Environmental Health Guidelines for cleaning, decontamination, fumigation or spraying of public places.

Coronavirus Disease 2019 (COVID - 19) is an acute respiratory disease caused by a novel Coronavirus (SARS-CoV-2), transmitted in most instances through respiratory droplets, direct contact with cases and also through contaminated surfaces/objects. Though the virus survives on environmental surfaces for varied period of time, it gets easily inactivated by chemical disinfectants.

**Scope:** This document aims to provide interim guidance about the environmental cleaning / decontamination of common public places including offices in areas reporting COVID-19. In view of the above, the following guidelines are to be followed, especially in areas reporting COVID-19.

1. Procedure for fumigation or spraying of public places
   1.1. **Targeted areas for fumigation or spraying are:**
   1.1.1. Taxi ranks, places of shelter or community centres.
   1.1.2. Community market centres;
   1.1.3. Government buildings such as Home Affairs, SAPS, Prisons, and Traffic Departments;
   1.1.4. The inside of empty taxis, police vans, ambulances and other public transport vehicles;
   1.1.5. Open parking area and surroundings;
   1.1.6. Shopping Centres

Fumigation, spraying and decontamination of public or government buildings will be implemented through the recommended process flow as depicted in Annexure A below.

There are few disinfectants that are effective against COVID -19, however **Disinfectant or antiseptic solution** (with the following ingredients: Alkyl Dimethyl benzyl ammonium chloride and poly hydrochloride) and Chlorine releasing agent – hypochlorite (strength: 1000-10,000 ppm) are highly recommended as they provide deep cleaning and surface cleaning of the areas, and effective against bacteria, fungi, viruses and spores. See the guidelines for preparing fresh sodium hypochlorite solution: **Annexure B.**
1.2. **Application Procedure**

1.2.1. Disinfectants should be used at the recommended dilution rate to allow for contact time;
1.2.2. Fumigation activities should only be conducted by authorised persons such as Environmental Health Practitioners or Registered Pest Control Operators;
1.2.3. Pest Control Service providers should get authorisation or permit from the Environmental Health Provincial office or Municipal Health Office before application of any product;
1.2.4. The fumigation should be conducted during off-peak hours to allow more contact time;
1.2.5. Fumigation of public places such as bus or taxi ranks and other open parking spaces should not be conducted during rainy or windy days as it may affect effectiveness of the disinfectant;
1.2.6. Only high contact points, such as taxi, bus ranks and open parking spaces in shopping centres, where there is possibly human excrement (spitting and gobbing) on floor surfaces, must be sprayed to reduce the risk of contamination;
1.2.7. The fumigation should be repeating at least every week for it to be effective over a longer period.
1.2.8. Evacuation of people from confined space such as government buildings and shopping centres must be undertaken before fumigation to allow necessary contact time and reduce risk of excessive inhalation;
1.2.9. Equipment originally designed to spray pesticides for agricultural applications should be adapted to spray disinfecting chemicals.
1.2.10. Equipment used should be regularly maintained or calibrated according to manufacturer instructions.

1.3. **Protective clothing and safety requirements:**

1.3.1. Operators must follow the material safety data sheet or labelling instruction on the requirement for protective clothing such as eye protection, shoes with socks, and long sleeves/pants before the application of the product;
1.3.2. Prescribed triple rinsing procedure and disposal of used containers should be followed to avoid incidents;
1.3.3. The products should always be stored under lock and key to avoid access to unauthorised persons;
1.3.4. Operators should be familiar with donning and doffing procedure of Personal Protective Clothing.

2. **Procedure for decontamination of patient homes:**

Environmental Health should ensure decontamination and disinfection of patient homes are carried out as follows:
2.1. Clean and disinfect bathrooms and toilet surfaces at least once daily. Regular household soap or detergent should be used first for cleaning, and then, after rinsing, regular household disinfectant containing 0.5% sodium hypochlorite should be applied;

2.2. Clean the patient’s clothes, bed linen, and bath and hand towels using regular laundry soap and water or machine wash at 60–90 °C with common household detergent, and dry thoroughly. Place contaminated linen into a laundry bag. Do not shake soiled laundry and avoid contaminated materials coming into contact with skin and clothes;

2.3. Gloves and protective clothing (e.g., plastic aprons) should be used when cleaning surfaces or handling clothing or linen soiled with body fluids. Depending on the context, either utility or single-use gloves can be used. After use, utility gloves should be cleaned with soap and water and decontaminated with 0.5% sodium hypochlorite solution. Single-use gloves (e.g., nitrile or latex) should be discarded after each use;

2.4. Perform hand hygiene before and after removing gloves;

2.5. Gloves, masks and other waste generated during at-home patient care should be placed into a waste bin with a lid or suitable HCRW receptacle in the patient’s room before being disposed of as infectious waste;

2.6. Avoid other types of exposure to contaminated items from the patient’s immediate environment (e.g. do not share toothbrushes, cigarettes, eating utensils, dishes, drinks, towels, washcloths or bed linen).

3. Decontamination procedure for clothing of COVID -19 deceased patient;

3.1. The belongings of the deceased person should be handled with gloves and cleaned with detergent followed by disinfection with a solution of at least 70% of ethanol or 0.1% bleach.

3.2. Clothing and other fabric belonging to the deceased should be machine washed with warm water at 60 – 90°C and detergent. If a machine washing is not possible, linen can be soaked in a hot water and soap in a large drum using a stick to stir and being carefully to avoid splashing. The drum should then be emptied, and the linen soaked in 0.05% chlorine for approximately 30 minutes. Finally, the laundry should be rinsed with clean water and the linen allowed to dry fully in the sunlight.

4. Workplace disinfection.

4.1. Workplaces must be kept clean and hygienic at all times;

4.2. Surfaces (e.g. desks and tables) and objects (e.g. telephones, keyboards) must be wiped with disinfectant;

4.3. Gloves and protective clothing (e.g., plastic aprons) should be used when cleaning working surfaces either utility or single-use gloves can be used. After use, utility gloves should be cleaned with soap and water and decontaminated with 0.5% sodium hypochlorite solution. Single-use gloves (e.g., nitrile or latex) should be discarded after each use;

4.4. Perform hand hygiene before and after removing gloves;
4.5. Avoid other types of exposure to contaminated items from the patient’s work environment (pens, computers, eating utensils, dishes);

4.6. Promote regular and thorough hand-washing by employees, contractors and customers;

4.7. Brief your employees, contractors and customers that if COVID-19 starts spreading in your community anyone with even a mild cough or low-grade fever (37.3 C or more) needs to stay at home. They should also stay home (or work from home) if they have had to take simple medications, such as paracetamol/acetaminophen, ibuprofen or aspirin, which may mask symptoms of infection.

5. **Health care facility cleaning and disinfection.**

Health facility cleaning, disinfection and decontamination to be done as prescribed in the Infection, Prevention, and Control Manuals, DOH, 2019, which is available.
Contact the nearest Municipal Health Services, Environmental Health or ProvJoc to provide information on COVID – 19 positive cases.

Identify the government building that the COVID – 19 positive patient works

Environmental Health Practitioner should recommend for the closure of the building if voluntary closure has not yet been instituted.

The Environmental Health Specialist & Infection Prevention and Control Specialist will determine the scope of work, through onsite inspection including mapping of the route that the worker was undertaking during performance of her/his duties.

Source assistance from Environmental Health Specialists and Infection Prevention and Control Specialist on decontamination of the contaminated building

Determine the areas that require disinfection and large areas that can require spraying and fumigation.

The Environmental Health or Municipal Health must declare the building safe for habitation. See Annexure C.

Undertake disinfection, spraying and fumigation based on the scope of work.

The building is opened by the landlord and normal work commences.
Annexure B: Preparing fresh sodium hypochlorite solution

Making cleaning solution from 3.5% liquid bleach

1. Before starting, put on your gown, mask, face shield, and two pairs of gloves.

2. Mix 6 parts water with 1 part household bleach (3.5% chlorine) every day.

3. Pour STRONG chlorine water onto clean cloth.

4. Put soaked cloth on top of spill. Let sit for 15 minutes. Then clean up and throw in waste bag.

Making hand washing solution from liquid bleach

1. This MILD solution can be made from mixing 1 part STRONG solution with 9 parts water every day.

2. Use the MILD chlorine water to wash hands.

References:
- CDC (2020)
- U.S. Centers for Disease Control and Prevention
COVID – 19: CERTIFICATE OF BUILDING OCCUPATION

This is to certify that the (name of Building): ____________________________

Was decontaminated/fumigated on (date): ________________________________

By (name of the official): __________________________

On the day _____________________ of month _____________________ Year _________

Using the following chemicals/disinfectants:
1) ________________________________
2) ________________________________
3) ________________________________

I therefore declare that the area that was decontaminated, sprayed or fumigated will not cause any health hazard to human health and well-being. The building is now declared safe for occupation.

Name & Surname of the official: ______________________________

Capacity: ______________________________

Signature: ______________________________

Date: ______________________________