

Transmission-based precautions, home care

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■ Introduction

Transmission-based precautions are infection prevention practices that may be required in addition to standard precautions for patients who have a confirmed or suspected infection with highly transmissible pathogens. (See the "[Standard precautions, home care](#)" procedure.) Although patients' homes aren't subject to the same degree of environmental controls as other health care settings,¹ nurses working in the home can implement measures to help prevent infection transmission, such as using appropriate personal protective equipment, dedicating patient care equipment to the infected patient, and implementing environmental control measures. The need for transmission-based (airborne, contact, or droplet) precautions depends primarily on the pathogen but also depends on the patient's ability to contain infectious substances.² More than one type of transmission-based precaution may be needed simultaneously.

Airborne precautions help prevent the spread of infectious droplet nuclei, which are small particles (less than 5 micrometers) suspended in the air and dispersed over long distances by air currents. Susceptible individuals may inhale these suspended particles even without having face-to-face contact with the source of the particles, such as the infected individual. Nurses who enter the home of a patient on airborne precautions must wear respiratory protection, typically a fit-tested disposable respirator, such as an N95 respirator or a high-efficiency particulate air (HEPA) respirator.^{3 4 5}

Contact precautions help prevent the transfer of microorganisms that spread through direct or indirect contact with a patient or the patient's environment. Effective contact precautions require the use of gloves and a gown by anyone who has contact with the patient, the patient's support equipment, or items that have come into contact with the patient or the patient's environment. Proper hand hygiene and handling and disposal of articles that have come into contact with the patient and the patient's environment are essential.³

Droplet precautions help prevent infectious pathogens from traveling from the respiratory tract of an infected person to the mucous membranes of a susceptible host. These pathogens, carried by respiratory droplets, spread when an infected person coughs, sneezes, or talks or during procedures such as suctioning. Anyone having direct contact with the patient or who will be within 3' (1 m) of the patient should wear a surgical or procedure mask over the nose and mouth.³ When exposure to a highly virulent pathogen is likely, wearing a mask when within 6' to 10' (2 m to 3 m) of the patient or upon entering the patient's care area offers further protection.³

◆ **Clinical alert:** For information on Coronavirus disease (COVID-19), please refer to the latest recommendations from the CDC, located at https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC_AA_refVal=https%253A%252F%252Fwww.cdc.gov%252Fcoronavirus%252F2019-ncov%252Fhpc%252Finfection-control.html, when caring for a patient with known or suspected Coronavirus disease.◆

■ Equipment

- Respirator (disposable N95 or higher level [such as HEPA])
- Supplies for hand hygiene (alcohol-based hand rub or soap and water)
- Single-patient-use equipment
- Facial tissues
- No-touch tissue disposal receptacle
- Gloves
- Gown
- Masks (surgical or procedure)
- Waste container lined with a plastic biohazard bag
- Written educational materials
- Optional: fluid-impermeable pad, agency-approved disinfectant, plastic bags

■ Preparation of Equipment

Check the integrity of personal protective equipment before putting it on *to prevent exposure to pathogens*.

■ Implementation

- Review the referral information, plan of care, and prior visit documentation, if available, *to determine the need for transmission-based precautions*.

- Schedule the visit with a patient on transmission-based precautions for the end of the day, whenever possible, *to reduce the risk of transmitting the infection to other patients.*²
- Gather and prepare the necessary equipment, supplies, and written educational materials. Dedicate single-patient-use equipment to a patient who requires transmission-based precautions whenever possible.^{1 2}
- If the patient requires airborne precautions, put on a fit-tested respirator according to the manufacturer's instructions and perform a respirator seal check before entering the home.^{4 5 6} (See the "[Personal protective equipment \[PPE\], putting on, home care](#)" procedure.)
- When you enter the patient's home, introduce yourself and state the purpose of your visit.
- Confirm the patient's identity using at least two patient identifiers.⁷
- Perform hand hygiene.^{8 9 10 11 12}
- Observe the physical layout of the patient's home *to determine the primary patient care area; the ability to close the door to the patient care area; and the presence or absence of a dedicated, private bathroom for the patient.* A patient on transmission-based precautions should ideally have a private bedroom and bathroom.^{3 13}
- Ask the patient and family about any recent changes in the patient's health status, including practitioner visits, tests, or changes in medications.
- Be alert for a patient with signs and symptoms of active infection, such as diarrhea, rash, respiratory symptoms, and draining wounds or skin lesions. Initiate transmission-based precautions in addition to standard precautions according to the clinical situation. Notify the practitioner of your findings.
- Explain transmission-based precautions to the patient and family (if appropriate) according to their individual communication and learning needs *to increase their understanding, allay their fears, and enhance cooperation.*^{14 15 16 17}
- Organize the equipment and supplies on a clean surface. Place a fluid-impermeable pad between the environment and the equipment, if needed.^{2 8 18}

Airborne precautions

- Implement airborne precautions for a patient with a known or suspected infection transmitted by the airborne route, including chickenpox (varicella), shingles (herpes zoster), measles (rubeola), and tuberculosis.²
- Encourage the patient to stay at home and remain in a private room with the door shut, if possible, until airborne precautions have been discontinued. If the patient must leave the room or home, advise the patient to wear a mask that covers the nose and mouth, if tolerated, *to reduce the likelihood of transmission.*^{3 4 19}
- Discourage contact between the patient and uninfected people who may be particularly vulnerable to the infection, such as young children and people who are immunocompromised, *to reduce the likelihood of exposure.* If such individuals live with the patient, segregate them to another part of the home. If they don't live with the patient, discourage visiting.^{3 19}
- Avoid performing cough-inducing or aerosol-generating procedures in the patient's home. If you must collect a sputum sample, perform the collection outdoors and away from other people, windows, and ventilation intakes.⁴
- Open windows and turn on window fans or air conditioners, as the weather permits, *to improve ventilation and dilute the concentration of infectious particles.*¹⁹
- Instruct the patient on respiratory hygiene and cough etiquette. Instruct the patient to cover the mouth and nose with a facial tissue when coughing or sneezing, to discard the tissue promptly in a no-touch disposal receptacle, and to perform hand hygiene.^{3 4 20}

Contact precautions

- Implement contact precautions for a patient with a known or suspected infection transmitted by direct or indirect contact. Such infections include draining wounds or lesions, conjunctivitis, impetigo, scabies, head lice (pediculosis), gastroenteritis (particularly for incontinent patients and those with norovirus, rotovirus, or *Clostridioides difficile* infection), and infection or colonization with a multidrug-resistant organism (such as methicillin-resistant *Staphylococcus aureus* and vancomycin-resistant *Enterococcus*).^{2 3}
- ♦ **Clinical alert:** Adherence to standard precautions alone may be sufficient protection against transmission of a multidrug-resistant organism if the infectious material is adequately contained (such as in a diaper or wound dressing), the patient and the environment are generally clean, and the patient and family are willing and able to implement infection control measures in the home.^{2 3} ♦
- Perform hand hygiene.^{8 9 10 11 12}

- Put on a gown and gloves before touching the patient, the patient's belongings, or anything in the patient's environment.^{[3] [21] [22] [23] [24] [25]}
- Avoid touching your face, body, or other surfaces or items not needed for direct patient care with your gloved hands *to reduce the risk of transmitting infectious organisms.*^{[3] [22] [23] [24] [25]}
- Ensure that wounds or lesions are covered with dressings sufficient to contain the drainage. If the patient is incontinent, ensure that the appropriate incontinence product is used *to contain feces or urine.*^[2]
- Change your gloves after contact with a contaminated body site, body fluids or excretions, mucous membranes, nonintact skin, or wound dressings. Perform hand hygiene after removing soiled gloves and before putting on new gloves.^{[8] [9] [10] [11] [12] [21] [23] [24] [25]}
- Instruct a patient with known or suspected infectious diarrhea to use a separate bathroom, if available. Instruct the patient or family members to clean and disinfect the bathroom before it's used by anyone else.^[3]
- Place waste contaminated by blood, body fluids, excretions, or secretions (such as soiled dressings and incontinence supplies) in a waste container lined with a plastic biohazard bag. Avoid overfilling the container.^{[3] [21]} (See the "[Visit-generated waste disposal, home care](#)" procedure.)
- Remove and discard your gloves carefully after completing direct patient care.^[21] (See the "[Personal protective equipment \[PPE\], removal, home care](#)" procedure.) Ensure that your clothing and skin don't come into contact with the patient or environment after you remove your personal protective equipment and before you leave the patient's home.^[2]
- Perform hand hygiene using soap and water when your hands are visibly soiled with blood or body fluids and after caring for a patient with known or suspected infectious diarrhea. Otherwise, use an alcohol-based hand rub for routine hand hygiene.^{[8] [9] [10] [11] [12]} (See the "[Hand hygiene, home care](#)" procedure.)

Droplet precautions

- Implement droplet precautions for a patient with a known or suspected infection transmitted by the droplet route. Such infections include seasonal influenza, mumps, German measles (rubella), whooping cough (pertussis), diphtheria, and diseases caused by group A *Streptococcus*, *Haemophilus influenzae* type b, *Neisseria meningitidis*, and *Mycoplasma pneumoniae*.^[3]
- Before entering the immediate patient care area, put on a mask. Secure the ear loops around your ears, or tie the strings in the middle of the back of your head and neck. Adjust the flexible metal nose strip to fit your nose bridge so that it fits firmly but comfortably. Make sure that the mask fits snugly on your face and below your chin.^{[3] [22] [26]}
- Encourage family members to wear a mask when in close contact with the patient *to reduce the risk of exposure.*^{[3] [13] [26]}
- Discourage contact between the patient and uninfected people who may be particularly vulnerable to the infection, such as young children and people who are immunocompromised, *to reduce the likelihood of exposure.* If such individuals live with the patient, segregate them to another part of the home. If they don't live with the patient, discourage visiting.^{[3] [13]}
- If the patient must leave the room or home, advise the patient to wear a mask that covers the nose and mouth, if tolerated, *to reduce the likelihood of transmission.*^{[3] [13] [26]}
- Instruct the patient on respiratory hygiene and cough etiquette. Instruct the patient to cover the mouth and nose with a facial tissue when coughing or sneezing, to discard the tissue promptly in a no-touch disposal receptacle, and to perform hand hygiene.^{[3] [20] [26]}
- Remove your mask carefully, and discard it when leaving the immediate patient care area. Untie the strings or remove the elastic bands, and handle the mask only by the strings or elastic bands *because the front of the mask is considered contaminated.*^{[3] [22]}

Completing the procedure

- Perform hand hygiene.^{[8] [9] [10] [11] [12]}
- If single-patient-use equipment wasn't available and reusable equipment was required, put on gloves^{[3] [8] [21] [27] [28]} and clean and disinfect reusable equipment according to the manufacturer's instructions.^{[29] [30] [31]} Use an agency-approved disinfectant (such as a 1:10 dilution of household bleach [5.25% sodium hypochlorite]) for resistant pathogens (such as norovirus, rotavirus, or *C. difficile*), as appropriate. Alternatively, place reusable equipment in a plastic bag for transport and subsequent cleaning and disinfection.^{[2] [3]} Then, remove and discard your gloves. Repeat hand hygiene.^{[8] [9] [10] [11] [12] [21]}
- Review progress toward the goals in the patient's plan of care with the patient and family, as appropriate.^{[32] [33]}

- Make arrangements for the next visit, as appropriate, and ensure that the patient and family have adequate supplies (such as gloves and masks) for self-care until then.
- Provide and review written educational materials, the visit schedule, and contact information in case concerns arise between visits.^{34 35 36 37}
- If the patient requires airborne precautions, remove your respirator immediately after leaving the patient's home. When removing the respirator, touch only the headbands *because the front of the respirator is considered contaminated*. Dispose of the respirator appropriately, and perform hand hygiene.^{3 5 8 9 10 11 12 22}
- Report any changes in the patient's condition and progress toward goals to the practitioner, as appropriate.^{38 39 40 41}
- Coordinate care with other services, as appropriate.^{42 43 44 45} Be sure to inform other clinicians of the needed transmission-based precautions.^{1 3}
- Document the procedure.^{46 47 48 49}

■ Special Considerations

- Susceptible nurses shouldn't enter the home of a patient who is known or suspected to have measles, chickenpox, shingles, or other vaccine-preventable airborne diseases. Instead, a nurse who is immune to the disease should care for the patient.³
- Respirator fit testing is performed initially and then periodically at a frequency determined by federal, state, and local regulations *to ensure adequate protection from airborne pathogens*. Respirator fit testing should also be performed with changes in physical features that may affect the respirator fit (such as scarring, weight loss or gain, or dental changes).^{4 6}

■ Patient Teaching

Instruct the patient and family on infection control measures, including meticulous hand hygiene and the use of personal protective equipment. Instruct them to clean the home environment routinely, paying particular attention to repeatedly touched items, such as doorknobs, light switches, and toilet handles. Advise them to launder the patient's towels, bed linens, and clothing frequently and to avoid sharing towels, dishware, and eating utensils.^{2 3 13}

■ Complications

Social isolation is a potential complication of transmission-based precautions. Failure to adhere to proper infection prevention measures may result in disease transmission.

■ Documentation

Record the type of transmission-based precautions required. Document the initiation and maintenance of the precautions and the patient's tolerance of the procedure. Document teaching provided to the patient and family (if appropriate), their understanding of that teaching, and any need for follow-up teaching. Note the date and time transmission-based precautions were discontinued, as appropriate.

This procedure has been co-developed and reviewed by
the National Association for Home Care & Hospice.



■ References

[\(Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions\)](#)

1. Kenneley, I. (2012). Infection control in home healthcare: An exploratory study of issues for patients and providers. *Home Healthcare Nurse*, 30, 235–245. (Level VI)
2. McGoldrick, M. (2009). Management of the patient with a multidrug-resistant organism in the home: Standard precautions vs. contact precautions. *Caring*, 28(5), 14–18.
3. Siegel, J. D., et al. (2007, revised 2019). "2007 guideline for isolation precautions: Preventing transmission of infectious agents in healthcare settings" [Online]. Accessed January 2020 via the Web at <https://www.cdc.gov/infectioncontrol/pdf/guidelines/isolation-guidelines-H.pdf> (Level II)

4. Centers for Disease Control and Prevention. (2005). Guidelines for preventing the transmission of *Mycobacterium tuberculosis* in health-care settings, 2005. *MMWR Recommendations and Reports*, 54(RR-17), 1–141. Accessed January 2020 via the Web at <https://www.cdc.gov/mmwr/PDF/rr/rr5417.pdf> (Level I)
5. Centers for Disease Control and Prevention. (2010). "How to properly put on and take off a disposable respirator" [Online]. Accessed January 2020 via the Web at <https://www.cdc.gov/niosh/docs/2010-133/pdfs/2010-133.pdf> (Level VII)
6. Occupational Safety and Health Administration. (2011). "Standard number 1910.134: Respiratory protection" [Online]. Accessed January 2020 via the Web at <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134> (Level VII)
7. The Joint Commission. (2020). Standard NPSG.01.01.01. *Comprehensive accreditation manual for home care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
8. Accreditation Commission for Health Care. (2019). Standard HH7-1A. *ACHC accreditation standards*. Cary, NC: Accreditation Commission for Health Care. (Level VII)
9. Centers for Disease Control and Prevention. (2002). Guideline for hand hygiene in health-care settings: Recommendations of the Healthcare Infection Control Practices Advisory Committee and the HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force. *MMWR Recommendations and Reports*, 51(RR-16), 1–45. Accessed January 2020 via the Web at <https://www.cdc.gov/mmwr/pdf/rr/rr5116.pdf> (Level II)
10. Community Health Accreditation Partner. (2018, updated 2019). Standard IPC.3.I.M1. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)
11. The Joint Commission. (2020). Standard NPSG.07.01.01. *Comprehensive accreditation manual for home care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
12. World Health Organization. (2009). "WHO guidelines on hand hygiene in health care: First global patient safety challenge, clean care is safer care" [Online]. Accessed January 2020 via the Web at https://apps.who.int/iris/bitstream/handle/10665/44102/9789241597906_eng.pdf?sequence=1 (Level IV)
13. Martin, S. D. (2006). Infection control matters in home healthcare. *Home Healthcare Nurse*, 24, 485–486.
14. Accreditation Commission for Health Care. (2019). Standard HH2-8A. *ACHC accreditation standards*. Cary, NC: Accreditation Commission for Health Care. (Level VII)
15. Community Health Accreditation Partner. (2018, updated 2019). Standard APC.8.I.M1. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)
16. Centers for Medicare and Medicaid Services, Department of Health and Human Services. (2019). Condition of participation: Patient rights. 42 C.F.R. § 484.50(f).
17. The Joint Commission. (2020). Standard RI.01.01.03. *Comprehensive accreditation manual for home care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
18. Community Health Accreditation Partner. (2018, updated 2019). Standard IPC.6.I.M1. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)
19. Jarvis, M. (2010). Tuberculosis: Infection control in hospital and at home. *Nursing Standard*, 25(2), 41–47.
20. Centers for Disease Control and Prevention. (2009). "Respiratory hygiene/cough etiquette in healthcare settings" [Online]. Accessed January 2020 via the Web at <https://www.cdc.gov/flu/professionals/infectioncontrol/resphgiene.htm> (Level VII)
21. Occupational Safety and Health Administration. (2012). "Bloodborne pathogens, standard number 1910.1030" [Online]. Accessed January 2020 via the Web at https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=10051&p_table=STANDARDS (Level VII)
22. Centers for Disease Control and Prevention. (n.d.). "Guidance for the selection and use of personal protective equipment (PPE) in healthcare settings" [Online]. Accessed January 2020 via the Web at <https://www.cdc.gov/HAI/pdfs/ppe/PPEslides6-29-04.pdf> (Level VII)
23. Pang, V., et al. (2014). How to use personal protective equipment. *Nursing Times*, 11(51), 14–16. Accessed January 2020 via the Web at <https://www.nursingtimes.net/clinical-archive/infection-control/how-to-use-personal-protective-equipment-12-12-2014/>
24. McGoldrick, M. (2015). Personal protective equipment. *Home Healthcare Now*, 33, 112–113.
25. World Health Organization. (2009). "Glove use information leaflet" [Online]. Accessed January 2020 via the Web at https://www.who.int/gpsc/5may/Glove_Use_Information_Leaflet.pdf
26. Centers for Disease Control and Prevention. (2018). "Prevention strategies for seasonal influenza in healthcare settings" [Online]. Accessed January 2020 via the Web at <https://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm> (Level VII)
27. Community Health Accreditation Partner. (2018, updated 2019). Standard IPC.1.I.M1. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)

28. The Joint Commission. (2020). Standard IC.02.01.01. *Comprehensive accreditation manual for home care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
29. Accreditation Commission for Health Care. (2019). Standard HH7-9A.01. *ACHC accreditation standards*. Cary, NC: Accreditation Commission for Health Care. (Level VII)
30. Community Health Accreditation Partner. (2018, updated 2019). Standard IPC.5.I. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)
31. The Joint Commission. (2020). Standard IC.02.02.01. *Comprehensive accreditation manual for home care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
32. Accreditation Commission for Health Care. (2019). Standard HH5-3A. *ACHC accreditation standards*. Cary, NC: Accreditation Commission for Health Care. (Level VII)
33. Community Health Accreditation Partner. (2018, updated 2019). Standard APC.7.I.M1. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)
34. Accreditation Commission for Health Care. (2019). Standard HH5-3C. *ACHC accreditation standards*. Cary, NC: Accreditation Commission for Health Care. (Level VII)
35. Community Health Accreditation Partner. (2018, updated 2019). Standard APC.8.I.M3. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)
36. Centers for Medicare and Medicaid Services, Department of Health and Human Services. (2019). Condition of participation: Care planning, coordination of services, and quality of care. 42 C.F.R. § 484.60(e).
37. The Joint Commission. (2020). Standard PC.02.03.01. *Comprehensive accreditation manual for home care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
38. Accreditation Commission for Health Care. (2019). Standard HH5-8B. *ACHC accreditation standards*. Cary, NC: Accreditation Commission for Health Care. (Level VII)
39. Community Health Accreditation Partner. (2018, updated 2019). Standard APC.9.I.M3. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)
40. Centers for Medicare and Medicaid Services, Department of Health and Human Services. (2019). Condition of participation: Care planning, coordination of services, and quality of care. 42 C.F.R. § 484.60(c)(1).
41. The Joint Commission. (2020). Standard PC.02.01.05. *Comprehensive accreditation manual for home care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
42. Accreditation Commission for Health Care. (2019). Standard HH5-4A. *ACHC accreditation standards*. Cary, NC: Accreditation Commission for Health Care. (Level VII)
43. Community Health Accreditation Partner. (2018, updated 2019). Standard APC.9.I.M4. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)
44. Centers for Medicare and Medicaid Services, Department of Health and Human Services. (2019). Condition of participation: Care planning, coordination of services, and quality of care. 42 C.F.R. § 484.60(d)(3).
45. The Joint Commission. (2020). Standard PC.02.02.01. *Comprehensive accreditation manual for home care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)
46. Accreditation Commission for Health Care. (2019). Standard HH5-1A. *ACHC accreditation standards*. Cary, NC: Accreditation Commission for Health Care. (Level VII)
47. Community Health Accreditation Partner. (2018, updated 2019). Standard IM.7.I.M1. *Home health standards of excellence*. Washington, DC: The Community Health Accreditation Program, Inc. (Level VII)
48. Centers for Medicare and Medicaid Services, Department of Health and Human Services. (2019). Condition of participation: Clinical records. 42 C.F.R. § 484.110(a).
49. The Joint Commission. (2020). Standard RC.01.03.01. *Comprehensive accreditation manual for home care*. Oakbrook Terrace, IL: The Joint Commission. (Level VII)

■ Additional References

- Anderson, D. J. Infection prevention: Precautions for preventing transmission of infection. (2019). In: *UpToDate*, Harris, A., & Sullivan, M. (Eds.). [UpToDate Full Text](#)
- McGoldrick, M. (2015). Infection prevention: Management of the individual in the home suspected of having exposure to the Ebola virus. *Home Healthcare Now*, 33, 222–225.

Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions

The following leveling system is from *Evidence-Based Practice in Nursing and Healthcare: A Guide to Best Practice* (2nd ed.) by Bernadette Mazurek Melnyk and Ellen Fineout-Overholt.

Level I: Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)

Level II: Evidence obtained from well-designed RCTs

Level III: Evidence obtained from well-designed controlled trials without randomization

Level IV: Evidence from well-designed case-control and cohort studies

Level V: Evidence from systematic reviews of descriptive and qualitative studies

Level VI: Evidence from single descriptive or qualitative studies

Level VII: Evidence from the opinion of authorities and/or reports of expert committees

Modified from Guyatt, G. & Rennie, D. (2002). Users' Guides to the Medical Literature. Chicago, IL: American Medical Association; Harris, R.P., Hefland, M., Woolf, S.H., Lohr, K.N., Mulrow, C.D., Teutsch, S.M., et al. (2001). Current Methods of the U.S. Preventive Services Task Force: A Review of the Process. American Journal of Preventive Medicine, 20, 21-35.