

Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care

WHO Interim Guidelines

June 2007



Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care

WHO Interim Guidelines

June 2007

Guidance updates

- The present guidelines supersede the document “*Hospital Infection Control Guidance for Severe Acute Respiratory Syndrome (SARS)*”, revised 24 April 2003, previously available at <http://www.who.int/csr/sars/infectioncontrol/en/>
- These guidelines relate to, and can be used in conjunction with, the document “*Avian Influenza, Including Influenza A (H5N1): WHO Interim Infection Control Guidelines for Health-care Facilities*” published by the WHO Regional Office for the Western Pacific on 10 March 2004, and updated in May 2007, available at http://www.who.int/csr/disease/avian_influenza/guidelines/infectioncontrol1/en/index.html
- Please make sure the version being used is the most recent version available at: <http://www.who.int/csr/resources/publications/csrpublications/en/index7.html>.
- After the conclusion of the pilot tests, to be conducted in 200/2008, a revised version of these guidelines will be published.
- In the event of new epidemics or pandemics, additional recommendations will be forthcoming.

© World Health Organization 2007

All rights reserved.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

Contents

| | |
|---|-----------|
| Foreword | 3 |
| Acknowledgements | 4 |
| I. List of acronyms and definition of terms used in the document | 5 |
| II. Executive summary | 10 |
| III. Introduction and scope of the guidelines | 12 |
| III.1 ARDs in health care | 12 |
| III.2 Scope of the current guidelines..... | 12 |
| III.3 ARDs that may constitute a public health emergency of international concern covered in the current document..... | 13 |
| III.3.1 Severe acute respiratory syndrome (SARS)..... | 13 |
| III.3.2 New influenza virus causing human infection | 13 |
| III.3.3 Novel ARD with potential to have a high public health impact..... | 13 |
| III.4 Infection control guiding principles..... | 14 |
| III.5 Environmental ventilation..... | 15 |
| IV. Infection prevention and control recommendations | 16 |
| IV.1 Early recognition, isolation, reporting, and surveillance of episodes of ARD of potential international public health concern | 16 |
| IV.2 Administrative control strategies for HCFs..... | 21 |
| IV.2.1 Isolation precautions | 22 |
| IV.2.2 Cohorting and special measures..... | 22 |
| IV.2.3 Transport of patients inside and outside HCFs | 23 |
| IV.2.4 Duration of infection control precautions and patient discharge | 24 |
| IV.2.5 Family member/visitor recommendations..... | 25 |
| IV.2.6 Specimen collection/transport/handling within HCFs | 26 |
| IV.2.7 Occupational health..... | 27 |
| IV.3 Engineering and environmental control for ARDs..... | 28 |
| IV.3.1 Placement of patients with ARDs | 28 |
| IV.3.2 Design of triage and waiting areas | 29 |
| IV.3.3 Corridors | 29 |
| IV.4 PPE use | 29 |
| IV.4.1 Rational use of PPE..... | 29 |
| IV.5 Care of the deceased | 31 |
| IV.5.1 Removal of the body from the isolation room/area..... | 31 |

| | |
|--|-----------|
| IV.5.2 Mortuary care..... | 31 |
| IV.5.3 Postmortem examination..... | 31 |
| IV.5.4 Engineering and environmental controls for autopsy | 32 |
| V. Environmental ventilation for respiratory infections..... | 33 |
| V.1 General concepts and principles | 34 |
| V.2 Use of natural ventilation in isolation rooms | 35 |
| V.3 Use of exhaust fans in isolation rooms | 38 |
| V.4 Use of mechanical ventilation in isolation rooms..... | 38 |
| V.5 Conclusions..... | 39 |
| VI. HCF preparedness planning for ARD epidemics..... | 40 |
| Annex A. Respiratory protection..... | 43 |
| Annex B. Principles and design of natural ventilation | 48 |
| Annex C. Routine and specific infection control precautions | 53 |
| Annex D. Sample checklist assessment of environmental conditions for home care of patients with ARDs of potential concern..... | 60 |
| Annex E. Sample HCW influenza-like illness monitoring form for HCW exposed to patients with ARDs of potential concern..... | 61 |
| Annex F. Isolation rooms/areas | 62 |
| Annex G. Mortuary care and postmortem examination..... | 67 |
| Annex H. Use of disinfectants: alcohol and bleach | 69 |
| Annex I. Surge capacity: HCF PPE needs during epidemics/pandemics..... | 71 |
| Annex J. Cleaning and disinfection of respiratory equipment..... | 74 |
| Annex K. Infection control across the continuum of health care | 76 |
| References..... | 79 |

Foreword

The purpose of this document is to provide infection control guidance to help prevent the transmission of acute infectious respiratory diseases during health care, with emphasis on acute respiratory diseases that may constitute a public health emergency of international concern as defined in the International Health Regulations (2005; Annex 1). Managers of health-care facilities may also consider using this guidance to assist them in preparation for epidemics and pandemics.

This document is intended to be used by government planners, health-care facility administrators, infection control professionals, occupational health specialists, other professionals involved in patient care and direct care providers.

The infection control advice provided in the guidelines is based on available information on the main routes of transmission of pathogens, and is intended to provide guidance for continuous and sustainable improvement in safety of health care. These guidelines are designed to offer Member States a conceptual framework for individual adaptation according to local regulations, settings, needs and resources. Health-care facilities are encouraged to review the recommendations and to adapt them accordingly.

The guidelines were developed after performing a systematic review of the scientific literature (in English) identified through PubMed (US National Library of Medicine) and the Cochrane Library, and secondary papers (in English, and also in Chinese, French, Portuguese and Spanish) identified from existing relevant guidelines. International and national infection control guidelines and infection control textbooks were also consulted. The document has undergone internal and external peer reviews. The Guideline Steering Group¹ evaluated the comments suggested by the reviewers providing guidance when opinions differed, and oversaw the incorporation of amendments and finalization of the document.

Pilot tests of the guidelines will be conducted in 2007 and 2008 in each of the six WHO Regions to help provide local data on clarity of the document and generate information on resources required to carry out the recommendations, feasibility, and validity of the interventions concerned. The pilot tests may also help provide information for implementation and dissemination strategies. The guidelines will be reviewed and updated after the conclusion of the pilot tests.

As in many other areas, the knowledge on modes of transmission of respiratory diseases is evolving rapidly. In addition, case surveillance and case and contact investigation are critical in defining and identifying changes in the epidemiology of human infections and will continue to inform infection control recommendations. Modifications to these guidelines will be made, as necessary, as additional information becomes available.

¹ **Guideline Steering Group:** Denise Mary Cardo, CDC, Atlanta, USA; Cathryn Murphy, Infection Plus, Australia; Fernando Otaiza, Ministry of Health, Chile; Shirley Paton, Public Health Agency, Canada; Carmem L Pessoa-Silva, WHO/EPR; Cathy Roth, WHO/EPR; Wing-Hong Seto, Queen Mary Hospital, China, Hong Kong SAR. All external experts have signed the declaration of interests in accordance with WHO policy and are available on request.

Acknowledgements

This document is the product of collaborative efforts across WHO, led by the Department of Communicable Disease Surveillance and Response at the WHO Regional Office for the Western Pacific and the Department of Epidemic and Pandemic Alert and Response at WHO Headquarters, with significant input from the staff at other WHO regional offices, and from many partners working in collaboration with WHO worldwide.

WHO wishes to thank the Department of International Cooperation of Italy's Ministry of Foreign Affairs, the Swiss Humanitarian Aid Agency of the Federal Department of Foreign Affairs, the Alfred P. Sloan Foundation, the United States Centers for Disease Control and Prevention, and the United States Agency for International Development for their generous financial support for the development and publication of this document.

WHO wishes to acknowledge with gratitude the commitment of experts from all over the world who contributed to the preparation of this document:

Michael Bell, Maureen Birmingham, Denise Mary Cardo, Mary Chamberland, Yves Chartier, Patricia Ching, Gerald Dziekan, Ana Estrela, Pierre Formenty, Keiji Fukuda, Paul Gully, Kathleen Harriman, Frederick Hayden, Suzanne Hill, Stéphane Hugonnet, William R Jarvis, Dominique Legros, Yuguo Li, Marlo Libel, Jose C Martines, Ziad A Memish, Sylvie Mortier, Cathryn Murphy, Fernando Otaiza, Ulysses Panisset, Shirley Paton, Carmem L Pessoa-Silva, Nicoletta Previsani, Sue Resnik, Guenaël RM Rodier, Victor D Rosenthal, Cathy Roth, Michael J Ryan, Sharon Salmon, Wing-Hong Set, Nikki Shindo, Gail Thomson, Teresa KF Wang, Martin W Weber, Susan Wilburn, Rosamund Williams.

Editors

Carmem L Pessoa-Silva, Wing-Hong Seto.

Writing committee

(responsible for drafting and finalizing the document)

Patricia Ching, Kathleen Harriman, Yuguo Li, Carmem L Pessoa-Silva, Wing-Hong Seto, Teresa KF Wang.

Guideline steering group

(responsible for overseeing the process of developing the document)

Denise Mary Cardo, Cathryn Murphy, Fernando Otaiza, Shirley Paton, Carmem L Pessoa-Silva, Cathy Roth, Wing-Hong Seto.

External peer review board

(experts responsible for external technical review)

Michael Bell, Mary Chamberland, Stéphane Hugonnet, William R Jarvis, Ziad A Memish, Sue Resnik, Victor D Rosenthal.

Administrative and secretarial support

Sylvie Mortier

Technical editing

Rosamund Williams

I. List of acronyms and definition of terms used in the document

Acronyms

| | |
|-----------|---|
| ACH | air changes per hour |
| AORN | Professional Organization of Perioperative Registered Nurses (USA) |
| ARD | acute respiratory disease |
| ASTM | American Society for Testing and Materials (former name) |
| BFE | bacterial filtration efficiency |
| BiPAP | bilevel positive airway pressure |
| BSL | biosafety level |
| CDC(US) | Centers for Disease Control and Prevention, Atlanta, United States of America |
| CE | Conformité Européenne (European Conformity) |
| Co-V | coronavirus |
| CPAP | continuous positive airway pressure |
| EU | European Union |
| FDA | Food and Drug Administration (United States of America) |
| FFP | filtering face piece |
| HCF | health-care facility |
| HCW | health-care worker |
| HVAC | heating, ventilation, and air conditioning |
| IHR | International Health Regulations |
| ILI | influenza-like illness |
| NIOSH(US) | National Institute for Occupational Safety and Health |

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_28088

