

# Initial Environmental Examination

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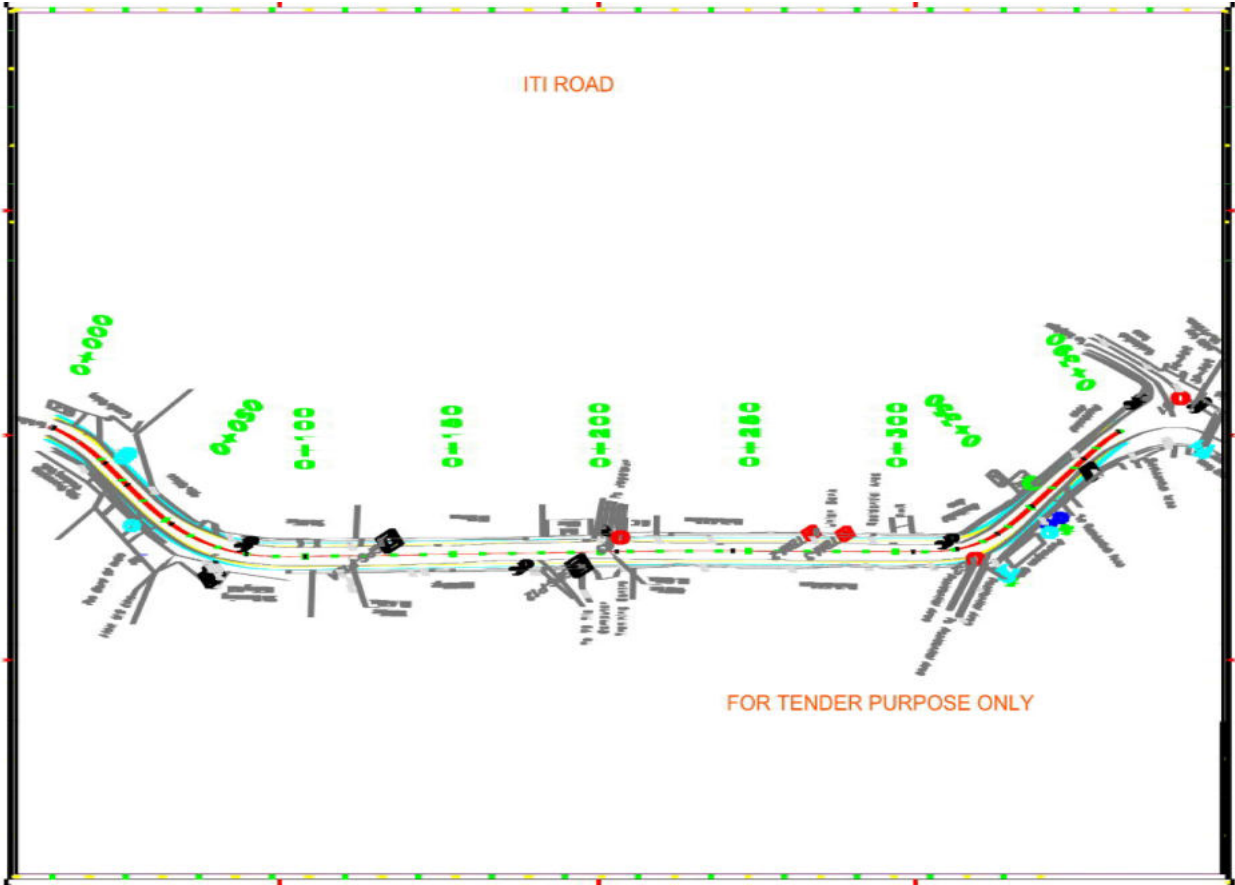
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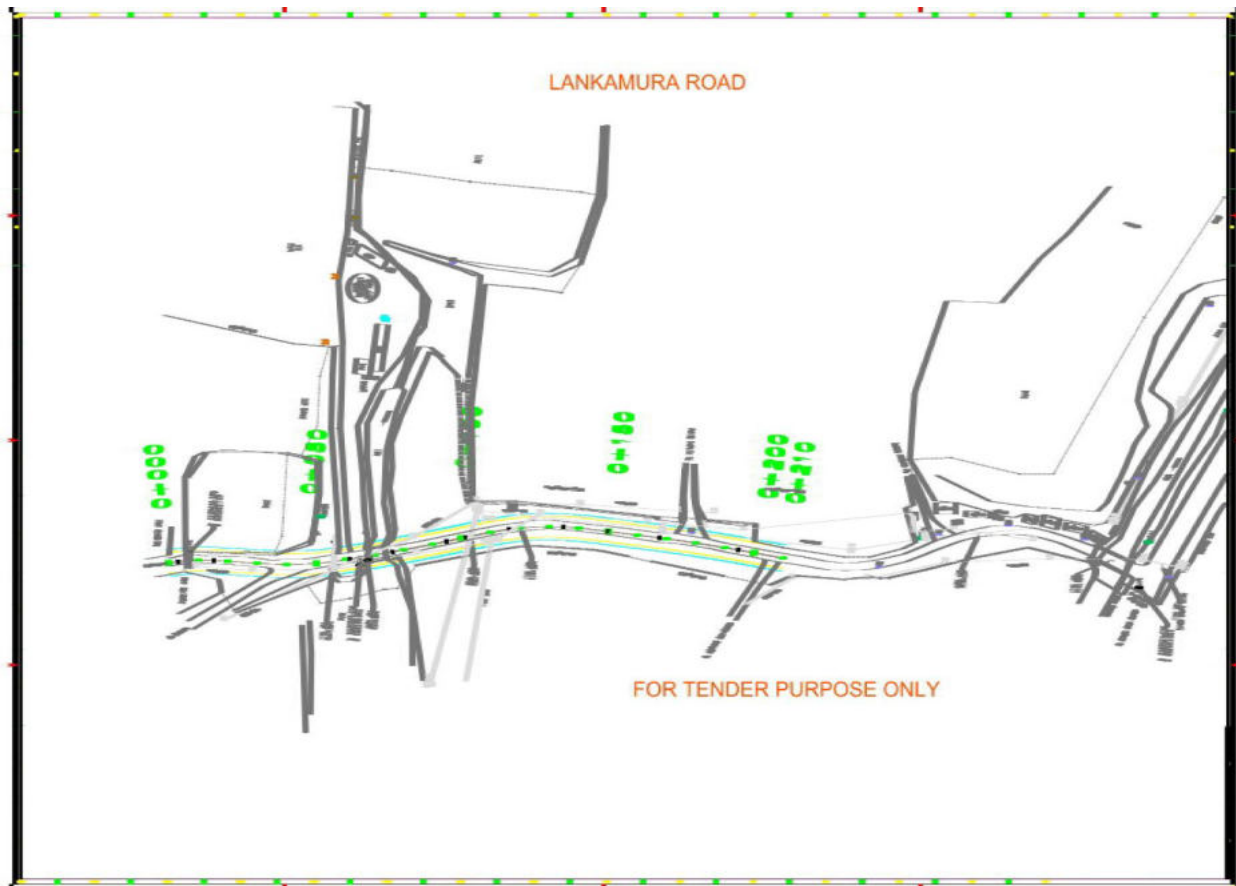
## IND: Agartala City Urban Development Project – Upgradation of Major Roads in Agartala City PART E

Prepared by Project Management Unit, Agartala Smart City Limited, Government of Tripura for the Asian Development Bank.

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## Appendix 19: WHO Interim Guidance on Water, Sanitation, Hygiene and Waste Management for the COVID-19 virus



### Water, sanitation, hygiene, and waste management for the COVID-19 virus

Interim guidance  
19 March 2020

#### Background

This interim guidance supplements the infection prevention and control (IPC) documents by summarizing WHO guidance on water, sanitation and health care waste relevant to viruses, including coronaviruses. It is intended for water and sanitation practitioners and providers and health care providers who want to know more about water, sanitation and hygiene (WASH) risks and practices.

The provision of safe water, sanitation, and hygienic conditions is essential to protecting human health during all infectious disease outbreaks, including the COVID-19 outbreak. Ensuring good and consistently applied WASH and waste management practices in communities, homes, schools, marketplaces, and health care facilities will help prevent human-to-human transmission of the COVID-19 virus.

The most important information concerning WASH and the COVID-19 virus is summarized here.

- Frequent and proper hand hygiene is one of the most important measures that can be used to prevent infection with the COVID-19 virus. WASH practitioners should work to enable more frequent and regular hand hygiene by improving facilities and using proven behavior-change techniques.
- WHO guidance on the safe management of drinking-water and sanitation services applies to the COVID-19 outbreak. Extra measures are not needed. Disinfection will facilitate more rapid die-off of the COVID-19 virus.
- Many co-benefits will be realized by safely managing water and sanitation services and applying good hygiene practices.

Currently, there is no evidence about the survival of the COVID-19 virus in drinking-water or sewage. The morphology and chemical structure of the COVID-19 virus are similar to those of other human coronaviruses for which there are data about both survival in the environment and effective inactivation measures. This document draws upon the evidence base and WHO guidance on how to protect against viruses in sewage and drinking-water. This document will be updated as new information becomes available.

#### 1. COVID-19 transmission

There are two main routes of transmission of the COVID-19 virus: respiratory and contact. Respiratory droplets are generated when an infected person coughs or sneezes. Any person who is in close contact with someone who has respiratory symptoms (sneezing, coughing) is at risk of being exposed to potentially infective respiratory droplets.<sup>1</sup> Droplets may also land on surfaces where the virus could remain viable; thus, the immediate environment of an infected individual can serve as a source of transmission (contact transmission).

Approximately 2–10% of cases of confirmed COVID-19 disease present with diarrhoea,<sup>2–4</sup> and two studies detected COVID-19 viral RNA fragments in the faecal matter of COVID-19 patients.<sup>5,6</sup> However, only one study has cultured the COVID-19 virus from a single stool specimen.<sup>7</sup> There have been no reports of faecal–oral transmission of the COVID-19 virus.

#### 2. Persistence of the COVID-19 virus in drinking-water, faeces and sewage and on surfaces.

Although persistence in drinking-water is possible, there is no evidence from surrogate human coronaviruses that they are present in surface or groundwater sources or transmitted through contaminated drinking water. The COVID-19 virus is an enveloped virus, with a fragile outer membrane. Generally, enveloped viruses are less stable in the environment and are more susceptible to oxidants, such as chlorine. While there is no evidence to date about survival of the COVID-19 virus in water or sewage, the virus is likely to become inactivated significantly faster than non-enveloped human enteric viruses with known waterborne transmission (such as adenoviruses, norovirus, rotavirus and hepatitis A). For example, one study found that a surrogate human coronavirus survived only 2 days in dechlorinated tap water and in hospital wastewater at 20°C.<sup>8</sup> Other studies concur, noting that the human coronaviruses transmissible gastroenteritis coronavirus and mouse hepatitis virus demonstrated a 99.9% die-off in from 2 days<sup>9</sup> at 23°C to 2 weeks<sup>10</sup> at 25°C. Heat, high or low pH, sunlight, and common disinfectants (such as chlorine) all facilitate die off.

It is not certain how long the virus that causes COVID-19 survives on surfaces, but it seems likely to behave like other coronaviruses. A recent review of the survival of human



coronaviruses on surfaces found large variability, ranging from 2 hours to 9 days.<sup>11</sup> The survival time depends on a number of factors, including the type of surface, temperature, relative humidity, and specific strain of the virus. The same review also found that effective inactivation could be achieved within 1 minute using common disinfectants, such as 70% ethanol or sodium hypochlorite (for details, see Cleaning practices).

### 3. Keeping water supplies safe

The COVID-19 virus has not been detected in drinking-water supplies, and based on current evidence, the risk to water supplies is low.<sup>12</sup> Laboratory studies of surrogate coronaviruses that took place in well-controlled environments indicated that the virus could remain infectious in water contaminated with faeces for days to weeks.<sup>10</sup> A number of measures can be taken to improve water safety, starting with protecting the source water; treating water at the point of distribution, collection, or consumption; and ensuring that treated water is safely stored at home in regularly cleaned and covered containers.

Conventional, centralized water treatment methods that use filtration and disinfection should inactivate the COVID-19 virus. Other human coronaviruses have been shown to be sensitive to chlorination and disinfection with ultraviolet (UV) light.<sup>13</sup> As enveloped viruses are surrounded by a lipid host cell membrane, which is not robust, the COVID-19 virus is likely to be more sensitive to chlorine and other oxidant disinfection processes than many other viruses, such as coxsackieviruses, which have a protein coat. For effective centralized disinfection, there should be a residual concentration of free chlorine of  $\geq 0.5$  mg/L after at least 30 minutes of contact time at pH  $< 8.0$ .<sup>12</sup> A chlorine residual should be maintained throughout the distribution system.

In places where centralized water treatment and safe piped water supplies are not available, a number of household water treatment technologies are effective in removing or destroying viruses, including boiling or using high-performing ultrafiltration or nanomembrane filters, solar irradiation and, in non-turbid waters, UV irradiation and appropriately dosed free chlorine.

### 4. Safely managing wastewater and faecal waste

There is no evidence that the COVID-19 virus has been transmitted via sewerage systems with or without wastewater treatment. Further, there is no evidence that sewage or wastewater treatment workers contracted the severe acute respiratory syndrome (SARS), which is caused by another type of coronavirus that caused a large outbreak of acute respiratory illness in 2003. As part of an integrated public health policy, wastewater carried in sewerage systems should be treated in well-designed and well-managed centralized wastewater treatment works. Each stage of treatment (as well as retention time and dilution) results in a further reduction of the potential risk. A waste stabilization pond (an oxidation pond or lagoon) is generally considered a practical and simple wastewater treatment technology particularly well suited to destroying pathogens, as relatively long retention times (20 days or longer) combined with sunlight, elevated pH levels, biological activity, and other factors serve to accelerate pathogen destruction. A final disinfection step may be considered if existing wastewater treatment plants are not optimized to remove viruses. Best practices for protecting the health of workers at sanitation treatment facilities should

be followed. Workers should wear appropriate personal protective equipment (PPE), which includes protective outerwear, gloves, boots, goggles or a face shield, and a mask; they should perform hand hygiene frequently; and they should avoid touching eyes, nose, and mouth with unwashed hands.

## WASH in health care settings

Existing recommendations for water, sanitation and hygiene measures in health care settings are important for providing adequate care for patients and protecting patients, staff, and caregivers from infection risks.<sup>14</sup> The following actions are particularly important: (i) managing excreta (faeces and urine) safely, including ensuring that no one comes into contact with it and that it is treated and disposed of correctly; (ii) engaging in frequent hand hygiene using appropriate techniques; (iii) implementing regular cleaning and disinfection practices; and (iv) safely managing health care waste. Other important measures include providing sufficient safe drinking-water to staff, caregivers, and patients; ensuring that personal hygiene can be maintained, including hand hygiene, for patients, staff and caregivers; regularly laundering bedsheets and patients' clothing; providing adequate and accessible toilets (including separate facilities for confirmed and suspected cases of COVID-19 infection); and segregating and safely disposing of health care waste. For details on these recommendations, please refer to Essential environmental health standards in health care.<sup>14</sup>

### 1. Hand hygiene practices

Hand hygiene is extremely important. Cleaning hands with soap and water or an alcohol-based hand rub should be performed according to the instructions known as "My 5 moments for hand hygiene".<sup>15</sup> If hands are not visibly dirty, the preferred method is to perform hand hygiene with an alcohol-based hand rub for 20–30 seconds using the appropriate technique.<sup>16</sup> When hands are visibly dirty, they should be washed with soap and water for 40–60 seconds using the appropriate technique.<sup>17</sup> Hand hygiene should be performed at all five moments, including before putting on PPE and after removing it, when changing gloves, after any contact with a patient with suspected or confirmed COVID-19 infection or their waste, after contact with any respiratory secretions, before eating, and after using the toilet.<sup>18</sup> If an alcohol-based hand rub and soap are not available, then using chlorinated water (0.05%) for handwashing is an option, but it is not ideal because frequent use may lead to dermatitis, which could increase the risk of infection and asthma and because prepared dilutions might be inaccurate.<sup>19</sup> However, if other options are not available or feasible, using chlorinated water for handwashing is an option.

Functional hand hygiene facilities should be present for all health care workers at all points of care and in areas where PPE is put on or taken off. In addition, functional hand hygiene facilities should be available for all patients, family members, and visitors, and should be available within 5 m of toilets, as well as in waiting and dining rooms and other public areas.

## 2. Sanitation and plumbing

People with suspected or confirmed COVID-19 disease should be provided with their own flush toilet or latrine that has a door that closes to separate it from the patient's room. Flush toilets should operate properly and have functioning drain traps. When possible, the toilet should be flushed with the lid down to prevent droplet splatter and aerosol clouds. If it is not possible to provide separate toilets, the toilet should be cleaned and disinfected at least twice daily by a trained cleaner wearing PPE (gown, gloves, boots, mask, and a face shield or goggles). Further, and consistent with existing guidance, staff and health care workers should have toilet facilities that are separate from those used by all patients.

WHO recommends the use of standard, well-maintained plumbing, such as sealed bathroom drains, and backflow valves on sprayers and faucets to prevent aerosolized faecal matter from entering the plumbing or ventilation system,<sup>20</sup> together with standard wastewater treatment.<sup>21</sup> Faulty plumbing and a poorly designed air ventilation system were implicated as contributing factors to the spread of the aerosolized SARS coronavirus in a high-rise apartment building in Hong Kong in 2003.<sup>22</sup> Similar concerns have been raised about the spread of the COVID-19 virus from faulty toilets in high-rise apartment buildings.<sup>23</sup> If health care facilities are connected to sewers, a risk assessment should be conducted to confirm that wastewater is contained within the system (that is, the system does not leak) before its arrival at a functioning treatment or disposal site, or both. Risks pertaining to the adequacy of the collection system or to treatment and disposal methods should be assessed following a safety planning approach,<sup>24</sup> with critical control points prioritized for mitigation.

For smaller health care facilities in low-resource settings, if space and local conditions allow, pit latrines may be the preferred option. Standard precautions should be taken to prevent contamination of the environment by excreta. These precautions include ensuring that at least 1.5 m exists between the bottom of the pit and the groundwater table (more space should be allowed in coarse sands, gravels, and fissured formations) and that the latrines are located at least 30 m horizontally from any groundwater source (including both shallow wells and boreholes).<sup>21</sup> If there is a high groundwater table or a lack of space to dig pits, excreta should be retained in impermeable storage containers and left for as long as feasible to allow for a reduction in virus levels before moving it off-site for additional treatment or safe disposal, or both. A two-tank system with parallel tanks would help facilitate inactivation by maximizing retention times, as one tank could be used until full, then allowed to sit while the next tank is being filled. Particular care should be taken to avoid splashing and the release of droplets while cleaning or emptying tanks.

## 3. Toilets and the handling of faeces

It is critical to conduct hand hygiene when there is suspected or direct contact with faeces (if hands are dirty, then soap and water are preferred to the use of an alcohol-based hand rub). If the patient is unable to use a latrine, excreta should be collected in either a diaper or a clean bedpan and immediately and carefully disposed of into a separate toilet or latrine used only by suspected or confirmed cases of COVID-19. In all health care settings, including those with suspected or confirmed COVID-19 cases, faeces must be treated as a biohazard and handled as little as possible. Anyone handling

faeces should follow WHO contact and droplet precautions<sup>18</sup> and use PPE to prevent exposure, including long-sleeved gowns, gloves, boots, masks, and goggles or a face shield. If diapers are used, they should be disposed of as infectious waste as they would be in all situations. Workers should be properly trained in how to put on, use, and remove PPE so that these protective barriers are not breached.<sup>25</sup> If PPE is not available or the supply is limited, hand hygiene should be regularly practiced, and workers should keep at least 1 m distance from any suspected or confirmed cases.

If a bedpan is used, after disposing of excreta from it, the bedpan should be cleaned with a neutral detergent and water, disinfected with a 0.5% chlorine solution, and then rinsed with clean water; the rinse water should be disposed of in a drain or a toilet or latrine. Other effective disinfectants include commercially available quaternary ammonium compounds, such as cetylpyridinium chloride, used according to manufacturer's instructions, and peracetic or peroxyacetic acid at concentrations of 500–2000 mg/L.<sup>26</sup>

Chlorine is ineffective for disinfecting media containing large amounts of solid and dissolved organic matter. Therefore, there is limited benefit to adding chlorine solution to fresh excreta and it is possible that this may introduce risks associated with splashing.

## 4. Emptying latrines and holding tanks, and transporting excreta off-site.

There is no reason to empty latrines and holding tanks of excreta from suspected or confirmed COVID-19 cases unless they are at capacity. In general, the best practices for safely managing excreta should be followed. Latrines or holding tanks should be designed to meet patient demand, considering potential sudden increases in cases, and there should be a regular schedule for emptying them based on the wastewater volumes generated. PPE (long-sleeved gown, gloves, boots, masks, and goggles or a face shield) should be worn at all times when handling or transporting excreta off-site, and great care should be taken to avoid splashing. For crews, this includes pumping out tanks or unloading pumper trucks. After handling the waste and once there is no risk of further exposure, individuals should safely remove their PPE and perform hand hygiene before entering the transport vehicle. Soiled PPE should be put in a sealed bag for later safe laundering (see Cleaning practices). Where there is no off-site treatment, in-situ treatment can be done using lime. Such treatment involves using a 10% lime slurry added at 1-part lime slurry per 10 parts of waste.

## 5. Cleaning practices

Recommended cleaning and disinfection procedures for health care facilities should be followed consistently and correctly.<sup>19</sup> Laundry should be done and surfaces in all environments in which COVID-19 patients receive care (treatment units, community care centres) should be cleaned at least once a day and when a patient is discharged.<sup>27</sup> Many disinfectants are active against enveloped viruses, such as the COVID-19 virus, including commonly used hospital disinfectants. Currently, WHO recommends using:

- 70% ethyl alcohol to disinfect small areas between uses, such as reusable dedicated equipment (for example, thermometers);
- sodium hypochlorite at 0.5% (equivalent to 5000 ppm) for disinfecting surfaces.



All individuals dealing with soiled bedding, towels, and clothes from patients with COVID-19 infection should wear appropriate PPE before touching soiled items, including heavy duty gloves, a mask, eye protection (goggles or a face shield), a long-sleeved gown, an apron if the gown is not fluid resistant, and boots or closed shoes. They should perform hand hygiene after exposure to blood or body fluids and after removing PPE. Soiled linen should be placed in clearly labelled, leak-proof bags or containers, after carefully removing any solid excrement and putting it in a covered bucket to be disposed of in a toilet or latrine. Machine washing with warm water at 60–90°C (140–194°F) with laundry detergent is recommended. The laundry can then be dried according to routine procedures. If machine washing is not possible, linens can be soaked in hot water and soap in a large drum using a stick to stir and being careful to avoid splashing. The drum should then be emptied, and the linens soaked in 0.05% chlorine for approximately 30 minutes. Finally, the laundry should be rinsed with clean water and the linens allowed to dry fully in sunlight.

If excreta are on surfaces (such as linens or the floor), the excreta should be carefully removed with towels and immediately safely disposed of in a toilet or latrine. If the towels are single use, they should be treated as infectious waste; if they are reusable, they should be treated as soiled linens. The area should then be cleaned and disinfected (with, for example, 0.5% free chlorine solution), following published guidance on cleaning and disinfection procedures for spilled body fluids.<sup>27</sup>

#### **6. Safely disposing of greywater or water from washing PPE, surfaces and floors.**

Current WHO recommendations are to clean utility gloves or heavy duty, reusable plastic aprons with soap and water and then decontaminate them with 0.5% sodium hypochlorite solution after each use. Single-use gloves (nitrile or latex) and gowns should be discarded after each use and not reused; hand hygiene should be performed after PPE is removed. If greywater includes disinfectant used in prior cleaning, it does not need to be chlorinated or treated again. However, it is important that such water is disposed of in drains connected to a septic system or sewer or in a soakaway pit. If greywater is disposed of in a soakaway pit, the pit should be fenced off within the health facility grounds to prevent tampering and to avoid possible exposure in the case of overflow.

#### **7. Safe management of health care waste**

Best practices for safely managing health care waste should be followed, including assigning responsibility and sufficient human and material resources to dispose of such waste safely. There is no evidence that direct, unprotected human contact during the handling of health care waste has resulted in the transmission of the COVID-19 virus. All health care waste produced during the care of COVID 19 patients should be collected safely in designated containers and bags, treated, and then safely disposed of or treated, or both, preferably on-site. If waste is moved off-site, it is critical to understand where and how it will be treated and destroyed. All who handle health care waste should wear appropriate PPE (boots, apron, long-sleeved gown, thick gloves, mask, and goggles or a face shield) and perform hand hygiene after removing it. For more information refer to the WHO guidance, Safe management of wastes from health-care activities.<sup>28</sup>

### **Considerations for WASH practices in homes and communities.**

Upholding best WASH practices in the home and community is also important for preventing the spread of COVID-19 and when caring for patients at home. Regular and correct hand hygiene is of particular importance.

#### **1. Hand hygiene**

Hand hygiene in non-health care settings is one of the most important measures that can prevent COVID 19 infection. In homes, schools and crowded public spaces – such as markets, places of worship, and train or bus stations – regular handwashing should occur before preparing food, before and after eating, after using the toilet or changing a child's diaper, and after touching animals. Functioning handwashing facilities with water and soap should be available within 5 m of toilets.

#### **2. Treatment and handling requirements for excreta.**

Best WASH practices, particularly handwashing with soap and clean water, should be strictly applied and maintained because these provide an important additional barrier to COVID-19 transmission and to the transmission of infectious diseases in general.<sup>17</sup> Consideration should be given to safely managing human excreta throughout the entire sanitation chain, starting with ensuring access to regularly cleaned, accessible, and functioning toilets or latrines and to the safe containment, conveyance, treatment, and eventual disposal of sewage.

When there are suspected or confirmed cases of COVID-19 in the home setting, immediate action must be taken to protect caregivers and other family members from the risk of contact with respiratory secretions and excreta that may contain the COVID-19 virus. Frequently touched surfaces throughout the patient's care area should be cleaned regularly, such as beside tables, bed frames and other bedroom furniture. Bathrooms should be cleaned and disinfected at least once a day. Regular household soap or detergent should be used for cleaning first and then, after rinsing, regular household disinfectant containing 0.5% sodium hypochlorite (that is, equivalent to 5000 ppm or 1-part household bleach with 5% sodium hypochlorite to 9 parts water) should be applied. PPE should be worn while cleaning, including mask, goggles, a fluid-resistant apron, and gloves,<sup>29</sup> and hand hygiene with an alcohol-based hand rub or soap and water should be performed after removing PPE.

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WHO continues to monitor the situation closely for any changes that may affect this interim guidance. Should any factors change, WHO will issue a further update. Otherwise, this interim guidance document will expire 2 years after the date of publication.

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## Appendix 20: ADB's Interim Advisory Note on COVID – 19

### INTERIM ADVISORY NOTE

# Protecting the Safety and Well-Being of Workers and Communities from COVID-19



Health and safety risks from the coronavirus disease (COVID-19) pandemic can cause an additional burden on workers, local communities, and employers. To support its developing member countries in managing these risks, the Asian Development Bank (ADB) has prepared the following advisory note on publicly available international good practice. These preventive measures can be adapted for a variety of workplaces and country-specific contexts.<sup>1</sup>

**Transmission, spread, and infection are the greatest health and safety risks to projects and local communities. If left unmanaged, rising infection rates can result in project delays and job losses as well as overwhelm health care systems.**

### What can governments and companies (including enterprises of all sizes) do to prevent and manage COVID-19 risks?

To protect the health and safety of workers, as well as surrounding communities, it is recommended to conduct a workplace review and risk assessment for exposure to COVID-19. The nature of works, stage of implementation, location of the project activities, and status of the project (whether it is ongoing or under development) must be taken into consideration. In addition, vulnerable groups such as migrant workers as well as women, older workers, at-risk workers including those with underlying health conditions, or those with combined vulnerability factors (e.g., migrant women workers with underlying health conditions) who will also be disproportionately impacted, should be taken into account.<sup>2</sup>

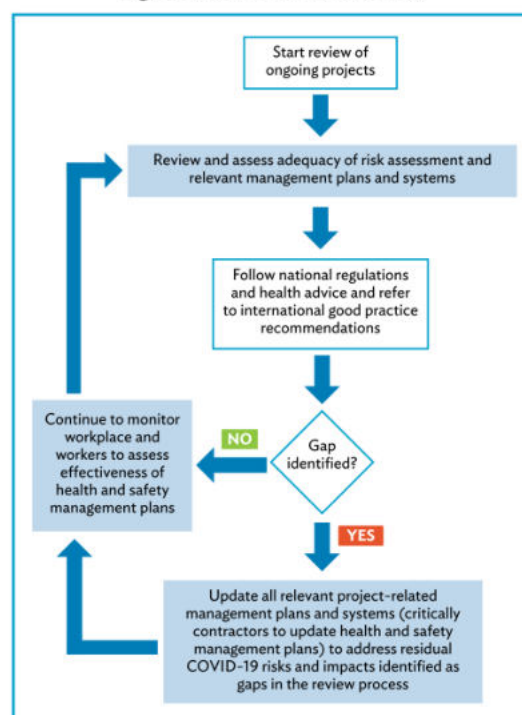
The decision tree (Figure 1) outlines how to review and assess the adequacy of management plans and systems to prevent the spread of COVID-19 in the workplace.

### Which sectors are more at risk from COVID-19?

COVID-19 may be more easily transferred among workers or service users and local communities in the following sectors and associated workplace activities:<sup>3</sup>

- Projects and businesses where there are a **large number of workers in close proximity with one another**, particularly where remote work is not feasible.
- Projects that involve **worker accommodation camps**, where physical distancing and robust hygiene measures may be more difficult to implement.
- **Health care providers** including hospitals, laboratories, clinics, dentists, ambulances, and pharmacies.

Figure 1: COVID-19 Decision Tree



Source: Asian Development Bank.

<sup>1</sup> This advisory note may not cover all circumstances. It will remain a living document and will be updated regularly to reflect updates to international good practice in preventing and managing the COVID-19 pandemic at the workplace as listed in Annex.

<sup>2</sup> Migrant workers are faced with multiple impacts including the challenge of returning home, accessing food and medical assistance, and experiencing potential loss of income.

<sup>3</sup> The list represents a selection and is not exhaustive.



- **Food and agriculture** including food processing plants and those handling live animals and animal products.
- **Education**, after lockdowns are lifted and schools reopen in affected countries.
- Consumer-centric businesses where workers may come into **regular contact with customers** including **hotels, retail, and other tourism-related sectors**.
- **Logistics and transport**, where **workers come into contact with a large number of people** across potentially a large geographic region.
- Businesses where **workers come into contact with suppliers and supply chains** operating in affected areas.

### How can governments and companies apply a risk-based approach to assess exposure risks to COVID-19 in the workplace?

#### 1. DETERMINE LEVEL OF EXPOSURE RISK

The risk of work-related exposure to COVID-19 depends on the probability of coming into close or frequent contact with people who may be infected and through contact with contaminated surfaces and objects. According to guidance from the World Health Organization (WHO), the risk levels (Figure 2) may be useful in carrying out a workplace risk assessment for exposure risk to COVID-19 and planning for preventive measures in non-health care workplaces.<sup>4</sup>

Figure 2: COVID-19 Risk Categories

LOW EXPOSURE RISK
Jobs or work tasks <b>without frequent, close contact with the general public and other co-workers</b> , visitors, clients or customers, or contractors, and that do not require contact with people known to be or suspected of being infected with COVID-19.
MEDIUM EXPOSURE RISK
Jobs or work tasks <b>with close (less than 1 meter) frequent contact with the general public, or other co-workers</b> , visitors, clients or customers, or contractors, that do not require contact with people known to be or suspected of being infected with COVID-19.
HIGH EXPOSURE RISK
Jobs or work tasks with high potential for <b>close contact with people who are known or suspected of having COVID-19</b> as well as contact with objects and surfaces possibly contaminated with the virus.

Source: World Health Organization.

#### 2. DETERMINE ADDITIONAL EXPOSURE RISK FACTORS

Work-related exposure can occur anytime in the workplace, during work-related travel to an area with local community transmission, as well as on the way to and from the workplace.

In the same work setting, there may be jobs with different levels of risk, and different jobs or work tasks may have similar levels of exposure. Therefore, risk assessment should be carried out for each specific work setting and for each job or group of jobs. For each risk assessment, it is important to consider the environment; the task; the threat, if any (e.g., for frontline staff); and resources available such as personal protective equipment.

Some workers may be at higher risk of developing severe COVID-19 illness because of age or pre-existing medical conditions; this should be considered in the risk assessment for individuals. Essential public services, such as security and police, food retail, accommodation, public transport, deliveries, water and sanitation, and frontline workers may be at an increased risk of exposure.

#### 3. CONSULT WITH WORKERS

Employers and managers, in consultation with workers, are encouraged to carry out and regularly update the risk assessment for work-related exposure to COVID-19, preferably with support from occupational health services and local primary health care facilities.

#### 4. UPDATE OR DEVELOP NEW HEALTH AND SAFETY MANAGEMENT PLANS

Following completion of the review and risk assessment process, health and safety plans in the workplace may require updates or may have to be developed for ongoing projects that did not require one previously. Relevant approvals of the health and safety plan should be obtained.

#### 5. REVIEW INTERNATIONAL GOOD PRACTICES

ADB recommends that employers review WHO-issued key guidance to manage the spread of COVID-19 in the workplace (Table).

<sup>4</sup> WHO. 2020. Considerations in adjusting public health and social measures in the context of COVID-19: interim guidance. 15 April. <https://www.who.int/publications/i/item/considerations-in-adjusting-public-health-and-social-measures-in-the-context-of-covid-19-interim-guidance>.





Table: Guidelines on Preventive Measures at the Workplace

MEASURES FOR ALL WORKPLACES	
<b>Hand hygiene</b>	<ul style="list-style-type: none"> <li>Regular and thorough handwashing with soap and water or hand hygiene with alcohol-based hand-rub before starting work; before eating; frequently during the work shift, especially after contact with co-workers or customers; after using the bathroom; after contact with secretions, excretions, and body fluids; after contact with potentially contaminated objects (gloves, clothing, masks, used tissues, waste); and immediately after removing gloves and other protective equipment but before touching eyes, nose, or mouth.</li> <li>Hand hygiene stations, such as handwashing and hand rub dispensers, should be put in prominent places around the workplace and be made accessible to all staff, contractors, clients or customers, and visitors along with communication materials to promote hand hygiene.</li> </ul>
<b>Respiratory hygiene</b>	<ul style="list-style-type: none"> <li>Promote respiratory etiquette by all people at the workplace. Ensure that medical face masks and paper tissues are available, for those who develop a runny nose or cough at work, along with bins with lids for hygienic disposal.</li> <li>Develop a policy on wearing a face mask or cover in line with national or local guidance. Masks may carry some risks if not used properly. If a worker is sick, they should not come to work. If a worker feels unwell while at work, provide a medical mask so that they may get home safely. Where masks are used, whether in line with government policy or by personal choice, it is very important to ensure safe and proper use, care, and disposal.</li> </ul>
<b>Physical distancing</b>	<ul style="list-style-type: none"> <li>Introduce measures to keep a distance of at least 1 meter between people and avoid direct physical contact i.e., hugging, touching, shaking hands), strict control over external access, queue management (marking on the floor, barriers).</li> <li>Reduce density of people in the building (no more than one person per 10 square meters), physical spacing at least 1 meter apart for workstations and common spaces, such as entrances/exits, lifts, pantries/canteens, stairs, and other areas congregation or queuing of employees or visitors/clients might occur.</li> <li>Minimize the need for physical meetings, e.g., by using teleconferencing facilities.</li> <li>Avoid crowding by staggering working hours to reduce congregation of employees at common spaces such as entrances or exits.</li> <li>Implement or enhance shift or split-team arrangements, or teleworking.</li> <li>Defer or suspend workplace events that involve close and prolonged contact among participants, including social gatherings.</li> </ul>
<b>Reduce and manage work-related travels</b>	<ul style="list-style-type: none"> <li>Cancel or postpone non-essential travel to areas with community transmission of coronavirus disease (COVID-19), provide hand sanitizer to workers who must travel, advise workers to comply with instructions from local authorities where they are traveling as well as information on whom to contact if they feel ill while traveling.</li> <li>Workers returning from an area where COVID-19 transmission is occurring should monitor themselves for symptoms for 14 days and take their temperature twice a day; if they are feeling unwell, they should stay at home, self-isolate, and contact a medical professional.</li> </ul>

Source: World Health Organization.

<b>Regular environmental cleaning and disinfection</b>	<ul style="list-style-type: none"> <li>• Clean surfaces by brushing or scrubbing thoroughly using soap or a neutral detergent to remove dirt, debris, and other materials. After the cleaning process is completed, disinfection is used to kill pathogens and other microorganisms on surfaces.</li> <li>• Selection of disinfectants should align with the local authorities' requirements for market approval, including any regulations applicable to specific sectors.</li> <li>• Identify "high-touch" surfaces for priority disinfection (e.g., commonly used areas, door and window handles, light switches, kitchen and food preparation areas, bathroom surfaces, toilets and taps, touchscreen personal devices, personal computer keyboards, and work surfaces).</li> <li>• Prepare and use disinfectant solutions according to the manufacturer's instructions, including instructions on how to protect the safety and health of disinfection workers and how to use personal protective equipment (PPE); avoid mixing different chemical disinfectants.</li> <li>• In indoor workplaces, routine application of disinfectants to environmental surfaces via spraying or fogging is generally not recommended because it is ineffective at removing contaminants outside of direct spray zones and can cause eye, respiratory, and skin irritation and other toxic effects.</li> <li>• In outdoor workplaces, there is currently insufficient evidence to support recommendations for large-scale spraying or fumigation.</li> <li>• Spraying of people with disinfectants (such as in a tunnel, cabinet, or chamber) is not recommended under any circumstances.</li> </ul>
<b>Risk communication, training, and education</b>	<ul style="list-style-type: none"> <li>• Provide posters, videos, and electronic message boards to increase awareness of COVID-19 among workers, and promote safe individual practices at the workplace and engage workers in providing feedback on the preventive measures and their effectiveness.</li> <li>• Provide regular information about the risk of COVID-19 using official sources such as government agencies and the World Health Organization, and emphasize the effectiveness of adopting protective measures and counteracting rumors and misinformation.</li> <li>• Special attention should be given to reaching out to and engaging vulnerable and marginalized groups of workers, such as those in the informal economy as well as migrant workers, domestic workers, subcontracted and self-employed workers, and those working under digital labor platforms.</li> </ul>
<b>Management of people with suspected COVID-19 or their contacts</b>	<ul style="list-style-type: none"> <li>• Urge workers who are unwell or who develop symptoms consistent with COVID-19 to stay at home, self-isolate, and contact a medical professional or the local COVID-19 information line for advice on testing and referral.</li> <li>• Where local community transmission is high, and work continues, allow for a telemedicine consultation where available, or consider waiving the requirement for a medical note for workers who are sick so that they may stay home.</li> <li>• Urge all workers to self-monitor their health, possibly with the use of questionnaires, and take their body temperature regularly.</li> </ul>



SPECIFIC MEASURES FOR WORKPLACES AND JOBS AT MEDIUM RISK	
In addition to the measures for all sites	<ul style="list-style-type: none"> <li>Enhance cleaning and disinfection of objects and surfaces that are touched regularly, including all shared rooms, surfaces, floors, bathrooms, and changing rooms.</li> <li>Where the physical distancing of at least 1 meter cannot be implemented to a particular activity, workplaces should consider whether that activity needs to continue; if so, take all the mitigating actions possible to reduce the risk of transmission between workers, clients or customers, contractors, and visitors such as scheduling staggered activities, minimizing face-to-face and skin-to-skin contacts, placing workers side-by-side or facing away from each other rather than face-to-face, assigning staff to the same shift teams to limit social interaction, and installing plexiglass barriers at all points of regular interaction and cleaning them regularly.</li> <li>Enhance hand hygiene—regular handwashing with soap and water or use of alcohol-based hand rub—before entering and after leaving enclosed machinery, vehicles, confined spaces, and before putting on and after taking off PPE.</li> <li>Provide PPE and training on its proper use—e.g., masks, disposable gowns, and disposable gloves or heavy-duty gloves that can be disinfected. Provide face or eye protection (medical mask) during cleaning procedures that generate splashes (e.g., washing surfaces).</li> <li>Increase ventilation rate, through natural aeration or artificial ventilation, preferably without re-circulation of the air.</li> </ul>
SPECIFIC MEASURES FOR WORKPLACES AND JOBS AT HIGH RISK	
In addition to the measures for all sites	<ul style="list-style-type: none"> <li>Assess the possibility of suspending the activity.</li> <li>Adhere to hygiene before and after contact with any known or suspected case of COVID-19, before and after using PPE.</li> <li>Require use of medical mask, disposable gown, gloves, and eye protection for workers who must work in the homes of people who are suspected or known to have COVID-19. Use the protective equipment when in contact with the sick person, or respiratory secretions, body fluids, and potentially contaminated waste.</li> <li>Train workers on infection prevention and control practices and use of PPE.</li> <li>Avoid assigning tasks with high risk to workers who have pre-existing medical conditions, are pregnant, or older than 60 years of age.</li> </ul>

Source: World Health Organization.

**The application of the international good practice within job-specific method statements/schedules and environments should be informed by a job-specific risk assessment.**





### How do governments and companies ensure effective implementation?

Cooperation between workplace managers, workers and their representatives, surrounding communities, and primary health care facilities is an essential element of workplace-related preventive measures in line with international good practice. To assess the effectiveness of implementation of the workplace health and safety management plan, regular monitoring of site conditions and those of surrounding communities is recommended. It is also important for management of workplaces to keep abreast with the latest updates to the international good practice guidance referenced in this advisory note including government issued health advice in relation to COVID-19 to ensure effective implementation. A select list is provided in Annex.

Risks communication, training, awareness campaigns, and the development of an emergency action plan are also recommended to address suspected cases of COVID-19 in the workplace.

The decision to close or reopen workplaces, and suspend or downscale individual work activities at the workplace should be made in light of the risk assessment, the capacity of contractors to implement proposed preventive measures within the Health and Safety Management Plan, and also the recommendations of national authorities for adjusting public health and social measures at the workplace in the context of COVID-19.

### Further Assistance

ADB may be able to provide assistance to our developing member countries in emergency planning, emergency assistance, and continuous sharing of international best practice. Please contact [ADB resident missions and offices](#) to request assistance.



The Pandemic Sub-National Reference Laboratory at the Jose B. Lingad Memorial Regional Hospital in San Fernando City, Pampanga on 9 May 2020. The laboratory financed by the \$3 million grant from the Asia Pacific Disaster Response Fund, can perform up to 3,000 COVID-19 tests daily, significantly increasing the country's testing capacity (photo by Eric Sales/ADB).



## Annex: Publicly Available Sources and Useful Links

### Asian Development Bank

Managing Infectious Medical Waste during the COVID-19 Pandemic, April 2020. An outline of key considerations for governments to understand their country's capacity to manage an anticipated surge in infectious medical waste. Also includes practical recommendations to improve disposal of household and hospital waste—as well as municipal solid waste—with the aim of reducing the further spread of the coronavirus disease (COVID-19) and other diseases. Links to important technical resources and guidance materials are also provided.

### Belgian Investment Company for Developing Countries

COVID-19: ESG Guidance Note for Employers, March 2020. General Environmental, Social and Governance guidance to employers on how to minimize business disruptions and take the most adequate actions.

### Canadian Construction Association

Standardized Protocols for All Canadian Construction Sites

### Centre for Disease Control

Centre for Disease Control (CDC) Group COVID-19 Guidance for Employers, March 2020. Summary of publicly available guidance and examples of practice adopted by some CDC Group investees and fund managers. Aims to provide a framework that can be applied to many companies and situations, but guidance is not able to cover all circumstances and not every company will be able to benefit from all of the guidance, in particular if employees are not able to work from home or practice social distancing.

### European Bank for Reconstruction and Development Workers Accommodation

Worker accommodation and COVID-19, April 2020. Note on key issues relating to workers living in accommodation camps and considerations on how to address certain risks. In alignment with good international industry practice and international lenders' standards. Developed by Mott MacDonald's social, labor, and health specialists based on their experience, drawing on the guidance of the World Health Organization (WHO).

### Her Majesty's Government, United Kingdom

Her Majesty's Government. Working safely during COVID-19 in construction and other outdoor work, 2020. Guidance for employers, employees, and the self-employed.

### Inter-American Development Bank

Corporate Governance: COVID-19 and the board of directors, March 2020. Indicative guidance for the Board of Directors in identifying, prioritizing, and implementing a governance framework to deal with the strategy and oversight challenges that COVID-19 may present, and a list of questions that can be asked by investors and that Board of Directors should consider to build an effective response to the COVID-19 crisis.

COVID-19 Guidance for Infrastructure Projects, March 2020. Guidance for clients to identify project performance and capacity gaps, along with context and project-related risks, that could contribute to COVID-19 transmission.

### International Federation of Consulting Engineers

COVID-19 guidance memorandum for users of International Federation of Consulting Engineers (FIDIC) standard forms of works contract. An outline of the provisions in FIDIC's various general conditions of contract for works which may be relevant with regard to likely scenarios that are arising as a consequence of COVID-19. Guidance memorandum to help parties to a FIDIC contract to consider mutually satisfactory solutions and avoid disputes arising between them.

Coronavirus (COVID-19): FIDIC Guidance for Global Consulting Engineering Businesses, March 2020.

### International Finance Corporation

Interim Advice for International Finance Corporation (IFC) Clients on Preventing and Managing Health Risks of COVID-19 in the Workplace, April 2020. A selection of publicly available advice from internationally recognized sources to help IFC clients rapidly identify measures for preventing and managing outbreaks of COVID-19 in the workplace, and for responding to community COVID-19 infection. Not exhaustive, and provides generic rather than sector-specific advice. Companies in high-risk sectors should refer to sector-specific procedures and standards.

Interim Advice for IFC Clients on Supporting Workers in the Context of COVID-19, April 2020. Tip sheet of useful information to support decision making in response to the impacts of COVID-19 on workers and employment. Focus areas include:

- (i) Health and safety, including actions to prevent transmission.
- (ii) Job protection, including supporting workers through difficult times and building resilience for businesses to operate during and after the immediate crisis.
- (iii) Responsible retrenchment as an option only if there is no other alternative, and how to re-employ those workers, when possible, once the situation has improved.

Corporate Governance Tip-Sheet for Company Leadership on Crisis Response, Facing the COVID-19 Pandemic, April 2020. Generally applicable to any type of business, some tips may not be relevant based on the nature or size of business, shareholding structure, or other factors.

### International Labour Organization

International Labour Organization (ILO) Standards and COVID-19 FAQ, March 2020. A compilation of answers to most frequently asked questions related to international labor standards and COVID-19.

Family-Friendly Policies and other Good Workplace Practices in the Context of COVID-19: Key steps employers can take, March 2020. General recommendations to help employers strengthen support for workers and their families. In collaboration with UNICEF.

### International Organization for Migration

COVID-19: Guidance for employers and business to enhance migrant worker protection during the current health crisis, April 2020.

### KfW

KfW DEG COVID-19 Guidance for employers, March 2020. Guidance specifically from the perspective of international guidance on social topics and occupational health and safety.

### Occupational Health and Safety Organization

Guidance on Preparing Workplaces for COVID-19. Recommendations and descriptions of mandatory safety and health standards (based on the United States' Occupational Safety and Health Act of 1970). Advisory only. Identifies four categories of risk (low, medium, high, very high) depending on proximity to the people infected with the virus and recommends taking different level of precautions in the areas of engineering control, administrative control, and personal protective equipment (PPE).

### Pan American Health Organization, World Health Organization, and United Nations Office for Project Services

COVID 19 Prevention Measures at Construction Sites

### The United Nations Entity for Gender Equality and the Empowerment of Women (UN Women)

Guidance for Action: Addressing the Emerging Impact of the COVID-19 Pandemic on Migrant Women in Asia and the Pacific for a Gender-Responsive Recovery. Note on the emerging impacts of the COVID-19 pandemic on women migrant workers and recommendations to support governments, donors, civil society organizations, employers, and the private sector in addressing those impacts.

### World Health Organization

Considerations in adjusting public health and social measures in the context of COVID-19 (Interim Guidance) (WHO 2020).

Considerations in adjusting public health and social measures in the context of COVID-19 (Interim Guidance, April 2020) (WHO 2020).

Coronavirus disease (COVID-19) advice for the public, March 2020. Web page providing advice for the public, including on social distancing, respiratory hygiene, self-quarantine, and those seeking medical advice.

Getting your workplace ready for COVID-19, March 2020. Summary of general considerations for getting businesses ready for work in the context of COVID-19. Does not provide technical detail but useful starting point to develop further awareness. Also provides some specific guidance on meetings and travel.

Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response, March 2020. Advice on communicating effectively with the public, engaging with communities, local partners, and other stakeholders to prepare and protect public health relating to COVID-19.

Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19), March 2020. Guidance to member states on quarantine measures for individuals in the context of COVID-19. Intended for those responsible for establishing local or national policy for quarantine of individuals, and adherence to infection prevention and control measures.

Operational considerations for case management of COVID-19 in health facility and community, March 2020. Intended for health ministers, health system administrators, and other decision makers. Guidance for the care of COVID-19 patients as the response capacity of health systems is challenged; aims to ensure that COVID-19 patients can access lifesaving treatment, without compromising public health objectives and safety of health workers.

Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19), February 2020. Summary of WHO's recommendations for the rational use of PPE in health care and community settings, as well as during the handling of cargo. Intended for those who are involved in distributing and managing PPE as well as public health authorities and individuals in health care and community settings. Provides information about when PPE use is most appropriate.

Water, sanitation, hygiene and waste management for COVID-19, March 2020. Technical brief that supplements existing infection prevention and control (IPC) documents by referring to and summarizing WHO guidance on water, sanitation, and health care waste which is relevant for viruses (including coronaviruses). Written for water and sanitation practitioners and providers.



Safe management of wastes from health care activities, 2014. Handbook of practical guidance on the management of healthcare waste in local facilities. Provides guidelines for national and local administrators.

Advice on the use of masks in the community, during home care and in health care settings in the context of the novel coronavirus (COVID-19) outbreak, March 2020. Intended for individuals in the community, public health and IPC professionals, health care managers, health care workers, and community health workers. Updated version also includes advice to decision makers on the use of masks for healthy people in community settings.

Laboratory biosafety guidance related to coronavirus disease 2019 (COVID-19), March 2020. Interim guidance on laboratory biosafety related to the testing of clinical specimens of COVID-19 patients.

Infection prevention and control during health care when novel coronavirus infection is suspected, March 2020. Guidance for healthcare workers, health care managers, and IPC teams at the facility level, also relevant for national and district/provincial level.

Coronavirus disease (COVID-19) outbreak: rights, roles and responsibilities of health workers, including key considerations for occupational safety and health, March 2020. Outline of rights and responsibilities of health workers, including the specific measures needed to protect occupational safety and health.

Disability Considerations during the COVID-19 outbreak, March 2020. Mitigation actions and protective measures that can reduce the impacts of COVID-19 on advice on vulnerable groups, focusing on those with disabilities.

This advisory note does not constitute medical or legal advice and is not a substitute for professional advice from international public health organizations such as the World Health Organization, national public health authorities, and national governments. We strongly encourage our borrowers and clients to seek guidance and monitor regular updates as the COVID-19 pandemic evolves. ADB is not responsible for the content of any external references within this document.



Cover photo. Tokyo, Japan—Elementary students wearing masks sit with distance to each other during graduation in Tokyo, 25 March 2020. Japanese Prime Minister Shinzo Abe has called for all schools in the country to close until the end of the spring holidays to reduce the risk of spreading the virus (photo by Richard Atrero de Guzman/ADB).

Annex 1 photo. San Fernando, Pampanga—Medical technicians test the equipment inside a sterile lab during the inauguration and turnover of the Pandemic Sub-National Reference Laboratory at the Jose B. Lingad Memorial Hospital in San Fernando, Pampanga on 9 May 2020. The laboratory financed by the \$3 million grant from the Asia Pacific Disaster Response Fund, can perform up to 3,000 COVID-19 tests daily, significantly increasing the country's testing capacity (photo by Veejay Villafranca/ADB).



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