

## FRAMEWORK AND TOOLKIT FOR INFECTION PREVENTION AND CONTROL IN OUTBREAK PREPAREDNESS, READINESS AND RESPONSE AT THE NATIONAL LEVEL



# FRAMEWORK AND TOOLKIT FOR INFECTION PREVENTION AND CONTROL IN OUTBREAK PREPAREDNESS, READINESS AND RESPONSE AT THE NATIONAL LEVEL



Framework and toolkit for infection prevention and control in outbreak preparedness, readiness and response at the national level

ISBN 978-92-4-003272-9 (electronic version) ISBN 978-92-4-003273-6 (print version)

#### © World Health Organization 2021

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <u>https://creativecommons.org/licenses/by-nc-sa/3.0/igo</u>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization (<u>http://www.wipo.int/amc/en/mediation/rules/</u>).

**Suggested citation.** Framework and toolkit for infection prevention and control outbreak preparedness, readiness and response at the national level. Geneva: World Health Organization; 2021. Licence: <u>CC BY-NC-SA 3.0 IGO</u>.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

**Sales, rights and licensing.** To purchase WHO publications, see <u>http://apps.who.int/bookorders</u>. To submit requests for commercial use and queries on rights and licensing, see <u>https://www.who.int/copyright</u>.

**Third-party materials.** If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

**General disclaimers.** 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 WHO 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 and dashed 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 WHO 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 WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

## CONTENTS

Acknowledgements Abbreviations Glossary	iv v vi
Background Methodology	<b>1</b> 1
Scope and target audience Objectives	<b>2</b> 2
<b>Description of the framework and toolkit, instructions for use</b> Considerations when using this framework and toolkit Future considerations	<b>3</b> 5 5
Phase 1 Framework: Outbreak preparedness	7
1A. Immediate actions	10
1B. Early actions 1C. Advanced actions	19 21
TC. Advanced actions	ZI
Phase 2 Framework: Outbreak readiness	23
2A. Immediate actions	25
2B. Early actions	32
2C. Advanced actions	33
Phase 3 Framework: Outbreak response	35
3A. Immediate actions	37
3B. Early actions	44
3C. Advanced actions	45
Toolkit for all phases: Resources	47
Bibliography	59
Annex: Literature review	69

### ACKNOWLEDGEMENTS

#### Overall coordination, writing and design of the document

Natasha Bagdasarian (World Health Organization (WHO) Health Emergencies Programme), led the writing of the document and conducted the literature review; April Baller (WHO Health Emergencies Programme) coordinated and led the development of the document; Fernanda C. Lessa (United States Centers for Disease Control and Prevention) contributed to the development of the document and the literature review; Alessandro Maddedu (Maraltro) oversaw the design of the document; Maria Clara Padoveze (School of Nursing, University of São Paulo) contributed to the development of the document and the literature review and Paul Schumacher (WHO Health Emergencies Programme) provided project management support.

#### **Expert Review Group - WHO**

Benedetta Allegranzi (WHO Headquarters, Integrated Health Services); Hanan Balkhy (WHO Headquarters, Antimicrobial Resistance Division); Alessandro Cassini (WHO Headquarters, Integrated Health Services); Ana Paula Coutinho (WHO Regional Office for Europe, Infectious Hazards Management); Christine Francis (WHO Headquarters, Antimicrobial Resistance Division); Babacar Ndoye (Infection Prevention and Control Consultant for the WHO Regional Office for Africa); Stephen Nurse-Findlay (WHO Headquarters, Antimicrobial Resistance Division); Sharon Salmon (WHO Regional Office for the Western Pacific); Alice Simniceanu (WHO Health Emergiencies Programme); Anthony Twyman (WHO Headquarters, Integrated Health Services); Joao Toledo (Pan American Health Organization) and Vicky Willet (WHO Health Emergencies Programme).

#### **External Peer Review Group**

Kathy Dunn (Public Health Agency of Canada); Dale Fisher (National University of Singapore); Catalina Ramírez Hernández (Costa Rican Social Security Fund); Kushlani Jayatilleke (Sri Jayewardenepura General Hospital, Nugegoda, Sri Lanka); Margaret Leong (Ministry of Health and Medical Services, Fiji); Ljiljana Markovic-Denic (University of Belgrade, Serbia); Rajeev P Nagassar (The Eastern Regional Health Authority, Trinidad and Tobago); Fernando Otaiza (Ministry of Health of Chile); Benjamin Park (United States Centers for Disease Control and Prevention (CDC)); Francini Placencia (Ministerio de Salud, República Dominicana); Mitchell J Schwaber (National Center for Infection Control, Israel Ministry of Health); Sara Tomczyk (Robert Koch Institute, Deutschland); Rossitza Vatcheva-Dobrevska (University Hospital "Queen Joanna"-ISUL, Sofia, Bulgaria); Katie Wilson (CDC); Jadwiga Wojkowska-Mach (Jagiellonian University Medical School, Krakow) and Peta-Anne Zimmerman (Griffith University, Queensland, Australia).

Contributors listed in alphabetical order.

#### **Financial support**

Funding for the development of this document was provided by the US Centers for Disease Control and Prevention (CDC) in addition to WHO funds. The views and conclusions of this document do not necessarily represent the official position of the CDC.

## **ABBREVIATIONS**

ABHR	alcohol-based hand rub
AMR	antimicrobial resistance
CDNA	Communicable Diseases Network Australia
CDC	United States Centers for Disease Control and Prevention
COVID-19	coronavirus disease
ECDC	European Centre for Disease Prevention and Control
EVD	Ebola virus disease
HCF	health care facility
нсw	health care worker
нн	hand hygiene
ICU	intensive care unit
ІНМ	infectious hazard management
IMS	incidence management system
IPC	infection prevention and control
IPCAF	infection prevention and control assessment framework
IPCAT	infection prevention and control assessment tool
MDRO	multidrug-resistant organisms
MDRO MERS-CoV	multidrug-resistant organisms Middle East respiratory syndrome coronavirus
MERS-CoV	Middle East respiratory syndrome coronavirus
MERS-CoV MoH	Middle East respiratory syndrome coronavirus ministry of health
MERS-CoV MoH MSF	Middle East respiratory syndrome coronavirus ministry of health Médecins Sans Frontières
MERS-CoV MoH MSF NGO	Middle East respiratory syndrome coronavirusministry of healthMédecins Sans Frontièresnon-governmental organization
MERS-CoV MoH MSF NGO PAHO	Middle East respiratory syndrome coronavirusministry of healthMédecins Sans Frontièresnon-governmental organizationPan American Health Organization
MERS-CoV MoH MSF NGO PAHO PPE	Middle East respiratory syndrome coronavirusministry of healthMédecins Sans Frontièresnon-governmental organizationPan American Health Organizationpersonal protective equipment
MERS-CoV MoH MSF NGO PAHO PPE RCCE	Middle East respiratory syndrome coronavirusministry of healthMédecins Sans Frontièresnon-governmental organizationPan American Health Organizationpersonal protective equipmentrisk communication and community engagement
MERS-CoV MoH MSF NGO PAHO PPE RCCE SARS	Middle East respiratory syndrome coronavirusministry of healthMédecins Sans Frontièresnon-governmental organizationPan American Health Organizationpersonal protective equipmentrisk communication and community engagementsevere acute respiratory syndrome
MERS-CoV MoH MSF NGO PAHO PPE RCCE SARS SARS-CoV-2	Middle East respiratory syndrome coronavirusministry of healthMédecins Sans Frontièresnon-governmental organizationPan American Health Organizationpersonal protective equipmentrisk communication and community engagementsevere acute respiratory syndromesevere acute respiratory syndrome coronavirus 2
MERS-CoV MoH MSF NGO PAHO PPE RCCE SARS SARS-CoV-2 SOPs	Middle East respiratory syndrome coronavirusministry of healthMédecins Sans Frontièresnon-governmental organizationPan American Health Organizationpersonal protective equipmentrisk communication and community engagementsevere acute respiratory syndromesevere acute respiratory syndrome coronavirus 2standard operating procedures
MERS-CoV MoH MSF NGO PAHO PPE RCCE SARS SARS-CoV-2 SOPs TOR	Middle East respiratory syndrome coronavirusministry of healthMédecins Sans Frontièresnon-governmental organizationPan American Health Organizationpersonal protective equipmentrisk communication and community engagementsevere acute respiratory syndromesevere acute respiratory syndrome coronavirus 2standard operating proceduresterms of reference
MERS-CoV MoH MSF NGO PAHO PPE RCCE SARS SARS-CoV-2 SOPs TOR UNICEF	Middle East respiratory syndrome coronavirusministry of healthMédecins Sans Frontièresnon-governmental organizationPan American Health Organizationpersonal protective equipmentrisk communication and community engagementsevere acute respiratory syndromesevere acute respiratory syndrome coronavirus 2standard operating proceduresterms of referenceUnited Nations Children's Emergency Fund

### GLOSSARY

**Framework:** A framework usually denotes a structure, overview, outline, system or plan consisting of various descriptive categories, for example, concepts, constructs or variables, and the relations between them(1).

**Health care facilities:** Health care facilities encompass all formally recognized facilities that provide health care, including primary (health posts and clinics), secondary and tertiary (district or national hospitals); public and private (including faith-run); and temporary structures designed for emergency contexts (e.g. cholera treatment centres). They may be located in urban or rural areas(2).

**Incident management system:** The standardized structure and approach that WHO has adopted to manage its response to public health events and emergencies, and to ensure that the Organization follows best practice in emergency management. WHO has adopted an Incident Management System comprising six critical functions: Leadership, Partner Coordination, Information and Planning, Health Operations and Technical Expertise, Operations Support and Logistics, and Finance and Administration(*3*).

**Infection prevention and control (IPC) minimum requirements:** IPC standards that should be in place at both national and health facility level to provide minimum protection and safety to patients, health care workers and visitors, based on the WHO core components for IPC programmes. The existence of these requirements constitutes the initial starting point for building additional critical elements of the IPC core components according to a stepwise approach based on assessments of the local situation(4).

**Multimodal strategy:** A multimodal strategy comprises several elements or components (three or more; implemented in an integrated way with the aim of improving an outcome and changing behavior. It includes tools, such as bundles and checklists, developed by multidisciplinary teams that take into account local conditions(4).

**Outbreak:** An outbreak can be described as a group of cases that are linked by both time and place. These disease cases are usually suspected to come from a common source of infection. They can be:

- a greater than expected incidence of infection compared with the usual background rate for the particular facility or ward;
- a single case for certain rare or epidemic-prone diseases; or
- a suspected, anticipated or actual event involving microbial contamination of food or water (e.g. sink drains, water reservoirs)(5).

**Preparedness phase:** The development of public health emergency response plans for relevant hazards; this includes mapping of potential hazards and hazard sites, the identification of available resources, the development of appropriate national stockpiles of resources, and the capacity to support operations at the intermediate and community/primary response levels during a public health emergency. These activities may take 6 months to 2 years in order to be fully prepared for an emerging infectious disease and/or public health threat(4).

**Personal protective equipment:** Equipment used to prevent or minimize exposure to hazards, such as biological hazards, chemical hazards, radiological hazards, electronical hazards, mechanical hazards, etc(6).

## 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 23442