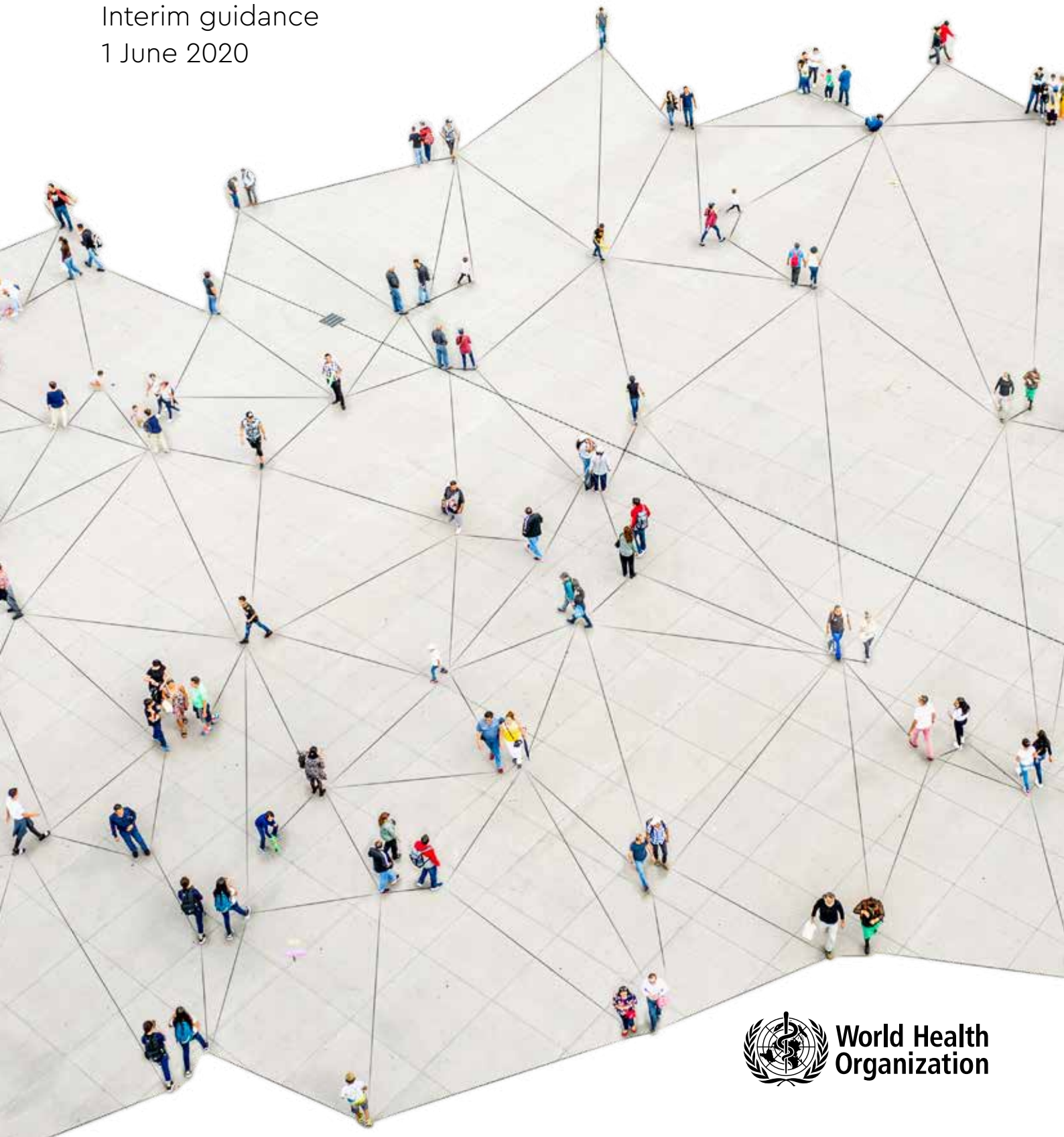


Maintaining essential health services: operational guidance for the COVID-19 context

Interim guidance
1 June 2020



© World Health Organization 2020

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

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.

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.

This document is the update of an interim guidance originally published under the title "COVID-19: Operational guidance for maintaining essential health services during an outbreak" on 25 March 2020.

WHO/2019-nCoV/essential_health_services/2020.2

Photo credits:

Cover page, iStock.com/Orbon Alija.
Page v, Flickr CC0 1.0/AMISOM Public Information/AU UN IST PHOTO/Tobin Jones.
Page 1, Flickr CC BY-NC-ND 2.0/ILO/Adri Berger.
Page 2, Flickr CC BY-ND 2.0/Hospital Clínic/Francisco Àvia.
Page 4, Flickr CC BY-NC-ND 2.0/© UNICEF Ethiopia/2013/Ose.
Page 5, Freepik.
Page 6, © UNICEF/UNI309864/Frank Dejongh.
Page 8, Freepik.
Page 10, Flickr CC BY-NC-ND 2.0/UN Women/Pathumporn Thongking.
Page 12, Flickr CC BY-NC 2.0/U.S. Pacific Fleet/Rawad Madanat.
Page 14, © UNICEF/UNI314083/Chan.
Page 16, Flickr CC BY-SA 2.0/Karina Zambrana – SGEP/MS.
Page 17, © UNICEF/UNI322149/Frank Dejongh.
Page 18, © UNICEF/UNI324621.
Page 20, Flickr CC BY 2.0/NEC Corporation of America.
Page 22, © UNICEF/UNI309873/Frank Dejongh.
Page 23, Flickr CC BY-NC 2.0/Public Services International.
Page 24, © UNICEF/UNI326749/Frank Dejongh.
Page 31, Flickr CC BY-NC-ND 2.0/UNMISS.
Page 39, © UNICEF/UN0294748/Frank Dejongh.
Page 50, © UNICEF/UNI331144/Volpe.
Page 54, Flickr CC BY 2.0/CDC Foundation/David Snyder.

Design: Annovi Design.

Maintaining essential health services: operational guidance for the COVID-19 context

Interim guidance
1 June 2020

Table of Contents

Acknowledgements	v
Part 1: Operational strategies for maintaining essential health services	1
1.1 Overview	2
1.2 Context considerations	4
1.3 Adjust governance and coordination mechanisms to support timely action	5
1.4 Prioritize essential health services and adapt to changing contexts and needs	6
1.5 Optimize service delivery settings and platforms	8
1.6 Establish safe and effective patient flow at all levels	10
1.7 Rapidly optimize health workforce capacity	12
1.8 Maintain the availability of essential medications, equipment and supplies	14
1.9 Fund public health and remove financial barriers to access	16
1.10 Strengthen communication strategies to support the appropriate use of essential services	17
1.11 Strengthen the monitoring of essential health services	18
1.12 Use digital platforms to support essential health service delivery	20
PART 2: Life course and disease considerations	22
2.1 Life-course stages	24
2.1.1 Maternal and newborn health	24
2.1.2 Child and adolescent health	26
2.1.3 Older people	28
2.1.4 Sexual and reproductive health services	29
2.2 Nutrition, noncommunicable diseases and mental health	31
2.2.1 Nutrition	31
2.2.2 Noncommunicable diseases	33
2.2.3 Mental, neurological and substance use disorders	37
2.3 Communicable diseases	39
2.3.1 HIV, viral hepatitis and sexually transmitted infections	39
2.3.2 Tuberculosis	43
2.3.3 Immunization	44
2.3.4 Neglected tropical diseases	46
2.3.5 Malaria	48
References	50
Annex	54
Sample indicators for monitoring essential health services	54

Acknowledgements



This guidance was developed exclusively by UN agency personnel through expert consensus, new analyses and reference to existing WHO, UNICEF and UNFPA programme guidance.

Coordinating editorial group

Jill Farrington, Andre Griekspoor, Santosh Gurung, Sally Hargreaves, Sara Hollis, Blerta Maliqi, Teri Reynolds (Responsible Officer), Susan Sparkes

Other contributors and reviewers

World Health Organization (WHO)

Bernadette Abela-Ridder, Marina Adrianopoli, Olga Agbodjan-Prince, Elsie Akwara, Benedetta Allegranzi, Jamela Al-Raiiby, Avni Amin, Kingsley Asiedu, Ian Askew, Rachel Baggaley, Sepideh Bagheri Nejad, Sunil Bahl, Andrew Ball, April Baller, Valentina Baltag, Anshu Banerjee, Prebo Barango, Shannon Barkley, Hélène Barroy, Hana Bekele, Anjana Bhushan, Gautam Biswas, Mercedes Bonet, Mathieu Boniol, Daniel Brigden, Anne Brink, Nathalie Broutet, Maurice Bucagu, Sonja Caffè, Susanne Carai, Maricel Castro, Venkatraman Chandra-Mouli, Diana Chang Blanc, Richard Cibulskis, Camilo Cid, David Clarke, Adam Lauren Cohen, Giorgio Cometto, Erwin Cooreman, Marilyns Corbex, Peter Cowley, Valeria de Oliveira Cruz, Bernadette Daelmans, Daniel Argaw Dagne, Carolina Alfaro Danovaro, Masoud Dara, Shalini Desai, Teshome Desta, Khassoum Diallo, Theresa Diaz, Amadou Garba Djirmay, Meg Doherty, Elisa Dominguez, Martin Donoghoe, Bayarsaikhan Dorjsuren, Tarun Dua, Pablo Durán, Philippa Easterbrook, Maria Eebello, Tamás Evetovits, Dennis Falzon, Nathan Ford, Andres de Francisco, Albis Gabrielli, Bela Ganatra, Elkhan Gasimov, Massimo Ghidinelli, Karima Gholbzouri, Philippe Glaziou, Global Malaria Programme and WHO intercountry support teams, Rodolfo Gómez, Richard Gregory, Lianne Marie Gonsalves, Regina Guthold, Zeea Han, Vachagan Harutyunyan, Lisa Hedman, Nilmini Hemachandra, Dirk Horemans, Andre Ilbawi, Naoko Ishikawa, Saurabh Jain, Melitta Jakob, Mohammed Jamsheed, Anoma Jayathilaka, Cheryl Johnson, Matthew Jowett, Rita Kabra, Catherine Kane, Tereza Kasaeva, Elizabeth Katwan, Ed Kelley, James Kelley, Akpaka Kalu Sudhir Khanal, Rajat Khosla, James Kiarie, Nancy Kidula, Warrick Kim, Jonathan King, Souleymane Kone, Yeboue Kouadio, Katrina Kretsinger, Aigul Kuttumuratova, Joseph Kutzin, Oleg Kuzmenko, Hugues Lago, Benjamin Lane, Margrieta Langins, Antonella Francheska Lavelanet, Ornella Lincetto, Ann Lindstrand, Jayantha Liyanage, Laura Nic Lochlainn, Daniel Low-Beer, Silvana Luciani, Briana Lucido, Niklas Luhmann, Frank Lule, Virginia MacDonald, Ramez Mahaini, Mwelecele Malecela, Priya Mannava, Casimir Manzengo, Awad Mataria, Inke Mathauer, Cuauhtémoc Ruiz Matus, Pamela Mbabazi, Sympllice Mbola Mbassi, Bruno Meesen, Garrett Livingston Mehl, Rajesh Mehta, Lisa Menning, Bente Mikkelsen, Jose R. Franco Minguell, Ann Beth Moller, Hernan Montenegro von Muelenbrock, Roberto Montoya, Antonio Montessoro, Allisyn Moran, Claudia Garcia Moreno, Bridget Akora Mugisa, Diane Muhongerwa, Mick Mulders, John Murray, Assumpta Muriithi, Bremen de Mucio, Juliet Nabyonga, Claudia Nannei, Manjulaa Narasimhan, Salla Ndoungou, Santiago Nicholls, Yasir Nisar, Abdisalan Noor, Olufemi Oladapo, Kathryn O'Neill, Leopold Ouedraogo, Francesca Palestra, Venkata Pemmaraju, Martina Penazzato, Claudia Pescetto, Marina Plesons, Annie Portela, Zita Weise Prinzo, Gerardo Priotto, Giovanni Ravasigi, Nirina Razakaso, Pryanka Relan, Bharat Rewari, Leanne Riley, Briana Rivas Morello, Alastair Robb, Michelle Rodolph, Lisa Rogers, Gojka Roglic, David Anthony Ross, Tomas Roubal, Jose A. Ruiz-Postigo, Aurora Saares, Sohel Saikat, Ritu Sadana, Kuntal Saha, Dieudonne Sankara, Lale Say, Nicole Seguy, Mukta Sharma, Stephanie Shendale, Hai-Rim Shin, Khalid Siddeeg, Angela Padmini de Silva, Satvinder Singh, Charalampos Sismandis, Slim Slama, Samir Sodha, Anthony Solomon, Agnès Soucat, Kate Strong, Yuka Sumi, Afework Tekle, Juan Tello, Thaksaphon (Mek) Thamarangsi, Jotheeswaran Amuthavalli Thiyagarajan, Sarah Thomson, Alexandre Tiendrebeogo, Tsolmongerel Tsilaajav, Prosper Tumusiime, Juliawati Untoro, Meera Thapa Upadhyay, Neena Valecha, Mark Van Ommeren, Cherian Varghese, Raman Velayudhan, Annette Verster, Pedro Albajar Vinas, Marco Vitoria, Lara Vojnov, Elena Vovc, Zubair Wadood, Hui Wang, Susan Annemarie Wang, Supriya Warsuvithana, Martin Weber, Maru Aregawi Weldedawit, Wilson Were, Teodora Wi, Aya Yajima, Nasir Yusuf, Ghasem Zamani, Diana Zandi, Li Zhao, Matteo Zignol

United Nations Children's Fund (UNICEF)

Mamka Anyona, Jennifer Asman, Joanne Bosworth, Valentina Buj, Carlos Navarro Colorado, Anne Detjen, Hannah Sarah Dini, David Hipgrave (Coordinator), Shaffiq Essajee, Ulla Griffiths, Gagan Gupta, Tedbabe Degefie Hailegebriel, Andreas Hasman, Debra Jackson, Tanvi Jain, Karin Kallander, Joanna Lai, Manuel Celestino Lavayen, Ken Legins, Robin Nandy, Rory Nefdt, Luwei Pearson, Stefan Swartling Peterson, Jerome Pfaffmann, Benjamin Schreiber, Fouzia Shafique, Alyssa Sharkey, David Stewart, Claudia Vivas, Ahmadu Yakubu, Willibald Zeck

United Nations Population Fund (UNFPA)

Michel Brun, Danielle Engel, Mandira Paul

Part 1. Operational strategies for maintaining essential health services





1.1 Overview

Health systems around the world are being challenged by increasing demand for care of people with COVID-19, compounded by fear, stigma, misinformation and limitations on movement that disrupt the delivery of health care for all conditions. When health systems are overwhelmed and people fail to access needed care, both direct mortality from an outbreak and indirect mortality from preventable and treatable conditions increase dramatically (1, 2, 3). Maintaining population trust in the capacity of the health system to safely meet essential needs and to control infection risk in health facilities is key to ensuring appropriate care-seeking behaviour and adherence to public health advice.

Any system's ability to maintain the delivery of essential health services will depend on its baseline burden of disease, the local COVID-19 transmission scenario (classified as no cases, sporadic, clusters or community transmission) and the health system capacity as the pandemic evolves (4). Recent investments in primary health care for universal health coverage provide a critical foundation for adapting to the pandemic context. A well organized and prepared health system has the capacity to maintain equitable access to high-quality essential health services throughout an emergency, limiting direct mortality and avoiding indirect mortality.

In the early phases of the COVID-19 outbreak, many health systems have been able to maintain routine service delivery in addition to managing a relatively limited COVID-19 case-load. As demands on systems have surged and health workers themselves have increasingly been affected by COVID-19 infection and the indirect consequences of the pandemic, strategic adaptations have become urgent to ensure that limited public and private sector resources provide the maximum benefit for populations.

Countries are making difficult decisions to balance the demands of responding directly to the COVID-19 pandemic with the need to maintain the delivery of other essential health services. Establishing safe and effective patient flow (including screening for COVID-19, triage and targeted referral) remains critical at all levels. Many routine and elective services have been suspended, and existing delivery approaches are being adapted to the evolving pandemic context as the risk-benefit analysis for any given activity changes. When the delivery of essential health services comes under threat, effective governance and coordination mechanisms, and protocols for service prioritisation and adaptation, can mitigate the risk of outright system failure.

As the outbreak is brought under control and restrictive public health measures are gradually eased, some adaptations in service delivery may need to be reversed, others continued for a limited time, and yet others that are found to be effective, safe and beneficial can be incorporated into routine post-pandemic practice. The course of the outbreak is likely to wax and wane, and the strategic response will need to be dynamic and calibrated. Decision-makers should anticipate the need to start, stop and restart adaptations. Decisions should be aligned with relevant national and subnational policies and should be re-evaluated at regular intervals.

Successful implementation of these strategic shifts will require the active engagement of communities and public and private stakeholders, specific measures to ensure access for socially vulnerable populations, transparency and frequent communication with the public and a high degree of cooperation from individuals.

All adaptations should be made in accordance with ethical principles, such as equity in the allocation of resources and access, self-determination, non-abandonment, and respect for dignity and human rights (5). Overall, the failure to protect vulnerable groups subjects them to higher risk and undermines the COVID-19 response and broader public health goals. In all cases, infection prevention and control (IPC) measures should be strictly followed based on up-to-date guidance (6) and relevant policies.

This document expands on the content of the essential health services and systems pillar of the *COVID-19 strategic preparedness and response plan: operational planning guidelines to support country preparedness and response* (4), supersedes the earlier *Operational guidance for maintaining essential health services during an outbreak* (7), and complements the recently released *Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic* (8). It supports country implementation of targeted actions at the national, subnational and local levels to reorganize and maintain access to safe and high-quality essential health services. It outlines the adaptations needed to keep people safe and maintain continuity of essential health services during the response to the COVID-19 pandemic. It is intended for decision-makers and managers at the national and subnational levels.

Part 1 outlines basic principles and practical recommendations that support decision-making to ensure the continuity of select essential health services, highlighting key actions that countries should consider.

Part 2 contains brief sections addressing specific adaptations and considerations for life course and disease programmes in the context of COVID-19. These sections are intended to be used in conjunction with — and do not replace — existing WHO programme guidance in these areas.



1.2 Context considerations

Different areas, even within the same country, may require different approaches to designate essential health services and to reorient health system components to maintain these services. Decision-makers must balance the benefits of specific activities with the risks they pose for the transmission of the virus. The risk-benefit analysis for any given activity depends on the local disease burden and social context, the COVID-19 transmission scenario and the local capacity for service delivery at baseline and as the pandemic evolves.

Countries have different policies for the public health and social measures they implement to limit the transmission of COVID-19, and their approaches to easing these measures also differ. Policies that restrict movement to limit transmission may create barriers to health care access and will influence the roadmap for restoring services. In particular, the pandemic has placed unprecedented demands on individuals to self-manage many health needs and on informal caregivers — including families, friends and neighbours — who should be exempted from travel restrictions that could preclude them from providing needed care.

In settings where high-burden infectious diseases have signs and symptoms overlapping with the COVID-19 case definition (such as malaria, pneumonia or tuberculosis [TB]), public health messaging will need to be adapted to ensure that people do not delay seeking care for potentially life-threatening illnesses. Furthermore, in areas where elimination and eradication efforts are under way, even short-term modifications in prevention and treatment approaches may rapidly reverse hard-won gains and have substantial long-term consequences.

Where, how and from whom people seek health care may vary significantly by context. In some communities, private sector providers and non-governmental organizations (NGOs), including faith-based organizations, are important stakeholders and key service providers. Rapid assessments at the national and subnational levels should guide strategic choices about policy and protocol changes, taking into account that pre-existing gaps in service delivery may be exacerbated during the outbreak. This is particularly important in countries with low capacity and in humanitarian settings, where services will be compromised more quickly. Adaptations and innovations need to account for limitations in resources and capacities (9). When well-informed and coordinated, adaptations made in the COVID-19 context have the potential to build health system capacity that can be sustained throughout the pandemic and beyond.



1.3 Adjust governance and coordination mechanisms to support timely action

National COVID-19 responses usually involve establishing an incident management team (IMT). A designated focal point for essential health services should be a member of this IMT and act as a liaison with essential health service programmes. In the phases of the epidemic when the COVID-19 case-load can be managed without compromising routine services, this focal point can coordinate the repurposing of human, financial and material resources and mobilize additional resources. During these phases, the focal point works with programmes to optimize protocols for modifying and maintaining essential health services, while ensuring that infection prevention measures are strengthened to guarantee safe service delivery. When routine services are compromised, the designated focal point coordinates the activation of protocols for phased reprioritization and adaptation of services, as described in the sections below. Implementation should be coordinated with the relevant authorities at the national and subnational levels and with public and private service providers. As COVID-19 transmission is controlled and demand related to the outbreak declines, the focal point will coordinate the gradual, safe restoration of services and strategies to address the backlog of health care needs. As the pandemic evolves, these cycles are likely to repeat, with the need to start, stop and restart service adaptations.

KEY ACTIONS:

- Designate a focal point for essential health services as a member of the COVID-19 IMT.
- Establish channels of coordination and communication among the COVID-19 IMT, essential health service programme managers and public and private sector service providers.
- Establish (or adapt) mechanisms and protocols to govern the delivery of essential health services in coordination with response protocols, including for strengthening infection prevention measures.
- Establish triggers or thresholds for phased reallocation of capacity from routine comprehensive services towards essential services, and for the re-expansion and transformation of services as the pandemic evolves.
- Establish mechanisms to monitor the ongoing delivery of essential health services and incorporate data into IMT decision-making (see Section 1.8).
- Establish or maintain coordination mechanisms between finance and health authorities to ensure financing for essential health services and facilitate responsive adaptation, restoration and transformation of services (see Section 1.9).



1.4 Prioritize essential health services and adapt to changing contexts and needs

To avert indirect morbidity and mortality and prevent acute exacerbations of chronic conditions when services are disrupted, countries should identify context-relevant essential health services that will be prioritized for continuation during the acute phase of the COVID-19 pandemic. High-priority categories include:

- essential prevention and treatment services for communicable diseases, including immunizations;
- services related to reproductive health, including during pregnancy and childbirth;
- core services for vulnerable populations, such as infants and older adults;
- provision of medications, supplies and support from health care workers for the ongoing management of chronic diseases, including mental health conditions;
- critical facility-based therapies;
- management of emergency health conditions and common acute presentations that require time-sensitive intervention; and
- auxiliary services, such as basic diagnostic imaging, laboratory and blood bank services.

As the COVID-19 case-load and associated pressure on the health system decrease, many services that were suspended will need to be restored. Decisions about when and how to restore services safely will differ by condition and population (see Part 2). For example, the initiation of cancer treatment must take into account the benefits of early treatment for a given individual and the risk of any associated immunosuppression. Strategies for restoring comprehensive and elective services should be revisited and revised periodically as the outbreak evolves. Substantial decreases in service utilization below agreed thresholds or other performance indicators should trigger targeted strategies, such as population communication campaigns about recognizing danger signs for heart attack and stroke (see Section 1.8 and Part 2).

In many settings, the temporary suspension of services will lead to a backlog of people needing care. Interrupted preventive programmes, including screening, are likely to require catch-up campaigns, such as for missed vaccinations. The suspension of surgical services, for example, is likely to create substantial backlog in most systems, with some procedures that were initially deemed elective becoming progressively more urgent. Given the health workforce requirements, the necessity for close contact and the associated material resource needs (including operating theatres and extensive personal protective equipment [PPE]), restoration of operative services will require a coordinated and well-planned strategy. Planning should account for the possibility of prolonged periods of increased volume and urgency relative to baseline conditions.

In addition to the suspension of services, other barriers associated with the pandemic context have led to complications and morbidity associated with delayed care-seeking, such as severe exacerbations of noncommunicable diseases (NCDs) or advanced infections. The associated confinement, fear, job loss and

uncertainty about the future, has been linked with an increase in domestic, institutional, sexual and gender-based violence and with an overall increase in mental health conditions, including depression, anxiety and substance use disorders (see Section 2.2.3). All of the above generate increased need for health services.

Service restoration is likely to occur in the context of a new normal, characterized by ongoing risks of COVID-19 transmission and recurrence of local clusters or community transmission. Service delivery needs to be restored safely, continuing to mitigate the risk of transmission, building on adaptations initiated during the response and anticipating the likelihood that restrictive measures will be reintroduced. Contingency planning for the possible resuspension of services may include supplying ambulances and facilities, establishing clear transition protocols and training personnel. Programme-specific mitigation measures and contingency plans will be needed to safely start, stop and restart activities as the pandemic evolves.

Effective anticipatory planning paves the way for a transformation that leaves health systems better prepared and reduces potential risks from future disruptions. Adaptations should be oriented to strengthen the resilience of services and increase the system potential for rapid scale up of COVID-19 treatment capacity, while ensuring safe access to high-quality essential health services.

KEY ACTIONS:

- Generate a country-specific list of care essential health services based on the context and supported by WHO guidance and tools.
- Address the particular needs of marginalized populations, such as indigenous peoples, migrants and refugees, sex workers and the homeless, among others.
- Identify routine and elective services that can be suspended or relocated to less affected areas.
- Create a roadmap for progressive reduction and restoration of services as pressure on the health system surges and recedes (see Section 1.3).
- Anticipate restoring suspended services based on changing needs as public health measures are gradually eased and address any new barriers to access.
- Ensure the continuity of risk reduction and mitigation measures for COVID-19 transmission, strengthening IPC programmes to implement priority measures, in all health service delivery programmes.
- Ensure the development of associated systems components through the strategic actions described in the sections below.



1.5 Optimize service delivery settings and platforms

The settings where specific services are delivered may need to be modified for many reasons, including:

- existing service locations may be unavailable because they have been designated for the exclusive care of people affected by COVID-19, or because they cannot safely provide routine services;
- travel to health facilities may be disrupted by movement restrictions, including disruptions of public transport;
- a need to limit facility-based encounters, including nonessential hospital admissions, for reasons of safety and capacity;
- a shift of the primary venue for acute care services to hospital emergency units to concentrate services in a setting suited to high-volume, high-acuity care that is available 24 hours per day.

Facility-based services should be delivered remotely where appropriate and feasible, and primary care services that would routinely be delivered across multiple visits should be integrated when possible. Inpatient admission processes may need to be adapted, as the risks and benefits associated with hospital-based care may change. Well-coordinated discharge planning linked with primary care follow up can reduce the duration of hospital stays.

Health systems with existing models of integrated primary care that include linkages across levels of care and with homecare and long-term care facilities can use their existing system architecture to re-map referral pathways and ensure timely access to needed services. In all systems, adaptations made in the pandemic context may provide a foundation for the transformation and integration of primary care services.

KEY ACTIONS:

- Conduct functional mapping of health facilities for acute, chronic and long-term care, including those in public, private (commercial and non-profit) and military systems. This is a shared action with pillar 7 of the *COVID-19 strategic preparedness and response plan: operational planning guidelines to support country preparedness and response* (4).
- Taking into account repurposed facilities, ensure that 24-hour acute care services are available at designated first-level hospital emergency units (or similar) and ensure public awareness of these changes.
- Reorient referral pathways and ensure changes are communicated to providers and the public.
- Coordinating primary care support, adjust hospital admission and discharge protocols as appropriate and safe to limit duration of inpatient stays.
- Use available technologies and associated regulations to facilitate the shift of clinical encounters to digital platforms and to support self-care interventions wherever appropriate (see Section 1.12).

- Redesign chronic disease management strategies around limited or adapted provider encounters and increased self-management, while ensuring access to necessary medications and supplies.

 - Integrate services across disease programmes at the point of service delivery where appropriate to limit the number of facility-based encounters.

 - Adapt outreach delivery of services, including availability of medicines at pharmacies, where appropriate.

 - Document adaptive responses (e.g. teleconsultation, integrated primary care, remapping of referral pathways) implemented during the pandemic phase that should be considered for longer-term integration into health system operations.
-



1.6 Establish safe and effective patient flow at all levels (screening, triage, and targeted referral)

Because people present for care prior to having a diagnosis, people with and without COVID-19 will initially access the health system in the same way. To guarantee the safe delivery of services, the minimum requirements for IPC should be enforced throughout the health system, in particular at frontline care sites: primary care centres, clinics and hospital emergency units and ad hoc community settings that have been designated as care sites. Adherence to standard precautions for all patients at all times should be strengthened, particularly regarding distancing, hand hygiene, the appropriate use of PPE, and surface and environmental cleaning and disinfection. Which additional IPC measures are needed will depend on the local COVID-19 transmission scenario and the type of contact required by the activity. Refresher training in basic IPC measures and additional precautions to be adopted for COVID-19 should be conducted for health workers at all levels of the health system.

Frontline sites will need to expand their capacity for COVID-19 screening and isolation and for triage of all patients, including reorganizing physical spaces and stocking appropriate PPE and IPC supplies (e.g. hand hygiene products and disinfectants for environmental decontamination). Where appropriate, appointments should be scheduled to avoid crowding in waiting areas, and waiting areas should be reorganized to ensure physical distancing. Numbers of visitors and visiting periods should be highly restricted. Where possible, to minimize unnecessary contacts among patients and staff, facilities should reorganize processes and physical space to create uni-directional flow.

All sites will need to be ready to assess and refer patients appropriately to reduce transmission and ensure the rational use of scarce advanced-care resources. Instituting targeted referral and counter-referral criteria and processes will be crucial to keep the system from becoming overwhelmed. Since the availability of and access to referral services may be limited in the context of high COVID-19 transmission, all health workers should be prepared (including through targeted in-service training in line with their scope of practice) to take on additional responsibilities related to the initial management of key life-threatening syndromes in children and adults: difficulty breathing, shock, altered mental status and injury (see WHO-ICRC *Basic emergency care*) (10).

KEY ACTIONS:

- Disseminate information to inform the public and guide safe care-seeking behaviour (see Section 1.10).
- Ensure that minimum requirements for IPC, including implementation of standard precautions, are in place in all facilities throughout the health system.
- Ensure adequate IPC supplies to guarantee the safe delivery of services.
- Establish screening of all patients for COVID-19 on arrival at all sites using the most up-to-date guidance and case definitions (11).

- Establish mechanisms for isolating patients in all care sites using the most up-to-date COVID-19 guidance.
- Ensure acuity-based triage at all sites providing acute care.
- Schedule appointments, limit visitors and manage patient flows to ensure distancing, avoid crowding in waiting areas, and create uni-directional flow of patients and staff.
- Establish clear criteria and protocols for targeted referral and counter-referral pathways within the public system and among public and private providers.



1.7 Rapidly optimize health workforce capacity

Many countries face health workforce challenges, including shortages, maldistribution and misalignment between population health needs and health worker competencies. Additional factors may limit the availability of health workers to deliver essential services during the pandemic, including the redistribution of staff to treat increasing numbers of patients with COVID-19 and the loss of staff who may be quarantined, infected or required to care for friends and family. The combination of increased workload and a reduced number of health workers is expected to severely strain the capacity to maintain essential services, and it will particularly impact women, who make up the majority of the health workforce. These predictable challenges should be offset through a combination of strategies, including recruitment, repurposing within the limits of training and skills, redistributing roles among health workers, while keeping health workers safe and providing mental health and psychosocial support (12).

Mechanisms to identify additional health workforce capacity include:

- requesting part-time staff to expand their hours and full-time staff to work remunerated overtime;
- reassigning staff from low or no transmission areas with excess capacity, while ensuring the alignment of clinical indemnity arrangements as needed;
- utilizing registration and certification records to identify additional qualified workers, including licensed retirees and medical residents for appropriate supervised roles;
- mobilizing NGO, military and private sector health workforce capacity, including through temporary deployment to the public sector if relevant;
- where appropriate, establishing pathways for accelerated training and early certification of medical, nursing and other key trainee groups and ensuring they have supportive supervision;
- identifying high-impact clinical interventions for which rapid training would facilitate the optimization of tasks and roles and considering expansions in scopes of practice where possible;
- utilizing online learning platforms and mobile technology to provide key training (e.g. on management of time-sensitive conditions and common undifferentiated presentations in frontline care), clinical decision support and direct clinical services (e.g. telemedicine), if appropriate (see Section 1.12);
- formalizing organized lay-provider systems (such as community first aid responders and Red Cross or Red Crescent volunteers);
- training and repurposing government and other members of the workforce from non-health sectors to support functions in health facilities (e.g. administration, maintenance, nutrition);
- rapidly training and equipping and providing remuneration for community-based health workers to expand capacity to provide essential health services in the community, ensuring supportive supervision and mechanisms for monitoring the quality of care.

Critical support measures include ensuring appropriate working hours and enforced rest periods; providing guidance, training and supplies (including PPE in appropriate sizes for women) to limit health worker exposures; monitoring for illness and stress; ensuring physical security; providing access to mental health care and self-help materials; and ensuring timely payment of salaries, sick leave and overtime, including to temporary staff to eliminate perverse incentives for staff to report to work while ill. Health workers at high risk for complications from COVID-19 may need to be reassigned to tasks that reduce their risk of exposure. Offering accommodation to reduce staff travel time and protect health workers' families from exposure may be appropriate. Overall, planners should emphasize consideration of gender issues, including by supporting women's leadership and recognizing unpaid social care burdens. Sub-national (district) health directorates should be supported to undertake health workforce planning, including for coping with surge conditions, in coordination with the IMT focal point for essential health services.

KEY ACTIONS:

- Support sub-national (district) health directorates to undertake health workforce planning, including for coping with surge conditions, in coordination with the IMT focal point for essential health services.
- Map need for health workers (including for critical tasks and time expenditures), and align rosters and plans for different COVID-19 transmission scenarios.
- Conduct rapid assessments as needed on the availability, capacity and distribution of the health workforce (see Section 1.11).
- Coordinate additional funding to ensure the timely payment of salaries, overtime, sick leave and incentive or hazard pay, including for temporary workers (See Section 1.9).
- Initiate rapid training mechanisms and provide job aids for key capacities, including for screening, triage, clinical management, supply chain management, use of digital tools, and essential IPC measures.
- Maximize occupational health and staff safety measures listed above, including providing mental health care and psychosocial support and promoting self-care strategies.
- Conduct rapid policy reviews of task sharing; accelerated credentialing, licensure and indemnification of health workers; and public-private partnerships for health workforce expansion.
- Utilize WHO's COVID-19 surge calculators (13) to inform planning and prepare for the workforce gaps that may exist at critical junctures throughout the pandemic, using specific country inputs and trajectories.



1.8 Maintain the availability of essential medications, equipment and supplies

The need to redirect supplies to treat patients with COVID-19, compounded by general supply chain disruptions due to the effects of the outbreak on other sectors, is likely to lead to stock-outs of resources needed for essential services. Supply is dynamic during a pandemic and there are elevated risks of shortages. Lists of priority resources linked to essential services should be developed or adapted from existing lists, and planning should be executed in coordination with the overall outbreak response (14). Suppliers and pharmacies, both public and private, can be networked to allow for dynamic inventory assessment and coordinated redistribution. For details, see pillar 8, operational support and logistics, of the *COVID-19 strategic preparedness and response plan: operational planning guidelines to support country preparedness and response* (4).

KEY ACTIONS:

- Map lists of essential services to resource requirements, including medicines, diagnostics, medical devices, and other supplies. Use and adapt existing reference lists as appropriate to monitor availability.
- Assess supply chain constraints and map (or use existing maps of) major public and private distribution centres and appoint focal points to monitor and report on the availability of health supplies at key locations.
- Establish weekly reporting from major distribution points, such as hospitals and district stores, on critical products that may be at risk of shortage or other problems (e.g. expiration, overstock that could be transferred). Reports should be made to national focal points (see below) and the frequency of reporting adjusted as supply levels normalize. Items for priority reporting should be defined according to local context and could include:
 - essential medicines or supplies that are out of stock or at high risk of stock-out, such as those with low inventory as reported by facility health care workers or relative to forecast surges in demand;
 - overstock products that could be moved to other facilities with unmet needs.
- Identify focal points within national agencies, including from regulatory, procurement and customs to develop solutions for supply constraints. National focal points should collaborate to develop guidance on:
 - maintaining central communication with suppliers, manufacturers and other agencies about variations in needs;
 - informing treatment facilities proactively about supply chain problems and solutions and points of contact to escalate concerns;
 - considering alternative supply sources for exceptional use and distribution;
 - other flexibilities, such as regulatory exceptions to label language requirements and customs exceptions, such as fast tracking of anaesthesia medicines and other controlled products;
 - reporting shortages to WHO offices.

- Expedite the flow of logistics information and orders by considering temporary adaptations to existing procurement and logistics management processes if possible. Examples may include using email forms, electronic approvals and mobile applications to save time and avoid unnecessary exposure for personnel.
- Ensure that staff with appropriate knowledge of managing and using products and identifying local supply sources are engaged in processes, particularly for sourcing medicines, PPE, oxygen, cold chain products and diagnostics. For supplies such as oxygen, knowledgeable staff should advise on all supplies required to administer oxygen to patients.



1.9 Fund public health and remove financial barriers to access

People should not pay user fees (co-payments) at the point of care for essential services during the COVID-19 outbreak. The need for payment may present a substantial barrier to people seeking and receiving needed care, which can result in avoidable morbidity and mortality and in increased transmission during an outbreak (15). It is not enough to declare that services are free, particularly in settings in which informal payments are common (e.g. for medical supplies or to health workers). Governments should establish reliable and timely mechanisms to finance fee-free delivery of essential services and communicate this policy clearly to the public.

Health authorities will need to formulate evidence-based requirements for resources for essential services and clearly communicate these to finance authorities and donors so that funds are available and protected. This is particularly important in an environment of growing budgetary pressure, as government revenues fall and expense requirements increase. Such processes should consider the inputs needed for cross-cutting common goods, such as surveillance and associated laboratory capacity, water and sanitation, information systems, communications campaigns and supply chains (16, 17).

Government financial plans should include compensation for the loss of fee income by health facilities (18), as well as funding for the increased expenditures connected to the actions advised in this guidance (e.g. remuneration for overtime for health workers) and for common goods. Financial plans should also consider the costs associated with changes in service delivery modalities and safety measures that mitigate COVID-19 transmission risks, as well as opportunities for productivity gain through greater efficiency in the use of existing resources. Health authorities will need to continually monitor the use of resources and address financing bottlenecks that delay the delivery of essential services.

KEY ACTIONS:

- Reprioritize and reprogramme existing budgetary resources based on a rapid analysis of the incremental costs arising from increased expenditures related to the epidemic, the potential lost income from user fees and the impact of shifts in service delivery modalities.
- Introduce flexible and timely mechanisms to enable the transfer and use of funds, including front-loading public and donor funds to subnational governments and purchasing agencies and increasing flexibility for spending authorization and procurement while maintaining reporting and accountability for the use of funds (19).
- Consider adjusting provider payment methods and rates to enable shifts in service delivery and ensure continuity of funding flows to providers.
- Suspend any co-payments or user fees at the point of care for essential health services for all patients, regardless of their insurance or citizenship status, compensating public and contracted private providers by advancing provider payments where feasible (20).
- If fees, or other financial barriers (e.g. transport costs), cannot be eliminated, work with authorities that provide social cash transfers to ensure vulnerable households can obtain care (21).



1.10 Strengthen communication strategies to support the appropriate use of essential services

Effective communication and community engagement are essential to maintaining trust in public health authorities and ensuring appropriate care-seeking behaviours. While provider encounters should be limited where appropriate, in keeping with physical distancing recommendations, people should not delay seeking care for time-sensitive conditions and should maintain ongoing therapies for chronic conditions to avoid complications and acute exacerbations. Clear messages about when and where to seek care, relevant policies about the suspension of user fees, and reassurance about the safety of care are essential and should be mainstreamed as part of the outbreak response communication strategy. This strategy should include guidance on safe care-seeking behaviour and up-to-date information on changes in service delivery settings (e.g. changes in the location of specific health services, implementation of separate access points for people with and without symptoms of COVID-19 or when suspended services will be available again). Helplines using purpose-designed emergency care protocols can support individual decision-making about whether and when to seek care. Public messaging should identify sources for information and assistance with emerging issues of public health concern, such as violence and substance abuse, as well as information about activities to promote health. The effective use of digital platforms can rapidly expand the reach of health promotion messaging to target audiences (see Section 1.12).

KEY ACTIONS:

- Disseminate information and include translation into local languages to guide safe care-seeking behaviour and to prepare the public for changes in service delivery platforms, including outreach activities in their communities.
- Use multiple communication approaches, including social media channels, to build public confidence and encourage continued utilization of essential services during the outbreak. Engage with communities to inform the adaptation of services so they are more responsive to local needs.
- Identify information sources trusted by the public – such as primary care clinics, pharmacies, community health workers and leaders, and peer networks – and ensure these sources are kept up to date about changes in essential service delivery and about available resources, such as hotlines.
- Provide practical and emotional support through informal networks and health professionals.
- Strengthen local associations to generate and disseminate community-based support initiatives for health promotion and to provide support to isolated and vulnerable people while maintaining physical distancing and IPC measures.
- Ensure that messages are accessible to people with vision, hearing or cognitive impairment.



1.11 Strengthen the monitoring of essential health services

Key decisions about the nature and timing of modifications to service delivery must be informed by the use of accurate and timely data throughout all phases of the COVID-19 pandemic.

Once countries have identified the core set of essential services to be maintained during the pandemic (see Section 1.4), health authorities should regularly track, analyse and report on the utilization and delivery of these services. Reports should highlight any service disruptions and adjustments to be made, such as planning catch-up strategies, implementing workforce optimization strategies, addressing resource allocation and ensuring the availability of essential supplies.

While modifications to data systems may be needed to track the trajectory of the pandemic and its effect on the overall health system, the provision of essential health services should be tracked, as far as possible, using indicators from existing health information platforms, including routine health information systems, rapid health facility assessments, vital statistics systems (including mortality registers) and modelling efforts. Where feasible, countries should also try to assess each community's needs and access to services.

It will be important for health authorities to collect and analyse routinely reported data on a core set of indicators that reflect overall service delivery and utilization and that can be monitored regularly. Collection and analysis should include assessing trends in total outpatient attendance or primary care visits and total hospital discharges and deaths compared with reports from previous years. Where possible, data should be disaggregated by age, sex and population group, as relevant to local context, to ensure that services are being delivered equitably and that no specific population (particularly the most vulnerable and at risk) is being left behind. A small number of tracer services should also be monitored to detect any changes and trends, such as an increase in maternal deaths (Box 1). In addition, countries should ensure that health workers continue to report immediately on any unusual increases in epidemic-prone diseases (e.g. cholera, malaria, measles, meningitis and yellow fever).

A principal challenge will be to obtain data safely and in a timely fashion. Data collection processes will need to be adapted, and routine accountability mechanisms that increase contact, such as requiring confirmatory signatures, should be suspended. Additional efforts may be required to obtain monthly or weekly reports from health facilities and subnational areas. In some contexts, it may be necessary to focus on a subset of sentinel health facilities from which reports can be quickly and easily obtained and analysed to compare activity levels with a similar period during previous years. While these facilities may not be fully representative of the true national context (e.g. there may be a bias towards urban versus rural health facilities), they can nonetheless provide early evidence of changes in health service provision and utilization. In subnational areas where quantitative information is lacking owing to an absence of regularly utilized health information systems, efforts should be made to contact health facilities and health workers directly by telephone to proactively obtain relevant reports. Where possible, data from the community health workforce and other service delivery platforms (e.g. home-based and long-term care) should be captured. In general, the COVID-19 pandemic provides an opportunity to strengthen core surveillance capacities that can deliver public health benefits well beyond this emergency. Capacity improvements made to support data efforts associated with the pandemic should be oriented to sustainable improvement of the system.

Rapid assessments of the evolving needs of health facilities and their capacities to provide essential health services during different phases of the pandemic will also be essential for planning service delivery and any redistribution of resources, both material and workforce. Countries should consider implementing regular rapid assessments of a sample of facilities to determine priority needs in terms of essential medicines, diagnostics, equipment, service availability, safety measures and workforce capacity. In some contexts, these may need to be conducted using sentinel facilities and through telephone or application-based reporting. A suite of modules for conducting these rapid assessments – adapted from existing harmonized health facility modules (22) to meet countries' needs throughout the different phases of COVID-19 preparedness, response and recovery – are under development and will be made available soon at the WHO COVID-19 publication hub (6).

In addition, modelling can serve as an additional method to examine the impact of disruptions in service provision and can help to inform choices about essential services. Baseline assumptions and inputs for each model should align with the context and scope of the model's outputs.

KEY ACTIONS:

- Routinely report and analyse the overall impact of the pandemic on health service provision and utilization by using a small set of core indicators (including total attendance at outpatient departments or primary care visits and hospital discharges and deaths) and evaluate ongoing service provision based on a set of tracer services (see Box 1 and the Annex).
- Disaggregate data by age, sex and population group where possible to ensure equitable delivery of services.
- Conduct rapid health facility assessments to monitor the evolving capacity to provide essential health services; assess disruptions, mitigation approaches, capacity for screening and triage, workforce capacity and the availability of essential medicines and supplies (including PPE).
- In situations in which site visits are not feasible or reporting is delayed, establish a remote digital system using a network of selected sentinel health facilities to determine capacities and priorities and to facilitate effective and targeted referrals and resource distribution.
- Track and monitor funds to ensure that the system is working as expected towards the agreed objectives.
- Where possible, integrate community-based reporting with facility-based health information systems to maintain a comprehensive approach to monitoring service delivery and utilization.
- Strengthen and maintain existing surveillance systems to ensure effective ongoing monitoring of outbreak progression.

Box 1. Sample indicators for monitoring the maintenance of essential health services during the COVID-19 pandemic

Countries should select a context-relevant set of indicators and monitor and report at regular intervals to ensure close monitoring of essential health services. An extended list can be found in the Annex and examples include:

- Total number of outpatient attendances or primary care visits
- Total number of hospital discharges, including deaths (both related and unrelated to COVID-19)
- Number of health workers available for work, disaggregated by occupational group (i.e. by the International Standard Classification of Occupations, or ISCO-8 classification)
- Number of health workers with COVID-19, disaggregated by occupational group, including health or care workers in nursing homes and long-term care facilities
- Essential medicines or supplies for which there is less than 2 months' inventory without confirmation of on-time replenishment or with or without confirmation of replenishment
- Number of facility births
- Number of children younger than 1 year receiving their third dose of diphtheria–tetanus–pertussis (DPT3) or their first dose of measles vaccine
- Number of women and girls receiving (a) oral and (b) injectable contraceptives
- Number of children 0–59 months of age admitted to health facility for treatment of severe wasting and bilateral pitting oedema
- Percentage of hospital emergency units with a validated triage tool (23) in place
- Ratio of hospital-based deaths from acute injury to overall deaths from acute injury
- Number of inpatient admissions for acute cardiovascular and cerebrovascular emergencies
- Number of new and relapse TB cases notified
- Number of new cancer diagnoses

A full set of indicator metadata, including recommended disaggregation and analytical guidance, is under development. Indicators should be monitored and reported over a specified period (i.e. weekly, monthly) and disaggregated where possible (e.g., by age and sex).



1.12 Use digital platforms to support essential health service delivery

Innovative approaches using digital platforms allow health systems to better manage the COVID-19 response and to maintain the delivery of essential health services and communicate to the public about how to access these services. Digital modalities can be used to rapidly share and exchange targeted information, whether for training and supporting the health workforce, enabling peer-to-peer communication or implementing surveys to monitor service provision and supply.

An important prerequisite for the use of digital health technologies is ensuring alignment with existing national digital health strategies, policies and action plans (24). Technologies should be selected after considering the existing infrastructure and the enabling environment (e.g. standards and interoperability, legislation, regulations and capabilities of the workforce) (25).

There are many relevant and practical examples of the use of digital technologies for maintaining and strengthening service delivery in the COVID-19 context. Telemedicine solutions include clinical consultations conducted via video chat or text message, staffed helplines, e-pharmacies and mobile clinics with remote connections to health facilities for timely access to patient data such as medication lists and diagnostic test results. Digital applications can be used as part of supportive supervision of health workers, and evidence-based digital tools can be used to support clinical decisions on diagnosis and treatment. Messaging platforms that identify and communicate the location of dedicated facilities for specific services, such as routine vaccinations or maternal health services, can create transparency and increase appropriate care-seeking behaviour in communities. In addition, digital health technologies can support medication adherence and empower individuals to take more proactive measures to manage their own health. Evidence-based, high-quality self-care interventions can be delivered via digital technologies (26) and can offer effective alternatives to some face-to-face interactions with providers.

Users will require guidance or training in the use of digital health solutions, and email and messaging platforms must meet all of the relevant standards for interoperability and privacy when exchanging patient data. While there are a range of different digital tools and ways in which they can be implemented, key principles apply across all. WHO recommends that common platforms be used when possible, and interoperability should be carefully assessed and planned to avoid having multiple programme solutions that cannot interact. The implementation of digital health technologies should not contribute to the digital divide and should avoid stand-alone disease-specific and non-interoperable digital health solutions.

The key actions outlined below should be reviewed and aligned with existing interagency digital health policies, priorities and practices (27, 28, 29). These actions can be prioritized for quick and systematic implementation and build upon existing digital health solutions spanning different programme areas. Efforts should be reviewed throughout the response and later phases to maintain alignment with national strategies on essential health services and contribute to creating more resilient and prepared health systems for future emergencies.

KEY ACTIONS:

- Establish interim guidance and regulation on the:
 - delivery of health services through digital health technologies, taking into account accessibility, liability, safety and privacy;
 - use of electronic billing and payment systems, if applicable;
 - timely and secure storage and exchange of data among medical laboratories, facilities, practitioners and pharmacies;
 - governance and management of data for surveillance of disease and nutrition status, tracking and reporting adverse events, and clinical research across multiple sites;
 - use of remote clinical consultations for case evaluation, triage and management.

- Create a central, up-to-date and reliable website or digital messaging portal for disseminating information to the public and providing guidance about safe care-seeking behaviour.

- Implement tools and information systems to support teleconsultations (see Section 1.5).

- Establish a mechanism for implementing electronic prescriptions (e-prescriptions) among public and private pharmacies and suppliers.

- Consider implementing automated stock tracking, management and delivery software to maintain the availability of essential equipment, medicine and supplies, including vaccines (see Section 1.8).

- Utilize existing digital health information systems at the facility and national levels to monitor the provision and utilization of essential health services and health workforce capacity (see Sections 1.5 and 1.7).

- Initiate rapid in-service training in key areas through online or digital learning platforms, including ongoing supervisory components (see Section 1.7).

Part 2. Life course and disease considerations





The sections below address programme-specific considerations and adaptations needed in the pandemic context. The first sections address considerations by stage of the life course, and these are complemented by detailed guidance on specific topical and disease-oriented programme activities. Together, these approaches provide a comprehensive account of the key modifications required to maintain essential services in the context of the pandemic. Each section provides a brief overview and a table of activities that highlights needed adaptations as well as considerations for transitions as the pandemic evolves. Linked areas are highlighted with cross-references. These tables are intended to be used together with the Annex on indicators.

These sections do not replace comprehensive programme guidance and should be read in conjunction with Part 1 of this document and with *Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic* (8). In particular, all activities described below should be implemented in a way that is fully consistent with up-to-date WHO guidance on IPC (6). In general, where a programme activity is not mentioned and can be delivered safely, it should be continued in accordance with existing guidance.



2.1 Life-course stages

2.1.1 Maternal and newborn health

Reductions in access to and utilization of essential maternal and newborn health (MNH) services during epidemics translate into important increases in the number of women and newborns who suffer complications or die during pregnancy, childbirth and the postnatal period (30, 31). Even a modest decline of 10% in service coverage during pregnancy and for newborns could result in an additional 28 000 maternal deaths, 168 000 newborn deaths, and millions of unintended pregnancies as family planning services face disruptions (31).

Managers should carefully consider the capacities of both facility- and community-based services to decide how best to ensure the continuation of essential MNH services. WHO recommends (32, 33) that all essential elements of antenatal care (ANC) and postnatal care (PNC) are maintained and that women and newborns have access to skilled care at all times, including referral for the management of complications and for auxiliary services, such as laboratory, blood banks and timely and safe transport to health facilities. Risks for mothers and newborns of adverse outcomes associated with unattended childbirth outweigh the potential risks of COVID-19 transmission at health facilities. Essential commodities and supplies should be in stock and available for ANC, childbirth and PNC services, including newborn care.

See WHO guidance on clinical management of COVID-19 disease (34) for management of pregnant or lactating women or newborns with suspected or confirmed COVID-19. Mothers with suspected or confirmed COVID-19 should be encouraged to initiate and continue skin-to-skin contact and breastfeeding with appropriate precautions (35).

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Delivery of eight ANC contacts (36) according to national guidelines	<p>Where comprehensive facility-based services are disrupted:</p> <ul style="list-style-type: none"> • prioritize ANC contacts for low-risk pregnant women during the third trimester and for all pregnant women who are assessed as high risk, including women with comorbidities, who are underweight or overweight, adolescent girls, women at risk of common maternal mental health conditions, or other vulnerable groups; • ensure that birth preparedness and complications readiness plans are adapted to take into account changes to services. <p>Offer 2–3 months of recommended micronutrient supplements and ITNs.</p> <p>Where feasible, use digital platforms for counselling and screening, including for danger signs.</p> <p>Whenever possible, book ANC visits to reduce overcrowding and plan to provide all relevant care in a single visit.</p> <p>Prioritize risk assessments for conditions known to be increased in the COVID-19 context, including tobacco, alcohol and other substance use; common mental health conditions (e.g. anxiety, depression); and gender-based violence.</p> <p>👁 Sections 2.1.4, 2.2.1 and 2.3.1</p>	<p>Ensure targeted outreach strategies are implemented where coverage and care-seeking have declined.</p> <p>Plan for catch up of missed ANC contacts, including delivery of tetanus toxoid-containing vaccines, and HIV and syphilis testing. Establish mechanisms for ensuring continued early delivery of missed contacts or content.</p> <p>Plan for catch-up of incomplete home-based records.</p>
Skilled care during labour, childbirth (37), and the immediate postnatal period in a health facility for a minimum of 24 hours after birth	<p>Maintain maternity waiting homes where they exist, ensuring that appropriate IPC guidance (38) is followed.</p> <p>Ensure birth companions are appropriately screened for COVID-19 infection.</p> <p>Ensure safe transport to care for mothers and newborns.</p> <p>Prioritize support for initiation of skin-to-skin contact and early and exclusive breastfeeding (35).</p> <p>A caesarean section should be performed based solely on obstetric indications, independent of the COVID-19 transmission scenario and the COVID-19 status of the mother.</p>	
Delivery of four PNC (39) contacts according to national guidelines	<p>Where comprehensive facility-based services are disrupted:</p> <ul style="list-style-type: none"> • prioritize PNC contacts with women and newborns during the first week after birth, including PNC contact within the first 24 hours after birth in the case of a home birth; • prioritize follow up of high-risk women and newborns. <p>Where feasible, use digital health platforms for counselling and screening, including for danger signs.</p> <p>Where in-person visits are necessary, provide all relevant care in a single visit.</p> <p>Offer 2–3 months of recommended micronutrient supplements, ITNs and contraceptives. Consider offering long-acting reversible contraception.</p> <p>Ensure that complication readiness plans are adapted to take into account changes to services.</p> <p>👁 Sections 2.2.1, 2.2.3, 2.3.1, 2.3.3 and 2.3.4</p>	<p>Ensure targeted outreach strategies are implemented where coverage and care-seeking have declined.</p> <p>Plan for catch up of missed PNC contacts or essential elements, including administration of vitamin K and birth dose immunizations for newborns</p> <p>Plan for catch-up of incomplete home-based records.</p>
Management of preterm and LBW newborns (33)	<p>Limit the number of caregivers providing KMC support to one or two trained in IPC with PPE.</p> <p>Develop strategies to enable support to continue KMC in the home.</p> <p>Consider early discharge with follow up of stable preterm or LBW newborns receiving KMC.</p>	
NICU admissions	<p>Ensure parents are appropriately screened for COVID-19 prior to entering the NICU.</p>	
Registration of birth and maternal and perinatal deaths and review of maternal and perinatal deaths (40)	<p>Prioritize birth registration for all newborns, regardless of place of birth and monitor birth registration coverage.</p> <p>Prioritize registration of maternal and perinatal deaths.</p>	<p>Implement birth registration catch up as needed.</p> <p>Enhance implementation of maternal and perinatal death surveillance and response.</p>

*See also Section 1.11 and Annex.

ANC: antenatal care; BCG: bacille Calmette–Guérin; IPC: infection prevention and control; ITN: insecticide-treated net; KMC: kangaroo mother care; LBW: low birth weight; NICU: neonatal intensive care unit; PNC: postnatal care.

2.1.2 Child and adolescent health

While mortality rates for COVID-19 appear to be low in children and adolescents (41), this group may be disproportionately affected by the disruption of routine health services. Symptoms of COVID-19 are nonspecific and overlap with the leading causes of deaths in children under the age of 5 years (i.e. pneumonia, diarrhoea and malaria). Models have estimated that disruption to essential services lasting up to 12 months could lead to as many as 2.3 million additional deaths in children under the age of 5 in low- and middle-income countries (30). It is of utmost importance to ensure the continuity of essential services delivered through integrated primary health care, that there are explicit and well communicated referral pathways for secondary care and that antibiotics, oxygen and pulse oximeters remain available. WHO recommends that care be delivered according to standard protocols where feasible (42, 43). Counselling about responsive caregiving and nutrition, and support and monitoring of children's nutritional status should be part of every contact with health services, especially when routine visits may be limited. Caregivers' mental health and needs for psychosocial support can be assessed with simple questions, and necessary support should be provided.

Early evidence suggests that during the pandemic, children and adolescents are at a greater risk of depression and anxiety (44), online harassment (45), and sexual and reproductive health problems, such as unintended pregnancy and intimate partner violence (46). School closures have had dramatic impacts on adolescents' access to preventive services – for example, many adolescents with mental health conditions may access services exclusively within school settings. Millions of children previously fed via school meal programmes may have less access to food, with school-based nutrition services being interrupted, including weekly iron and folic acid supplementation. Delayed vaccinations, dramatically reduced opportunities for physical activity, and increased tobacco, alcohol and drug use may have long-term impacts on preventing NCDs.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Sick child acute care visits (common childhood illnesses and acute malnutrition)	<p>Modify assessment protocols (8) to include COVID-19 screening while taking necessary IPC measures (23).</p> <p>Maintain all acute care services for children with continued recognition of immediate needs for suspected cases and with referral processes adapted as needed (23, 34).</p>	<p>Monitor and report utilization of services for sick child care and for comparison of data with previous years.</p> <p>Monitor and report on children affected by COVID-19, including on post-infectious inflammatory syndromes.</p>
Sick child chronic care visits (chronic conditions and developmental disabilities)	<p>Consider limiting the frequency of face-to-face visits for stable patients while maintaining the normal schedule of visits for those who require close monitoring.</p> <p>Provide medicines and other supplies for longer periods than usual.</p> <p>Provide extra care for children and adolescents with developmental delays and disabilities.</p> <p>Consider using digital solutions to communicate with caregivers and patients.</p> <p>👁 Sections 2.2.2, 2.2.3 and 2.3.1.</p>	
Well child care including growth and developmental monitoring and counselling	<p>Consider postponing routine well child visits while planning for catch-up activities.</p> <p>Integrate into every contact with health services, including immunization visits, growth and developmental monitoring, counselling and support for nutrition, screening for abuse and the mental health of the child and caregiver, and counselling for the caregiver about responsive caregiving (47).</p> <p>Consider using digital solutions to communicate key messages to protect children and promote healthy growth and development.</p> <p>👁 Sections 2.2.1 and 2.2.3.</p>	<p>Rapidly reinstate services for well child care, including growth and developmental monitoring and counselling.</p> <p>Plan and prepare for disruption during the next peak in demand.</p> <p>Monitor changes in rates of undernutrition and overweight.</p> <p>Plan for catchup of incomplete home-based records.</p>
Immunization of children and adolescents	<p>Inform parents and adolescents about altered vaccine schedules, reassuring them about the safety of rescheduling vaccinations for adolescents.</p> <p>👁 Section 2.3.3.</p>	<p>Plan for catch-up of incomplete home-based records.</p> <p>Once schools reopen, ensure that school-based immunization programmes implement a catch-up vaccination plan (48).</p>

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Provision of school- and community-based health education	<p>Where possible, integrate child- and adolescent-targeted messaging (49) through mass and digital media into national and subnational communication strategies.</p> <p>Broadcast educational programmes on TV and radio during school closures.</p> <p>Establish tele-health mechanisms for the provision of counselling about preventing NCDs and provide brief interventions on substance use prevention and sexuality.</p>	<p>Once schools reopen and community gatherings are permissible, design tailored catch-up strategies, especially for students with particular vulnerabilities.</p> <p>Prepare for reopening with adequate preparations for IPC.</p> <p>Assess the impact of differential access to health information and education during school closures.</p>
School-based food security and nutrition services	<p>Design alternative strategies to safeguard schoolchildren's food security and nutrition, for example, by providing micronutrient supplements, take-home rations, deworming medicines (as applicable), cash-based transfers to families with schoolchildren, and food voucher assistance.</p> <p>Put in place alternative modalities for food collection, such as the ability to pick up meals and snacks at distribution points, including at otherwise-closed schools.</p> <p>Build upon existing safety-net structures to ensure vulnerable schoolchildren are cared for.</p> <p>Section 2.2.1.</p>	<p>Reinstate and continue the provision of essential school health and nutrition packages (50).</p> <p>Create contingency plans for the distribution of meals or food baskets during school closures.</p>
Mental health promotion, prevention and treatment (through schools and community-based services)	<p>Identify home-based activities that are safe and entertaining, provide learning opportunities and help children and adolescents adapt.</p> <p>Create contingency plans to provide mental health services during school closures for students who mainly rely on school-based services.</p> <p>Consider using digital platforms to provide psychosocial support and for early detection and management of mental health conditions.</p> <p>Use remote socioemotional learning programmes, and strengthen the capacities of schools, mental health staff and youth champions to deliver them remotely.</p> <p>Section 2.2.3.</p>	<p>Intensify classroom-based socioemotional learning after schools reopen.</p> <p>Follow up with school drop-outs to institute support mechanisms.</p> <p>Enhance opportunities for young people and their families to access mental health and psychosocial support services.</p> <p>Where possible, see if good practices put in place during the pandemic can be institutionalized.</p>
SRH and HIV services to adolescents	<p>Adopt alternative strategies to inform adolescents about where and how to access SRH and HIV information and services.</p> <p>Consider waiving restrictions (if these exist) – such as age or marital status, parental or spousal consent and costs – to facilitate access to SRH and HIV services by adolescents.</p> <p>Establish tele-health mechanisms for individual counselling of adolescents that adhere to the principles of confidentiality and noncoercive decision-making.</p> <p>If available, engage community groups and youth networks to extend the provision of SRH and HIV information and services</p> <p>Sections 2.1.4 and 2.3.1</p>	
Prevention and response to intimate partner violence and sexual violence	<p>Inform adolescents – males and females – where and how to get support and care in case of intimate partner violence or sexual violence. Use the media, if possible.</p> <p>Advise health workers about the heightened risk to adolescents of intimate partner violence and sexual violence and the need to provide support and care discreetly and to ensure confidentiality.</p> <p>Establish helplines and safe houses, if possible.</p>	<p>Advise adolescents to seek support and care if they were unable to do so during times of restricted mobility.</p>
Provision of menstrual products	<p>Advocate with authorities to ensure that menstrual hygiene products are included in lists of priority health products to mitigate supply disruption.</p> <p>Provide information to girls and women about alternative, reusable menstrual health products.</p> <p>Where available, engage community groups to extend the availability of menstrual products.</p>	<p>For programmes that rely on school-based distribution of menstrual hygiene products, create contingency plans for their provision during school closures.</p>

*See also Section 1.11 and Annex.

IPC: infection prevention and control; NCD: noncommunicable disease; SRH: sexual and reproductive health.

2.1.3 Older people

Older people, particularly those with underlying health conditions, are at higher risk of serious health outcomes and death from COVID-19 and are more vulnerable to many of the indirect consequences of the pandemic. They are more likely to have ongoing needs for medication and care, including home-based visits and community care, so movement restrictions may disproportionately affect them (see Sections 2.2.2 and 2.2.3).

Specific WHO technical guidance is available about caring for older people with COVID-19 (6), providing home care (51) and community-based health care (8), and implementing IPC in long-term care facilities (38). WHO recommends that older people, their households and caregivers are informed about preventive measures and the importance of promoting physical and mental health in the COVID-19 context. Older people should be proactively engaged in adapting their care plans, and specific mechanisms should be put in place to ensure that they have safe access to integrated health and social care, including support, monitoring and follow up (52).

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Promote physical and mental health for older people at home	<p>Prioritize informing older people, their households and caregivers about:</p> <ul style="list-style-type: none"> preventive measures, including ensuring good hygiene (53), minimizing visitors and recognizing symptoms of COVID-19 (54); how to promote safe physical activity and maintain mental health during the pandemic (47); how to monitor for negative impacts of social isolation; how to get help and report elder abuse (55); when and how to seek care in order to prevent serious health outcomes. <p>Ensure there is a personalized care plan that is adapted to the pandemic context and addresses the interventions (such as the need for prescription medicines) necessary to manage underlying conditions, self-management to maintain physical and mental capacities, and goals and preferences for future medical treatment and care, including end-of-life care.</p> <p>Prioritize psychosocial support, including for grief and loss.</p> <p>👁 Section 2.2.2.</p>	<p>Identify those who have missed their annual influenza or pneumococcal conjugate vaccination, or both, and provide them according to national vaccine policies. See also Section 2.3.3.</p> <p>Assess urgent care episodes (e.g. incidence of falls), hospital admissions and patient outcomes, and take action as needed, such as implementing outreach to at-risk groups and establishing dedicated helplines.</p>
Care for older people with impairments or disabilities	<p>Ensure information is accessible to older people with impairments (e.g. low vision or blindness, hearing loss, cognitive decline or dementia).</p> <p>Facilitate access to rehabilitation services as needed, including education, self-management information, home exercise programmes and assistive products.</p> <p>👁 Section 2.2.3.</p>	<p>Assess changes in the availability and utilization of rehabilitation services.</p>
Care for older people with underlying conditions	<p>Reach out proactively to older people with underlying conditions and their caregivers through tele-health mechanisms (56) and community engagement (8).</p> <p>Where possible, ensure the availability of critical medicines and mechanisms for their delivery.</p> <p>Develop a mechanism for regular monitoring and follow up of older people.</p>	<p>Assess changes in treatment coverage of underlying conditions (e.g. hypertension, diabetes, chronic obstructive pulmonary disease, dementia, cataracts) and take further action as needed, such as activating dedicated helplines or reviewing outreach mechanisms.</p> <p>Anticipate and plan for surge capacity to manage the backlog of nonurgent health services that were suspended (e.g. cataract surgery).</p>
Care for older people who are care dependent	<p>Develop in advance and together with the older person and the household, an alternative plan in case the primary caregiver is unavailable, and identify an alternative caregiver or alternative facility, or both.</p> <p>Educate caregivers about COVID-19 (38, 51) and identify options for relieving the burden on caregivers, including providing psychological support and respite care.</p>	<p>Assess changes in the availability and utilization of social care services in the community (e.g. day care centres, services for home visits) and ensure an alternative care plan is implemented, if needed.</p>

*See also Section 1.11 and Annex.

2.1.4 Sexual and reproductive health services

Ensuring universal access to SRH services and reproductive rights in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action are key SDG targets (3.7 and 5.6). Lessons from the Ebola and Zika virus disease outbreaks show that during such outbreaks access to sexual and reproductive health (SRH) services can be severely disrupted, disempowering individuals – particularly women and girls – and exposing them to preventable health risks. Reductions in the availability of essential SRH and MNH services will result in many thousands of maternal and newborn deaths due to millions of additional unintended pregnancies, unsafe abortions and complicated deliveries without access to essential and emergency care. Even a 10% reduction in these services could result in an estimated 15 million unintended pregnancies, 3.3 million unsafe abortions and 29 000 additional maternal deaths during the next 12 months (30, 31, 46).

When facility-based provision of SRH services is disrupted, WHO recommends prioritizing digital health services, self-care interventions, task sharing and outreach to ensure access to medicines, diagnostics, devices, information and counselling. This prioritization should include ensuring access to contraception, abortion to the full extent allowed by law, and prevention and treatment services for sexually transmitted infections (STIs), including HIV and human papillomavirus (HPV). Existing gender and social inequalities are exacerbated by the pandemic context, which is impacting girls and women in different ways than it affects men and boys. Women's and girls' exposure is likely to be affected by social norms and expectations around their caregiving role: they provide the overwhelming majority of care in the home and comprise the majority of the health workforce. Overall, the failure to protect vulnerable groups puts them at a higher risk of infection and undermines the broader COVID-19 response.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Access to contraception	<p>If a woman's regular contraceptive method is not available, other contraceptive options (including barrier methods, fertility awareness-based methods and emergency contraceptives) should be made more readily available.</p> <p>Relax requirements for a prescription for oral or self-injectable contraception and emergency contraception and provide multimonth supplies with clear information about the method and how to access referral care for adverse reactions.</p> <p>Enable pharmacies and drugstores to increase the range of contraceptive options they can provide and allow for multimonth prescriptions and self-administration of subcutaneous injectable contraceptives if available.</p>	<p>Plan for clients to return to longer-term methods (such as IUDs, implants) and permanent methods (tubal ligation and vasectomy) if these services were disrupted.</p> <p>Assess inventory and maintain data related to procurement of medications for contraception to avoid potential stock outs. Monitor and communicate about where services can be accessed.</p>
Fertility care	<p>Prioritize fertility care for patients with limited ovarian reserve and consider use of cryopreservation where fertility treatments have been interrupted.</p>	
Safe abortion to the full extent of the law and post-abortion care	<p>Consider reducing barriers that could delay care and therefore increase risk for adolescents, rape survivors and others particularly vulnerable in this context.</p> <p>Consider the option of using noninvasive medical methods for managing safe abortion and incomplete abortion.</p> <p>Minimize facility visits and provider–client contacts through the use of telemedicine and self-management approaches, when applicable, ensuring access to a trained provider if needed.</p> <p>Adjust forecasting for commodities and supplies to meet the anticipated increase in need for medical methods of abortion.</p>	<p>Regularly assess inventory data related to medications and supplies for abortion and post-abortion care to avoid potential stock-outs when normal services resume.</p> <p>Consider expanding telemedicine mechanisms for medication delivery in contexts where it is proven effective.</p>
Sexual health	<p>Increase access to condoms and lubricants for safer sexual practices by using different outlets.</p> <p>Prioritize the need for menstrual products and ensure they are included in lists of priority health products needed to mitigate supply disruption.</p> <p>Communicate about alternative, reusable menstrual health products.</p> <p>Where available, engage community groups to extend the availability of menstrual products.</p> <p>Increase the availability of self-testing for HIV and self-collection of samples for STIs, including syphilis, and referrals to treatment if needed.</p> <p>Prioritize appropriate messaging for safe and consensual sex during periods of self-isolation.</p> <p>Ensure adequate access to essential commodities for people under long-term treatment (e.g. HIV medications, menopause management or hormonal therapy as part of gender-affirming care).</p>	

👁 Section 2.3.1.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Cervical cancer screening and prevention	<p>See specific adaptations for HPV vaccination found in the WHO and UNICEF frequently asked questions (57).</p> <p>Promote self-sampling for HPV testing, facilitating the collection of specimens through pharmacies or drop-offs at facilities. Promote online advice after a negative screening test and adequate management after a positive screening test.</p> <p>Utilize a single-visit approach to screen for and treat precancerous lesions, if the capacity exists and services can be safely delivered.</p> <p>Prioritize screening access for women living with HIV.</p> <p> Section 2.2.2.</p>	Restore HPV vaccination, including safe sex messaging and linkages to SRH services.
Addressing violence against women and girls, gender-based violence and sexual violence	<p>Provide information about changes made to services (e.g. locations, opening hours, contact details).</p> <p>Inform and alert all service providers about the heightened risk of domestic violence related to the prevention and control measures associated with the outbreak.</p> <p>Enhance responses to survivors and provide support for their needs, including for mental health and psychological support.</p> <p>Ensure the availability of post-rape care services including emergency contraception, HIV prophylaxis and treatment for STIs.</p> <p>Identify safe houses, shelters or social service referrals for individuals at risk of or facing violence during quarantine periods.</p> <p>Strengthen screening and services for identifying violence against women and girls, gender-based violence and sexual violence.</p>	

*See also Section 1.11 and Annex.

HPV: human papillomavirus; IUD: intrauterine device; SRH: sexual and reproductive health; STIs: sexually transmitted infections.



2.2 Nutrition, noncommunicable diseases and mental health

2.2.1 Nutrition

The COVID-19 pandemic will impact the nutritional well-being of vulnerable populations through multiple mechanisms. Dietary quality and quantity are expected to fall due to the loss of household income and disruptions in food systems (e.g. disruption of trade and transport of foods from production to markets) and school feeding programmes. Programmes delivering important nutrition components, such as ANC and PNC, counselling for infant and young child feeding, micronutrient supplements and early detection and treatment of wasting) will be threatened, along with the surveillance of at-risk populations used to identify communities or individuals in need of nutritional support.

As health services divert their attention to the COVID-19 pandemic, nutrition services must adapt in order to prevent increases in morbidity and mortality due to malnutrition. The adaptations made will depend on the phase of the pandemic, the response and the country context, including the food security situation and burden of malnutrition. In areas with a high burden of malnutrition, essential nutrition actions for children, adolescents, pregnant and lactating women and other vulnerable populations should be maintained throughout all stages of the response. Nutrition information management, surveillance and monitoring should be adapted to ensure coordination of nutrition activities.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Maternal nutrition	<p>If ANC or PNC contacts are reduced, provide 2–3 months of recommended supplements per visit (IFA supplements and calcium supplements in ANC; IFA in PNC).</p> <p>Where food distribution is significantly interrupted and in populations with a high prevalence of nutritional deficiencies, the use of multiple micronutrient supplements that include IFA may be considered for pregnant and lactating women.</p> <p>Among undernourished populations, provide balanced energy and protein dietary supplementation to pregnant women.</p>	<p>If ANC or PNC visits have been missed and supplementation interrupted, screen for maternal haemoglobin concentrations upon return to the clinic and treat cases of anaemia.</p>
Promote breastfeeding and support new mothers to start breastfeeding	<p>Provide information and support to all mothers to begin breastfeeding and clarify information about risks and benefits in relation to COVID-19 (34, 35).</p> <p>Use digital health platforms to deliver ongoing counselling about infant and young child feeding, if feasible.</p> <p>👁 Section 2.1.2.</p>	
Vitamin A supplementation for children aged 6–59 months in areas where vitamin A deficiency is a public health concern	<p>If there are disruptions in routine child health visits, vitamin A supplementation may be delayed or integrated with other programmes, such as immunization.</p>	<p>If disruptions are prolonged, monitor children for eye signs of vitamin A deficiency.</p> <p>Catch-up vitamin A supplementation campaigns may be needed and can be integrated with other programmes, such as immunization.</p>
Provide iron supplements or multiple micronutrient powders for children and provide IFA supplements to adolescents and adult women in populations where anaemia is a public health problem	<p>Where the provision of supplements is recommended for only several months per year, distribution may be delayed (8).</p> <p>👁 Section 2.1.2.</p>	<p>Similar to strategies for vitamin A, screening and catch up may be required if delays are prolonged or may be implemented once the outbreak settles.</p>
Early detection, referral and treatment of wasting, including screening of sick children	<p>Adapt treatment protocols for wasting without complications to allow for supply chain breaks or other constraints (e.g. using modified anthropometric criteria and modified dose and distribution schedules for ready-to-use therapeutic food).</p> <p>Treatment of severe wasting with medical complications should follow WHO recommendations for inpatient care with enhanced IPC measures.</p> <p>👁 Section 2.1.2.</p>	<p>If disruptions are prolonged, prioritize services for children with wasting.</p>

*See also Section 1.11 and Annex.

ANC: antenatal care; IFA: iron and folic acid; IPC: infection prevention and control; PNC: postnatal care.

2.2.2 Noncommunicable diseases: cardiovascular diseases, cancer, diabetes, chronic respiratory diseases, chronic kidney disease, oral health conditions

COVID-19 can negatively impact NCD outcomes for adults and children through several pathways including the higher susceptibility to COVID-19 infection and higher case fatality rates among people with NCDs; delays in diagnosis of NCDs resulting in more advanced disease stages; delayed, incomplete or interrupted therapy (treatment, rehabilitation, palliation) of NCDs; and increases in behavioural risk factors, such as physical inactivity and increased use of harmful substances. Examples include delayed care-seeking for emergencies, such as heart attack and stroke; increased infection risk for people with kidney failure who need treatment in dialysis centres; diabetic crisis caused by interruption in insulin supply; worsened cancer prognosis as a result of a delayed diagnosis; and deteriorating functioning among people with chronic respiratory diseases because of interruptions in pulmonary rehabilitation.




Evidence (58) suggests that people with cardiovascular disease (CVD) or diabetes, as well as those with CVD risk factors, such as hypertension and obesity, are at increased risk of severe disease and death from COVID-19, and this poor prognosis seems to be heightened with advanced age. In this subgroup, early clinical evaluation is warranted for any suspect symptoms.

The nature of COVID-19 may make some NCDs more difficult to recognize. For example, COVID-19 has been associated with cardiovascular complications that can make the accurate diagnosis of myocardial infarction more difficult. In addition, patients with chronic respiratory diseases face particular challenges in making choices about when to seek care, since their baseline disease may cause signs and symptoms similar to those of COVID-19. Cancer treatment plans should consider the increased morbidity and mortality caused by COVID-19 in cancer patients, and multidisciplinary teams can support the definition of priority interventions.

In treating patients affected by NCDs and COVID-19, it is critical to monitor the side-effects and interactions of medicines. For example, the off-label use of medicines to treat COVID-19, such as antiretroviral drugs usually used to treat HIV infection or chloroquine, may have cardiovascular side-effects. Additionally, misinformation about NCD medicines and their impact on COVID-19 susceptibility or outcome needs to be addressed and corrected (59, 60).

It is also important to reinforce health-promoting behaviours for children and adults and to maintain population-level interventions for tobacco and alcohol control, diet and physical activity. These interventions may include regulatory and fiscal measures relating to food, alcohol and tobacco, including implementation of the WHO Framework Convention on Tobacco Control and WHO recommendations on the "best buys (61)" for NCDs. The COVID-19 pandemic provides an opportunity to promote tobacco cessation, which will also benefit the prevention and control of chronic respiratory diseases and other NCDs (62).

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Prevention and screening		
Prevention of NCDs through reduction of behavioural risk factors	Adapt health promotion activities (e.g. on tobacco control and cessation, harmful use of alcohol, physical activity, healthy diet and stress management) to enable delivery via telephone, SMS text or online resources, as feasible. Increase tobacco cessation support as per WHO guidance (63, 64).	Review when community transmission decreases. Monitor effectiveness of delivery mechanisms and consider further scale up of virtual mechanisms for delivery where there is proven effectiveness.
Vaccination for prevention of cancer (HBV, HPV) and protection of people with high-risk conditions	See specific adaptations for school-based vaccination and vaccination of adults, older persons, high-risk individuals and health care workers, which can be found in the WHO and UNICEF guidance for frequently asked questions (57).	
Cardiovascular risk assessment and adult health check programmes	Maintain advice on NCD risk reduction, with delivery strategies modified as above, and consider temporarily suspending facility-based screening programmes.	Review when community transmission decreases.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Cancer screening (cervical, breast, colorectal)	<p>Modify and consider temporarily delaying cancer screening programmes, particularly those that are facility based.</p> <p>Consider promotion of home-based, self-sampling for cervical cancer (HPV test) and colorectal cancer in settings with appropriate infrastructure and capacity.</p> <p>Maintain communication with and diagnostic follow up for those who have a screening test. Remote support can be utilized for counselling after a negative test and planning for management after a positive test. Screening for high-risk individuals (such as cervical cancer screening for women living with HIV) may be prioritized.</p> <p> Section 2.1.4.</p>	Review when community transmission decreases.
Diabetic retinopathy screening	Consider temporarily suspending facility-based screening programmes until community transmission decreases.	Monitor the incidence of blindness and prioritize catch-up screening for adults who have had type 1 diabetes for >5 years, people with diabetes with established proliferative retinopathy who have missed their visit, and people with diabetic nephropathy.
Diagnosis		
Cancer early diagnosis programmes	<p>Initiate or increase campaigns to encourage the general public to seek consultation for possible symptoms of cancer.</p> <p>Utilize virtual consultations to minimize delays in diagnosis.</p> <p>Maintain in-person clinical appointments, as needed, for time-sensitive services (e.g. evaluation of abnormal bleeding) and decision-making.</p>	Monitor the number of new cancer diagnoses per month and institute rapid remedy actions if any significant drop is detected (65).
Diagnosis of cancer	Prioritize cancer imaging studies that can inform time-sensitive decision-making about treatment.	
Diagnosis of chronic respiratory disease	<p>Because bronchoscopy and most pulmonary function tests have the potential to aerosolize the coronavirus, screen patients for COVID-19 prior to these procedures and limit procedures to those that will have a critical impact on patient care, including those that are part of a cancer management pathway.</p> <p> Section 2.3.2.</p>	Keep changes under review, monitoring their impact on patient pathways.
Chronic disease management and specialist treatment (66, 67, 68)		
General management of chronic NCDs	<p>Increase awareness of patients with NCDs about their heightened susceptibility to COVID-19 and ways to reduce the risk of transmission and recognize COVID-19 symptoms; this activity should also include information regarding the implications for self-management of NCDs.</p> <p>Ensure patients with chronic NCDs are aware of when and how to access telehealth or online services for regular monitoring or urgent care for acute exacerbations or deterioration.</p> <p>Create self-management plans, and support self-monitoring of disease, if appropriate, that is backed up by health care workers using alternative delivery mechanisms, if needed.</p> <p>Increase home supplies of medication and stocks of monitoring devices.</p> <p>Modify routine clinical reviews (e.g. frequency, means of delivery), as appropriate.</p> <p> Section 2.1.2.</p>	Monitor the incidence of medicine stock-outs, disease complications, COVID-19 patients with underlying conditions, urgent care episodes, hospital admissions and patient outcomes; take remedial action as needed, such as ensuring outreach to at-risk groups, activating dedicated helplines and reviewing triage and care pathways.
Management of chronic respiratory diseases such as asthma and chronic obstructive pulmonary disease	<p>In addition to modifying the management of chronic NCDs in general:</p> <ul style="list-style-type: none"> • increase patient education to include differentiating symptoms of COVID-19 from the usual cough or symptoms; • direct patients to online resources for support or training in correct inhaler technique and virtual consultations to reinforce patient awareness and avoidance of triggers for acute episodes to minimize risk of hospital admission; • if appropriate, ensure patients with asthma have rescue packs (i.e. a short course of steroids) to manage acute exacerbations at home with support, according to self-management plan agreed with clinician. 	Consider further scale up of virtual mechanisms for delivery where there is proven effectiveness.
Management of diabetes	<p>In addition to modifying the management of chronic NCDs in general:</p> <ul style="list-style-type: none"> • modify the management of severe hypoglycaemia in people with insulin-treated diabetes by supplying family with glucagon injection, and educate them about using it at home; • provide people with type 1 diabetes with urine ketone self-monitoring strips, and ensure phone contact is established with a provider. 	Based on monitoring described above, take remedial action as needed, such as ensuring outreach to at-risk groups, activating dedicated helplines and reviewing triage and care pathways.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Management of CVDs (secondary prevention, including cardiac rehabilitation, for those with existing CVD)	<p>In addition to modifying the management of chronic NCDs in general:</p> <ul style="list-style-type: none"> • develop individually tailored health promotion programmes, modifying them to be delivered through mass media campaigns, telephone, SMS text or online resources, as feasible; telerehabilitation is an option for patients discharged from the hospital after an acute event; • extend treatment plans that are likely to expire during movement restrictions; • emphasize the importance of early detection of ischaemic heart disease and stroke (using the FAST acronym for face drooping, arm weakness, speech difficulty, time to call for help) and of continued care-seeking for signs of NCD emergencies; • ensure there is proactive follow up and outreach to patients, particularly those avoiding visits to health facilities. 	<p>Review when community transmission decreases.</p> <p>Monitor the effectiveness of delivery mechanisms on risk behaviours and outcomes.</p> <p>Consider further scale up of virtual mechanisms for delivery where there is proven effectiveness.</p>
Management of atrial fibrillation for prevention of stroke	<p>Consider modifying the delivery of facility-based monitoring of anticoagulation therapy, for example, by collecting blood samples from home or another designated place, and ensure pathways are in place if test values trigger further action (such as specialist consultation).</p>	<p>Review when community transmission decreases.</p>
Acute treatment and specialist care for NCDs	<p>Modify treatment pathways for specialist and emergency care services to assist people with and without COVID-19, and ensure patients are screened for COVID-19 at the first point of contact.</p> <p>Institute a multidisciplinary discharge strategy with primary care support, if not already in place.</p> <p>Modify treatment decisions according to the disease and tailored to the individual in consultation with the specialist or multidisciplinary team, or both</p>	<p>Monitor hospital admission and mortality rates, key performance and quality indicators, and patient outcomes; significant variations (e.g. in admissions) should trigger targeted strategies and communication campaigns.</p>
Care for ACS and stroke	<p>Maintain emergency care systems and protocols for managing ACS and stroke.</p> <p>Modify ACS and stroke networks (hub and spoke + differentiated pathways), according to patient's COVID-19 status.</p> <p>Maintain time-sensitive interventions (e.g. thrombolysis, thrombectomy).</p> <p>Develop safe options for rehabilitation during inpatient care.</p> <p>Recognize potential medicine interactions and cardiovascular toxicities of several off-label medicines used for COVID-19 treatment.</p> <p>Prioritize follow-up consultations with stroke survivors because they are at higher risk of pneumonia.</p>	<p>Monitor delays in care-seeking and modify helpline and ambulance triage protocols as needed.</p> <p>At the facility or stroke-network level, monitor survival rates, patients' functional recovery and variations in stroke services and interventions; adjust pathways and improve care as needed.</p> <p>Consider developing a contingency plan for upgrading facilities and ambulances with, for example, diagnostic tools, treatment kits and relevant protocols, and providing training to personnel to activate the protocol for ACS or stroke with at-distance support from the relevant clinical network.</p> <p>Review regulations and protocols for communicating with the patient and family members and ensure they include, for example, phone calls, SMS text messaging and video calls.</p>
Specialist care of cancer	<p>Prioritize timely initiation of cancer treatment for cancers in which delays impact outcomes.</p> <p>Because cancer patients with advanced disease who are diagnosed with COVID-19 are at a higher relative risk for a poorer outcome, adaptations to treatment plans may be required.</p> <p>Prioritize the treatment of cancers for which the benefits of early initiation of therapy outweigh the risks of initiating therapy in the pandemic context, taking into account exposure risks and the extent to which the patient is immunocompromised.</p> <p>Tailor and modify to individual circumstances and service context:</p> <ul style="list-style-type: none"> • treatment sequence (such as the use of chemotherapy or radiotherapy before surgery); • treatment regimens (such as the duration of therapy for patients in deep remission); and/or • treatment plan (such as candidates for allogenic hematopoietic stem cell transplantation). <p>For people with cancer who are diagnosed with COVID-19, consider immediately changing their cancer treatment plans, including potentially suspending immunosuppressive therapies.</p>	<p>Ongoing adaptations to cancer treatment services may be required depending on changes in the available workforce, infrastructure, case volume and clinical outcomes.</p>

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Renal dialysis	<p>Facilitate travel to haemodialysis centres and explore possibility of decreasing the frequency of haemodialysis, from three to two times per week, in patients who can tolerate such a regimen, in order to reduce the risk of infection or to mitigate a shortage of dialysis supplies, or both.</p> <p>Remote consultations should be considered to assist patients on home dialysis.</p> <p>Deliveries of home dialysis supplies might need to be adapted (e.g. deliver a larger number of kits or amount of fluids).</p>	Anticipate possible increase in number of patients with end-stage renal disease or nonrecovery of acute kidney injuries requiring admission to dialysis in the post-pandemic phase and establish priorities for management, including vascular access procedures and transplantation programmes.
Delivery of oral health care	<p>Suspend temporarily elective procedures and nonurgent oral health care, but maintain services for oral health emergencies, such as acute infections, pain, bleeding or trauma, using enhanced IPC. Use remote digital platforms, if available, for initial assessment.</p> <p>Because oral health care services are considered high-risk environments for cross-infection, consider modifying oral health care procedures to include essential interventions that generate no or only minimal aerosol production.</p>	
Rehabilitation		
Rehabilitation for all NCDs	Modify rehabilitation programmes by tailoring them to individual circumstances and develop practical advice for speech, physio-, psycho-, and occupational therapists; support workers to determine how to implement remote consultations rapidly and efficiently (69).	Conduct individual risk assessments to initiate changes to management, and monitor for complications.
Rehabilitation after limb amputation	Develop safe options for rehabilitation during inpatient care, and maximize the use of telerehabilitation for recently discharged patients and their family members.	Analyse quality indicators (i.e. outcome measures) that can be used to trigger additional measures to ensure access to rehabilitation.
Rehabilitation for chronic respiratory disease	Avoid face-to-face pulmonary rehabilitation classes and patient support groups, but consider alternative delivery mechanisms, such as telehealth or online resources, or both, to support maintenance of function.	Review when community transmission decreases.
Rehabilitation for stroke and CVD	<p>Activate telerehabilitation for recently discharged stroke patients and their family members. If this is not possible, develop safe options for community-based and outpatient follow up.</p> <p>For cardiac rehabilitation, see above, Management of CVDs (secondary prevention, including cardiac rehabilitation, for those with existing CVD).</p>	Analyse stroke network quality indicators (e.g. functionality rates) that can be used to trigger additional measures to ensure access to rehabilitation.
Palliative care		
Palliative care for NCDs	<p>See WHO guidance on palliative care and ethical issues during emergencies and the COVID-19 pandemic (70, 71).</p> <p>Update advance care plans for people with NCDs, and share them across the health system, if possible.</p> <p>In the home care setting, modify delivery so that opioid injections are replaced by oral opioids, patches, or both. Train family caregivers of patients with NCDs in palliative care.</p> <p>Provide patient education material about, for example, management of breathlessness at home, for those with chronic heart and lung conditions who cannot be referred to hospital.</p> <p>Family caregivers for people with NCDs or other conditions should be exempted from movement restrictions.</p>	Monitor daily or weekly the numbers of patients who have COVID-19 and those who do not who need palliative care, in order to further adapt service provision.

*See also Section 1.11 and Annex.

ACS: acute coronary syndrome; CVD: cardiovascular disease; HBV: hepatitis B virus; HPV: human papillomavirus; IPC: infection prevention and control; NCDs: noncommunicable diseases.

2.2.3 Mental, neurological and substance use disorders

Mental health conditions include a range of mental, neurological and substance use (MNS) disorders and their associated psychosocial, cognitive and intellectual disabilities. The direct and indirect consequences of the pandemic impact these conditions in many different ways. Major stressors are a potent risk factor for the development, exacerbation and relapse of a range of MNS disorders and unhealthy patterns of behaviour, including the use of alcohol and psychoactive drugs and excessive gaming or gambling (47). Among people with substance use disorders, disruption of the supply of alcohol and drugs during the pandemic can result in severe withdrawal states. COVID-19 itself is associated with neurological manifestations, such as delirium, encephalopathy, agitation, stroke and meningoencephalitis. Social isolation, reduced physical activity and reduced cognitive stimulation may increase the risks of cognitive decline and dementia, and people with dementia have higher susceptibility to COVID-19 and higher rates of death associated with the disease.

The disruption of care for MNS disorders can be life-threatening, such as in the cases of interruptions to treatment for epilepsy, unaddressed suicide risk, disrupted harm reduction services, and unmanaged opioid overdose and severe alcohol withdrawal syndromes. It may also lead to increased contact with the criminal justice system or expose people to intolerable suffering (such as in severe depression, acute psychosis, opioid withdrawal or severe dementia), and can have an impact on child development in the case of antenatal or postnatal MNS disorders.

WHO recommends that mental health services be enhanced and strengthened in the pandemic context. Providing safe care for MNS disorders in prisons and detention centres is a priority, given the high rates of MNS disorders in incarcerated populations and the high risk of infection in confinement.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Emergency and acute care for MNS disorders in inpatient and outpatient settings	<p>Continue acute and emergency care for MNS disorders (e.g. imminent suicide risk, seizures, delirium, acute psychosis, acute mania, opioid overdose, severe and complicated substance withdrawal syndromes), and ensure that some inpatient care for MNS disorders remains available.</p> <p>Since neurological manifestations are associated with COVID-19 (e.g. delirium or encephalopathy, agitation, stroke, meningoencephalitis, impaired sense of smell or taste), ensure that all patients presenting with these manifestations are evaluated for COVID-19 as well as for other causes.</p>	
Treatment and care for MNS disorders in outpatient settings	<p>Prioritize face-to-face care for initial management of severe MNS disorders involving either severely impaired functioning or life-threatening situations.</p> <p>Establish clear protocols to ensure the availability of diagnostic and laboratory testing for key scenarios (e.g. to determine cause of delirium or interactions between medicines, blood level of lithium, white blood cell count for clozapine use, neuroimaging for stroke).</p> <p>Incorporate early recognition of and treatment for antenatal and postnatal MNS disorders into modified ANC and PNC protocols. See also Section 2.2.1.</p> <p>For people with substance use disorders, maintain critical harm reduction interventions and psychosocial services, including uninterrupted opioid agonist maintenance treatment and management of severe withdrawal syndromes.</p> <p>Reach out to frontline workers in all health facilities (including staff in long-term care homes) to offer access to mental health care and self-help materials.</p> <p>Introduce use of longer prescription periods involving either expanded take-home practices (e.g. for methadone or buprenorphine treatment, sustained release antiseizure medicines, or neuroleptic depot with informed consent) or periodic delivery of medicines to the home. Involve caregivers to ensure medicines are stored safely to reduce suicide risk.</p> <p>Digital health care or telemedicine can be introduced for:</p> <ul style="list-style-type: none"> • follow-up visits; • psychological treatments, if functioning is not severely impaired; • caregivers of people with MNS disorders; • group psychosocial care (e.g. mutual-help groups). <p>Redirect initial care for mild depression and anxiety to self-help (e.g. digital or written materials) (72).</p> <p>Enhance outreach care for isolated people with severe MNS disorders, as needed.</p> <p>Ensure home visits are maintained for specific situations (e.g. care of older adults with MNS disorders).</p> <p>Delay elective surgery for epilepsy and delay any psychometric assessments.</p>	<p>Reinstate routine laboratory monitoring for people with MNS disorders on psychotropic medications when they return to the clinic.</p> <p>Prepare for increased service use (beyond pre-pandemic levels) for a range of conditions, including depressive disorder, anxiety disorder, alcohol and drug use disorders, prolonged grief disorder, psychosis, posttraumatic stress disorder and self-harm and suicidality.</p> <p>Ensure that rehabilitation support is available for people with severe MNS disorders and associated psychosocial, intellectual and cognitive disabilities.</p>

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Care provided in specialized inpatient or residential facilities (e.g. mental hospitals, homes for people with dementia, alcohol and drug rehabilitation centres)	<p>Limit admissions to urgent cases. Perform COVID-19 testing prior to admission, ensuring that recommended quarantine protocols are followed with full IPC used for positive cases.</p> <p>Establish and enhance monitoring of complaint mechanisms for neglect or human rights violations.</p> <p>Enable remote family support if visiting is suspended.</p> <p>Use accessible formats and familiar communication channels to deliver information about IPC measures for people with psychosocial, intellectual or cognitive disabilities.</p> <p>Ensure that access to high-quality treatment and criteria for isolation are the same for people with MNS conditions as they are for others.</p>	
Cross-sectoral service delivery for MNS disorders (via schools, social services, criminal justice system)	<p>Enhance engagement with governmental and NGO actors to mobilize social and resources to support people with MNS disorders (e.g. at home, and in schools, care homes and prisons), and ensure that people with severe MNS disorders have access to services that address their basic needs.</p> <p>Modify school mental health services to be delivered through online platforms.</p>	Consider the long-term effects of the COVID-19 response on high-risk groups (e.g. those with pre-existing MNS disorders, older persons, women, young people, children); enhance cross-sectoral services.
Mental health promotion and prevention of MNS disorders	<p>Provide access to information about positive coping methods.</p> <p>Support nurturing learning environments for children and young people who are confined at home.</p> <p>Support activities that help isolated older adults stay connected with others.</p>	

*See also Section 1.11 and Annex.

ANC: antenatal care; IPC: infection prevention and control; MNS: mental, neurological and substance use; NGO: nongovernmental organization; PNC: postnatal care.



2.3 Communicable diseases

2.3.1 HIV, viral hepatitis and sexually transmitted infections

Among people living with HIV, those with low CD4 cell counts and high viral load and those not taking antiretroviral therapy (ART) have a generally increased risk of infections and related complications. While it is unknown if the immunosuppression associated with HIV infection increases the risk of COVID-19 disease or concomitant bacterial infections occurring during ventilation of patients with acute respiratory disorders, given the pandemic context it is prudent to take additional precautions for people with advanced or poorly controlled HIV infection.

Providing early testing, implementing preventive measures, including harm reduction, and ensuring continuity of ART are essential to maintain an effective HIV response during the COVID-19 pandemic. Modelling suggests that in sub-Saharan Africa a 6-month interruption of ART would result in an excess of 500 000 adult deaths from HIV infection during a 4-year period and an up to twofold increase in mother-to-child transmission of HIV. Poorer clinical care resulting from overstretched health facilities, interruptions of the supply of medicines and suspension of HIV testing would also have significant population impacts (73).

To limit the potential for disruptions to the supply of ART and other essential medications, WHO recommends dispensing for up to 6 months. People currently being treated for hepatitis B or C infection should also receive extended supplies of medications. For those with hepatitis B or C infection who are not yet on treatment, postponement of treatment initiation can be considered unless initiation is critical. People who have advanced liver disease due to hepatitis B or C infection or another cause or who have had a liver transplant may be at risk of serious illness from COVID-19 and should be especially vigilant in protecting themselves.

As soon as movement restrictions are relaxed, catch-up campaigns should be considered to improve coverage of testing, prevention and treatment interventions. National programmes should develop standard operating procedures to guide providers on how best to successfully locate and re-enrol clients into care, especially if their treatment has been interrupted.


Prevention

Provision of condoms and lubricants Provision and exchange of needles and syringes	Modify delivery to occur through community distribution points. Encourage secondary delivery through peers and pharmacy-based distribution. Maintain facility-based and outreach-based activities.	Re-establish community distribution.
Pre-exposure prophylaxis (PrEP)	Allow for multimonth prescribing, including for clients initiating pre-exposure prophylaxis, if appropriate. Do facility-based visit after first month unless no exposure within past 3 weeks.	Provide telehealth follow up and community dispensing; quality-assured HIV self-testing can be considered for maintenance.
Voluntary medical male circumcision	Suspend voluntary medical male circumcision campaigns; continue post-operative follow up.	Ensure facility site readiness (sufficient supplies, including PPE, and competency of health care workers) and restart with a focus on males aged 15 years and older. Run catch-up campaigns for males older than 15 years.
Hepatitis B infant immunization, including timely birth dose	Section 2.3.3.	
Adult vaccination of high-risk groups for catch-up vaccination	Section 2.3.3.	
Prevention of mother-to-child transmission of HBV (HBsAg screening and use of antivirals, such as TDF, or hepatitis B immunoglobulin)	Maintain facility-based activities.	Provide catch up interventions for mothers and newborns after home births.
Opioid dependency treatment and monitoring	Maintain facility-based services for people not eligible for take-home medication, those who have recently initiated treatment, residents of long-term care institutions or prisons, and people hospitalized for inpatient treatment or rehabilitation. Section 2.2.3.	

Screening and testing

Facility-based testing for HIV	Adapt pretest information and posttest counselling to include online or telephone consultations. Prioritize HIV testing for high-risk individuals, those presenting with defined conditions (such as TB), and children for early infant diagnosis. Consider options for HIV self-testing (see Self-testing for HIV, below).	Plan for catch-up. Reinstate partner services and social network-based approaches for HIV.
Facility-based testing for viral hepatitis	Adapt pretest information and posttest counselling to include online or telephone consultations. Prioritize hepatitis B and C testing for high-risk individuals and persons with symptoms of liver disease, and consider deferring other testing, if feasible.	Plan for catch-up.
Community-based testing for HIV and viral hepatitis	Space community-based HIV testing to support physical distancing. Consider options for HIV self-testing (see Self-testing for HIV, below). Suspend community-based viral hepatitis testing campaigns.	Run catch-up campaigns, including for early infant diagnosis at first vaccination or other well child visits if missed.
Self-testing for HIV	Prioritize individuals on pre-exposure prophylaxis, partners of people living with HIV and pregnant women; give HIV self-test kits to male partner. Promote HIV self-testing to partners, peers and contacts of key populations. Scale up provision of self-testing through use of community distribution points, facility-based pick-up points (including in the private sector), the internet and mail. Establish clear pathways for further testing services and linkage to care.	Do targeted outreach for catch up for key populations and other higher-risk populations, and in areas with high HIV burden.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Partner services and social network-based testing approaches for people living with HIV	Prioritize partners and social contacts of people living with HIV for testing using internet and telephone follow up and self-testing (include self-testing option for partners and peers to distribute).	
Screening of pregnant women for HBV	Prioritize HBV screening at ANC visits.	
Testing for STIs	<p>Prioritize screening of pregnant women for syphilis as part of routine ANC, when feasible.</p> <p>Modify STI testing through the use of home-based self-sampling, ensuring provision of information about proper self-sampling and where to send samples.</p> <p>Modify provision of test results, treatment and prevention messaging to delivery through digital platforms, including mobile phones.</p>	<p>Resume clinic-based testing and screening. Ensure appropriate treatment for STIs.</p> <p>Self-sampling can be maintained. Provision of treatment and information should be in place.</p> <p>Implement catch-up syphilis screening and treatment for mothers and infants if home birth or missed syphilis screening</p>
Treatment and monitoring		
Routine screening for people with HIV	Use point-of-care CD4 cell count at ART start and return to care to diagnose advanced HIV disease.	
Prevention of common comorbidities in HIV infection and AIDS	Modify prescribing to increase patients' supplies of TB preventive treatment (isoniazid, 3HP, 1HP), sulfamethoxazole + trimethoprim, and fluconazole.	
Routine ART: adults and adolescents	<p>Emphasize same-day start for ART, including when patient is starting outside of a facility (e.g. during outreach or when attending mobile services).</p> <p>Extend to 6-monthly dispensing and promote community dispensing points.</p>	<p>Re-establish group adherence support (e.g. small group, virtual, mobile phone).</p> <p>Return to 3-monthly dispensing, if preferred.</p>
Routine ART: children	<p>Prioritize optimal regimens containing LPV/r or DTG, and switch to dispensing 3 months for children aged >3 years.</p> <p>For children aged <3 years, estimate whether dose adjustment will be required before next visit and prescribe accordingly.</p> <p>Follow up via phone or SMS text, including for planned dose adjustment.</p> <p>If insufficient stocks, deliver antiretrovirals at home or in the community.</p>	Do catch-up campaigns for early infant diagnosis and ART initiation at first vaccination or other well child visits, if missed.
HIV: adherence and retention in care	<p>Emphasize electronic health and mobile health strategies.</p> <p>Establish tele-health modalities for individual counselling that adhere to the principles of confidentiality and non-coercive decision-making.</p>	Scale up peer and group counselling for adherence support and tracing, and also for re-engagement of people who have disengaged.
TB-HIV coinfection	<p>Provide adequate stocks of TB medicines to all patients to take home to ensure treatment completion without having to visit treatment centres unnecessarily to collect medicines.</p> <p>Use electronic health and mobile health platforms for adherence support.</p>	Implement catch-up campaigns for initiation of TB preventive treatment if delayed or missed.
Preventives and diagnostics for patients with advanced HIV disease	<p>Modify to promote out-of-clinic delivery of elements of advanced disease package of care (prophylaxis, and screening for CD4 count and cryptococcal antigen, and TB screening for lipoarabinomannan antigen).</p> <p>Reinforce vaccination against influenza.</p> <p>👁 Section 2.3.3.</p> <p>Maintain regular follow up through distanced clinic check up or electronic or mobile health platforms.</p>	Full clinical check up.
ART treatment monitoring	Reduce viral load testing to every 12 months unless otherwise clinically indicated.	Implement catch up campaign to assess viral load.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Viral hepatitis treatment and monitoring	<p>Modify medicine supply at treatment initiation for HBV to 6 months or for HCV to full 12- or 24-week course.</p> <p>Engage courier companies or community groups to support home delivery.</p> <p>Reschedule HCV confirmation of cure (HCV viral load sustained viral response for 12 weeks, or SVR12) and annual HBV viral load monitoring.</p>	Maintain log or register of persons awaiting monitoring visit (i.e. for test of cure for HCV or annual HBV viral load), and reschedule when movement restrictions are lifted.
STI treatment	<p>Maintain syndromic management as much as possible.</p> <p>Prioritize symptomatic patients and ensure that sex partners are provided with the same treatment as the index case.</p> <p>Build capacity to do virtual STI case management through online or phone-based clinical services.</p> <p>Allow index case to dispense treatment to partner.</p>	Implement catch-up syphilis screening and treatment for mothers and infants if there was a home birth or missed syphilis screening.
Advanced liver disease: care and monitoring	<p>Prioritize access for acute management of complications (e.g. decompensated liver disease, bleeding oesophageal varices).</p> <p>Reschedule liver cancer screening appointments or liver cancer programme activities.</p> <p>Reschedule influenza vaccination. Provide pneumococcal vaccination based on national policy.</p> <p> Section 2.3.3</p>	

*See also Section 1.11 and Annex.

1HP and 3HP: TB prevention regimens combining rifapentine and isoniazid; ANC: antenatal care; ART: antiretroviral therapy; DTG: dolutegravir; HBsAg: hepatitis B surface antigen; HBV: hepatitis B virus; HCV: hepatitis C virus; LPV/r: lopinavir+ ritonavir; STI: sexually transmitted infection; TB: tuberculosis; TDF: tenofovir disoproxil fumarate.

2.3.2 Tuberculosis

A recent modelling estimate suggests that if the COVID-19 pandemic led to a reduction of 25% in expected TB detection for 3 months – a realistic possibility given the levels of disruption in TB services being observed in multiple countries – a 13% increase in TB deaths would be expected, bringing the levels of TB mortality back to those of 5 years ago. Between 2020 and 2025, an additional 1.4 million TB deaths could be registered as a consequence of the COVID-19 pandemic (74).

The overlap in clinical characteristics between COVID-19 and TB – including cough, fever and difficulty breathing – impacts the screening and evaluation for both diseases. Both diseases attack primarily the lungs and both biological agents are transmitted mainly via close contact. It is anticipated that people who have both TB and COVID-19 may have poorer treatment outcomes, especially if TB treatment is interrupted. In areas with TB transmission, clinicians should always consider whether people presenting with cough, fever or difficulty breathing warrant testing for both COVID-19 and TB. Even in the case of a person with a known diagnosis of COVID-19 or TB, coinfection should always be considered and testing performed when clinically indicated. Home-based treatment should be facilitated for all people with TB, including providing all-oral treatments for multidrug-resistant TB and extensively drug-resistant TB.

The use of digital health technologies should be intensified to support TB patients and programmes to ensure improved communication, counselling, care and information management. Appropriate planning and monitoring are essential to ensure that the procurement and supply of TB medicines and diagnostics are not interrupted. As countries prepare to share existing molecular platforms for COVID-19 testing, current molecular diagnostic services for TB should be maintained, and diagnostic equipment should not be moved from currently designated TB laboratories to respond to the demand for COVID-19 testing.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Prevention	<p>Leverage established TB contact tracing mechanisms for COVID-19 contact tracing.</p> <p>Provide adequate stocks of medications for TB preventive treatment to households in order to minimize facility encounters.</p>	<p>Monitor volume of recruitment for TB preventive treatment and number and yield of TB contact investigations done.</p> <p>Catch up on any contact investigations and TB preventive treatment activities that were suspended.</p>
Diagnosis	<p>Maintain current molecular diagnostic services for TB and do not move equipment from currently designated TB laboratories to respond to the demand for COVID-19 testing.</p> <p>In areas with TB transmission, test for both COVID-19 and TB whenever clinically indicated.</p> <ul style="list-style-type: none"> • Special precautions are needed when collecting and transporting sputum samples and bronchoalveolar lavage fluid, as well as when samples are received and unpacked in the laboratory. • Collect sputum in an open, well-ventilated space, away from others and preferably outside. • Encourage sputum collection at home and give specific instructions as detailed in previous point. 	<p>Monitor requests for TB tests or number of laboratory-confirmed TB cases (or TB notifications) to assess disruptions to TB services during the emergency measures and the competitive use of diagnostic platforms for COVID-19 testing.</p> <p>Maintain universal biosafety precautions; restart sputum collection at facilities.</p>
Treatment and care	<p>Provide adequate stocks of TB medicines to all patients to take home to ensure treatment completion while limiting treatment centre visits.</p> <p>Make alternative arrangements to reduce visits for TB follow up.</p> <p>Use innovative communication technologies to maintain treatment support.</p>	<p>Monitor the use of digital technologies that encourage adherence.</p> <p>Catch up on any TB treatment and care activities that were suspended (e.g. seeing people on waiting list for treatment for drug-resistant TB).</p> <p>Resume any epidemiological surveys that were delayed.</p>

*See also Section 1.11 and Annex.
TB: tuberculosis.

2.3.3 Immunization

Disruptions in immunization services, even for a brief period, result in increased numbers of susceptible individuals and an increased risk of outbreaks of vaccine-preventable diseases (VPDs) (e.g. measles, polio, diphtheria, pertussis, meningococcal disease, typhoid, cholera, influenza and yellow fever), leading to excess morbidity and mortality. WHO has issued guidance on immunization services during the COVID-19 pandemic (75) and with UNICEF has issued answers to frequently asked questions (57) providing guiding principles and considerations. Because of the high morbidity and mortality associated with VPD outbreaks, WHO recommends that countries continue routine immunization services wherever feasible. Many countries have already temporarily postponed preventive or outbreak response mass vaccination campaigns. For countries simultaneously impacted by VPD and COVID-19 outbreaks, determining the most appropriate course of action may be complex. A risk assessment should be done and include a detailed review of the epidemiological evidence as well as consideration of the short- and medium-term public health consequences of immediately implementing or delaying a mass vaccination campaign, weighed against the potential aggravation of COVID-19 transmission triggered by the campaign. The polio programme continuity guide provides specific guidance (76).

Recommended programme adaptations include improving microplanning, providing training and building capacity. It will be important to closely monitor vaccine stocks and initiate forecasting of required vaccines and related supplies for catch-up vaccination and other immunization activities. Countries are strongly advised to maintain their VPD surveillance and their monitoring of adverse events following immunization, and to closely monitor any disruption to immunization activities in order to intensify efforts to track and vaccinate missed individuals at the earliest opportunity.

Countries must frequently reassess decisions to adapt immunization services and resume full services as soon as is safely possible, while monitoring vaccine stocks, related supplies and catch-up needs. Any policies that might limit catch-up efforts (e.g. restrictions on age or target group), and when immunization takes place, should be reviewed and considered for revision. Catch-up vaccination schedules should be linked to the national immunization schedule, include clear directives on the minimum intervals permissible between doses and be widely disseminated (77). Community engagement plans should be developed to help ensure that the concerns of health workers and the population are addressed and that communities are encouraged and feel safe to seek vaccination services. Review of vaccination status, with referral for any needed vaccines, should be part of every health facility visit.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Routine immunizations: <ul style="list-style-type: none"> • fixed services • outreach services • mobile clinics 	Maintain routine immunization but modify sessions to eliminate risk of infection transmission as follows. <ul style="list-style-type: none"> • Train staff on IPC and delivery protocols. • Provide facilities with adequate IPC equipment, including for waste management. • Plan several small sessions per day at different times to limit contact. • Limit the duration of stay in the health facility. • Modify session locations to ensure separation of immunization services from treatment areas, and proactively inform communities about this strategy while reinforcing the value of vaccination. • Establish a screening process before allowing entry to the vaccination area. • For outreach and mobile services, proactively engage with communities to identify open sites that allow physical distancing. Specific adaptations for birth doses (78), school-based vaccination, and vaccination of adults, older persons, high-risk individuals and health care workers can be found in the WHO and UNICEF's frequently asked questions (57).	Resume comprehensive services as soon as supply chains are ensured, sufficient health workers are trained in IPC, and revised operating procedures are in place to accommodate physical distancing. <p>Catch-up activities should not wait for the lifting of restrictions and should proceed even when other immunization activities are suspended.</p> Some countries may need to resume immunization services based on the COVID-19 situation at the subnational (district) level. Consider periodic intensification of routine immunization services to ensure rapid catch up for children and adolescents (79).
Mass vaccination campaigns <ul style="list-style-type: none"> • Preventive • Outbreak response 	Undertake a systematic decision-making process to assess the risks and benefits of implementing mass vaccination campaigns (both preventive and outbreak response) with the active engagement of local oversight bodies, such as national immunization technical advisory groups. <p>Modifications could include using physical distancing measures, measures to avoid oral dropper contamination, and context-suitable adaptations to enable caregivers to administer vaccines to children under vaccinator supervision.</p>	Use dashboards and regional and partner updates to assess needs for catch-up strategies. Monitor for increases in VPDs to identify the need for campaigns and ensure readiness: <ul style="list-style-type: none"> • adopt microplans to account for all missed cohorts; • confirm adequate stocks of vaccines and related supplies; • ensure that health workers are trained in new IPC and physical distancing measures. Consider mass vaccination campaigns that integrate multiple antigens or the delivery of other health interventions.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
VPD surveillance (including for polio, measles, and other priority VPDs)	<p>Maintain minimum recommended VPD surveillance and risk assessment activities (80). To minimize the exposure of personnel and communities to COVID-19 consider (a) delaying in-person training and meetings or conducting them remotely if feasible and (b) discouraging community-based surveillance for polio.</p> <p>Establish protocols for joint implementation of VPD and COVID-19 surveillance, and upgrade data and laboratory systems as needed to support this expanded portfolio of work.</p> <p>Maintain case detection and reporting, and specimen collection, modifying where there are transport disruptions to ensure specimens are stored under proper conditions until delivered to the laboratory.</p> <p>Prioritize sample processing depending on known VPD epidemiology and evolving risks.</p> <p>Map current levels of laboratory supplies and reprioritize and redistribute to meet evolving needs.</p> <ul style="list-style-type: none"> • Identify high-risk areas with urgent needs for reagents and testing. • Prepare laboratory networks for possible surge in cases due to decreased immunization activities. 	<p>Restore when full resumption of VPD surveillance is possible.</p> <p>Adjust for evolving VPD epidemiology.</p>
Certification of VPD eradication or elimination	<p>In polio-free regions and in WHO's Eastern Mediterranean Region, face-to-face meetings of national certification committees and regional certification commissions should be temporarily suspended unless they can be conducted virtually.</p> <p>In WHO's African Region, certification activities that can be done without travel should continue. Preparation for regional certification in 2020 should continue.</p> <p>For other VPD elimination strategies (e.g. measles-rubella, maternal and neonatal tetanus), continuation or postponement of verification activities will depend on the local context, country capacity for COVID-19 response and ability to comply with physical distancing requirements.</p>	<p>Full-scale certification activities can resume gradually, as per national, regional and global plans. Incorporate lessons learnt through remote collaboration techniques to increase the cost-effectiveness of certification activities.</p>
Poliovirus containment	<p>Inventories of supplies for vaccination against polio types 1 and 3 should be conducted and reported through the coordinators of the national authorities of containment or the national certification committee to regional certification committees, when possible.</p> <p>National authorities of containment should continue their dialogue with, and oversight of, their poliovirus-essential facilities to progress the containment certification progress.</p> <p>Exchanges should continue among national authorities of containment, the Containment Working Group of the Global Commission for the Certification of the Eradication of Poliomyelitis and the Containment Advisory Group.</p>	
Global coordination of vaccine supply	<p>Update the functional inventory of cold chain equipment.</p> <p>Keep an up-to-date inventory of vaccines and related supplies, forecasting for future vaccine needs.</p> <p>Initiate replenishment of vaccines and related supplies, considering disruptions to international freight during the COVID-19 pandemic.</p> <p>Keep track of expiry dates to mitigate the risk of stock-outs as well as closed-vial wastage.</p> <p>When safe and feasible, consider integrating other essential, temperature-sensitive health products (e.g. COVID-19 diagnostics and therapeutics, oxytocin, insulin and HIV diagnostic kits) into the existing immunization cold chain equipment to manage surge storage needs (81).</p> <p>Consider accepting delivery of vaccines with reduced shelf-life (e.g. remaining shelf-life is 12 months upon delivery) when previously anticipated deliveries have been delayed and the risk of stock-out is imminent.</p>	<p>Monitor the global capacity for vaccine production and international freight. Implement risk mitigation plans.</p> <p>Plan for the gradual resumption of activities as supply capacity recovers.</p>

*See also Section 1.11 and Annex.

BCG: bacille Calmette-Guérin; IPC: infection prevention and control; VPD: vaccine preventable disease.

2.3.4 Neglected tropical diseases

Some neglected tropical diseases (NTDs) are outbreak prone, and others are fatal or lead to profound disability if not promptly diagnosed and treated. Prolonged delays in delivering NTD interventions may lead to an increase in the transmission of infections or a resurgence of cases, especially in areas of high transmission. NTD services and interventions have been affected by the COVID-19 pandemic. For NTDs requiring case management of patients at health care facilities, anecdotal reports indicate there have been reductions in the numbers of patients attending for clinical assessment, treatment and follow up, leading to disruptions in care pathways. In addition, for some NTDs, the transfer of samples for confirmatory diagnosis or species identification has been affected because of a lack of transport between laboratories or border closures, and there have been delays in sample analyses due to the prioritization of COVID-19 diagnostics and staff absences. Preliminary assessments have also indicated some disruption in manufacturing and supply chains for NTD medicines and diagnostics due to the suspension or reduction of production, export and import of medical supplies not related to the COVID-19 pandemic.

WHO has advised that community-based NTD interventions be postponed, including mass treatment, community-based surveys and active case-finding (8, 82). WHO recommends that programmes maintain diagnostic and management services for the most critical cases (e.g. Buruli ulcer, Chagas disease, dengue, human African trypanosomiasis, leprosy, rabies, snake bite envenoming, visceral leishmaniasis, neurocysticercosis) and for severe complications of other NTDs. It will be important to maintain systems and databases for programme monitoring (including patient and laboratory registers, treatment outcome monitoring cards) to continue to collect data on implemented activities. It is also essential to meet deadlines for annual reports on progress and requests for procurement or donation of medicines and diagnostics. Outbreak-prone diseases (e.g. dengue, cutaneous and visceral leishmaniasis) should be monitored for clustering of cases, and if outbreaks are identified, preventive measures should be implemented to reduce transmission.

National implementation plans will need to be revised as needed, while aiming to keep on track for meeting established elimination targets. New dates for postponed activities could be proposed based on current knowledge and projections of the COVID-19 situation and national policy. Programmes need to ensure that resources are in place to support activities for the tentative new dates, taking into consideration the need to maintain established protective measures. Prioritize completing any assessments of planned impacts as soon as possible.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Buruli ulcer: diagnosis, confirmatory diagnosis with PCR and antibiotic treatment	Give presumptive treatment in the absence of PCR confirmation. Provide patients with sufficient stocks of medicines to cover the total period of treatment.	Restore capacity to undertake PCR for <i>Mycobacterium ulcerans</i> . Consider undertaking catch-up active case-finding in areas where presentations to health facilities decrease during the pandemic.
Buruli ulcer: surgical interventions and rehabilitation	Suspend non-urgent surgical interventions and rehabilitation when there is minimal risk of deformity if treatment is delayed.	Return to normal protocols when routine surgical and rehabilitative services become available.
Chagas disease: screening of newborns and other children of infected mothers for early diagnosis and treatment	Continue screening newborns and children of infected mothers if feasible, but if not, refer to other facilities or modify in line with maternal and child health services.	
Dengue: diagnosis using a good-quality RDT and confirmatory PCR	Sustain differential diagnosis of suspected dengue cases from COVID-19. In dengue-endemic areas in which transmission is occurring, diagnostics for dengue (high-quality RDTs and PCR) should be in place. Health workers should monitor for warning signs and signs of severe dengue, and they should be prepared for an increase in the number of severe dengue cases, ensuring access to care to prevent unnecessary mortality.	
Echinococcosis: case management	Screening services can be delayed. Case management may be delayed based on the type of echinococcosis (i.e. delay is generally less risky for cystic echinococcosis than for alveolar echinococcosis), stage, cyst localization, resources and training.	Restart when capacity for screening and appropriate case management have been restored.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
Cutaneous leishmaniasis: early diagnosis and treatment	When possible, prioritize the treatment of severe cases, including the diffuse, disseminated and mucocutaneous forms, or cases in which the patient is at risk of disfigurement and life-threatening complications.	Restart when the capacity to treat cutaneous leishmaniasis is restored.
Leprosy (Hansen's disease): treatment	Provide sufficient medicines for 2–3 months' treatment instead of for only 1 month. Provide patients with adequate information to promptly identify leprosy reactions and about how to consult health professionals at the primary health care level. Reduce patient contact by promoting self-care and instructing patient and family members about basic measures to avoid and manage sequelae (e.g. ulcers).	
Lymphoedema in lymphatic filariasis: management	Maintain facility-based acute care for wound care and acute episodes of adenolymphangitis. In order to limit facility contacts, instruct family members or care providers in lymphoedema management where feasible. Postpone any community outreach and case searches until transition to routine programme activities.	Restart when capacity to provide routine management of lymphoedema or emergency treatment is restored.
Surgery for hydrocele in lymphatic filariasis	Where availability of surgical services is limited, hydrocele surgeries may be postponed. Surgical camps should be postponed.	Restart when capacity to provide routine management of hydrocele is restored. Promote service restoration; there may be a need to temporarily increase service capacity to manage backlog.
Scabies: prompt case management with topical permethrin cream or lotion or oral ivermectin	Monitor closely any increase in cases, especially in high-risk areas, for early detection and control of potential outbreaks.	
Trachoma: management of trichiasis in patients presenting to health care facilities	Where surgical services are limited, prioritize surgical correction of trichiasis cases in whom greater numbers of eyelashes touch the cornea or where trichiasis affects the only eye with good vision. For other patients, consider instructing a family member to undertake careful epilation with high-quality forceps.	Restart when ophthalmic surgical services have been restored, and actively promote service restoration to affected populations. There may be a need to temporarily increase service capacity to manage backlog.
Yaws: treatment	Initiate presumptive treatment in the absence of laboratory confirmation.	

*See also Section 1.11 and Annex.

RDT: rapid diagnostic test; PCR: polymerase chain reaction.

2.3.5 Malaria

Malaria is a rapidly evolving, life-threatening febrile illness with symptoms that overlap with COVID-19. A recent modelling analysis (83) estimates that disruptions in the distribution of insecticide-treated nets (ITNs) and a severe reduction in access to malaria treatment in sub-Saharan Africa could result in an estimated additional 46 million malaria episodes and double the number of deaths compared with 2018 (for an estimated 769 000 deaths in 2020) (84).

These numbers highlight the importance of continuing malaria prevention, diagnosis and treatment in the pandemic context. WHO and partners have developed guidance on how to safely maintain malaria prevention and treatment services (8, 85). Making simple modifications to current delivery processes will allow malaria prevention to be delivered with minimal risk to health workers and the community, including vector control, seasonal malaria chemoprevention (SMC) and intermittent preventive treatment in pregnancy (IPTp) and in infants (IPTi).

Early diagnosis and treatment are critical to prevent mild cases of malaria from progressing to severe illness or death. Public health messaging will need to be adapted to ensure that people do not delay seeking care for febrile illness.

To minimize the risk of COVID-19 transmission, full PPE is recommended for health workers conducting malaria rapid diagnostic tests (RDTs) on people with confirmed or suspected COVID-19. The lack of PPE or RDTs should not delay treatment. In such circumstances and in areas with malaria transmission, people with fever should be treated presumptively for malaria. Countries resorting to presumptive treatment for malaria should plan for increased supply needs.

Countries nearing elimination and those working to prevent re-establishment should, if possible, maintain intensive malaria surveillance activities in addition to core vector control and case-management activities, using best practices to protect health workers and communities. Interrupting these activities puts countries at risk of outbreaks or the reintroduction of malaria, or both.

As circumstances evolve during the COVID-19 pandemic, national programmes may be faced with diverse reasons for invoking exceptional measures to rapidly drive down malaria in populations. For any extraordinary measures, consideration should be given to how all interventions can be modified to achieve two major objectives:

- i. reducing the health system burden due to malaria illness in order to facilitate the response to the emerging COVID-19 pandemic (in particular, by reducing the number of people with fever who need management by health workers); and
- ii. reducing the population malaria burden (i.e. infection, illness, severe disease and death) in malaria-endemic countries where COVID-19 is emerging.

There is an opportunity to extend the benefits of SMC by broadening its geographical reach, widening the targeted age group and increasing the number of rounds, if needed, to address the full transmission season.

Mass drug administration (MDA) is another preventive strategy recommended by WHO to reduce malaria rapidly during epidemics and in complex emergencies. The delivery of large-scale, high-coverage MDA, coupled with expanded and well-timed vector control strategies, should be considered as an exceptional measure during the COVID-19 pandemic.

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
ITN campaigns and indoor residual spraying	Shift planning and budgeting to a single-phase door-to-door ITN distribution strategy, leaving ITNs at the door. Suspend data and accountability procedures that increase person-to-person contact. Ensuring required PPE (which includes N95 masks or the equivalent) to protect workers doing indoor spraying from insecticide exposure may require special supply arrangements in the pandemic context.	Reinstate data and accountability procedures.
Chemoprevention with IPTp and IPTi	Modify facility-based ANC and immunization sessions to reduce person-to-person contact: sulfadoxine + pyrimethamine tablets can be administered without touching and while maintaining 1 m distance. (Current guidance does not recommend community administration.)	
SMC	Modify delivery to use a single-phase door-to-door delivery approach. Enable the caregiver to administer the medicine, which can be supervised while maintaining physical distancing (86). Extend SMC, as appropriate, by widening geographical coverage and increasing the number of dosing rounds. Considering the exceptional circumstances, further impact on transmission can be achieved by broadening eligible age groups.	

Programme activities	Modifications for safe delivery of services	Transition towards restoration of activities*
MDA	<p>As an exceptional measure to control malaria, MDA may be required to minimize malaria disease and death during the COVID-19 pandemic, and the use of MDA should be considered before health services are overwhelmed.</p> <p>MDA should be used only following careful consideration of the context and COVID-19 transmission risk (87).</p> <p>MDA should ideally use long-acting antimalarial medicines.</p>	MDA should be done only under exceptional circumstances and for limited periods.
Diagnosis	<p>In areas with malaria transmission, malaria diagnostic testing will be indicated in most people being evaluated for COVID-19. To ensure safety:</p> <ul style="list-style-type: none"> • conduct testing for people with suspected or confirmed COVID-19 in a designated area away from other patients. Tests could be done early in the patient flow such that results are available by the time the health worker evaluates the patient; • for a person with suspected COVID-19, use full PPE to test for COVID-19 and malaria. If full PPE is not available, presumptively treat with the recommended antimalarial and arrange for confirmatory malaria testing when possible; • in all cases, follow local protocols for isolating people with suspected or confirmed COVID-19. <p>Modify to presumptive treatment of fever with ACTs where there are RDT stock-outs due to supply chain disruptions and where there is a lack of capacity to perform RDTs.</p> <p>As a temporary measure, decisions can be made about which groups should receive presumptive treatment. These will include people at high risk of severe disease and death (including children younger than 5 years and pregnant women).</p> <p>Decisions should be made about how to use available supplies of RDTs and ACTs to safely manage other suspected malarial and nonmalarial illnesses.</p> <p>Under such circumstances, the priority is to obtain RDTs and relevant PPE.</p> <p>See up-to-date WHO guidance on infection prevention and control (6).</p>	<p>Pretreatment parasitological testing should be reinstated as soon as RDTs and appropriate PPE are available.</p> <p>Presumptive treatment should be kept to a minimum because this approach will rapidly deplete stocks of ACTs, at which point there will be no treatment for malaria and a markedly increased risk of severe disease and death.</p>
Ensuring prompt access to care and treatment	<p>Modify public health messaging to ensure that people do not delay seeking care for illnesses that could be malaria.</p> <p>Consider increasing support for community-based treatment of fever and malaria to reduce the malaria burden on health facilities and improve access to care in rural and isolated communities.</p> <p>Where confirmation of parasitological diagnosis is not possible, initiate presumptive treatment for malaria based on symptoms.</p>	<p>Emphasize the importance of seeking prompt diagnosis and care for fever in areas of malaria risk.</p> <p>Where appropriate, maintain adaptations that have successfully expanded community-based malaria diagnosis treatment activities.</p>
Surveillance	<p>Prioritize the collection of basic minimum data (e.g. number tested; number positive, by parasite species and severity; age; and COVID-19 status, if available) through the health management information system to ensure critical malaria operational planning is maintained (e.g. commodity forecasting).</p> <p>Where possible and indicated, test for malaria and COVID-19 simultaneously.</p>	Return to collecting the full complement of data that facilitates national and subnational planning.
Case and focus investigations and response activities	<p>Simplify notification and investigation processes to limit exposure of surveillance officers to COVID-19 transmission risk and conduct investigations via telephone where possible.</p> <p>Focus investigations can also be simplified to include only verification of coverage of vector control, and deficiencies addressed by telephone where possible.</p> <p>If there is insufficient PPE to conduct reactive case detection, presumptive treatment of cases of fever can be done.</p>	Return to notification and investigation processes once COVID-19 transmission has been interrupted.

*See also Section 1.11 and Annex.

ACT: artemisinin-based combination therapy; ANC: antenatal care; IPTi: intermittent preventive treatment in infants; IPTp: intermittent preventive treatment in pregnancy; ITN: insecticide-treated net; MDA: mass drug administration; PPE: personal protective equipment; SMC: seasonal malaria chemoprevention.

References



1. Parpia AS, Ndeffo-Mbah ML, Wenzel NS, Galvani AP. Effects of response to 2014–2015 Ebola outbreak on deaths from malaria, HIV/AIDS, and tuberculosis, West Africa. Volume 22, Number 3—March 2016 – Emerg Infect Dis, 2016;22(3):433–441. doi:10.3201/eid2203.150977
2. Brolin Ribacke KJ, Saulnier DD, Eriksson A, von Schreeb J. Effects of the West Africa Ebola virus disease on health-care utilization - a systematic review. Front Public Health. 2016;4:222. doi: 10.3389/fpubh.2016.00222.
3. Elston JWT, Cartwright C, Ndumbi P, Wright J. The health impact of the 2014–15 Ebola outbreak. Public Health. 2017;143:60–70. doi: 10.1016/j.puhe.2016.10.020.
4. Strategies and plans: strategic preparedness and response plan [website]. Geneva: World Health Organization; 2020 (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/strategies-and-plans>, accessed 23 May 2020).
5. Addressing human rights as key to the COVID-19 response, 21 April 2020. Geneva: World Health Organization; 2020 (WHO/2019-nCoV/SRH/Rights/2020.1; <https://apps.who.int/iris/handle/10665/331811>, accessed 23 May 2020).
6. Coronavirus disease (COVID-19) technical guidance: Infection prevention and control / WASH [website]. Geneva: World Health Organization; 2020 (<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control>, accessed 23 May 2020).
7. COVID-19: operational guidance for maintaining essential health services during an outbreak: interim guidance, 25 March 2020. Geneva: World Health Organization; 2020 (WHO/2019-nCoV/essential_health_services/2020.1; <https://apps.who.int/iris/handle/10665/331561>, accessed 23 May 2020).
8. Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic: interim guidance, May 2020. Geneva: World Health Organization, United Nations Children's Fund; (<https://apps.who.int/iris/handle/10665/331975>, accessed 23 May 2020).
9. Interim guidance on public health and social measures for COVID-19 preparedness and response operations in low capacity and humanitarian settings. Geneva: Inter-Agency Standing Committee; 2020 (<https://interagencystandingcommittee.org/health/interim-guidance-public-health-and-social-measures-covid-19-preparedness-and-response>, accessed 23 May 2020).
10. WHO-ICRC basic emergency care: approach to the acutely ill and injured [website]. Geneva: World Health Organization, International Committee of Red Cross and Red Crescent; 2018 (<https://www.who.int/publications-detail/basic-emergency-care-approach-to-the-acutely-ill-and-injured>, accessed 23 May 2020).
11. Global surveillance for human infection with coronavirus disease (COVID-19) [website]. Geneva: World Health Organization; 2020 ([https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-\(2019-ncov\)](https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-(2019-ncov)), accessed 23 May 2020).
12. Rapid guidance for strengthening human resources for health in the context of COVID-19. New York: United Nations Children's Fund; 2020 (<https://www.corecommitments.unicef.org/covid19db/Rapid-guidance-on-HRH-in-the-context-of-COVID-19-UNICEF-8May20-%281%29.pdf>, accessed 23 May 2020).

13. New WHO tools launched to help hospitals manage surge in COVID-19 patients [website]. Geneva: World Health Organization; 2020 (<http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/4/new-who-tools-launched-to-help-hospitals-manage-surge-in-covid-19-patients>, accessed 23 May 2020).
14. COVID-19 essential supplies forecasting tool [website]. Geneva: World Health Organization; 2020 (<https://www.who.int/who-documents-detail/covid-19-essential-supplies-forecasting-tool>, accessed 23 May 2020).
15. An unnecessary evil? User fees for healthcare in low-income countries. London: Save the Children; 2005 (<https://resourcecentre.savethechildren.net/node/2736/pdf/2736.pdf>, accessed 23 May 2020).
16. Soucat A. Financing common goods for health: fundamental for health, the foundation for UHC. Health Syst Reform. 2019 Oct 2;5(4):263–7. doi:10.1080/23288604.2019.1671125.
17. Common goods for health [website]. Geneva: World Health Organization, 2020 (<https://www.who.int/health-topics/common-goods-for-health>, accessed 23 May 2020).
18. Gaál, P, Jakab M, Shishkin S. Strategies to address informal payments for health care. In Kutzin J, Cashin C, Jakab M, eds. Implementing health financing reform: lessons from countries in transition. Geneva: World Health Organization, on behalf of the European Observatory on Health Systems and Policies; 2010 (<https://www.who.int/publications-detail/implementing-health-financing-reform-lessons-from-countries-in-transition>, accessed 23 May 2020).
19. Saxena S, Stone M. Preparing Public Financial Management Systems for Emergency Response Challenges. Special Series on Fiscal Policies to Respond to COVID-19. Washington, DC: IMF; 2020.
20. Can people afford to pay for health care? New evidence on financial protection in Europe. Copenhagen: World Health Organization, Regional Office for Europe; 2019 (<http://www.euro.who.int/en/publications/abstracts/can-people-afford-to-pay-for-health-care-new-evidence-on-financial-protection-in-europe-2019>, accessed 23 May 2020).
21. UNICEF's Global social protection programme framework [website]. New York: United Nations Children's Fund; (<https://www.unicef.org/reports/global-social-protection-programme-framework-2019>, accessed 23 May 2020).
22. Assessment tools [website]. Geneva: World Health Organization; 2020 (<http://www.who.int/hospitals/assessment-tools-and-checklists/en/>, accessed 23 May 2020).
23. Operational considerations for case management of COVID-19 in health facility and community: interim guidance, 19 March 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/331492>, accessed 23 May 2020).
24. National eHealth strategy toolkit. Geneva: World Health Organization, International Telecommunication Union; 2012 (<https://apps.who.int/iris/handle/10665/75211>, accessed 23 May 2020).
25. Digital Health Atlas [website]. Geneva: World Health Organization; 2020 (<https://digitalhealthatlas.org/en/-/>, accessed 23 May 2020).
26. WHO consolidated guideline on self-care interventions for health: sexual and reproductive health and rights. Geneva: World Health Organization; 2019 (<http://www.who.int/reproductivehealth/publications/self-care-interventions/en/>, accessed 23 May 2020).
27. WHO guideline: recommendations on digital interventions for health system strengthening. Geneva: World Health Organization; 2019 (<https://apps.who.int/iris/handle/10665/311941>, accessed 23 May 2020).
28. UNICEF's approach to digital health [website]. New York: United Nations Children's Fund; 2020 (<https://www.unicef.org/innovation/reports/unicefs-approach-digital-health%E2%80%8B%E2%80%8B>, accessed 23 May 2020).
29. Draft global strategy on digital health 2020–2024, 22 March 2020. Geneva: World Health Organization; 2020 (https://www.who.int/docs/default-source/documents/gS4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf?sfvrsn=f112ede5_42, accessed 23 May 2020).
30. Robertson T, Carter ED, Chou VB, Stegmuller AR, Jackson BD, Tam Y, et al. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. Lancet Glob Health. 2020. doi:10.1016/S2214-109X(20)30229-1.
31. Riley T, Sully E, Ahmed Z, Biddlecom A. Estimates of the potential impact of the COVID-19 pandemic on sexual and reproductive health in low- and middle-income countries. Int Perspect Sex Reprod Health. 2020;46:73–6. doi: 10.1363/46e9020.
32. WHO recommendations on maternal health: guidelines approved by the WHO Guidelines Review Committee. Geneva: World Health Organization; 2017 (WHO/MCA/17.10; <https://apps.who.int/iris/handle/10665/259268>, accessed 23 May 2020).
33. WHO recommendations on newborn health: guidelines approved by the WHO Guidelines Review Committee. Geneva: World Health Organization; 2017 (WHO/MCA/17.07; <https://apps.who.int/iris/handle/10665/259269>, accessed 23 May 2020).
34. Clinical management of COVID-19: interim guidance, 27 March 2020. Geneva: World Health Organization; 2020 (WHO/2019-nCoV/clinical/2020.5; <https://www.who.int/publications-detail/clinical-management-of-covid-19>, accessed 27 May 2020).
35. Frequently asked questions: breastfeeding and COVID-19, for health care workers, 12 May 2020. Geneva: World Health Organization; 2020 (<https://www.who.int/docs/default-source/maternal-health/faqs-breastfeeding-and-covid-19.pdf>, accessed 23 May 2020).
36. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/bitstream/handle/10665/250796/9789241549912-eng.pdf?sequence=1>, accessed 23 May 2020).
37. WHO recommendations: intrapartum care for a positive childbirth experience. Geneva: World Health Organization; 2018 (<https://www.who.int/publications-detail/9789241550215>, accessed 23 May 2020).
38. Infection prevention and control guidance for long-term care facilities in the context of COVID-19: interim guidance, 21 March 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/331508>, accessed 23 May 2020).

39. WHO recommendations on postnatal care of the mother and newborn. Geneva: World Health Organization; 2014 (<https://apps.who.int/iris/handle/10665/97603>, accessed 23 May 2020).
40. Maternal death surveillance and response: technical guidance. Geneva: World Health Organization; 2013 (<https://apps.who.int/iris/handle/10665/87340>, accessed 23 May 2020).
41. Sinha IP, Harwood R, Semple MG, Hawcutt DB, Thursfield R, Narayan O. COVID-19 infection in children. *Lancet Respir Med.* 2020;8:P446-7. doi: 10.1016/S2213-2600(20)30152-1.
42. WHO recommendations on child health: guidelines approved by the WHO Guidelines Review Committee. Geneva: World Health Organization; 2017 (WHO/MCA/17.08; <https://apps.who.int/iris/handle/10665/259267>, accessed 23 May 2020).
43. WHO recommendations on adolescent health: guidelines approved by the WHO guidelines review committee. Geneva: World Health Organization; 2017 (WHO/MCA/17.09; <https://apps.who.int/iris/handle/10665/259628>, accessed 23 May 2020).
44. Liang L, Ren H, Cao R, Hu Y, Qin Z, Li C, et al. The effect of COVID-19 on youth mental health. *Psychiatr Q.* 2020. doi: 10.1007/s11126-020-09744-3.
45. Coronavirus disease (COVID-19) and its implications for protecting children online [website]. New York: United Nations Children's Fund; 2020 (<https://www.unicef.org/documents/covid-19-and-implications-protecting-children-online>, accessed 23 May 2020).
46. Impact of the COVID-19 pandemic on family planning and ending gender-based violence, female genital mutilation and child marriage: pandemic threatens achievement of the transformative results committed to by UNFPA [website]. New York: United Nations Population Fund; 2020 (<https://www.unfpa.org/resources/impact-covid-19-pandemic-family-planning-and-ending-gender-based-violence-female-genital>, accessed 23 May 2020).
47. Mental health and psychosocial considerations during the COVID-19 outbreak, 18 March 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/331490>, accessed 23 May 2020).
48. Considerations for school-related public health measures in the context of COVID-19, 10 May 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/332052>, accessed 23 May 2020).
49. Q&A: adolescents, youth and COVID-19 [website]. Geneva: World Health Organization; 2020 (<https://www.who.int/news-room/q-a-detail/q-a-for-adolescents-and-youth-related-to-covid-19>, accessed 23 May 2020).
50. Global monitoring of school meals during COVID-19 school closures [website]. Rome: World Food Programme; 2020 (<https://cdn.wfp.org/2020/school-feeding-map/index.html>, accessed 23 May 2020).
51. Home care for patients with COVID-19 presenting with mild symptoms, and management of their contacts: interim guidance, 4 February 2020. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/331133>, accessed 23 May 2020).
52. Integrated care for older people (ICOPE): guidance for person-centred assessment and pathways in primary care. Geneva: World Health Organization; 2019 (<http://www.who.int/ageing/publications/icope-handbook/en/>, accessed 23 May 2020).
53. Water, sanitation, hygiene, and waste management for the COVID-19 virus: interim guidance, 19 March 2020. Geneva: World Health Organization; 2020 (WHO/2019-nCoV/IPC_WASH/2020.2; <https://apps.who.int/iris/handle/10665/331499>, accessed 23 May 2020).
54. Q&A: older people and COVID-19 [website]. Geneva: World Health Organization; 2020 (<https://www.who.int/news-room/q-a-detail/q-a-on-on-covid-19-for-older-people>, accessed 23 May 2020).
55. Elder abuse [website]. Manila: Regional Office for the Western Pacific; 2020 (<https://www.who.int/health-topics/elder-abuse>, accessed 23 May 2020).
56. Mobile health for ageing (mAgeing) [website]. Geneva: World Health Organization; 2020 (<http://www.who.int/ageing/health-systems/mAgeing/en/>, accessed 23 May 2020).
57. Immunization in the context of COVID-19 pandemic: frequently asked questions (FAQ), 16 April 2020. Geneva: World Health Organization; 2020 (WHO/2019-nCoV/immunization_services/FAQ/2020.1; <https://apps.who.int/iris/handle/10665/331818>, accessed 23 May 2020).
58. Driggin E, Madhavan MV, Bikdeli B, Chuich T, Laracy J, Biondi-Zoccai G, et al. Cardiovascular considerations for patients, health care workers, and health systems during the COVID-19 pandemic. *J Am Coll Cardiol.* 2020;75(18):2352-71. doi: 10.1016/j.jacc.2020.03.031.
59. COVID-19 and the use of angiotensin-converting enzyme inhibitors and receptor blockers: scientific brief, 7 May 2020. Geneva: World Health Organization; 2020 (WHO/2019-nCoV/Sci_Brief/ACE-I/2020.1; <https://apps.who.int/iris/handle/10665/332021>, accessed 23 May 2020).
60. The use of non-steroidal anti-inflammatory drugs (NSAIDs) in patients with COVID-19: scientific brief, 19 April 2020. Geneva: World Health Organization; 2020 (WHO/2019-nCoV/Sci_Brief/NSAIDs/2020.1; <https://apps.who.int/iris/handle/10665/331796>, accessed 23 May 2020).
61. Tackling NCDs: "best buys" and other recommended interventions for the prevention and control of noncommunicable diseases. Geneva: World Health Organization; 2017 (WHO/NMH/NVI/17.9; <https://apps.who.int/iris/handle/10665/259232>, accessed 23 May 2020).
62. Tobacco Free Initiative (TFI): smoking cessation [website]. Geneva: World Health Organization; 2020 (http://www.who.int/tobacco/publications/smoking_cessation/en/, accessed 23 May 2020).
63. Q&A: smoking and COVID-19 [website]. Geneva: World Health Organization; 2020 (<https://www.who.int/news-room/q-a-detail/q-a-on-smoking-and-covid-19>, accessed 23 May 2020).

64. Q&A: be active during COVID-19 [website]. Geneva: World Health Organization; 2020 (<https://www.who.int/news-room/q-a-detail/be-active-during-covid-19>, accessed 23 May 2020).
65. Guide to cancer early diagnosis. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254500>, accessed 23 May 2020).
66. Coronavirus (COVID-19): rapid guidelines [website]. London: National Institute for Health and Care Excellence; 2020 (<https://www.nice.org.uk/covid-19>, accessed 23 May 2020).
67. Framework for healthcare systems providing non-COVID-19 clinical care during the COVID-19 pandemic [website]. Atlanta (GA): Centers for Disease Control and Prevention; 2020 (<https://www.cdc.gov/coronavirus/2019-ncov/hcp/framework-non-COVID-care.html>, accessed 23 May 2020).
68. Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations: scientific brief, 29 March 2020. Geneva: World Health Organization; 2020 (<https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>, accessed 23 May 2020).
69. Rehabilitation considerations during the COVID-19 outbreak. Washington (DC): Pan American Health Organization, World Health Organization; 2020 (PAHO/NMH/MH/COVID-19/20-0010; <http://www.paho.org/en/documents/rehabilitation-considerations-during-covid-19-outbreak>, accessed 23 May 2020).
70. Integrating palliative care and symptom relief into responses to humanitarian emergencies and crises: a WHO guide. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/handle/10665/274565>, accessed 23 May 2020).
71. Guidance for managing ethical issues in infectious disease outbreaks. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/250580>, accessed 23 May 2020).
72. Doing what matters in times of stress: an illustrated guide. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/331901>, accessed 23 May 2020).
73. Jewell BL, Mudimu E, Stover J, Kelly SL, Phillips A. Potential effects of disruption to HIV programmes in sub-Saharan Africa caused by COVID-19: results from multiple mathematical models. 2020; Available from: https://figshare.com/articles/Potential_effects_of_disruption_to_HIV_programmes_in_sub-Saharan_Africa_caused_by_COVID-19_results_from_multiple_mathematical_models/12279914
74. Updated WHO Information Note: Ensuring continuity of TB services during the COVID-19 pandemic. Geneva: World Health Organization; 2020 (<https://www.who.int/news-room/detail/12-05-2020-updated-who-information-note-ensuring-continuity-of-tb-services-during-the-covid-19-pandemic>, accessed 23 May 2020).
75. Guiding principles for immunization activities during the COVID-19 pandemic: interim guidance. Geneva: World Health Organization; 2020 (<https://www.who.int/publications-detail/guiding-principles-for-immunization-activities-during-the-covid-19-pandemic-interim-guidance>, accessed 23 May 2020).
76. Polio eradication programme continuity: implementation in the context of the COVID-19 pandemic: Interim guide. Polio Global Eradication Initiative; 2020 (<http://polioeradication.org/news-post/global-polio-eradication-and-covid-19/>, accessed 23 May 2020)
77. WHO recommendations for routine immunization – summary tables. Geneva: World Health Organization; 2019 (http://www.who.int/immunization/policy/immunization_tables/en/, accessed 23 May 2020).
78. Bacille Calmette-Guérin (BCG) vaccination and COVID-19. Geneva: World Health Organization; 2020 ([https://www.who.int/news-room/commentaries/detail/bacille-calmette-guérin-\(bcg\)-vaccination-and-covid-19](https://www.who.int/news-room/commentaries/detail/bacille-calmette-guérin-(bcg)-vaccination-and-covid-19), accessed 23 May 2020).
79. Immunization policy and strategies [website]. Geneva: World Health Organization; 2018 (http://www.who.int/immunization/programmes_systems/policies_strategies/en/, accessed 23 May 2020).
80. Vaccine Preventable Diseases Surveillance Standards [Internet]. Geneva: World Health Organization; 2018 (http://www.who.int/immunization/monitoring_surveillance/burden/vpd/standards/en/, accessed 23 May 2020).
81. Temperature-Sensitive Health Products in the Expanded Programme on Immunization Cold Chain: Interim Update on COVID-19 Response [Internet]. Geneva: World Health Organization, United Nations Children's Fund; 2020 (https://www.rhsupplies.org/uploads/tx_rhscpublications/EPI-cold-chain-WHO-UNICEF-joint-statement_A4_rev2_5-14-15-3.pdf, accessed 23 May 2020).
82. COVID-19: WHO issues interim guidance for implementation of NTD programmes. Geneva: World Health Organization; 2020 (http://www.who.int/neglected_diseases/news/COVID19-WHO-interim-guidance-implementation-NTD-programmes/en/, accessed 23 May 2020).
83. The potential impact of health service disruptions on the burden of malaria: a modelling analysis for countries in sub-Saharan Africa. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/331845>, accessed 23 May 2020).
84. World malaria report 2019. Geneva: World Health Organization; 2019 (<https://www.who.int/publications-detail/world-malaria-report-2019>, accessed 23 May 2020).
85. Tailoring malaria interventions in the COVID-19 response [Internet]. Geneva: World Health Organization; 2020 (<http://www.who.int/malaria/publications/atoz/tailoring-malaria-interventions-in-the-covid-19-response/en/>, accessed 23 May 2020).
86. Adapting seasonal malaria chemoprevention in the context of COVID-19: Operational Guidance [Internet]. Roll Back Malaria Partnership To End Malaria; 2020 (<https://endmalaria.org/resources/library/covid19/4481>, accessed 23 May 2020).
87. Mass drug administration for falciparum malaria: a practical field manual [Internet]. Geneva: World Health Organization; 2017 (<http://www.who.int/malaria/publications/atoz/9789241513104/en/>, accessed 23 May 2020).



Sample indicators for monitoring essential health services

Because health systems are increasingly overwhelmed by the volume of patients needing care for COVID-19, the examples below are meant to be specific, relevant, timebound and refer to a core set of indicators that can serve as proxies for monitoring the pandemic's impact on essential health services. They should be prioritized based on the country's specific context, including the selection of services that are to be maintained or modified and the COVID-19 transmission context. They are not meant to be exhaustive but are meant to be used to monitor disruptions in essential health services or serve as triggers for implementing modifications to programme activities during different phases of the pandemic. Criteria for selecting the priority indicators included (a) the availability of data and the ease of data collection and reporting at the community and facility levels, (b) their coverage of essential services and (c) their direct link to poor health outcomes if the service is missed or not provided. They should be drawn from existing indicators that are already measured. Indicators should be monitored and reported over a specified period (i.e. weekly, monthly) and disaggregated if possible (e.g. by age and sex). A full set of indicator metadata, including recommended disaggregation, and analytical guidance is under development and aims to support the monitoring of essential health services.

Extended list of sample indicators for monitoring essential health services during the COVID-19 pandemic

- Total number of outpatient attendances or primary care visits
- Total number of hospital discharges, including deaths (both related and unrelated to COVID-19)
- Number of health workers available, disaggregated by occupational group (i.e. by the International Standard Classification of Occupations, or ISCO-8 classification)
- Number of health workers infected by COVID-19, disaggregated by occupational group, including health or care workers in nursing homes and long-term care facilities
- Percentage of hospital emergency units with a validated triage tool in place
- Ratio of hospital-based deaths from acute injury to overall deaths from acute injury
- Number of inpatient admissions for acute cardiovascular and cerebrovascular emergencies
- Percentage of COVID-19 patients with an existing underlying NCD
- Number of hospital admissions and discharges (including deaths) due to hypoglycaemia and hyperglycaemia
- Essential medicines or supplies for which there is less than 2 months' inventory without confirmation of on-time replenishment or with or without confirmation of replenishment
- Number of women and girls receiving (a) oral and (b) injectable contraceptives
- Number of women presenting to the facility with abortion-related complications
- Number of pregnant women with at least one ANC visit
- Number of antenatal care contacts for which pregnant women were given/prescribed iron containing supplements
- Number of facility births
- Number of births by caesarean section
- Incidence of low birth weight (<2500 g) among newborns
- Number of term infants who were put to the breast within 1 hour after birth
- Number of women receiving PNC within 2 days of delivery
- Number of newborns receiving PNC within 2 days of delivery
- Number of newborns weighing ≤ 2000 g receiving kangaroo mother care
- Number of newborns admitted to the neonatal intensive care unit
- Number of children presenting to facility with any sign of acute respiratory infection
- Number of children younger than 1 year receiving their third dose of diphtheria–tetanus–pertussis (DPT3) or their first dose of measles vaccine
- Immunization coverage rate by vaccine for each vaccine in the national schedule
- Number of children 0–59 months of age admitted to health facility for treatment of severe wasting and bilateral pitting oedema
- Number of children 0–59 months of age who were screened for severe wasting and bilateral pitting oedema
- Number of children 0–59 months of age who were discharged/recovered/treated for severe wasting and bilateral pitting oedema
- Number of children 0–59 months of age who received an age-appropriate dose of vitamin A in each semester
- Percentage of confirmed malaria cases treated with artemisinin-based combination therapies
- Number of new and relapse TB cases notified
- Percentage of adults living with HIV currently receiving antiretroviral therapy who are affected by treatment disruptions
- Percentage of people living with hepatitis B and on long-term treatment who are affected by treatment disruptions
- Number of women screened for cervical cancer
- Number of cases of violence against women and girls (physical, sexual, other), by type of perpetrator, recorded at the health facility level
- Number of persons with severe mental health conditions (e.g. moderate to severe depression, psychosis, bipolar affective disorder, substance abuse disorders) who are using consultative services
- Suicide rate
- Number of new cancer diagnoses
- Number of COVID-19 patients and patients without COVID-19 in need of palliative care
- Number of older people presenting to facility with any sign of acute respiratory infection
- Number of deaths in adults older than 60 due to conditions unrelated to COVID-19



World Health Organization
Avenue Appia 20
1211 Geneva 27
Switzerland

WHO in Emergencies:
www.who.int/emergencies/en