# Maintaining infection prevention and control measures for COVID-19 in health care facilities

Policy brief

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World Health Organization

## Introduction

Between late March and May 2022, the number of COVID-19 cases declined in countries worldwide, except in the World Health Organization (WHO) Region of the Americas and African Region *(1)*. With increases in population level immunity from past infection and/or vaccination, there is a decline and decreasing impact on health systems. Many countries have been lifting public health and social measures (PHSM) and considering what infection prevention and control (IPC) measures implemented in the context of COVID-19 could be relaxed in health care facilities *(2)*. Since January 2020 and throughout the course of the pandemic, WHO has recommended that countries implement a comprehensive package of measures adapted to local contexts and epidemiological scenarios to prevent COVID-19 transmission during the pandemic, including PHSM and IPC measures in health care facilities. These measures are aimed at limiting person-to-person transmission of SARS-CoV-2, thereby protecting individuals and their contacts from getting infected.

In the context of circulation of known SARS-CoV-2 variants of concern and potential emergence of future variants of concern, based on available evidence and expert consensus, WHO continues to advise that the current recommended IPC measures be reinforced and continue to be stringently implemented in health care facilities *(3)*. Current key infection prevention and control (IPC) strategies and measures for management of COVID-19 in healthcare facilities include[1]: 1) an IPC programme or at least a dedicated and trained IPC focal point, 2) screening and triage for early recognition of community- and health care facility-acquired cases and rapid implementation of source control measures, 3) applying standard and transmission-based precautions, 4) patient isolation and cohorting, 5) universal masking using well-fitting medical masks, 6) administrative controls, 7) implementation of engineering and environmental controls, with emphasis on ventilation, 8) COVID-19 vaccination of health workers and 9) prevention, identification and management of COVID-19 among health workers *(4-5)*.

## Purpose of this document

This document aims to encourage countries to develop and implement policies to maintain and strengthen IPC programmes and measures in health care facilities in the context of the current ongoing transmission of the SARS-CoV-2, with recognition that epidemiological trends may vary; this should be done also considering the risk of transmission of other pathogens. These policies should achieve the following:

- maintain IPC achievements and prioritize critical gaps in IPC programmes;
- maintain IPC operational readiness for a resurgence of COVID-19 case and other emerging and re-emerging pathogens;

[1] For additional resources on infection prevention and control in the context of COVID-19 issued by WHO, refer to the Country & Technical Guidance - Coronavirus disease (COVID-19) home page: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance-publications?publicationtypes=d198f134-5eed-400d-922e-1ac06462e676.

- scale up IPC capacity with strong investments in the implementation of IPC minimum requirements and the ultimate goal of achieving the implementation of all IPC core components and ensuring resilience and sustainability.

As stated in the WHO framework and toolkit for IPC preparedness, readiness and response to outbreaks in the context of COVID-19, countries should implement and adapt IPC measures to the local context *(6)*.

## Target audience

This document is intended for national, subnational and facility-level authorities (including IPC focal points and teams), policy makers, developers of normative guidance, donors, health care facility managers, implementing partners and those involved in the management of IPC in the context of COVID-19 (e.g., IPC COVID-19 Taskforce and individuals in charge of clinical management).

## Process and methodology

On 23 March 2022 the members of the WHO Health Emergencies Programme COVID-19 IPC Guideline Development Group[2] met virtually to 1) review the current global epidemiological situation and data on IPC programmes during the pandemic according to recent surveys, 2) discuss potential changes required in WHO's IPC guidance for health care facilities in the current epidemiological context, 3) discuss the importance of highlighting the need for continued to prevention of SARS-CoV-2 transmission in health care settings by sustaining IPC measures and 4) strengthening IPC programmes to allow safe access to health care facilities and services and to prevent transmission of any pathogen. Their conclusions were critical to the development of this brief. GDG members signed a declaration of interest and the secretariat concluded that none of the members had a conflict of interest.

## Implementation of IPC measures in the context of the COVID-19 pandemic

Many countries have made impressive improvements in IPC with the focused prioritization of measures to mitigate SARS-CoV-2 transmission within health care facilities; but sustaining this progress and further improvement are urgently required. A detailed global survey on the minimum requirements for national IPC programmes was conducted by WHO between July 2021 and January 2022, with participation by 106 countries. Significant increases compared to a previous WHO survey conducted in 2017-2018 were reported in the percentage of countries with a trained IPC focal point, a dedicated budget for IPC and an in-service IPC curriculum. By contrast, the 2021-2022 survey found that 54.7% (58/106) of countries had an active IPC programme and only four out of 106 participating countries (3.8%) met all minimum requirements for IPC (none of these was a lower-middle-income country) *(7, 8)*. The survey also documented specific gaps: lack of functioning IPC programmes with annual work plans and supported by a dedicated budget, inadequate support at the national level for IPC training roll-out and monitoring of its effectiveness and limited expertise in conducting IPC monitoring *(8)*.

It is likely that financial resources for IPC have been dedicated mainly to procurement of commodities including personal protective equipment (PPE) and hand hygiene and cleaning supplies. Other critical needs may have not been adequately addressed. These include the establishment or strengthening of IPC programmes and expertise; investment in sustainable production, stockpiling, and access to PPE and other IPC supplies; improving governance; infrastructural improvements; and implementing interventions to change practices. Environmental and engineering control interventions in health care facilities were often limited to interventions for the COVID-19 emergency response, such as implementation of portable high-efficiency particulate absorbing (HEPA) filtration devices and installation of exhaust fans *(9)* and provision of temporary hand hygiene stations in isolation wards; rather than longer-term, sustainable improvements such as natural or mechanical ventilation and sustainable water, sanitation and hygiene (WASH) services in health facilities.

[2] For the list of contributors, refer to the "Acknowledgment" section.

WHO pulse surveys[3] on continuity of essential health services during the COVID-19 pandemic *(10-13)* found that in quarter 4 2021, bottlenecks in procurement of PPE for all staff in many low- and middle-income countries, health workforce challenges, a lack of IPC supplies and best practices were major contributors to ongoing essential health services disruption. The results also showed that IPC focal points were more likely to be found in healthcare facilities than in primary care facilities (89% vs 65%). Essential IPC supplies[4] were available, although almost half of healthcare facilities did not have all items.

There continued to be a shortage of PPE required to provide care to COVID-19 patients (medical masks, respirators, gloves, face shields, goggles and gowns), with only 20% of primary care facilities and 27% of healthcare facilities having all items available for staff. Additionally, a COVID-19-safe environment (i.e., dedicated entrance for screening, separated room for a patient suspected of having COVID-19) was being implemented in about one-quarter of primary care facilities and about one-third of healthcare facilities. Furthermore, a lack or limited availability of PPE was also confirmed in two WHO pulse surveys on continuity of essential health services during the COVID-19 pandemic *(13, 14)*. These surveys demonstrated that the lack of IPC supplies and poor application of best practices were a major reported reason for the disruption of essential health services in 44% of countries in 2020 and 26% of countries in 2021.

Finally, the increased use of PPE has intensified the pre-existing problem of health care waste – with 2 in 3 healthcare facilities in the least developed countries lacking means for segregating or safely treating waste.

## Maintaining IPC achievements and prioritizing critical gaps in healthcare settings

SARS-CoV-2 transmission in healthcare settings has been a matter of concern during the COVID-19 pandemic, especially early in the pandemic in 2020. Among hospitalized confirmed COVID-19 patients, it has been estimated that up to 41% were infected in healthcare settings. The incidence of infection among health workers has varied from 0.4% to 49.6% depending on the study *(15)*.

As SARS-CoV-2 continues to circulate widely, healthcare facilities remain a high-risk transmission setting where patients at risk of severe COVID-19 are admitted *(16-19)*. Hence, it is critical to maintain IPC measures, including appropriate mask wearing and physical distancing *(20)*.

There is a risk that as COVID-19 incidence and mortality reduces globally, key IPC measures (for example, screening at facility entrance, triage and use of use of masks) will be scaled down. While it is not possible to identify all cases nor stop SARS-CoV-2 transmission in the community, given the wide circulation of the virus, by contrast, all possible efforts to avoid transmission within healthcare facilities – where fragile patients are present – should continue, and improvements in IPC gained during the pandemic be sustained. These include, for example, appointed focal points/teams at the national and facility level; adequate provision of hand hygiene supplies at the point of care, in toilets and other critical sites; appropriate environmental cleaning; patient placement/cohorting and flow; increase in isolation rooms; improved use of PPE; and safe management of waste *(7)*. This means that assessments of the local situation of IPC and WASH – in particular concerning measures for COVID-19 and the International Health Regulations (IHR 2005 requirements – should continue to be regularly undertaken at both national and facility levels; and gaps should be addressed promptly *(7, 10, 21, 22)*.

## IPC operational readiness for resurgence of cases

Healthcare facilities can become amplifiers of infectious disease outbreaks. Maintaining IPC operational readiness to rapidly respond to resurgence of COVID-19 cases is therefore paramount *(23-25)*. Readiness activities are designed to mitigate the impact of an outbreak on the health system and reduce morbidity and mortality. By flattening the

[3] For more information on the global pulse survey on continuity of essential health services during the COVID-19 pandemic, refer to https://www.who.int/teams/integrated-health-services/monitoring-health-services/global-pulse-survey-on-continuity-of-essential-health-services-during-the-covid-19-pandemic/dashboard.

[4] IPC supplies considered in the question: liquid soap, hand sanitizer, biohazard bags, safety boxes and body bags. For more information on the indicator, refer to footnote 3.

epidemic curve of new SARS-CoV-2 and avoiding a sharp peak of COVID-19 cases, the impact on the population and healthcare system capacity can be better controlled. Hence, if a resurgence of SARS-CoV-2 variants of concern cases is detected or imminently anticipated, key immediate actions at national and healthcare facility levels are required.

In the context of the COVID-19 pandemic, if there is a local resurgence of cases, national and sub-national level authorities should take the following immediate actions *(6)*:

1. Reconvene the national COVID-19 outbreak IPC taskforce to revise, adapt and disseminate policies, national guidelines, training and other IPC-related activities across all levels of the health system.
2. Re-evaluate the national COVID-19 Strategic Preparedness and Response Plan (SPRP)[5] IPC/PHSM pillar priority areas to strengthen in preparation for potential widespread community transmission.
3. Assess surge capacity, identify required resources for a resurgence of cases (financial, logistical, human resources) and provide contingency plans where needed for alternative service delivery modes, human resources incentives and IPC/PPE supplies (based on PPE burn rate).
4. Update and undertake refresher COVID-19 IPC training.[6]
5. Maintain a surveillance system and management policies for health worker infection detection and policies for management of exposed and confirmed health worker infection (quarantine and isolation).
6. Update and reinforce existing risk communication messaging and dissemination strategy related to IPC and PHSM considering contextual issues (e.g., pandemic fatigue).

Immediate steps at healthcare facility level include the reactivation of incident management for coordination of IPC stakeholders and resource mobilization; ensuring safe flow of patients, staff and safe care environments; PPE availability and optimal use; vaccinating health workers as per latest protocols; increasing infrastructural capacity as required (e.g., screening, triage and isolation capacity) and refresher IPC training *(6)*.

Actions recommended for immediate implementation with planned sustainability include the recruitment and training of IPC focal persons to direct and monitor facility response actions, investments in assessing and improving health infrastructure to ensure the ventilation in healthcare facilities meets or exceeds recommended air-exchange rates for the expected volume of occupants and implementing surveillance approaches to identify and investigate SARS-CoV-2 transmission events in healthcare settings. This will ensure these events serve as opportunities for continuous improvement to mitigate the possibility of amplifying outbreaks within healthcare facilities.

Such actions will need to be contextualized for fragile, conflict or vulnerable settings where mobile health teams may be required to identify risks in congregate care settings and IPC and WASH resources and develop an outbreak response action plan that includes interventions specific to COVID-19 testing, isolation and quarantine.

It is assumed that when SARS-CoV-2 becomes endemic there will be low-level circulation of virus, and many people infected with the virus may be asymptomatic. In that context, having a separate entrance for patients with suspected infection will be less likely to prevent acquisition within a health system. Instead, there should be enhanced vigilance and IPC measures in place akin to universal precautions, which were introduced in the 1980s to protect health workers from HIV and other bloodborne pathogens in human blood and certain other body fluids, regardless of a patients' infection status *(26)*.

## Scaling up IPC capacity and ensuring resilience and sustainability

COVID-19 has awakened countries to the critical need to enhance and sustain IPC policies. The importance of such policies goes beyond protection against SARS-CoV-2 infection. Enhanced IPC policies will also reduce the burden of other healthcare associated infections (HAI) that occur every day in all countries, caused mainly by pathogens resistant to antimicrobials but also by viruses such as other respiratory or hepatitis viruses. Every year this burden affects millions of people across the health system, including in primary care and long-term care facilities, and across all

[5] For more information on the WHO Strategic preparedness, readiness and response plan to end the global COVID-19 emergency in 2022, refer to https://apps.who.int/iris/handle/10665/352861.

[6] For more information on the OpenWHO courses, refer to the Infection Prevention and Control channel at https://openwho.org/channels/ipc.

country income levels. The impact of HAI and antimicrobial resistance (AMR) on people's lives is incalculable, in terms of human suffering, premature mortality, disabilities, and financial loss. The risk of acquiring an infection during health care delivery and of suffering from its deadly consequences, doubles and can be up to 20 times higher in low- and middle-income countries, where IPC programmes and measures are least implemented. Evidence emerging from surveillance networks shows significant increases in the incidence of HAI and AMR in different countries during the COVID-19 pandemic *(8)*. This could be in part due to a narrow focus on IPC measures that are specific for COVID-19 and less attention and efforts in implementing antimicrobial stewardship and wider IPC measures, in particular those preventing infections due to invasive devices.

Scale-up of IPC capacity should be undertaken according to WHO-recommended IPC core components *(27)* and the framework for IPC preparedness, readiness, and response to outbreaks *(6)*. To achieve these goals, it is recommended that countries:

- conduct an in-depth situational analysis regarding the implementation status of IPC programmes and practices using standardized tools;[7]
- develop action plans based on this analysis for further improvements with consideration of wider IPC priorities;
- put in place at least the IPC minimum requirements at the national and health care facility levels as soon as possible *(7);*
- strengthen or establish functional IPC programmes at the national level and in all health care facilities, including primary care and long-term care, supported by dedicated budget and trained IPC team and not by a temporary programme or focal point;
- ensure implementation of IPC standards at the point of care, including within specific clinical care practices (such as surgical, neonatal and maternal care) and monitor key performance indicators[8];
- simulate scenarios to assess whether current strategies and plans can cope with a rapid upsurge of cases, absenteeism of staff, shortage of IPC supplies or other challenges;
- ensure that procurement, distribution, and use of essential IPC supplies be secured at the point of care and WASH infrastructure be further improved and maintained and its funding sustained;
- support IPC capacity by increasing knowledge and expertise;
- strengthen coordination among all partners operating at the country level and work in support of ministerial action plans for IPC in the long term;
- update national IPC policies as well as national and local action plans for the next phase towards ending the pandemic to consolidate previous efforts and clearly identify the above-mentioned priorities and adapt them to the local context.

## Conclusions

IPC is a clinical and public health specialty that provides practical solutions grounded in scientific evidence on infectious diseases, epidemiology, social and implementation science and health systems strengthening. Ultimately, the goal of IPC is to prevent harm from infections to patients, health workers, caregivers and visitors in health care settings.

The COVID-19 pandemic has demonstrated the importance of IPC implementation at national, subnational and facility levels to contain the emergence and re-emergence of infectious threats and for the delivery of safe care. IPC, together with other core capacities required by the International Health Regulations (2005), plays a critical role in detecting, assessing, notifying and reporting events and responding to public health risks and emergencies of national and

[7] For more information on standardized tools to assess the implementation of infection prevention and control practices, refer to *World Health Organization. (2017). Instructions for the national infection prevention and control assessment tool 2 (IPCAT2). https://apps.who.int/iris/handle/10665/330078, World Health Organization. (2018). Infection prevention and control assessment framework at the facility level. World Health Organization. https://apps.who.int/iris/handle/10665/330072* and *World Health O. Minimum requirements for infection prevention and control programmes. Geneva: World Health Organization; 2019 (https://apps.who.int/iris/handle/10665/330080.*

[8] See footnote 7.

international concern. The pandemic has also demonstrated the critical role of health system resiliency in providing essential health services and maintaining health systems functioning.

During the Seventy-fifth World Health Assembly, held on May 2022, Member States requested the Director-General to develop in consultation with Member States and regional economic integration organizations, a global strategy on infection prevention and control in both health and long term care settings (Agenda item 14.6, A75/A/CONF./5) *(28)* for consideration by the Seventy-six World Health Assembly, elevating IPC in the global health and political agendas. There is an urgent need to bridge the existing gaps in IPC implementation, maintain IPC operational readiness to ensure surge capacity and ensure scale up and sustainability of IPC programmes in the long-term to end the pandemic, prevent and control future outbreaks, reduce the endemic burden of HAI and AMR *(29, 30)* and build resilient health systems *(31)*.

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