Centers for Disease Control and Prevention

Infection Control

Isolation Precautions

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

Isolation Precautions Guideline – Print Version [PDF – 1 MB]

Updates

See updates to this guideline:

- Interim Measles Infection Control Recommendations
- Gastroenteritis, Noroviruses Precaution
- Varicella Recommendation
- Environmental Control Recommendation Correction
- Tdap Vaccine
- Appendix A Updates
- Mumps
- Edits and Changes
- Ebola Virus Disease
- Ebola Virus Disease for Healthcare Workers

Categorization Scheme for Recommendations

Rating	Explanation
Category IA	Strongly recommended for implementation and strongly supported by well-designed experimental, clinical, or epidemiologic studies.
Category IB	Strongly recommended for implementation and supported by some experimental, clinical, or epidemiologic studies and a strong theoretical rationale.
Category IC	Required for implementation, as mandated by federal and/or state regulation or standard.
Category II	Suggested for implementation and supported by suggestive clinical or epidemiologic studies or a theoretical rationale.
No recommendation; Unresolved issue.	Practices for which insufficient evidence or no consensus regarding efficacy exists.

Summary of Recommendations

I. Administrative Responsibilities

#	Recommendation	Category
I.A.	Incorporate preventing transmission of infectious agents into the objectives of the organization's patient and occupational safety programs	IB/IC
I.B.	Make preventing transmission of infectious agents a priority for the healthcare organization. Provide administrative support, including fiscal and human resources for maintaining infection control programs	IB/IC
I.B.1.	Assure that individuals with training in infection control are employed by or are available by contract to all healthcare facilities so that the infection control program is managed by one or more qualified individuals	IB/IC
I.B.1.a.	Determine the specific infection control full-time equivalents (FTEs) according to the scope of the infection control program, the complexity of the healthcare facility or system, the characteristics of the patient population, the unique or urgent needs of the facility and community, and proposed	IB

#	Recommendation	Category
	the patient population, the unique or urgent needs of the facility and community, and proposed staffing levels based on survey results and recommendations from professional organizations	
I.B.2.	Include prevention of healthcare-associated infections (HAI) as one determinant of bedside nurse staffing levels and composition, especially in high-risk units	IB
I.B.3.	Delegate authority to infection control personnel or their designees (e.g., patient care unit charge nurses) for making infection control decisions concerning patient placement and assignment of Transmission-Based Precautions	IC
I.B.4.	Involve infection control personnel in decisions on facility construction and design, determination of AIIR and Protective Environment capacity needs and environmental assessments	IB/IC
I.B.4.a.	Provide ventilation systems required for a sufficient number of airborne infection isolation rooms (AIIR)s (as determined by a risk assessment) and Protective Environments in healthcare facilities that provide care to patients for whom such rooms are indicated, according to published recommendations	IB/IC
I.B.5.	Involve infection control personnel in the selection and post-implementation evaluation of medical equipment and supplies and changes in practice that could affect the risk of HAI	IC
I.B.6.	Ensure availability of human and fiscal resources to provide clinical microbiology laboratory support, including a sufficient number of medical technologists trained in microbiology, appropriate to the healthcare setting, for monitoring transmission of microorganisms, planning and conducting epidemiologic investigations, and detecting emerging pathogens. Identify resources for performing surveillance cultures, rapid diagnostic testing for viral and other selected pathogens, preparation of antimicrobial susceptibility summary reports, trend analysis, and molecular typing of clustered isolates (performed either on-site or in a reference laboratory) and use these resources according to facility-specific epidemiologic needs, in consultation with clinical microbiologists	IB
I.B.7.	Provide human and fiscal resources to meet occupational health needs related to infection control (e.g., healthcare personnel immunization, post-exposure evaluation and care, evaluation and management of healthcare personnel with communicable infections	IB/IC
I.B.8.	In all areas where healthcare is delivered, provide supplies and equipment necessary for the consistent observance of Standard Precautions, including hand hygiene products and personal protective equipment (e.g., gloves, gowns, face and eye protection)	IB/IC
I.B.9.	Develop and implement policies and procedures to ensure that reusable patient care equipment is cleaned and reprocessed appropriately before use on another patient	IA/IC
I.C.	Develop and implement processes to ensure oversight of infection control activities appropriate to the healthcare setting and assign responsibility for oversight of infection control activities to an individual or group within the healthcare organization that is knowledgeable about infection control	II
I.D.	Develop and implement systems for early detection and management (e.g., use of appropriate infection control measures, including isolation precautions, personal protective equipment [PPE]) of potentially infectious persons at initial points of patient encounter in **outpatient settings** (e.g., **triage areas, emergency departments, outpatient clinics, physician offices**) and at the time of admission to hospitals and long-term care facilities (LTCF)	IB
I.E.	Develop and implement policies and procedures to limit patient visitation by persons with signs or symptoms of a communicable infection. Screen visitors to high-risk patient care areas (e.g., oncology units, hematopoietic stem cell transplant [HSCT] units, intensive care units, other severely immunocompromised patients) for possible infection.	IB
I.F.	Identify performance indicators of the effectiveness of organization-specific measures to prevent transmission of infectious agents (Standard and Transmission-Based Precautions), establish processes to monitor adherence to those performance measures and provide feedback to staff members.	IB

II. Education and Training

#	Recommendation	Category
II.A.	Provide job- or task-specific education and training on preventing transmission of infectious agents associated with healthcare during orientation to the healthcare facility; update information periodically during ongoing education programs. Target all healthcare personnel for education and training, including but not limited to medical, nursing, clinical technicians, laboratory staff; property service (housekeeping), laundry, maintenance and dietary workers; students, contract staff and volunteers. Document competency initially and repeatedly, as appropriate, for the specific staff positions. Develop a system to ensure that healthcare personnel employed by outside agencies meet these education and training requirements through programs offered by the agencies or by participation in the healthcare facility's program designed for full-time personnel	IB
II.A.1.	Include in education and training programs, information concerning use of vaccines as an adjunctive infection control measure	IB
II.A.2.	Enhance education and training by applying principles of adult learning, using reading level and language appropriate material for the target audience, and using online educational tools available to the institution	IB
II.B.	Provide instructional materials for patients and visitors on recommended hand hygiene and Respiratory Hygiene/Cough Etiquette practices and the application of Transmission-Based Precautions	II

III. Surveillance

#	Recommendation	Category
III.A.	Monitor the incidence of epidemiologically-important organisms and targeted HAIs that have substantial impact on outcome and for which effective preventive interventions are available; use information collected through surveillance of high-risk populations, procedures, devices and highly transmissible infectious agents to detect transmission of infectious agents in the healthcare facility	IA
III.B.	Apply the following epidemiologic principles of infection surveillance • Use standardized definitions of infection • Use laboratory-based data (when available) • Collect epidemiologically-important variables (e.g., patient locations and/or clinical service in hospitals and other large multi-unit facilities, population-specific risk factors [e.g., low birth-weight neonates], underlying conditions that predispose to serious adverse outcomes) • Analyze data to identify trends that may indicated increased rates of transmission • Feedback information on trends in the incidence and prevalence of HAIs, probable risk factors, and prevention strategies and their impact to the appropriate healthcare providers, organization administrators, and as required by local and state health authorities	IB
III.C.	Develop and implement strategies to reduce risks for transmission and evaluate effectiveness	IB
III.D.	When transmission of epidemiologically-important organisms continues despite implementation and documented adherence to infection prevention and control strategies, obtain consultation from persons knowledgeable in infection control and healthcare epidemiology to review the situation and recommend additional measures for control	IB
III.E.	Review periodically information on community or regional trends in the incidence and prevalence of epidemiologically-important organisms (e.g., influenza, RSV, pertussis, invasive group A streptococcal disease, MRSA, VRE) (including in other healthcare facilities) that may impact transmission of organisms within the facility	II

IV. Standard Precautions

Edit [February 2017]

⚠ **Edit:** An ~ indicates text that was edited for clarity. The edit does not constitute change to the intent of the recommendations.

IV.A. Hand Hygiene

#	Recommendation	Category
IV.A.1.	During the delivery of healthcare, avoid unnecessary touching of surfaces in close proximity to the patient to prevent both contamination of clean hands from environmental surfaces and transmission of pathogens from contaminated hands to surfaces	IB/IC
IV.A.2.	When hands are visibly dirty, contaminated with proteinaceous material, or visibly soiled with blood or body fluids, wash hands with either a nonantimicrobial soap and water or an antimicrobial soap and water	IA
IV.A.3.	If hands are not visibly soiled, or after removing visible material with nonantimicrobial soap and water, decontaminate hands in the clinical situations described in IV.A.4.a-f. The preferred method of hand decontamination is with an alcohol-based hand rub. Alternatively, hands may be washed with an antimicrobial soap and water. Frequent use of alcohol-based hand rub immediately following handwashing with nonantimicrobial soap may increase the frequency of dermatitis.	IB
	Perform hand hygiene ~ in the following clinical situations:	
IV.A.3.a.	Before having direct contact with patients	IB
IV.A.3.b.	After contact with blood, body fluids or excretions, mucous membranes, nonintact skin, or wound dressings	IA
IV.A.3.c.	After contact with a patient's intact skin (e.g., when taking a pulse or blood pressure or lifting a patient)	IB
IV.A.3.d.	If hands will be moving from a contaminated-body site to a clean-body site during patient care.	II
IV.A.3.e.	After contact with inanimate objects (including medical equipment) in the immediate vicinity of the patient	II
IV.A.3.f.	After removing gloves	IB
IV.A.4.	Wash hands with non-antimicrobial soap and water or with antimicrobial soap and water if contact with spores (e.g., *C. difficile* or Bacillus anthracis) is likely to have occurred. The physical action of washing and rinsing hands under such circumstances is recommended because alcohols, chlorhexidine, iodophors, and other antiseptic agents have poor activity against spores	II
IV.A.5.	Do not wear artificial fingernails or extenders if duties include direct contact with patients at high risk for infection and associated adverse outcomes (e.g., those in ICUs or operating rooms)	IA
IV.A.5.a.	Develop an organizational policy on the wearing of non-natural nails by healthcare personnel who have direct contact with patients outside of the groups specified above	II

IV.B. Personal Protective Equipment (PPE) (see Figure)

# #	Recommendation Recommendation	Category Category
IV.B.1.	**Observe the following principles of use:**	
IV.B.1.a.	Wear PPE, as described in IV.B.2-4,when the nature of the anticipated patient interaction indicates that contact with blood or body fluids may occur	IB/IC
IV.B.1.b.	Prevent contamination of clothing and skin during the process of removing PPE (see Figure).	II
IV.B.1.c.	Before leaving the patient's room or cubicle, remove and discard PPE	IB/IC
IV.B.2.	**Gloves**	
IV.B.2.a.	Wear gloves when it can be reasonably anticipated that contact with blood or other potentially infectious materials, mucous membranes, nonintact skin, or potentially contaminated intact skin (e.g., of a patient incontinent of stool or urine) could occur	IB/IC
IV.B.2.b.	Wear gloves with fit and durability appropriate to the task i. Wear disposable medical examination gloves for providing direct patient care. ii. Wear disposable medical examination gloves or reusable utility gloves for cleaning the environment or medical equipment.	IB
IV.B.2.c.	Remove gloves after contact with a patient and/or the surrounding environment (including medical equipment) using proper technique to prevent hand contamination (see Figure). Do not wear the same pair of gloves for the care of more than one patient. Do not wash gloves for the purpose of reuse since this practice has been associated with transmission of pathogens	IB
IV.B.2.d.	Change gloves during patient care if the hands will move from a contaminated body-site (e.g., perineal area) to a clean body-site (e.g., face).	II
IV.B.3.	**Gowns**	
IV.B.3.a.	Wear a gown, that is appropriate to the task, to protect skin and prevent soiling or contamination of clothing during procedures and patient-care activities when contact with blood, body fluids, secretions, or excretions is anticipated.	IB/IC
IV.B.3.a.i.	Wear a gown for direct patient contact if the patient has uncontained secretions or excretions	IB/IC
IV.B.3.a.ii.	Remove gown and perform hand hygiene before leaving the patient's environment	IB/IC
IV.B.3.b.	Do not reuse gowns, even for repeated contacts with the same patient.	II
IV.B.3.c.	Routine donning of gowns upon entrance into a high risk unit (e.g., ICU, NICU, HSCT unit) is not indicated	IB
IV.B.4.	**Mouth, nose, eye protection**	
IV.B.4.a.	Use PPE to protect the mucous membranes of the eyes, nose and mouth during procedures and patient-care activities that are likely to generate splashes or sprays of blood, body fluids, secretions and excretions. Select masks, goggles, face shields, and combinations of each according to the need anticipated by the task performed	IB/IC

#	Recommendation	Category
IV.B.5.	During aerosol-generating procedures (e.g., bronchoscopy, suctioning of the respiratory tract [if not using in-line suction catheters], endotracheal intubation) in patients who are not suspected of being infected with an agent for which respiratory protection is otherwise recommended (e.g., M. tuberculosis, SARS or hemorrhagic fever viruses), wear one of the following: a face shield that fully covers the front and sides of the face, a mask with attached shield, or a mask and goggles (in addition to gloves and gown) Ebola Virus Disease for Healthcare Workers [2014] ⚠ **Update:** Recommendations for healthcare workers can be found at Ebola For Clinicians.	IB

IV.C. Respiratory hygiene/cough etiquette

#	Recommendation	Category
IV.C.1.	Educate healthcare personnel on the importance of source control measures to contain respiratory secretions to prevent droplet and fomite transmission of respiratory pathogens, especially during seasonal outbreaks of viral respiratory tract infections (e.g., influenza, RSV, adenovirus, parainfluenza virus) in communities	IB
IV.C.2.	Implement the following measures to contain respiratory secretions in patients and accompanying individuals who have signs and symptoms of a respiratory infection, beginning at the point of initial encounter in a healthcare setting (e.g., triage, reception and waiting areas in emergency departments, outpatient clinics and physician offices)	
IV.C.2.a.	Post signs at entrances and in strategic places (e.g., elevators, cafeterias) within **ambulatory** and **inpatient settings** with instructions to patients and other persons with symptoms of a respiratory infection to cover their mouths/noses when coughing or sneezing, use and dispose of tissues, and perform hand hygiene after hands have been in contact with respiratory secretions.	II
IV.C.2.b.	Provide tissues and no-touch receptacles (e.g., foot-pedal-operated lid or open, plastic-lined waste basket) for disposal of tissues	II
IV.C.2.c.	Provide resources and instructions for performing hand hygiene in or near waiting areas in **ambulatory** and **inpatient settings**; provide conveniently-located dispensers of alcohol-based hand rubs and, where sinks are available, supplies for handwashing	IB
IV.C.2.d.	During periods of increased prevalence of respiratory infections in the community (e.g., as indicated by increased school absenteeism, increased number of patients seeking care for a respiratory infection), offer masks to coughing patients and other symptomatic persons (e.g., persons who accompany ill patients) upon entry into the facility or medical office 126, 899 898 and encourage them to maintain special separation, ideally a distance of at least 3 feet, from others in common waiting areas	IB
IV.C.2.d.i.	Some facilities may find it logistically easier to institute this recommendation year-round as a standard of practice.	II

IV.D. Patient placement

#	Recommendation	Category
IV.D.1.	Include the potential for transmission of infectious agents in patient-placement decisions. Place patients who pose a risk for transmission to others (e.g., uncontained secretions, excretions or wound drainage; infants with suspected viral respiratory or gastrointestinal infections) in a single-patient room when available	IB

#	Recommendation	Category
IV.D.2.	Determine patient placement based on the following principles: • Route(s) of transmission of the known or suspected infectious agent • Risk factors for transmission in the infected patient • Risk factors for adverse outcomes resulting from an HAI in other patients in the area or room being considered for patient-placement • Availability of single-patient rooms • Patient options for room-sharing (e.g., cohorting patients with the same infection)	II

IV.E. Patient-care equipment and instruments/devices

#	Recommendation	Category
IV.E.1.	Establish policies and procedures for containing, transporting, and handling patient-care equipment and instruments/devices that may be contaminated with blood or body fluids	IB/IC
IV.E.2.	Remove organic material from critical and semi-critical instrument/devices, using recommended cleaning agents before high level disinfection and sterilization to enable effective disinfection and sterilization processes	IA
IV.E.3.	Wear PPE (e.g., gloves, gown), according to the level of anticipated contamination, when handling patient-care equipment and instruments/devices that is visibly soiled or may have been in contact with blood or body fluids	IB/IC

IV.F. Care of the environment

Edit [February 2017]

⚠ **Edit:** An ***** indicates recommendations that were renumbered for clarity. The renumbering does not constitute change to the intent of the recommendations.

#	Recommendation	Category
IV.F.1.	Establish policies and procedures for routine and targeted cleaning of environmental surfaces as indicated by the level of patient contact and degree of soiling.	II
IV.F.2.	Clean and disinfect surfaces that are likely to be contaminated with pathogens, including those that are in close proximity to the patient (e.g., bed rails, over bed tables) and frequently-touched surfaces in the patient care environment (e.g., door knobs, surfaces in and surrounding toilets in patients' rooms) on a more frequent schedule compared to that for other surfaces (e.g., horizontal surfaces in waiting rooms)	IB
IV.F.3.	Use EPA-registered disinfectants that have microbiocidal (i.e., killing) activity against the pathogens most likely to contaminate the patient-care environment. Use in accordance with manufacturer's instructions	IB/IC
IV.F.3.a.	Review the efficacy of in-use disinfectants when evidence of continuing transmission of an infectious agent (e.g., rotavirus, *C. difficile*, norovirus) may indicate resistance to the in-use product and change to a more effective disinfectant as indicated	II

#	Recommendation	Category
IV.F.4.	In facilities that provide health care to pediatric patients or have **waiting areas with child play toys** (e.g., **obstetric/gynecology offices and clinics**), establish policies and procedures for cleaning and disinfecting toys at regular intervals	IB
* IV.F.4.a.	Use the following principles in developing this policy and procedures: • Select play toys that can be easily cleaned and disinfected • Do not permit use of stuffed furry toys if they will be shared • Clean and disinfect large stationary toys (e.g., climbing equipment) at least weekly and whenever visibly soiled • If toys are likely to be mouthed, rinse with water after disinfection; alternatively wash in a dishwasher • When a toy requires cleaning and disinfection, do so immediately or store in a designated labeled container separate from toys that are clean and ready for use	II
IV.F.5.	Include multi-use electronic equipment in policies and procedures for preventing contamination and for cleaning and disinfection, especially those items that are used by patients, those used during delivery of patient care, and mobile devices that are moved in and out of patient rooms frequently (e.g., daily)	IB
IV.F.5.a.	No recommendation for use of removable protective covers or washable keyboards.	Unresolved issue

IV.G. Textiles and laundry

#	Recommendation	Category
IV.G.1.	Handle used textiles and fabrics with minimum agitation to avoid contamination of air, surfaces and persons	IB/IC
IV.G.2.	If laundry chutes are used, ensure that they are properly designed, maintained, and used in a manner to minimize dispersion of aerosols from contaminated laundry	IB/IC

IV.H. Safe injection practices

The following recommendations apply to the use of needles, cannulas that replace needles, and, where applicable, intravenous delivery systems.

#	Recommendation	Category
IV.H.1.	Use aseptic technique to avoid contamination of sterile injection equipment	IA
IV.H.2.	Do not administer medications from a syringe to multiple patients, even if the needle or cannula on the syringe is changed. Needles, cannulae and syringes are sterile, single-use items; they should not be reused for another patient nor to access a medication or solution that might be used for a subsequent patient	IA
IV.H.3.	Use fluid infusion and administration sets (i.e., intravenous bags, tubing and connectors) for one patient only and dispose appropriately after use. Consider a syringe or needle/cannula contaminated once it has been used to enter or connect to a patient's intravenous infusion bag or administration set	IB
IV.H.4.	Use single-dose vials for parenteral medications whenever possible	IA
IV.H.5.	Do not administer medications from single-dose vials or ampules to multiple patients or combine leftover contents for later use	IA

#	Recommendation	Category
IV.H.6.	If multidose vials must be used, both the needle or cannula and syringe used to access the multidose vial must be sterile	IA
IV.H.7.	Do not keep multidose vials in the immediate patient treatment area and store in accordance with the manufacturer's recommendations; discard if sterility is compromised or questionable	IA
IV.H.8.	Do not use bags or bottles of intravenous solution as a common source of supply for multiple patients	IB

IV.I. Infection control practices for special lumbar puncture procedures

#	Recommendation	Category
IV.I.	Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space (i.e., during myelograms, lumbar puncture and spinal or epidural anesthesia)	IB

IV.J. Worker safety

#	Recommendation	Category
IV.J.	Adhere to federal and state requirements for protection of healthcare personnel from exposure to bloodborne pathogens	IC

V. Transmission-Based Precautions

V.A. General principles

#	Recommendation	Category
V.A.1.	In addition to Standard Precautions, use Transmission-Based Precautions for patients with documented or suspected infection or colonization with highly transmissible or epidemiologically-important pathogens for which additional precautions are needed to prevent transmission (see Appendix A)	IA
V.A.2.	Extend duration of Transmission-Based Precautions, (e.g., Droplet, Contact) for immunosuppressed patients with viral infections due to prolonged shedding of viral agents that may be transmitted to others	IA

V.B. Contact precautions

#	Recommendation	Category
V.B.1.	Use Contact Precautions as recommended in Appendix A for patients with known or suspected infections or evidence of syndromes that represent an increased risk for contact transmission. For specific recommendations for use of Contact Precautions for colonization or infection with MDROs, go to Management of Multidrug- Resistant Organisms in Healthcare Settings 2006	

V.B.2. Patient placement

Edit [February 2017]

⚠ **Edit:** An * indicates recommendations that were renumbered for clarity. The renumbering does not constitute change to the intent of the recommendations.

#	Recommendation	Category
V.B.2.a.	In acute care hospitals, place patients who require Contact Precautions in a single-patient room when available	IB
	When single-patient rooms are in short supply, apply the following principles for making decisions on patient placement:	
* V.B.2.a.i.	• Prioritize patients with conditions that may facilitate transmission (e.g., uncontained drainage, stool incontinence) for single-patient room placement.	II
* V.B.2.a.ii.	• Place together in the same room (cohort) patients who are infected or colonized with the same pathogen and are suitable roommates.	IB
	If it becomes necessary to place a patient who requires Contact Precautions in a room with a patient who is not infected or colonized with the same infectious agent:	
* V.B.2.a.iii.	• Avoid placing patients on Contact Precautions in the same room with patients who have conditions that may increase the risk of adverse outcome from infection or that may facilitate transmission (e.g., those who are immunocompromised, have open wounds, or have anticipated prolonged lengths of stay).	II
* V.B.2.a.iv.	• Ensure that patients are physically separated (i.e., >3 feet apart) from each other. Draw the privacy curtain between beds to minimize opportunities for direct contact.	II
* V.B.2.a.v.	• Change protective attire and perform hand hygiene between contact with patients in the same room, regardless of whether one or both patients are on Contact Precautions.	IB
V.B.2.b.	In **long-term care** and **other residential settings**, make decisions regarding patient placement on a case-by-case basis, balancing infection risks to other patients in the room, the presence of risk factors that increase the likelihood of transmission, and the potential adverse psychological impact on the infected or colonized patient	II
V.B.2.c.	In **ambulatory settings**, place patients who require Contact Precautions in an examination room or cubicle as soon as possible	II

V.B.3. Use of personal protective equipment

#	Recommendation	Category
V.B.3.a.	**Gloves** Wear gloves whenever touching the patient's intact skin or surfaces and articles in close proximity to the patient (e.g., medical equipment, bed rails). Don gloves upon entry into the room or cubicle.	IB
V.B.3.b.	**Gowns**	
V.B.3.b.i.	Wear a gown whenever anticipating that clothing will have direct contact with the patient or potentially contaminated environmental surfaces or equipment in close proximity to the patient. Don gown upon entry into the room or cubicle. Remove gown and observe hand hygiene before leaving the patient-care environment	IB
V.B.3.b.ii.	After gown removal, ensure that clothing and skin do not contact potentially contaminated environmental surfaces that could result in possible transfer of microorganism to other patients or environmental surfaces	II

V.B.4. Patient transport

#	Recommendation	Category
V.B.4.a.	In **acute care hospitals** and **long-term care** and other **residential settings**, limit transport and movement of patients outside of the room to medically-necessary purposes.	II
V.B.4.b.	When transport or movement in any healthcare setting is necessary, ensure that infected or colonized areas of the patient's body are contained and covered.	II
V.B.4.c.	Remove and dispose of contaminated PPE and perform hand hygiene prior to transporting patients on Contact Precautions.	II
V.B.4.d.	Don clean PPE to handle the patient at the transport destination.	II

V.B.5. Patient-care equipment and instruments/devices

#	Recommendation	Category
V.B.5.a.	Handle patient-care equipment and instruments/devices according to Standard Precautions	IB/IC
V.B.5.b.	In **acute care hospitals** and **long-term care** and **other residential settings**, use disposable noncritical patient-care equipment (e.g., blood pressure cuffs) or implement patient-dedicated use of such equipment. If common use of equipment for multiple patients is unavoidable, clean and disinfect such equipment before use on another patient	IB
V.B.5.c.	**In home care settings**	
V.B.5.c.i.	Limit the amount of non-disposable patient-care equipment brought into the home of patients on Contact Precautions. Whenever possible, leave patient-care equipment in the home until discharge from home care services.	II
V.B.5.c.ii.	If noncritical patient-care equipment (e.g., stethoscope) cannot remain in the home, clean and disinfect items before taking them from the home using a low- to intermediate-level disinfectant. Alternatively, place contaminated reusable items in a plastic bag for transport and subsequent cleaning and disinfection.	II
V.B.5.d.	In **ambulatory settings**, place contaminated reusable noncritical patient-care equipment in a plastic bag for transport to a soiled utility area for reprocessing.	II
V.B.6.	**Environmental measures** Ensure that rooms of patients on Contact Precautions are prioritized for frequent cleaning and disinfection (e.g., at least daily) with a focus on frequently-touched surfaces (e.g., bed rails, overbed table, bedside commode, lavatory surfaces in patient bathrooms, doorknobs) and equipment in the immediate vicinity of the patient.	IB
V.B.7.	Discontinue Contact Precautions after signs and symptoms of the infection have resolved or according to pathogen-specific recommendations in Appendix A.	IB

V.C. Droplet Precautions

Edit [February 2017]

⚠ **Edit:** An ***** indicates recommendations that were renumbered for clarity. The renumbering does not constitute change to the intent of the recommendations.

#	Recommendation	Category

#	Recommendation	Category
V.C.1.	Use Droplet Precautions as recommended in Appendix A for patients known or suspected to be infected with pathogens transmitted by respiratory droplets (i.e., large-particle droplets >5μ in size) that are generated by a patient who is coughing, sneezing or talking	IB
V.C.2.	**Patient placement**	
V.C.2.a.	In **acute care hospitals**, place patients who require Droplet Precautions in a single-patient room when available	II
	When single-patient rooms are in short supply, apply the following principles for making decisions on patient placement:	
* V.C.2.a.i.	• Prioritize patients who have excessive cough and sputum production for single-patient room placement	II
* V.C.2.a.ii.	• Place together in the same room (cohort) patients who are infected the same pathogen and are suitable roommates	IB
	If it becomes necessary to place patients who require Droplet Precautions in a room with a patient who does not have the same infection:	
* V.C.2.a.iii.	• Avoid placing patients on Droplet Precautions in the same room with patients who have conditions that may increase the risk of adverse outcome from infection or that may facilitate transmission (e.g., those who are immunocompromised, have or have anticipated prolonged lengths of stay).	II
* V.C.2.a.iv.	• Ensure that patients are physically separated (i.e., >3 feet apart) from each other. Draw the privacy curtain between beds to minimize opportunities for close contact	IB
* V.C.2.a.v.	• Change protective attire and perform hand hygiene between contact with patients in the same room, regardless of whether one patient or both patients are on Droplet Precautions	IB
V.C.2.b.	In **long-term care** and **other residential settings**, make decisions regarding patient placement on a case-by-case basis after considering infection risks to other patients in the room and available alternatives	II
V.C.2.c.	In **ambulatory settings**, place patients who require Droplet Precautions in an examination room or cubicle as soon as possible. Instruct patients to follow recommendations for Respiratory Hygiene/Cough Etiquette	II
V.C.3.	**Use of personal protective equipment**	
V.C.3.a.	Don a mask upon entry into the patient room or cubicle	IB
V.C.3.b.	No recommendation for routinely wearing eye protection (e.g., goggle or face shield), in addition to a mask, for close contact with patients who require Droplet Precautions.	Unresolved issue
V.C.3.c.	For patients with suspected or proven SARS, avian influenza or pandemic influenza, refer to the following websites for the most recommendations ([These links are no longer active: www.cdc.gov/ncidod/sars/; www.cdc.gov/flu/avian/; www.pandemicflu.gov/) Similar information may be found at Severe Acute Respiratory Syndrome (SARS); Pandemic Influenza; and Pandemic Awareness , accessed November 3, 2016.]	
V.C.4.	**Patient transport**	
V.C.4.a.	In **acute care hospitals** and **long-term care** and **other residential settings**, limit transport and movement of patients outside of the room to medically-necessary purposes.	II
V.C.4.b.	If transport or movement in any healthcare setting is necessary, instruct patient to wear a mask and follow CDC's Respiratory Hygiene/Cough Etiquette in Healthcare Settings [Current version of this document may differ from original.].	IB
V.C.4.c.	No mask is required for persons transporting patients on Droplet Precautions.	II
V.C.4.d.	Discontinue Droplet Precautions after signs and symptoms have resolved or according to pathogen-specific recommendations in Appendix A.	IB

V.D. Airborne Precautions

Edit [February 2017]

⚠ **Edit:** These recommendations contain minor edits in order to clarify the meaning. The edits do not constitute any change to the intent of the recommendations.
***** Indicates a change to the numbering system.
~ Indicates a text change.

#	Recommendation	Category
V.D.1.	Use Airborne Precautions as recommended in Appendix A for patients known or suspected to be infected with infectious agents transmitted person-to-person by the airborne route	IA/IC
V.D.2.	**Patient placement**	
V.D.2.a.	In **acute care hospitals** and **long-term care settings**, place patients who require Airborne Precautions in an AIIR that has been constructed in accordance with current guidelines	IA/IC
V.D.2.a.i.	Provide at least six (existing facility) or 12 (new construction/renovation) air changes per hour.	
V.D.2.a.ii.	Direct exhaust of air to the outside. If it is not possible to exhaust air from an AIIR directly to the outside, the air may be returned to the air-handling system or adjacent spaces if all air is directed through HEPA filters.	
V.D.2.a.iii.	Whenever an AIIR is in use for a patient on Airborne Precautions, monitor air pressure daily with visual indicators (e.g., smoke tubes, flutter strips), regardless of the presence of differential pressure sensing devices (e.g., manometers).	
V.D.2.a.iv.	Keep the AIIR door closed when not required for entry and exit.	
V.D.2.b.	When an AIIR is not available, transfer the patient to a facility that has an available AIIR	II
V.D.2.c.	In the event of an outbreak or exposure involving large numbers of patients who require Airborne Precautions: • Consult infection control professionals before patient placement to determine the safety of alternative room that do not meet engineering requirements for an AIIR. • Place together (cohort) patients who are presumed to have the same infection(based on clinical presentation and diagnosis when known) in areas of the facility that are away from other patients, especially patients who are at increased risk for infection (e.g., immunocompromised patients). • Use temporary portable solutions (e.g., exhaust fan) to create a negative pressure environment in the converted area of the facility. Discharge air directly to the outside, away from people and air intakes, or direct all the air through HEPA filters before it is introduced to other air spaces	II
V.D.2.d.	**In ambulatory settings:**	
V.D.2.d.i.	Develop systems (e.g., triage, signage) to identify patients with known or suspected infections that require Airborne Precautions upon entry into **ambulatory settings**	IA
V.D.2.d.ii.	Place the patient in an AIIR as soon as possible. If an AIIR is not available, place a surgical mask on the patient and place him/her in an examination room. Once the patient leaves, the room should remain vacant for the appropriate time, generally one hour, to allow for a full exchange of air	IB/IC
V.D.2.d.iii.	Instruct patients with a known or suspected airborne infection to wear a surgical mask and observe Respiratory Hygiene/Cough Etiquette. Once in an AIIR, the mask may be removed; the mask should remain on if the patient is not in an AIIR	IB/IC

#	Recommendation	Category
V.D.3.	**Personnel restrictions.** Restrict susceptible healthcare personnel from entering the rooms of patients known or suspected to have measles (rubeola), varicella (chickenpox), disseminated zoster, or smallpox if other immune healthcare personnel are available	IB
V.D.4.	**Use of PPE**	
V.D.4.a.	Wear a fit-tested NIOSH-approved N95 or higher level respirator for respiratory protection when entering the room or home of a patient when the following diseases are suspected or confirmed:	
* V.D.4.a.i.	• Infectious pulmonary or laryngeal tuberculosis or when infectious tuberculosis skin lesions are present and procedures that would aerosolize viable organisms (e.g., irrigation, incision and drainage, whirlpool treatments) are performed	IB
* V.D.4.a.ii.	• Smallpox (vaccinated and unvaccinated). Respiratory protection is recommended for all healthcare personnel, including those with a documented "take" after smallpox vaccination due to the risk of a genetically engineered virus against which the vaccine may not provide protection, or of exposure to a very large viral load (e.g., from high-risk aerosol-generating procedures, immunocompromised patients, hemorrhagic or flat smallpox	II
V.D.4.b.	**~ Suspected measles, chickenpox or disseminated zoster.** ⚠ **Interim Measles Infection Control [July 2019]** For current recommendations on face protection for measles, see Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings No recommendation is made regarding the use of PPE by healthcare personnel who are presumed to be immune to measles (rubeola) or varicella-zoster based on history of disease, vaccine, or serologic testing when caring for an individual with known or suspected measles, chickenpox or disseminated zoster, due to difficulties in establishing definite immunity	Unresolved issue
V.D.4.c.	**~ Suspected measles, chickenpox or disseminated zoster.** ⚠ **Interim Measles Infection Control [July 2019]** For current recommendations on face protection for measles, see Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings No recommendation is made regarding the type of personal protective equipment (i.e., surgical mask or respiratory protection with a N95 or higher respirator) to be worn by susceptible healthcare personnel who must have contact with patients with known or suspected measles, chickenpox or disseminated herpes zoster.	Unresolved issue
V.D.5.	**Patient transport**	
V.D.5.a.	In **acute care hospitals and long-term care and other residential settings**, limit transport and movement of patients outside of the room to medically-necessary purposes.	II
V.D.5.b.	If transport or movement outside an AIIR is necessary, instruct patients to wear a surgical mask, if possible, and observe Respiratory Hygiene/Cough Etiquette	II
V.D.5.c.	For patients with skin lesions associated with varicella or smallpox or draining skin lesions caused by *M. tuberculosis*, cover the affected areas to prevent aerosolization or contact with the infectious agent in skin lesions	IB
V.D.5.d.	Healthcare personnel transporting patients who are on Airborne Precautions do not need to wear a mask or respirator during transport if the patient is wearing a mask and infectious skin lesions are covered.	

#	Recommendation	Category
V.D.6.	**Exposure management** ⚠ **Interim Measles Infection Control [July 2019]** For current recommendations on face protection for measles, see Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings Immunize or provide the appropriate immune globulin to susceptible persons as soon as possible following unprotected contact (i.e., exposed) to a patient with measles, varicella or smallpox: • Administer measles vaccine to exposed susceptible persons within 72 hours after the exposure or administer immune globulin within six days of the exposure event for high-risk persons in whom vaccine is contraindicated • Administer varicella vaccine to exposed susceptible persons within 120 hours after the exposure or administer varicella immune globulin (VZIG or alternative product), when available, within 96 hours for high-risk persons in whom vaccine is contraindicated (e.g., immunocompromised patients, pregnant women, newborns whose mother's varicella onset was <5 days before or within 48 hours after delivery). • Administer smallpox vaccine to exposed susceptible persons within 4 days after exposure	IA
V.D.7.	Discontinue Airborne Precautions according to pathogen-specific recommendations in Appendix A.	IB
V.D.8.	Consult CDC's "Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005" and the "Guideline for Environmental Infection Control in Health-Care Facilities" for additional guidance on environment strategies for preventing transmission of tuberculosis in healthcare settings. The environmental recommendations in these guidelines may be applied to patients with other infections that require Airborne Precautions.	

V1. Protective Environment (Table 4)

#	Recommendation	Category
VI.A.	Place allogeneic hematopoietic stem cell transplant (HSCT) patients in a Protective Environment as described in the "Guideline to Prevent Opportunistic Infections in HSCT Patients," the "Guideline for Environmental Infection Control in Health-Care Facilities," and the "Guidelines for Preventing Health-Care-Associated Pneumonia, 2003" to reduce exposure to environmental fungi (e.g., *Aspergillus* spp.)	IB
VI.B.	No recommendation for placing patients with other medical conditions that are associated with increased risk for environmental fungal infections (e.g., aspergillosis) in a Protective Environment	Unresolved issue
VI.C.	For Patients Who Require a Protective Environment, Implement the Following (see Table 5)	

#	Recommendation	Category
VI.C.1.	**Environmental controls**	
VI.C.1.a.	Filter incoming air using central or point-of-use high efficiency particulate (HEPA) filters capable of removing 99.97% of particles ≥0.3 μm in diameter	IB
VI.C.1.b.	Direct room airflow with the air supply on one side of the room that moves air across the patient bed and out through an exhaust on the opposite side of the room	IB

#	Recommendation	Category
VI.C.1.c.	Ensure positive air pressure in room relative to the corridor (pressure differential of ≥2.5 Pa [0.01-in water gauge]) Update or clarification r14**Correction [April 2019]:** Pressure differential changed from ≥ 12.5 to ≥ 2.5.	IB
VI.C.1.c.i.	Monitor air pressure daily with visual indicators (e.g., smoke tubes, flutter strips)	IA
VI.C.1.d.	Ensure well-sealed rooms that prevent infiltration of outside air	IB
VI.C.1.e.	Ensure at least 12 air changes per hour	IB

#	Recommendation	Category
VI.C.2.	Lower dust levels by using smooth, nonporous surfaces and finishes that can be scrubbed, rather than textured material (e.g., upholstery). Wet dust horizontal surfaces whenever dust detected and routinely clean crevices and sprinkler heads where dust may accumulate	II
VI.C.3.	Avoid carpeting in hallways and patient rooms in areas	IB
VI.C.4.	Prohibit dried and fresh flowers and potted plants	II
VI.D.	Minimize the length of time that patients who require a Protective Environment are outside their rooms for diagnostic procedures and other activities	IB
VI.E.	During periods of construction, to prevent inhalation of respirable particles that could contain infectious spores, provide respiratory protection (e.g., N95 respirator) to patients who are medically fit to tolerate a respirator when they are required to leave the Protective Environment	II
* VI.E.1.a.	No recommendation for fit-testing of patients who are using respirators.	Unresolved issue
* VI.E.1.b.	No recommendation for use of particulate respirators when leaving the Protective Environment in the absence of construction.	Unresolved issue

#	Recommendation	Category
VI.F.	**Use of Standard and Transmission-Based Precautions in a Protective Environment.**	
VI.F.1.	Use Standard Precautions as recommended for all patient interactions.	IA
VI.F.2.	Implement Droplet and Contact Precautions as recommended for diseases listed in Appendix A. Transmission-Based precautions for viral infections may need to be prolonged because of the patient's immunocompromised state and prolonged shedding of viruses	IB
VI.F.3.	Barrier precautions, (e.g., masks, gowns, gloves) are not required for healthcare personnel in the absence of suspected or confirmed infection in the patient or if they are not indicated according to Standard Precautions	II
VI.F.4.	Implement Airborne Precautions for patients who require a Protective Environment room and who also have an airborne infectious disease (e.g., pulmonary or laryngeal tuberculosis, acute varicella-zoster).	IA
VI.F.4.a.	Ensure that the Protective Environment is designed to maintain positive pressure	IB
VI.F.4.b.	Use an anteroom to further support the appropriate air-balance relative to the corridor and the Protective Environment; provide independent exhaust of contaminated air to the outside or place a HEPA filter in the exhaust duct if the return air must be recirculated	IB
VI.F.4.c.	If an anteroom is not available, place the patient in an AIIR and use portable, industrial-grade HEPA filters in the room to enhance filtration of spores	II

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