



Preventing the Spread of Coronavirus Disease 2019 (COVID-19) Guideline for Airlines

Eighth Edition

In order to continue efforts in implementing routine COVID-19 prevention protocols, reinforce various measures aimed at preventing “disease importation and domestic resurgence”, and tighten measures aimed at curbing “virus spread via both human beings and cargo”, this eighth edition of *Preventing the Spread of Coronavirus Disease 2019 (COVID-19) Guideline for Airlines* is developed, taking into account of the changing international epidemic situation, virus mutations and the efforts in the establishment of an immune barrier among front-line personnel.

1. Assessment of Flight Risks and Differentiated Management

1.1 Risk Assessment of Domestic Flights

1.1.1 In principle, domestic flights are no longer classified into different risk levels; instead they are subject to routine prevention and control measures.

1.1.2 In case of regional epidemic rebound at places where domestic passenger flights originate, different prevention and control measures should be taken based on the different levels of response made by local governments to public health emergencies or on other relevant requirements. The details are as follows:

1.1.2.1 Measures in line with the prevention and control requirements for high-risk international/regional flights should be taken if local authority activates a level-I emergency event response.

1.1.2.2 Measures in line with the prevention and control requirements for medium-risk international/regional flights should be taken if local authority activates a level-II emergency event response or there are high-risk areas in the city of origin.

1.1.2.3 In other circumstances, measures in line with routine domestic prevention and control requirements should be taken.

1.1.2.4 Places of origin should be defined as prefecture-level cities (regions) or above.

1.2 Risk Assessment of International/Regional Flights

1.2.1 International/regional flights are subject to classified and differentiated management, with differentiated prevention and control measures implemented with



respect to individual crew member protection, in-flight service and aircraft environmental hygiene management.

1.2.2 The risk levels of international/regional passenger flights will be determined based on a comprehensive rating of indicators such as epidemic situation at the points of origin, flight distance and passenger load factors. See Attachment 1 and 2 for details of rating methods.

1.2.3 Among indicators for risk assessment of international/regional passenger flights, epidemic situation at the points of origin and flight distance shall be rated based on actual situations; passenger load factors shall be rated by the planned load factors if the flights are subject to restricted load factors due to epidemic situations at points of origin. Refer to Attachment 2 for details of planned load factors.

1.2.4 The risk levels of international/regional cargo flights will be determined based on a comprehensive rating of indicators such as epidemic situation at the points of origin, type of cargo carried and the temperature at the point of origin/destination. See Attachment 3 for details of rating methods.

1.2.5 Flight risk levels shall be subject to real-time adjustment according to epidemic developments.

2. Routine Prevention and Control Measures for Domestic Flights

2.1 Prevention and Control Measures for On-duty Crew

2.1.1 See Attachment 4 for personal protection standards for crew members of domestic flights.

2.1.2 Considerations of Wearing Masks:

2.1.2.1 The mask should be close to the face, covering the nose and mouth completely. When the mask is on or being removed, the crew must not touch the out layer of the mask with hands to avoid hand contamination.

2.1.2.2 Once dampened by secretions or contaminated by other contaminants, facial masks should be replaced immediately with new ones, and hands should be cleaned and sanitized both before and after the replacement.

2.1.2.3 Disposed masks should be placed in a dedicated protective equipment waste bag for centralized post-flight disposal.

2.1.3 Considerations of In-flight Service



2.1.3.1 Flight attendants should avoid close contact with passengers without effective protection.

2.1.3.2 Crew members should enhance hand cleaning and disinfection before meal, after using lavatory and before and after contact with passengers by using alcohol-based disinfection wipes or non-alcohol rinse free hand sanitizers. When crew members are not sure whether their hands are clean or not, they should avoid touching the noses, mouths and eyes with hands.

2.1.3.3 An exclusive lavatory for crew members should be assigned when conditions allow, otherwise the lavatory should be disinfected every time before and after use by crew members.

2.1.4 Crew members should pay close attention to their own health status, and timely report information in case of any abnormal situations.

2.2 Prevention and Control Measures for Air Travelers

2.2.1 Pre-boarding Preparations

2.2.1.1 When there are medium to high-risk areas within the city of origin, passengers shall cooperate in checking of health QR code. Negative results of nucleic acid tests shall be provided if necessary, with the validity period for test results determined based on the regulations of the relevant local departments.

2.2.1.2 Passengers should clean and disinfect hands before boarding.

2.2.2 In-flight Prevention and Control Measures

2.2.2.1 Passengers should wear masks with no breathing valves during the whole flight, and should not remove their masks if it is not necessary.

2.2.2.2 Passengers should reduce unnecessary movement in the cabin, and must not switch seats except under special circumstances.

2.2.2.3 Passengers should use lavatory in an orderly way as guided by flight attendants, put down toilet lid before flushing to avoid breathing in infectious particles, and timely clean and disinfect hands after use.

2.2.2.4 Passengers should timely clean and disinfect hands before meals or after touching surface of objects in the cabin, in particular those frequently touched ones such as armrest and door handles of lavatory, and avoid touching noses, mouths and eyes with unsanitized hands.

2.2.2.5 Passengers should immediately seek help from flight attendants if they find themselves with symptoms such as fever, dry cough, fatigue, sore throat, impairment of smell (taste) and diarrhea during flight.

2.2.2.6 Passengers' discarded protective equipment (e.g. masks, disposable gloves, etc.) must not be randomly thrown away, instead they should be put in a dedicated waste bag for protective equipment.

2.3 Prevention and Control Measures for In-flight Service

2.3.1 Crew members will broadcast messages on in-flight infection prevention and control measures before takeoff and during flight, which shall at least cover those included in 2.2.2 In-flight Prevention and Control Measures.

2.3.2 In-flight service should be simplified with meals provided in the usual way but excluding raw animal products and seafood. Flight attendants should clean and disinfect hands before and after food preparation.

2.3.3 Passengers with symptoms should be provided with masks, disinfection wipes and disposable medical rubber gloves.

2.3.4 Passengers should be arranged to use lavatory in order, so as to avoid gathering outside the lavatory, and should keep social distance while queuing. Lavatories should be disinfected every 2 hours (or after being used 10 times).

2.3.5 When there are medium to high-risk areas within the city of origin, the last three rows of seats on the right side should be reserved to be used as quarantine area for handling emergency events on board.

2.4 Routine Cleaning and Disinfection of Aircraft

2.4.1 Aircraft should be cleaned using the wet cleaning process during a stopover, and thoroughly cleaned upon the completion of the flight. Please refer to Attachment 5 for the detailed aircraft cleaning methods. In case of limited conditions, priority should be given to the cleaning of lavatories and kitchens.

2.4.2 Preventative disinfection of an aircraft should be conducted at least once a month. If there are medium to high-risk areas in the stopover city, preventive disinfection should be carried out on the same day after flight.

2.4.3 Please refer to Attachment 4 for personal protective equipment for aircraft cleaning personnel and disinfection personnel. Disinfection personnel should have obtained relevant qualifications or accepted training before performing duty.

2.4.4 Aircraft Preventative Disinfection

2.4.4.1 Please refer to Appendix 1 for the operating procedures for chemical disinfection and the choice of disinfectants.

2.4.4.2 With respect to the preventive disinfection of cockpit, passenger cabin and cargo hold, physical ultraviolet disinfection can be used when conditions permit. Information on ultraviolet intensity, leakage, ozone leakage and other technical requirements is included in the *Hygienic Requirements for Ultraviolet Sterilizers* (GB 28235-2020). At the same time, the application of ultraviolet disinfection shall meet the following requirements:

- Ultraviolet disinfection cannot replace the routine cleaning procedure.
- Ultraviolet disinfection may cause damage or discoloration of aviation materials, and therefore should meet airworthiness requirements.
- If, in the case of ultraviolet disinfection, there is a blind area on certain high-frequency contact surfaces which can not be exposed to ultraviolet light, chemical disinfection should be adopted.

2.4.5 Aircraft Terminal Disinfection

2.4.5.1 If an aircraft is found to have carried passengers with suspicious symptoms, a terminal disinfection of the passenger cabin should be conducted immediately following its landing.

2.4.5.2 If animal remains or suspicious contaminants of a contagious nature are found in the cargo hold, a post-flight terminal disinfection of the cargo hold should be performed.

2.4.5.3 Operating procedures and disinfection protocols for terminal disinfection are contained in Appendix 3.

2.4.6 If an assessment of the efficacy of aircraft environment cleaning is necessary, it could be done by using fluorescence labeling to conduct quantitative analysis into the efficacy of the cleaning of frequently-touched surfaces. Details can be found in *Guidelines for Cleaning and Disinfecting Environmental Surfaces in Healthcare Facilities* (WS/T 512-2016).

2.4.7 If an assessment of the efficacy of aircraft disinfection is required, please refer to the *Standards Governing the Assessment of On-site Disinfection during COVID-19* (WS/T 774-2021) for the specific methods.

3. Differentiated Prevention and Control Measures for International/Regional Passenger Flights

3.1 Prevention and Control Measures for On-duty Crew

3.1.1 Prior to the performance of a flight task, crew members need to be fully vaccinated against COVID-19.

3.1.2 Personal Protective Equipment (PPE)

Crew members should use different protective equipment based on the risk level of the flight. Refer to Attachment 4 for details. When wearing personal protective equipment, attention should be paid to the following:

3.1.2.1 The mask should be close to the face, covering the nose and mouth completely. When the mask is on or being removed, the crew must not touch the out layer of the mask with hands to avoid hand contamination.

3.1.2.2 Once dampened by secretions or contaminated by other contaminants, facial masks should be replaced immediately with new ones, and hands should be cleaned and sanitized both before and after the replacement.

3.1.2.3 Flight crew members should wear masks while in the cockpit and crew rest area. Crew members flying high-risk flights should change their masks at least once every 4 hours (or whenever necessary).

3.1.2.4 Reusable goggles should be sterilized and dried every time after use. Goggles with anti-fogging films should avoid being wiped with disinfectant. Instead, it is recommended that they be washed with clean water before being exposed to close-range direct ultraviolet lighting for over 30 minutes.

3.1.2.5 All disposable protective equipment, after their use, should be placed in dedicated waste bags for protective equipment, packed and sealed as per requirements of the destination airport and safely handed over to ground staff.

3.1.3 Prevention and Control Measures during In-flight Services

3.1.3.1 Flight attendants should, whenever possible, be assigned to provide service only in their designated areas to achieve zoned management, and avoid unnecessary cross-area service except for performing safety management duties and dealing with unexpected incidents. In the meantime, close contacts between flight attendants and passengers without effective protection should be avoided.



3.1.3.2 High-risk flights should only be provided with essential in-flight service, and flight crew working areas, passenger sitting areas and quarantine area on an aircraft should be served by different flight attendants.

3.1.3.3 Flight attendants should enhance hand cleaning and disinfection before and after contact with passengers by using alcohol-based disinfection wipes or non-alcohol rinse free hand sanitizers. When crew members are not sure whether their hands are clean or not, they should avoid touching noses, mouths and eyes with hands.

3.1.3.4 After touching or disposing wastes, flight attendants should wash hands with soap or hand sanitizers under running water before cleaning and disinfecting hands.

3.1.3.5 Flight crew members should reduce their entry/exit of the cockpit and use intercom system for communication whenever they can to avoid close contact.

3.1.3.6 Crew members should avoid sitting next to each other while dining at the same time, and should disinfect hands before meals.

3.1.3.7 Crew members should use an exclusive lavatory and reduce the frequency of their use of the lavatory.

3.2 Prevention and Control Measures for Air Travelers

3.2.1 Pre-boarding Preparations

3.2.1.1 Passengers should go through health QR code checking as required by relevant departments.

3.2.1.2 Passenger should clean and sanitize their hands before boarding.

3.2.2 Temperature Screening

3.2.2.1 Passengers should have their body temperature measured using non-contact body temperature detection equipment (calibrated) and be observed for any potential symptoms. If any ill passenger is found to have such symptoms as fever ($\geq 37.3^{\circ}\text{C}$), dry cough, fatigue, sore throat, impairment of smell (taste) and diarrhea, crew members should timely report and respond, and cooperate in the handover.

3.2.2.2 For flights with duration over 4 hours, measurement of body temperature should be taken once during flight operation. In case of ill passenger(s) found to have such symptoms as fever ($\geq 37.3^{\circ}\text{C}$), dry cough, fatigue, sore throat, impairment of smell (taste) and diarrhea, the event should be dealt with in compliance with the guidance for the handling of in-flight emergency medical events in this Guideline, and the crew should timely communicate with the destination airport, and cooperate in the handover of the passenger(s) after landing.



3.2.3 In-flight Prevention and Control Measures

3.2.3.1 Passengers should wear masks during the whole flight, and should not remove their masks if not necessary. KN95/N95 masks with no breathing valves are recommended.

3.2.3.2 Passengers should reduce unnecessary movement in the cabin, and must not change seats except under special circumstances.

3.2.3.3 Passengers should use lavatory in an orderly way as guided by flight attendants, put down toilet lid before flushing to avoid breathing in infectious particles and timely clean and disinfect hands after use.

3.2.3.4 Passengers should timely clean and disinfect hands before meals or after touching surface of objects in the cabin, in particular those frequently touched ones such as armrest and door handles of lavatory, and avoid touching noses, mouths and eyes with unsanitized hands.

3.2.3.5 Passengers should immediately seek help from flight attendants if they find themselves with symptoms such as fever, dry cough, fatigue, sore throat, impairment of smell (taste) and diarrhea.

3.2.3.6 Passengers' discarded protective equipment (e.g. masks, disposable gloves, etc.) must not be randomly thrown away, instead they should be put in dedicated waste bags for protective equipment.

3.3 Prevention and Control Measures during In-flight Services

3.3.1 Restriction on Passenger Load Factors

Based on the epidemic situation at points of origin, flights will be subject to restriction on passenger load factors. To conduct differentiated management of such flights, planned passenger load factors will be used in flight risk level rating. See Attachment 2 for details.

3.3.2 Division of Areas

3.3.2.1 Seats should be reserved on board as a quarantine area for handling of possible in-flight emergencies. Details on seat reservation should be made based on the epidemic situation at points of origin. See Attachment 2 for reference.

3.3.2.2 Reserved seats in the quarantine area on board should be used only by those under quarantine.



3.3.2.3 If conditions allow, passengers should be arranged to sit scattered or with an empty seat in between.

3.3.2.4 Proper physical separation should be set up between crew rest area and passenger sitting area.

3.3.2.5 The front lavatory should be assigned for exclusive use by crew members, and if conditions don't allow, the lavatory should be disinfected every time before and after use by crew members.

3.3.2.6 On high-risk flights, when conditions allow, two lavatories should be assigned for separate use by flight crew and cabin crew.

3.3.2.7 The lavatory on the rear right side of the cabin should be for the exclusive use by those under quarantine.

3.3.3 Information Dissemination on Prevention and Control Measures

Crew member will broadcast messages on in-flight infection prevention and control measures before takeoff and during flight, which shall at least cover those included in 3.2.3 In-flight Prevention and Control Measures.

3.3.4 Catering Service

When dining, passengers sitting in odd and even rows should dine separately.

3.3.4.1 Low-risk flights: normal meal service should be provided. Hot meals should be provided, while cold dishes, cold meat and edible ice cubes should be removed. Cabin crew should clean and disinfect their hands before and after meal preparation.

3.3.4.2 Medium-risk flights: food-preparation procedures should be simplified, pre-packaged food should be provided, and cold meal, cold meat and edible ice cubes should be canceled.

3.3.4.3 High-risk flights: it is recommended to provide pre-packaged food and bottled water before or during passenger boarding. Except for special needs, no in-flight catering service should be provided.

3.3.5 Supply of Protective Equipment

3.3.5.1 Passengers with symptoms should be provided with masks, disinfection wipes and disposable medical rubber gloves.

3.3.5.2 Symptomatic passengers sitting in quarantine area should be provided with necessary medical protective equipment.



3.3.5.3 Supply of magazines should be canceled on high-risk flights, and blankets and pillows should no longer be provided except for special needs.

3.3.5.4 Designated waste collection bags for protective equipment should be additionally put in seat pocket on high-risk flights.

3.3.5.5 For high-risk flights with duration over 8 hours, exclusive in-flight amenity kits should be provided for each crew member.

3.3.6 Use of Lavatory

3.3.6.1 Passengers should be arranged to use lavatory in an orderly way, so as to avoid gathering outside the lavatory (no more than 2 passengers waiting), and should keep social distance while waiting. Ventilation of the lavatory should be enhanced.

3.3.6.2 Lavatories should be disinfected at different frequency based on the risk level of the flight. Lavatories should be disinfected every 2 hours (or after being used 10 times) on low and medium-risk flights; or every hour (or after being used 5 times) on high-risk flights. Hands should be cleaned and sanitized upon completion of lavatory disinfection.

3.3.7 Other Matters

3.3.7.1 On high-risk flights, aircraft air conditioning system should be set at maximum ventilation during flight to ensure efficient air circulation in the cabin.

3.3.7.2 Wastes from high-risk flights, including solid and liquid wastes and aviation food wastes, should be under closed-loop management while being collected, transported and disposed and be disinfected and treated innocuously, as per the requirements of customs or local health departments.

3.3.7.3 All disposable protective equipment, after their use, should be placed in dedicated waste bags for protective equipment, packed and sealed as per requirements of the destination airport and safely handed over to ground staff. Discarded disposable protective equipment from high-risk flights should be placed in yellow medical waste bags and be disposed of as medical wastes.

3.4 Routine Cleaning and Disinfection of Aircraft

3.4.1 Routine Cleaning of Aircraft

3.4.1.1 Wet process cleaning for aircraft should be applied during a stopover, and a thorough cleaning upon the completion of the flight.



3.4.1.2 Please refer to Attachment 5 for detailed aircraft cleaning methods. Cleaning of lavatories and galleys should be prioritized if conditions are limited.

3.4.1.3 Please refer to Attachment 4 for personal protection standards for aircraft cleaning personnel.

3.4.2 Disinfection of Aircraft

3.4.2.1 Inbound aircraft and wastes on board should be terminally disinfected as per the requirements of the local health and quarantine department and the *Disinfection Work Plan for Inbound Passenger Aircraft* (Document No. 100 (2021) issued by the Joint Prevention and Control Mechanism of the State Council). The operating procedures for terminal disinfection shall be based on the *Notice on further Enhancing Disinfection for the Prevention and Control of COVID-19* (Document No. 94 (2021) issued by the Joint Prevention and Control Mechanism of the State Council) and the relevant provisions of the health and quarantine department.

3.4.2.2 Garbage on board (including kitchen wastes on board) should be collected by designated cleaning or aviation food service personnel, and be treated as per the requirements of the local quarantine organ and health department. It is recommended that the garbage collected be wet sprayed using the disinfectant with an effective chlorine concentration of 1000mg/L, and put into double-layered yellow medical waste bags to prevent garbage leakage. Waste bags should be sprayed on each layer with disinfectant before being gooseneck tied.

3.4.2.3 If an aircraft carries out domestic operation following its entry into China, post-flight preventive disinfection should be carried out throughout its ensuing domestic operation. For the flight whose preceding international segment is rated as having a low and medium-risk level, one post-flight preventive disinfection should be carried out within one week after its domestic operation, and for the flight whose preceding international segment is rated as having a high risk level, post-flight preventive disinfection should be carried out after its first domestic operation. If domestic operation is carried out on a continuous basis, follow-up preventive disinfection should be carried out referring to the relevant requirements in 2.4.2. Please refer to Appendix 1 for the operating procedures for post-flight preventive disinfection.

3.5 Prevention and Control Measures for Inbound Flight Ground Handling Staff

With regard to airlines' prevention and control requirements for the ground staff handling inbound flights, refer to the Preventing the Spread of Coronavirus Disease 2019 (COVID-19) Guideline for Airports, section 7 - Prevention and Control Measures for Ground Personnel Working at the Entry Areas.

4. Prevention and Control Measures for International/Regional Cargo Flights

4.1 Prevention and Control Measures for On-duty Crew Members

4.1.1 Prior to the performance of a flight task, crew members need to be fully vaccinated against COVID-19.

4.1.2 Personal Protective Equipment (PPE)

Refer to Attachment 4 for detailed information on personal protective equipment for crew members of international/regional cargo flights. When wearing personal protective equipment, attention should be paid to the following:

4.1.2.1 The mask should be close to the face, covering the nose and mouth completely. When the mask is on or being removed, the crew must not touch the out layer of the mask with hands to avoid hand contamination.

4.1.2.2 Once dampened by secretions or contaminated by other contaminants, facial masks must be replaced immediately with new ones, and hands should be cleaned and sanitized both before and after the replacement.

4.1.2.3 All disposable protective equipment, after their use, should be placed in dedicated protective equipment waste bags, packed and sealed as per requirements of the destination airport and safely handed over to ground staff.

4.1.3 Prevention and Control Measures

4.1.3.1 While flying high-risk cargo flights, especially those carrying cold-chain goods and live animals, crew members shall not come into contact with cargo and outer packaging.

4.1.3.2 For international/regional cargo-in-cabin flights which use cabin to carry cargo, a buffer area should be set up between crew sitting area (rest area) and cargo storage area.

4.1.3.3 Prior to take-off and after landing, crew members should wear effective personal protective equipment before carrying out job handover with relevant ground personnel, to avoid close contact with ground personnel without protection. The handover should be carried out outside the cabin whenever possible.

4.1.3.4 With respect to the handover of letters, documents, bills and other paper items, it is recommended to put them in waterproof package bags, and disinfect the waterproof outer packaging using wipes after handover. In case of physical items handover, hands should be carefully cleaned and sanitized upon task completion.

4.2 In-flight Prevention and Control Measures for Cargo Flight

4.2.1 When transported on wide-body aircraft, cold-chain goods are recommended to be loaded and transported in a centralized manner in a separate container; and when on narrow-body aircraft, it is recommended to transport them in a separate cargo hold, not mixed with other goods.

4.2.2 Temperature of cold-chain goods should be strictly controlled during flight by setting the temperature of cargo hold as per their temperature requirements.

4.3 Cleaning and Disinfection of Aircraft

4.3.1 For cargo flights, routine cleaning should be performed after each flight.

4.3.2 Inbound aircraft and wastes on board shall be terminally disinfected in accordance with the relevant requirements of the local health and quarantine department.

4.3.3 If the airport of origin can provide compelling evidence showing that cargo and Unit Load Devices (ULDs) have been preventatively disinfected prior to take-off, the airport of destination may not need to repeat the preventive disinfection of the aircraft cargo hold.

4.3.4 Garbage on board (including kitchen wastes on board) should be collected by designated cleaning or aviation food service personnel, and be treated as per the requirements of the local quarantine organ and health department. It is recommended that the garbage collected be wet sprayed using the disinfectant with an effective chlorine concentration of 1000mg/L, and put into double-layered yellow medical waste bags to prevent garbage leakage. Waste bags should be sprayed on each layer with disinfectant before being gooseneck tied.

4.4 Other Requirements

While using cargo hold to transport cargo, passenger flights should meet the prevention and control requirements in sections 4.1, 4.2 and 4.3 above.

5. Routine Aircraft Maintenance

5.1 While changing High Efficiency Particulate Air (HEPA) filters, maintenance personnel should be personally protected as stipulated in Attachment 4.

5.2 Upon arrival, cabin and cargo hold doors should be opened for ventilation before maintenance work is performed, and the time for natural ventilation should be extended.

5.3 HEPA filters should be replaced in accordance with what's specified in the manufacturer's manual, in strict compliance with the prevention and protection



requirements set out in the Aircraft Maintenance Manual, and in accordance with the personal prevention and protection program for aircraft maintenance personnel. The used HEPA should be replaced by a designated person, and placed in a double-layered plastic bag and sealed. The external surface of the bag should be disinfected before being treated innocuously.

5.4 Upon the completion of the maintenance task, the maintenance staff should disinfect their hands and remove their protective equipment in the specified order before cleaning and sanitizing their hands thoroughly.

6. Handling of In-flight Medical Emergencies

6.1 Emergency Handling Principles

If any passenger on board is found with fever, fatigue, dry cough, sore throat, impairment of smell (taste), diarrhea or other suspicious symptoms, they should be handled immediately in accordance with the following procedures:

6.1.1 Before coming into contact with passengers with suspicious symptoms or contaminants of a contagious nature (such as vomit, excretions or blood) or contaminated articles or surfaces, crew members should wear personal protective equipment as described in Attachment 4.

6.1.2 Passengers with suspicious symptoms should be seated in the window seats on the right side of the designated emergency quarantine area, so as to discharge, to the greatest extent possible, the exhaled air directly out of the aircraft.

6.1.3 The rear lavatory on the right side should be reserved exclusively for those under quarantine to avoid cross infection.

6.1.4 It is recommended that a flight attendant be designated to provide them with essential in-flight services. Unless required to operate for the purpose of safety, the flight attendant designated should reduce close contact with other crew members.

6.2 Aircraft Concurrent Disinfection

6.2.1 When contaminated by potentially contagious blood, secretions, excretions, vomit and other liquid contaminants, aircraft cabin should be disinfected concurrently.

6.2.2 Operating procedures and disinfection protocols for concurrent disinfection are contained in Appendix 2.

7. Quarantine Measures for the Crew Members Showing Symptoms or Having Contact with Suspicious Passengers

Crew members' quarantine should be carried out by referring to the latest edition of *COVID-19 Prevention and Control Program* issued by the National Health Commission, taking into account of the specificity of crew members' working schedules, and following the guidelines as follows.

7.1 Crew Members Quarantine Program

7.1.1 If any crew member shows such symptoms as fever, dry cough, fatigue, sore throat, impairment of smell (taste) and diarrhea during off-duty hours, and has a history of epidemiology (such as a history of living and traveling in high-risk countries/regions and of having contacts with suspected, confirmed or asymptomatic cases), he/she should be handled in accordance with the requirements in the *COVID-19 Prevention and Control Program*. Crew members who performed duty on the same flight on the day symptoms developed or during the previous 2 days and who had close and unprotected contact with him/her within the past 2 days should be instantly put under centralized quarantine.

7.1.2 If any crew member shows such symptoms as fever, dry cough, fatigue, sore throat, impairment of smell (taste) loss and diarrhea during the duty hours, he/she should cease performing his/her duties immediately as long as flight safety is not compromised. It is recommended to put him/her under quarantine in the cabin emergency quarantine area and avoid his/her close contact with other crew members. After the flight has landed, a special vehicle should be sent following the deplaning of passengers and other crew members, carrying him/her to a designated medical facility for examination. Other crew members should be quarantined as per 7.1.1.

7.1.3 Where any passenger on board a domestic flight shows such symptoms as fever, fatigue, dry cough, sore throat, impairment of smell (taste) and diarrhea, the crew members who have provided in-flight services for the symptomatic passenger should be under centralized quarantine after the flight has landed. Other crew members do not need to be quarantined for the time being. If the crew members having direct contact with the passenger have been personally well protected throughout the journey in accordance with the prevention and control measures laid down in this Guideline, they may be exempted from quarantine as close contacts. All crew members are required to monitor their health condition and report promptly any abnormalities that may arise.

7.1.4 Where an airline has received a message of confirmation from local disease control or quarantine department that a domestic flight operated by the airline did carry confirmed, suspected or asymptomatic case(s), the crew members involved should be quarantined as per 7.1.3.



7.2 Centralized Quarantine Measures for Crew Members

7.2.1 A special vehicle should be dispatched to carry crew members to a quarantine point to avoid contact with other people excluding the driver.

7.2.2 Crew members under quarantine should live in separate rooms, and must not leave the room except under special circumstances (and with the permission of the medical observation staff). They shall not come into contact with others under quarantine.

7.2.3 Crew members under quarantine should dine alone in their own room, and food should be delivered without any physical contact. No one other than the essential staff shall be allowed to enter the rooms where crew members are quarantined.

8. Management of International/Regional Flight Crew Members Stationed Abroad

During their stay abroad, crew members should enhance their prevention awareness, be mindful of their personal protection to avoid the risk of infection, and pay close attention to their health status.

8.1 During their stay abroad, crew members should wear personal protective equipment except in their own hotel room, and avoid close contact with others without effective protection.

8.2 While staying abroad, crew members should, as a minimum requirement, wear a medical surgical mask or KN95/N95 mask, goggles, disposable medical rubber or nitrile gloves. While staying in high-risk countries (with the prevalence rate exceeding 500 per one million people), they should wear protective clothing and KN95/N95 masks in addition to meeting the above requirements, and if they are unable to wear protective clothing due to special requirements of the local customs or border inspection authorities, they can wear disposable protective clothing with equivalent protective effect instead.

8.3 Except during their trips between airport and hotel, crew members must be strictly placed under closed-off management during their stay in the hotel. They must not go out or allow anyone to enter their rooms. Where the overseas hotel is shared by people other than the crew members, the crew members must not leave their rooms after check-in until they leave the hotel for the return flight.

8.4 Crew members should closely monitor their own health status, and report their body temperature and abnormal symptoms (fever, fatigue, dry cough, sore throat, olfactory (taste) loss, diarrhea, etc.) on a daily basis. Any abnormalities that may arise should be reported immediately. The pilot-in-command or chief flight attendant is responsible for reporting crew members' health status and their activities to the airlines on a daily basis and recording such information for future reference.



8.5 When waiting at an overseas airport and going through customs clearance for entry, crew members should wear personal protective equipment, keep a distance of more than 1 meter, avoid mixing with passengers as far as possible, and avoid unnecessarily taking off of protective equipment. When clearing the customs, they should carry with them sanitizers and place in advance documents that need to be verified in a dedicated user-friendly transparent bag. They should disinfect the bag's surface in time upon the completion of verification process and sanitize their hands immediately.

8.6 Crew members should be carried by dedicated vehicles, and should avoid sitting in the co-driver area. Vehicles should be cleaned, disinfected and ventilated prior to and after each ride, with enhanced disinfection for, in particular, those frequently touched surfaces such as door handles, seat armrest and railings in the vehicle. Vehicles carrying crew members should strictly follow the designated route while travelling between airport and hotel, with no stop allowed.

8.7 Crew members should stay in fixed hotel rooms during their stay abroad, which must not be checked in by anyone other than the airlines' crew members. Before crew members arrive at and check in to the hotel, hotel staff should thoroughly clean, disinfect and ventilate the rooms. The rooms should be equipped with temperature detection equipment.

8.8 After checking in, crew members should first of all remove their protective equipment outside the room according to the standard procedure, followed by disinfection of the door handle and their hands before entering the room. The waste protective equipment will be collected by the designated personnel for centralized disposal.

8.9 After entering the room, crew members should first of all disinfect the frequently touched surfaces in the room (such as door handle, power switch, seat armrest, remote control and faucet). The room should be ventilated frequently. Crew members should avoid using central air conditioning, clean rubbish every day, and never leave kitchen wastes indoors.

8.10 Crew members should eat alone in the hotel room. It's recommended that they prepare meals themselves, and in the case of takeaway meals ordered, they should be delivered without any physical contact. Food delivery personnel must not enter the room, and the external packaging should be disinfected before meals.

8.11 Airlines should monitor the health status of the service staff stationed abroad and having contact with crew members, including drivers and food preparation staff, and arrange them to receive nucleic acid testing on a regular basis. Such staff should be fixed ones whenever possible and must wear masks while having contact with crew members. In addition to mask wearing, food delivery staff should have their hands cleaned and sanitized. Food should be fully cooked. Provision of cold meals and raw food should be avoided.



8.12 Crew members should avoid direct contact with elevator buttons. They should wear masks and goggles and keep a distance of over 1 meter while having contact with others.

8.13 Prior to take-off and after landing, crew members should wear effective personal protective equipment before carrying out job handover with relevant ground personnel, to avoid close contact with ground personnel without protection. The handover should be carried out outside the cabin whenever possible. The handover should be carried out outside the engine room as far as possible. If maintenance staff need to board the aircraft for inspection or other personnel need to board the aircraft to perform duty, they should be required to wear masks before entering the cabin. After the work is finished, the surface of objects they come into contact with should be disinfected and recorded.

8.14 Airlines should make available information on epidemic development by timely informing the crew members of the local epidemic situation, and at the same time provide solid support for the crew members to ensure the supply of food and related daily necessities and adequate protective materials.

8.15 It is recommended that crew members prepare their own meals for the return flight, and not have the meals provided overseas unless under special circumstances. If overseas meals have to be distributed, no cold dishes should be included, and the outer surface of the dining carts should be disinfected before they are loaded on board. Crew members should sanitize their hands before and after picking up the meal, and the meal must be fully heated before being taken. Flight attendants should also sanitize their hands before and after delivery.

9 Quarantine Measures for the Crew Members on International/regional Flights Upon Their Return

9.1 Quarantine for Crew Members Upon Their Return

9.1.1 Quarantine of Crew Members Staying Overnight Overseas

9.1.1.1 For crew members flying international/regional passenger flights, they shall be strictly placed under closed-off management during their stay overseas. Upon their return, they shall be put under centralized quarantine for 14 days and health monitoring for 7 days. During the quarantine period, they shall receive nucleic acid tests on the 1st, 3rd, 7th and 14th day after their return. For the test on the 14th day, one nasopharyngeal swab sample shall be collected and tested using two nucleic acid detection reagents. In principle, the two tests shall be carried out by different testing institutions. During the health monitoring period, nucleic acid tests shall be carried out on the 2nd and 7th day. They can continue to fly international/regional flights 7 days after return, and fly flights throughout the health monitoring period.

9.1.1.2 For crew members flying international/regional cargo flights, they shall be strictly placed under closed-off management during their stay overseas. Upon their return, they shall be put under centralized quarantine for 14 days and health monitoring for 7 days. They shall receive nucleic acid tests on the 1st, 3rd, 7th and 14th day after their return. For the test on the 14th day, one nasopharyngeal swab sample shall be collected and tested using two nucleic acid detection reagents. In principle, the two tests shall be carried out by different testing institutions. During the health monitoring period, they can fly flights and shall be subject to random nucleic acid tests whenever there appears a feeling of discomfort. While performing duty during quarantine, they shall act as follows:

- If testing negative in the nucleic acid test upon their return, they can continue to fly international/regional cargo flight. If testing negative on the 7th day after their return, they can fly international/regional passenger flight.
- If there is no change made to the crew team, quarantine shall be conducted following the requirements in 9.1.3.4.
- If there is a replacement/addition to the crew team, the quarantine period for the whole team shall be based on the longest individual quarantine period in the team.
- They shall be put under closed-off management while on their way to/from the airport, during pre-flight preparation and going through other processes.

9.1.2 Quarantine of Crew Members with No Overnight Stay

9.1.2.1 Quarantine Requirements for Cabin Crew Flying Passenger Flights

Upon their return, cabin crew shall be put under centralized quarantine for 14 days and health monitoring for 7 days. During the quarantine period, they shall receive nucleic acid tests on the 1st, 3rd, 7th and 14th day after their return. For the test on the 14th day, one nasopharyngeal swab sample shall be collected and tested using two nucleic acid detection reagents. In principle, the two tests shall be carried out by different testing institutions. During the health monitoring period, nucleic acid tests shall be randomly carried out whenever there appears a feeling of discomfort. They can continue to fly international/regional flights during quarantine, and can fly flights during health monitoring period.

9.1.2.2 Quarantine Requirements for Flight Crew and Maintenance Staff on Board (excluding Maintenance Staff Staying in the Cabin)

For those who fly passenger flights and do not disembark, they can be exempted from centralized quarantine if they are personally well protected throughout their duty in strict accordance with the prevention and control requirements in this *Guideline* and test negative in the first nucleic acid test upon their return. They are required to have their

health monitored for 14 days, during which they shall receive nucleic acid testing every other day and can fly flights.

For those who fly cargo flights and do not disembark, they can be exempted from home quarantine if they are personally well protected throughout their duty in strict accordance with the prevention and control requirements in this *Guideline* and tested negative in the first nucleic acid test upon their return. They are required to have their health monitored for 7 days, during which they shall receive nucleic acid testing every other day and can fly flights.

For those who do not stay overnight but need to make a brief stay abroad, they should be placed under centralized quarantine for 7 days and have their health monitored for 7 days if they are personally well protected throughout their duty in strict accordance with the prevention and control requirements in this *Guideline*. During the quarantine, they should receive nucleic acid testing every other day. During the health monitoring period, they should receive nucleic acid testing on the 2nd and 7th day and can fly flights. While performing duty during quarantine, they shall act as follows:

- If testing negative in the nucleic acid test upon their return, they can continue to fly international/regional flights.
- If there is no change made to the crew team, quarantine shall be conducted following the requirements in 9.1.3.4.
- If there is a replacement/addition to the crew team, the quarantine period for the whole team shall be based on the longest individual quarantine period in the team.
- They shall be put under closed-off management while on their way to/from the airport, during pre-flight preparation and going through other processes.

9.1.3 Others

9.1.3.1 For crew members flying inbound international/regional passenger flights which do not carry any passengers, they should be quarantined upon their return as per the quarantine requirements for crew members flying cargo flights. For crew members flying passenger-to-cargo flight, they should be quarantined as per the quarantine requirements for crew members flying cargo flights. Where an inbound passenger-to-cargo flight carries passengers due to special reasons, crew members should be quarantined in the same manner as those flying passenger flights.

9.1.3.2 Non-disembarkation means that no crew members left the aircraft during their stop abroad, except for the essential operation such as refueling and external aircraft inspection, and had no close contact (within 1 meter) with overseas personnel while wearing effective protection. Crew members and the airline shall jointly make a written



commitment on this, put the joint commitment on record, and bear the corresponding responsibility.

9.1.3.3 Where crew members did not disembark the aircraft but had close contact (within 1 meter) with overseas personnel, they should be quarantined in the same manner as provided for in 9.1.2.2 for those who did not make an overnight stay but needed to make a brief stay abroad.

9.1.3.4 Where crew members flying international/regional flights continue to operate such flights during their centralized quarantine, they shall be quarantined upon their re-entry as follows:

- If they are required to be quarantined as a result of the latest flight they operate, the quarantine period shall be recalculated based on the quarantine period required for the flight concerned.
- If they are not required to be quarantined as a result of the flight they operate, they can be released from quarantine upon the expiration of the quarantine period from operating the previous flight.

9.1.3.5 All the crew members flying international/regional flights shall be strictly put under closed-loop management during the period from disembarking upon their return to checking in to the quarantine site.

9.1.3.6 Prior to duty performance, crew members flying international/regional flights shall sign the *Letter of Personal Commitment on Taking Prevention and Control Measures while Flying International/Regional Flights* in Appendix 5.

9.1.3.7 After crew members having completed their flight operation tasks, airlines shall assess their risk of exposure overseas. Where such exposure risk is assessed as positive, all members of the crew shall be subject to a strict 14-day centralized quarantine.

9.1.3.8 Unless required otherwise, throat swabs should be collected for nucleic acid tests on crew members during quarantine and health monitoring.

9.2 Quarantine upon Return

9.2.1 Centralized Quarantine

9.2.1.1 Crew members flying international/regional flights who are required to be under centralized or home quarantine shall be strictly put under closed-loop management during the period from disembarking upon their return to checking-in to the quarantine site. A special vehicle should be dispatched if required to carry crew members, and public transport should be avoided.



9.2.1.2 During their stay at the quarantine site, each crew member should be assigned a separate room. Except for being alone at their room, crew member should don personal protective equipment (at least a mask) and avoid close contact with others without effective protection.

9.2.1.3 Crew members in quarantine should closely monitor their health status, and report their body temperature and abnormal symptoms to the relevant department of the airlines every morning and evening. Any abnormalities that may arise should be reported immediately.

9.2.1.4 Airlines shall monitor and record the daily health status of the quarantined crew members.

9.2.1.5 Crew members who are eligible to continue their operation during the quarantine shall be under closed-off management on their trip between the quarantine site and the airport. A special vehicle should be sent if required. They must not go out except for being on duty.

9.2.1.6 Crew members under quarantine must not leave their rooms except under special circumstances, and must not come into contact with others. Crew members who test negative in nucleic acid test after 7 days of centralized quarantine could take physical exercises within designated areas of quarantine location only if permitted to do so by their airlines, and should follow the requirements as below:

- a. a dedicated exercise area for crew members shall be set up, which must not be used by non-crew staff.
- b. fitness and training equipment shall be used on an appointment basis, to avoid gathering at one single location.
- c. public equipment, machines and facilities shall be disinfected before and after use.
- d. ventilation shall be increased at exercise areas.
- e. disposable medical surgical mask is required the whole time.

9.2.1.7 No one other than the essential staff should be allowed to enter the rooms where crew members are quarantined.

9.2.1.8 Crew members under quarantine should dine alone in their own rooms, and food should be delivered without any physical contact.

9.2.2 Health Monitoring



9.2.2.1 Crew members under quarantine should strictly monitor their health status, and report their body temperature and abnormal symptoms to the relevant department of the airlines every morning and evening. Any abnormalities that may arise should be reported immediately.

9.2.2.2 Except for being on duty, crew members should not go out unless necessary. They shall not leave their place of residence (prefecture-level cities/districts) or go to medium-and high-risk areas, nor shall they go to crowded public places or group events. And they shall try to avoid taking public transport such as subway and bus.

9.2.3 Whenever crew members under centralized quarantine and health monitoring develop any symptoms (such as fever, chills, cough, expectoration, nasal congestion, runny nose, sore throat, headache, fatigue, muscle soreness, dyspnea, chest tightness, conjunctival hyperemia, nausea, vomiting, diarrhea and abdominal pain), they should immediately notify the quarantine point or the relevant department of the airlines. In the meantime, the airlines should report to the local health and disease control department and civil aviation authorities immediately and make additional response as required by relevant regulations.

10. Prevention and Control Measures for Special Transport Missions (Charter Flights) to/from Pandemic Countries/Regions

Infection control measures should be put in place as follows for special transport missions to/from pandemic countries/regions (with the number of infected cases in every one million people at the point of origin exceeding 500).

10.1 Assessment of Passengers' Fitness to Fly

10.1.1 Passengers should be assessed for their fitness to fly before enplaning. The assessment, focusing mainly on whether they are physically suitable for this specific flight, should be done by the health department.

10.1.2 Before the carriage of passengers, relevant department of the airlines should check the health conditions of the passengers by screening. Confirmed cases, suspected cases, close contacts or those who can pose potential health risks shall not be transported on the same plane carrying healthy passengers.

10.1.3 Passengers are required to wear medical surgical masks or facial masks with better filtering efficiencies throughout the journey, and in case of KN95/N95 masks, the ones without breathing valves should be used.

10.2 Body Temperature Measuring

10.2.1 Pre-boarding Body Temperature Measuring

Prior to boarding, passengers should have their body temperature measured using calibrated non-contact infrared thermometer equipment and at the same time be examined for possible symptoms. If any suspicious passenger with symptoms such as fever ($\geq 37.3\text{ }^{\circ}\text{C}$), fatigue, dry cough, impairment of smell (or taste) or diarrhea is found, he/she should be measured again immediately. If confirmed as a passenger with fever, he/she shall not be transported by air for the time being.

10.2.2 In-flight Body Temperature Measuring

For flights with a duration of 4 hours or longer, the cabin crew should measure the body temperature of randomly selected passengers. If any suspicious passenger with symptoms such as fever ($\geq 37.3\text{ }^{\circ}\text{C}$), fatigue, dry cough, impairment of smell (or taste) or diarrhea is found, the crew should take some basic measures as per the guidance on the handling of in-flight emergencies, issue a timely notification to the destination airport, and provide cooperation in the transfer of passengers after landing.

10.3 Cabin Area Division

In order to avoid cross-infection, the cabin area can be divided into clean area, buffer zone, passenger sitting area and quarantine area. Each area should be clearly marked. It is recommended that a disposable curtain be used for the physical separation of each area.

The division should be made based on the following principles (and can be adjusted based on different aircraft types):

10.3.1 Clean area: it is recommended that the front half of the cabin for both the first and business class be designated as a clean area for the exclusive use by crew members. The boarding gate connecting the clean area should be reserved for the exclusive use by crew members. No one wearing protective clothing shall be allowed to enter the clean area.

10.3.2 Buffer zone: it is recommended that the rear half of the cabin for both the first and business class be designated as a buffer zone available for crew members to put on and take off protective clothing.

10.3.3 Passenger sitting area: it is the sitting area for healthy passengers.

10.3.4 Emergency quarantine area: the last three rows of seats should be designated as the emergency quarantine area.

10.3.5 Lavatories: lavatories in the first-class cabin are to be used exclusively by crew members and need to be thoroughly disinfected after each use. Two lavatories should be designated, to be used separately by flight and cabin crew. The lavatory on the rear right side of the cabin is for the exclusive use by those under quarantine, and the surface area



should be disinfected every hour during the flight, with the hands cleaned and disinfected right after the completion of disinfection.

10.4 Prevention and Control Measures for Crew Members

10.4.1 Personal Protection Equipment (PPE)

10.4.1.1 Personal Protection Equipment (PPE) for cabin crew members: medical protective masks, goggles or face screen, double-layer disposable medical rubber gloves, disposable caps, disposable protective clothing, and disposable boot covers. It's recommended that cabin crew reduce use of the lavatory and avoid using lavatory unless in special circumstances to reduce the risk of infection, and they may wear disposable diapers.

10.4.1.2 Personal Protection Equipment (PPE) for flight crew members: KN95/N95 masks, goggles, disposable medical rubber or nitrile gloves. Medical protective masks and disposable protective clothing and/or disposable shoe covers can also be donned if so required by a specific task.

10.4.2 For the procedures of disposable Personal Protection Equipment (PPE) wearing/removing, please refer to appendix 4 for the specific procedures.

10.4.3 Dinning Considerations

Cabin crew members should be divided into different groups while having simple meals in different hours of the day. To reduce the risk of exposure, others should refrain from walking around.

10.4.4 If any crew member shows symptoms while on duty, he/she shall immediately cease performing his/her duties as long as flight safety is not compromised and be handled following the procedures with respect to the handling of passengers with fever in Section 6. Handling of In-flight Medical Emergencies.

10.5 Safety Prevention and Control Measures for Passengers

10.5.1 Passengers shall select masks without breathing valves and wear them throughout the journey and shall not remove masks unless necessary.

10.5.2 Passengers shall reduce unnecessary movement in the cabin and shall not change seats unless in special circumstances.

10.5.3 Passengers shall use the toilet in an orderly manner following the instructions of the flight attendants, and close the toilet lid before flushing in order to avoid the potential risk of taking in particles, and clean and disinfect hands immediately after use.



10.5.4 Not eating or drinking at the same time with neighboring passengers to minimize the risk of droplet transmission, and cleaning and disinfecting hands before meals.

10.5.5 After touching the surfaces of objects in the cabin, especially high-touch surfaces such as seat handrails and bathroom door handles, passengers shall clean and disinfect hands immediately and avoiding contact with mouth, nose and eyes with hands not disinfected.

10.5.6 If having symptoms such as fever, fatigue, dry cough, sore throat, impairment of smell (taste) and diarrhea during the flight, passengers shall ask help from flight attendant immediately.

10.5.7 Passengers shall not discard used personal protective items (such as masks and disposable gloves), and shall place them in yellow medical waste bags.

10.6 In-flight Service Considerations

10.6.1 Flight attendants in different cabin areas shall be managed separately and provide separate in-flight services. The flight crew working area, passenger sitting area and quarantine area on board shall be served by different flight attendants. As a principle, flight attendants shall not be allowed to leave the area they serve, and passengers shall not move among different areas. In addition, flight attendants should avoid unprotected close contacts with passengers or other flight attendants.

10.6.2 Only pre-packaged food and bottled drinking water will be provided, which are placed in the back pocket of the front seat before boarding. Except for special needs, catering service will no longer be provided during the flight. No more blankets, pillows and other disposable items will be supplied. Dedicated waste bags are added in seat pocket to collect personal protective items.

10.6.3 Before take-off and during the flight, crew members shall, by broadcast, inform the passengers of in-flight preventative measures, including but not limited to what's included in Section 10.5 Safety Prevention and Control Measures for Passengers, and urge passengers to strictly implement such measures during the flight.

10.6.4 When dining during the flight, passengers shall be served separately by the flight attendants based on the odd and even seat numbers, so as to avoid neighboring passengers dining at the same time.

10.6.5 Flight attendants should make arrangement for passengers to use the lavatory in an orderly manner, to avoid passengers from crowding while queuing outside the lavatory.

10.6.6 Fresh air supply from aircraft air conditioning system should be maximized during flight to ensure efficient air circulation in the cabin.



10.6.7 Sterilized wipes should be provided for passengers on board and face masks and disposable medical rubber gloves should be provided for passengers with symptoms.

10.6.8 If the above prevention and control measures are strictly implemented, cabin passengers may not specifically be required sitting every other seat, and they can sit in such a way when the operator deems appropriate.

10.7 Handling of In-flight Medical Emergencies

10.7.1 If there are any suspicious passengers on board showing such symptoms as fever, fatigue, dry cough, sore throat, impairment of smell (taste) or diarrhea, an arrangement shall be made to sit them in the quarantine area.

10.7.2 Once the cabin is found to have been contaminated by blood, secretions, excreta, vomit and other liquids, it shall be disinfected instantly following the specific procedures in Appendix 2.

10.7.3 For other considerations, please refer to the relevant description in Section 6 Handling of In-flight Medical Emergencies.

10.8 Procedure for Crew Members Deplaning after Operation

10.8.1 After landing, the aircraft shall park at a remote stand (no boarding bridge docking allowed) or a parking space shall be set aside for the exclusive use by charter flights. A special lane shall be set aside for crew members, to avoid a mixed flow with passengers. Passengers shall disembark through the rear cabin door, while the crew shall disembark through the front cabin door.

10.8.2 After all passengers have deplaned; flight crew members shall open the cockpit door and have their protective equipment changed in the clean area before deplaning.

10.8.3 After all flight crew have deplaned, the cabin crew should enter into the buffer zone one after another to remove their protective clothing and other equipment, then enter into the clean area to put on new protective equipment before deplaning. Crew members should be picked up by special vehicle(s).

10.8.4 Crew members should clean and disinfect their hands before and after changing their protective equipment.

10.8.5 All the removed protective equipment of crew members shall be placed in special yellow medical waste bags and be centrally disposed of as medical waste.

10.9 Aircraft Disinfection



Terminal disinfection shall be performed after landing, by referring to the specific procedures as detailed in Appendix 3.

11 Aviation Staff Mental Health Management

Airlines should continuously pay attention to the mental health conditions of aviation staff, strengthen mental health care during quarantine, and adopt a standardized approach to mental health management, so as to ensure effective mental health support and assistance for aviation staff.

11.1 Work with Psychology Team to Better Apply Professional Skills

11.1.1 Use help from professional psychology teams. Employee Assistance Programs (EAP) should be utilized to the greatest extent to provide various professional psychological services including but not limited to psychological counseling, hotline service, topic-specific micro-class, online lecture, art therapy, emotions and sleep training workshop and group psychological mentoring, in order to effectively ease the negative emotions of crew, and enhance positive mental energy. Such activities shall be led by psychological professionals to ensure the activities are safe, non-judgmental and voluntarily-based.

11.1.2 Provide accessible mental assistance resource database. Such database shall include online mental health video lessons, emotion toolkit, and relaxation video and audio library, which could be accessed by crew on an on-demand basis. Mental assistance resources should be provided with emphasis on quality instead of quantity.

11.1.3 Create mental health files to implement dynamic management. Mental health files shall be created, to keep abreast of the mental health conditions of front-line aviation personnel. Duty scheduling for flights requiring quarantine shall be made after giving full consideration to crew members' psychological conditions, personality, family life pressures, social support system and other factors.

11.1.4 Develop mental crisis contingency plan. Manage crew members under quarantine differently based on which category they are in, using information collected through questionnaire survey, expert assessment, voluntary reporting, and visit and inspection. Special circumstances such as mental crisis should be immediately dealt with by a team of medical professionals specialized in psychological aid, and if necessary, transferred to medical institutions like mental health center. Attention should be paid to confidentiality and its exceptions during the whole process.

11.2 Better Understand Crew Members' Needs and Provide Concrete Support, with Priority on the Solution of Practical Problems

11.2.1 Provide practical support and help. Efforts shall be made to create a favorable environment for maintaining mental health at quarantine location, and under the premise



of not violating prevention and control policies, to properly improve the quarantine environment and organize outdoor activities within a designated area. Attention shall be paid to guarantee remuneration and benefits of aircrew during quarantine to show earnest care for them. Enhanced psychological support and empathy shall be provided for their families. Assistance shall be provided to solve practical difficulties their families are faced with, to mitigate their concerns.

11.2.2 Communicate and keep in touch with family and friends. Efforts shall be made to provide crew members with facilities and networks, making their life more convenient, and encourage them to communicate with their family and friends to alleviate the loneliness caused by quarantine. Assistance should be provided to establish a peer-to-peer support group among crew members, through which their feelings, difficulties and coping methods during quarantine can be communicated and shared on a regular basis to facilitate mutual support and encouragement.

11.2.3 Encourage quarantined air crew to explore healthy hobbies. Efforts shall be made to provide them with entertainment and exercise facilities such as musical instruments, cross stitch and fitness equipment to enrich their quarantine life; encourage the establishment of virtual communities for various online activities like book-reading, film appreciation, art exhibitions, fitness groups, and aerobics dancing, among others, so as to enrich their spiritual and cultural life.

11.3 Regulate Working Procedures and Methods of Management and Service Personnel

11.3.1 Regulate working procedures to improve the capability of staff to identify common psychological problems. Efforts should be made to collect information through multiple channels to timely identify high-risk personnel that needs psychological counseling and psychological crisis intervention. Be actively aware of emotional changes, sleep situation and behavior of aircrew; provide convenient channels for aircrew to report and seek help; set up a dedicated mental health follow-up team to check on quarantined personnel in terms of their adaptability to quarantine, emotional changes and interpersonal exchanges and observe for their emotional problems; build a third-party online platform to summarize and integrate resources.

11.3.2 Timely adjust mental health program according to the feedback of aircrew. Timely adjustment shall be made to the details of such a program based on airlines' realities and the feedback from aircrew collected during its implementation, so as to achieve science-based prevention and provide targeted services.

11.3.3 Establish a helper support system. Attention should also be paid to the staff providing psychological care to quarantined aircrew by monitoring their physical and mental status as helpers, carrying out regular relaxation activities and sharing and exchange meetings, and stepping up the establishment of a coordination and mutual assistance mechanism, so as to improve service efficiency and quality.



12. Proper Use of Personal Protective Equipment (PPE)

In order to provide guidance to front-line staff in civil aviation on how to correctly wear masks, caps, gloves, goggles and other protective equipment, and properly sanitize hands, and to prepare them with relevant epidemic prevention and control knowledge and techniques, our Office made a video, which can be downloaded from CAAC's website and <https://ams.caac.gov.cn>.

Attachment 1

Recommended Risk Levels and Scores for International/Regional Passenger Flights

Factors \ Scores	1	2	3	4	5	6
Prevalence rate at the point of origin (per million)	0-50	51-100	101-200	201-500	501-1000	> 1000
Passenger load factor (%)	≤50	51-74	≥75	—	—	—
Flight Duration (in hours)	< 4	4-8	> 8	—	—	—

Note:

1. Prevalence rate at the point of origin is the number of currently existing confirmed cases per million people.
2. The number of currently existing confirmed cases at the point of origin shall be that as defined by the country or region concerned (data source: WHO and the official website of each country or region).
3. Source for population reference data: World Population Website
4. Passenger load factor score shall be calculated by referring to the preset passenger load factor in Attachment 2, which is determined based on the epidemic situation at the points of origin.
5. The risk level of a transfer flight shall be the higher of the two segments. In identifying the risk level of a stop-over flight, the flight duration should be that of the whole journey.
6. Flight risk level will be updated on a daily basis.
7. In case of emergencies and special flights, risk level can be upgraded if appropriate.
8. For the same flight operated by a single airline on the same route, if a total of 5 confirmed and asymptomatic cases have been found in the recent 3 weeks after its entry (for an individual flight, data released by the National Health Commission for the 7 consecutive days after its entry shall prevail), such a flight shall be considered as a high risk flight.
9. Risk level is divided into high, medium and low based on the total score of all factors:
 low risk flight: total score of 3-6;
 medium risk flight: total score of 7-9;
 high risk flight: total score of 10-12.

Attachment 2

Recommended Preset Passenger Load Factor and Seat Reserve for International/Regional Passenger Flights

Prevalence Rate Score at the Point of Origin	1	2	3	4	5	6
Preset Passenger Load Factor	Not specified				≤75%	
Quarantine Area	The last three rows on the right side		The last three rows			

Note:

1. Prevalence rate score at the point of origin is based on the definition in the notes in Attachment 1.

Attachment 3

Recommended Risk Levels and Scores for International/Regional Cargo Flights

Scores	1	2	3	4
Factors				
Prevalence rate at the point of origin (per million)	0-100	101-500	501-1000	>1000
Temperature at the point of origin (C°)	≥15	<15	—	—
Temperature at destination (C°)	≥25	<25	—	—

Note:

1. The recommended scores apply to regular international/regional cargo flights. In case of an international/regional cargo flight transporting imported cold chain goods, it is directly rated as a high-risk international/regional cargo flight.
2. Prevalence rate at the point of origin is the number of currently existing confirmed cases per million people.
3. The number of currently existing confirmed cases at the point of origin shall be defined by country or region (data source: WHO and the official website of each country or region).
4. Temperature at the point of origin is set according to the average temperature of the day in the city where the airport of origin is located, and temperature of the day in the destination is set according to the average temperature in the city where the airport of destination is located.
5. Domestic transfer of international flights transporting imported cold chain goods shall be treated as international flights carrying cold chain goods.
6. Flight risk level will be updated on a daily basis.
7. In case of emergencies and special flights, risk level can be upgraded if appropriate.
8. Risk level can be divided into high, medium and low based on the total score of all factors:
low risk flight: total score of 3-4;
medium risk flight: total score of 5-6;
high risk flight: total score of 7-8.

Attachment 4

Recommendations of PPE Wearing for Various Personnel

Personnel Category	Flight Classification or Exposure Risk	Masks				Goggles/ Face Screen*	Disposable Protective Suit	Disposable Medical Rubber or Nitrile Gloves	Disposable Shoe/Boot Covers	Disposable Medical Cap
		Disposable Medical Mask	Medical Surgical Mask	KN95/ N95	Medical Protective Mask					
Flight Crew	Domestic	√								
	International/Regional(low/medium)		√					√		
	International/Regional(high)		√			√		√		
Cabin Crew	Domestic	√						○		
	International/Regional(low/medium)		√			○		√	○	
	International/Regional(high)			√		√	○	√	○	○
	Emergency Handling				√	√	√**	√***	√	√
Inspector	Domestic	√						○		
	International/Regional (non-passenger area)		√					√	○	
	International/Regional(passenger area)		√			√	√	√	√	√
Maintenance Staff	Replacing HEPA			√		√	√	√	√	√
Ground Handler △	Domestic	√						○		
	International/Regional(low/medium)		√			○		√		
	International/Regional(high)			√		√	○	√	○	○
Personnel Having Direct Contact with Cargo and Luggage	Domestic	√						√		
	International/Regional(low/medium)		√					√	○	
	International/Regional(high)			√		√	○	√	○	√



Personnel Category	Flight Classification or Exposure Risk	Masks				Goggles/ Face Screen*	Disposable Protective Suit	Disposable Medical Rubber or Nitrile Gloves	Disposable Shoe/Boot Covers	Disposable Medical Cap
		Disposable Medical Mask	Medical Surgical Mask	KN95/ N95	Medical Protective Mask					
Cleaning Staff	Domestic	√						√	○	○
	International/Regional(low/medium) ****		√			○		√	√	√
	International/Regional(high)			√		√	√	√	√	√
Disinfection Staff	—			√		√	○	√	√	√

△ For the PPEs ground handlers need before entering the passenger cabin, please refer to those for inspectors. For the PPEs required for the maintenance staff other than those who change HEPA, please refer to those for ground handlers.

* If there is a risk of coming into contact with a large amount of vomits and splashes from passengers, protective screen can be chosen in place of goggles; while in an airtight and small space where aerosol could be easily generated, it is recommended goggles be preferred. In general, the goggles and the protective screen are not used at the same time. If the crew members of an international/regional flight cannot disinfect the goggles in time during their staying abroad, goggles shall be provided for each flight segment.

** Under special circumstances, the protective apron in the epidemic prevention bag can be used instead, as a short-term emergency response.

*** Double layer disposable rubber gloves.

**** Cleaning staff are advised to wear long clothes (or sleeves) and trousers to prevent skin exposure, and recommended to wear goggles/protective screens when collecting medical wastes.

Note:

1. Passenger area refers to an area where passengers stay, including passenger cabin, the observation area designated at an airport, and arrival area.
2. ○ in the table means that protective equipment is optional and can be selected as appropriate based on the actual exposure risk and conditions. √ means that protective equipment is mandatory.

Attachment 5

Aircraft Cleaning

Area	Items to Be Cleaned	Stopover Duration		Post-flight
		< 60min	> 60min	
Flight Deck	Clean tray tables and cup holders	If necessary	√	√
	Clean lockers and racks	If necessary	√	√
	Wipe pilot seats	If necessary	√	√
	Clean floor/vacuum carpet	If necessary	If necessary	√
	Clean windscreen	If necessary	If necessary	√
	Clean doors and wall panels	If necessary	If necessary	√
	Empty ashtrays (if installed)	√	√	√
Passenger Cabin	Dispose of wastes in closets	√	√	√
	Dispose of litter and newspapers	√	√	√
	Dispose of wastes in seat pockets	√	√	√
	Clean tray tables	If necessary	If necessary	√
	Clean cabin crew tray tables	If necessary	If necessary	√
	Clean interphone mic	If necessary		√
	Clean cabin windows			√
	Vacuum cloth-covered seats		If necessary	√
	Wipe leather-covered seats		If necessary	√
	Clean outside surface of the overhead bin and its latch	If necessary	If necessary	√
	Dispose of wastes in overhead bins		If necessary	√
	Clean PVC floors			√
	Vacuum carpet		If necessary	√
	Replace pillows, headrest covers and blankets			√
	Clean seat-back screens and control panels			√
	Clean seats and armrests	If necessary	If necessary	√
	Remove and vacuum passenger seat cushions			√
	Remove carpet stains			√

	Clean seat rails, air outlets, ceiling, side wall panels, lockers, bulkheads and magazine racks			√
Galleys	Empty waste bins and waste bags	√	√	√
	Clean bulkheads, trolley brake blocks, ceiling and ventilation grille (air-conditioning outlets)	If necessary	If necessary	√
	Clean faucets, sink countertop	If necessary	√	√
	Clean retractable countertop	If necessary	√	√
	Clean ovens both inside and outside	If necessary	If necessary	√
	Clean galley trolleys	If necessary	√	√
	Clean PVC floors	If necessary	If necessary	√
Lavatories	Empty waste bins and waste bags	√	√	√
	Clean toilet	√	√	√
	Clean sink, faucet and countertop	√	√	√
	Clean mirrors	√	√	√
	Clean baby care table	√	√	√
	Clean wall panels, door surfaces both outside and inside, handrails and latches	√	√	√
	Clean PVC floors	√	√	√
	Replenish hand sanitizer	If necessary	√	√
	Replenish toiletry items	If necessary	√	√
Crew Rest Areas	Remove waste in lockers		√	√
	Remove litter/newspapers		√	√
	Remove bed sheets, and other items		√	√
	Clean pillows and blankets		√	√
	Clean control panels (reading lights and air conditioning) and interphone mic		√	√
	Vacuum carpet			If necessary
	Clean cabin crew seats		√	√
	Clean the surface of the inner layer of cabin window glass		√	√

Note: Dedicated rags and mops shall be used respectively for areas like aisle, toilet and gallery, and marked with different colors. Cleaning tools and articles shall not be used on a mixed basis among aircraft, and could only be used again after disinfection.

Appendix 1

Operating Procedures for Aircraft Preventative Disinfection

1. Operating Procedures for Preventative Disinfection in Cabin

1.1 Separate rags and mops should be used for aisle, lavatory and galley, and be marked with different colors. Designated personnel should be assigned to each of the aforementioned areas where conditions allow.

1.2 During disinfection, surfaces should be rubbed using rags soaked with disinfectant, and after a period of reaction, a regular cleaning process should be performed to avoid corrosive effect on cabin component due to long time exposure to the disinfectant.

1.3 Disinfectant should be sprayed onto cabin floor from the front to the back, followed by disinfection of key areas. Once cabin disinfection is finished, disinfectant should be sprayed onto cabin floor again from the back to the front.

1.4.1 Key areas should be disinfected in the following order:

1.4.1 Aisle: from outside to the inside and from upper places to lower places, overhead bins, reading lights, air outlets, side wall panels, windows, seats (tray tables, armrests, passenger control units, decorative panels), lockers/closets, bulkheads, magazine racks and cabin attendant seats.

1.4.2 Lavatory: from the heavily contaminated areas to lowly contaminated areas, disinfection in lavatory should be progressed as follows: toilet bowls, waste bins, sinks, wall panels, door surfaces, doorknobs, ashtrays (if installed), and latches.

1.4.3 Galley: from upper places to lower places and from outside to the inside, ovens, water boilers, coffee makers, galley itself, lockers/drawers, and waste bins.

1.5 Disinfectants

Aircraft cleaning and disinfectant products should be issued with an airworthiness approval to avoid damage to aircraft components. The following disinfectants are recommended to be used, at a concentration set out in product users' manual.

As far as preventative disinfection is concerned, it is recommended to use compound quaternary ammonium salt, double-chain quaternary ammonium salt, or chlorine-containing disinfectant. Effective concentration of chlorine should be within the range of 250mg/L-500mg/L, with a reaction time of 10 minutes.

2. Operating Procedures for Preventative Disinfection in Cargo Hold

2.1 Ordinary spray disinfection or aerosol spray disinfection shall be used. Spray disinfection is suitable for the disinfection of object surface, and aerosol spray disinfection is suitable for disinfection of air and object surface. While spray disinfection is performed, the surface of the cargo hold shall be all moist.



2.2 The method of thorough disinfection should be used. Disinfectants should be sprayed from the ceiling to the floor and from the left to the right. Disinfection workers should spray and move backward at the same time, disinfecting the cargo hold in the following sequence: door, wall and floor. Finally, the floor should be sprayed again.

2.3 It's recommended to use double-chain quaternary ammonium salt or compound quaternary ammonium salt as disinfectants, with the reaction time being the same as that of preventive disinfection in cabin. Attention should be paid to the selection of disinfectants that are not corrosive to the exposed carbon steel parts in the cabin. If it is impossible to determine whether the selected disinfectant is corrosive to carbon steel, the key parts made of carbon steel should be avoided in the disinfection operation.

2.4 After the disinfection is completed, cargo hold doors should be opened to remove the residual disinfectant particles floating in the air.



Appendix 2

Operating Procedures for Aircraft Concurrent Disinfection

Aircraft should be disinfected concurrently according to the following procedures in *Emergency Medical Equipment Installation and Training for Large Transport Aircraft* (AC-121-102R1 issued by CAAC):

1. Wear personal protection equipment.
2. Prepare disinfectant: Put one surface disinfection tablet into 250-500ml clean water to make a 1:500-1000 disinfectant.
3. Cover the respiratory secretions, blood, vomit, excretions and other contaminants evenly with absorbent disinfectant for 3-5 min to enable them to be solidified.
4. Shovel the coagulated contaminants with portable pickup shovels into biohazard waste bags.
5. Sterilize twice the contaminated area with pre-prepared disinfectant, make sure disinfectant stays on the contaminated surface for 3-5 minutes, then wash the area twice with clean water before drying the area with towels. Put those towels and other used disinfectants into a biohazard waste bag.
6. Disinfect hands before removing protections in the following order: take off protective suits (aprons), gloves, apply skin disinfection wipe for hand disinfection; then take off goggles, facial masks, and finally apply skin disinfection wipe to clean hands and other parts of the body that may have been exposed to contaminants.
7. Put all used protection gears and contaminated items into biohazard waste bags, seal the bags, and stick a “Biohazard Waste” label close to the seal.
8. Keep the sealed biohazard waste bags in a proper place temporarily to prevent them from being lost, damaged or contaminating meals on board.
9. Inform relevant ground handling agents at the destination to make preparation as required.

Appendix 3

Operating Procedures for Aircraft Terminal Disinfection

1. Aircraft Cabin Terminal Disinfection

1.1 After all occupants get off the aircraft, close cabin doors, and set the air conditioner to its maximum capacity to allow at least one complete cycle of ventilation in the cabin area.

1.2 Once the ventilation is over, the sitting area of the passengers with suspicious symptoms and lavatory should be disinfected before proceeding with the thorough terminal disinfection from periphery to center and from top to bottom.

1.3 After disinfection, the passenger cabin should be cleaned in accordance with the post-flight cleaning requirements.

1.4 For a stop-over flight carrying suspected cases, as a first move, its sitting areas should be disinfected during the stop-over, and after end of the flight, a terminal disinfection shall be conducted covering the whole cabin.

1.5 Air conditioning system shall be turned off during the disinfection and the cabin shall be fully ventilated after disinfection.

2. Aircraft Cargo Hold Terminal Disinfection

2.1 When animal remains or suspicious contaminants of a contagious nature are found in the cargo hold, the contaminated area in which the animal remains or the contaminants were should be disinfected and cleaned as the first step, followed by a thorough disinfection of the remaining areas of the cargo hold.

2.2 Thorough spray disinfection should be conducted. Disinfection should be performed from upwind to downwind and from top to bottom.

2.3 Before disinfecting the inside area of the cargo hold, spray around the door, close the door, enter into the cargo hold, and spray on the floor while moving forward till the whole floor is sprayed before disinfecting other areas of the cargo hold.

2.4 Disinfect the cargo hold by spraying disinfectant from left to right and vice versa, and then spray the cargo hold wall from top to bottom. The amount of disinfectant sprayed should not exceed the amount of the liquid that can be absorbed (the maximum amount of disinfectant the surface can absorb).

2.5 Upon completion, disinfect the cargo hold floor once again by spraying while moving backward. After returning to the ground along the ladder, disinfect the ladder by spraying.

2.6 Air conditioning system shall be turned off during the disinfection and the cargo hold shall be fully ventilated after disinfection.

3. Disinfectant

Aircraft cleaning and disinfection products should be issued with an airworthiness approval. During terminal disinfection, the passenger cabin should be wiped while the cargo hold should be wiped or sprayed with disinfectant. Liquid concentration should be in line with what's specified in product users' manual.

It is recommended to use chlorine-based disinfectant for terminal disinfection. The effective concentration of chlorine should be 1000mg/L, with a reaction for 30 minutes. Attention should be paid to the selection of disinfectants that are not corrosive to the exposed carbon steel parts in the cabin. If it is not possible to determine whether the selected disinfectant is corrosive to carbon steel, the key parts made of carbon steel should be avoided in the disinfection operation.

Appendix 4

Procedures Personal Protection Equipment (PPE) Wearing and Removing

Hands shall be cleaned and disinfected immediately before wearing and after removing Personal Protection Equipment (PPE). If possible, two supervisors should be arranged to oversee wearing and removing of protective clothing and implement the disinfection measures in the process of removing.

All PPEs used in the high-risk/medium risk flights and used for handling suspected cases shall be disposed of as infectious wastes, while reusable PPE shall be disinfected at a designated site.

1. Procedures for Wearing PPE

- 1.1 Clean and disinfect hands.
- 1.2 Wear face mask (an air tightness test is required for medical protective masks).
- 1.3 Wear disposable cap.
- 1.4 Wear inner gloves.
- 1.5 Wear one-piece protective clothing (put on protective clothing cap).
- 1.6 Wear goggles.
- 1.7 Wear outer gloves after checking air tightness, with the cuffs of the gloves covering the cuffs of the protective clothing.
- 1.8 Wear inner shoe covers.
- 1.9 Wear boot covers.
- 1.10 Clean and disinfect hands.

2. Procedures for Removing PPE

- 2.1 Leave the contaminated area to the buffer zone (must not contaminate others).
- 2.2 Clean and disinfect hands.
- 2.3 Remove goggles. Reusable goggles shall be put directly in disinfectant for disinfection, or placed in a double-layer yellow medical waste bag to be sent for disinfection at a designated site.
- 2.4 Clean and disinfect hands.
- 2.5 Remove protective clothing and boot covers, and outer gloves, turn them inside out, and put them in a yellow medical waste bag.
- 2.6 Clean and disinfect hands.
- 2.7 Remove inner shoe covers.
- 2.8 Remove inner gloves.
- 2.9 Clean and disinfect hands.
- 2.10 Put fingers into the cap, gently take it off, turn it inside out, and put it in a yellow medical waste bag.
- 2.11 Remove face mask and avoid touching face with hands.
- 2.12 Clean and disinfect hands.



Appendix 5

Letter of Personal Commitment on Taking Prevention and Control Measures while Flying International/Regional Flights

Name: _____ Flight No.: _____

When performing duty on international/regional flights, I am committed to strictly complying with the prevention and control requirements in the latest edition of *Preventing the Spread of Coronavirus Disease 2019 (COVID-19) Guideline for Airlines and Airports* (the “Guidelines”) and other regulatory requirements, and to fulfilling my prevention and control responsibilities as a crew member. I will understand and strictly implement various prevention and control measures to be adopted with respect to in-flight operation, activities abroad and quarantine upon return as provided for in the Guidelines, strengthen prevention and control awareness when disembarking or staying overnight overseas, seriously follow personal prevention and protection requirements, closely monitor health conditions and timely report in case of abnormal situations.

I will provide full cooperation if it’s required to go through, upon my return, an investigation by relevant departments on recent duty performance and other relevant matters, and will not conceal or falsify information.

In case of any violation of the above-mentioned commitment, I am willing to take all the consequences.

Signature:

Date: