

Epidemic- and pandemic-prone acute respiratory diseases

Infection prevention and control in health care

Background

In an era of emerging and re-emerging communicable disease threats, the importance of infection prevention and control measures in health-care settings to avoid amplification of outbreaks should not be underestimated. The main mode of transmission of most acute respiratory diseases (ARDs) is through droplets from a source patient who coughs or sneezes. Transmission can also occur through contact (including hand contamination with respiratory secretions followed by self-inoculation of conjunctiva or the mucosa of the nose or mouth) and through spread of fine infectious respiratory aerosols at short range during aerosol-generating procedures.

Because many symptoms of ARDs are non-specific and rapid diagnostic tests are not always available, the etiology is often not known immediately. Therefore, health-care facilities face the challenge of providing care for patients with ARDs of known and unknown etiology and modes of transmission. It is critical that health-care workers use appropriate infection control precautions when providing care for such patients to minimize the possibility of transmission of infection to themselves, other health-care workers, patients, and visitors.

Some ARDs can cause large-scale outbreaks, outbreaks with high morbidity and mortality, and may constitute a public health emergency of international concern. Additional protective measures are indicated for ARDs of potential concern such as SARS, human cases of avian influenza or a novel pathogen for which no information on the mode of transmission is available.

Important advice

- The most important elements of these infection control precautions are protection of the mucosa of mouth and nose, and hand hygiene. If there is a risk of splashes or sprays to the face, the mucosa of the eyes (conjunctivae) should also be protected.
- Administrative controls, including early detection, isolation and reporting, and establishment of an infection control infrastructure, are key components to contain and mitigate the impact of pathogens which may constitute a major public health threat.
- Environmental/engineering controls, such as adequate ventilation, proper patient placement, and adequate environmental cleaning can help reduce the spread of some respiratory pathogens during health care.

✓ Personal protective equipment (PPE) and hand hygiene checklist

The basic measures necessary when providing direct close care for patients with ARDs are:

- hand hygiene with soap and water or an alcohol-based hand rub;
- medical mask;
- use face protection if there is a risk of splashes on the face. Use either (1) medical mask and eye-visor or goggles, or (2) a face shield.

For patients suspected to be infected with an ARD that may also be transmitted via contact, add:

- clean, non-sterile, long-sleeved gown; and
- clean gloves which should cover the cuffs of the gown. For certain invasive procedures (i.e. bronchoscopy, intubation, aspiration of respiratory tract) the gloves may need to be sterile.

Use a particulate respirator for:

- aerosol-generating procedures associated with increased risk of infection transmission (e.g. aspiration of respiratory tract, intubation, resuscitation, bronchoscopy, autopsy);
- all interactions with patients suspected to be infected with a novel ARD causing high morbidity and mortality.

For more details, see **Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care** available at http://www.who.int/csr/resources/publications/WHO_CD_EPR_2007_6/en/index.html



World Health
Organization

Infection prevention and control for acute respiratory diseases in health-care facilities

KEY STRATEGIES

Administrative controls, source control, environmental and engineering controls, and the use of personal protective equipment (PPE) according to routine and additional infection control precautions.

Key strategies

Administrative controls

- Infection control structure (infection control committee, trained infection control professionals) and policies (e.g. guidelines).
- Provision of adequate staff and supplies, education of health-care workers, patients, and visitors.

Source control: Respiratory hygiene or cough etiquette

- Health-care workers, patients and family members should cover mouth and nose when coughing and perform hand hygiene afterwards.

Environmental and engineering controls

- Keep distance of ≥ 1 m between patients.
- Keep spaces well ventilated through natural (e.g. open windows) or mechanical ventilation.
- Clean soiled and/or frequently touched surfaces regularly.

ARD of potential concern (e.g. avian influenza, SARS)

Early recognition and reporting of ARDs that may be epidemic- or pandemic-prone

- Immediately inform public health authorities.
- Public health authorities to inform health-care facilities of unusual ongoing events in the community/ other hospitals.

Patient placement

- Place patient in a separate well ventilated room.
- If there are insufficient single rooms, group patients with same diagnosis and maintain spatial separation of at least 1 metre between patients.

Infection control precautions when providing care for SARS and avian influenza patients

- Perform adequate hand hygiene and use gloves, gown, medical mask and eye protection.
- Limit numbers of health-care workers/family members/visitors exposed to ARD patients.

Routine and additional specific Infection control precautions for ARD patients

Routine infection control precautions

To be promoted in all health-care settings for caring of all patients.

- Standard Precautions¹ are the basic infection control precautions designed to minimize direct unprotected exposure to blood, body fluids or secretions.

Additional specific infection control precautions

For care of all febrile ARD patients

- Health-care workers should use medical masks whenever providing close contact care.
- Keep distance (at least 1 m) between patients.
- Placement of patients with same diagnosis in designated areas may facilitate the application of infection control precautions.

Providing care for paediatric ARD patients during peak seasons of specific respiratory infections (e.g. respiratory syncytial virus, parainfluenza virus, and adenovirus)

- Whenever possible, health-care workers should use medical masks, gowns and gloves when providing close contact care and change them between patients.
- Keep distance (at least 1 m) between patients.
- Placement of patients with same diagnosis in designated areas may facilitate the application of infection control precautions.

¹ See **Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care** available at http://www.who.int/csr/resources/publications/WHO_CD_EPR_2007_6/en/index.html