with isolation precautions and for tactfully calling observed infractions to the attention of offenders. A variance report is submitted to Quality Management for repetitive infractions.
3. Patients and their significant others have a responsibility for complying with isolation precautions. Teaching the patient, family, and visitors how to prevent and control the spread of infection is the responsibility of the physician and the nurse. This teaching must be documented.

## III. INSTRUCTIONS FOR SETTING UP ISOLATION

1. Standard precautions are used for all patients. These precautions are instituted with every patient contact and maintained throughout the patient's stay.
2. In addition to standard precautions, transmission-based precautions are instituted and the patient is placed in isolation when first suspected of having a transmissible infectious disease, not after confirmation.
3. The patient is assessed for isolation needs upon admission, and daily thereafter.
4. Using the attached guidelines, the disease for which specific isolation precautions are indicated is located. If you think the patient may have a disease not listed on the chart, the Infection Control Department is consulted at ext. 55110, or the hospital operator is asked to page the Infection Control Nurse on call.
5. If the patient has secretions or excretions that cannot be confined or contained, a barrier is established between the healthcare provider and the body fluid by using appropriate dressings and/or personal protective equipment. Contact Precautions are used and appropriate signage is placed.
6. When Respiratory Precautions or Resistant Microbe Precautions are necessary, the appropriate sign is posted on the door. If a private room is not available the sign is

placed on foot of the patient's bed in a semiprivate room. The patient's name or identifying information is written on the first line of the sign. Additional needs are entered under "additional care" on the bottom of the isolation precautions sign. The patient's diagnosis is NEVER written on the sign.

7. If a patient is suspected or known to have an epidemiologically significant infection that requires contact, respiratory or resistant microbe precautions, every effort is made to provide the patient with a private room. Notify Infection Control for assistance as needed.
8. It is the responsibility of the charge nurse to assure that the sign is correct and updated at least weekly and additionally, as appropriate.
9. The chart is flagged with a sticker labeled with appropriate precautions.
10. A Confidential Disease Case form (Epi-2430) is completed if the patient has a reportable disease listed in Appendix C. If the patient has a sexually transmitted disease, a Confidential Report of Sexually Transmitted Disease (STD-43) is completed. Both forms are sent to the Infection Control Department within 3 working days of diagnosis.
11. Recommendations for removing patients from isolation are located in Section XXI "Type and Duration of Precautions Needed for Selected Infections and Conditions".
12. When a patient known to have a resistant microbe returns to the hospital, the patient is placed in isolation until three negative cultures are obtained unless the three negative cultures were obtained prior to the previous discharge.

#### IV. ISOLATION TYPES

Isolation precautions are based on transmission of the organism. Transmission of infections within a hospital requires three elements: a source of infecting microorganisms, a susceptible host, and a means of transmission for the microorganism.

##### A. Standard Precautions

Standard Precautions include a group of infection prevention practices that apply to all patients, regardless of suspected or confirmed infection status, in any setting in which healthcare is delivered. These include: hand hygiene, use of gloves, gown, mask, eye protection, and/or face shield, depending on the anticipated exposure; and safe injection practices. Also, with infectious agents, equipment or items in the patient environment are likely to be contaminated and must be handled in a manner to prevent transmission (e.g. wear gloves for direct contact, contain heavily soiled equipment, properly clean and disinfect or sterilize reusable equipment before use on another patient). All body fluids are considered potentially infectious whether blood is visible or not. PPE is available and should be used as needed.

##### B. Contact Precautions

In addition to Standard Precautions, Contact Precautions are intended to prevent transmission of infectious agents which are spread by direct or indirect contact with the patient or the patient's environment.

- Direct Contact Transmission: Direct transmission occurs when microorganisms are transferred from one infected person to another person without a contaminated intermediate object or person.
- Indirect Contact Transmission: Indirect transmission involves the transfer of an infectious agent through a contaminated intermediate object or person. In the absence of a point-source outbreak, it is difficult to determine how indirect transmission occurs. However, extensive evidence cited in the Guideline for Hand Hygiene in Health-Care Settings suggests that the contaminated hands of healthcare personnel are important contributors to indirect contact transmission.

Some examples of when contact precautions should be instituted include:

- A patient who is ambulatory, has uncontrollable diarrhea, and soils the floor repeatedly while trying to get to the bathroom.
- A patient with a forceful, productive cough who cannot or will not cover his mouth with tissue while coughing.
- A mentally challenged, ambulatory patient who soils his hands with body fluids and contaminates the environment because he cannot remember to wash his hands.

Requirements:

1. If the patient has excretions or secretions that cannot be confined and contained in a dressing, a barrier is established between the healthcare providers and the body fluids by using appropriate dressings, gloves, gowns, eye protection, masks, cap and shoes covers as needed. Strict handwashing is enforced.
2. A single-patient room is preferred. When a single-patient room is not available, consultation with Infection Control personnel is recommended.
3. When a multi patient room is necessary, >3 feet spatial separation between beds is necessary to reduce the opportunities for inadvertent sharing of items between the infected/colonized patient.
4. Gowns and gloves are worn for all interactions that may involve contact with the patient or potentially contaminated areas in the patient's environment.
5. PPE should be donned immediately prior to use and discarded before exiting the patient room.
6. See Section XXI "Type and Duration of Precautions Recommended for Selected Infections and Conditions" for when to discontinue Contact Precautions.

C. Respiratory Precautions

In addition to Standard Precautions, Respiratory Precautions (Droplet or Airborne) are intended to prevent transmission of pathogens spread via the respiratory tract. (i.e. talking, sneezing, and coughing-inducing procedure).

- **Droplet Precautions-** (i.e. Pertussis, Neisseria Meningitidis, and Influenza)- Droplet Precautions are intended to prevent transmission of pathogens spread through close respiratory or mucous membrane contact with respiratory secretions. These infectious agents do not remain infectious over long distances when suspended in the air. A single patient room is required. Negative pressure is **NOT** required. All healthcare personnel, volunteers, and visitors must don an N-95 mask upon entry. Additional PPE is available and used as needed. Eye protection may be necessary. Masks are discarded upon exiting the room or anteroom. Keep the room door closed and the patient in the room unless a procedure or diagnostic test is deemed necessary and cannot be done inside the room.
- **Airborne Precautions-**(i.e., TB, Chickenpox, Rubeola, or disseminated herpes zoster) – Airborne Precautions are intended to prevent transmission of infectious agents that remain infectious over long distances when suspended in the air. Patient is placed in a single room. **NEGATIVE PRESSURE IS REQUIRED** and monitored (minimum of 6 air exchanges per hour). All healthcare personnel, volunteers, and visitors, must don an N-95 mask upon entry. Additional PPE is available and used as needed. Discard masks and other PPE in anteroom or immediately after leaving patient’s room if no anteroom is available. Keep the room door closed and the patient in the room, unless a diagnostic test or procedure is deemed necessary and cannot be done in the room. Charge RN notifies Physical Plant to check the room before the patient is admitted and daily for proper air monitoring.  
 \*\*The immunocompromised patient requiring protective isolation and who has TB, rule out TB, or some other condition requiring airborne isolation has special requirements. Contact Infection Control for guidance.

1. A Respiratory Isolation sign is placed on the patient’s door. The chart is flagged with appropriate sticker. (see appendix D).
2. Patients on Respiratory Isolation who must be transported outside the isolation room should wear a mask. Assess respiratory status frequently and follow Respiratory Hygiene/Cough Etiquette.
3. Patients in Respiratory Isolation must have access to any medical procedure or diagnostic procedure deemed necessary by the physician. Elective procedures should be postponed until patient is removed from isolation. For procedures that cannot be performed in the patient’s room, provisions will be made.
4. Aerosol generating procedures are performed in a negative pressure, private room or procedure room. (i.e, bronchoscopy, wound irrigating, cough induction).
5. If a susceptible person has been recently exposed to an infectious disease requiring Respiratory Isolation precautions, especially chickenpox, the physician should postpone elective admission or prescribe appropriate precautions upon admission.

## **Respiratory Hygiene/Cough Etiquette**

This strategy is targeted at patients, accompanying family members, and friends with undiagnosed transmissible respiratory infections; and applies to any person with signs of illness including cough, congestion, rhinorrhea, or increased production of respiratory secretions when entering a healthcare facility. Healthcare workers receive mandatory education annually regarding methods to prevent the spread of respiratory illness.

Patients and visitors are educated using posters and pamphlets and other printed material as well as verbal reminders from staff. Respiratory Hygiene/Cough Etiquette include the following.

1. Educate staff, patients and visitors.
2. Post signs, in language appropriate to population served, with instructions to patients, and accompanied family members and friends.
3. Encourage patients, visitors and other staff to cover mouth/nose with tissue when coughing and dispose of tissue promptly.
4. Use hand hygiene after contact with respiratory secretions.
5. Spatial separation is important. Coughing patients who cannot or will not confine secretions should be placed in a private room. In common waiting areas, ideally there should be at least 3 feet of separation between persons. Coughing persons should wear a mask (a surgical mask is acceptable). Assess masked patients frequently for respiratory status.
6. Healthcare workers should observe Droplet Precautions and hand hygiene when examining and caring for a patient with signs and symptoms of a respiratory infection.
7. Healthcare workers who have a respiratory infection should avoid direct patient contact, especially with high risk patients.

### **D. Resistant Microbe Precautions:**

Resistant Microbe Precautions are used in addition to Standard Precautions, Contact Precautions, or Respiratory Precautions when the following are known or suspected:

- Methicillin Resistant *Staphylococcus aureus* (MRSA) in ICU, BMT, and patients with draining wounds in any area.
- Vancomycin Resistant *Enterococcus* (VRE).
- Vancomycin Intermediate *Staphylococcus aureus* (VISA) aka, GISA- Glycopeptide Intermediate Resistant *Staphylococcus aureus*.
- Vancomycin Resistant *Staphylococcus aureus* (VRSA) aka, GRSA- Glycopeptide Resistant *Staphylococcus aureus*.
- Any organism resistant to 3 or more of the following classes of antimicrobials;  
Cephalosporins = third and fourth generation – ceftazidime, cefoperazone, cefepime, ceftriaxone, cefuroxime.  
Aminoglycosides = gentamicin, amikacin and tobramycin.  
BL/BLI = Beta-lactam drugs and Beta-lactam + inhibitors  
Imipenem.  
Ciprofloxacin

- *Clostridium Difficile*- (epidemiologically significant organism).
- Multi-drug resistant gram negative rods (MDRO GNR)
- Extended spectrum betalactamase producers (ESBL)

Requirements:

1. The Clinical Lab shall immediately notify by phone the clinical unit, the attending physician, Infection Control Practitioner, and the Infectious Disease Consultation Service. After hours, weekend and holidays the information is left on the Infection Control Department voicemail at 5-5110.
3. If a patient is admitted with a resistant microbe, the nursing staff notifies the Infection Control Practitioner.
4. A private room is necessary. (Negative pressure or an anteroom is not required, unless the diagnosis or rule out diagnosis is multi-drug resistant tuberculosis).
5. Gowns and gloves are required for all persons entering the patient's room. Additional PPE is available and should be used as needed (i.e. mask, eye protection, and face shield).
6. A "Resistant Microbe Precautions" sign is placed on the door.
7. The chart of patients with resistant microbes is flagged with a sticker appropriately labeled.
8. Patients may be placed in a room with other patients if both patients have the exact same sensitivity unless the Infection Control Department advises otherwise.
9. Specific healthcare workers may be dedicated to provide one-on-one care for the colonized or infected patient with VRE or VISA (GISA). Patients with VRSA (GRSA) must have dedicated staff.
10. The number of people entering the colonized/infected patient's area is kept to a minimum. Persons with chronic skin and/or nail problems are not allowed to enter the room of a patient with Resistant Microbe Precautions, unless prohibiting them from entry could result in injury to the patient; i.e., a code situation.
11. Chlorhexidine soap is used for routine handwashing. Hand sanitizer should be used if hands are not visibly soiled, except for patients in isolation for *Clostridium Difficile*.
12. Patients may be placed in Post Anesthesia Care Unit (PACU) after surgery. Resistant Microbe Precautions should be maintained. Care is taken to keep the patient as far away from other patients as possible (in corner of room). Curtains are kept drawn around the patient to remind personnel of the need for precautions. The environment is cleaned thoroughly before the next patient. Privacy curtains should be changed. Handwashing and use of PPE are strictly enforced.
13. The need for baseline cultures for personnel who cared for the patient before the patient cultured positive and of the patient's roommates is left to the discretion of the Infection Control team.
14. Patient care items are not taken into the room unless ready for use. Items such as blood pressure cuffs, stethoscopes, glucometers, and thermometers are dedicated to the patient. Items are obtained from CMS or the Nursing Supply Coordinator.
15. A filter should be placed on the expiratory phase tubing of patients requiring mechanical ventilation.

16. Isolation should not be discontinued until 3 consecutive negative cultures performed at least one day apart from any previously infected/colonized site are obtained. If all sites are healed, cultures of the nares should be done. The Infectious Diseases Department should be consulted before isolation is discontinued and patient should be off antibiotics and without signs or symptoms and clear of infection.
17. Patients isolated for *Clostridium difficile* may be removed from isolation when they have no diarrhea for 24 hours and have formed stools.
18. When a patient known to have a resistant microbe returns to the hospital, the patient is placed in isolation until three negative cultures are obtained unless the three negative cultures were obtained prior to the previous discharge.
19. All disposable waste items that are carried into the room are discarded in red medical waste containers, and not in regular trash with exception of MRSA on the general care units.

#### V. NEUTROPENIC PRECAUTIONS (REVERSE ISOLATION)

Patients with a neutrophil count of <1000 cells per mm should be placed in neutropenic precautions.

- Private room is labeled with neutropenic precautions. Place appropriate sticker to chart.
- Handwashing and Standard Precautions are used.
- No one shall enter the room with signs of infection, including healthcare workers and visitors.
- No fresh fruit, vegetables, or plants are allowed.
- Transport of the patient outside the room is kept to a minimum and a surgical mask is worn by the patient whenever he must leave the room.
- Bone Marrow Transplant patients must be provided for according to unit-specific instructions.

#### VI. DISCONTINUING ISOLATION

For detailed guidance, please reference the CDC table XXII, page 17.

1. Tuberculosis: Refer to Tuberculosis Plan IC 1.3:

Patients placed in respiratory isolation pending completion of the physician's initial assessment may be removed from isolation when the assessment is complete, and isolation is no longer deemed necessary by the attending staff.

OR

When 3 consecutive sputum smears, collected at least 8 hours apart, are negative for AFB and the patient's physical signs and symptoms have improved.

OR

In the absence of 3 negative sputum smears, a consultation from the Pulmonary or Infectious Disease physician has been obtained and they agree to discontinue isolation.

2. C. difficile infection (also known as CDI, formerly CDAD): When patient becomes asymptomatic, has no diarrhea for 24 hours, and stool is formed.

3. Other Multi Drug Resistant Organisms (VRE, MDRO gram negative rods, ESBL producers, etc.): Isolation should not be discontinued until 3 consecutive negative cultures performed at least one day apart from any previously infected/colonized site are obtained. If all sites are healed, cultures of the nares should be done. The Infectious Diseases Department should be consulted before isolation is discontinued and patient should be off antibiotics and without signs or symptoms and clear of infection.
4. Other organisms, reference the CDC table XXII, page 17.

## VII. AGENTS OF BIOTERRORISM

CDC has designated the agents that cause anthrax, smallpox, plague, tularemia, viral hemorrhagic fevers, and botulisms as Category A (high priority) because these agents can easily be disseminated environmentally and/or transmitted from person to person; can cause high mortality and have the potential for major public health impact; might cause public panic and social disruption; and require special action for public health preparedness.

## VIII. MANAGING VISITORS OF PATIENTS IN ISOLATION

Screening of visiting siblings and other children before they are allowed into clinical areas is necessary to prevent the introduction of childhood illness and common respiratory infections. Screening may be passive through the use of signs to alert family members and visitors with signs and symptoms of communicable diseases not to enter clinical areas.

**Table I: Additional Clinical Syndromes or Conditions**

Table 1

Clinical Syndromes or Conditions Warranting Additional Precautions To Prevent Transmission of Epidemiologically Important Pathogens Pending Confirmation of Diagnosis\*

<b>Clinical Syndrome or Condition<sup>1</sup></b>	<b>Potential Pathogens<sup>2</sup></b>	<b>Precautions</b>
<b><u>Diarrhea</u></b>		
1) Acute diarrhea with a likely infectious cause in an incontinent or diapered patient.	Enteric pathogens <sup>3</sup>	Contact
2) Diarrhea in an adult with a history of broad spectrum or long-term antibiotics.	Clostridium difficile	Resistant Microbe and Contact
<b><u>Meningitis</u></b>		
	Neisseria meningitidis	Respiratory Droplet No negative pressure room required.
<b><u>Rash or any Eruptive Disease, Generalized, Etiology Unknown</u></b>		
1) Petechial/ecchymotic with fever	Neisseria meningitidis	Respiratory Droplet No negative pressure room required.
2) Vesicular	Varicella	Respiratory Airborne and Contact with negative pressure room.
3) Maculopapular with coryza and fever	Rubeola (measles)	Respiratory Airborne with negative pressure room.
<b><u>Respiratory Infections</u></b>		
1) Cough/fever/upper lobe pulmonary infiltrate in an HIV-negative patient and a patient at low risk for HIV.	Mycobacterium tuberculosis	Respiratory Airborne with negative pressure room.
2) Cough/fever/pulmonary infiltrate in any lung location in an HIV-infected patient and patients at high-risk for HIV.	Mycobacterium tuberculosis	Respiratory Airborne with negative pressure room.
3) Paroxysmal or severe persistent cough during periods of pertussis activity.	Bordetella pertussis	Respiratory Droplet, No negative pressure required.
4) Severe Acute Respiratory Syndrome (SARS)	SARS-associated Coronavirus (SARS-CoV)	Respiratory Droplet mandatory, Contact.
5) Respiratory infections, particularly bronchitis and croup in infants and young children.	Resp. syncytial virus	Standard
	Human Metapneumovirus	Contact
	Para influenza virus, or Influenza A virus	Respiratory Droplet No negative pressure room required.
<b><u>Risk of Multidrug-Resistant Microorganisms:</u></b>		
1) History of infection or colonization with multidrug-resistant organisms**	Resistant bacteria	Resistant Microbe
2) Skin, wound, or urinary tract infection in a patient with a recent hospital or nursing home stay in a facility where multidrug-resistant organisms are prevalent.	Resistant bacteria	Resistant Microbe
<b><u>Skin or Wound Infection</u></b>		
Abscess or draining wound that cannot be contained within a bandage.	Staphylococcus aureus, Groups A & B Streptococcus	Contact
<p>*To ensure that appropriate empiric precautions are always implemented patients should be evaluated according to these criteria as part of their preadmission and admission care.  <sup>1</sup>Patients with the syndromes or conditions listed above may present with atypical signs or symptoms (e.g., pertussis in neonates and adults may not have paroxysmal or severe cough.)  <sup>2</sup>The organisms listed under the column "Potential Pathogens" are not intended to represent the complete or even most likely diagnoses, but rather possible etiological agents that require additional precautions beyond Standard Precautions until they can be ruled out.  <sup>3</sup>These pathogens include Escherichia coli 157:H7, Shigella, Hepatitis A, and Rotavirus.  **Resistant bacteria judged by the Infection Control Department based on current state, regional, and national recommendations, to be of special clinical or epidemiological significance.</p>		

## IX. TRANSPORT OF INFECTED/COLONIZED PATIENTS

1. Transport and movement outside the patient's room are kept to a minimum, and when necessary, are accomplished as quickly and safely as possible.
2. Appropriate barriers (e.g., masks, impervious dressings) are worn.
3. Personnel in the area to which the patient is being transported are notified in advance of the arrival of the patient and of the precautions to be used.
4. Patients are informed of the ways by which they can assist in preventing transmission of their disease to others.
5. All body fluids must be confined and contained before and during transport.
6. In addition, if the patient is going to surgery, isolation precaution is documented (respiratory, contact, resistant organism, neutropenic) on the preoperative checklist.

## X. PATIENT CARE EQUIPMENT AND ARTICLES

The following recommendations reduce the risk of cross-contamination from patient care equipment.

- Equipment and articles are not brought into the room until the time of use.
- Community supply carts in the ICU should not be kept in the patient's room; however, if they must be used, they must be covered at all times and hands must be clean before touching carts or supplies.
- Personnel do not clean items/equipment before sending to CMS.
- All used items are sent to CMS after use for appropriate cleaning and disinfection/sterilization.
- All items are discarded or sent to CMS after patient is discharged.
- Used sharps are placed in sharps containers.
- Any equipment sent outside the hospital must be cleaned by CMS before sending.
- Wheelchairs or stretchers used for isolation should be cleaned with housekeeping disinfectant after each use.

## XI. LINEN AND LAUNDRY

All linen is treated as contaminated. It is placed in a laundry bag or, if fluids can be expressed, in a clear plastic bag, and then into a laundry bag, fully closed and secured, placed in a secure regular hamper and sent to the laundry via the laundry chute. Linen from patients with body/head lice should be placed in a sealed plastic bag and then into a laundry bag and sent to the laundry via the laundry chute. HCW wear gloves and other PPE as appropriate to establish barriers between themselves and linen, and to prevent soiling of their clothing. Linen hampers are only filled to  $\frac{3}{4}$  of capacity.

## XII. EATING UTENSILS

There is no need for disposable trays for infection prevention. Nursing personnel deliver and pick up the dietary trays as well as other dietary items from the isolated patient's room.

### XIII. PATIENT FURNISHINGS AND EQUIPMENT

Clean bedrails, over-bed table, and bedside table daily and more frequently if needed. Area should be clean and sanitary. Store patient care supplies and equipment in a sanitary manner.

### XIV. URINE AND FECES

Urine and feces from patients on isolation precautions can be flushed down the toilet. Disposable urinals and bedpans are used for all patients and should be changed when the patient is no longer colonized or infected. Empty catheter bags are placed in regular trash unless grossly bloody. If the patient is in resistant microbe precautions, urinals, bedpans and empty catheter bags are placed in medical waste containers (red bag) with the exception of MRSA on general care units.

### XV. DISCARDING BLOOD AND BODY FLUID OTHER THAN URINE AND FECES

Appropriate personal protective equipment (e.g., gowns, gloves, masks, and/or goggles) must be worn when disposing of blood or body fluids.

### XVI. LABORATORY SPECIMENS

Care is taken when collecting specimens to avoid contamination of the outside of the container. If contamination occurs, the specimen is discarded if recollection is possible. If the specimen cannot be recollected, tightly close the container with a secure lid to prevent leaking and clean the outside the container. Biohazard labels are not necessary because all specimens are considered contaminated. The specimen is then placed in an impervious bag and carried to the laboratory office. Specimens contained in screw cap tubes, approved sealable containers, or rubber capped vacutainer blood collection tubes may be sent to the lab using pneumatic tube system carriers that are padded for such specimens. Each specimen must be sealed in a plastic bag before placing in the pneumatic tube carrier.

Specimens in blood culture bottles are hand carried to the laboratory. Respiratory collection containers and any other containers that do not fit securely in the tube carrier pad should be hand carried to the lab.

### XVII. CLOTHING

If the patient's clothing is contaminated with body fluids on admission, it is bagged, labeled with the patients name and location, and sent to the hospital laundry. Patient clothing and personal items that are infested with head/body lice are placed in a plastic bag and closed tightly for 48hrs to kill the lice.

When a health care worker's clothing becomes soiled with blood or body fluids, it is to be removed and laundered by the hospital laundry. Hospital owned scrubs are provided to the worker, and may be obtained from the laundry, while their clothing is being laundered. The

scrubs must be returned to the hospital laundry. Care should be used when removing contaminated clothing to avoid contact with the face.

Only laundry personnel are allowed to launder contaminated attire.

## XVIII. CONTAMINATED TRASH/WASTE

Trash from an isolation room is not considered contaminated unless it meets the criteria for contaminated waste. Contaminated waste is defined as any waste from which body fluids can be released on contact. All trash from the room of a patient in resistant microbe precautions is treated as contaminated waste and discarded in a red hard plastic container or a red bag lined container. The only exception is waste from patients with MRSA on general care units, which may be disposed of in the regular trash.

## XIX. PEDIATRIC PATIENTS

Unique differences in the pediatric population require modification of the use of some isolation guidelines; however, Standard Precautions must be practiced with all patients regardless of the setting.

### NICU

- Because single patient rooms are not available, patients on Resistant Microbe Precautions and those conditions requiring Respiratory Precautions without negative pressure rooms may be isolated in an incubator, crib or isolette. The patient shall be placed in the back of the Nursery where a 4-6 foot aisle or area is maintained between newborn infant stations.
- Infants with airborne transmitted diseases that require a negative pressure room are placed in the procedure room (K 538). The charge nurse must contact Physical Plant to convert the room to negative pressure. Any procedures/surgeries routinely done in this area will be performed elsewhere.
- Cohorting in NICU will be performed with the cooperation of the Infection Control Department.
- Appropriate signage as outlined in the Isolation Guidelines must be posted. Appropriate stickers to flag chart.

### PICU

- Patients shall be placed in private rooms as outlined in the Isolation Guidelines. Patients may be cohorted with the cooperation of the Infection Control Department.
- Negative pressure rooms are available in PICU.
- Appropriate signage as outlined in the Isolation Guidelines must be posted. Appropriate stickers to flag chart.

### Nursery

- Because single patient rooms are not available, patients on Resistant Microbe Precautions and those designated conditions requiring Respiratory Precautions without negative pressure rooms may be isolated in their incubatory, crib or isolette. They shall be placed at least 4 to 6 feet from other patients.
- Infants with airborne transmitted diseases will be (in order of priority):
  - transferred to an OB (4G) negative pressure room.
  - transferred to a negative pressure room on 5J or 5G.

- The Charge Nurse must contact Physical Plant to convert the room to negative pressure.
- Appropriate signage as outlined in the Isolation Guidelines must be posted on the door of any isolation room, incubator, crib or isolette. Chart is flagged with appropriate stickers.

#### General Pediatrics

- Pediatric patients must be placed in a private room unless directed to cohort by the Infection Control Department and/or Pediatric Infectious Disease Physician.
- Isolation rooms with negative pressure are available on the pediatric units for patients who require respiratory isolation.
- Appropriate signage as outlined in the Isolation Guidelines must be posted on the door of any isolation room, incubator, crib or isolette. Chart is flagged with appropriate stickers.

#### XX. ROUTINE AND TERMINAL CLEANING

The room or cubicle and bedside equipment of patients on isolation precautions are cleaned using routine housekeeping procedures. The water, cloths, and mop are changed after the patient room is cleaned. Appropriate PPE shall be worn by environmental service personnel, when cleaning occupied or unoccupied isolation rooms.

#### XXI. POSTMORTEM HANDLING OF BODIES

Standard Precautions are used by personnel to protect themselves during postmortem care. Masks are usually not necessary unless aerosols are expected to be generated. (If the patient has a known infectious disease, the body shall be tagged with the type of disease, i.e., Hepatitis B, HIV, etc., so that appropriate precautions can be maintained during and after the autopsy).

XXII. TYPE AND DURATION OF PRECAUTIONS NEEDED FOR SELECTED INFECTIONS AND CONDITIONS

Infection/Condition	Precautions		
	Type	Duration	Comments
Abscess			
Draining, major (No dressing or dressing does not contain drainage adequately).	Contact	Until drainage stops or can be contained	
Draining, minor or limited (Dressing covers and contains drainage adequately).	Standard		
Acquired Immunodeficiency Syndrome	Standard		
Actinomycosis	Standard		
Adenovirus infection, in infants and young children	Respiratory Droplet	Duration of Illness	No negative pressure room required
Amebiasis	Standard		
Anthrax			
Cutaneous	Standard, Contact		See Appendix E: Fact Sheets
Pulmonary	Standard		
Environmental	Respiratory Airborne, Contact		Until decontamination of environment is complete. Protective clothing, decontaminate persons with powder on them.
Antibiotic-associated colitis (see <i>Clostridium difficile</i> )			
Arthropodborne viral encephalitides (eastern, western, Venezuelan equine encephalomyelitis; St Louis, California encephalitis)	Standard		Not transmitted person to person

Infection/Condition	Precautions		
	Type	Duration	Comments
Arthropodborne viral fevers (dengue, yellow fever, Colorado tick fever)	Standard		Not transmitted person to person
Ascariasis	Standard		
Aspergillosis	Standard		Contact and Airborne, if copious soft tissue drainage and repeated irrigations required.
Babesiosis	Standard		
Blastomycosis, North American, cutaneous or pulmonary	Standard		
Botulism	Standard		See Appendix E: Fact Sheets
Bronchiolitis (see respiratory infections in infants and young children)	Standard		
Brucellosis (undulant, Malta, Mediterranean fever)	Standard		
<i>Campylobacter</i> gastroenteritis (see gastroenteritis)			
Candidiasis, all forms including mucocutaneous	Standard		
Cat-scratch fever (benign inoculation lymphoreticulosis)	Standard		
Cellulitis, uncontrolled drainage	Contact	Duration of illness	Until drainage has stopped or can be contained with dressing
Chancroid (soft chancre)	Standard		
Chickenpox (Varicella)	Respiratory Airborne	Maintain precautions until all lesions are crusted.	Negative pressure room required.

Infection/Condition	Precautions		
	Type	Duration	Comments
<i>Chlamydia trachomatis</i>			
Conjunctivitis	Standard		
Genital	Standard		
Respiratory	Standard		
Cholera (see gastroenteritis)			
Closed-cavity infection			
Draining, unable to confine	Contact	Duration of illness	
Not draining or confined	Standard		
<i>Clostridium</i>			
<i>C. botulinum</i>	Standard		
<i>C. difficile</i>	Resistant Microbe	Until diarrhea stops.	Do not use hand sanitizer when caring for these patients. Wash hands with soap and water.
<i>C. perfringens</i>			
Food poisoning	Standard		
Gas gangrene	Standard		
Coccidioiomycosis (valley fever)			
Draining lesions	Standard		
Pneumonia	Standard		
Colorado tick fever	Standard		
Congenital rubella	Contact	Until 1 year of age	Standard precautions if nasopharyngeal secretions and urine cultures are negative after age 3 months of age.
Conjunctivitis			
Acute bacterial	Standard		
<i>Chlamydia</i>	Standard		
Gonococcal	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Conjunctivitis (Continued)			
Acute viral (acute hemorrhagic)	Contact	Duration of Illness	Adenovirus most common; enterovirus 70, Coxsackie virus A24 also associated with community outbreaks.
Coxsackievirus disease (see enteroviral infection)			
Creutzfeldt-Jakob disease	Standard		In surgery, follow OR guidelines.
Croup (see respiratory infections in infants and young children)			
Cryptococcosis	Standard		
Cryptosporidiosis (see gastroenteritis)			
Cysticercosis	Standard		
Cytomegalovirus infection, neonatal or immunosuppressed	Standard		
Decubitus ulcer, infected			
Major (No dressing or dressing does not contain dressing adequately).	Contact	Duration of Illness	
Minor or limited. (Dressing covers and contains drainage adequately).	Standard		
Dengue	Standard		
Diarrhea, acute-infective etiology suspected (see gastroenteritis)			
Diphtheria			
Cutaneous	Contact		Until off antibiotics and until two cultures 24 hours apart are negative.
Pharyngeal	Respiratory Droplet		Until off antibiotics and until two cultures 24 hours apart are negative.

Infection/Condition	Precautions		
	Type	Duration	Comments
Ebola (See viral hemorrhagic fevers)			Notify Infection Control and Infectious Disease Department immediately.
Echinococcosis (hydatidosis)	Standard		
Echovirus (see enteroviral infection)			
Encephalitis or encephalomyelitis (see specific etiologic agents)			
Endometritis	Standard		
Enterobiasis (pinworm disease, oxyuriasis)	Standard		
<i>Enterococcus</i> species	Standard		
<i>Enterococcus</i> species (Vancomycin Resistant)	Resistant Microbe	Until at least 3 negative cultures taken at least 24 hours apart at infected/colonized site.	
Enterocolitis, <i>Clostridium difficile</i>	Resistant Microbe	Until diarrhea stops.	Do not use hand sanitizer when caring for patient. Use Chlorhexidine soap and water.
Enteroviral infections (i.e., Group A and B, Cocksackie viruses and Echo viruses) (Excludes polio virus).			
Adults	Standard		Contact if incontinent or diapered.
Infants and young children	Standard		Contact if incontinent or diapered.
Epiglottitis, due to <i>Haemophilus influenzae</i> , Type B	Respiratory Droplet No negative pressure room required.	Until 24 hours after initiation of effective antibiotic therapy and decrease of symptoms.	
Epstein-Barr virus infection, including infectious mononucleosis	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Erythema infeciosum (also see Parvovirus B19)	Respiratory Droplet	Duration of Illness	
<i>Escherichia coli</i> gastroenteritis (see gastroenteritis)			
Food Poisoning			
Botulism	Standard		See Appendix E Fact Sheets
<i>Clostridium perfringens or welchii</i>	Standard		
Staphylococcal	Standard		
Furunculosis-staphylococcal			
Infants and young children	Contact	Duration of Illness	
Gangrene (gas gangrene)	Standard		
Gastroenteritis			
Diapered or incontinent patients (related to all cases of gastroenteritis)	Contact	Duration of Illness	Use Contact precautions for diapered or incontinent patient.
Adenovirus	Standard		
<i>Campylobacter</i> species	Standard		
Cholera	Standard		
<i>Clostridium difficile</i>	Resistant Microbe	Duration of Diarrhea	If <i>Clostridium difficile</i> is suspected use Resistant Microbe precautions
<i>Cryptosporidium species</i>	Standard		
<i>Escherichia coli</i>			
Enterohemorrhagic O157:H7	Standard		
Other species	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Gastroenteritis (Continued)			
<i>Giardia lamblia</i>	Standard		
Rotavirus	Contact	Duration of Illness	
<i>Salmonella</i> species (including <i>S. typhi</i> )	Standard		
<i>Shigella</i> species	Standard	Duration of Illness	
<i>Vibrio parahaemolyticus</i>	Standard		
Viral (if not covered elsewhere)	Standard		
<i>Yersinia enterocolitica</i>	Standard		
German measles (see rubella)	Respiratory Droplet	Until 7 days after onset of the rash.	No negative pressure room required. Gown and glove for direct patient contact. Non-immune HCW should avoid contact if immune workers are available.
Giardiasis (see gastroenteritis)			
Gonococcal ophthalmia neonatorum (gonorrheal ophthalmia, acute conjunctivitis of newborn)	Standard		
Gonorrhea	Standard		
Granuloma inguinale (donovanosis, granuloma venereum)	Standard		
Guillain-Barré syndrome	Standard		
Hand, foot, and mouth disease (see enteroviral infection)			
<i>Hantavirus</i> pulmonary syndrome	Standard		
<i>Helicobacter pylori</i>	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Hemorrhagic fevers (See Viral Hemorrhagic Fevers)			
Hepatitis, Viral			
Type A	Standard		
Type B-HBsAg positive	Standard		
Type C and other unspecified non-A, non-B	Standard		
Type E	Standard		
Type G	Standard		
Herpangina (see enteroviral infection)			
Herpes simplex ( <i>Herpesvirus hominis</i> )			
Encephalitis	Standard	Duration of Illness	Until lesions stop draining.
Neonatal	Contact	Until lesions stop draining.	Dedicated items (BP cuffs, stethoscopes, and glucometers). For infants delivered vaginally or by C-Section, and if mother has active infection and membranes have been ruptured for more than 4 to 6 hours.
Mucocutaneous, disseminated or primary, severe	Contact	Until lesions are dry and crusted.	
Mucocutaneous, recurrent (skin, oral, genital)	Standard		
Herpes zoster (Varicella-zoster or Shingles)			
Disseminated disease in any patient. Localized disease in immunocompromised patient until disseminated infection ruled out.	Airborne, Contact	Duration of Illness.	Persons susceptible to Varicella should not enter the room if other immune caregivers are available.
Localized in patient with intact immune system with lesions that can be covered/contained.	Standard	Duration of Illness	Persons susceptible to Varicella should not provide direct care if other immune caregivers are available.

Infection/Condition	Precautions		
	Type	Duration	Comments
Herpes zoster (Varicella-zoster or Shingles) (Continued)			
Localized in patients with intact immune system with lesions that <b>cannot</b> be covered; i.e., small lesions on the face or head.	Standard		Persons susceptible to Varicella should not provide direct care if other immune caregivers are available.
Histoplasmosis	Standard		Not transmitted person to person
HIV (see human immunodeficiency virus)	Standard		
Hookworm disease (ancylostomiasis, uncinariasis)	Standard		
Human immunodeficiency virus (HIV) infection	Standard		
Human Metapneumovirus	Contact	Duration of Illness.	Strict use of barriers for skin contact until 24 hours after initiation of effective antibiotic therapy.
Impetigo	Contact	Until 24 hours of effective antibiotics	
Infectious mononucleosis	Standard		
Influenza			
Human seasonal influenza	Respiratory Droplet. No negative pressure room required	Duration of Illness	Use expiratory phase filter on mechanical vents.
Avian Influenza	Respiratory Droplet. Negative pressure room required.	Duration of Illness	Use expiratory phase filter on mechanical vents. See <a href="http://www.cdc.gov/flu/avian/professional/infect-control.htm">www.cdc.gov/flu/avian/professional/infect-control.htm</a> for current avian flu guidance.
Pandemic influenza (also a human influenza virus)	Respiratory Droplet	5 days from onset of symptoms	See <a href="http://www.cdc.pandemicflu.gov">www.cdc.pandemicflu.gov</a> for current pandemic influenza guidance.
Novel influenza A (H1N1) 2009			See appendix B2, Novel influenza A (H1N1)
Kawasaki syndrome	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Lassa fever (See viral hemorrhagic fevers)	Standard	Duration of Illness	<b><u>Private room mandatory.</u></b>
Legionnaires' Disease	Standard		Not transmitted from person to person.
Leprosy	Standard		
Leptospirosis	Standard		
Lice (pediculosis)	Contact	Until effective therapy complete.	Wears gown and gloves when removing clothing; bag and seal for 24 hours and wash all clothing. Use gloves for every contact. Use gown if direct contact with patient or bed.
Listeriosis (listeria monocytogenes)	Standard		Person to person transmission rare; cross-contamination in Neonatal unit possible.
Lyme disease	Standard		Not transmitted from person to person.
Lymphocytic choriomeningitis	Standard		Not transmitted from person to person.
Lymphogranuloma venereum	Standard		
Malaria	Standard		Not transmitted from person to person.
Marburg virus disease (Ebola) (See viral hemorrhagic fevers)			
Measles (rubeola), all presentations	Respiratory Airborne, Contact Negative pressure room required.	Duration of Illness.	Place exposed susceptible patient on Respiratory Airborne precautions and exclude susceptible HCWs from duty from day #5 after exposure to day 21 after last exposure regardless of post-exposure vaccine. Report to Occupational Health Clinic
Melioidosis, all forms	Standard		Not transmitted from person to person.
Meningitis			
Aseptic (nonbacterial or viral meningitis; also see enteroviral infections)	Standard		Contact precautions for infants and young children. Until 24 hours after effective antibiotic therapy.
Bacterial, gram-negative enteric, in neonates	Standard		
Continued, next page.			

Infection/Condition	Precautions		
	Type	Duration	Comments
Meningitis (Continued)			
Fungal	Standard		
<i>Haemophilus influenzae</i> , known or suspected	Respiratory Droplet	Until 24 hours after initiation of effective antibiotic therapy.	
<i>Listeria monocytogenes</i>	Standard		
<i>Neisseria Meningitides</i> (meningococcal) known or suspected	Respiratory Droplet	Until 24 hours after initiation of effective antibiotic therapy.	Post exposure chemo-prophylaxis for household contacts, HCWs, exposed to respiratory secretions. Post exposure vaccine only to control outbreak.
Pneumococcal	Standard		
Tuberculosis	Standard	Until 24 hours after initiation of effective antibiotic therapy.	Patient should be examined for evidence of current active pulmonary TB. If evidence exists, additional precautions are necessary, see TB. Concurrent, active pulmonary disease or draining cutaneous lesions may necessitate addition of Contact and/or Respiratory precautions.
Other diagnosed bacterial	Standard		
Meningococcal Disease (Sepsis, Pneumonia, Meningitits)	Respiratory Droplet No negative pressure room required.	Until 24 hours after initiation of effective therapy	Post exposure chemo-prophylaxis for household contacts, HCWs, exposed to respiratory secretions. Post exposure vaccine only to control outbreak.

Infection/Condition	Precautions		
	Type	Duration	Comments
<i>Molluscum contagiosum</i>	Standard		
Monkeypox	Respiratory Droplet, Contact No negative pressure room required	Respiratory until monkeypox confirmed and smallpox excluded. Contact until lesions crusted.	See <a href="http://www.cdc.gov/ncidod/monkeypox">www.cdc.gov/ncidod/monkeypox</a> for most current recommendations
Mucormycosis	Standard		
Multidrug-resistant organisms, infection or colonization			
Gastrointestinal	Resistant Microbe	Until 3 negative cultures taken 24 hours apart from infected/colonized site.	Private room mandatory with dedicated items, i.e. bp cuffs, thermometers, glucometers. Gown and glove when entering the room.
Respiratory	Resistant Microbe	Until 3 negative cultures taken 24 hours apart from infected/colonized site.	Private room mandatory with dedicated items, i.e. bp cuffs, thermometers, glucometers. Gown and glove when entering the room.
Skin, wound, or burn	Resistant Microbe	Until 3 negative cultures taken 24 hours apart from infected/colonized site.	Private room mandatory with dedicated items, i.e. bp cuffs, thermometers, glucometers. Gown and glove when entering the room
Mumps (infectious parotitis)	Respiratory Droplet No negative pressure room required.	For 9 days after onset of swelling.	Private room recommended. Susceptible HCWs should not provide care if immune caregivers are available.

Infection/Condition	Precautions		
	Type	Duration	Comments
Mycobacteria, nontuberculosis (atypical)			
Pulmonary	Standard		
Wound	Standard		
<i>Mycoplasma pneumonia</i>	Respiratory Droplet No negative pressure room required.	Duration of Illness	
Necrotizing enterocolitis	Standard		
Nocardiosis, draining lesions or other presentations	Standard		
Norwalk agent gastroenteritis (see viral gastroenteritis)			
Orf	Standard		
Parainfluenza virus infection, respiratory in infants and young children	Standard	Duration of Illness.	Contact precautions if secretions cannot be contained. Gown and glove if contact with nasal or oral secretions.
Parvovirus B19	Respiratory Droplet No negative pressure room required.	Duration of Illness.	
Pediculosis (lice)	Contact	Until 24 hours after effective therapy.	Wears gown and gloves when removing clothing; bag and seal for 24 hours and wash all clothing. Use gloves for every contact. Use gown if direct contact with patient or bed.
Pertussis (whooping cough)	Respiratory Droplet No negative pressure room required.	Until 5 days after initiation of effective antibiotic therapy.	Private room preferred. Post-exposure prophylaxis for household contacts and HCWs with prolonged exposure to respiratory secretions. Recommend Tdap for all HCWs caring for pediatric patients.
Pinworm infection	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Plague ( <i>Yersinia pestis</i> )			
Bubonic	Standard		Gown and gloves for contact with lesions. See Appendix E: Fact Sheets
Pneumonic	Respiratory Droplet. No negative pressure room required.	Until 48 hours after initiation of effective therapy.	Antimicrobial prophylaxis for exposed HCW. See Appendix E: Fact Sheets
Pleurodynia (see enteroviral infection)			
Pneumonia			
Adenovirus	Respiratory Droplet. No negative pressure room required.	Duration of Illness.	
Bacterial, not listed elsewhere (including gram-negative bacterial)	Standard		
<i>Burkholderia cepacia</i> in cystic fibrosis (CF) patients, including respiratory tract colonization	Contact	Duration	Private room preferred.
<i>Burkholderia cepacia</i> in Patients without CF. See Multidrug Resistant organisms.			
Chlamydia	Standard		
Fungal	Standard		
<i>Haemophilus influenzae</i>			
Adults	Standard		
Infants and young children	Respiratory Droplet. No negative pressure room required.	Until 24 hours after initiation of effective therapy.	
<i>Legionella</i>	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Pneumonia (Continued)			
Meningococcal	Respiratory Droplet. No negative pressure room required.	Until 24 hours after initiation of effective antibiotic therapy.	
Multidrug-resistant bacterial (see multidrug-resistant organisms), such as MRSA pneumonia			
Mycoplasma (primary atypical)	Respiratory Droplet. No negative pressure room required.	Duration of Illness	
Pneumococcal pneumonia	Standard		
<i>Pneumocystis carinii</i> <i>Pneumocystis jiroveci</i>	Standard.		Avoid placement in the room with an immunocompromised patient.
<i>Staphylococcus Aureus</i>	Standard		For MRSA, see MDRO.

Infection/Condition	Precautions		
	Type	Duration	Comments
Pneumonia (Continued)			
Streptococcus, group A			
Adults	Respiratory Droplet	Until 24 hours after initiation of effective antibiotic therapy.	
Infants and young children	Respiratory Droplet. No negative pressure room required.	Until 24 hours after initiation of effective antibiotic therapy.	
Viral			
Adults	Standard		
Infants and young children	Contact. No negative pressure room required.	Duration of Illness.	
Poliomyelitis	Contact		
Pressure ulcer (decubitus ulcer, pressure sore) infected			
Major	Contact	Duration of Illness	If no dressing or containment or drainage; until drainage stops or can be contained by dressing
Minor	Standard		If dressing covers and contains drainage.
Prion disease (See Creutzfeldt-Jakob Disease)	Standard		Refer to IC Policy 25.0
Psittacosis (ornithosis)	Standard		Not transmitted from person to person.
Q fever	Standard		
Rabies	Standard		If patient bite occurs, wash area and report to Occupational Health for prophylaxis.
Rat-bite fever ( <i>Streptobacillus moniliformis</i> disease, <i>Spirillum minus</i> disease)	Standard		
Relapsing fever	Standard		Not transmitted from person to person.

Infection/Condition	Precautions		
	Type	Duration	Comments
Resistant bacterial infection or colonization (see multidrug-resistant organisms)			
Respiratory infectious disease, acute (if not covered elsewhere)			
Adults	Standard		
Infants and young children	Contact	Duration of Illness	
Respiratory syncytial virus infection, in infants and young children, and immunocompromised adults	Contact	Duration of Illness	Wear mask according to Standard Precautions. In immunocompromised patients, extend the duration of Contact Precautions due to prolonged shedding. Reliability of antigen testing to determine when to remove patients with prolonged hospitalizations from Contact Precautions uncertain.
Reye's syndrome	Standard		Not an infectious condition
Rheumatic fever	Standard		Not an infectious condition
Rhinovirus	Droplet	Duration of illness	Add Contact precautions if copious secretions.
Rickettsial fevers, tickborne (Rocky Mountain spotted fever, tickborne typhus fever)	Standard		Not transmitted from person to person
Rickettsialpox (vesicular rickettsiosis)	Standard		Use Contact precautions for outbreaks.
Ringworm (dermatophytosis, dermatomycosis, tinea)	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Ritter's disease (staphylococcal scalded skin syndrome)	Contact	Duration of Illness	
Rocky Mountain spotted fever	Standard		
Roseola infantum (exanthema subitum)	Standard		
Rotavirus infection (see gastroenteritis)			
Rubella (German measles; also see congenital rubella)	Respiratory Droplet. No negative pressure room required.	Until 7 days after onset of rash.	Strict use of gowns and gloves for direct patient contact. Non-immune HCW should avoid contact if immune workers are available.
Rubeola (See Measles)			
Salmonellosis (see gastroenteritis)			
Scabies	Contact	Until 24 hours after initiation of effective therapy.	Use gown and gloves for every patient contact.
Scalded skin syndrome, staphylococcal (Ritter's disease)	Contact	Duration of Illness	
Schistosomiasis (bilharziasis)	Standard		
Severe acute respiratory syndrome (SARS)	Respiratory Airborne, Contact Negative pressure room required.	Duration of Illness plus 10 days after resolution of fever, provided respiratory symptoms are absent or improving	Respiratory Precautions preferred. N95 or higher respiratory protection; surgical mask if N95 unavailable; eye protection (goggles, face shield); aerosol-generating procedures and "supershedders" highest risk for transmission via small droplet nuclei and large droplets. Vigilant environment disinfection (see <a href="http://www.cdc.gov/ncidod/sars">www.cdc.gov/ncidod/sars</a> )
Shigellosis (see gastroenteritis)			
Shingles (See Herpes Zoster)			

Infection/Condition	Precautions		
	Type	Duration	Comments
Smallpox (variola; see vaccinia for management of vaccinated persons)	Respiratory Airborne, Contact Negative pressure room required	Duration of Illness	Until all scabs have crusted and separated (3-4 weeks). Non-vaccinated HCWs should not provide care when immune HCWs are available; N95 respiratory protection for susceptible and unsuccessfully vaccinated individuals; post-exposure vaccine within 4 days of exposure protective. See Appendix E: Fact Sheets
Sporotrichosis	Standard		
Spirillum minus disease (rat-bite fever)	Standard		Not transmitted from person to person.
Staphylococcal disease ( <i>S aureus</i> )			
Skin, wound, or burn			
Major (No dressing or dressing does not contain drainage adequately).	Contact Private room recommended.	Duration of Illness	
Minor or limited (Dressing covers and contains drainage adequately)	Standard		
Enterocolitis	Standard		
Multidrug-resistant (see multidrug-resistant organisms)	Resistant Microbe In ICUs Contact on general care areas	Until 3 negative cultures taken 24 hours apart from infected/colonized site.	Isolate in General Care Units if secretions/excretions cannot be confined/contained. Private room mandatory. Dedicated items, i.e. BP cuff, thermometers, glucometers, etc.
Pneumonia	Standard		
Scalded skin syndrome	Standard		
Toxic shock syndrome	Standard		
<i>Streptobacillus moniliformis</i> disease (rat-bite fever)	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Streptococcal disease (group A streptococcus)			
Skin, wound, or burn			
Major (No dressing or dressing does not contain drainage adequately).	Respiratory Droplet Contact	Until 24 hours after initiation of effective antibiotic therapy.	Private room required. If dressing or dressing does not contain drainage adequately.
Minor or limited	Standard		Dressing covers and contains drainage adequately.
Endometritis (puerperal sepsis)	Standard		
Pharyngitis in infants and young children	Respiratory Droplet. No negative pressure room required.	Until 24 hours after initiation of effective antibiotic therapy.	
Pneumonia	Respiratory Droplet. No negative pressure room required.	Until 24 hours after initiation of effective antibiotic therapy.	
Scarlet fever in infants and young children	Respiratory Droplet. No negative pressure room required.	Until 24 hours after initiation of effective antibiotic therapy.	
Serious Invasive Disease	Respiratory Droplet No negative pressure room required. Contact	Until 24 hours after initiation of effective antibiotic therapy	Contact Isolation for draining wounds. Follow CDC recommendations for antibiotic prophylaxis on selected conditions.
Streptococcal disease (group B streptococcus), neonatal	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Streptococcal disease (not group A or B) unless covered elsewhere	Standard		
Multidrug-resistant (see multidrug-resistant organisms)			
Strongyloidiasis	Standard		
Syphilis			
Skin and mucous membrane, including congenital, primary, secondary, latent) (tertiary and seropositivity without lesions	Standard		
Tapeworm disease			
<i>Hymenolepis nana</i>	Standard		Not transmitted from person to person.
<i>Taenia solium</i> (pork)	Standard		
Other	Standard		
Tetanus	Standard		Not transmitted from person to person.
Tinea (fungus infection dermatophytosis, dermatomycosis, ringworm)	Standard		
Toxoplasmosis	Standard		
Toxic shock syndrome (staphylococcal disease)	Standard		Respiratory precautions for the first 24 hours after implementation of antibiotic therapy if Group A streptococcus is a likely etiology.
Trachoma, acute	Standard		
Trench mouth, (Vincent's angina)	Standard		
Trichinosis	Standard		
Trichomoniasis	Standard		
Trichuriasis (whipworm disease)	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Tuberculosis			
Extrapulmonary, draining lesion	Airborne and Contact Private room with negative pressure if pulmonary disease likely.	Duration of Illness	Discontinue precautions only when patient is improving clinically, and draining has ceased or there are three consecutive negative cultures of continued drainage. Examine for evidence of active pulmonary tuberculosis.
Extrapulmonary, no draining lesion, meningitis	Standard		Examine for evidence of pulmonary tuberculosis. For infants and children, use Respiratory Airborne Precautions if evidence of pulmonary involvement likely and until active pulmonary tuberculosis in visiting family members ruled out.
Pulmonary or laryngeal disease, confirmed	Respiratory Airborne Negative pressure room required.	Until 3 consecutive sputum smears, collected at least 8 hours apart, are negative for AFB (acid-fast bacilli) and the patient's physical signs and symptoms have improved.	In the absence of 3 negative sputum smears, a consultation from the Pulmonary or Infectious Disease physician has been obtained and they agree to discontinue isolation.
Skin-test positive with no evidence of current pulmonary disease	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Tuberculosis (Continued)			
Pulmonary or laryngeal disease, suspected	Respiratory Airborne Negative pressure room required.		Discontinue precautions only when the likelihood of infectious TB disease is deemed negligible and either 1) there is another diagnosis that explains the clinical syndrome or 2) the results of three sputum smears for AFB are negative.
Tularemia			
Draining lesion	Standard		Not transmitted from person to person
Tularemia (Continued)			
Pulmonary	Standard		Not transmitted from person to person
Typhoid ( <i>Salmonella typhi</i> ) fever (see gastroenteritis)			
Typhus, endemic and epidemic			
<i>Rickettsia prowazekii</i> (Epidemic or Louse-borne typhus)	Standard		Transmitted from person to person through close personal or clothing contact.
<i>Rickettsia typhi</i>	Standard		Not transmitted from person to person.
Urinary tract infection (including pyelonephritis), with or without urinary catheter	Standard		

Infection/Condition	Precautions		
	Type	Duration	Comments
Vaccinia (vaccination site, adverse events following vaccination)	Standard		Only vaccinated HCWs have contact with active vaccination sites and care for persons with adverse vaccinia events; if unvaccinated, only HCWs without contraindications to vaccine may provide care.
Vaccination site care (including autoinnoculated areas)	Standard		Vaccination recommended for vaccinators, for newly vaccinated HCWs; semi-permeable dressing over gauze until scab separates, with dressing changes as fluid accumulates, ~3-5days, gloves, hand hygiene for dressing change; vaccinated HCW or HCW without contraindication to vaccine for dressing change.
<i>Eczema vaccinatum</i>	Contact	Until lesions dry and crusted	For contact with virus-containing lesions and exudative material.
Fetal vaccinia	Contact		
Generalized vaccinia	Contact		
Progressive vaccinia	Contact		
Postvaccinia encephalitis	Standard		
Blepharitis conjunctivitis	Standard, Contact		Use Contact Precautions if there is copious drainage
Iritis or keratitis	Standard		
Vaccinia-associated erythema multiforme (Stevens Johnson Syndrome)	Standard, Contact		Not an infectious condition.
Vancomycin Resistant Enterococcus (VRE)	Resistant Microbe	Until at least 3 negative cultures taken at least 24 hours apart at infected/colonized site.	Private room. If not possible consult Infection Control for assistance with patient placement.

Infection/Condition	Precautions		
	Type	Duration	Comments
Varicella Zoster (chickenpox)	Respiratory Airborne And Contact	Until lesions are dry and crusted.	<b><u>Negative pressure room required.</u></b> Gown and glove for direct contact Dedicated items. Private room required. Susceptible HCWs should not enter room if immune caregivers are available. In immunocompromised host with varicella pneumonia, prolong duration of precautions for duration of illness. Post-exposure prophylaxis; provide post-exposure vaccine ASAP but within 120 hours; for susceptible exposed persons for whom vaccine is contraindicated (immunocompromised persons, pregnant women, newborns whose mother's varicella onset is $\leq 5$ days before delivery or within 48 hrs after delivery) provide VZIG, when available, within 96 hours; if unavailable, use IVIG. Use Respiratory Precautions for exposed susceptible persons and exclude exposed susceptible HCWs beginning 8 days after first exposure until 21 days after last exposure or 28 if received VZIG, regardless of post-exposure vaccination.
Variola (see smallpox)			
<i>Vibrio parahaemolyticus</i> (see gastroenteritis)			
Vincent's angina (trench mouth)	Standard		
Viral Diseases			
Respiratory (if not covered elsewhere)			
Adults	Standard		
Infants and young children (see respiratory infectious disease, acute)			

Infection/Condition	Precautions		
	Type	Duration	Comments
Viral hemorrhagic fevers Due to Lassa, Ebola, Marburg, Crimean-Congo fever viruses	Respiratory Airborne, Contact <b><u>Negative pressure room required.</u></b>	Duration of Illness.	Single-patient room preferred. Emphasize: 1) use of sharps safety devices and work practices, 2) hand hygiene; 3) barrier protection against blood and body fluids upon entry into room (single gloves and fluid-resistant or impermeable gown, face/eye protection with masks, goggles or face shields); and 4) appropriate waste handling. Use N95 or higher respirators when performing aerosol-generating procedures. Largest viral load in final stages of illness when hemorrhage may occur; additional PPE, including double gloves, leg and shoe coverings may be used, especially in resource-limited settings where options for cleaning and laundry are limited. Notify public health officials immediately if Ebola is suspected.
Whooping cough (pertussis)	Respiratory. No negative pressure room required.	Until 5 days after initiation of effective antibiotic therapy.	
Wound infections			
Major (No dressing or dressing does not contain drainage adequately).	Contact Private room recommended.	Duration of Illness.	
Minor or limited (Dressing covers and contains drainage adequately).	Standard		
<i>Yersinia enterocolitica</i> gastroenteritis (see gastroenteritis)			

Infection/Condition	Precautions		
	Type	Duration	Comments
Zoster (See Varicella-zoster) (See Herpes Zoster)			
Localized in immunocompromised patient, or disseminated	Respiratory Airborne. Negative pressure room required. Contact.	Until lesions are no longer draining.	
Zygomycosis (phycomycosis, mucormycosis)	Standard		Not transmitted from person to person

## References

Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings. (HICPAC). CDC, 2007.

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<http://goapic.org/MRSA.htm>

Fact Sheet: Anthrax Information for Healthcare Providers, CDC, accessed on line 1/30/09 at:  
<http://emergency.cdc.gov/agent/anthrax/anthrax-hcp-factsheet.asp>.

Fact Sheet: Botulism Facts for Healthcare Providers, CDC, accessed on line 1/30/09 at:  
<http://emergency.cdc.gov/agent/botulism/hcpfacts.asp>

Fact Sheet: Frequently Asked Questions (FAQ) About Plague, CDC, accessed online 1/30/09 at:  
<http://emergency.cdc.gov/agent/plague/faq.asp>

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<http://emergency.cdc.gov/agent/smallpox/clinicians.asp>

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Louisiana State University Health Sciences Center-Shreveport Laundry Infection Control Guidelines, Written: November 1976, revised, October 2007.\*

Louisiana State Sanitary Code, Title 51, Louisiana State Statute. June, 2007.

“Management of Multidrug-Resistant Organisms in Healthcare Settings.” Hospital Infection Control. Vol. 33, No 12, Dec. 2006, p. 136, 137.

Public Health Guidance for Preparedness and Response to Severe Acute Respiratory Syndrome (SARS)” CDC, May 3, 2005.

Guidelines for Environmental Infection Control in HealthCare Facilities. Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC). CDC, 2003.

## Severe Acute Respiratory Syndrome

Severe Acute Respiratory Syndrome (SARS) is a severe respiratory illness caused by SARS associated Coronavirus (SARS-CoV) first recognized in Asia in late 2002. The first cases identified in North America occurred in February 2003. Because of the aggressive nature of the disease, and the uncertainty of the mode of transmission, strict infection control measures should be practiced. The transmission rate in healthcare workers who have not used isolation precautions has been up to 50% in some settings.

CDC Suspected SARS Case definition:

Respiratory illness of unknown etiology with onset since February 1, 2003, and the following criteria:

- Measured temperature >100.4°F (>38.0°C)
- One or more clinical findings of respiratory illness (cough, shortness of breath, difficulty breathing, hypoxia, or radiographic findings of either pneumonia or acute respiratory distress syndrome)
- Travel within 10 days of onset of symptoms to an area with suspected or documented community transmission of SARS, (excluding areas with secondary cases limited to health-care workers or direct household contacts)

OR

- Close contact within 10 days of onset of symptoms with either a person with a respiratory illness and travel to a SARS area or a person under investigation or suspected of having SARS

### Infection Control Requirements

1. Immediately apply a submicron mask to the patient if SARS is suspected, and place the patient in a negative pressure room. Priority for a negative pressure room should be given to the suspected SARS patient. All personnel in the room with the patient should don submicron masks, eye protection, gowns, and gloves.
2. The patient should be taught cough containment and good hand hygiene.
3. Hand hygiene should be strictly enforced among personnel, using antimicrobial soap and water. Alcohol based hand gel may be used if hands are not visibly contaminated.
4. Implement Respiratory Isolation and Resistant Microbe Isolation. Gowns, submicron masks, and gloves are necessary for all contact with the patient or his immediate environment. **Goggles or fluid shields are mandatory at all times while in the patient's presence.** Eye glasses are not considered protection.
5. Limit visitors, and require all visitors to don a submicron mask and wear eye protection.
6. All diagnostic and treatment procedures should be performed in the patient's room, if at all possible, i.e., CXR. If a procedure must be performed outside of the patient's room, the receiving unit should be notified in advance of the patient's diagnosis, and procedures should be scheduled at the end of the day, or whenever exposure to others is minimized. After the procedure, the room should be thoroughly cleaned. During transport, the patient should wear a submicron mask.
7. Virology Lab should be notified of the suspected SARS diagnosis at Ext. 5-6087. Please hand carry specimens to the main lab on second floor, and carefully note the SARS diagnosis on the lab slip. Notify lab personnel in person when you arrive with the specimen. Do not leave it unattended. **DO NOT send a SARS specimen in the pneumatic tube system.**
8. Cleaning of the environment should be performed according to routine housekeeping guidelines.
9. If transport to another facility is necessary, the patient should be masked with a submicron mask for transfer. The receiving facility should be notified in advance of the patient's diagnosis.
10. Close contacts of the patient should be advised to seek medical care for symptoms of respiratory illness.
11. Close contacts of the patient who exhibit respiratory symptoms should be masked with a submicron mask, referred for medical evaluation, and cleared by a physician before being allowed to visit or remain in the hospital.
12. After hours or on weekends, the infection control practitioner on call should be paged through the hospital operator. Infection control will assist with reporting to local and state health officials and the CDC.
13. A consult by an infectious disease physician is recommended by WHO and CDC.

Reference: "Public Health Guidance for Preparedness and Response to Severe Acute Respiratory Syndrome (SARS)"  
CDC, May 3, 2009

Written: February 2005

Revised: February 2007, 2009

Approved by Clinical Board: February 2009

**Avian Influenza (Bird Flu)/Pandemic Flu**

Avian influenza (bird flu), first recognized in Asia in 1997, is a rare form of influenza in humans, which is caused by viruses that occur in nature in the intestines of birds. Of particular interest is avian influenza A (H5N1), which has spread rather rapidly among poultry and caused human outbreaks in Asia with high mortality. It usually does not cause sickness in wild birds, but causes severe illness in domestic birds, including chickens, ducks, and turkeys.

**Suspected Avian Flu Case Definition:**

- Measured temperature > 100.4°F (>38.0°C)
- One or more clinical findings of respiratory illness (cough, fever, sore throat, muscle aches, radiographically confirmed pneumonia, ARDS, or other severe respiratory illness) for which an alternate diagnosis has not been established **AND**
- Travel within 10 days of onset of symptoms to an area with suspected or documented H5N1 avian influenza in poultry and/or humans (for a regularly updated list of H5N1-affected countries, see the OIE website and the WHO website). As of 9/01/2005, these areas include Cambodia, China, Hong Kong, Indonesia, Japan, Kazakhstan, Korea, Laos, Malaysia, Russia, Thailand, and Vietnam. Testing should be considered on a case-by-case basis in consultation with state and local health departments for hospitalized or ambulatory patients who meet the case definition especially if there is a history of contact with poultry (visited a poultry farm, a household raising poultry, or a bird market) or with a known or suspected human case of influenza A (H5N1).

**Infection Control Requirements must be strictly enforced for all personnel and visitors:**

1. Immediately apply a submicron mask to the patient, assuring that the mask is adjusted so that there is no venting at the chin or cheeks. Assess the patient initially and frequently for tolerance of the mask. Place the patient in a negative pressure room as soon as possible. Priority for a negative pressure room should be given to the suspected avian influenza patient. Once inside the negative pressure room, the patient mask may be removed. All personnel in the room with the patient must wear submicron masks, gowns, gloves and goggles. Eye glasses are not considered adequate protection.
2. Maintain respiratory isolation for 14 days or until avian influenza has been ruled out.
3. The patient should be taught cough containment and good hand hygiene practices.
4. Hand hygiene should be strictly enforced among personnel, using antimicrobial soap and water. Alcohol based hand gel may be used if hands are not visibly contaminated.
5. Implement Respiratory Droplet Isolation and Resistant Microbe Isolation. Gowns, submicron masks, gloves and goggles are necessary for all contact with the patient or the patient's immediate environment.
6. Limit visitors to immediate family only, and require all visitors to don a submicron mask, gloves, gown and goggles. Family members who have had contact with the patient or traveled to suspicious regions should be medically evaluated before being allowed to visit or remain in the hospital. They must wear a mask at all times during hospital visits until medically cleared. Visits should be limited to short periods of time, and hand hygiene should be strictly enforced. UPD should be notified if visitors who fail to comply with the guidelines, and should be escorted from the hospital.
7. All diagnostic and treatment procedures should be performed in the patient's room, if at all possible, i.e., CXR. If a procedure must be performed outside of the patient's room, the receiving unit should be notified in advance of the patient's diagnosis, and procedures should be scheduled at the end of the day, or whenever exposures to others is minimized. After the procedure, the room should be thoroughly cleaned. During the transport, the patient should wear a submicron mask.
8. **Laboratory Testing** The Reference lab should be notified immediately of suspected avian influenza diagnosis at Ext. 5-5477, or page microbiologist on call. Hand carry specimens to the main lab on second floor, and note the avian influenza diagnosis on the lab slip. Notify lab personnel in person when you arrive with the specimen. Do not leave it unattended. **DO NOT send an avian influenza specimen in the pneumatic tube system.** The state lab requires viral transport media (available in the Diagnostic Virology Lab refrigerator outside room 5-335). Send to the Reference Lab with an order for Avian Influenza Detection. Dr. Janice Matthews-Greer (LSUHSC-S) recommends nasopharyngeal swab, throat swab, and serum sample. State Lab will perform a rapid influenza assay to detect influenza A. Confirmation of avian influenza will be by real time RT PCR.
9. **Reporting**
  - **LA Public Health State Lab: 318-221-0859 during office hours. After hours, page the on call staff at 1-877-512-4350. The State Lab is available not only for reporting, but also for questions of the clinician.**

- Notify Infection Control at 675-5110 or page through the hospital operator after hours or weekends. Infection Control will assist with reporting to local and state health officials and the CDC.
  - **Notification of and consult by an infectious disease physician is recommended by WHO and CDC.** The Infectious Disease Department may be contacted at 675-5900, or the Infectious Disease physician on-call may be paged by the operator.
10. **Environmental cleaning** should be performed according to the routine housekeeping guidelines for resistant microbe isolation. (Use red bag or box for all waste).
  11. If transport to another facility is necessary, the patient should be masked with a submicron mask for transfer. The transport personnel and receiving facility should be notified in advance of the patient's diagnosis.
  12. The Infection Control Department monitors the worldwide influenza information through internet access to WHO, CDC, and Louisiana Department of Public Health websites and receives HAN (Health Alert Network) influenza advisories. The World Health Organization (see chart below) has been in a state of Phase 3 alert for some time. If the WHO increases the alert status to Phase 4, or if cases of Avian (H5N1) influenza or other strains or influenza are identified by local, state or federal agencies as a public health threat, the Infection Control will alert Hospital Administration and the Infectious Disease Department. Hospital leadership will assess the organization's ability to obtain necessary supplies and respond according to need, including activation of the hospital wide and nursing disaster and mass casualty plans.

<b>Phases of Pandemic Alert</b>		
	<b>Phase</b>	<b>Description</b>
<b>Inter-pandemic Period</b>	Phase 1	No new influenza virus subtypes detected in humans. If present in animals, the risk of human infection is considered to be low.
	Phase 2	No new influenza virus subtypes detected in humans. However, a circulating animal influenza virus poses a substantial risk of human disease.
<b>Pandemic Alert Period</b>	Phase 3	Human infections with a new subtype, but no human-to-human spread, or at most rare instances of spread by close contact.
	Phase 4	Small clusters with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.
	Phase 5	Larger clusters of infection, but human-to-human spread is still localized suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible.
<b>Pandemic Period</b>	Phase 6	Pandemic situation-increase and sustained transmission in general population.

Sources: CDC online @ [www.cdc.gov](http://www.cdc.gov) accessed 1/21/2009; Infection Control Precautions for H5N1, CDC accessed online 1/21/09 @ <http://www.cdc.gov/flu/avian/gen-info/avian-flu-humans.htm> Office International des Epizooties accessed online 1/21/09 @ [http://www.oic.int/eng/en\\_index.htm](http://www.oic.int/eng/en_index.htm)

Written: January 2007. Reviewed January 2009  
 Approved by Clinical Board: February 2009

**Novel influenza A (H1N1) 2009 Pandemic Influenza Infection Control Guidance for LSUHSC-S:**

Novel influenza A (H1N1) 2009 has been identified in Shreveport, Louisiana. Guidelines from the CDC are evolving rapidly as more information is gained regarding characteristics of the virus. It is important to remember that potential remains for the virus to change and cause more severe disease. Real uncertainty remains regarding Fall 2009 and on how the novel H1N1 virus will affect the 2009-2010 influenza season in the United States. For the most up-to-date information, access online: <http://www.cdc.gov/h1n1flu/>.

**Suspected or probable novel influenza A (H1N1) Case Definition:**

- Measured temperature > 37.8°C plus one or more of the following:
  - Rhinorrhea or nasal congestion
  - Sore throat
  - Cough
  - No reason other than influenza for these symptoms.

**Confirmed Case Definition:** Laboratory confirmation through specimen analysis.

**Infection Control Requirements for all confirmed, probable, or suspected cases:**

1. **Patient Placement:** Private room with the door closed at all times.
  - a. If a private room is not immediately available, apply a mask to the patient and seat them as far away as possible from other people.
  - b. Cohorting may be done in a separate room, such as the waiting room in ECC.
2. **Cough Etiquette:** Teach cough etiquette and handwashing to the patient and their visitors.
3. **Isolation:** Contact and droplet precautions must be observed by all healthcare personnel. Limit personnel to those who must provide care to the patient.
4. **PPE:**
  - a. A fit-tested N-95 mask must be worn when entering the patient's room.
  - b. Eye protection is recommended. Eye glasses are not considered adequate protection.
  - c. Disposable gowns and gloves when touching the patient, their furnishings or equipment.
  - d. Dispose of PPE upon exiting the patient's room.
5. **Handwashing:** Hands must be washed or alcohol hand sanitizer must be used when gloves or other equipment are removed, and after contact with respiratory secretions.
6. **Transporting:** Patient must wear a mask. Transferring unit must notify the receiving unit. If transferring to another facility, the patient must wear a mask, and the receiving institution must be notified of the patient's diagnosis
7. **Procedures likely to generate aerosols:** Elective intubation, bronchoscopy, nebulized medications, and suctioning should be performed in a negative pressure room.
8. **Management of visitors:**
  - a. **Limit to those needed for the patient's emotional well being and care.**
  - b. Offer mask, eye protection, gown and gloves and instruct on their use.
  - c. Teach hand washing.
  - d. Instruct visitors to limit their movement within the facility, since they may be a source of infection.
9. **Duration of isolation:** 7 days from symptom onset or the duration of illness, whichever is longer.
10. **Monitoring healthcare workers:**
  - a. Supervisors should monitor workers daily for symptoms.
  - b. Ill healthcare workers should not come to work. If illness occurs during work, they should cease patient care and notify their supervisor and Infection Control.
  - c. Ill healthcare workers should be excluded from work for 7 days or until symptoms have resolved.
  - d. Exposure of patients to ill healthcare workers will be followed by the Infection Control Department.
  - e. Exposure of staff to ill healthcare workers will be followed by the Occupational Health Department.
11. **Period of communicability:** 1 day before onset of symptoms to 7 days after onset, or as long as symptoms persist.
12. **The Infectious Disease Department** may be contacted at 675-5900, or the Infectious Disease physician on-call may be paged by the operator if consultation is needed.
13. **Environmental cleaning:** Routine housekeeping guidelines.
14. **Preferred specimen is a nasal aspirate or nasal wash.**
  - a. **Specimen Collection of a nasal wash can be performed with a bulb or syringe.**
  - b. Recline head to a 70 degree angle.

- c. If using a bulb to collect a wash, suction 5 mls saline into a new sterile bulb. Inset bulb into one nostril until nostril is occluded, instill saline with one squeeze of bulb and immediately release bulb to collect recoverable nasal specimen.
- d. Empty bulb into a tube of viral transport media (pink liquid).
- e. If using a syringe to collect a wash, fill syringe with 1 ml of sterile saline (0.5 ml for babies) and attach a baby feeding catheter to the syringe tip. Insert the tubing into one nostril and quickly express the saline.
- f. Recovery of the instilled fluid must occur rapidly, either by aspiration with the syringe or by tilting the head forward over a specimen container.
- g. Add the collected specimen to a tube of viral transport media.

**Collection of a nasal aspirate is performed with a mucus trap and suction pump:**

- a. Recline head to a 70 degree angle
- b. Attach mucus trap to suction pump and catheter, turn on suction and adjust to selected pressure.
- c. Without applying suction, insert catheter into the nose.
- d. Apply suction.
- e. Using a rotating movement, slowly withdraw catheter.
- f. Collect secretions and add to a tube of viral transport media.

Send the specimen to the Virology Lab.

Please collect specimens only according to LSUHSC-S Virology Lab procedures. DO NOT refer to outside agency recommendations without the approval of Dr. Janice Matthews-Greer. Contact the laboratory for alternative acceptable specimens if a nasal aspirate or wash is not feasible.

**If you have any questions, please call Dr. Matthews-Greer at 5-4739 or 564-3001.**

**References:**

CDC guidelines online on June 15, 2009 at [http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control.htm).

CDC Guideline for Environmental Infection Control in Healthcare Facilities, 2003.

Call to 800-CDC-INFO (800-232-4636) placed on 6/15/2009, regarding the use of N-95 mask and eye protection for every patient contact. Recommendation:

CDC Novel H1N1 updated key points: June 11, 2009.

Appendix C

Sanitary Code  
State of Louisiana  
Chapter II  
The Control of Disease

“It is hereby made the duty of every physician practicing medicine in the State of Louisiana to report to the State Health Officer, through the Health Unit of the parish of municipality wherein such physician practices, any case of suspected case of reportable disease which is attending, or has Examined, or for which such physician as prescribed. The report shall be made promptly at time the physician first visits, examines or prescribes for the patient, and such report shall state the name, age, sex, race, usual residence, place where the patient is to be found, the nature of the disease and the date of onset.” In addition to physician reporting, laboratories are required to report the results of tests that are either confirm or suggest the occurrence of reportable diseases as specified by law. Additionally, Section 2:006 states “it shall be the duty of every osteopath, coroner, medical examiner, dentist, homeopath, infection control practitioner, medical records director, nurse, nurse midwife, nurse practitioner, pharmacist, physician assistant, podiatrist, social worker, veterinarian, and any other health care professional to report a confirmed case of reportable disease as specified in Section 2:003 in which he or she has examined or evaluated, or for which he or she is attending or has knowledge.” LAC 51:II.105: The following diseases/conditions are hereby declared reportable with reporting requirements by Class:

Class A Disease/Conditions-Reporting Required Within 24 Hours

*Diseases of major public health concern because of the severity of disease and potential for epidemic spread-report by telephone immediately upon recognition that a case, a suspected case, or a positive laboratory result is known; [in addition, all cases of rare or exotic communicable disease, unexplained death, unusual cluster of disease and cluster of disease and all outbreaks shall be reported.]*

Anthrax	Measles (Rubeola)	Severe Acute Respiratory Syndrome-associated Coronavirus (SARS-CoV)
Avian Influenza	Neisseria Meningitidis (invasive disease)	Smallpox
Botulism	Plague	Staphylococcus Aureus, Vancomycin Intermediate or Resistant (VISA/VRSA)
Brucellosis	Polioomyelitis, paralytic	Tularemia
Cholera	Q Fever ( <i>Coxiella burnetii</i> )	Viral Hemorrhagic Fever
Diphtheria	Rabies (animal and human)	Yellow Fever
<i>Haemophilus influenzae</i> (invasive disease)	Rubella (congenital syndrome)	
Influenza-associated Mortality	Rubella (German measles)	

Class B Diseases/Conditions-Reporting Required Within 1 Business Day

*Diseases of public health concern needing timely response because of potential epidemic spread-report by the end of the next business day after the existence of a case, a suspected case, or a positive laboratory result is known.*

Arthropod-Borne Neuroinvasive Disease and other infections (including West Nile, St. Louis, California, Eastern Equine, Western Equine and others)	Hemolytic-Uremic Syndrome	Pertussis
Aseptic Meningitis	Hepatitis A (acute disease)	Salmonellosis
Chanchroid <sup>1</sup>	Hepatitis B (acute illness & carriage in pregnancy)	Shigellosis
<i>Escherichia coli</i> , Shig-toxin producing (STEC), Including <i>E. coli</i> 0157:H7	Hepatitis B (perinatal infection)	Syphilis <sup>1</sup>
Hantavirus Pulmonary Syndrome	Hepatitis E	Tetanus
	Herpes (neonatal)	Tuberculosis <sup>2</sup>
	Legionellosis (acute disease)	Typhoid Fever
	Malaria	
	Mumps	

Class C Diseases/Conditions-Reporting Required Within 5 Business Days

*Diseases of significant public health concern-report by the end of the workweek after the existence of a case, suspected case, or a positive laboratory result is known.*

Acquired Immune Deficiency Syndrome (AIDS)	Gonorrhea <sup>1</sup>	
Blastomycosis	Hansen Disease (Leprosy)	Streptococcal disease, Group A (invasive dis.)
Campylobacteriosis	Hepatitis B (carriage, other than in pregnancy)	Streptococcal disease, Group B (invasive dis.)
Chlamydial infection <sup>1</sup>	Hepatitis C (acute illness)	Streptococcal Toxic Shock Syndrome
Coccidiomycosis	Hepatitis C (past or present infection)	<i>Streptococcus pneumoniae</i> , penicillin resistant [DRSP], (invasive disease)
Cryptococcosis	Human Immunodeficiency Virus (HIV Syndrome infection)	<i>Streptococcus pneumoniae</i> , (invasive infection in children <5 years of age)
Cyclosporiasis	Listeria	Transmissible Spongiform Encephalopathies
Dengue	Lyme Disease	Trichinosis
Ehrlichiosis	Lymphogranuloma venereum	Varicella (Chickenpox)
Enterococcus, Vancomycin Resistant [(VRE), invasive disease]	Psittacosis	Vibrio Infections (other than cholera)
Giardia	Rocky Mountain Spotted Fever (RMSF)	
	Staphylococcus Aureus, Methicillin/Oxacillin Resistant [(MRSA), invasive infection]	

Class D Diseases/Conditions-Reporting Required Within 5 Business Days

Cancer	Hemophilia <sup>3</sup>	Severe Traumatic Head injury
Complications of Abortion	Lead Exposure and/or Poisoning (All ages) <sup>3</sup>	Severe Undernutrition (severe anemia, failure to thrive)
Congenital Hypothyroidism <sup>3</sup>	Pesticide-Related Illness or Injury (All ages)	Sickle Cell Disease (newborns) <sup>3</sup>
Galactosemia <sup>3</sup>	Phenylketonuria <sup>3</sup>	Spinal Cord Injury
Heavy Metal (Arsenic, Cadmium, Mercury) Exposure and/or Poisoning (All ages)	Reye's Syndrome	Sudden Infant Death Syndrome (SIDS)

Case reports not requiring special instructions (see below) can be reported by the Confidential Disease Case Report forms (2430) facsimile, (504) 219-4522 Telephone, (504) 219-4563, or web base at <https://ophrdd.dhh.state.la.us>

<sup>1</sup>Report on STD-43 form. Report cases of syphilis with active lesions by telephone.

<sup>2</sup>Report on CDC72.5 (f.5.2431) card.

<sup>3</sup>Report to the Louisiana Genetic Diseases Program Office by telephone at (504) 219-4413 or facsimile at (504) 219-4452. Louisiana Sanitary Code, 2007, accessed online January 8, 2009.

Use

**Resistant Microbe Precautions**  
(Mode of Transmission: Direct and Indirect)

Name: \_\_\_\_\_

- Standard Precautions
- Handwashing
- Gloves & Splash-proof gowns when entering the room
- Discard all PPE immediately prior to leaving patient's room

Additional Care

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Do not use hand sanitizer with patients with Clostridium Difficile**

Date & Initials of nurse completing sign: \_\_\_\_\_

Date & nurse's initials at reassessment:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Reassess Need for Isolation Weekly

Color: Red

Resistant Microbe Precautions  
Quick Reference

Private room  
Keep personnel to a minimum  
Dedicate patient care items  
Flag charts  
Mask if cough inducing procedures  
Do not remove patient from room unless necessary  
Clean room daily  
Do not discontinue isolation until three negative cultures 24 hours apart.  
Discard all potentially contaminated items after patient is discharged or send to CMS.  
Red bag all waste from Resistant Microbe Isolation with the exception of MRSA on all General Care floors.  
Refer to the *Infection Control BIT* for additional information.

Use

## Respiratory Precautions

Droplet-No Negative Pressure Room Required

Airborne-Negative Pressure Room Required

Name: \_\_\_\_\_

- Standard Precautions
- Submicron mask for all persons entering the room
- Private Room
- Discard mask in anteroom or immediately after leaving patient's room if no anteroom.

Additional Care

\_\_\_\_\_  
\_\_\_\_\_

Wash hands with Chlorhexidine or alcohol gel  
When leaving the room.

Date & initials of nurse completing the sign: \_\_\_\_\_  
Date and nurse's initials at reassessment

\_\_\_\_\_  
\_\_\_\_\_  
Reassess need for  
Isolation weekly

Respiratory Precautions  
Quick Reference

1. Private room.
2. Call Physical Plant (5-6319) to assure room has negative pressure.
3. Flag chart with appropriate sticker.
4. Submicron mask required for all staff and visitors entering room.
5. Limit patient movement outside room. Maintain precautions during transport. Notify receiving unit prior to transport.
6. Clean room daily.
7. Discard all potentially contaminated items after patient is discharged.
8. MICU and SICU call Physical Plant to change the filter when patient is discharged.

Refer to *Infection Control BIT* for additional information

Use

## Contact Precautions

(Mode of Transmission: Direct and Indirect Contact)

Name: \_\_\_\_\_

- Standard Precautions
- Handwashing
- Gloves & Splash-proof gowns when contact with patient or patient's environment anticipated.
- Discard all PPE immediately prior to leaving patient's room.

### Additional Care

\_\_\_\_\_  
\_\_\_\_\_

Wash hands with Antimicrobial soap or hand sanitizer when leaving room.

Date & Initials of nurse completing sign: \_\_\_\_\_

Date & nurse's initials at reassessment:

\_\_\_\_\_  
\_\_\_\_\_

Reassess Need for Isolation Weekly

Contact Precautions  
Quick Reference

Private room.

Flag chart.

Dedicate patient care items or disinfect shared items immediately after use.

Limit patient movements outside room. Maintain precautions during transport.

Wear gloves and splash proof gown whenever contact with patient or patient's environment is anticipated.

Discard all potentially contaminated items after patient is discharged or send to CMS.

Clean room daily.

Prior to transport, notify receiving unit of precautions.

Discontinue isolation when body fluids can be confined or contained as directed by infectious process.

Refer to *Infection Control BIT* for additional information.

Use  
**Neutropenic Precautions**

When patient has a neutrophil count of <1000 cells per mm  
or as directed by patient's Physician.

\_\_\_\_\_  
Name

- Standard Precautions and Handwashing
- Private Room
- Anyone with signs of infection should not enter the room
- No fresh fruit, vegetables, or plants allowed
- Transport out of room kept to minimum, surgical mask is worn by patient when he/she must leave the room

Additional Care

\_\_\_\_\_  
\_\_\_\_\_

Date & initials of nurse completing sign: \_\_\_\_\_

Date & nurse's initial at reassessment

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Reassess Need for Isolation Weekly

**Neutropenic Precautions  
Quick Reference**

Private room.

Flag chart with appropriate sticker

Strict handwashing before entering room or immediately upon entering room.

Dedicated patient care items.

Limit patient's movement outside room. Place surgical mask on patient when outside of room.

Prohibited items: No fresh flowers or plants. No raw fruit or vegetables.

Clean room daily.

## AGENTS OF BIOTERRORISM

### Anthrax Fact Sheet

#### I. Etiology

Anthrax is an acute infectious disease caused by *Bacillus Anthracis*. Humans can become infected through skin contact, ingestion, or inhalation of spores from infected animals, animal products, or a bioterrorist attack. **Persons with Anthrax are not contagious. Person-to-Person transmission or inhalational disease does not occur.**

#### II. Clinical Features

Human anthrax infection can occur in 3 forms: pulmonary, cutaneous, or gastrointestinal. Of these forms, pulmonary anthrax is associated with bioterrorism exposure to aerosolized spores. Clinical features for each form include:

##### Pulmonary

- Non-specific prodrome of flu-like symptoms-headache, fever, tiredness, cough, mild chest discomfort.
- Possible brief interim improvement.
- 2 to 4 days after initial symptoms, abrupt onset of respiratory failure and hemodynamic collapse, possibly accompanied by thoracic edema and a widened mediastinum on chest radiograph suggestive of mediastinal lymphadenopathy and hemorrhagic mediastinitis.
- Gram-positive bacilli on blood culture, usually after the first 2 or 3 days of illness.
- Direct exposure to vesicle secretions of cutaneous anthrax lesions may result in secondary cutaneous infection.

##### Cutaneous

- Local skin involvement after direct contact with spores or bacilli.
- Commonly seen on the head, forearms or hands.
- Localized itching, followed by a papular lesion that turns vesicular, and within 2-6 days develops into a depressed black eschar.
- Usually non-fatal if treated with antibiotics.

##### Gastrointestinal

- Abdominal pain, nausea, vomiting, and fever following ingestion of contaminated food.
- Bloody diarrhea, hematemesis.
- Gram-positive bacilli on blood culture, usually after the first 2 or 3 days of illness.
- Usually fatal after progression to toxemia and sepsis.
- **Anthrax is treatable in early stages and less treatable after onset of breathing problems. Death usually occurs within 24-36 hours after onset of severe symptoms.**

#### III. Mode of Transmission

As a bioterrorism agent, it could be delivered as an aerosol. Transmission modes include:

- Inhalation of spores
- Cutaneous contact with spore-contaminated materials.
- Ingestion of contaminated food.

IV. **Incubation Period**

The incubation period ranges from 1 day to 8 weeks (average 5 days), depending on the exposure route and dose:

- 2-60 days following pulmonary exposure.
- 1-7 days following cutaneous exposure.
- 1-7 days following ingestion.

V. **Period of Communicability**

Person to person transmission is very unlikely-but direct contact with skin lesions may result in cutaneous infection.

VII. **Infection Control Practices for Patient Management**

Symptomatic patients with suspected or confirmed infections will be managed according to current guidelines to their disease state.

a. **Isolation precautions**

Standard precautions are used for the care of patients. Standard Precautions include the use of PPE to avoid direct contact with a patient's body fluids.

**Handwashing**-Hands are washed after touching blood, body fluids, excretions, secretions, or items contaminated with such body fluids, whether or not gloves are worn. Hands are washed immediately after gloves are removed and between patient contact. Either plain or antimicrobial-containing soaps may be used.

**Clean, non-sterile gloves** are worn when touching blood, body fluids, excretions, secretions, or items contaminated with such body fluids. Clean gloves are donned just before touching mucous membranes and non-intact skin. Gloves are changed between tasks and between procedures on the same patient if contact occurs with contaminated material. Hands are washed promptly after removing gloves and before leaving a patient care area.

- b. Private room placement is not necessary. Airborne transmission of anthrax does not occur. Skin lesions may be infectious, but requires direct skin contact only.
- c. Patient transport-Standard Precautions should be used for transport and movement of patients.
- d. Principles of Standard Precautions will be applied for the management of patient-care equipment and for environmental control. If there are questions, please call the Infection Control Department at x 5-5110.
- e. Patient linen is handled in accordance with Standard Precautions. Although linen may be contaminated, the risk of disease transmission is negligible if it is handled, transported, and laundered properly.
- f. The patient's waste is considered contaminated.
- g. No special discharge instructions are needed; however, home care providers should be taught to use Standard Precautions.
- h. **Post-mortem care**-Standard Precautions should be used for post-mortem care.

VII. **Post Exposure Management**

a. Contamination of patient/environment

The risk of re-aerosolization is low. In situations where the threat of gross exposure to *B. anthracis* spores exists, cleansing of skin and potentially contaminated fomites (e.g. clothing or environmental surfaces) may be necessary to reduce the risk for cutaneous and gastrointestinal forms of disease. The plan for decontamination of patients exposed to anthrax includes the following:

- Instructing patients to remove contaminated clothing and place in contaminated bags.
  - Handle clothing minimally to avoid agitation.
  - Instruct patients to shower thoroughly with soap and water (and provide assistance if necessary).
  - Instruct personnel to use Standard Precautions and wear appropriate barriers (e.g., gloves, gown, and respiratory protection) when handling contaminated clothing or other contaminated fomites.
  - Decontaminating environmental surfaces using a 0.5% hypochlorite solution (one part bleach added to nine parts water).
- b. Exposure
- If exposed to an aerosol, clothing should be removed and placed in a plastic bag for incineration. A cleansing shower will remove the organism.
- Surfaces that aerosol may have settled on shall be cleaned with a bleach solution (one part bleach to nine parts water).

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# **Botulism Fact Sheet**

## I. **Etiology**

Clostridium botulinum is a gram-positive bacillus that produces a potent neurotoxin, botulinum that produces a potent neurotoxin, botulinum toxin. Foodborne botulism is the most common form of disease in adults. An inhalational form of botulism is also possible.

## II. **Clinical Features**

Foodborne botulism is accompanied by GI symptoms-nausea, vomiting, and diarrhea. Inhalation botulism and foodborne botulism are likely to share other symptoms including:

- Responsive patient with absence of fever.
- Symmetric cranial neuropathies (drooping eyelids, weakened jaw clench, difficulty swallowing or speaking).
- Blurred vision and diplopia due to extra-ocular muscle palsies.
- Paralysis of arms first, followed by respiratory muscles, then legs.
- Respiratory dysfunction from respiratory muscle paralysis or upper airway obstruction due to weakened glottis.
- No sensory deficits.

## III. **Mode of Transmission**

Botulinum toxin is generally transmitted by ingestion of toxin-contaminated food. Aerosolization of botulinum toxin has been described and may be a mechanism for bioterrorism exposure.

## IV. **Incubation Period**

- Neurologic symptoms begin 12-36 hours after ingestion.
- Neurologic symptoms begin 24-72 hours after aerosol exposure.

**Botulism is not transmitted from person to person.**

## V. **Infection Control Practices for Patient Management**

- a. Standard Precautions with emphasis on hand washing. Standard precautions include the use of PPE, to avoid direct contact with a patient's body fluids.
- b. Patient-to-patient transmission does not occur. Patient room selection and care should be consistent with individual assessment.
- c. Standard Precautions with emphasis on hand washing is used for transport.
- d. No special discharge instructions are indicated.
- e. Standard Precautions is used for post-mortem care.

## VI. **Post Exposure Management**

Suspicion of even a single case of botulism should immediately raise concerns of an outbreak potentially associated with contaminated food. Call the Infection Control Department at x 5-5110 if you have **any** patients admitted with this diagnosis. In collaboration with the CDC and local/state health departments, attempts should be made to locate the contaminated food source and identify other persons who may have been exposed. Any individual suspected to have been exposed to botulinum toxin will be carefully monitored for evidence of respiratory compromise.

- Contamination does not place persons at risk for dermal exposure or risk associated with re-aerosolization. Therefore, decontamination of patients and their environment is not required.

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## Smallpox Fact Sheet

### I. Etiology

Smallpox is an acute viral illness caused by the variola virus.  
Smallpox is a bioterrorism threat and a single case is a public health emergency.

### II. Clinical Features

Acute clinical symptoms of smallpox resemble other acute viral illnesses, such as influenza. Skin lesions appear, quickly progressing from macules to papules to vesicles. Other clinical symptoms to aid in identification of include:

- 2-4 day, non-specific prodrome of **fever, myalgias**.
- rash most prominent on face and extremities (including palms and soles) in contrast to the truncal distribution of varicella (chicken pox).
- rash scabs over in 1-2 weeks.
- In contrast to the rash of varicella, which arises in “crops,” variola rash erupts all at once.

### III. Mode of Transmission

Smallpox is transmitted via both large and small respiratory droplets.

**Person-to-person transmission is likely from airborne and droplet exposure, and by contact with skin lesions or secretions.** Patients are considered more infectious when coughing or when they have a hemorrhagic form of smallpox.

### IV. Incubation Period

- 7-17 days; average 12 days.

#### Period of communicability

- Patients become infectious at the onset of the rash and remain infectious until their scabs separate (approximately 3 weeks).
- Even previously vaccinated persons are considered susceptible to smallpox.

### V. Infection Control Practices for Patient Management

#### a. Isolation precautions

For patients with suspected or confirmed smallpox, both airborne and Contact Precautions shall be used along with Standard Precautions.

- **Notification**-Notify Physical Plant as soon as a case is suspected to assure ventilation is changed to avoid cross contamination by air.
- **Handwashing**-Wash hands using an antimicrobial soap immediately after gloves are removed and between patient contact.
- **Airborne Precautions**-Require healthcare providers and others to always wear a (N-95 submicron mask) when entering the patient unit.
- **Contact Precautions**-are used since the organism can be transferred by direct contact.
- **Standard Precautions** include the use of PPE to avoid direct contact with the patient’s body fluids.
- **Clean non-sterile gloves** donned upon entry into patient room.
- **Splash-proof Isolation gowns** are worn for all patient contact and for all contact with the patient’s environment. Gown must be removed before leaving the area.

#### b. A Negative Pressure Room is Required.

- Doors to patient rooms and unit must remain closed.

- Limit the movement and transport of patients to essential medical purposes only. When transport is necessary, place a submicron mask on the patient and utilize Standard Precautions.
- c. Principles of Standard Precautions shall be applied for the management of patient-care equipment and for environmental control.
  - When possible, patient care equipment is dedicated to a single patient (or cohort of patients with the same illness).
  - If use of common items is unavoidable, all potentially contaminated, reusable equipment will not be used for the care of another patient until it has been appropriately cleaned and reprocessed.
- d. All waste is considered contaminated.
- e. No special discharge instructions are required. Teach home care providers to use Standard Precautions.
- f. Airborne and Resistant Microbe Precautions will be used for post-mortem care.

VI. **Post Exposure Management**

- a. Decontamination of patients/environment
  - Patient decontamination after exposure to smallpox is not indicated.
  - Items potentially contaminated by infectious lesions should be handled using Resistant Microbe Precautions.

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## Plague Fact Sheet

### I. Etiology

Plague is an acute bacterial disease caused by the gram-negative bacillus, *Yersinia pestis*. It occurs in three forms: pneumonic (pulmonary), bubonic (lymph node infection), and septicemic (blood stream infection). As a biological weapon, the bacillus would be distributed by aerosolization, so that it is inhaled by the intended victims, causing rapid, fulminant pulmonary disease.

### II. Mode of Transmission

A bioterrorism attack would most likely be characterized by pneumonic cases occurring simultaneously in people from 1 to 6 days following a common exposure to aerosolized bacillus, and in a secondary wave of people infected by inhalation of droplets from those initially infected. Bubonic and septicemic forms of the disease are not likely to be implicated in a bioterrorist attack. Bubonic plague is transmitted to humans through the bites of infected fleas or rodents, and rarely, by contact with pus from draining buboes, the swollen lymph nodes infected with *Yersinia pestis*. Septicemic plague is usually a secondary infection to bubonic or pneumonic plague, and is termed primary if no buboes are present.

### III. Clinical Features

In all three forms, plague initially begins with a flu-like prodrome, including fever, chills, myalgia, weakness, and headache. Diarrhea, nausea, vomiting, and abdominal pain are common. In addition, specific clinical features of each form include.

#### Pneumonic Plague

- Within 24 hours of the onset of the prodrome, chest discomfort, cough, and shortness of breath develops.
- By day 2-4, the patient begins coughing blood, and progresses rapidly to dyspnea, stridor, cyanosis, respiratory failure, circulatory collapse and death.
- CXR shows patchy, often bilateral, infiltrates and/or consolidated bronchiopneumonia.
- Incubation is 1-6 days after exposure, presumably dose dependent.
- Communicable from the onset of symptoms until sputum cultures are negative in a confirmed case, or until the completion of 72 hours of antibiotic therapy and symptoms have subsided in a suspected case.
- Mortality rate is extremely high if antibiotic therapy is not initiated within 18-24 hours of onset of symptoms.

#### Bubonic Plague

- Within 24 hours of inoculation, bacteria are transported to the lymph nodes, which become swollen. The swollen lymph nodes are known as buboes. Buboes should not be aspirated, except for diagnosis.
- Rarely, an eschar or ulcer develops at the site of inoculation.
- Incubation is from 1-10 days after inoculation.
- It is not usually transmitted person-to-person, unless there is contact with pus from a draining bubo.

#### Septicemic Plague

- DIC, characterized by purpuric skin lesions and thrombosis.
- May be secondary to pneumonic or bubonic forms, or rarely, may be a primary infection.
- Often develops late in the disease process, followed by multi-organ failure.
- Meningitis occurs in 5% of cases.
- Incubation is from 1-10 days.

- Is not usually transmitted person-to-person, but contact with blood and body fluids should be avoided.

#### IV. **Infection Control Practices for Patient Management**

Symptomatic patients with suspected or confirmed infections will be managed according to current guidelines specific to their disease state.

##### a. **Isolation Precautions**

1. **All patients: Standard Precautions are used for the care of all patients.**  
Standard Precautions include the routine use of clean gloves for contact with non-intact skin. Gowns, goggles, masks, and other PPE must be worn to prevent contact with body fluids and contaminated items.  
**Hand washing**-Hands are washed after touching blood, body fluids, excretions, secretions, or items contaminated with body fluids, whether or not gloves are worn. Hands are washed immediately after gloves are removed between tasks and patient contacts. Either plain or antimicrobial-containing soaps may be used.  
**Clean, non-sterile gloves** are worn when touching blood, body fluids, excretions, secretions, or contaminated items. Gloves are changed between tasks and procedures on the same patient if contact occurs with contaminated material. Hands are washed promptly after removing gloves and before leaving a patient care area.
2. **Pneumonic plague: STRICT RESPIRATORY PRECAUTIONS**  
Three consecutive negative sputums at least 8 hours apart should be obtained prior to discontinuation of respiratory isolation in confirmed pneumonic plague. In suspected cases, 72 hours of antibiotic therapy should be completed with a decrease in symptoms before isolation is discontinued. In the ER or clinic setting, and during transport, a submicron mask should be placed on the patient. The patient should be carefully monitored for tolerance of the mask. Personnel should wear submicron masks when providing patient care.

##### b. **Room Placement**

1. **Pneumonic plague**-Negative pressure room is not required. Private room placement is preferable, but cohorting patients with laboratory confirmed pneumonic plague is acceptable. Patients with suspected or confirmed pneumonic plague should not be cohorted in the same room with patients not known to be infected with pneumonic plague.
  2. **Bubonic or septicemic plague**-Private room placement is preferable, but cohorting patients with laboratory confirmed bubonic plague is acceptable. Patients with suspected or confirmed bubonic plague should not be cohorted in the same room with patients who are not known to be infected with bubonic plague.
- c. **Patient Transport**-Standard Precautions should be used. Patients with known or suspected pneumonic plague should wear a submicron (N95) mask during transport.
- d. **Equipment and Environmental Cleaning**- Principles of standard precautions should be generally applied. If there are questions, please call the Infection Control Department at x 5-5110.
- e. **Linen**-Linen is handled in accordance with Standard Precautions.
- f. **Waste**-All waste is considered contaminated
- g. **Discharge instructions**-No special discharge instructions are needed; however, home care providers should be taught to use standard precautions.
- h. **Post-mortem care**-Strict Standard Precautions should be used. In addition to Standard Precautions, surgical masks should be worn during autopsies.

V. **Post Exposure Management**

In situations where the possibility of gross exposure to *Y. pestis* exists, cleansing of the skin and potentially contaminated fomites (e.g., clothing or environmental surfaces) may be necessary to reduce the risk for exposure. The plan for decontaminating patients exposed to plague includes the following:

- Instruct the patients to remove contaminated clothing and place in plastic biohazard bags for incineration. Handle clothing minimally to avoid agitation.
- Instruct patients to shower thoroughly with soap and water, providing assistance as necessary.
- Instruct personnel regarding Standard Precautions and wearing appropriate barriers when handling contaminated clothing or other contaminated fomites.
- Decontaminate environmental surfaces using a hospital-approved disinfectant.
- Surfaces where the aerosol may have settled should be cleaned with a hospital-approved disinfectant.

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