

CONTRIBUTORS

Sarah Coleman, Emilia Connolly, Zachary Crawford, Brown David Khongo, Amruta Houde, Viola Karanja, Cory McMahon, Jean d'amour Ndahimana, Vicky Reed, Shada Rouhani, Chiyembekezo Kachimanga, Rebecca Cook and Stephanie Smith.

INTRODUCTION

Infection prevention and control (IPC) measures are fundamental to health systems and to reducing health care associated infections, antimicrobial resistance, and the spread of infectious diseases like tuberculosis (TB) and COVID-19 among both patients and staff at health facilities and in communities. IPC measures help address some alarming statistics: nearly 1 in 10 patients get an infection while receiving care, and more than 50% of surgical site infections can be antibiotic-resistant ([WHO guidelines on preventing surgical infections](#)). Effective IPC measures can help reduce surgical site and other infections as well as illness among patients and staff at health facilities, but infectious disease outbreaks like COVID-19 test IPC systems and often require that they evolve to respond to clinical realities so as to effectively reduce risk of exposure and infection.

Pandemics such as COVID-19 draw renewed attention to the importance of national IPC measures and should induce health authorities to adapt policies, protocols, and plans to address these emerging threats with an eye toward preparedness for future outbreaks and health emergencies. While this guidance is informed by World Health Organization (WHO) and other international standards for IPC policies and protocols in the context of COVID-19, it also calls for including clinicians, care delivery teams, and patients from all levels of the health system to have a voice in these processes.

In clinical settings, COVID-19 poses a high risk to vulnerable patients like those with TB, HIV, and other immunodeficiency and respiratory illnesses, of developing severe disease. Clinicians and staff, too, can be at high risk of infection and transmission without sufficient and proper use of personal protective equipment (PPE) and the protocols, staff, supplies, spaces, and supports necessary to mitigate the spread of COVID-19. These considerations should be incorporated into ongoing national training plans to equip facilities and health care workers (HCW), including community health workers (CHWs), with the tools and systems to detect, respond to, and monitor COVID-19 in inpatient, clinical, and community settings. Supportive systems must also be put in place for HCWs and patients alike, such as psychological and social support for frontline workers experiencing burnout and for COVID-19 patients struggling with isolation. Investing in these systems serves both the immediate need to adapt clinical protocols to better address COVID-19 realities as well as long-term IPC preparedness and health system resiliency in the face of future outbreaks.

Screening, early detection, isolation and contact tracing are central to IPC activities and protocols, especially important during a global pandemic. Challenges such as uneven screening practices, limited number of diagnostic tests, lack of isolation spaces for suspected and confirmed COVID-19 cases, and inadequate contact tracing extend beyond facilities. National IPC response plans must therefore ensure that community members, CHWs, and local leaders are equipped to complement ongoing surveillance and contact tracing activities effectively carry out IPC activities.

GOAL Develop and implement robust IPC programs and practices backed by the appropriate supplies that protect healthcare workers (HCWs) and patients at health facilities.

ACRONYMS

BCC	Behavior Change Communication
CHW	Community Health Worker
HCW	Health Care Worker
HRH	Human Resources for Health
IEC	Information Education and Communication
IPC	Infection Prevention and Control
PIH	Partners In Health
PPE	Personal Protective Equipment
SOP	Standard Operating Procedure
WHO	World Health Organization

OBJECTIVE 1: Conduct IPC assessments to understand the current state of IPC programs and practices and determine future needs.

Strategy 1.1: Assess current IPC practices including availability of equipment, airborne isolation rooms, PPE, and staff knowledge, attitudes and practices.

IPC assessments should include both COVID-19 units and other inpatient and outpatient areas of the health facility. Though many countries have dedicated COVID-19 treatment centers, staff may encounter undiagnosed COVID-19 patients in general wards as well. In addition, IPC in general wards is essential to reducing the spread of nosocomial infections and preventing transmission of other infectious diseases, including TB and Malaria.

Intervention Ensure that assessment results are accessible within each facility to promote quality improvement as well as aggregated regionally and nationally to identify areas for improvement. See [WHO assessments - IPC healthcare facility response for COVID-19](#) and [WHO assessment tool – rapid hospital readiness checklist adapted for COVID-19](#).

Strategy 1.2: Conduct gap analyses to identify training needs of health care workers.

Intervention Include voices from all stakeholders, including community members, facility staff, clinicians, and leadership, and from regional and national bodies such as technical working groups. Gaps are often greatest for the end user, so the latter’s voices are crucial to include in gap analyses.

OBJECTIVE 2: Adapt and disseminate clinical protocols and standard operating procedures (SOPs) that include COVID-19 considerations.

Strategy 2.1: Adapt regional or national policies and protocols for key IPC processes to include COVID-19 considerations.

Revised protocols should capture standards for COVID-19 wards and also address IPC in other areas of the health facility to strengthen long term IPC and reduce nosocomial infections.

- Intervention Adapt protocols for cleaning requirements for equipment, even if separate equipment is procured for isolation spaces and wards. See [disinfection and cleaning guidelines on covidprotocols.org](#) and [WHO guidance on cleaning and disinfecting environmental surfaces in health facilities](#).
- Intervention Adapt protocols for cleaning and transport of ambulances and other emergency transport vehicles. See [IPC patient transport, covidprotocols.org](#), [PIH COVID-19 Transport Guidelines](#), [PAHO pre-hospital EMS readiness checklist for COVID-19](#), and [PAHO COVID-19 recommendations for pre-hospital EMS](#).
- Intervention Adapt protocols for stock outs and inadequate supplies, including protocols around extended use and reuse of respirators, and reusable or washable gowns. See [CDC PPE supply burn rate calculator](#) and [WHO rational use of PPE for COVID-19 and considerations during severe shortages](#).
- Intervention Adapt protocols to allow for social distancing in staff, patient, and office spaces including limiting visitors and providing maximum capacity regulation. See [IPC visitation policies on covidprotocols.org](#) and [Brigham and Women’s Hospital \(BWH\) visitor policies](#).
- Intervention Specify lab turnaround times in protocols for early detection. See [WHO laboratory assessment tool for laboratories implementing SARS-CoV-2 testing](#).
- Intervention Adapt IPC measures for specimen transportation and handling.

Strategy 2.2: Ensure that facility supplies match protocols and that supply availability is adequate, including hand hygiene stations.

Strategy 2.3: Ensure staffing is sufficient to execute protocols, including increasing numbers of cleaning staff as needed.

Strategy 2.4: Disseminate protocols and ensure designated individual or team to implement protocols at facility level.

OBJECTIVE 3: Design and implement trainings on IPC measures inclusive of COVID-19

Protocols and systems are fundamental building blocks to IPC but cannot be successful without trained and empowered HCWs who can successfully apply IPC principles. To do this, training programs must be adapted to locally-available resources and to different cadres of workers. To strengthen HCW IPC capacity:

Strategy 3.1: Implement targeted trainings developed on key IPC measures and protocols, including on the proper use of particulate respirators, donning and doffing of PPE, handwashing, rational use of PPE, safe COVID-19 vaccine delivery, and environmental cleaning and decontamination.

- Intervention Ensure trainings are accessible to multiple cadres of workers, ranging from cleaning staff to physicians. Content and delivery should be adapted to literacy and baseline knowledge.
- Intervention Ensure trainings are adapted to match locally available equipment, including type of available barrier protection (gown versus apron), type of respirator, and available cleaning and disinfection equipment.
- Intervention Trainings should be inclusive of modifications needed when PPE supplies are scarce, including clustering of patient care activities and safe extended use of respirators and other supplies. In many settings, PPE scarcity remains a reality and will likely continue to be a challenge even with new investments in PPE procurement. It is essential to equip end users with the tools needed to remain safe in these scenarios. See [WHO rational use of PPE for COVID-19 and considerations during severe shortages](#).
- Intervention Trainings should include education to reduce stigma against people with COVID-19 and reduce health care provider concerns or anxiety about infecting themselves or others. See [WHO IPC for COVID-19 Virus course](#), [WHO COVID-19 vaccine training for health workers](#), and [WHO COVID-19 vaccine checklist](#).

Strategy 3.2: Design and conduct post-training knowledge assessments either at the end of a training or by a supervisor or mentor at a later date. Include practical demonstration of IPC topics.

Strategy 3.3 Use training delivery plans that build long-term trainer capacity and support flexible staffing during surges.

Strategy 3.4 Develop and distribute job aids to support implementation of IPC principles. Job aids support retention of key concepts and/or function as easy references for staff to review procedures.

- Intervention Use pictorial depictions when possible. Images should be locally adapted to reflect the working environment and local culture.
- Intervention Post commonly-used job aids so they are clearly visible to staff.
- Intervention Embed job aids in digital health systems when possible. See [PAHO medPPE app](#), [PAHO infographic on how to wear a mask safely](#), [PAHO infographic on how to wear a non-medical fabric mask safely](#), and [PIH guide on testing, contact tracing and community management of COVID-19](#).

Strategy 3.5: Develop and implement post-training monitoring systems to ensure the application of IPC measures for

mitigating the risk of spread of COVID-19.

OBJECTIVE 4: Monitor ongoing IPC practices to support continuous quality improvement

Strategy 4.1: Develop and implement feedback mechanisms at the facility and regional and national levels.

Mechanisms should identify gaps in IPC practices at the facility level and feed those into regional/national decision-making processes to identify training needs, supply needs, or system needs to establish targets for continuous improvement.

Strategy 4.2: Ensure that COVID-19 specific IPC indicators are incorporated into district/national level monitoring and evaluation plans.

Strategy 4.3: Identify, support and empower IPC champions within facilities to support training, ongoing IPC monitoring, and quality improvement.

- Intervention Support IPC champions to provide ongoing monitoring of IPC adherence at facilities. See [PIH Mentorship and Enhanced Supervision for Healthcare and Quality Improvement \(MESH-IQ\)](#).
- Intervention Distribute materials and implement programs to train staff on supportive supervision, a skill set that builds staff capacity across disease areas.
- Intervention Develop locally adapted job aids and checklists to support monitoring of IPC practices including ongoing mentorship of staff.
- Intervention To promote successful change, allocate funds for IPC champions to carry out quality improvement activities and/or implement needed systems changes. Funds can support procurement of supplies identified over time as necessary to support improved IPC practices (for example, a cabinet to hold PPE in, or a bucket for cleaning), and/or additional training or staff development.
- Intervention To maximize impact, promote an integrated approach to monitoring and assessment activities that extends beyond COVID-19 isolation spaces to other wards and disease areas. This protects against the possibility of undiagnosed COVID-19 and also strengthens the health system in the long-term.

OBJECTIVE 5: Identify appropriate screening systems for COVID-19 and other relevant infectious disease (such as TB or Ebola) at entrances of all health facilities including primary health facilities.

See [WHO assessment tool – ensuring a safe environment for patients and staff in COVID-19 health-care facilities](#), [WHO IPC capacity assessment: health-care facility response for COVID-19](#), and [PIH COVID-19 patient intake and symptoms screening tool](#).

Strategy 5.1: Designate and equip spaces for screening at health facility entrances.

- Intervention Ensure hand hygiene stations at screening sites, including plans for drainage and cleanup if needed. Ensure 70% alcohol hand sanitizer or hand washing stations equipped with soap and adequate drainage.
- Intervention Provide PPE for screening staff and/or use physical barriers to separate screening staff from patients to reduce infection risk.
- Intervention When designating screening spaces, ensure that a separate space is available for screening staff to take breaks, hydrate; that infrastructure for staff and patient comfort and safety is provided, and that space is set up so that IPC protocols are observed. See [Transmission Prevention in](#)

Intervention [Facilities in covidprotocols.org](https://covidprotocols.org).
 Ensure that patients arrive with masks, and/or provide masks if needed. Use visual and verbal education methods to ensure proper mask use by patients.

Strategy 5.2: Ensure adequate staffing for facility screening.

Intervention Account for surge staffing and turnover time needed for screening. Ensure 24-hour coverage for facilities open at night. See [WHO COVID-19 Health Workforce Estimator](https://www.who.int/tools/whodoc/default.aspx?docid=11462).

Strategy 5.3: Design and implement screening questions for the facility entrance that combine screening for COVID-19 and TB to facilitate disease identification.

Intervention Design and implement protocols where patients who are unable to provide a history or answer screening questions as possible COVID-19 cases and care for them under appropriate precautions and in appropriate isolation spaces. Ensure patients can receive any needed services, including emergency delivery or surgery. See [Transmission Prevention in Facilities in covidprotocols.org](https://covidprotocols.org).

Strategy 5.4: After initial facility-based screening, implement acuity-based triage systems for all patients presenting for acute, unscheduled care.

Strategy 5.5 Deliver facility-based information, education and communication (IEC)/behavior change communication (BCC) for patients and staff.

Intervention Community health educators or existing staff to provide daily facility-based patient education on hand hygiene, mask usage, other information about protective measures for entering health facilities.

Intervention Communication via visual signs/messaging in appropriate language (or multiple languages) and visuals for non-literate patients. Considerations for visual signs and messaging:

- Ensure that illustrations represent community members
- If infrastructure allows, provide video messaging
- Include radio messaging via ‘skit’ or other engaging media
- Provide patients with take-home pamphlets

OBJECTIVE 6: Ensure adequate isolation space for suspected and confirmed COVID-19 cases.

After screening, further patient care should be conducted under appropriate IPC precautions, often in an isolation space where they can receive additional diagnostics and therapeutic interventions. Physical requirements and recommendations for isolation spaces are covered elsewhere (Cross-link to infrastructure toolkit). The operational considerations for an isolation space depend on the facility structure and layout of the isolation space. However, general considerations include:

Strategy 6.1: Ensure acuity-based triage is performed to identify critically ill patients in need of time-sensitive interventions.

Strategy 6.2 Patients should be distributed within isolation spaces. To do this, consider:

Intervention Needs to separate patients by self-identified gender.
 Intervention Separate cases within an isolation space based on probability of disease when testing is limited

or when testing turnaround times are prolonged. This helps promote infection prevention and control.

Strategy 6.3: Designate an area for critically ill patients within the isolation space. A dedicated area for critically ill patients promotes frequent staff monitoring, allows clustering of supplies for critically ill patients, and facilitates patient care.

- Intervention An area for high-acuity patients could be designated with a few beds within one larger isolation space or a separate isolation ward.
- Intervention Ensure staffing ratios for the critical care space are sufficient.
- Intervention Develop lists of essential medical equipment and medical supplies that needs to be in isolation rooms and easily accessible to the critical care area. Ensure availability of the equipment and medical supplies at all time.

Strategy 6.4: Ensure oxygen is immediately available or rapidly accessible throughout the isolation space. COVID-19 patients can become rapidly hypoxemic and need access to oxygen quickly.

Strategy 6.5: Plan for staffing within isolation spaces that reflects the length of time patients will spend there and the needed levels of care, particularly for patients waiting for testing results. In many locations, test results are delayed. In these settings, facilities should plan for inpatient levels of staffing with ratios adjusted based on level of patient acuity.

Strategy 6.6: Develop or adapt protocols for isolating infectious patients while promoting safety and dignity. Isolation protocols should consider the following recommendations:

- Intervention Promote rapid transfer between suspected and confirmed areas once COVID-19 test results return.
- Intervention Ensure sufficient materials in the isolation spaces to care for patients without cross-contaminating equipment between wards.
- Intervention Develop clear guidance for clearing patients from isolation.
- Intervention Include instructions for communicating and supporting with people in isolation, including mental health screening, services, and social support. See Objective 10 below.

Strategy 6.7: Educating family or contacts of patients in isolation about COVID-19 signs, symptoms, and addressing misconceptions.

- Intervention Encourage community members to provide support to individual and family members.
- Intervention Be aware of different emotional reactions related to COVID-19 that a person may experience.

OBJECTIVE 7: Staffing, bed occupancy, and workload considerations

Staff ratios are an often-overlooked consideration in infection prevention and control. When staff-to-patient ratios are too high, staff are pressured to adopt time-saving measures that can undercut IPC efforts – for example, quickly stepping into an isolation room without PPE, or not pausing to perform hand hygiene between patients. High staff-to-patient ratios also lead to fatigue and burnout, which increases medical errors and IPC lapses. Strategies and interventions to address these areas include:

Strategy 7.1: Plan for the number of staff needed for given wards and facilities, considering how requirements may change under surge conditions

- Intervention Establish target staffing ratios, which will vary by area of hospital. Typically, staff: patient ratios are lower in areas that require critical care or frequent interventions, such as the emergency department, critical care areas, and operative recovery areas.
- Intervention In addition to staffing ratios, consider shift schedules and the possibility of staff illness and/or quarantine when calculating staffing needs.
- Intervention For positions where staff are continuously in PPE (extended use of PPE), consider environmental factors such as ward temperature and the feasibility of prolonged shifts. It may be necessary to increase staffing numbers to allow for more frequent breaks. See [WHO technical specifications of PPE for COVID-19](#) and [WHO rational use of PPE for COVID-19 and considerations during severe shortages](#).

Strategy 7.2: In addition to considering staff numbers in COVID-19 isolation spaces, assess national human resources for health (HRH) guidelines in other units and adapt staffing levels and ratios in the context of COVID-19.

See [WHO health workforce policy and management in the context of the COVID-19 pandemic response](#).

Strategy 7.3: Encourage staffing plans and systems that coordinate across the facility to promote optimal use of staff and promote flexibility in staff placement.

It is common for facilities to have different occupancy levels in different wards, but in many places, daily staffing is fixed. This becomes particularly problematic when staff illnesses or patient surges further imbalance staff-to-patient ratios in different hospital areas.

- Intervention In the short-term, we recommend that hospital and ward leadership to coordinate and track daily staff ratios and bed occupancy. Regional and national leadership can promote this through trainings for hospital leadership and with simple paper-based tools to report and track these metrics.
- Intervention In the long-term, hospital administrators should be empowered to continually monitor staffing, bed occupancy and workload.

Strategy 7.4: Ensure adequate numbers of cross-trained staff so that they can be reassigned to COVID wards as required by patient volume and backlog of open positions.

OBJECTIVE 8: Surveillance and outbreak monitoring, including health care associated infection surveillance.

Pandemic management relies on surveillance and early warning systems to rapidly identify outbreaks and stop disease spread. Surveillance and outbreak monitoring must occur at both the community and facility levels. See [WHO assessment tool - ensuring safe environment for patients and staff in COVID-19 health care facilities](#), [WHO surveillance protocol for SARS-CoV-2 infection among health workers](#), and [WHO protocol for assessment of potential risk factors for COVID-19 infection among health care workers in a health care setting](#).

Strategies to support surveillance and outbreak monitoring include:

Strategy 8.1: Ensure surveillance systems to monitor for new cases of COVID-19 in the community.

Surveillance systems that are integrated across disease types (for example, monitoring for symptoms of COVID-19 and TB) are preferred. Integrate COVID screening into existing home visit data collection, and create a specific data pipeline for rapid reporting on new cases. For more details, see community toolkit.

Strategy 8.2: Implement facility-based surveillance systems for COVID-19 for patients and staff.

- Intervention Implement symptom screening protocols for inpatients in non-COVID-19 isolation wards to assess for new or undiagnosed COVID-19 infection. See [WHO guidance on IPC during health care when COVID-19 is suspected or confirmed](#).
- Intervention Establish surveillance systems for healthcare workers and essential staff. Surveillance systems should incorporate the following elements:
 - Establish daily symptom screens for facility staff to screen for symptoms of COVID-19.
 - Ensure access to testing for staff as part of COVID-19 surveillance for early detection, isolation, and mitigation of spreading the disease. Develop or adapt protocols for testing after occupational and community exposures, as well as for testing of asymptomatic staff during times of high community spread. See [WHO guidance on prevention, identification, and management of health worker infection in the context of COVID-19](#) and [WHO surveillance protocol for SARS-CoV-2 infection among health workers](#).
 - Forecast testing needs to ensure adequate supply of COVID-19 test kits for both inpatients and any health workers who have been exposed to COVID-19 or present symptoms. See [WHO COVID-19 essential supplies forecasting tool](#) and [WHO assessment tool - diagnostics, therapeutics, vaccine readiness, and other health products for COVID-19](#).
 - Establish temporary housing solutions for staff to mitigate the risk of spread of COVID-19.

Strategy 8.3: Ensure surveillance and testing systems are closely linked to contract tracing systems to promote quarantine and monitoring of newly-identified contacts to limit spread of COVID-19.

The following resources are helpful when establishing or adapting surveillance and contact tracing systems:

- [PIH contact tracing key components of successful programs](#)
- [PIH COVID-19 Contact Tracing Playbook](#)
- [WHO guidance on contact tracing in the context of COVID-19](#)
- [The first few X cases and contacts \(FFX\) investigation protocol for COVID-19](#)

OBJECTIVE 9: Waste management

Waste management is a critical component of IPC. Facility level waste management is covered in the infrastructure toolkit. However, proper waste management begins even before the waste is generated. See [WHO guidance on IPC during health care when COVID-19 is suspected or confirmed](#) and [The Global Fund Technical Brief on Healthcare Waste Management](#).

Strategies to promote sustainable and efficient waste management include:

Strategy 9.1: Promote the safe disposal of infectious waste, including the separation of infectious waste from non-infectious waste.

- Intervention Create and/or distribute national policies on waste management. Facilitate the adaptation of policies to SOPs on waste disposal at the facility level.
- Intervention Train hospital staff on waste management, including HCWs, cleaners, and grounds staff.
- Intervention Educate patients on the importance of waste management for infection prevention using posters, talking walls, other IEC strategies.

Strategy 9.2: Provide waste management supplies to health facilities.

- Intervention Ensure color coded pedal bins and disposal bags are available for use within wards to separate infectious and non-infectious waste.
- Intervention Ensure a sufficient supply of sharps containers for needles and scalpels.
- Intervention Ensure color-coded collection bins from wards and trolleys or wheel barrows to transport waste.
- Intervention Provide adequate protection equipment for workers transporting and handling waste.

OBJECTIVE 10: Ensure adequate supplies of personal protective equipment are available to end users at healthcare facilities.

Protecting HCWs from infection requires adequate supplies of appropriate PPE. Unfortunately, in many environments PPE supplies remain limited. PPE specifications and quantification are extremely detailed elsewhere. See [WHO COVID-19 essential supplies forecasting tool](#) and [WHO technical specifications of PPE for COVID-19](#).

When considering PPE availability and use, additional principles to consider include:

Strategy 10.1: Plan and implement fit testing for N95 masks.

Strategy 10.2: Ensure that quantification reflects planned staffing levels, including considerations for surges and needs for staff breaks as described above.

Strategy 10.3 Implementation of systems at the ward level to ensure sufficient stock of supplies for end users and systems to ensure timely resupply.

See [WHO rational use of PPE for COVID-19 and considerations during severe shortages](#).

OBJECTIVE 11: Ensure mental health and psychosocial support is available to patients in isolation spaces and to staff dealing with IPC measures during the COVID-19 pandemic.

See [WHO Mental health and psychosocial considerations during the COVID-19 outbreak](#).

Strategy 11.1: Develop and implement plan for adapting and maintaining mental health and psychosocial support services.

- Intervention Develop protocols for communication with patients around duration of isolation, providing psychological and social support during isolation.
- Intervention Develop protocols for communication with patients around duration of isolation, providing psychological and social support during isolation.
- Intervention Train all front-line workers on essential psychosocial care principles, including communication techniques, psychosocial care principles, psychological support, and referral pathways.
- Intervention Establish integrated training program to train frontline staff to deliver [Psychological First Aid](#).
- Intervention Develop supervision and mentorship structure to support frontline staff on [Psychological First Aid](#).

Strategy 11.2: Provide essential psychological and social support to health care workers to prevent and address burnout with increased workload and stress during the COVID-19 pandemic.

- Intervention Establish dedicated roles to supporting staff wellness and mental health needs in collaboration with human resource and occupational health departments.
- Intervention Establish peer support structure for staff to conduct group and individual peer support sessions focused on wellness on a regular basis.

- Intervention Conduct trainings on wellness and recognizing and addressing burnout. Develop an accessible resource library with informational materials, tools, and exercises to support one's own mental health and well-being. See [PIH Cross-Site Mental Health Materials](#).
- Intervention Ensure access to clinical support including mental health services. Establish referral pathways for staff who require additional mental health services.

COST CONSIDERATIONS

Objective 1:

- Survey costs for IPC assessments and gap analyses at facilities
- Meeting costs for IPC assessments at district and national level
- Salary support for assessment coordinator

Objective 2:

- Meeting costs for protocol adaptation and validations
- Physical infrastructure costs to allow social distancing in facilities and/or IPC protocols changes for transport vehicles
- Costs for hand hygiene stations and cleaning supplies to implement IPC protocols
- Costs for additional IPC staff and cleaning staff
- Cost for protocol dissemination (if any)

Objective 3:

- Trainings for IPC measures and protocols for multiple cadres of HCWs (cleaning staff, facility staff, physicians, nurses, etc.)
- Training of trainers
- Printing and distribution of job aids for IPC principles
- Poster board, white board or cork board for posting of IPC job aids and posters in public spaces within facilities
- Cell phones or tablets for IPC protocol digitalization

Objective 4:

- Salary funding for mentor staff providing supportive supervision for IPC practices
- Materials for supportive supervision
- Print locally adapted job aids and checklists
- Funds for IPC champions to carry out quality improvement activities, procurement of supplies (cabinets for PPE, buckets for cleaning, etc.)

Objective 5:

- Set up funds for screening stations with basic infrastructure (open side tent to allow roof for sun protection, desk, thermometer);
- Hand hygiene stations and equipment at screening entrances (pumps, soap, 70% alcohol liquid hand sanitizer)
- PPE for screening staff
- Physical barriers for screening staff
- PPE for patients (masks)
- Surge staffing for screening
- Develop and produce signs/messaging/visuals regarding screening (including posters, pamphlets, video or radio messaging, etc.)

Objective 6:

- Signage and/or barriers within isolation spaces to designate patient areas by acuity and/or gender
- Carts and shelving for equipment and supplies
- Surge staffing for isolation spaces
- Phones or other equipment to allow communication between patients in isolation and their families
- Additional costs may be needed if adaptations to facilities or oxygen infrastructure are needed

Objective 7:

- Surge staff for wards and facilities
- Printed paper-based tools to report and track daily staff ratios and bed occupancy
- Training costs to cross-train staff to allow flexible staffing between different areas of the facility

Objective 8:

- Development and printing of protocols for screening inpatients in non-COVID-19 wards
- Symptom screening materials (questionnaire, thermometer, etc.)
- COVID-19 testing kits
- Temporary housing for staff to mitigate spread of COVID-19

Objective 9:

- Trainings on waste management
- Waste management supplies (color coded pedal bins, disposal bags, sharps containers, color coded collection bins, trolleys or wheel barrows for waste transportation)
- PPR for workers transporting or handling waste
- See infrastructure section for costs for facility level waste management

Objective 10:

- PPE (see [WHO COVID-19 Essential Supplies Forecasting Tool](#) and [WHO Technical Specifications for Personal Protective Equipment for COVID-19](#))
- Fit testing kits for N95 masks
- Cabinets and shelving to distribute PPE

Objective 11:

- Development and printing of protocols
- Trainings on psychosocial care principles, communication techniques, etc.
- Digital tools for communication (phones, tablets)
- Trainings on HRH wellness and burnout

RESOURCES:

[Brigham and Women's Hospital Visitor Policies](#)

[Centers for Disease Control and Prevention \(USA\) PPE Supply Burn Rate Calculator](#)

[Covidprotocols.org – Facilities Management and Operations: Disinfection and Cleaning](#)

[Covidprotocols.org – Facilities Management and Operations: Visitation Policies](#)

[Covidprotocols.org – Infection Prevention and Control: Transmission Prevention in Facilities](#)

[OpenWHO Training Course: COVID-19 Vaccination Training for Health Workers](#)

[OpenWHO Training Course: Infection Prevention and Control \(IPC\) for COVID-19 Virus](#)

[PIH COVID-19 Patient Intake and Symptoms Screening Form](#)

[PIH COVID-19 Transport Guidelines](#)

[PIH Cross-Site Mental Health Materials](#)

[PIH Guide: Contact Tracing 101: Key Components of an Effective Program](#)

[PIH Guide: Testing, Contact Tracing, and Community Management of COVID-19](#)

[PIH Mentorship and Enhanced Supervision for Healthcare and Quality Improvement \(MESH-IQ\)](#)

[The Global Fund Technical Brief: Sustainable Health Care Waste Management](#)

[WHO Assessment Tool: COVID-19 Vaccine Checklist for Frontline Health Workers](#)

[WHO Assessment Tool: Diagnostics, Therapeutics, Vaccine readiness, and Other Health Products for COVID-19](#)

[WHO Assessment Tool: Ensuring a Safe Environment for Patients and Staff in COVID-19 Health-Care Facilities](#)

[WHO Assessment Tool: Infection Prevention and Control Health-Care Facility Response for COVID-19](#)

[WHO Assessment Tool: Laboratory Assessment Tool for Laboratories Implementing SARS-CoV-2 Testing](#)

[WHO Assessment Tool: Rapid Hospital Readiness Checklist: Interim Guidance](#)

[WHO Assessment Tool: Surge Planning Support Tool](#)

[WHO Cleaning and Disinfection of Environmental Surfaces in the Context of COVID-19](#)

[WHO Community-Based Health Care Including Outreach and Campaigns in the Context of the COVID-19 Pandemic](#)

[WHO Contact Tracing in the Context of COVID-19](#)

[WHO COVID-19 Strategic Preparedness and Response Plan \(SPRP 2021\)](#)

[WHO COVID-19 Essential Supplies Forecasting Tool](#)

[WHO Global Guidelines on Preventing Surgical Site Infections, 2nd Edition](#)

[WHO Health Workforce Policy and Management in the Context of the COVID-19 Pandemic Response](#)

[WHO Home Care for Patients with Suspected or Confirmed COVID-19 and Management of Their Contacts](#)

[WHO Infection Prevention and Control During Health Care When COVID-19 is Suspected or Confirmed](#)

[WHO Minimum Requirements for Infection Prevention and Control Programmes](#)

[WHO Prevention, Identification and Management of Health Worker Infection in the Context of COVID-19](#)

[WHO Protocol for Assessment of Potential Risk Factors for COVID-19 Infection Among Health Care Workers in a Health Care Setting](#)

[WHO Psychological First Aid: Guide for Field Workers](#)

[WHO Rational Use of Personal Protective Equipment for COVID-19 and Considerations During Severe Shortages](#)

[WHO Surveillance Protocol for COVID-19 Infection Among Health Workers](#)

[WHO Technical Specifications for Personal Protective Equipment for COVID-19](#)

[WHO The First Few Cases and Contacts \(FFX\) Investigation Protocol for COVID-19](#)

[WHO/PAHO COVID-19 Recommendations: Prehospital Emergency Medical Services \(EMS\)](#)

[WHO/PAHO Infographic: How to Wear a Mask Safely](#)

[WHO/PAHO Infographic: How to Wear a Non-Medical Fabric Mask Safely](#)

[WHO/PAHO medPPE App](#)

[WHO/PAHO Prehospital Emergency Medical System Readiness: Checklist for COVID-19](#)