



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

Sixth Edition

In order to do a good job in normalized disease prevention and control, strictly implement various measures that guard against “disease importation and domestic resurgence”, intensify measures against “virus spread via humans and cargo”, and effectively prevent the spread of the COVID-19 through air transport, the sixth edition of *Preventing the Spread of Coronavirus Disease 2019 (COVID-19) Guideline for Airlines* is developed.

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 normalized prevention and control management measures.

1.1.2 In case of regional epidemic resurgence at places of origin of domestic passenger flights, prevention and control measures of various flight risk levels should be adopted depending on the different levels of emergency events of public health response as determined by local governments or 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.

1.1.2.3 In other circumstances, measures in line with domestic normalized 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, as passenger flights will be classified into three levels, namely high, medium and low-risk flights, by a comprehensive rating based on 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.



1.2.2 Among indicators for risk assessment of international/regional passenger flights, epidemic situation at the points of origin and flight distance shall be rated by 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 3 for details of planned load factors.

1.2.3 International/regional cargo flights are subject classification by risk levels, which will be based on a comprehensive rating of indicators such as epidemic situation at the points of origin and type of cargo carried. See Attachment 4 for details of rating methods.

1.2.4 According to the risk levels of international/regional flights, differentiated prevention and control measures shall be adopted in terms of personal protection for crew members, in-flight service and aircraft environment hygiene management to optimize allocation of resources.

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

2. Normalized Prevention and Control Measures for Domestic Flights

2.1 Prevention and Control Measures for On-duty Crew

2.1.1 See Attachment 5 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 must be replaced immediately with new ones, and hands should be cleaned with sanitizer both before and after the replacement.

2.1.2.3 Disposed masks should be placed in a dedicated waste bag for centralized disposal after flight.

2.1.3 Considerations of In-flight Service:

2.1.3.1 Crew members 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 sanitizer. 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 When sneezing or coughing, crew members should try to lower the head or turn away from passengers and other crew members nearby, and cover the mouth and nose with tissue or flexed elbow.

2.1.3.4 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 Passengers who depart from a point of origin with existing local COVID-19 cases should present health code before boarding, and negative results of RT-PCR tests if necessary (validity for test results varies in accordance with 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 during the whole flight, and should not remove their masks if it is not necessary.

2.2.2.2 Passengers should clean and disinfect hands after touching surfaces onboard, before meal and after using lavatory, and avoid touching the noses, mouths and eyes if the hands are not sanitized.

2.2.2.3 Passengers should ask crew members for help once they find themselves with symptoms such as fever, dry cough or fatigue.

2.2.2.4 Disposed masks should not be randomly thrown away, instead they should be stored in a sealed waste bag.

2.2.2.5 When using in-flight lavatories, put down toilet lid before flushing to avoid risks of breathing in infectious particles.

2.3 Prevention and Control Measures for In-flight Service

2.3.1 In-flight announcements before takeoff and during flight should include matters regarding on-board prevention and control which require passenger attention, which should at least cover In-flight Prevention and Control Measures under section 2.2 Prevention and Control Measures for Air Travelers.

2.3.2 In-flight service should be simplified with meals being provided in the usual way but excluding raw animal products and seafood. Crew members 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 to keep social distance while queuing. Lavatories should be disinfected every 2 hours (or after being used 10 times).

2.4 Routine Cleaning and Preventative Disinfection of Aircraft

2.4.1 Wet process cleaning for aircraft should be applied during a stopover, a thorough cleaning upon the completion of the flight, and preventative disinfection at least once every month.

2.4.2 Please refer to Attachment 5 for personal protection standards for aircraft cleaning personnel and disinfection personnel. Disinfection personnel should have obtained relevant qualifications or accepted trainings before performing duty.

2.4.3 Please refer to Attachment 6 for detailed aircraft cleaning methods. Cleaning of lavatories and galleys should be prioritized if conditions are limited.

2.4.4 Please refer to Appendix 1 for preventative disinfection procedures and choice of disinfectants.

2.4.5 If an assessment of aircraft environment cleaning is necessary, it could be done by using fluorescence labeling to conduct quantitative analysis on cleaning of frequently-touched surfaces. Details can be found in *Regulation for Cleaning and Disinfection Management of Environmental Surface in Healthcare*.

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

3.1 Prevention and Control Measures for On-duty Crew

3.1.1 Personal Protection Equipment (PPE)



According to flight risk levels, crew members should follow different protection standards, see Attachment 5 for details. When wearing personal protection equipment, attention should be paid to the following:

3.1.1.1 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.

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

3.1.1.3 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).

3.1.1.4 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.

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

3.1.2 Prevention and Control Measures for In-flight Service

3.1.2.1 Flight attendants should be assigned as possible to only provide service in their designated areas to enable zoned management, and avoid cross-area service if not necessary. In the meantime, close contacts between flight attendants and passengers without effective protection should be avoided.

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

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

3.1.2.4 When sneezing or coughing, crew members should try to lower the head or turn away from passengers and other crew members nearby, and cover the mouth and nose with tissue or flexed elbow.



3.1.2.5 After touching or disposing wastes, crew members should wash hands with soap or hand sanitizer under running water then clean and disinfect hands.

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

3.1.2.7 Crew members should avoid two of them dining at the same time, and disinfect hands before meals.

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

3.1.3 Health Management of Crew Stationed Abroad

When stationed abroad, Crew members should be mindful of personal protection and pay close attention to their own health status, in particular, they should enhance awareness of prevention and control when stationed at high-risk countries/regions. Recommendations are as follows:

3.1.3.1 When stationed abroad, crew members should not visit crowded places and should reduce unnecessary outings. If they do need to go out, they should report to the Pilot-in-Command who should report on a daily basis the crew whereabouts to the relevant department of the airline.

3.1.3.2 The chief flight attendant should keep a daily record of the body temperature of the crew, keep a close watch on their health status, and timely report any abnormalities that may arise.

3.1.3.3 Self-preparation of meals are recommended if conditions allow, but if dining out is necessary, crew members should avoid collective dining and are encouraged to have their meal separately. For meals ordered through food delivery, disinfect the outer packing first before eating. If crew members are required to dine in a canteen, the distance between seats should be increased to the greatest extent possible (at least 1 meter apart), they should not sit next to each other or facing each other, nor be allowed to converse with each other.

3.1.3.4 While staying abroad, crew members should have themselves well protected except when being indoors alone. They should avoid going to places with poor ventilation for physical exercise. Also, they should wear masks and goggles while taking elevators (no direct contact with elevator buttons) or having contact with others, and keep a distance of over 1 meter whenever possible.

3.1.3.5 Their rooms should be ventilated frequently and the use of central air conditioning system should be avoided to the extent possible. Attention should be paid to maintaining clean and hygiene by removing garbage on a daily basis and leaving no kitchen waste



indoors, so as to avoid potential indoor air pollution and the spread of pathogenic microorganisms. After checking in, crew members should first of all disinfect the frequently touched surfaces (such as door handles, power switches and seat armrests).

3.1.3.6 After returning from public places, they should have their hands cleaned and disinfected in a timely manner to reduce the risk of spread of pathogenic microorganisms through indirect contact and digestive tract.

3.1.3.7 Airlines should communicate information on epidemic development by informing crew members of the changes in local epidemic development in a timely manner. They should provide crew members with a sufficient amount of protective equipment and materials.

3.1.3.8 Airlines should provide necessary support by providing food and daily necessities so as to cut the unnecessary outings of the crew.

3.2 Prevention and Control Measures for Air Travelers

3.2.1 Temperature Screening

3.2.1.1 Passenger should clean their hands and keep hygiene before boarding, and non-contact body temperature detection equipment (calibrated) should be used to measure the body temperatures of the pre-boarding passengers and observe any potential symptoms. If any suspicious passenger is found with such symptoms as fever ($\geq 37.3^{\circ}\text{C}$), fatigue and dry cough, crew members should timely report and handle, and cooperate in the takeover.

3.2.1.2 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 with such symptoms as fever ($\geq 37.3^{\circ}\text{C}$), fatigue and cough, 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.

3.2.2 In-flight Prevention and Control Measures

3.2.2.1 Passengers should wear masks with no valves during the whole flight, and should not remove their masks if not necessary.

3.2.2.2 Passengers must not switch seats, and reduce unnecessary movement in the cabin, and reduce use of the lavatory.

3.2.2.3 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.

3.2.2.4 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 the noses, mouths and eyes if their hands are not sanitized.

3.2.2.5 Passengers should ask crew members for help once they find themselves with symptoms such as fever, cough and nausea.

3.2.2.6 Passengers' disposed protection equipment (e.g. masks, disposable gloves, etc.) must not be randomly thrown away, instead they should be put in dedicated waste bags.

3.3 Prevention and Control Measures for In-flight Service

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. For such flights, planned passenger load factors will be used in flight risk level rating for classified management. See Attachment 3 for details.

3.3.2 Division of Areas

3.3.2.1 Flights should reserve seats 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 3 for reference.

3.3.2.2 Reserved seats in the quarantine area onboard should be used only by persons under quarantine.

3.3.2.3 If conditions allow, passengers should be arranged to sit in dispersion to avoid higher density of passengers in certain areas onboard.

3.3.2.4 Proper physical separation should be set up between crew rest area and passenger sitting area. 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. On high-risk flights, when conditions allow, two lavatories should be assigned for separate use by flight crew and cabin crew.

3.3.2.5 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

In-flight announcements before takeoff and during flight should include matters regarding on-board prevention and control which require passenger attention, which should at least cover 3.2.2 In-flight Prevention and Control Measures under section 3.2 Prevention and



Control Measures for Air Travelers.

3.3.4 Catering Service

3.3.4.1 Low-risk flights: normal meal service should be provided by serving hot meals, while cold dishes, cold meat and edible ice cubes should be cancelled. The 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, catering service should not be provided onboard. Passengers are encouraged to dine by odd and even line numbers separately in different batches.

3.3.5 Provision of Protection Equipment

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

3.3.5.2 Passengers sitting in quarantine area with symptoms should be provided with necessary medical protection 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 Waste collection bags for protection 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, it is recommended to provide exclusive protection kits 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 and to keep social distance while waiting.

3.3.6.2 According to different flight risk levels, lavatories should be disinfected at corresponding frequency, and hand cleaning and disinfection should be done upon completion of lavatory disinfection.

3.3.6.3 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.

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

3.4 Routine Cleaning and Preventative 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 6 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 5 for personal protection standards for aircraft cleaning personnel.

3.4.2 Preventative Disinfection of Aircraft

3.4.2.1 Preventative disinfection should be carried out upon the completion of the flight for at least once every week for low and medium-risk flights, or after every flight for high-risk flights.

3.4.2.2 Disinfection personnel should have obtained relevant qualifications or accepted trainings before performing duty. Please refer to Attachment 5 for personal protection standards for disinfection personnel.

3.4.2.3 Please refer to Appendix 1 for preventative disinfection procedures and choice of disinfectants.

3.4.2.4 If conditions allow, assessment on the effectiveness of flight preventative disinfection could be carried out on regular basis by using fluorescence labeling. Details can be found in *Regulation for Cleaning and Disinfection Management of Environmental Surface in Healthcare*.

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

4.1 Prevention and Control Measures for Crew Members

4.1.1 Personal Protection Equipment (PPE)

Regarding personal protection standards for crew members of international/regional cargo flights, see Attachment 5 for details. When wearing personal protection equipment, attention should be paid to the following:

4.1.1.1 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.

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

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

4.1.2 Prevention and Control Measures for Duty Performance

4.1.2.1 For cargo flights carrying cold-chain food and live animals, crew members must not touch the external package of cold-chain food and live animals during flight.

4.1.2.2 Before take-off and after landing, transfer between crew members and ground staff should better be done outside cabin doors and crew members should wear effective personal protection equipment to avoid close contact with ground staff; in case of handover of objects, hand cleaning and disinfection should be carefully conducted after contact.

4.1.2.3 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.

4.2 Prevention and Control Measures for Relevant Ground Staff

4.2.1 Personal Protection Equipment (PPE)

According to flight risk levels, relevant ground staff should follow different protection standards, see Attachment 5 for details. When wearing personal protection equipment, attention should be paid to the following:

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

4.2.1.2 Once dampened by secretions or contaminated by other contaminants, facial masks must be replaced immediately with new ones, and hands should be cleaned with



sanitizer both before and after the replacement.

4.2.1.3 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, and then exposed to close-range direct ultraviolet lighting for over 30 minutes in rooms with no person inside.

4.2.1.4 All disposable protective equipment, after their use, should be placed in dedicated waste bags, packed and sealed for concentrated disposal.

4.2.2 Prevention and Control Measures during Operation

4.2.2.1 All work related to loading, unloading and transfer of cold-chain food and live animals should be done by fixed operators, at a fixed operation venue and with dedicated production facilities, and involved ground staff should be arranged to rest at a fixed area to minimize cross-infection risks.

4.2.2.2 All ground staff with direct contact with cold-chain food and live animals should be 100% real-name registered, and should be subject to health monitoring and intensified body temperature screening, and accept RT- PCR tests.

4.2.2.3 Ground staff with direct contact with inbound goods, in particular cold-chain food and live animals, should be furnished with sufficient protection, and should try to avoid having frequent touches of goods surfaces with their body in order to reduce infection risks.

4.2.2.4 Ground staff with no responsibility related to loading, unloading or transfer of cold-chain food and goods, must not unpack cargo or open the packages of cold-chain food and have direct contact without permission.

4.3 Prevention and Control Measures for Cargo Transport

4.3.1 Cold-chain food and live animals transported on a cargo flight operated with wide-body aircraft are recommended to be stored in separate containers; and those with narrow-body aircraft are recommended to be stored in a separate cargo compartments, instead of being mixed with other cargo.

4.3.2 Temperature control should be guaranteed for cold-chain food and live animals during flight by setting the temperature of cargo compartment as per their temperature requirements.

4.3.3 For handling after landing, preparations should be made in advance according to flights and cargo information by adopting practices such as drawing up lines on the ground to separate operating procedures of cold-chain food and live animals from those of regular cargo, to ensure vehicle and personnel cross contacts.

4.3.4 Physical separation by means of railings and fence should be set up to separate unpacking and sorting area for cold-chain food and live animals from that for regular cargo.

4.3.5 For sorting and storage, cold-chain cargo and live animals should not be mixed but instead should be placed in separate warehouses in accordance with their characteristics or placed in accordance with storehouse assignment codes.

4.4 Routine Cleaning and Preventative Disinfection of Aircraft and Ground Equipment

4.4.1 For low-risk cargo flights, routine cleaning should be performed after the flights.

4.4.2 For medium-risk flights, disinfection should be performed at least once a week, and for high-risk flights, preventative disinfection should be performed every time after the flights. See Appendix 1 for operation procedures.

4.4.3 After cold-chain food and live animals are claimed or transferred, timely disinfection should be performed to the involved storage venues, operation facilities and vehicles, and it is recommended to set up cold-chain disinfection stations on the aprons.

4.5 Other Requirements

Prevention and control requirements in sections 4.2, 4.3 and 4.4 of this document should be applied for passenger flights that use belly hold to carry cargo.

5. Routine Aircraft Maintenance

5.1 While changing High Efficiency Particulate Air (HEPA) filters, maintenance personnel should be personally protected as stipulated in Attachment 5.

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. Used HEPA should be placed in a special plastic bag, disinfected with chlorine disinfectant and sealed.

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 disinfecting 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 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 5.

6.1.2 Passengers with suspicious symptoms should sit in the window seats on the right side of the pre-set 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. Except the need for safety operation, the flight attendant designated should reduce close contact with other crew members.

6.2 Aircraft Concurrent Disinfection

6.2.1 When contaminated by 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 contain in Appendix 2.

6.3 Aircraft Terminal Disinfection

6.3.1 If an aircraft is found to have carried passengers with suspicious symptoms, an immediate terminal disinfection of the passenger cabin should be conducted upon landing.

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

6.3.3 Operating procedures and disinfection protocols for terminal disinfection contain in Appendix 3.

7. Crew Members Quarantine and Management

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, fatigue and dry cough during off-duty hours, and has a history of epidemiology (such as a history of living, traveling and having contacts with locals in high-risk countries/regions), 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 or during the previous 2 days and who had close contact with him/her within the past 2 days should be instantly put under centralized quarantine, and where conditions do not allow, they can be put under home quarantine and medical observation.

7.1.2 If any crew member shows such symptoms as fever, fatigue and dry cough 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 and dry cough, the crew members who have provided in-flight services for the symptomatic passenger should be under centralized quarantine after the flight has landed, and where conditions do not allow, they can be under home quarantine and medical observation. 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.

7.1.5 For crew members flying international/regional cargo flights who are personally well protected while on duty in strict accordance with the prevention and control requirements in this *Guideline* and do not make an overnight stay abroad, they can be exempted from centralized or home quarantine and can continue to rostered on duty. For crew members who made an overnight stay abroad and were put in a closed-off management during their stay overseas, they can be exempted from centralized or home

quarantine and continue to be rostered on duty if their RT-PCR test results are negative upon their return. During this period, all crew members are required to monitor their health conditions and report promptly any abnormalities that may arise.

7.1.6 For cabin crew members flying international/regional passenger flights who do not make an overnight stay abroad, they can be put under centralized quarantine if their RT-PCR test results are negative upon their return, and where conditions do not allow, they can be put under home quarantine and medical observation. During their quarantine, they can continue to be rostered on duty (international/regional flights), and must not go out except for reporting for duty. They are required to be under centralized or home quarantine for 14 days following their performance of duty, and their quarantine can be lifted upon the expiration of the 14-day period in addition to negative results in RT-PCR re-tests. For crew members and maintenance staff on board who do not make an overnight stay abroad, they can be exempted from centralized or home quarantine if they are personally well protected throughout their duty in strict accordance with the prevention and control requirements in this *Guideline* and their RT-PCR test results are negative upon their return. However, they are required to have RT-PCR tests within 7 days and on the 14th day upon their return, monitor their health conditions and report promptly any abnormalities that may arise.

7.1.7 For crew members flying international/regional passenger flights who have made overnight stay abroad, they shall be put under centralized quarantine if their RT-PCR test results are negative upon their return. During the quarantine, they cannot report for duty, and shall receive RT-PCR tests on the 3rd day and 7th day upon return. If testing negative, they can be under home quarantine and medical observation, and can continue to be rostered on duty (international/regional flights). The quarantine can be lifted after 14 days of centralized and home quarantine.

7.1.8 For crew members flying inbound international/regional passenger flights which do not carry any passengers, they should be quarantined as per the quarantine requirements for crew members flying cargo flights in 7.1.5. Where an inbound cargo flight converted from passenger flight carries passengers due to special reasons, crew members should be quarantined and managed in the same manner as those flying passenger flights.

7.1.9 For crew members conducting special transport missions (charter flights) to/from the pandemic countries/regions, if they are personally well protected throughout their duty in strict accordance with the prevention and control requirements for charter flights in this *Guideline*, they can be quarantined as per the quarantine requirements in sections 7.1.5, 7.1.6 and 7.1.7 for flight crew flying similar international/regional flight, taking into account such aspects as the type of load carried and whether or not they have made overnight stay abroad.

7.2 Quarantine Period

7.2.1 The medical observation period refers to 14 days after the last contact of a quarantined crew member with confirmed, asymptomatic or suspected cases, or passengers



or other crew members with suspicious symptoms.

7.2.2 During this period, if the suspected cases or the individuals with suspicious symptoms have been cleared by the disease control department, the aforementioned crew member should be released from quarantine and medical observation.

7.3 Measures to Be Taken during Quarantine Period

7.3.1 Crew members under medical observation should report their body temperatures and health conditions to the relevant department of the airlines every morning and evening.

7.3.2 Crew members under centralized or home quarantine should stay in a relatively separate space which should be regularly cleaned and disinfected, and minimize their contact with others sharing the same apartment.

7.3.3 All crew members under centralized observation should be prohibited from contact with others under observation during the observation period. Strict access control should be placed at the observation site, except for the working staff. Where there is a justifiable need to take part in activities in a public area in the centralized observation site, they should wear medical surgical masks, keep a distance of more than 1 meter from each other, cut short their stay, and avoid touching the items and facilities in the public area to the greatest extent possible.

7.3.4 Crew members must not have outings during the observation period. If they have to go out, they should report to the relevant department of the airlines and receive a prior approval from the management staff at the medical observation site. Also, they should wear surgical masks and avoid crowded places.

7.3.5 The airline concerned should keep a record of the health conditions of the crew members under medical observation, as well as the number of times they went out.

7.3.6 Once a crew member shows any symptom during medical observation (such as fever, chills, dry cough, cough, expectoration, nasal congestion, runny nose, sore throat, headache, fatigue, muscle soreness, breathing difficulties, dyspnea, chest tightness, conjunctival hyperemia, nausea, vomiting, diarrhea and abdominal pain), the airlines concerned should report to the local public health department immediately and send the crew member to a designated medical care facility for diagnosis and treatment.

7.3.7 After the medical observation period, the crew member should be released from medical observation if showing no signs of symptoms.

8. 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).

8.1 Assessment of Passengers' Fitness to Fly

8.1.1 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.

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

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

8.2 Body Temperature Measuring

8.2.1 Pre-boarding Body Temperature Measuring

Prior to boarding, passengers should have their body temperature measured using non-contact infrared thermometer equipment (calibrated) and be examined for possible symptoms. If any suspicious passenger with symptoms such as fever (≥ 37.3 °C), fatigue or dry cough is found, he/she should be measured again immediately using a mercury thermometer. If confirmed as a passenger with fever, he/she shall not be transported by air for the time being.

8.2.2 In-flight Body Temperature Measuring

For flights with durations over 4 hours, the cabin crew should measure the body temperature of randomly selected passengers. If any suspicious passenger with symptoms such as fever (≥ 37.3 °C), fatigue or dry cough 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.

8.3 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):

8.3.1 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. No one wearing protective clothing shall be allowed to enter the clean area. The boarding gate connecting the clean area should be reserved for the exclusive use by crew members.

8.3.2 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.

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

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

8.3.5 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.

8.4 Prevention and Control Measures for Crew Members

8.4.1 Personal Protection Equipment (PPE)

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

8.4.1.2 Personal Protection Equipment (PPE) for flight crew members: medical protective masks and goggles. Disposable protective clothing and/or disposable shoe covers can also be donned if so required by a specific task.

8.4.2 Personal Protection Equipment (PPE) wearing/removing procedures

Please refer to appendix 4 for the specific procedures.

8.4.3 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.

8.5 Safety Prevention and Control Measures for Passengers

8.5.1 Wearing masks throughout the journey and never removing masks unless necessary.

8.5.2 Reducing unnecessary movement in the cabin during the flight.

8.5.3 Reducing the frequency of lavatory use, using the toilet in an orderly manner following the instructions of the flight attendants, and cleaning and disinfecting hands immediately after use.

8.5.4 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.

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

8.5.6 If having symptoms such as fever, cough and nausea during the flight, asking help from flight attendant immediately.

8.5.7 Not discarding used personal protective items (such as masks and disposable gloves), and placing them in a medical waste bag.

8.6 In-flight Service Considerations

8.6.1 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.

8.6.2 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. Waste collection bags are added in seat pocket to collect personal protective items.

8.6.3 Before take-off and during the flight, flight attendants shall inform the passengers of preventative health measures, including but not limited to what's included in section 8.5 Safety Prevention and Control Measures for Passengers, and urge passengers to strictly

implement such measures during the flight.

8.6.4 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.

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

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

8.6.7 Sterilized wipes should be provided for passengers on board and face masks should be provided for passengers with symptoms.

8.6.8 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.

8.7 Handling of In-flight Medical Emergencies

8.7.1 If there are any suspicious passengers on board showing such symptoms as fever, fatigue or dry cough, an arrangement shall be made to sit them in the quarantine area.

8.7.2 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.

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

8.8 Procedure for Crew Members Deplaning after Operation

8.8.1 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.

8.8.2 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.

8.8.3 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).

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

8.8.5 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.

8.9 Aircraft Disinfection

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

9. Aviation Staff Mental Health Management

To ensure flight operation, front-line aviation staff are still faced with risks of infection. In addition, that crew members are put under quarantine after operating international flights may somewhat affect their mental health. Therefore, airlines should keep a close eye on the mental health conditions of front-line staff, establish and improve a reliable psychological assistance program, and strengthen cooperation among managers, aviation staff, aviation medical professionals and psychological professionals, so as to ensure effective mental health support and assistance for front-line aviation staff.

9.1 Health and Mental Support

9.1.1 Efforts shall be made to have an understanding of the mental health conditions of front-line crew members. Duty scheduling for international flights shall be made after giving full consideration to crew members' psychological conditions, personality, current family life pressures, social support system and other circumstances.

Necessary measures shall be taken to improve the mental health and well-being of aviation staff and create an environment to achieve psycho-social security.

9.1.2 Effective mental health support and assistance shall be provided for aviation staff through cooperation among aeromedical professionals, other medical professionals, psychological professionals and aviation staff.

9.1.3 A Peer to Peer supportive group shall be promoted among aviation staff to facilitate mutual support and encouragement.

9.2 Measures for Aviation Staff Mental Health Care during Quarantine

9.2.1 Efforts shall be made to create a comfortable setting for crew members, enabling them to keep good mental health conditions during quarantine, provide them with facilities and networks, making their life more convenient, and encourage them to maintain a regular



working and resting schedules and communicate with their family and friends through telephone and network, so as to alleviate the loneliness triggered by quarantine.

9.2.2 Quarantined employees shall be provided with popular science materials on mental health, psychological self-assessment tools and psychological counseling services.

9.2.3 Designated personnel shall be assigned to establish friendly relations with quarantined personnel, maintain contact with them, and proactively keep an eye on their mood changes, life difficulties, sleep and diet, so as to find those with mental health risks in a time.

9.2.4 Assistance shall be provided to the quarantined crew members in creating mutual supportive groups, through which crew members can regularly communicate and share, their feelings and difficulties and their coping methods through video conferences during the quarantine period.

10. 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, our Office made a video, which can be downloaded from the website ams.caac.gov.cn under Prevention and Control of Public Health Emergency.

Attachment 1

Recommended Risk Levels and Scores for International/Regional Passenger Flights

Scores	1	2	3	4	5	6
Factors						
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 defined by country or region (data source: WHO and the official website of each country or region).
3. Passenger load factor score shall be calculated by referring to the preset passenger load factor in Attachment 3, which is determined based on the epidemic situation at the points of origin.
4. 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.
5. Flight risk level will be updated on a daily basis.
6. In case of emergencies and special flights, risk level can be upgraded if appropriate.
7. Risk level can be divided into high, medium and low based on the total score of all factors:
 - low risk flight: total score of 3-6;
 - medium risk flight: total score of 7-9;
 - high risk flight: total score of 10-12.

Attachment 2

Population of Some Countries/Regions in 2020 (in millions)

China	1400	Hong Kong (China)	8	Taiwan (China)	24
Algeria	42	Netherlands	17	Switzerland	8
United Arab Emirates	9	Canada	37	Saudi Arabia	33
Azerbaijan	9	Cambodia	16	Sri Lanka	21
Egypt	100	Qatar	3	Thailand	69
Ethiopia	106	Kuwait	4	Turkey	82
Austria	8	Kenya	51	Brunei	0.4
Australia	24	Laos	7	Uzbekistan	32
Pakistan	200	Rwanda	12	Spain	46
Belarus	9	Malaysia	32	Greece	11
Belgium	11	United States	326	Singapore	5
Poland	38	Mongolia	3	New Zealand	4
Denmark	5	Bangladesh	166	Iraq	39
Germany	82	Myanmar	53	Iran	82
Russia	144	South Africa	57	Israel	9
France	65	Nepal	29	Italy	60
Philippine	106	Portugal	10	Indonesia	266
Finland	5	Japan	127	United Kingdom	66
Republic of Korea	51	Sweden	10	Vietnam	96

Attachment 3

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 4

Recommended Risk Levels for International/Regional Cargo Flights

Type of Cargo Carried	Ordinary Cargo			Cold Chain Food/Live Animals
Prevalence Rate at the Point of Origin (Per Million)	0-100	101-1000	> 1000	—
Risk Level	Low	Medium	High	

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 defined by country or region (data source: WHO and the official website of each country or region).
3. The risk level of a transfer flight shall be the higher one of the two segments.
4. Domestic transfer flights of international flights transporting imported cold chain food shall be treated as international flights carrying cold chain food.

Attachment 5

Recommendations of PPE Wearing for Various Personnel

Personnel Category	Flight Classification or Exposure Risk	Masks				Goggles*	Disposable Protective Suit	Disposable Medical Rubber or Nitrile Gloves	Disposable Shoes/Shoe 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	Domestic	√						√		
	International/Regional(low/medium)		√					√	○	



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

* If there is a risk of coming into contact with a large amount of vomits and splashes from passengers, protective screen can be chosen instead of goggles.

In general, the goggles and the protective screen are not used at the same time.

** 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.

**** Under special circumstances, disposable quarantine clothing can be used in place of disposable protective suit.

***** Cleaning staff are advised to wear long clothes (or sleeves) and trousers on high-risk flights to prevent skin exposure.

Note:

1. Passenger area refers to an area where passengers stay, including passenger cabin, the observation area designated at an airport for possible ill passengers, 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 6

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		√	√

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 (refer to <http://www.fccc.org.cn/webs/xhg/list.aspx?classid=0202> for products list, same below) to avoid corrosion to aircraft components. Given the current epidemic development and information available, the following disinfectants are recommended to be used for wiping disinfection, 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, hydrogen peroxide or chlorine-containing disinfectant. For hydrogen peroxide, concentration should be no higher than 3%, with a reaction time of 20 minutes; 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, ceiling, wall and floor. Finally, the floor should be sprayed again.

2.3 It's recommended to use hydrogen peroxide or chlorine-based disinfectants, with the reaction time being the same as that of preventive disinfection in cabin.

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.

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 ceiling of the cargo hold by spraying disinfectant from left to right and vice versa, and then spray the cargo hold wall from top to bottom. While disinfecting the ceiling and the wall, 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.

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 sprayed with disinfectant. Liquid concentration should be in line with what's



specified in product users' manual.

It is recommended to use hydrogen peroxide or chlorine-containing disinfectant for terminal disinfection. The concentration of hydrogen peroxide should be the same as that used in preventive disinfection, and the effective concentration of chlorine should be 1000mg/L, for 30 minutes. Air conditioning system should be turned off during disinfection, and the passenger cabin or cargo hold should be fully ventilated after disinfection.

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). All disposable PPE removed shall be disposed of as infectious waste, while reusable PPE shall be disinfected at a designated site.

1. Procedures for Wearing PPE

1.1 in the case of non one-piece protective clothing

- A. Wear the face mask: hold the face mask with one hand and put it on the face appropriately; secure the mask straps at the right place with the other hand, press the nose clip to make it close to the bridge of the nose. (an air tightness test is required for medical protective masks).
- B. Wear goggles.
- C. Wear the cap: do not touch the face with hands while putting on the cap.
- D. Wear protective clothing.
- E. Wear disposable shoe covers.
- F. Check the gloves for air tightness before putting them on, with the cuffs of the gloves covering the cuffs of the protective clothing.

1.2 in the case of one-piece protective clothing

- A. Wear the disposable cap.
- B. Wear the face mask (an air tightness test is required for medical protective masks).
- C. Wear goggles.
- D. Wear one-piece protective clothing (put on protective clothing cap).
- E. Wear disposable shoe covers.
- F. Check the gloves for air tightness before putting them on, with the cuffs of the gloves covering the cuffs of the protective clothing.

2. Procedures for Removing PPE

2.1 in the case of non one-piece protective clothing

- A. Leave the contaminated area. Remove PPE in the buffer zone (no contamination of others allowed).
- B. Remove the gloves, turn them inside out, and put them in a yellow medical waste bag.
- C. Clean and disinfect hands.
- D. Remove the protective clothing and shoe covers, turn them inside out, and put them in a yellow medical waste bag.
- E. Clean and disinfect hands.
- F. Put fingers into the cap, gently take it off, turn it inside out, and put it in a yellow medical waste bag. Remove goggles. (reusable goggles shall be put directly in disinfectant for disinfection, or placed in a double-layer yellow medical waste bag for centralized disinfection at a designated site).

- G. Clean and disinfect hands.
- H. Remove the face mask. Start with the bottom tie, and then remove the top tie together with the face mask. Do not touch face with hands.
- I. Clean and disinfect hands.

2.2 in the case of one-piece protective clothing

- A. Leave the contaminated area. Remove PPE in the buffer zone (no contamination of others allowed).
- B. Remove the outer gloves, turn them inside out and put them in a yellow medical waste bag.
- C. Clean and disinfect hands.
- D. Remove the protective clothing and shoe covers, turn them inside out, and put them in a yellow medical waste bag.
- E. Clean and disinfect hands.
- F. Remove goggles. Remove the mask by starting with the bottom tie, and then removing the top tie together with the mask. Do not touch face with hands. Reusable goggles shall be directly put in disinfectant for disinfection, or placed in a double-layer yellow medical waste bag for disinfection at a designated site.
- G. Clean and disinfect hands.
- H. Put fingers into the cap, gently remove it, turn it inside out, and put it in a yellow medical waste bag.
- I. Clean and disinfect hands.
- J. Remove the inner gloves. Clean and disinfect hands.