International Civil Aviation Organization

Council Aviation Recovery Task Force (CART)

Take-off: Guidance for Air Travel
through the COVID-19 Public Health Crisis
Fourth Edition

Montréal, Canada, 5 October 2021

Table of Contents

1. Background

1.1   The impact of the coronavirus disease (COVID-19) pandemic on global air transport is without precedent. For the year 2020, global passenger numbers fell by 60 per cent or 2.7 billion, compared to 4.5 billion in 2019 (-74 per cent in international traffic and -50 per cent in domestic traffic). Airlines have seen a 66 per cent decline in revenue passenger kilometres (RPKs) and airport passenger numbers were down 57 per cent in 2020. The traffic decline was estimated to have resulted in revenue losses of USD 371 billion and USD 112 billion for airlines and airports, respectively. The World Tourism Organization (UNWTO) also estimated a loss of USD 1.3 trillion in export revenues from tourism. With the COVID-19 pandemic accelerating across the globe, headwinds to air transport remain particularly pronounced in 2021. The updated ICAO projections indicate that world scheduled passenger traffic for the first half of 2021 will be reduced by 59 to 66 per cent (1.3 to 1.4 billion), compared to 2019 levels.

2. Overview

2.1   This document provides a framework for addressing the impact of the current COVID-19 pandemic on the global aviation transportation system. The appendix to this document includes mitigation measures needed to reduce public health risk to passengers and aviation workers while strengthening confidence among the travelling public, aviation workers, the global supply chain and governments. This will assist in accelerating demand for essential and non-essential air travel impacted by COVID-19. Complementing this material, this document also points to guidance material developed by international industry organizations which aims to assist in mitigating the impact of COVID-19. All of this material is kept under regular review and revised as necessary to keep it up to date.

2.2   With help and guidance from the civil aviation stakeholder community, ICAO recommends a phased approach to enable the safe return to high-volume domestic and international air travel for passengers and cargo. The approach introduces a core set of measures to form a baseline aviation health safety protocol to protect passengers and aviation workers from COVID-19. These measures will enable the growth of global aviation as it recovers from the current pandemic. It is, however, important to recognize that each stage of that recovery will need a recalibration of these measures in support of the common objectives, which are to safely enable air travel, incorporate new public health measures into the aviation system, as well as support economic recovery and growth. Our work must recognize the need to reduce public health risk while being sensitive to what is operationally feasible for airlines, airports and other aviation interests. Our work also considers evolving protocols that are available to mitigate risk, including testing and vaccination. This is essential to facilitate the recovery.

3. Objectives

3.1   In the aftermath of the COVID-19 outbreak, States, including government regulators, airports, airlines and aircraft manufacturers among other stakeholders of the aviation ecosystem, developed, in coordination with public health authorities, a set of measures aimed at reducing health risks to air travellers, aviation workers and the general public. These measures, applicable to States, airport operators, airlines and others in the air transport industry, are designed to enable a consistent and predictable travel experience. They will also contribute to the efficient, safe, secure and sustainable transport by air of an increasing number of passengers and cargo and will minimize the risk of COVID-19 transmission between and among these groups and the general public. The implementation of these measures will facilitate and strengthen the global recovery from the COVID-19 pandemic.

4. Guiding considerations

4.1   In developing the measures contained in the appendix, the drafters were guided by the following considerations:

a) Remain focused on fundamentals: safety, security, and efficiency;

b) Promote public health and confidence among passengers, aviation workers, and the general public; and

c) Recognize aviation as a driver of economic recovery.

4.2   Based on these guiding considerations, the drafters further agreed that these measures should be:

- implemented in a multi-layer approach commensurate to the risk level that does not compromise aviation safety and security;

- able to capitalize on the sector's longstanding experience and apply the same principles used for safety and security risk management. This includes monitoring compliance, reviewing the effectiveness of measures at regular intervals, and adapting measures to changing needs as well as improved methods and technologies;

- able to minimize negative operational and efficiency impacts while strengthening and promoting public confidence and aviation public health;

- consistent and harmonized to the greatest extent appropriate, yet flexible enough to respond to regional or situational risk-assessment and risk-tolerance. The acceptance of equivalent measures based on shared principles and internationally recognized criteria will be a fundamental enabler to restore air services on a global level;

- supported by medical evidence and consistent with public health best practices;

- non-discriminatory, evidence-based and transparent;

- cost effective, proportionate and not undermining to the equal opportunity to compete;

- highly visible and communicated effectively and clearly to the aviation community as well as the general public; and

- consistent with State obligations under the *Convention on International Civil Aviation* (Chicago Convention) and other international treaties and agreements, as well as with standards and recommended practices applicable to aviation and public health.

5.   Risk-based stages for mitigation measures

5.1   Resumption of higher volumes of passenger air travel will be dependent on a number of factors, including foremost public health agency guidelines (driven by travel risk levels), governmental travel restrictions and requirements, passenger confidence, and air carrier and airport operational capacity.

5.2   A risk-based approach to facilitate international travel is consistent with WHO recommendations, and will enable recovery and the adjustment of mitigation measures based on risk, while recognizing that reverting to previous stages of recovery may be necessary. The goal is to maximize consistency and develop criteria for data reporting and the monitoring processes in support of evaluation and progression to the next stage(s). It is currently not feasible to provide any specificity of timing between these stages. At the time this document was published, most of commercial passenger aviation was in Stage 3 or 4.

- *Stage 0:* A situation with travel restrictions and only minimal movement of passengers between major domestic and international airports.

- *Stage 1:* Initial increase of passenger travel. This initial stage will coincide with relatively low passenger volumes, allowing airlines and airports to introduce aviation public health practices appropriate to the volume. There will be significant challenges as each stakeholder community adapts to both increased demand and the new operational challenges associated with risk mitigation. Health measures for travel required at airports will need to, at a minimum, match those from other local modes of transport and infrastructure.

- *Stage 2:* As health authorities review the applicability of measures based on recognized medical criteria, passenger volumes will continue to increase. Several measures that were required in Stages 0 and 1 may be lifted. Health measures for travel required at airports will need to match those from other local modes of transport and infrastructure.

- *Stage 3:* This stage may occur when the virus outbreak has been sufficiently contained in a critical mass of major destinations worldwide as determined by health authorities. The reduction of national health alert levels and associated loosening of travel restrictions will be key triggers. Risk mitigation measures will continue to be reduced, modified, or will be stopped in this stage. There may not be effective pharmaceutical interventions (e.g. therapies or vaccines) commonly available during Stage 3, but contact tracing and testing should be readily available. Until specific and effective pharmaceutical interventions are available, States may need to continue to loosen or reinstate public health and social measures throughout the pandemic.

- *Stage 4:* This stage begins when specific and effective pharmaceutical interventions are readily available in most countries. There may be a set of residual measures/mitigations that could be retained, although these should also undergo a periodic review process.

    Note.— There are no hard boundaries in these stages and the transition between them can be in either direction.

— — — — — — — —

Take-off: Guidance for Air Travel
through the COVID-19 Public Health Crisis

Appendix

1. PUBLIC HEALTH RISK MITIGATION MEASURES

1.1 **General**

1.1.1 These public health risk mitigation measures are divided into four sections. The first section contains generally applicable risk mitigation measures that apply in all phases of passenger and cargo air transport. The second section describes modules, attached to this appendix, that are specific to various aspects of commercial air transport. The third section provides links to material, developed by industry organizations, to assist other aviation sectors. The final section describes Public Health Corridors as one collaborative implementation strategy for States to minimise the transmission of COVID-19 by aviation.

1.1.2 In the implementation of these measures, care should be taken to follow all applicable laws, regulations, requirements, standards and guidance issued by relevant sub-national, national and international authorities. Nothing in these guidelines is intended to supersede or contradict such requirements. States should ensure their policies and measures are coordinated across all relevant sectors.

1.2 **Generally applicable risk mitigation measures**

1.2.1 None of the measures listed below should be considered as sole mitigation measures but should be incorporated into a multilayered risk mitigation framework.

- *Public education:* States and stakeholders must work together to distribute accurate information quickly. Information must be as clear, simple and consistent as possible across the entire passenger travel experience.

- *General hygiene:* Hand hygiene (washing hands with soap and water or, where this is not available, using alcohol-based hand-sanitising solution), respiratory etiquette (covering the mouth and nose when sneezing or coughing) and limiting direct contact with any surfaces at the airport and in the aircraft to only when absolutely necessary should be observed at all times unless otherwise advised by airport staff or aircrew members.

- *Physical distancing:* To the extent feasible, people should be able to maintain social distancing consistent with World Health Organization (WHO) or applicable State health guidelines. Where this distancing is not feasible (for example in aircraft cabins), adequate risk-based measures should be used including allowing limited baggage in the cabin, orderly boarding processes, disembarkation announcements and procedures, and limiting unnecessary movement of passengers and cabin crew on board.

- ***Face masks.*** Non-medical and medical masks[1] should be worn in line with WHO recommendations[2] and the applicable public health guidelines, including requirements of all States concerned (e.g., departure, transit, arrival). Airlines should advise passengers in advance on type of masks required by the relevant national public health authorities. Exempted groups (e.g. children up to 5 years[3] or passengers that cannot tolerate non-medical or medical masks such as individuals with physical disabilities, respiratory or other conditions) should be clearly specified. Passengers and personnel should always follow best practice about when and how to wear, remove, replace, and dispose of non-medical and medical masks in addition to proper hand hygiene following removal. Non-medical masks should be three layers, fully cover the nose and mouth and comply with WHO standards in terms of filtration and breathability. Masks should be worn during all phases of flight except while eating or drinking for brief periods of time. It should be replaced when it is no longer functional (e.g. becomes damp). Medical masks should be prioritized for use as personal protective equipment by healthcare workers, passengers at high risk of developing complications due to COVID-19, and persons suspected of being infected with COVID-19. Medical respirators (e.g. N95 or N99 or FFP2 or FFP3) should be reserved for healthcare workers. Masks with exhalation valves can transmit the virus and should not be used[4]. Refer to the attached posters for more guidance.

- ***Routine sanitation:*** High touch surfaces should be cleaned and disinfected as prescribed by public health authorities with frequency based on operational risk assessment.

- ***Health declarations:*** Where feasible and justified, health declaration forms or health attestations for COVID-19 should be used for all passengers, in line with the recommendations of relevant health authorities. Self-declarations in electronic format prior to airport arrival should also be encouraged to avoid crowding at airports. Refer to Public health corridor (PHC) Form 4.

- ***Health screening:*** States should ensure that health screening, at exit or entry, is conducted in accordance with the protocols of the relevant health authorities (e.g., departure, transit, arrival). Screening could consist of pre-flight and post-flight health declarations, non-invasive temperature measurement and/or visual observation conducted by employees trained to recognise signs suggestive of COVID-19 and in the use of these measures. Such screenings could identify ill persons that may require additional examination prior to working or flying. The availability of such information and insights can be leveraged in a risk-based approach, which will further contribute to reassure the travelling public. This screening may be conducted upon entry and/or exit. Temperature and other symptom-based screening could be a part of a multi-layered approach but should not be relied on as a stand-alone mitigation measure as it has limited effectiveness[5], in detecting COVID-19 cases. The virus can be associated with mild symptoms or asymptomatic infections and is transmitted from both pre-symptomatic or asymptomatic individuals.

  If a person shows signs and symptoms suggestive of COVID-19, or their declaration form shows a history of respiratory infection or/and exposure to high-risk contacts, appropriate follow up would be necessary, including a focused health assessment performed by healthcare personnel either in a dedicated interview space at an airport, or in an offsite pre-identified health care facility.

- ***Health monitoring and Contact Tracing:*** Methods for the collection of passenger and employee contact information valid for the destination should be in place, including through web applications. Such information is critical for health observation of incoming travellers, and would also be used to support public health authorities in contact tracing should this be warranted following the identification of a COVID-19 case. Updated contact information should be requested as part of the above mentioned

---

[1] Medical masks (also known as surgical masks) refer to professional medical masks worn by healthcare workers. Medical respirators are recommended for use by healthcare workers only.

[2] Mask use in the context of COVID-19; https://www.who.int/publications/i/item/advice-on-the-use-of-masks-in-the-community-during-home-care-and-in-healthcare-settings-in-the-context-of-the-novel-coronavirus-(2019-ncov)-outbreak

[3] https://www.icao.int/safety/CAPSCA/Pages/ICAO-Manuals.aspx

[4] www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks

[5] https://www.who.int/news-room/articles-detail/public-health-considerations-while-resuming-international-travel

declaration. Public Health Passenger Locator Form (PLF) should be distributed during flight and collected afterwards and handed over to relevant health authorities.[6]

1.2.2   The following considerations should be taken into account.

- **Passengers with reduced mobility**: The specific needs of passengers with reduced mobility should be considered when implementing these measures in order not to unnecessarily limit their access to air travel.

- **Risk management (including testing):** A range of different and varied mitigation measures are available to States to manage the risks posed to their populations and economies by COVID-19. States should assess their risks and determine mitigation measures appropriate to their situation. At the same time, States are encouraged to promote to the greatest extent possible, a harmonised and inclusive approach when determining such measures to facilitate the recovery of aviation. As new COVID-19 tests are developed and matured, and as testing capacity and availability improve, States may consider incorporating testing as part of an overall risk management strategy. While testing is not universally recommended by public health authorities and WHO advises against considering international travellers by default as suspected COVID-19 cases or as priority group for testing, robust testing strategies allow for early detection of potentially infectious travellers and have been implemented by some States as a routine health screening method for international travellers. ICAO has published a *Manual on COVID-19 Cross-Border Risk Management*[7] to help States assess and develop their overall risk management strategy, including the possible use of testing. The Manual will be regularly updated to reflect medical advances and increased understanding of the disease**.**

- **Promoting, maintaining and supporting mental well-being**: COVID-19 and its associated restrictions has had a significant impact on the mental health and well-being of both passengers and aviation workers, which could impact operational safety. To provide for a psycho-socially safe and supportive aviation environment, multi-sector multi-stakeholder collaboration is necessary to support mental well-being of aviation workers, and to assist passengers in their preparations for travel. Principles and guidance material to support mental well-being may be found on the Promoting, Maintaining and Supporting Mental Well-Being in Aviation during the COVID-19 Pandemic Electronic Bulletin (EB 2020/55).

- **Testing, recovery and vaccinations protocols**: As more States apply testing, proof of recovery or vaccination as part of their COVID-19 risk management strategy, they should consider the guidance outlined in the ICAO *Manual on COVID-19 Cross-Border Risk Management*, to develop protocols and standardize reporting of COVID-19 health information for the purposes of cross-border travel.

- **Certification of testing, recovery and vaccination**: States are encouraged to use documentary proofs of COVID-19 certificates that are accessible, effective, secure, trustworthy, verifiable, convenient to use, compliant with data protection legislation and interoperable. Proof of vaccination could be based upon the WHO International Certificate of Vaccination or Prophylaxis (ICVP) and should be issued in an internationally/ globally interoperable format aligned with the technical specifications and guidance outlined by WHO[8]. Existing solutions should be considered and could incorporate a Visible Digital Seal[9] (VDS-NC) or other interoperable formats from regional or global intergovernmental bodies, or internationally recognized organizations.

- **Verification of COVID-19 certificates**: States are encouraged to consider the guidance outlined in the ICAO Manual on COVID-19 Cross-Border Risk Management to facilitate travel if COVID-19 certificates are required. This includes making available government tools to submit the certificates, inform passengers and stakeholders of the requirements with regards to testing, vaccination and verification of these certificates and providing the necessary guidance, resources and support to assist stakeholders. States

---

6 State Letter 20/97

7 https://www.icao.int/safety/CAPSCA/Pages/ICAO-Manuals.aspx

8 WHO technical specifications are contained in the Digital Documentation of COVID-19 Certificates: Vaccination Status technical specifications and implementation guidance document

9 ICAO guidance on Visible Digital Seal for non-constrained environments (VDS-NC) is contained in the ICAO Machine Readable Travel Documents (MRTD) Technical Report VDS-NC and the ICAO Guidelines Visible Digital Seals ("VDS-NC") for Travel-Related Public Health Proofs.

should ensure these processes and/or procedures are in full compliance with applicable laws and regulation on data protection and privacy.

- **Vaccinated and recovered passengers.** Vaccination plays an important role in aviation recovery as the vaccinated proportion of the global population increases over time. While vaccination should not be a mandatory requirement when traveling internationally[10], States are encouraged to promote, to the greatest extent possible, a harmonised and inclusive approach to facilitate the international travel and entry of fully vaccinated or recovered passengers.

- **Considerations for testing and quarantine alleviations and exemptions:** States are encouraged to streamline and harmonise international travel requirements, where possible, in keeping with World Health Organisation technical considerations for implementing a risk-based approach to international travel, particularly by working towards exempting international travellers from testing and/or quarantine who:

  - are fully vaccinated, [meaning they have received all recommended primary doses of a vaccine against COVID-19 listed by WHO for emergency use or approved by a Stringent Regulatory Authority] at least two weeks prior to travelling; or

  - have proof of previous SARS-CoV-2 infection confirmed by rRT-PCR received within the past 6 months and are no longer infectious as per WHO's criteria for releasing COVID-19 patients from isolation.

- **Crew:** Crew should be subject to minimal requirements in line with the crew module and guidance in the *Manual on COVID-19 Cross-Border Risk Management* (Doc 10152).

- **Vaccination considerations for aviation workers:** The WHO Strategic Advisory Group of Experts on Immunization (SAGE) Prioritization Roadmap supports countries in planning and suggests public health strategies and targeting priority groups for different levels of vaccine availability and epidemiologic settings. As transportation workers, aviation workers are essential workers falling within Stage III of the WHO SAGE Prioritization Roadmap, whilst crew who work on aircraft that carry goods and no passengers, fall into Stage II, to be vaccinated when there is moderate vaccine availability and between 21% and 50% of the national population has been vaccinated.

1.3 Risk mitigation measures applicable in specific modules

A. Airport

The airport module contains specific guidance addressing elements for airport terminal building, cleaning, disinfecting, hygiene, physical distancing, staff protection, access, check-in area, security screening, airside areas, gate installations, passenger transfer, disembarking, baggage claim and arrivals areas.

B. Aircraft

The aircraft module contains specific guidance addressing boarding processes, seat assignment processes, baggage, interaction on board, environmental control systems, food and beverage service, lavatory access, crew protection, management of sick passengers or crew members, and cleaning and disinfection of the flight deck, cabin and cargo compartment.

C. Crew

In order to promote safe and sustainable international air travel, a closely coordinated international approach to the treatment of air crews, consistent with recognized public health standards, will be

---

[10] Interim position paper: considerations regarding proof of COVID-19 vaccination for international travellers (who.int)

essential to alleviate burdens on critical transportation workers. These currently include screening, quarantine requirements, and immigration restrictions that apply to other travellers. The crew module contains specific guidance addressing the contact of a crew member with a suspected or positive COVID-19 case, reporting for duty, dedicated end-to-end crew layover best practices, crew members experiencing COVID-19 symptoms during layover and positioning of crew.

D. Cargo

Cargo flight crews should apply the same health and safety considerations as passenger flight crews and are collectively included in the crew section of this document. Whilst air cargo consignments do not come into contact with the travelling public, the cargo acceptance and handover process does include interaction with non-airport employees. The cargo module addresses aviation public health including physical distancing, personal sanitation, protective barriers for points of transfer to the ramp and the loading and unloading, and other mitigation procedures.

1.4 Risk mitigation measures applicable to other aviation sectors

1.4.1 The Take-off Guidance Document was developed in collaboration with aviation industry organizations. Several of these organizations have developed additional guidance pertinent to the operations of their members. This material has been developed, and is being maintained, in line with the Key Principles set out in the CART Report and with the Guiding Considerations included in this Take-off Guidance Document.

1.4.2 The guidance material developed by CANSO to support the operational safety and efficiency of air traffic services provision may be found at [LINK[11]].

1.4.3 The guidance material developed by IBAC to support those business aviation operations that are not covered under the guidance for commercial air transportation may be found at [LINK[12]].

1.4.4 The guidance material developed by IAOPA to support general aviation, including flying schools, recreational and non-commercial flying, may be found at [LINK[13]].

1.5 Implementation through Public Health Corridors

1.5.1 In order to mitigate the spread of COVID-19 and safeguard the health and safety of aviation personnel and passengers, States are strongly encouraged to collaborate with each other to establish Public Health Corridors[14].

1.5.2 A public health corridor is formed when two or more States agree to recognise the public health mitigation measures each has implemented on one or more routes between their States. To enable such mutual recognition, and promote, as far as possible, a harmonized approach States are strongly encouraged to actively share information, including on PHC arrangements with other States by means of the PHC template on the CRRIC[15].

1.5.3 In forming a public health corridor, it is anticipated that participating States would apply a mutually supportive multi-layered risk-based approach to their implementation of public health mitigating risk measures. A combination of risk controls will provide better protection than the implementation of only one or two selected risk controls. By collaborating on the measures implemented, States can establish a risk mitigation strategy that most effectively aligns to their risk tolerance and to their health and safety management systems.

---

[11] https://canso.org/publication/covid-19-restart-and-recovery-guide/
[12] https://ibac.org/guidance-documents
[13] https://iaopa.aopa.org/-/media/Files/IAOPA/ICAO/ICAO-Take-off-GA-Module.pdf
[14] the Manual on COVID-19 Cross-Border Risk Management (Doc 10152) has been updated (Chapter 5)
[15] https://www.icao.int/covid/Pages/crric.aspx

1.5.4   To facilitate implementation of PHCs, the *Manual on COVID-19 Cross-Border Risk Management* (Doc 10152) has been updated (Chapter 5) and the ICAO i-PACK "Establishing a Public Health Corridor " is available to States. They include associated procedures and relevant tools that will be regularly updated in view of latest scientific developments. One of these tools is the recently developed PHC Application (PHC App)[16].

1.5.5   States are encouraged to establish key performance indicators to monitor the effectiveness of risk mitigation measures especially with respect to aviation recovery included in each module. These indicators should be developed from an aviation perspective and based on data released by public health authorities.

— — — — — — — —

[16]https://portal.icao.int/CRRIC/Pages/Public-Health-Corridors.aspx

2. MODULES

Module
Airports

Target audience

Airport operators, authorities, governments, airport staff.

Element
Terminal building

Brief description (Objective)

Guidance for the operation of terminal buildings needs to consider all aspects of operations, including who has access to the building, the upkeep of cleanliness and disinfection procedures in place within the terminal building, as well as health measures, the provision of first-aid/medical attention guidance, and the protocols for passengers and staff.

Considerations

Cleaning and disinfection

- A written plan for enhanced cleaning and disinfection should be agreed upon by the airport health authority, airport operators and service providers, according to the standard operating procedures outlined in the WHO *Guide to Hygiene and Sanitation in Aviation*. The plan needs to be updated in terms of process, schedule and products, when new information becomes available. All relevant personnel should be trained on increased disinfection requirements.

- Cleaning and disinfection of terminal infrastructure and all equipment should be done on a regular basis, in accordance with the aforementioned plan, and its frequency should be increased as needed based on traffic.

- Increase the availability of cleaning and disinfecting products approved by the applicable authorities.

- All cleaning and disinfection staff should be made aware of the cleaning and disinfection plan. It is necessary to ensure staff are utilizing products effectively, including the concentration, method and contact time of disinfectants, and addressing areas that are frequently touched and most likely to be contaminated, such as:
  - Airport information desks, passengers with reduced mobility (PRM) desks, check-in areas, immigration/customs areas, security screening areas, boarding areas, etc.
  - Escalators, elevators and lifts, handrails.
  - Washrooms, toilets and baby changing areas.
  - Luggage trolleys and collection points: cleaned with dispensable wet wipes or disinfectants, ensuring that disposal bins are made available.
  - Seats prior to security screening and in boarding/check-in areas.
  - Parking shuttle buses and airside buses.

- Increase the use of air conditioning and effective filtration systems to keep air clean, reduce re-circulation and increase the fresh-air ratio. Horizontal airflows should be limited.

Physical distancing

- Physical distancing is an effective measure to limit transmission of COVID-19 and should be part of a comprehensive package of measures to limit the spread of COVID-19. Physical distancing measures in airports should be:
    o At least consistent with what is applied for other transport modes, particularly in urban public transport used for access to and from airports.
    o Applied to the greatest extent possible throughout the airport.
    o Re-evaluated as epidemiological conditions permit.

- Physical distancing should target reaching at least one (1) metre between all individuals.

- Mutual recognition of equivalent physical distancing measures that mitigate the health risks at the point of departure and of arrival is encouraged.

Staff protection:

- The level of adequate protection for staff members should be evaluated on a case-by-case basis. Such protection may include personal protective equipment (PPE), health screening programmes for staff, scheduling (keeping groups of staff in steady teams and shifts), easy alcohol-based hand sanitizer access, specific staff process prior to and after completing a shift, and physical distancing plans for workstations, including the consideration of barriers.

- Employees should be equipped with PPE based on the risk of exposure (e.g. type of activity) and the transmission dynamics (e.g. droplet spread). PPE could include disposable gloves, masks, goggles or face shields, and gowns or aprons.

- For staff and teams working shifts, handovers should be conducted in a contact-free manner, i.e. via telephone, videoconference, electronic logs, or at least through physical distancing.

- Maintenance and repair work in public areas should be prioritized and their schedule adjusted or postponed if it is non-essential.

- Staff training should maximize the use of online training and virtual classrooms.

- The use of physical separators between selected staff and passengers is recommended in areas of repeated exchanges and transactions.

Airport terminal access

- According to each airport specificities and the national legislation in place, airport terminal access may be restricted to workers, passengers and persons accompanying passengers with disabilities, reduced mobility or unaccompanied minors in an initial phase, as long as it does not create crowds and queues, which would enhance risks of transmission as well as create a potential security vulnerability.

- Where health screening is required by applicable regulations, non-contact thermometers should be used in a designated area, under conditions which minimize the impact on operations.

Means for uniform implementation

- Collaborate with relevant authorities to ensure viewpoints are aligned.

- Collaborate with stakeholders in the community to ensure the timely and accurate dissemination of information to the travelling public.

- Ensure alignment of measures with other local modes of transport and other infrastructures.

- Use the Airport COVID-19 Cleaning / Disinfection Control Sheet (PHC Form 3) or a similar one where appropriate.

Element
General check-in area

Brief description (Objective)

The general check-in area of an airport is usually an area that sees high passenger traffic. In order to limit queues and crowds, passengers should complete as much of the check-in process as possible before arriving at the airport (i.e. passengers should be ready to fly). Self-service options should be made available and utilized as much as possible to limit contact at passenger touchpoints.

Considerations

- Implement measures that reduce congestion within these areas through advanced-planning and monitoring of passenger flows.

- Airports should provide signage, floor markings and announcements via public address (PA) systems to encourage physical distancing. In addition, support communication of key prevention messages from health authorities through audio messages and signs at key touchpoints of the passenger journey should be considered.

- Various self-service tools, such as boarding pass and baggage tag kiosks and baggage drops are of specific concern due to the high levels of physical contact that increase the probability of contamination. Usage of these devices should nonetheless be encouraged to reduce face-to-face interactions, but with careful attention to the management of passenger flow and keeping such devices adequately and constantly disinfected.

- Whenever possible, passengers should be encouraged to complete check-in processes prior to arriving at the airport. Online check-in, mobile boarding pass, off-airport baggage tagging, and other initiatives will contribute to the reduction in the amount of contact with airport staff and infrastructure. It is therefore recommended that States remove any regulatory obstacles to enabling such types of off-airport processes.

- At the traditional check-in counters, the use of retractable stanchions and floor signage in the queuing area to encourage physical distancing and the installation of transparent barriers in front of staff at counters should be considered.

- Self-sanitizing technology may also be considered for integration within kiosks with touch screens, to allow for the disinfection of the screens between each use.

- Whenever possible, airport and other stakeholders should use contactless processes and technology, including contactless biometrics such as facial or iris recognition. Such digital identification processes can be applied to self-service bag drops, various queue accesses, boarding gates and retail and duty-free outlets. This will eliminate or greatly reduce the need for contact with travel documents between staff and passengers. It may also accelerate various processes, resulting in enhanced health protection, reduced queuing and other process efficiencies.

Means for uniform implementation

- Collaborate with relevant authorities, airlines and other aviation stakeholders for cost-effective solutions that protect the public.

- Simplified formalities by enabling contactless processes.

- Greater use of standardized digital identity management solutions.

- Use the Airport COVID-19 Cleaning / Disinfection Control Sheet (PHC Form 3) or a similar one where appropriate.

Element	
	Security Screening

Brief description (Objective)

In response to the continuing pandemic, we can expect the need for physical distancing measures to be maintained at security screening checkpoints, including during the screening process. Measures to control access to the security screening checkpoint may need to be considered, as well as possible modifications to standard screening, in order to comply with new COVID-19 sanitary guidelines.

Security screening staff should be exempt from carrying out health and safety related screening to ensure they remain focused on security screening and related processes.

Considerations

Checkpoint access procedures

- Appropriate procedures should be implemented in coordination with relevant government departments in order to respond to any passengers showing signs of illness.

- Hand sanitizers and disinfection products should be provided prior to passengers and staff screening access points where possible.

- Screeners and passengers should maintain physical distancing to the extent possible or wear the appropriate PPE to mitigate the risk of exposure.

- Rearranging of security checkpoint accesses and layouts should be considered with the objective of reducing crowds and queues, to the extent possible, and maintaining physical distance while maintaining desirable throughput. This should include both divestment areas and those areas where passengers retrieve their screened cabin baggage.

- Floor-markings, tensile barriers, or other suitable means should be established within the queueing area to help secure the proper distancing recommended by the appropriate authorities.

- Procedures involving passengers presenting boarding passes and other travel documents to security personnel should be done, to the extent possible, while avoiding physical contact and in a way that minimizes face-to-face interaction. Should there be a need to identify a person wearing a non-medical or medical mask against a government-issued photo identification, the non-medical or medical mask could be removed temporarily if physical distancing measures are met. Appropriate signage should be deployed that clearly informs about subsequent steps of the process.

  Possible solutions include:
  - Directing passengers to use automatic boarding pass scanners at access points while maintaining appropriate physical distance.
  - Using mobile boarding pass scanners operated by the security staff.
  - Conducting a visual inspection of the boarding pass and relevant identification documentation, as needed by standard operating procedures.

- Automated gates and mobile scanners' reader surfaces should be disinfected with the same frequency as for any other high-touch surface.

- Passenger preparation officers should be deployed to ensure passengers are prepared for the divestment needs. Screeners should reinforce processes with passengers accessing divesting areas, such that they properly divest and are less likely to cause a false alarm (to minimize the use of manual searches).

- Enhanced cleaning and disinfecting should be routinely conducted of frequently touched/exposed surfaces and security screening equipment, including trays at the security checkpoint and baggage areas.

Passenger Screening

- Alcohol-based hand sanitizer should be distributed to staff for the cleaning and disinfection of their hands.

- Screeners should wear disposable gloves and masks when conducting manual searches on passengers. Alcohol-based hand sanitizers should be applied to the disposable gloves between each passenger screened. Disposable gloves should be changed when they are obviously soiled or torn.

- Employees should be advised to wash their hands after removing disposable gloves.

- Appropriate signage and information to passengers should be clearly displayed regarding newly implemented health requirements, as well as modified screening processes. Signage should highlight the need for passenger cooperation throughout the screening process.

- Whenever screening checkpoints are processing a high number of passengers, staff and crew screening should be performed in dedicated checkpoints and separately from passengers (as an additional preventive health measure), where possible.

- Appropriate alarm resolution arrangements should be put in place to mitigate the risk of queue build up and to maintain passenger throughput. These might include alarm resolution in a dedicated area separated from the flow of passengers which may need the positioning of additional security personnel.

- For WTMD alarm resolution, prioritize the use of hand-held metal detectors to identify the cause of alarm, followed by a targeted manual search where the alarm is.

- The use of explosive trace detection (ETD) equipment or explosives detection dogs (EDDs) should not be limited to alarm resolution. Random use of such explosive detection should be encouraged and leveraged where possible.

- Should there be a concern or an alarm that cannot be cleared solely by the primary screening equipment used, it should undergo a secondary screening using, in order of availability and subject to the nature of the screeners concern regarding the threat: EDD, ETD or manual search

- If the standard procedure allows for the reuse of ETD swabs, consideration should be given to discontinuing this practice to limit the possibility of spreading COVID-19.

Note.- The standard procedure may continue if, for example, it could be determined that the high temperature generated by the specific ETD in use will destroy the virus and if the process for handling and storage of swabs eliminates the possibility of contamination.

- If there is a need to conduct a manual search, screeners should adapt their methodology, if possible, to avoid being face-to-face with passengers or other persons being screened.

- Staff needed to interact with passengers in close proximity should use a non-medical or medical mask.

- Larger quantities of health-related liquids, aerosols and gels (LAGs) than prescribed by applicable security regulations, such as alcohol-based hand disinfectants, could be accepted if permitted by the appropriate authorities for aviation security and safety, taking into account the related regulations[17].

Means for uniform implementation

- Work with the regulator to consider alternatives to manual searches when conducting random searches. Such alternatives should only be implemented with the approval of the appropriate authority and based on a risk assessment.

- Work with relevant health authorities to ensure cleanliness and disinfection protocols are developed and implemented for items with a high likelihood of cross contamination (e.g., trays and divestment area).

- Use the *Airport COVID-19 Cleaning / Disinfection Control Sheet* (PHC Form 3) or a similar one where appropriate.

---

[17] https://www.icao.int/safety/COVID-19OPS/Pages/DangerousGoods.aspx

Element
Terminal Airside Area

Brief description (Objective)

The post-security terminal airside area is an area of high passenger traffic with few physical barriers and usually wide-open space. Consideration needs to be given to the temporary need for physical distancing, while also providing passengers with access to the retail, duty-free concessions and food and beverage offerings.

Gate areas, VIP lounges and other services in this area also see a high passenger volume. Various flow monitoring tools, physical installations, floor markings and adapted wayfinding need to be evaluated and deployed. Enhanced cleaning and hygiene measures may need to be scheduled and deployed to contribute to the limiting of the virus spread.

Considerations

- Encourage the use of self-service options, established in compliance with local health authority guidelines where passengers have limited contact with retail, food and beverage staff.

- An orderly boarding process will be necessary to reduce physical contact between passengers, especially once load-factors start increasing. Close cooperation between the airline, airport and government is vital. Airlines will need to revise their current boarding processes. Airports may need to assist in redesigning gate areas and governments may need to adapt applicable rules and regulations. The increased use of automation, such as self-scanning and biometrics should be facilitated.

- Especially during the early stages of the restart phase, carry-on baggage that would need to use the overhead bins should be limited to facilitate a smooth boarding process.

- Where possible, implementation of self-boarding technologies at the gate should be considered, including units using automatic doors, integrated boarding pass readers, LCD displays for passenger instructions and a device for printing seat assignment changes.

- Increase use of all other opportunities of self-scanning of documents when identification is needed.

- As a temporary measure, sitting areas (e.g., lounges, gates, restaurants) can open at limited capacity to accommodate the short-term need for physical distancing. As the recovery phase progresses and health requirements evolve, a return to regular capacity can be contemplated.

- Temporary closing or enhanced monitoring of certain service areas should be considered, based on the stage of mitigation measures, such as:
  - Self-service buffet food;
  - Café seating or multi-purpose seating;
  - Smoking areas; and
  - Children's play areas.

- Multiple alcohol-based hand sanitizer stations should be made available throughout the airport with adequate signage for passengers.

- Installation of touch-free equipment in toilet facilities such as the following should be considered:
  - Automated door systems;
  - Automatic toilet flushing system;
  - Taps and soap/hand sanitizer dispensers; and
  - Automated hand towel dispensers.

Means for uniform implementation

- Work with retail, food and beverage concessions to ensure the use of contactless technology payment options and self-serve options.

- Involve airline stakeholders in measures needed in airport lounges.

- Collaborate with relevant authorities, airlines and other aviation stakeholders for cost-effective solutions that protect the public.

- Use the *Airport COVID-19 Cleaning / Disinfection Control Sheet* (PHC Form 3) or a similar one where appropriate.

- To help shops, food and beverage outlets, and other in-airport suppliers to demonstrate that they follow the ICAO / CART guidelines, ACI has developed guidance that can be found at LINK[18].

---

[18] https://aci.aero/about-aci/priorities/health/aci-airport-health-accreditation-programme/

Element
Aircraft Terminal Gate Equipment

Brief description (Objective)

Many airports will have decommissioned certain assets in response to a lack of passenger traffic. Appropriate safety checks need to be conducted prior to the recovery of the airline traffic. Airports and airlines need to work together to ensure that accurate flight schedules are provided in order to meet this demand.

Considerations

- Electromechanical equipment such as boarding bridges, escalators and elevators must be inspected and periodically tested or started up. Inspections of such decommissioned equipment are essential before returning them to service for passenger use, based on manufacturers' recommendations and national building codes.

- Maintenance protocols need to be defined and deployed.

- Where conditioned air is needed, power should be maintained in all outdoor-based equipment such as jetways and pre-conditioned air units.

- Critical service providers and State authorities must be advised in advance on ramp-up schedules and plans by the airport operator to return temporarily closed facilities into service.

- Passenger bus capacity should be adapted to facilitate physical distancing during boarding and disembarking of passengers

Gate aircraft equipment and air filtering

- Where external pre-conditioned air (PCA) and fixed electrical ground power are available at the stand, an aircraft can switch off its auxiliary power unit (APU) after arrival. A PCA system takes in ambient air through an intake filter and provides conditioned air to the cabin.

- External air sources are not processed through the aircraft's high-efficiency particulate air (HEPA) filter. The aircraft APU should be permitted to be used at the gate to enable the aircraft's air conditioning system to be operated if equivalent air quality from PCA is not available.

Means for uniform implementation

- Ensure that airport capacity recommissioning is in step with airline schedules and phased in an appropriate manner.

Element
Disembarking and Arrivals

Brief description (Objective)

Border control and customs processes may need to be temporarily revised to increase physical distancing.

Where equipment already exists, the use of automated border control (ABC) equipment, digital passenger identification (biometrics) as well as technology (thermal screening) could serve as an additional health screening measure and could speed up the immigration process, with the objective of reducing queuing and minimizing contact between border officials and passengers.

Furthermore, some governments are requiring passengers to complete health declarations or health attestations before departure or on arrival as an initial assessment measure, which could be used to identify passengers that might need a secondary assessment.

Considerations

- Coordination with various border regulatory authorities (e.g., immigration, health) should be established for measures facilitating the clearance of entry/arrival, such as enabling contactless processes (e.g., relating to the reading of passport chips, facial recognition).

- Where declarations are needed on arrival, governments should consider electronic options (e.g., mobile applications and QR codes) to minimize human-to-human contact. Information could be sent in advance via government portals. For customs formalities, where possible, green/red lanes for self-declarations are recommended.

- The identity verification process should be automated with the use of biometric technology. Use of contactless technology, automated border control or eGates should be encouraged in order to enhance transaction time and limit interaction between passengers, officers and staff.

- If needed by relevant regulations, smart thermal cameras can be installed to scan the temperature of multiple passengers rapidly and unobtrusively.

- During initial stages of recovery and if needed, secondary health assessments could be set to maintain the main general flow of passengers.

- For flights arriving from higher-risk areas where there are cluster or community transmission, a particular section of the arrivals terminal could be utilized to increase physical distancing, and/or smart thermal cameras could be placed at appropriate locations to screen arriving passengers, in consultation with the public health authorities.

Health Declaration

- Some governments are implementing a health declaration solution that can be set-up on a web portal. For those States that already have a platform to collect visa and electronic travel authorization information they could be customized to accommodate the additional information needed.

Transfer

- Develop health screening arrangements whereby passengers and property are not rescreened at transfer locations based on mutual recognition of health screening measures between the States in the travel itinerary.

- Where transfer security screening is needed, it should follow appropriate sanitary requirements as previously described in the departure process.

Means for uniform implementation

- Collaborate with relevant authorities for cost-effective solutions that protect the public.

- Collaborate with relevant authorities and airlines to develop efficient and cost-effective solutions that protect the travelling public.

- Work with governments and authorities if a health declaration is to be implemented.

- Greater use of standardized digital identity management solutions.

- Use the *Airport COVID-19 Cleaning / Disinfection Control Sheet* (PHC Form 3) or a similar one where appropriate.

Element
Baggage Claim Area

Brief description (Objective)

The baggage claim area of an airport is susceptible to high passenger footfall and physical contact with luggage carts, baggage, washrooms and other facilities. Disinfection measures and increased frequency of cleaning should be implemented.

Considerations

- All efforts need to be made to provide a speedy baggage claim process and ensure that passengers are not made to wait for excessive amounts of time in the baggage claim area.

- Maximize use of available arrival baggage carousels to limit the gathering of passengers, and, where possible, use of dedicated baggage carousels for flights from high risk areas.

- Governments should ensure that the customs clearance process is as speedy as possible and that appropriate measures are taken in case of physical baggage inspections.

- Cleaning schedules should be aligned based on flight schedules to ensure a more frequent, in-depth disinfection of luggage carts, washrooms, elevator buttons, rails, etc.

- Self-service kiosks or online options for passengers needing to report lost or damaged luggage should be made available.

- Floor-markings, tensile barriers, or other suitable means should be established to help secure the proper distancing recommended by the appropriate authorities.

- Airline agents at lost luggage counters should be provided with physical barriers (transparent) when possible.

- The use of baggage delivery services, where the passenger's baggage can be delivered directly to their hotel or home, should be encouraged.

- Baggage tracking information should be shared with passengers so that they are able to make a baggage claim, in case of baggage mishandling, without waiting in the reclaim area.

- Protocols for cleaning and disinfection of the area should be established.

Means for uniform implementation

- Collaborate with relevant authorities and airlines for cost-effective solutions that protect the travelling public.

- Use the *Airport COVID-19 Cleaning / Disinfection Control Sheet* (PHC Form 3) or a similar one where appropriate.

Element
Exit the Landside Area

Brief description (Objective)

Protocols and precautions need to be in place for arriving passengers who are exiting the landside area. Consideration should be given to the greeter's area as well as the terminal's exit area. During initial restart phases, measures could include establishing a perimeter around the greeter's area or limiting access to the terminal building.

Considerations

Airport terminal access

- According to each airport's specificities and the national legislation in place, airport terminal access may be restricted to workers, passengers and persons accompanying passengers with disabilities, reduced mobility or unaccompanied minors in an initial phase, as long as it does not create crowds and queues which would then increase risks of transmission as well as create a potential security vulnerability.

- Multiple hand washing stations or hand sanitizers should be provided prior to the exit of the terminal building.

- Cleaning should be increased based on flight schedules to ensure a more frequent, in-depth disinfection of landside public areas, including seating areas, food and beverage and retail, handrails, washrooms, automated moving systems and buses.

Means for uniform implementation

- Collaborate with stakeholders in the community to ensure the timely, accurate dissemination of information to the travelling public.

- Use the *Airport COVID-19 Cleaning / Disinfection Control Sheet* (PHC Form 3) or a similar one where appropriate.

— — — — — — — —

Module
Aircraft

Target audience
Operators covered under Annex 6 – *Operation of Aircraft*, Part 1 – *International Commercial Air Transport – Aeroplanes*.

Element
Passenger and Crew – General

Brief description (Objective)
Provide a safe, sanitary operating environment for passengers and crew.

Considerations

- Adjust the boarding process. To the extent possible, and consistent with weight and balance considerations, the boarding and disembarking of passengers should be conducted in ways that reduce the likelihood of passengers passing in close proximity to each other.

- Seat assignment processes. When needed, seats should be assigned for adequate physical distancing between passengers. Airlines should allow for separated seating arrangements when occupancy allows it. Passengers should also be encouraged to stay in the assigned seat as much as possible.

- Limit interaction on board. Passengers should be encouraged to travel as lightly as possible with all luggage checked-in except small hand luggage that fit under the seat. Newspapers and magazines should be removed. The size and quantity of duty-free sales may also be temporarily limited.

- Limit or suspend food and beverage service. Food and beverage service should be limited or suspended on short-haul flights or should be considered to be dispensed in sealed, pre-packaged containers.

- The use of non-essential in-flight supplies, such as blankets and pillows, should be reduced to minimize the risk of cross infection.

- Restrict lavatory access. When possible, one lavatory should be designated for crew use only, provided sufficient lavatories remain available for passenger use without fostering congregation by passengers waiting to use a lavatory. Passengers should be informed that closing the lavatory lid before flushing is an effective method to mitigate the spreading of potentially infectious particles.

- Also, to the extent practicable depending on the aircraft, passengers should use a designated lavatory based on seat assignment to limit passenger movement in flight, which reduces exposure to other passengers.

- Crew protection measures. Sharing of safety equipment used for safety demonstrations should be prohibited. Crew members should be instructed to provide service only to specific sections of the cabin. Additional means of protection, for instance plastic curtains or Plexiglas panels during the boarding process (to be removed once boarding is completed), should be explored.

Note.- The following elements concerning disinfection contain the latest joint aircraft original equipment manufacturer (OEM) recommendations currently available. Users of this guidance should note that:

- *These recommendations are based on evolving circumstances and technology.*

- *While every attempt was made to provide common recommendations for disinfectants usage on aeroplanes, there are differences between the products manufactured by each aircraft OEM. It is strongly recommended that the operator is familiar with OEM guidance and consults the OEM for any questions specific to that airframe.*

- *The intent of these guidelines is to provide operators with recommendations that are aligned with the aircraft product. It is the responsibility of the operator to ensure that the disinfectants are used per the manufacturer's instructions, that proper protection is employed by those using the disinfectant and that their use is in alignment with health organizations' recommendations for efficacy and in accordance with the label instructions of the disinfectant.*

Element   Disinfection – Flight Deck
Brief description (Objective)   Provide a safe, sanitary operating environment for crew and ground staff.
Considerations   - Frequency of cleaning of the flight deck should account for the separation of the flight deck from the passenger compartment as well as for the frequency of crew transitions.   - The flight deck should be cleaned and disinfected at an appropriate frequency to accommodate safe operations for the crew.   - Disinfection methods should be adopted in consultation with the aircraft manufacturer and based on an appropriate safety risk assessment. Any advice from WHO should also be taken into account. The risk assessment should be informed by recommendations from airframe manufacturers and reference instructions from appropriate health organizations on application to be effective against viruses.   - Aircraft manufacturers recommend: - the use of a 70% aqueous solution of Isopropyl Alcohol (IPA) as a disinfectant for the flight deck touch surfaces with specific care to be taken for application on leather and other porous surfaces;   - periodic equipment inspection to detect long-term effects or damage given the lack of data on the long term effects of much more frequent application of disinfectants; and to contacting them for guidance on alternate disinfectants should damage be observed;   - considering enhanced inspection intervals or maintenance when employing aggressive or new disinfection techniques.   - following their instructions for ensuring proper application, ventilation and use of personal protection equipment; and   - consulting them for more detailed recommendations or additional disinfecting chemicals noting the discrepancy in approvals for disinfection products in different States and in their availability.

- Surfaces should be cleaned of dirt and debris per instructions from the aircraft.

- Application to surfaces should be with pre-moistened wipes or single use wetted cloth and use limited bottle sizes on board to minimize the risk of spilling the IPA solution. Do not spray IPA in the flight deck. Do not allow the liquid to pool or drip into the equipment.

- IPA is flammable, so precautions should be taken around potential sources of ignition.

- The operator should consider whether increased cleaning and disinfection may affect compliance with any applicable disinsection requirements established in accordance with ICAO Annex 9. Additional information can be obtained from the appropriate authority and technical guidance is available on the WHO publication on aircraft disinsection methods and procedures[19].

- UV irradiation does not replace normal manual cleaning procedures but could be used to supplement existing disinfection procedures. Where used, several important factors should be considered, including that UV disinfection is only effective if the virus is exposed to the UV light. Materials that are exposed to UV light may be damaged or discoloured. The Airframe OEM should be consulted to ensure that the device intended for use is compatible with aircraft materials.

- Given the increased likelihood that switch positions may be inadvertently changed during the cleaning or disinfection process, operators and flight crew should reinforce procedures to verify that all flight deck switches and controls are in the correct position prior to operation of the airplane.

- Some equipment on the flight deck may have additional disinfectant needs based on usage (e.g., oxygen masks) and procedures should be put in place accordingly.

.

Means for uniform implementation

- OEM communication through ICCAIA and OEM communication with operators.

- Use the A*ircraft COVID-19 Disinfection Control Sheet* (PHC Form 2) or a similar one when appropriate.

---

[19] https://www.who.int/publications/i/item/cleaning-and-disinfection-of-environmental-surfaces-inthe-context-of-covid-19

Element
Disinfection – Passenger Cabin

Brief description (Objective)

Provide a safe, sanitary operating environment for passengers, crew and ground staff.

Considerations

- The cabin should be cleaned and then disinfected at an appropriate frequency to accommodate safe operations for the passengers and crew. The frequency should account for the operation of the aircraft and the potential exposure of the cabin to an infected person.

- Disinfection methods should be adopted in consultation with the aircraft manufacturer and based on an appropriate safety risk assessment. Any advice from WHO should also be taken into account. The risk assessment should be informed by recommendations from airframe manufacturers and reference instructions from appropriate health organizations on application to be effective against viruses.

- Aircraft manufacturers recommend:
  - the use of a 70% aqueous solution of Isopropyl Alcohol (IPA) as a disinfectant for cabin high-touch surfaces with specific care to be taken for application on leather and other porous surfaces;
  - periodic equipment inspection to detect long-term effects or damage given the lack of data on the long term effects of much more frequent application of disinfectants; and to contacting them for guidance on alternate disinfectants should damage be observed;
  - following their instructions for ensuring proper application, ventilation and use of personal protection equipment;
  - considering enhanced inspection intervals or maintenance when employing aggressive or new disinfection techniques.
  - consulting them for more detailed recommendations or additional disinfecting chemicals noting the discrepancy in approvals for disinfection products in different States and in their availability.

- Surfaces should be cleaned of dirt and debris before disinfecting to maximize effectiveness.

- Application to surfaces should be with pre-moistened wipes or singe use wetted cloth and use limited bottle sizes on board to minimize the risk of spilling the IPA solution. Do not spray IPA in the cabin. Do not allow the liquid to pool or drip into equipment (e.g., in-flight entertainment electronic boxes).

- IPA is flammable, so precautions should be taken around potential sources of ignition.

- The operator should consider whether increased cleaning and disinfection may affect compliance with any applicable disinsection requirements established in accordance with ICAO Annex 9. Additional information can be obtained from the appropriate authority and technical guidance is available on the WHO publication on aircraft disinsection methods and procedures[20].

---

[20] https://www.who.int/publications/i/item/cleaning-and-disinfection-of-environmental-surfaces-inthe-context-of-covid-19

- UV irradiation does not replace normal manual cleaning procedures, but could be used to supplement existing disinfection procedures. Where used, several important factors should be considered, including that UV disinfection is only effective if the virus is exposed to the UV light. Materials that are exposed to UV light may be damaged or discoloured. The Airframe OEM should be consulted to ensure that the device intended for use is compatible with aircraft materials.

- Airlines may wish to review their operating procedures to minimize the number of personnel who need to contact high-touch surfaces such as access panels, door handles, switches, etc. For more detailed recommendations or additional disinfecting chemicals, reach out to the specific airframe manufacturer.

Means for uniform implementation

- OEM communication through ICCAIA and OEM communication with airlines.

- Use the *Aircraft COVID-19 Disinfection Control Sheet* (PHC Form 2) or a similar one when appropriate.

Element
Disinfection – Cargo compartment

Brief description (Objective)

Provide a safe, sanitary operating environment for crew and ground staff.

Considerations

- The cargo compartment touch surfaces should be cleaned and disinfected at an appropriate frequency to accommodate safe operations for the ground staff.

- Disinfection methods should be adopted in consultation with the aircraft manufacturer and based on an appropriate safety risk assessment. Any advice from WHO should also be taken into account. The risk assessment should be informed by recommendations from airframe manufacturers and reference instructions from appropriate health organizations on application to be effective against viruses.

- Aircraft manufacturers recommend:
  o the use of a 70% aqueous solution of Isopropyl Alcohol (IPA) as a disinfectant for the cargo compartment high-touch surfaces with specific care to be taken for application on leather and other porous surfaces;
  o periodic equipment inspection to detect long-term effects or damage given the lack of data on the long term effects of much more frequent application of disinfectants; and to contacting them for guidance on alternate disinfectants should damage be observed;
  o following their instructions for ensuring proper application, ventilation and use of personal protection equipment;
  o considering enhanced inspection intervals or maintenance when employing aggressive or new disinfection techniques.
  o consulting them for more detailed recommendations or additional disinfecting chemicals noting the discrepancy in approvals for disinfection products in different States and in their availability.

- Surfaces should be cleaned of dirt and debris before disinfecting to maximize effectiveness.

- Application to surfaces should be with pre-moistened wipes or single use wetted cloth and use limited bottle sizes on board to minimize the risk of spilling the IPA solution. Do not spray IPA in the Cargo Compartment. Do not allow the liquid to contact critical equipment (e.g., smoke detector, electronic door operation equipment and fire extinguishing discharge nozzle).

- IPA is flammable, so precautions should be taken around potential sources of ignition. Pay particular attention to hidden ignition sources as many aircraft have electronic boxes mounted in the cargo compartment.

- The operator should consider whether increased cleaning and disinfection may affect compliance with any applicable disinsection requirements established in accordance with ICAO Annex 9.

Additional information can be obtained from the appropriate authority and technical guidance is available on the WHO publication on aircraft disinsection methods and procedures[21].

- UV irradiation does not replace normal manual cleaning procedures but could be used to supplement existing disinfection procedures. Where used, several important factors should be considered, including that UV disinfection is only effective if the virus is exposed to the UV light. Materials that are exposed to UV light may be damaged or discoloured. The Airframe OEM should be consulted to ensure that the device intended for use is compatible with aircraft materials.

- Airlines may wish to review their operating procedures to minimize the number of personnel who need to contact high-touch surfaces such as access panels, door handles, switches, etc.

Means for uniform implementation

- OEM communication through ICCAIA and OEM communication with airlines.

- Use the *Aircraft COVID-19 Disinfection Control Sheet* (PHC Form 2) or a similar one when appropriate.

---

[21] https://www.who.int/publications/i/item/cleaning-and-disinfection-of-environmental-surfaces-inthe-context-of-covid-19

Element
Disinfection – Maintenance

Brief description (Objective)

Provide a safe, sanitary operating environment for passengers, crew and ground staff.

Considerations

- Airlines should be mindful of regular maintenance to both air systems and water systems to ensure they continue to protect the passenger and crew from viruses. Airlines should refer to the Airframe OEM for specific maintenance actions and intervals.

- Airlines should include access panels and other maintenance areas in their disinfection procedures to ensure a safe environment for the maintenance crews.

- Airlines may wish to review their operating procedures to minimize the number of personnel who need to be in contact with high-touch surfaces such as access panels, door handles, switches, etc.

- Airlines should establish maintenance procedures to be applied after disinfection procedures in order to check the Flight Deck, Passenger Cabin and Cargo Compartment for the correct positioning of control handle, circuit breakers and control panels' switches and knobs. Access panels and doors' closure also should be checked.

Means for uniform implementation

- OEM communication through ICCAIA and OEM communication with airlines.

- Use the *Aircraft COVID-19 Disinfection Control Sheet* (PHC Form 2) or a similar one when appropriate.

Element
Hazardous Waste

Brief description (Objective)
Hazardous Waste Management

Considerations
- Normal waste: Cabin wastes generated during flight operations where no passenger or crew member exhibits COVID-19 symptoms should be handled as normal waste, as recommended by WHO, and disposed of in line with the procedures for such waste applicable in the State of destination. *Note.- This includes non-medical and medical masks. Only non-medical and medical masks that have been used by a person suspected by the cabin crew of having COVID-19 or visibly soaked with blood or body fluids should be treated as biohazardous waste.*   - Biohazardous waste: If a passenger or crew member exhibits COVID-19 symptoms, all waste materials including partly-consumed meals, beverages and disposable items as well as used paper towels, tissues and PPE (including non-medical and medical masks), generated whilst treating or supporting the passenger or crew member should be treated as biohazardous waste.   - Biohazardous waste should be placed in the biohazard waste disposal bag in the aircraft's UPK or double bagged in standard plastic waste bag. In accordance with WHO and other relevant guidelines the spraying or sprinkling of disinfectant into the contents of the biohazardous waste bags is not necessary to reduce the spread of COVID-19. The action of spraying chemical disinfectant may result in virus particles of becoming airborne, presenting an additional risk to passengers and crew. The bags should be labelled and sealed. The airport authority and aircraft service providers must be informed of the presence of biohazardous waste.   - States should consider relieving the ban on single use plastics to permit their use by airports and civil aviation authorities for medical, hygiene and safety purposes during the pandemic.   - Airlines should prepare a written plan to share with stakeholders regarding their COVID-19 waste management procedures and communicate the information accordingly. Crew should be trained in the handling of biohazardous waste.   - Airports and/or the relevant waste handling stakeholders should identify potential options for the treatment and disposal of biohazardous cabin waste resulting from the pandemic and communicate the information accordingly. The relevant personnel should be trained in the handling of biohazardous waste.

Means for uniform implementation
OEM communication through ICCAIA and OEM communication with airlines.

Element
Air System Operations

Brief description (Objective)

The aircraft manufacturers recommend maximizing total cabin airflow and care should be taken to avoid blocking air vents (particularly along the floor). These are general recommendations for cabin air considerations and there may be exceptions for specific aircraft models. It is strongly recommended that operators consult with the aircraft OEM for questions specific to an aircraft type.

Considerations

Ground Operations (before chocks-off and after chocks-on)

- Operations without the air conditioning packs or external pre-conditioned air (PCA) source should be avoided. External air sources are not processed through a high-efficiency particulate air (HEPA) filter. Use of the aircraft APU should be permitted at the gate to enable the aircraft's air conditioning system to be operated, if equivalent filtration from PCA is not available.

- If the aircraft has an air recirculation system, but does not have HEPA filters installed, reference should be made to OEM published documents or the OEM should be contacted to determine the recirculation system setting.

- It is recommended that fresh air and recirculation systems be operated to exchange the volume of cabin air before boarding considering the following:
  - For aircraft with air conditioning, run the air conditioning packs (with bleed air provided by APU or engines) or supply air via external PCA source at least 10 minutes prior to the boarding process, throughout boarding and during disembarkation.
  - For aircraft with HEPA filters, run the recirculation system to maximize flow through the filters.
  - For aircraft without an air conditioning system, keep aircraft doors open during turnaround time to facilitate cabin air exchange (passengers' door, service door and cargo door).

Flight Operations

- Operate environmental control systems with all Packs in AUTO and recirculation fans on.
  - Valid only if HEPA recirculation air filters are confirmed to be installed.

- If non-HEPA filters are installed, contact the aircraft OEM for recommendations on recirculation settings.

- If the aircraft in-flight operating procedure calls for packs to be off for take-off, the packs should be switched back on as soon as thrust performance allows.

Minimum Equipment List (MEL) Dispatch:

- Fully operational air conditioning packs and recirculation fans provide the best overall cabin ventilation performance. It is recommended to minimize dispatch with packs inoperative. It is recommended to minimize dispatch with recirculation fans inoperative for aircraft equipped with HEPA filter.

- Some aircraft have better airflow performance with all outflow valves operational. The OEM should be contacted about ventilation performance of the aircraft with outflow valves inoperative and the limitations associated with the dispatch in this situation.

High Flow (max Bleed) Switch:

- If the aircraft has an option for high flow operation, contact the OEM for setting recommendations.

  For example:

  Boeing recommends that airlines select High Flow Mode for 747-8, MD-80 and MD-90 aircraft, as this will maximize total ventilation rate in the cabin.

  Note 1.- This will increase fuel burn. However, for the 747-400 and 737, High Flow Mode should NOT be selected as this does not result in an increase in total ventilation rate. For all models, recirculation fans should remain on (when HEPA filters are installed).

  Note 2.- Sick passenger positioning guidance is contained in Cabin Crew element of the Crew module.

Filter Maintenance:

- Follow normal maintenance procedures as specified by the OEM. Take note of special protection and handling of filters when changing them.

- Contact OEM or refer to OEM published document to check if an additional sanitization procedure and/or personnel health protection is needed to avoid microbiological contamination in the filter replacement area.

Means for uniform implementation

- OEM communication through International Coordinating Council of Aerospace Industries Associations (ICCAIA) and OEM communication with airlines.

- Use the *Aircraft COVID-19 Disinfection Control Sheet* (PHC Form 2) or a similar one when appropriate.

— — — — — — — —

Module
Crew

Target audience
All operations covered under Annex 6 – *Operation of Aircraft*, Part 1 – *International Commercial Air Transport - Aeroplanes*, Civil Aviation Authorities and public health agencies.

Element
Crew Members

Brief description (Objective)
Provide harmonised health protection and sanitation considerations applicable to crew members that can be implemented globally.

Considerations

General

- Unless specified as flight crew or cabin crew, the term "crew" refers to all crew required on board for the air operator to support the flight, including those that maybe required to position before or after a duty. This element applies to all crew.

Facilitation

- Crew members operating passenger aircraft with cargo only, for example, should ensure that the correct notification has been sent to all agencies, to ensure that there is no confusion, or that crew members carried on board such as loadmasters, engineers, and cabin crew are correctly recognised and designated on the crew manifest.

- Flight crew travel, including travel between States for training and medical certification purposes, is essential in re-establishing operations as alleviations to medical certification, training and checking requirements expire. Noting that many States do not have direct access to training facilities such as flight simulation training devices, it is essential to consider flight crew as 'essential workers' to benefit from PHC initiatives when accessing such facilities or being required to undergo medical examinations in other States. Further details can be found in ICAO State letter AN 5/28 -20/97.

- States should require the airlines on their register to establish a coherent, effective and verifiable health assurance programme for their staff that would enable the implementation of measures that facilitate the continued operation of aircraft, such that:

  o Quarantine measures are not imposed on crew who need to layover, or rest, for the purposes of complying with flight time limitation (FTL) rest requirements.
  o Crews are not subject to screening or restrictions applicable to other travellers.
  o Health screening methods for crew members are as non-invasive as possible.

Health monitoring

- Crew members should:

    - participate in their national vaccination programmes recognising that vaccination offers personal protection from infection and can assist in recovery of global connectivity;

    - monitor themselves for fever or chills, cough, shortness of breath or difficulty breathing, loss of taste, or other symptoms of COVID-19 according to WHO guidance. The WHO cut off point for fever is 38^0C or higher;

    - take their temperature at least twice per day during duty periods and at any time they feel unwell; and

    - stay at home or in their hotel room, notify their employers' occupational health programme, and not report for work if they develop a fever, shortness of breath, or other symptoms of COVID-19. They should not return to work until cleared to do so by the employers' occupational health programme and public health officials.

Examples of crew exposure concerns, include the following:

- Are within a mandated period of quarantine related to previous travel and/or duty.

- A passenger testing positive for Covid-19 regardless of symptoms.

- Know that they have been exposed to a person showing symptoms of COVID-19.

- Are experiencing any symptoms of COVID-19.

- Have recovered from COVID-19 symptoms but have not been assessed by the employers' occupational health program and public health authority.

During Flight:

- If a crew member develops symptoms during flight, the crew member should stop working as soon as practical, put on a medical mask, notify the pilot in charge, and maintain the recommended physical distance from others, when possible to do so. Upon landing, individuals should follow up with airline medical and public health officials.

- Guidelines for managing a passenger developing symptoms during flight are set out in the Cabin Crew module.

Health protection

- To protect the health of crew and others, including co-workers, crew members should:

    o Maintain recommended physical distance from others where possible, when working on the aircraft e.g., while seated on the jump seat(s) during take-off or landing, during ground transportation and while in public places.

    o Wash their hands regularly. If hands are not visibly dirty, the preferred method is using an alcohol-based hand rub for 20−30 seconds using the appropriate technique. When hands are visibly dirty, they should be washed with soap and water for 40−60 seconds using the appropriate technique.

o Be reminded to, along with frequent hand washing/sanitization, avoid touching their face including while wearing disposable gloves.

o Wear a non-medical or medical mask while around other people, especially in situations where the recommended physical distance from others cannot be maintained.

o Non-medical, medical masks and disposable gloves should not impact the ability to carry out normal, abnormal and emergency safety procedures, such as the donning of oxygen masks, carrying out firefighting procedures etc.

Note - A non-medical mask should not replace the use of medical masks or other PPE provided in the universal precaution kit (UPK) when interacting with a sick traveller on board an aircraft.

o Inspect the integrity of the UPKs before each flight. Sealed kits need not be opened as it can be assumed that the contents will be as labelled. Crew members should follow existing air carrier policy and procedures regarding the use of PPE in the UPKs if needed to provide care to a sick passenger on board.

o Follow the guidance and precautions of the State and relevant health authorities related to COVID-19.

o Participate in their national vaccination programmes recognising that vaccination offers personal protection from infection and can assist in recovery of global connectivity

Additionally, airlines should:

- Provide sufficient quantities of cleaning and disinfectant products (e.g. disinfectant wipes) that are effective against COVID-19 for use during flight.

- Consider providing non-medical or medical masks to crew members for routine use when on duty, if these do not interfere with PPE, while carrying out job tasks and when it is difficult to maintain the recommended physical distance from co-workers or passengers.

-

Use of lavatories

- Ideally, one or more lavatories should be reserved for crew use, in order to limit the potential for infection from passengers.

Crew rest compartments

- To minimize any possibility of cross infection, pillows, cushions, sheets, blankets or duvets, where provided, should not be used by multiple persons unless coverings are disinfected.

- Some airlines issue each crew member with their own provisions and the cabin crew members are responsible for ensuring that they are removed and bagged after use.

- Other airlines provide bulk loading for crew rest area bedding items. Where this is the case, crew members should install their own bedding items before their rest period and remove them hygienically afterwards.

Training devices

- The same health protection and monitoring measures that apply to flight crew operating aircraft should be applied to the use of flight simulators and other training devices.

- The frequency of routine cleaning of flight simulators and training devices and other training aids, or equipment used during training (including oxygen masks) should be reviewed regularly against the risks and adjusted accordingly'. Cleaning products used should be COVID-19 disinfectants that are compatible with the materials being cleaned.

Means for uniform implementation

- Ensure that these considerations are fully supported by:

    o The applicable non-governmental agencies
    o Public health, immigration and customs agencies
    o Civil aviation authorities.

- A high degree of collaboration between airport operators and their associated stakeholder community.

- Associated policy, procedures and training are developed to reinforce the importance of these considerations.

- Use the C*rew COVID-19 Status Card* (PHC Form 1) or a similar one when appropriate.

Element
Flight Crew

Brief description (Objective)

Provide harmonised health protection and sanitation considerations applicable to Flight Crew which can be implemented globally.

Considerations

- Access to the flight deck should be limited to the greatest extent possible.

- Flight crew members should only leave the flight deck for short physiological breaks and scheduled rest.

- In the case of flight crew at controls displaying symptoms, flight crew should don medical masks and the operator should consider whether removal from the flight deck is an appropriate mitigation within their risk assessment and refer to established procedures to identify whether a diversion is needed.

- Non-medical or medical masks, as defined by the airline, should be worn by flight crew and by others who enter the cockpit. The airline or operating Flight Crew will complete an appropriate risk assessment before determining if masks will be removed after the flight deck door has been closed. Masks should be used whenever they leave the flight deck.

- Airlines should ensure that non-medical or medical masks worn by crew, can be removed rapidly so that oxygen masks can be placed unhindered on the face, properly secured, sealed, and supplying oxygen on demand and that crew are provided with the correct guidance on how to do so. When leaving the flight deck, all items should be stowed, personal items removed, and flight deck made ready for cleaning and disinfection.

- Prior to each cockpit crew change, the flight deck should have been fully cleaned and disinfected.

- In-person interactions with the cabin crew should be reduced to a minimum.

- If possible, only one person should be designated to be able to enter cockpit when necessary.

- Only one member of the flight crew or technical crew should be allowed to disembark the aircraft to complete the external inspection, refuelling, etc. In such case direct contact with the ground crew should be avoided.

Means for uniform implementation

- Ensure that these considerations are fully supported by:
  o The applicable non-governmental agencies.
  o Public health, immigration and customs agencies.
  o Civil Aviation Authorities.

- A high degree of collaboration between airport operators and their associated stakeholder community.

- Associated policy, procedures and training are developed to reinforce the importance of these considerations.

- Use the *Crew COVID-19 Status Card* (PHC Form 1) or a similar one when appropriate.

Element
Cabin Crew

Brief description (Objective)

Provide harmonised health protection and sanitation considerations applicable to Cabin Crew which can be implemented globally.

Considerations

- Cabin crew who are in contact with a passenger or a colleague suspected of being infected should not visit the flight deck unless it is unavoidable.

- Crew members should continue to assist passengers who become ill in-flight.

- In the case of someone suspected of having COVID-19, a crew member is to be designated to care for the passenger. That crew member must don the PPE provided in the UPK before engaging in close contact with the ill passenger. The ill passenger should be fitted with a medical mask and provided with appropriate assistance. Separate the ill person from the other passengers by a minimum of 1 metre. Where possible, this should be done by moving other passengers away. Depending on cabin design, 1 metre is usually two seats left empty in all directions. If possible, assign one toilet for use only by the ill passenger. The designated crew member(s) should comply with decontamination procedures established by the operator before resuming other duties.

- A passenger who develops symptoms in-flight should be assessed by the local public health authorities after landing and prior to disembarking the aircraft following national protocols.

- While limiting the number and frequency of physical flight crew checks, an alternative method of checking on flight crew welfare such as regular interphone calls should be implemented.

- The use of PPE should not impact the ability to carry out normal, abnormal and emergency safety procedures, such as the donning of oxygen masks, carrying out firefighting procedures etc.

- Safety demonstration equipment should not be shared to the extent feasible to reduce the likelihood of virus transmission. If it must be shared, alternate means of demonstration without the equipment should be considered or the equipment should be thoroughly sanitized between use.

- Safety demonstrations should highlight to passengers that non-medical and medical masks should be removed before donning emergency oxygen masks, should they be needed. Note that this could be achieved by an additional announcement after screening of the safety video.

Means for uniform implementation

- Ensure that these considerations are fully supported by:

    o The applicable non-governmental agencies.
    o Public health, immigration and customs agencies.
    o Civil aviation authorities.

- A high degree of collaboration between airport operators and their associated stakeholder community.

- Associated policy, procedures and training are developed to reinforce the importance of these considerations.

- Use the C*rew COVID-19 Status Card* (PHC Form 1) or a similar one when appropriate.

Element
Layover

Brief description (Objective)

Ensure that all crew that need to layover or transit at an outstation are aware of the measures necessary to reduce the risk of transmission of COVID-19.

Reference should be made to the ICAO Electronic Bulletin EB 2020/30 or as amended for the most up-to-date guidance.

Considerations

Layover/ transits

Crew members who are involved in flights with a layover, should not be medically quarantined or detained for observations while on layover or after returning, unless they were exposed to a known symptomatic passenger or crew member on board or during the layover.

If crews need to layover or transit at an outstation, air operators should ensure compliance with relevant public health regulations and policies together with measures identified by a risk assessment conducted by the operator that takes account of specific local conditions.

In the absence of a risk assessment, air operators should implement the following:

- Commute arrangements (between airport and hotel, if needed): The air operator should arrange for the commute between the aircraft and the crew's individual hotel rooms ensuring hygiene measures are applied and the recommended physical distancing, including within the vehicle, to the extent possible.

- At accommodation:
  a) At all times, the crew must comply with relevant public health regulations and policies.
  b) There should be one crew member per room, which is sanitized prior to occupancy.
  c) The crew, taking account the above, and insofar as is practicable, should;
     i. Avoid contact with the public and fellow crew members, and remain in the hotel room except to seek medical attention, or for essential activities including exercise, while respecting physical distancing;
     ii. Not use the common facilities in the hotel;
     iii. Dine in-room, get take-out or dine seated alone in a restaurant within the hotel, only if room service is not available;
     iv. Regularly monitor for symptoms including fever; and
     v. Observe good hand hygiene, respiratory hygiene and physical distancing measures when needed to leave the hotel room only for the reasons specified in (i), (iii) or in emergency situations.
- Crew members experiencing symptoms suggestive of COVID-19 during layover or transit should:
  a) Report it to the aircraft operator and seek assistance from a medical doctor for assessment of possible COVID-19.
  b) Cooperate with the assessment and possible further monitoring for COVID-19 in accordance with the evaluation procedure implemented by the State (e.g. assessment in the hotel room, or an isolation room within the hotel, or alternative location).

- If a crew member has been evaluated and COVID-19 is not suspected in accordance with the above procedures implemented by the State, the air operator may arrange for the crew member to repatriate to base.

- If a crew member is suspected or confirmed as a COVID-19 case by the State and isolation is not needed by the State, such crew member could be medically repatriated by appropriate modes of transport; if there is agreement to repatriate the crew member to home base.

Means for uniform implementation

- Ensure that these considerations are fully supported by:
  o The applicable non-governmental agencies
  o Public health, immigration and customs agencies
  o Civil aviation authorities.

- A high degree of collaboration between airport operators and their associated stakeholder community.

- Associated policy, procedures and training are developed to reinforce the importance of these considerations.

- Use the C*rew COVID-19 Status Card* (PHC Form 1) or a similar one when appropriate.

— — — — — — — —

Module
Cargo

Target audience:
Airline, freight forwarder, trucker, ground handler (cargo terminal operator).

Element
Road Feeder to Freight Reception & freight pick up

Brief description (Objective)
Protect cargo handling staff and truckers during the handover points for physical freight (in warehouse) and documentation (often office).

Considerations

- Onsite biosafety principles:
    - Proximity for document handover should be minimized, floor markings should be indicated and / or appropriate PPE should be worn.
    - Wherever possible, hand washing stations or alcohol-based hand sanitizer should be placed on entry.
    - Surfaces (e.g. handles, kiosks) should be regularly cleaned and disinfected
    - Alcohol-based hand sanitizer should be made available for users of kiosks, etc.
    - Area(s) for donning and doffing of appropriate PPE as needed should be identified.

- Physical handover of goods (truck offload):
    - Drivers should stay in vehicle cabin until instructed (as per relevant procedures).
    - Physical distance should be kept between driver and facility staff where possible.
    - Close contact of personnel should be limited, appropriate PPE should be worn where appropriate.

- Documentation handover (office):
    - Digital document systems and data exchange should be implemented wherever possible.
    - Physical distancing of at least 1 metre should be kept between all parties where possible, floor markings indicated or the appropriate PPE worn.
    - Where physical documents need to be signed, each signatory should do so with their own pen.
    - Physical barriers (transparent) should be installed at counters and reception.
    - Alcohol-based hand sanitizer should be made available when entering or exiting common areas.

- Material handling equipment (MHE) usage (e.g., forklifts, hand carts):
    - To avoid cross contamination, MHE should be cleaned and disinfected after use.
    - Employees should be educated and should practice personal hygiene principles.
    - Appropriate PPE should be worn where necessary.

Means for uniform implementation

- Wall posters, and handouts, downloadable from carrier and GHA web sites. See Posters in Staff Rest Areas for samples.

Element
Within Cargo facility (Origin / Destination / Transit)

Brief description (Objective)

Protect Cargo facility (warehouse) staff during business operations such as build-up, breakdown, repositioning and documentation handling.

Considerations

- Onsite biosafety principles:
    - Physical distance should be kept at all times when operational safety is not compromised.
    - Close proximity for handover minimized (e.g. drop zones) or appropriate PPE should be worn.
    - Ground personnel rotations should take into account the need to avoid cross-infection.
    - Alcohol-based hand sanitizer should be placed on entry into common areas.
    - Regular cleaning and disinfection of surfaces (e.g. handles, mobile devices, kiosks) should be established.
    - Sanitizer should be made available for users of kiosks, shared mobile devices, and other shared devices.

- Physical handling goods:
    - Physical distance should be kept when operational safety is not compromised;
        - When not possible (e.g. 2 person lift needed for heavy cargo) appropriate PPE should be worn.
    - Appropriate PPE should be worn where necessary.

- Material handling equipment (MHE) / ground support equipment (GSE) usage:
    - To avoid cross contamination MHE and GSE should be cleaned and disinfected between uses.
    - All employees should be educated and should practice personal hygiene principles.
    - Appropriate PPE should be worn where necessary.

Means for uniform implementation

- Posters displayed through cargo facility and staff rest areas.

Element
Cargo facility to ramp (Origin / Transit / Destination)

Brief description (Objective)

Protect staff during the Cargo facility handover to/from ramp crews in preparation for aircraft loading and unloading.

Considerations

- Onsite biosafety principles
    - Physical distance should be kept at all times when operational safety is not compromised or appropriate PPE should be worn.
    - Regular cleaning and disinfection of surfaces (e.g. handles, kiosks) should be established.
    - Alcohol-based hand sanitizer should be made available for users of kiosks, shared mobile devices, etc.
    - Close proximity for handover should be minimized (e.g. drop zones) or appropriate PPE should be worn.
    - Ground personnel rotations should take into account the need to avoid cross team infection.

- Physical handover of goods
    - Physical distance should be maintained, and cargo drop zones used where possible.
    - Close contact of personnel should be limited, and appropriate PPE should be worn where necessary.

- Ground support equipment (GSE) usage
    - To avoid cross contamination, GSE should be cleaned and disinfected between users.
    - All employees should be educated and should practice personal hygiene principles.
    - Appropriate PPE should be worn where necessary.

Means for uniform implementation

- Posters displayed in staff rest areas.

Element
Aircraft Loading / Unloading

Brief description (Objective)

Protect ramp handling staff during the loading and unloading of the aircraft, which is usually performed by multiple crews of 3 to 4 persons depending on the operation.

Ensure enhanced public health safety when the number of close contact personnel rises during manual loading of the passenger cabin.

Considerations

- Onsite biosafety principles
  - Physical distance should be kept at all times when operational safety is not compromised or appropriate PPE should be worn.
  - Alcohol-based hand sanitizer should be placed on entry into common areas.
  - Regular cleaning and disinfection of surfaces (e.g. handles, mobile devices, kiosks) should be established.
  - Alcohol-based hand sanitizer should be made available for users of kiosks, shared mobile devices, etc.
  - Close proximity of staff for loading should be minimized or appropriate PPE should be used particularly for passenger cabin loading.
  - Ground personnel rotations should take into account the need to avoid cross team infection.

- Physical Loading of goods
  - Physical distance should be kept when operational safety is not compromised (encourage single person operations).
  - Close contact of personnel should be limited, and appropriate PPE should be worn where necessary.
  - For "human chain" loading, appropriate PPE should be used (non-medical or medical masks and disposable gloves) and hygiene principles should be applied between operations.

- Material handling equipment (MHE) / ground support equipment (GSE) usage
  - To avoid cross contamination, MHE/GSE should be cleaned and disinfected between users.
  - All employees should be educated and should practice personal hygiene principles.
  - Appropriate PPE should be worn where necessary.

Means for uniform implementation

- Posters in staff rest areas.

- Use the *Airport COVID-19 Cleaning / Disinfection Control Sheet* (PHC Form 3) or a similar one where appropriate.

— — — — — — — —

3. FORMS AND POSTERS

CREW COVID-19 STATUS CARD
Purpose of this card: Information to be recorded by crew prior to departure to confirm their COVID-19 health status and to facilitate processing by State's Public Health Authorities.   Notwithstanding completion of this card, a crew member might still be subjected to additional screening by Public Health Authorities as part of a multilayer prevention approach e.g. when recorded temperature is 38 C° (100.4 F°) or greater.

1.	**During the past 14 days, have you had close contact (face-to-face contact within 1 metre and for more than 15 minutes or direct physical contact) with someone who was suspected of having COVID-19 or had been diagnosed with COVID-19?**" <center>Yes ☐ No ☐</center>
2.	**Have you had any of the following symptoms during the past 14 days:** Fever Yes ☐ No ☐ Coughing Yes ☐ No ☐ Breathing difficulties Yes ☐ No ☐ Sudden loss of sense of taste or smell Yes ☐ No ☐
3.	**Temperature at duty start:** Temperature not recorded due to individual not feeling/ appearing feverish ☐ Temperature in degrees C° ☐ / F° ☐ : _____ Date: _____ Time: _____ Recording method : Forehead ☐ Ear ☐ Other ☐ _____
4.	**Have you had a positive COVID-19 test during the past 3 days?** <center>Yes ☐ No ☐</center> Attach report if available
5.	**Have you received a COVID-19 vaccine?** **Yes ☐ No ☐** Date of most recent vaccination: _____ Are you fully vaccinated[22]? Yes ☐ No ☐

Crew member Identification: Name: Airline/ aircraft operator: Nationality and Passport No: Signature: Date:

Public health corridor (PHC) Form 1

---

[22] For the purposes of this document and CART guidance, an individual is defined as fully vaccinated 14 days or more after receiving all recommended primary doses of a COVID-19 vaccine that is listed for emergency use by the World Health Organization or approved by other stringent regulatory authorities (SRA).

AIRCRAFT COVID-19 DISINFECTION CONTROL SHEET
Aircraft Registration: _____

Aircraft disinfection was made in accordance with the recommendation of the World Health Organization, at a frequency determined by the National Public Health Authority and in accordance with approved products and application instructions of the aircraft manufacturer.

Date *(dd/mm/yy)*	Time (24hr - Coordinated Universal Time (UTC))	Airport (ICAO code)	Remarks	Disinfector name
Aircraft areas treated		**Disinfectant material**	**Comments**	**Disinfector signature**
Flight deck ☐ Passenger cabin ☐ Cargo compartment(s) ☐ Other: _____ _____				

Date *(dd/mm/yy)*	Time (24hr -UTC)	Airport (ICAO code)	Remarks	Disinfector name
Aircraft areas treated		**Disinfectant material**	**Comments**	**Disinfector signature**
Flight deck ☐ Passenger cabin ☐ Cargo compartment(s) ☐ Other: _____ _____				

Date *(dd/mm/yy)*	Time (24hr -UTC)	Airport (ICAO code)	Remarks	Disinfector name
Aircraft areas treated		**Disinfectant material**	**Comments**	**Disinfector signature**
Flight deck ☐ Passenger cabin ☐ Cargo compartment(s) ☐ Other: _____ _____				

Public health corridor (PHC) Form 2

XYZ- AIRPORT COVID-19 CLEANING / DISINFECTION CONTROL SHEET
Airport Area: _____

This airport area disinfection was made in accordance with the recommendation of the World Health Organization, at a frequency determined by the National Public Health Authority and in accordance with approved products and application instructions.

Date *(dd/mm/yy)*	Time (24hr)	Areas	Cleaning/Disinfectant product	Disinfector name and signature
		Floor □ Seats □ Counter □ Screening equipment □ Conveyor belts □ Passenger mobility aids □ Hand railings □ Elevators □ Baggage Trolleys □ Washrooms □ Information Desk □ Boarding Area □ (*includes aerobridges and airside buses*) Stanchions / queues □ Self-service kiosks □ Sanitization stations □ Other □	*Remarks*	

Date *(dd/mm/yy)*	Time (24hr)	Areas	Cleaning/Disinfectant product	Disinfector name and signature
		Floor □ Seats □ Counter □ Screening equipment □ Conveyor belts □ Passenger mobility aids □ Hand railings □ Elevators □ Baggage Trolleys □ Washrooms □ Information Desk □ Boarding Area □ (*includes aerobridges and airside buses*) Stanchions / queues □ Self-service kiosks □ Sanitization stations □ Other □	*Remarks*	

Public health corridor (PHC) Form 3

**PUBLIC HEALTH COVID-19 PASSENGER SELF DECLARATION
FORM**

Proposal – a health declaration to include on the reverse of the existing PLF.

PUBLIC HEALTH COVID-19 PASSENGER SELF DECLARATION FORM

Purpose of this form:

This form is intended to support public health authorities by allowing arriving passengers to easily provide relevant information pertaining to their health status, particularly with regard to COVID-19.
Information needs to be recorded by an adult member of the group or travel group.
Notwithstanding completion of this form, a passenger might still be subjected to additional health screening by the Public Health Authority as part of a multi-layer prevention approach.
Your information is intended to be held in accordance with applicable national laws and used only for public health purposes.

1) **Traveller Information:**

First Name(s):

Last Name(s):

Date of Birth (dd/mm/yyyy):

Travel document No. & issuing country:

Country of residence:

Port of Origin:

2) **During the past 14 days, have you, or a member of your group travelling with you, had close contact (face-to-face contact for more than 15 minutes or direct physical contact) with someone who had symptoms suggestive of COVID-19?** Yes ☐ No ☐

3) **Have you, or any member of your group travelling with you, had any of the following symptoms during the past 14 days:**

| Fever | Yes ☐ No ☐ | Shortness of breath | Yes ☐ No ☐ |
| Coughing | Yes ☐ No ☐ | Sudden loss of sense of taste or smell | Yes ☐ No ☐ |

4) **Have you, or any member of your group travelling with you, had a positive COVID-19 test in the last 3 days?** Yes ☐ No ☐
Please attach report if available

5) **Please indicate all countries and cities that you and the group travelling with you have visited or transited through in the last 14 days (including airports and ports), providing the dates of the visit. List the most recent country first.**

_____

_____

For more information on penalties related to the provision of false information on this form, please refer to the applicable national legislation and/or local health authorities.

Signature:

Date:

Public health corridor (PHC) Form 4

Recommended dataset on reporting COVID-19 testing results (PHC Form 5)

The minimum information to be recorded on the certificate includes:

    (1) Personal Information of Test Subject:
- a) Full Name (Surname, Given Name)
- b) Date of Birth (YYYYMMDD)
- c) ID Document[23] Type (mandatory)
- d) ID Document[22] Number (mandatory)

    (2) Service Provider:
- a) Name of testing facility or service provider (mandatory)
- b) Country of test (mandatory)
- c) Contact details (mandatory)

    (3) Date and Time of Test and Report:
- a) Date and time of specimen collection (mandatory)
- b) Date and time of report issuance (mandatory)

    (4) Test Result:
- a) Type of test conducted: molecular (PCR); molecular (other); antigen; antibody (mandatory)
- b) Result of Test (normal/abnormal or positive/negative) (mandatory)
- c) Sampling method (nasopharyngeal, oropharyngeal, saliva, blood, other (optional))

    (5) Optional Data Field: Issued at the discretion of the issuing authority

---

[23] Refers to any type of documentation, it does not need be a travel-specific document.

Recommended dataset on reporting COVID-19 recovery (PHC Form 6)

The minimum information to be recorded on the certificate includes:

    (1) Personal information of test subject:

        a)   full name (surname, given name);

        b)   date of birth (YYYYMMDD);

        c)   ID document type (mandatory); and

        d)   ID document number (mandatory);

    (2) Test result:

        a)   member State of test; and

        b)   date of first positive test result (mandatory);

    (3) Healthcare Provider/ Certificate issuer

Recommended dataset on reporting COVID-19 vaccination (PHC Form 7)

The information to be recorded on the vaccination certificate includes:

    (1) Unique certificate identifier (required)

    (2) Certificate valid from (optional)

    (3) Certificate valid to (optional)

    (4) Personal identification

    (5) Name (required)

        a) Unique identifier (recommended)

        b) Additional identifier (optional)

        c) Sex (recommended)

        d) Date of birth (conditional with unique identifier)

    (6) Vaccination Event

        a) Vaccine or prophylaxis (required)

        b) Vaccine Brand (required)

        c) Vaccine manufacturer (conditional with Marketing Authorization holder)

        d) Marketing authorization holder (conditional)

        e) Disease or agent targeted (recommended)

        f) Date of vaccination (required)

        g) Dose number (required)

        h) Country of vaccination (required)

        i) Administering centre (required)

        j) Vaccine batch number (required)

        k) Due date of next dose (optional)

Note:

|	
"REQUIRED"	means that the definition is an absolute requirement of the specification.
"RECOMMENDED"	means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
"OPTIONAL"	means that an item is truly optional. One user may choose to include the item because a particular application requires it or because the user feels that it enhances the application while another user may omit the same item.
"CONDITIONAL"	means the usage of an item is dependent on the usage of other items. It is therefore further qualified under which conditions the item is "REQUIRED" or "RECOMMENDED".
	Example with regards to conditional: *the field of Vaccine Marketing Authorization Holder is conditional, however if the market authorization holder is unknown, vaccine manufacturer is "REQUIRED".*

Examples of POSTERS IN STAFF REST AREAS
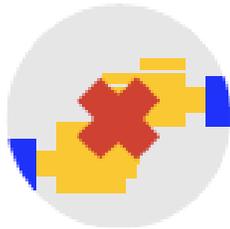
Instruction for Staff during COVID-19
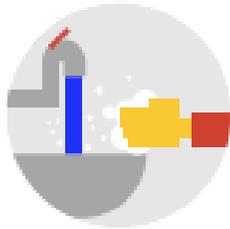
Regularly wash your hands

Use liquid soap and water to wash your hands for at least 20 seconds every time you enter the building.
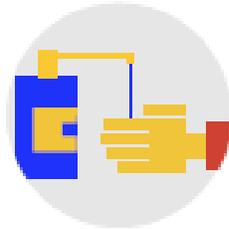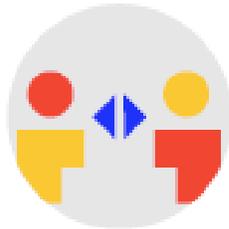
Disinfect

When handwashing is not possible, disinfect your hands with an alcohol-based hand rub.

Avoid shaking hands

Remember that the virus spreads through coughing and sneezing via airborne droplets, as well as through direct contact.
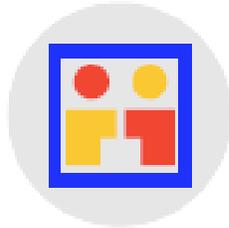
Respect physical distancing

Maintain a safe distance from others by following floor markings or other indicators. Driver to stay in the vehicle until instructed and follow local procedures.
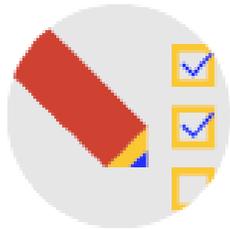
Clean regularly

Disinfect all frequently touched surfaces and all the equipment between uses.

Maintain the distance

Avoid entering enclosed rooms with other people present or wear appropriate personal protective equipment.

Use your own pen

Ensure you don't touch others' pens when signing documentation.

Follow any company, local or national guidance and regulations, especially if you show potential symptoms.

BE RESPONSIBLE.
STAY SAFE.

ICAO · OACI · ИКАО
国际民航组织

IATA

ACI
AIRPORTS COUNCIL
INTERNATIONAL

RECOMMENDED MASKS

COVERING/MASK	Efficiency at filtering Large Droplets	Efficiency at filtering Aerosols	Use in Aviation
Medical respirators e.g. N95, N99, FFP2 or FFP3 masks	99.9%	95%	Not routinely recommended, unless required by national health authorities. For use in healthcare and other occupational settings
Medical/surgical masks	98.5%	89.5%	Recommended
Non-medical/fabric masks	99.5%	82%	Recommended 3 layers in accordance with WHO specifications

NOT RECOMMENDED MASKS

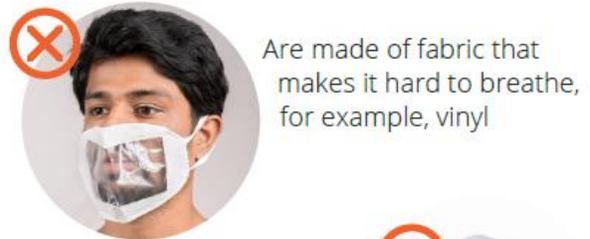|			
Tea Towel or Dishcloth	98%	72.5%	Not Recommended
100% Cotton T-shirt	97%	51%	Not Recommended
Silk or Lace	56%	54%	Not Recommended
Scarf or Bandana	44%	49%	Not Recommended
Masks with Built-in Valve or Vent	90%	90%	Not allowed due to risk of transmitting the virus

Based on Source: *Democritus University of Thrace; Duke University; Journal of Hospital Infection; Public Health England; University of Chicago; University of Illinois at Urbana-Champaign*

ICAO

HOW TO SELECT, WEAR, AND CLEAN YOUR MASK

DO choose masks that:

Have three layers of washable, breathable fabric

Completely cover your nose and mouth

Fit snugly against the sides of your face and don't have gaps

DO NOT choose masks that:

Are made of fabric that makes it hard to breathe, for example, vinyl

Have exhalation valves or vents, which allow virus particles to escape

Gaiters & Face Shields

Not recommended

Nor recommended, unless worn with a mask

Special Situations: Children

If you are able, find a mask that is made for children

If you can't find a mask made for children, check to be sure the mask fits snugly over the nose and mouth and under the chin

Special Situations: Glasses

If you wear glasses, find a mask that fits closely over your nose or one that has a nose wire to limit fogging

Do not put on children younger than 5 years old or the age specified by the national public health authority.

Based on Source: *https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-face-coverings.html*

ICAO

DO wear a mask that:

· Covers your nose and mouth and
  secure it under your chin
· Fits snugly against the sides of your face

For more information,
visit our How to Wear Masks web page.

How NOT to wear a mask:

❌ Around your neck

❌ On your forehead

❌ Under your nose

❌ Only on your nose

❌ On your chin

❌ Dangling from one ear

How to take off a mask:

1 Carefully, untie the strings behind your head or stretch the ear loops

2 Handle only by the ear loops or ties

3 Fold outside corners together

4 Be careful not to touch your eyes, nose, and mouth when removing and wash hands immediately after removing

ICAO

Aviation multi-layered strategy: based on the James Reason Swiss Cheese Model

– END –