# GUIDANCE FOR CONDUCTING A COUNTRY COVID-19 INTRA-ACTION REVIEW (IAR)





#### WHO/2019-nCoV/Country\_IAR//2020.1

#### © World Health Organization 2020

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; <a href="https://creativecommons.org/licenses/by-nc-sa/3.0/igo">https://creativecommons.org/licenses/by-nc-sa/3.0/igo</a>).

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.

(http://www.wipo.int/amc/en/mediation/rules/)

**Suggested citation**. Guidance for conducting a country COVID-19 intra-action review (IAR). Geneva: World Health Organization; 2020 (WHO/2019-nCoV/Country\_IAR//2020.1). Licence: <a href="https://cca.com/cca

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

**Sales, rights and licensing.** To purchase WHO publications, see <a href="http://apps.who.int/bookorders">http://apps.who.int/bookorders</a>. To submit requests for commercial use and queries on rights and licensing, see <a href="http://www.who.int/about/licensing">http://www.who.int/about/licensing</a>.

**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	iv
Introduction	1
Purpose of a country COVID-19 intra-action review	2
Scope of a country COVID-19 intra-action review	3
Who should participate?	5
When should the country COVID-19 intra-action review be conducted?	5
Format of the intra-action review	7
Documenting the intra-action review and following up	8
Country COVID-19 intra-action review package	9
Intra-action review linkage with the COVID-19 Partners Platform	10
Other resources	11
References	12

## **Acknowledgements**

This guidance for conducting a country COVID-19 intra-action review (IAR) and the accompanying package of templates and facilitation documents have been developed by the Country Simulation Exercises and Review (CER) unit of the Health Security Department (HSP) at WHO headquarters in collaboration with WHO regional offices.

This guidance is the result of a shared vision of the importance of collective learning in supporting the response to the current COVID-19 pandemic in real time.

This document was developed under the leadership of Stella Chungong by the team in charge of After Action Reviews (AARs) in the CER unit of the HSP Department of the WHO Health Emergencies Programme at WHO headquarters: Landry Ndriko Mayigane (Global AAR focal point), Allan Bell, Denis Charles, Cindy Chiu, Frederik Copper, Hilary Kagume Njenge and Candice Vente.

During the development of this guidance, the team received valuable contributions from colleagues at WHO headquarters: Céline Barnadas, Lucy Boulanger, Jorge Castilla Echenique, Sébastien Cognat, Virginie Dolmazon, Georgia Galazoula, Thomas Grein, Zheng Jie Marc Ho, Robert Andrew Holden, Qudsia Huda, Kande-bure Kamara, Glenn Lolong, Abbas Omaar, Christopher Oxenford, Gina Samaan, Maria Van Kerkhove, Kathleen (Taylor) Warren and Anne Yu. Their technical review and contributions to the guidance and the accompanying package are much appreciated.

Sincere appreciation also goes to colleagues at WHO regional offices for their technical contributions and for helping to integrate regional contexts and needs: Roberta Andraghetti, Sara Barragan Montes, Jessica Barry, Caroline Brown, Ana Paula Coutinho Rehse, Ute Enderlein, Maung Maung Htike, Pernille Jorgensen, Masaya Kato, Rim Kwang, Dina Pfeiffer, Adrienne Rashford, Jetri Regmi, Dalia Samhouri, Tanja Schmidt, Mary Stephen, Ardita Tahirukaj, Simon Van Woerden, Paula Vasconcelos Lopes, Elisabeth Waagensen and Joanna Zwetyenga.

Last but not least, thanks for technical input also go to Richard Garfield of the United States Centers for Disease Control and Prevention and Jobin Abraham and Amanda McClelland of Resolve to Save Lives.

### Introduction

Since the World Health Organization (WHO) declared the 2019 novel coronavirus outbreak a public health emergency of international concern on 30 January 2020, with the disease later designated as COVID-19, the pandemic has brought unprecedented social and economic disruptions globally, while case and death numbers have soared. This pandemic has resulted in increased demand from countries across the world for recommendations from public health experts to help develop a comprehensive COVID-19 risk management strategy that consists of measures addressing preparedness, prevention, mitigation, response and recovery. Community members have also demanded provision of more diagnostic testing, hospital beds for critical cases, development and validation of vaccines and treatments, protection of vulnerable populations, as well as more transparent communication with their government officials.

The rapid spread and impact of COVID-19 have propelled the public health core capacities described in the International Health Regulations (2005) (IHR 2005) into the international spotlight. These core capacities for emergency preparedness and response include, but are not limited to, coordination, surveillance, laboratory services, the provision of health services, risk communication and guidance for monitoring points of entry (1). As the acute, initial phase of the outbreak and the response to it around the world moves into a protracted phase, there is an opportunity for countries to reflect on and improve their national responses to the COVID-19 outbreak as needed. During this critical juncture, further testing and contact tracing are required to reduce human-to-human transmission, while capacities for case management need to be maintained as well as the safe delivery of non-COVID-19 essential health services.

With the expectation that the COVID-19 pandemic may continue into the months ahead, WHO, in collaboration with its regional offices and partners, has developed this guidance to support countries as they review their ongoing response efforts through processes of continual learning and improvement.

For the purpose of this guidance, an intra-action review (IAR) is defined as a country-led, facilitated discussion that allows national and subnational stakeholders of the COVID-19 response to (i) reflect on actions being undertaken to prepare for and respond to the COVID-19 outbreak at the country level in order to identify current best practices, gaps and lessons learned, and (ii) propose corrective actions to improve and strengthen the continued response to COVID-19. Additionally, IAR findings and recommendations may contribute to improving the management of concurrent emergencies and to long-term health security.

Countries may conduct multiple COVID-19 IARs at national and subnational levels, and they may also be undertaken in specific settings that have unique considerations. These may include cruise ships or humanitarian situations (e.g. camps with displaced populations or during repatriation operations) where the known risks are exceptionally high and the challenges are

particularly difficult. Key findings from IARs should be documented, and they should be shared to inform decision-making and allow for immediate improvement in the response and operational planning for COVID-19 at the national and subnational levels. Over the course of the pandemic, countries may need to conduct a structured review of ongoing response operations and activities to update their COVID-19 national or subnational response plans. Often, this may be done to respond to evolving epidemiological situations, emerging evidence, developing humanitarian crises, and new strategic directions and priorities. Changes in the requirements for or availability of resources will also affect and inform the revision of plans and may allow for renewed commitments and funding allocations from the government and additional contributions from partners and donors.

Under the IHR (2005) monitoring and evaluation framework (2), WHO usually recommends countries to conduct an after-action review (AAR) following the official declaration of the end of a significant public health event by the competent authority at the national level in the country. Given the unique context of the COVID-19 outbreak, AARs may not be conducted until the COVID-19 outbreak is controlled in the country. Thus, findings from multiple IARs conducted at national and subnational levels will provide critical information throughout the COVID-19 emergency response, as well as later informing the COVID-19 AAR in each country. While IARs will directly contribute to improving the ongoing COVID-19 response, both IARs and AARs equally aim to enhance preparedness for and response to future outbreaks, as well as to improve health systems moving forward. IARs are not considered or proposed to be alternatives to AARs. In addition, an IAR is a distinct process and should not be mistaken for a WHO joint operational review. The focus of an IAR is to review a country's preparedness and response capacities, whereas a joint operational review focuses on the performance of WHO and its partners.

# Purpose of a country COVID-19 intra-action review

An IAR provides an opportunity to review the functional capacity of the public health and emergency response systems at the national and subnational levels and to identify practical areas that need immediate remediation or can be targeted for sustained improvement of the outbreak response.

The purpose of a country COVID-19 IAR is fourfold:

 to provide an opportunity to share experiences and collectively analyse the ongoing incountry response to COVID-19 by identifying challenges and best practices;

- to facilitate consensus building among and the compiling of lessons learned by various stakeholders during the response to improve the current response by sustaining best practices that have had demonstrated success and by preventing recurrent errors;
- to document and apply the lessons learned from the response efforts to date to enable health system strengthening;
- to provide a basis for updating and validating the country's COVID-19 strategic preparedness and response plan and other strategic plans accordingly.

### Scope of a country COVID-19 intra-action review

Ideally, the first step of the IAR is to define its scope to facilitate planning and smooth implementation. The scope should be decided by the government institution or authority requesting the IAR, and it will define the period to be examined by the review, the response pillar(s) to be reviewed, the number and profiles of participants, the duration of the review process and the format, as well as help generate the trigger questions to be used. Fig 1 depicts these different elements to be considered when defining the scope of the IAR.

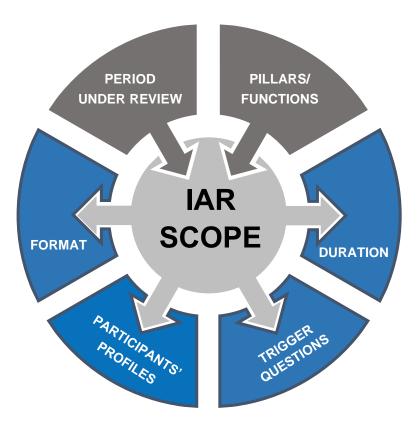


Fig. 1. The scope of a country COVID-19 intra-action review (IAR) determines how it will be conducted

Each government must decide which pillar or pillars of the COVID-19 response will be reviewed. For example, countries may consider the following pillars, which are highlighted in WHO's COVID-19 strategy update, 14 April 2020 (3), to the strategic preparedness and response plan:

- country-level coordination, planning and monitoring;
- risk communication and community engagement;
- surveillance, case investigation and contact tracing;
- points of entry;
- the national laboratory system;
- infection prevention and control;
- case management and knowledge sharing about innovations and the latest research;
- operational support and logistics in the management of supply chains and the workforce;
- maintaining essential health services during the COVID-19 outbreak.

The pillars listed here are only examples, and they can be revised or adapted according to the needs and priorities of each country.

Other possible topics or cross-cutting issues can also be considered during the IAR, depending on the context. These topics may include, but are not limited to, gender, equity and human rights; safety and security; the protection of vulnerable populations, such as those in long-term care homes, mental health facilities and prisons; personal livelihoods and governmental payouts and stimulus packages; humanitarian settings; mass-gathering events; non-essential services; and the use of public transportation. In addition, countries may wish to review their nonpharmaceutical social and public health measures, including physical distancing measures, movement restrictions, business or school closures; what the new normal will be upon reopening; business continuity plans; and research and development. Furthermore, countries may use an IAR to review how they translated their national pandemic influenza contingency plan into a COVID-19 response plan.

A database of more than 300 generic trigger questions is available in the package accompanying this guidance to stimulate reflection on and discussions about each pillar. Countries are encouraged to adapt and expand the list of questions as needed for their specific context. Before the IAR, the organisers should select only the questions that are relevant to the purpose and scope of their review. The trigger questions help to ensure that the most important themes of the pillar being reviewed are covered and that the most critical questions are asked and answered objectively.

### Who should participate?

To maximise the value of IARs for promoting productive discussion and developing appropriate recommendations, the ideal number of participants should be between 10 and 20. This is to maximise the efficiency of the process by balancing the requirements for diversity and expertise without jeopardising the response itself. However, the number of participants may vary from one IAR to another, depending on the scope. A diversity of opinions is key to the success of an IAR; this can be achieved by ensuring the participation of a wide range of stakeholders. Importantly, participants need to have proven first-hand experience with, depth of knowledge about and different levels of responsibility for the pillar being reviewed for the country's COVID-19 response.

Once the scope of the IAR has been defined, the IAR lead coordinator or coordinating body should identify appropriate stakeholders involved in the technical areas or functions of the pillars covered by the review. Preferably, to optimise the discussions about and findings derived from the IAR, all stakeholders participating in it should be currently involved in the COVID-19 response.

It is recommended that a country's COVID-19 IAR is conducted using a whole-of-society approach, which acknowledges the contributions of and important roles played by all relevant stakeholders. As the proposed COVID-19 IAR is a country-led exercise undertaken to review the ongoing response, the government or the institution coordinating the IAR has the discretion to decide on the profile of participants and whether to involve external partners as facilitators or observers. All levels of WHO (country offices, regional offices and headquarters) can provide support for planning and conducting an IAR.

# When should the country COVID-19 intra-action review be conducted?

The country COVID-19 IAR can be conducted at any time during the response when the government or an institution identifies the need to review the ongoing response or when accumulated experience calls for a review to consider strategic modifications. IARs should be conducted across different sectors in the spirit of continual collective learning to identify gaps for improvement and to sustain best practices. It is desirable to conduct an IAR when COVID-19 response plans are updated at the national and subnational levels.

Fig. 2 outlines the different phases of a successful IAR, including designing, preparing, conducting and following up on the IAR.

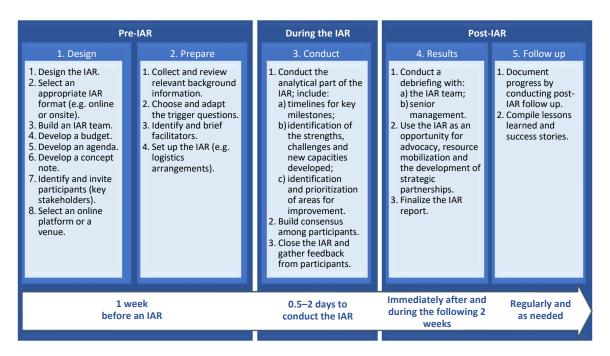


Fig. 2. Roadmap of the intra-action review (IAR) process

Many different situations may trigger an IAR. Some of these include:

- a significant increase or decrease in the number of reported COVID-19 cases (including fatal cases);
- the desire to review a specific COVID-19 programme or intervention after its implementation, especially if failures or successes have been reported;
- the need to review the national supply chain for COVID-19-related procurement;
- demands from industry, civil society or community members for the government to review the effectiveness of the outbreak response;
- a significant impact on the national economy as demonstrated by national quarterly reviews of economic productivity. Conducting an IAR could lead to corrective measures designed to mitigate continued negative economic performance. In addition, IAR can serve as a feedback mechanism where countries can apply the lessons learned to adapt their COVID-19 outbreak response;
- the intent to identify areas for further research by academia and the pharmaceutical industry, as well as vulnerable populations that require closer attention from public health officials;
- the need to obtain a consensus among stakeholders involved in the response regarding various topics of public concern and safety (e.g. the utilisation of new technologies for contact tracing, data privacy, validation of diagnostic tests, including home test kits, and prevention of vendors from selling unapproved home remedies);
- the need to review and adjust public health and social measures during the COVID-19 pandemic.

It will be important to ensure that the IAR process does not jeopardise or interfere with the management of the response itself.

#### Format of the intra-action review

An IAR is a facilitator-led discussion that may last from less than half a day (when only one or a limited number of pillars are reviewed) to a maximum of 2 days (for a more comprehensive IAR), bringing together a small group of people either in person or online. However, the duration of the IAR will vary based on the availability of stakeholders who are key to the response to take part in the IAR, taking into consideration that the priority remains the management of the current COVID-19 pandemic.

#### An IAR involves:

- a desk review of existing preparedness and response plans, the country's COVID-19 response plans, activity reports and other relevant country policy documents and guidelines;
- a structured review of activities undertaken at the national and subnational levels that occurred within a defined time frame during the COVID-19 response;
- the sharing of experiences among stakeholders to provide a snapshot of the current COVID-19 response and to highlight which issues can be addressed immediately to improve the ongoing response;
- identification of what can be done in the mid- or long-term time frames to improve the response to the potential next wave (or waves) of the COVID-19 outbreak; and
- if possible, an in-depth analysis of the best practices and challenges conducted using the root cause analysis methodology (4–6).

Good IAR facilitation is essential to ensure active participation and open and frank discussion among the participants to draw out important lessons. In situations where the time for discussion is limited and participants may be hesitant to share their views, it may be valuable to develop and distribute a questionnaire before the IAR to collect the necessary information. A facilitator and a note-taker should be designated to ensure the smooth conduct and documentation of the IAR. In addition to this guidance, a set of templates and facilitation documents have been compiled in a package to help countries prepare and conduct an IAR; these build on the debrief AAR format published by WHO in 2019 (7).

For online IARs, separate sessions can be organised for the different pillars using a video-conferencing platform to facilitate discussions. However, plenary sessions will also be essential to help identify and discuss cross-cutting issues among the different pillars under review.

Given the current COVID-19 situation, it is vital to ensure that during the IAR physical distancing and the basic hygiene measures in practice in the country are respected. We encourage the use of an online format for the IAR, especially if community transmission remains high in the country. If the IAR is conducted onsite, it is critical to ensure that meeting spaces are large enough to allow for adequate physical distancing between participants at all time. Additional guidance on how to prevent or reduce COVID-19 transmission risks when hosting face-to-face meetings can be found on WHO's website (8).

# **Documenting the intra-action review and following up**

The primary role of the designated note-taker will be to summarise the discussions that took place during the IAR sessions and the key action points for moving forward. The note-taker should share the final report with the participants to ensure that all lessons have been accurately captured and all proposed actions are feasible, practical, realistic and prioritised accordingly.

In addition, countries may wish to capture the best practices that worked in the national or subnational context during their response to the COVID-19 outbreak by highlighting one or multiple success stories that illustrate specific aspects of the selected pillars that they identified as strengths during the response. Countries are encouraged to share their IAR findings through their final report or part of their IAR findings through their success stories with other countries, WHO and partners to enable peer-to-peer learning of best practices or new capacities implemented in the country.

At the end of every IAR, a small follow-up team should be designated to monitor the implementation of the proposed activities. To ensure accountability and governmental support, members of the senior management of the Ministry of Health and other relevant government entities should also be involved in the entire IAR process (i.e. planning, conducting and following up).

The follow-up team should document the results of the monitoring activities and regularly report back to the IAR team and senior management officials about the progress being made on specific key activities undertaken to address any identified gaps, and they should provide evidence of the status and impact of the activities implemented. These may include making relevant changes to strategies, policies and processes, and developing new capacities to respond to the COVID-19 outbreak.

The follow-up team may collect both qualitative and quantitative information by reviewing relevant sources, including reports and media releases, by interviewing key stakeholders or

government officials involved in implementing the activities and by making field visits. Sharing the information collected or developing a community of practice will also promote further real-time learning.

All outputs from each IAR conducted in the country can contribute to the country COVID-19 AAR and any other review or evaluation process that takes place at the end of the response. Ultimately, IARs and AARs will strengthen preparedness and response capabilities and the overall resilience of the health system.

## **Country COVID-19 intra-action review package**

To support the planning and the conduct of a country COVID-19 IAR, a set of supplementary tools is available for consideration by IAR organisers (Table 1).

Table 1. Supplementary tools available to help in planning and conducting a country COVID-19 intra-action review

TOOL NUMBER	SUPPLEMENTARY TOOL	DESCRIPTION
01	Concept note template	Outlines the key elements (i.e. the scope, objectives and date of the review; key participants; methodologies; proposed budget; IAR team members and their roles) needed to prepare for an IAR.
02	Facilitator's manual	The manual includes instructions and recommendations for facilitators about how to organise and conduct an IAR. The manual highlights some of the key components that may need to be adapted to the national COVID-19 context.
03	Generic agenda template	This template for an agenda can be adapted depending on the format of the IAR (e.g. online or onsite) and the number of technical areas or pillars to be reviewed.
04	Generic presentation	This generic presentation can be adapted to the specific context of the country to facilitate the process of a country COVID-19 IAR.
05	Generic COVID-19 IAR trigger question database	This resource file has more than 300 trigger questions from which facilitators can select to stimulate reflection and discussion within the

		group and that can be tailored according to the
		needs of the review.
		This template can assist note-takers in capturing
06	Note-taking template	the discussions during each step of the IAR, and
		the notes can later help with writing the report.
		This template can be used by the report writer
<b>07</b> F	Final report template	to summarise in a structured manner the
		analyses and recommendations arising from the
		review.
		This form can be used to collect feedback from
08	Participant feedback form	the participants at the end of the IAR about how
		it was conducted and how useful it was.
	2	
09	Participant feedback form	This is an Excel file that can be used to analyse
	summary table	participants' feedback.
		This template can be used by countries to
		document what worked during their COVID-19
		response. These success stories should be
10	Success story template	shared broadly with other countries, WHO and
.0	dacess story template	partners to enable peer-to-peer learning of best
		practices or new capacities implemented in the
		1.
		country.

IAR: intra-action review.

The tools listed above can be downloaded on the following webpage: <a href="https://www.who.int/ihr/procedures/after-action-review/en/">https://www.who.int/ihr/procedures/after-action-review/en/</a>

# Intra-action review linkage with the COVID-19 Partners Platform

WHO collaboratively developed the COVID-19 Partners Platform web-based tool (9) to enable interactive planning among governments, United Nations agencies and partners, to help with efficient coordination and scale up of efforts to address the COVID-19 pandemic. For the first time during a pandemic, every country can demonstrate to the world what actions it is planning and implementing, request international support and critical supplies, and track contributions and progress in real time. For countries that are using the platform to advocate for their strategic preparedness and response plans, there is an opportunity to link the IAR to this tool.

Countries can use the platform:

as a source of valuable country data to inform their own IAR;

- to document the results of their IAR:
- to demonstrate the progress being made in implementing the recommendations of the IAR to leaders, decision-makers, partners and donors;
- to document the progress of implemented actions and demonstrate how they align with IHR core capacities;
- to increase visibility into the needs of the country in order to advocate for additional funding.

As of 22 July 2020, a total of 153 countries, territories and areas have been onboarded to the Platform. More than 100 countries have uploaded their COVID-19 response plans and regularly assess the actions planned and implemented by using the checklists on the Platform.

#### Other resources

The following resources may be helpful before, during and after an IAR.

- Country and technical guidance for COVID-19: <a href="https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance-publications">https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance-publications</a>.
- COVID-19 strategy and the strategic preparedness and response plan: https://www.who.int/publications/i/item/strategic-preparedness-and-response-plan-for-the-new-coronavirus.
- The COVID-19 Partners Platform: <u>https://covid-19-response.org/.</u>
- The European Centre for Disease Prevention and Control's guidance on conducting both in-action and after-action reviews of the public health response to COVID-19: <a href="https://www.ecdc.europa.eu/en/publications-data/conducting-action-and-after-action-reviews-public-health-response-covid-19">https://www.ecdc.europa.eu/en/publications-data/conducting-action-and-after-action-reviews-public-health-response-covid-19</a>.
- WHO's guidance for an after action review (AAR): <a href="https://www.who.int/ihr/procedures/after-action-review/en/">https://www.who.int/ihr/procedures/after-action-review/en/</a>.
- The health emergency and disaster risk management framework: <a href="https://apps.who.int/iris/handle/10665/326106">https://apps.who.int/iris/handle/10665/326106</a>.
- WHO's guidance on operational planning to support countries' preparedness and response efforts:
   https://www.who.int/publications/i/item/draft-operational-planning-guidance-for-un-

country-teams.

### References

- International Health Regulations (2005): guidance document for the State Party selfassessment annual reporting tool. Geneva: World Health Organization; 2018 (WHO/WHE/CPI/2018.17; <a href="https://apps.who.int/iris/handle/10665/272438">https://apps.who.int/iris/handle/10665/272438</a>, accessed 20 July 2020).
- 2. International Health Regulations (2005): IHR monitoring and evaluation framework. Geneva: World Health Organization; 2018 (WHO/WHE/CPI/2018.51; <a href="https://apps.who.int/iris/handle/10665/276651">https://apps.who.int/iris/handle/10665/276651</a>, accessed 20 July 2020).
- 3. COVID-19 strategy update, 14 April 2020. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/strategic-preparedness-and-response-plan-for-the-new-coronavirus, accessed 20 July 2020).
- 4. The global practice of after action review: a systematic review of literature. Geneva: World Health Organization; 2019 (WHO/WHE/CPI/2019.9; <a href="https://apps.who.int/iris/handle/10665/331432">https://apps.who.int/iris/handle/10665/331432</a>, accessed 20 July 2020).
- 5. Wu AW, Lipshutz AM, Pronovost P.J. Effectiveness and efficiency of root cause analysis in medicine. *JAMA*. 2008;299(6):685–7. doi:10.1001/jama.299.6.685.
- 6. Piltch-Loeb R, Nelson C, Kraemer J, Savoia, E, Stoto MA. A peer assessment approach incorporating root cause analysis for learning from public health emergencies. *Public Health Rep.* 2014;29(4):28–34. doi:10.1177/00333549141296S405.
- 7. Strengthening health security by implementing the International Health Regulations (2005): AAR toolkits [website]. Geneva: World Health Organization; 2020 (https://www.who.int/ihr/procedures/AAR-Toolkit/en/, accessed 20 July 2020).
- 8. Getting your workplace ready for COVID-19: how COVID-19 spreads, 19 March 2020. Geneva: World Health Organization; 2020 (WHO/2019-nCov/workplace/2020.2; <a href="https://apps.who.int/iris/handle/10665/331584">https://apps.who.int/iris/handle/10665/331584</a>, accessed 20 July 2020); see Section 2.
- 9. COVID-19 Partners Platform [website]. Geneva: World Health Organization; 2020 (https://covid-19-response.org/, accessed 20 July 2020).