

## **Advice on School Disinfection at the Height of Influenza Season**

### **Influenza**

Influenza is a highly infectious viral disease. In Hong Kong, the peak season is from January to March and from July to August. Influenza is transmitted from person to person by droplet or contact of respiratory secretion (direct or indirect). Since infective agents can survive in the environment for a period of time, it is essential to maintain good environmental hygiene to minimize the transmission of influenza in school.

Everybody has a role to play in the control of influenza by practising good personal hygiene, which includes proper hand hygiene (Please note Annex 1 for Guidelines for Hand Hygiene) and complying with infection control measures at the relevant settings. The following actions are strongly advised for schools to prevent influenza and contain its spread in schools during Influenza season:-

a) Maintain good indoor ventilation

- Windows of classroom should be opened for better ventilation
- Switch on fans or exhaust fans to enhance air flow
- Keep air-conditioners well-maintained
- Clean and wash the dust-filters of air-conditioners regularly

b) Environmental cleansing and disinfection

- Keep classrooms, kitchen, canteen, toilets and bathrooms clean and hygienic. School management is advised to maintain good hygienic standard of the school premises through thorough cleansing and disinfection daily. In case of occurrence of influenza outbreaks, the cleansing and disinfection measures have to be enhanced, for examples, in terms of frequency and strength of disinfectants used. The following presents the key points to note in the environmental hygiene and disinfection:-

***General rule:***

- ◆ Clean and disinfect frequently touched surfaces, furniture, toys, commonly shared items and floor at least daily by using appropriate disinfectant (e.g. 1 part of household bleach containing 5.25% sodium hypochlorite in 99 parts of water for non-metallic surfaces or 70% alcohol for metallic surfaces), leave for 15-30 minutes, and then rinse with water and wipe dry. (Please note Annex 2 for Preparing and Using Diluted Bleach)

- ◆ If places are contaminated by respiratory secretions, vomitus or excreta, use strong absorbent disposable towels to wipe them away. Then disinfect the surface and the neighbouring area with appropriate disinfectant (e.g. 1 part of household bleach containing 5.25% sodium hypochlorite in 49 parts of water for non-metallic surfaces or 70% alcohol for metallic surfaces), leave for 15-30 minutes, and then rinse with water and wipe dry. (Please note Annex 2 for Preparing and Using Diluted Bleach).

#### **When there is an outbreak:**

- ◆ In case of school outbreaks, concentration of bleach can be increased (e.g. 1 part of 5.25% household bleach in 49 parts of water for non-metallic surface) for cleansing and disinfection of the premises. The steps listed in the general rule above are to be followed.
- ◆ The method of disinfection of places contaminated by respiratory secretions, vomitus or excreta will be the same as highlighted in the general rule.

#### c) Environmental Support for Hand Hygiene

- Provide liquid soap and disposable paper towels or hand dryers at places where there are hand washing facilities e.g. toilets, kitchen/ pantry, laundry, art room, etc.
- Provide alcohol-based handrub in places where hand washing facility is not available. 70-80% alcohol-based handrub is effective for disinfection only when hands are not visibly soiled.
- Schools should refer to instructions on the container for proper usage and storage of alcohol-based handrub. According to advice of Fire Services Department, each school should not keep more than a total of 20 litres of alcohol-based handrub (40 bottles of 500ml capacity, or 200 bottles of 100ml capacity, or combinations of the two sizes). More than this, the alcohol-based handrub will need to be stored in an approved Cat. 5 Dangerous Goods Store.

#### **For more information**

Please visit the website of the Centre for Health Protection of the Department of Health at [www.chp.gov.hk](http://www.chp.gov.hk) or call the Department of Health's 24-Hour Health Education Hotline at 2833 0111.

*Centre for Health Protection*

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## **Annex 1**

### **Guidelines for Hand Hygiene**

Many infectious diseases can be transmitted through direct contact. If hands are contaminated with pathogens, especially **when they are soiled** with respiratory discharge or faecal matters, diseases include dysentery, cholera, hepatitis, influenza, and hand, foot and mouth disease can be spread easily. Observance of hand hygiene is the prerequisite of the prevention of the spread of communicable diseases. There are two ways to achieve hand hygiene including good handwashing and proper use of alcohol-based handrub.

#### **When do we perform Hand Hygiene?**

1. Before touching the eyes, nose and mouth
2. Before eating or handling food
3. After using the toilet
4. When hands are contaminated by respiratory secretions, e.g. after coughing or sneezing
5. After touching public installations or equipment, such as escalator handrails, elevator control panels or door knobs
6. After changing diapers or handling soiled articles when looking after young children or the sick
7. Before and after visiting hospitals or residential care homes.
8. After making contact with animals or poultry

As a matter of good practice, students are reminded to clean their hands frequently. In general, we should wash hands with soap and water when hands are visibly soiled or likely contaminated with body fluid, for example, after using the toilet or changing the diapers, after coughing or sneezing. When hands are not visibly soiled, 70-80% alcohol-based handrub is also effective for disinfection.

#### **Steps for Hand Hygiene**

##### **a) Handwashing with liquid soap and water:**

1. Wet hands under running water.
2. Apply liquid soap and rub hands together to make a soapy lather.
3. Away from the running water, rub the palms, back of hands, between fingers, back of fingers, thumbs, finger tips and wrists. Do this for at least 20 seconds.
4. Rinse hands thoroughly under running water.
5. Dry hands thoroughly with either a clean cotton towel, a paper towel, or a hand dryer.
6. The cleaned hands should not touch the water tap directly again.
  - The tap may be turned off by using the towel wrapping the faucet; or
  - after splashing water to clean the faucet.

**Please note:**

- Towels should never be shared.
- Used paper towel should be properly disposed of.
- Personal towels to be reused must be stored properly and washed at least once daily. It is even better to have more than one towel for frequent replacement.

**b) Use of alcohol-based handrub**

- Apply a palmful of alcohol-based handrub and cover all surfaces of the hands. Rub the palms, back of hands, between fingers, back of fingers, thumbs, finger tips and wrists for at least 20 seconds until the hands are dry. The picture below demonstrates the 7 steps in the use of alcohol-based handrub.



## Annex 2

### **Preparing and Using Diluted Bleach**

1. Keep windows open when diluting or using bleach to ensure good ventilation
2. Put on personal protective gear (e.g. mask, gloves and goggles) when diluting or using bleach as it irritates mucous membranes, the skin and the airway
3. Cold water should be used for dilution of bleach as hot water decomposes the active ingredient of bleach and renders it ineffective.
4. Bleach containing 5.25% sodium hypochlorite should be diluted as follows:
  - 1 in 99 diluted household bleach (mixing 10 ml of bleach with 990 ml of water) can be used for general household cleaning.
  - 1 in 49 diluted household bleach (mixing 10 ml of bleach with 490 ml of water) is used to disinfect surfaces or articles contaminated with vomitus, excreta and secretions.
5. Make adjustments to the amount of bleach added if the concentration of sodium hypochlorite is above or below 5.25%.
  - Calculation: Multiplier of the amount of bleach added =  $5.25\% \div \text{concentration of sodium hypochlorite in bleach}$
  - For example, when diluting bleach containing only 5% sodium hypochlorite, the multiplier is  $5.25 / 5 = 1.05$ . That means  $10 \text{ ml} \times 1.05 = 10.5 \text{ ml}$  of bleach should be used.
6. For accurate measurement of the amount of bleach added, a measuring cup can be used.
7. Rinse disinfected articles and surfaces with water and wipe dry.
8. Cleaning tools should be soaked in diluted bleach for 30 minutes and then rinsed thoroughly before reuse.
9. Finally, wash hands with liquid soap and water, then dry hands with a clean towel or disposable paper towel.

## **Precaution**

- Avoid using bleach on metals, wool, nylon, silk, dyed fabric and painted surfaces.
- Avoid touching the eyes. If bleach gets into the eyes, immediately rinse with water for at least 15 minutes and consult a doctor.
- Bleach should not be used together or mixed with other household detergents as this reduces its effectiveness in disinfection and causes chemical reaction. For instance, a toxic gas is produced when bleach is mixed with acidic detergents such as those used for toilet cleaning. This could result in accidents and injuries. If necessary, use detergents first and rinse thoroughly with water before using bleach for disinfection.
- As undiluted bleach liberates a toxic gas when exposed to sunlight, it should be stored in a cool and shaded place out of reach of children.
- Sodium hypochlorite decomposes with time. To ensure its effectiveness, it is advised to purchase recently produced bleach and avoid over-stocking.
- For effective disinfection, diluted bleach should be used within 24 hours after preparation.