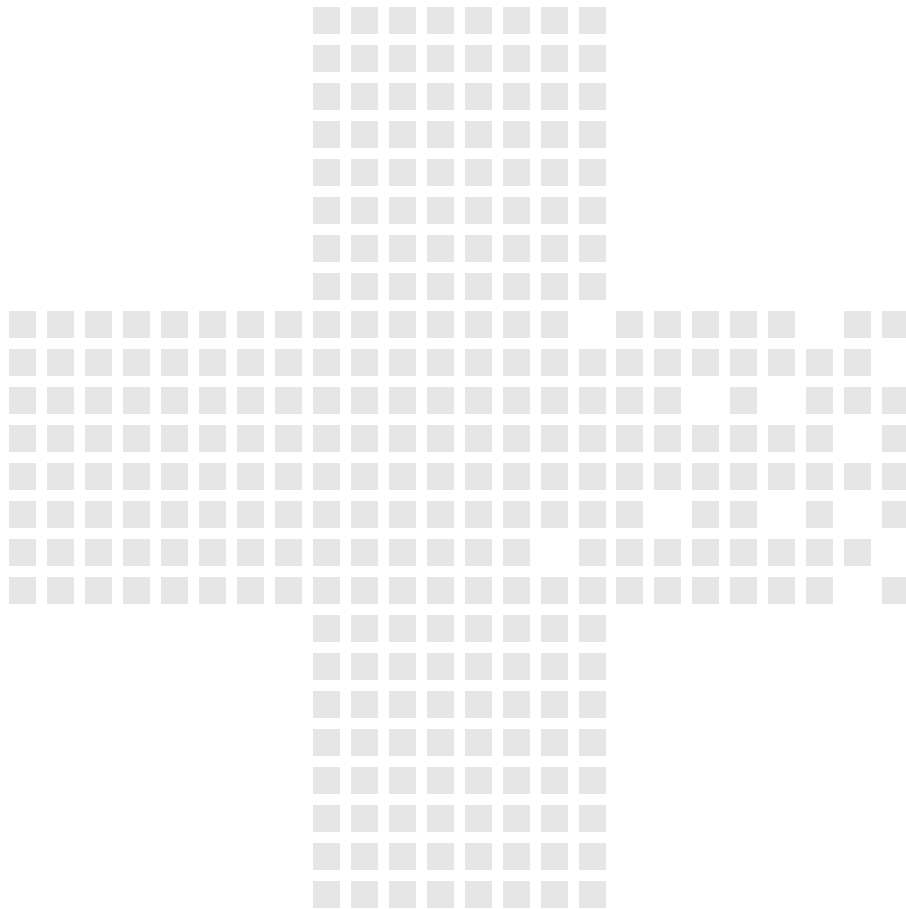# Best Practice for
Government Digital Health Platforms

This guidance material has been developed by the **IATA Control Authorities Working Group (CAWG)**. It is the outcome of collaborative working arrangements between governments and the airline industry to find mutually acceptable solutions for border management. For more information on the IATA CAWG.

Content

Acronyms

CART	Council Aviation Recovery Task Force (ICAO)
CAWG	Control Authorities Working Group (IATA)
CUSRES	Customs Response Message
DIVOC	Digital Infrastructure for Vaccination Open Credentialing
DTA	Digital Travel Authorization
DTC	Digital Travel Credential
eTA	Electronic Travel Authorization
EU DCC	European Union Digital COVID Certificate
FAQ	Frequently Asked Questions
iAPI	Interactive Advance Passenger Information
ICAO	International Civil Aviation Organization
IHR	International Health Regulations
ILOs	Immigration Liaison Officers
MRTDs	Machine Readable Travel Documents
MRZ	Machine Readable Zone
NATFC	National Air Transport Facilitation Committee
SARPs	Standards and Recommended Practices (ICAO)
VDS-NC	Visible Digital Seals for Non-Constraint Environments
WHO	World Health Organization
W3C	World Wide Web Consortium
WTTC	World Travel and Tourism Council

Purpose of the Best Practice

This CAWG guidance is based on the Standards and Recommended Practices (SARPs) of ICAO Annex 9 Amendment 29 and addresses best practice to inform the implementation of digital health platforms, with the objective of strengthening the platforms currently in place or assisting when there is a need to set up such system, as well as to discuss some challenges. ICAO Doc 9957 The Facilitation Manual provides extensive guidance on how to implement Annex SARPs.

The introduction of a government digital health platform in line with ICAO SARPs will ensure passengers have succeeded in complying with the government's health entry requirements prior to arriving at the airport, avoid disruptions to passengers' travel plans, minimize manual verification, and reduce health risks to other travelers. Authorities planning to implement a government digital health platform should read this best practice.

Background

This guidance intends to capture lessons learned on the government digital health platforms that emerged during the COVID-19 pandemic, and to inform a faster response to any future health outbreaks and minimize disruption to international travel.

The numerous health-related proofs and documentation that passengers needed to meet entry requirements during the COVID-19 pandemic have been a game-changer for the document verification processes. The COVID-19 pandemic reinvigorated the need for moving away from manual document verification processes.

The COVID-19 pandemic has been notorious for the patchwork of non-standardized health-related proofs required by different authorities from passengers to prove their health status or their eligibility to travel. This has been extremely challenging for: passengers having to understand and comply with the different requirements; airlines having to manually handle the varying proofs among countries for each passenger's transit and destination, and border authorities having to verify non-standardized proofs issued by third countries and parties. The extensive manual checks performed by airlines and authorities have resulted in queuing and congestion within airport terminals, at airline check-in counters, at security points and at border controls.

Among the measures to mitigate some of the COVID-19 pandemic-related risks and to safely and efficiently facilitate international travel, many countries from all regions implemented digital health platforms. These digital solutions for receiving health credentials and related proofs directly from passengers and performing appropriate verifications prior to travel, are collaterally addressing airport bottlenecks and document verification complexities.

These Government digital health platforms can take the form of a web portal, a mobile application, or a combination of them. Despite the numerous advantages of these platforms, a roll-out that has not been carefully designed can lead to, among others, duplication of information and processes, poor reconciliation between the applicants and the passengers intending to travel or reaching the border, not alleviating major pain points such as manual verification and to confusion of passengers. Recognizing the value of such platforms, ICAO has introduced the Recommended Practice 10.6 in Annex 9 – *Facilitation* recommending states to develop such platforms where passengers can apply to obtain a notification of approval for travel: *"Contracting States requesting standardized health documents and/or health-related documentation should consider developing a digital health platform where passengers can apply to obtain a notification of approval for travel by the States of destination and transit"*.

References

Other international guidance referred to in this document include the [ICAO Doc 10152 Manual on COVID-19 Cross-border Risk Management,](#) the work of the [ICAO Council Aviation Recovery Task Force (CART)](#) and the 20 recommendations that were issued throughout the COVID-19 pandemic. A wide number of public agencies representing different aspect of civil aviation in addition to industry stakeholders have participated in the development of these guidance materials.

Lastly, the report [Implementing a Digital Travel Portal: Good Practice Recommendations](#) published by the World Travel and Tourism Council (WTTC) is a comprehensive report on the technical capabilities of government digital health platforms. The CAWG has referred to the WTTC work extensively and readers are invited to further consult the WTTC Good Practice Recommendations.

1. Benefits

1.1 Pre-Travel Verification

o The level of standardization of Machine-Readable Travel Documents (MRTDs) and Machine-Readable Visas (MRVs) achieved by ICAO throughout the years has enabled automation of the verification of these documents, reducing the need for manual interventions. In contrast, the task of verifiers has reached new levels of complexity during the COVID-19 pandemic with numerous health proofs and documentation not being subject to a unique set of international standards. The entry requirements diverging greatly from country to country have added to the verification complexities.

o The implementation of a government digital health platform where passengers can lodge their health-related information in advance of travel, enables relevant authorities to perform pre-travel verification and checks on passenger's health-related documents. The pre-travel verification provides tangible results by increasing the trust of all stakeholders and the overall predictability of the journey i.e., passengers know in advance whether they comply with health requirements; airlines reduce the risk of carrying inadequately documented persons; and border control authorities can dedicate their resources to controls falling within their legal remits, i.e., immigration and border security controls.

1.2 Relation between the Traveler and Authorities

o Evaluation of the submitted information by the authorities of destination and/or transit facilitates the direct interaction between authorities and passengers. Authorities can assess, without physical exchange of documents, whether the passenger meet their entry or transit conditions.

o This direct interaction removes the need for airline staff to decide on the eligibility to travel of passengers based on their health status, or to act as a data broker on behalf of authorities. Airline staff deal with multiple countries' entry requirements. Taking a decision on the eligibility to travel is complex when the entry rules change rapidly and/or when there are different layers of exception that apply to different categories of travelers. With a digital health platform, relevant national agencies can take the ownership of decisions on eligibility to travel and admissibility to the countries of transit and/or destination and avoid involving airlines as intermediaries for collecting and/or checking sensitive health-related information.

1.3 Other Benefits of Digital Health Platform

Tourism benefits – Help supporting national economies and boosting tourism as travelers have greater assurance that they can proceed with their travels. Uncertainty and unpredictability have been serious deterrent to tourism during the COVID-19 pandemic.

Inadmissible persons - Reduce the administrative and operational burdens of border authorities and airlines related to inadmissible persons. These situations can be significantly complex when the entry denial is based on health-related requirements. This may lead to the passengers being stranded at airports e.g., out of compliance with the country of departure, reducing options for airlines for repatriation.

Data privacy and protection - Health-related information includes personal and sensitive data. The direct interaction between authorities and passengers ensures that the information is being treated to the level of confidentiality required, and by agencies holding the prerogative to deal with such information. The public is increasingly sensitive to the protection and privacy of their personal information. Displaying and/or sharing such data with airline staff is inappropriate and should be unnecessary.

Airport and resource capacity - By taking place at off-airport locations and in advance of travelling, health digital platforms contribute to relieving congestion at various touchpoints and heavy dependency on human resources. By completing verification in the pre-travel phase, digital health platforms contribute to decreasing the reliance of the air travel sector on manual document verification and the associated costs, notably training. No airline staff or border officer possesses the skills to verify a plethora of non-harmonized health-related documentation within a reasonable timeframe.

Set up for health screening - The implementation of a digital health platform reduces the screening facilities and number of medical staff required within the airport premises. Health screening resources can be dedicated to dealing with complex cases such as a declared health incident, exceptional cases, secondary inspection and/or for mitigating the risks of a passenger not meeting the health requirements through practical measures.

Pandemic Preparedness - Digital health platform is a globally scalable solution as suggested by their wide implementation across the regions and by jurisdictions with varying levels of development. Such platform can be reinstalled by authorities when the need arises to collect health information in case of a global or localized health outbreak. This tool should be integrated into to the national aviation plan in preparation for an outbreak of a communicable disease posing a health risk of international concern. Such a pandemic preparedness plan is mandated by ICAO (Standard 8.17): *"A Contracting State shall establish a national aviation plan in preparation for an outbreak of a communicable disease posing a public health risk or public health emergency of international concern"*.

1.4   Leveraging Technologies

o   Leading-edge technology solutions using decentralized identity management and verifiable credentials are transforming the way identity and personal data is shared, verified and authenticated.
o   Digitalization of credentials such as passports, ID cards, travel authorizations, health proofs, etc. is increasing. Secure and verifiable digital credentials enable the digital verification and authentication of the information provided by passengers. ICAO readily provides technical specifications for such

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credentials, i.e., the Digital Travel Credential (DTC), the Digital Travel Authorization (DTA) and the Visible Digital Seals for Non-Constraint Environments (VDS-NC). Other organizations and countries issue digital credentials or specifications, such as the European Union Digital COVID Certificate (EU DCC) and the World Wide Web Consortium (W3C) Verifiable Credentials.
o These developments on verifiable credentials should be factored into the development of digital health platforms to securely identify intended travelers to a country.

2. Regulatory and Policy Considerations

2.1 National Legislation

Stakeholders involved - When developing a digital health platform, governments should consider their existing policy structures, including the guidance they provide in terms of information exchanges between authorities and traveler, and between authorities and airlines.
o If the development and implementation of the digital health platform is shared amongst various departments, authorities should clearly define their roles and responsibilities and ensure that the authority exists for the lawful sharing of the data if one department is collecting it on behalf of another.

Scope - An immediate priority for authorities should be to develop an agile and proportionate risk-based framework that can be adapted to the specifics of a health emergency. Some flexibility should be given for a health platform to evolve as changes occur during a pandemic.
o Policies, including measures and triggers should be defined to determine when health mitigation measures should be withdrawn, including decommissioning of the digital health platform (refer to Section 5.3).
o Agencies should also consider whether there is a set or limited purpose of the tool or is it meant to be expanded beyond the initial scope at a later point. For example, to include customs and immigration collection (refer to Section 5.4).

Categories of travelers - Legislation should include clear indications such as:
- Whether the submission of health-related information is a mandatory or an optional requirement for both their nationals and foreigners
- Whether travelers failing to complete the digital health platform should be denied travel by airlines
- The categories of travelers who are exempted from such requirements
- The on-arrival processes for passengers who have a notification of approval for travel (health approval) and those for passengers who have not used the digital health platform
- Alternative measures for passengers intending to travel or arriving without the required health approval

Human rights - Use of a digital health platform as such to restrict the right to freedom to movement and other human rights is only justified when it supports the pursuit of a legitimate aim during a public health emergency and is provided for by law, is proportionate, of limited duration, based on scientific evidence, and not imposed in an arbitrary, unreasonable or discriminatory manner. Article 13.2 of the Universal Declaration of Human Rights sets the right for everyone to leave any country, including his own, and to return to his country. [1]

Essential aviation personnel - Authorities must recognize the importance of essential aviation personnel and their duties, such as training or certification activities, flights and cabin crew, maintenance engineers/technicians, air traffic management, etc. When it comes to crew at the time of pandemic, in accordance with their multi-layered approach and based on a risk assessment, authorities should[2]:

- Recognize crew members as essential personnel contributing to the continuity of critical transport services
- Recognize crew members must cross international borders as a part of their duties and, as such, conduct a separate risk assessment and implement minimal requirements to ensure global connectivity
- Not subject crew to screening or restrictions applicable to other travelers, but apply minimal requirements aligned with the crew module in the *Take-off: Guidance for Air Travel through the COVID-19 Public Health Crisis (TOGD)*[3];

o Giving the international recommendations above and the existing internal airline's health and safety policies to protect their personnel, authorities should consider exempting crew members from having to complete the digital health platform.

Fraud - There is a risk of fraudulent health-related travel documentation. Therefore, governments should include a fraud policy to review existing laws and regulations, mechanisms for revocation of fraudulent certificates, and assign roles and responsibilities within the government to identify, investigate, share information with the authorities internationally, and pursue prosecutions for fraud cases.

Data Privacy and Protection - Digital health platforms should be developed as per privacy by design principles. Passengers should share only the minimum data or proof required for any transaction directly with governments via a secure and encrypted channel in the order obtain the notification of approval for travel.

o Removing the airline from the process and removing the need for the centralized storage of personal data by industry, protects against exposure of passengers' personal and sensitive identity and health data.

o Once received, authorities should ensure health-related data can only be used in a manner consistent with the stated purpose for processing, and within the mandate of the agency, to avoid the risks of proliferation of passengers' personal medical data. Ideally, a country should make

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[1] Universal Declaration of Human Rights, 1948, https://www.un.org/en/about-us/universal-declaration-of-human-rights
[2] ICAO Doc 10152Manual on COVID-19 Cross-border Risk Management, Third Edition, 2021, Section 3.1.5
[3] https://www.icao.int/covid/cart/Pages/CART-Take-off.aspx

available to the traveling public the set of national rules pertaining to data protection and privacy on the digital health platform.

2.2 Regulatory Changes

o Authorities should endeavour to leverage existing systems and/or programs in order to capably adapt to changing public health realities, shifting resources and operational focus to manage the impact on the passengers, industry stakeholders and authorities.
o Fulfilling compliance and administrative requirements imposes real costs on regulated parties such as airlines, which may negatively impact their competitiveness and ability to operate. Authorities should consider implementing outcome-based regulations, which specify objectives or required outcomes rather than the means by which they must be achieved, to allow operational flexibility in an industry as fluid and complex as the airline industry.
o Authorities should conduct regular reviews of the health measures and plan to have pre-determined timelines planned in their legislation for amending the measures in place.
o However, travel rules can change rapidly and frequently, making constant communication between a destination government and travel operators and the travelling public challenging. Measures should be in place on arrival that enable passengers to comply with health requirements and not be deemed inadmissible.

2.3 Inter-Agency Cooperation

o The COVID-19 pandemic triggered unprecedented border restrictions and closures around the world in efforts to slow the spread of the virus. Even with the best emergency preparedness efforts from border agencies, the unique and rapidly evolving situation created unparalleled challenges, specifically in pushing out clear communication and developing effective policies in a timely manner.
o Additionally, the COVID-19 pandemic has demonstrated that border control policy development and decision-making processes have to consider health authorities' risk management strategies and the political agenda emanating from the national public opinion. Coordination with actors that have limited visibility on the challenges specific to international borders and travels exacerbated the challenges.
o This situation has sharpened the need for national coordination bodies to effectively align the national response in case of pandemics. The ICAO CART has on the onset of the COVID-19 pandemic, recognized the relevance of such body with its Recommendation #6 - Member States that have not done so should immediately establish a National Air Transport Facilitation Committee (NATFC) or equivalent as required by Annex 9 Standard 8.20 to increase national level cross-sectoral coordination.
o The purpose of such a committee is to coordinate facilitation activities between departments, agencies and other organization concerned or responsibilities for different aspects of aviation facilitation, in order to maintain a safe and secure civil aviation environment, i.e., immigration,

customs, security, health and agriculture authorities, in addition to industry representatives of airline, ground handling and airport operators.[4]

3. Carriers' Liability and Authorities' Responsibilities

3.1   Responsibilities and Legal Framework

International framework - Passengers' health-related documents are of different nature than travel documents. ICAO has developed a carrier's liability framework specific to health-related documents, in Chapter 10 of Annex 9 on Health-Related Provisions.

o   When it comes to travel documents, carriers have the obligation to take necessary precautions at the point of embarkation to ensure that persons are in possession of the travel documents prescribed by the country of transit or destination (Standard 3.33). For health documents and requirements, recognizing that they widely vary among countries, and that health-related documents offer little harmonization, a separate framework has been developed.

o   As per Recommended Practice 10.5, the responsibilities of airlines differ depending on the type of health document and on whether these documents are standardized or not:

> **Non-standardized health-related documentation –** aircraft operators should <u>check</u> that passengers and crew are in possession of such documentation

> **Standardized health-related documents –** aircraft operators should <u>evaluate</u> such documentation

Responsibilities of airlines - The output of the vetting process performed through digital health platforms, the 'notification of approval for travel' that passengers hold (Recommended Practice 10.6), simplifies these checks performed by carrier's staff. With the notification of approval for travel, airlines are not expected to validate any health-related documentation.

o   This single token confirms the status of passengers. It is to be checked at the point of embarkation to ensure that each passenger has been granted approval to travel (Recommended Practice 10.7).

o   The check on the notification of approval for travel has the additional benefit of not displaying personal data, such as vaccination certificates, thus preserving data privacy and protection requirements.

Obligations of states - This responsibility of airlines is balanced by an obligation of states which must assist aircraft operators in the evaluation of standardized documents (Standard 10.4). Digital solutions, such as digital health platforms, is one of the tools that are at the disposal of authorities for doing so.

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[4] ICAO Doc 10042 Model National Air Transport Facilitation Programme

- Assistance to carriers may as well take the form of a support centre with a direct contact with a government representative for enabling carriers to resolve queries with passengers. In most cases, carriers will reach out to this support centre at the time the passenger is at the airport. The centre should be accessible 24/7. The preferred method of communication is via telephone, with email as an alternative.
- Immigration Liaison Officers (ILOs) stationed in foreign destinations must be fully informed of the digital health platform requirements in order to assist airlines with the boarding decision.
- Encouraging carriers to have a verification process at departure (Standard 10.5) does not preclude authorities to remove checks upon arrival; this responsibility should not be delegated to airlines.
- Authorities are encouraged to have automated processes at arrival to ensure the compliance of passengers (Recommended Practice 10.9).

3.2   Effective Communications

- For authorities to clearly and effectively communicate with carriers and the travelling public is crucial at times of fast changing health-related entry requirements so that they can be informed within a reasonable timeframe (Standard 10.11). This is particularly relevant for passengers to fulfil their obligation of complying with entry requirements and for carriers to fulfil their responsibilities to ensure that their passengers are compliant with these requirements.
- A reasonable timeframe takes into consideration elements such as:
    - The availability of testing and the time for a person travelling by air to obtain test results.
    - Timely communication of changes in health-related documentation requirements so that adaptation to new requirements is reasonable under the circumstances, practicable and feasible for passengers and aircraft operators, as per Chapter 1, Standards 1.2 b) and 1.2 c).
    - Information is made available to minimize the likelihood that passengers boarding the aircraft will be inadmissible due to changing entry requirements by the country of transit and arrival.
- A digital health platform can assist authorities in communicating swiftly with passengers in case of changes with entry requirements (refer to Section 4.2.)

3.3   Mitigating Inadmissible Persons due to Health Requirements

- Due to 24/7 and global operations of air travel, there will be an immediate imposition to passengers when new health-related entry requirements are introduced without required advance notification, i.e., some passengers who have already started their journey will be non-compliant on arrival.
- Authorities should be practical in their evaluation of passengers before denying entry, while applying a risk-based evaluation. For instance, in the case of a passenger who has a test certificate for which validity is overdue by two hours, authorities should consider applying other measures other than that sending this passenger back to its origin point. As such vaccination, revaccination, testing and/or quarantine measures may be alternatives to deeming a passenger inadmissible.

o   There should be measures in place on arrival to mitigate the consequences faced by passengers who may become inadmissible or out of compliance with the country's health-related requirements (Recommended Practice 10.10).

3.4   Compliance

o   To instil trust between authorities and industry, compliance monitoring and penalty frameworks should not be applied on individual case-by-case bases. Periodic or trend-based enforcement should be considered as a preferred approach to both reduce the burden of compliance monitoring as well as the monetary impact of penalties on airlines. This approach should especially be considered in the early stages of digital health platform implementation.
o   When airlines can demonstrate that they have performed the necessary checks on the notification of approval for travel, they should not be penalized in the event that arriving passengers are found to be inadmissible or in-transit passengers do not fulfil the conditions for transfer (Standard 10.8). As such, passengers processing strategies should be designed so that airlines can easily demonstrate their compliance. For example, rather than relying on a simple visual inspection of the notification for approval to travel, a QR code could be embedded for airlines to scan as a condition for issuing a boarding pass.
o   In a context where checks are performed on documentation with little or no harmonization and where security features are not easily verifiable, air carriers should not be fined for cases of fraud by passengers, where the airline has followed all official procedures.
o   Aircraft operators should not neglect performing necessary checks to confirm passengers' health-related status when the destination country has implemented mitigating measures to address passengers who could arrive non-compliant.

Feedback to improve carrier's compliance - As part of their compliance framework, authorities should implement policies and procedures directed at improving carrier compliance by providing strategic feedback on their performance. This could include the use of regular audits and evaluations on compliance adherence, the distribution of performance report cards, as well as providing carriers with a best practice guide to better understand relevant expectations.
o   Authorities should also consider analysing various data and system pressure points on a regular basis to identify issues.
o   Authorities should provide carriers with timely compliance monitoring information, with sufficient passenger details for the carrier to conduct internal investigations and implement corrective actions. The more information an airline can receive on passengers' non-compliance, the better the source of the challenge can be addressed.[5]

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[5] More information on the importance of reporting non-compliance issues can be found in CAWG Considerations for Collaboratively Improving Advance Passenger Information Data Quality.

4. System Requirements

4.1 Lodgement Platform and Procedures

o The health-related information required from the traveling public should be kept to the minimum and in accordance with the country's national laws and regulations.

o The landing page or interface of the platform should provide instructions to complete an online health questionnaire without a need to log-in. The information provided to the traveling public should include:

- Who is required to apply and non-eligible travelers;
- What information and documents will be required to submit in the application; and
- Clear, concise language that allows travelers to select the criteria that correspond to their situation for purpose of travel.

o The platform should provide options for mobile and web-based interface to accommodate a large travelling public.

o The platform should accommodate enrolment for more than one traveler in a single session to accommodate groups or families travelling together. The platform should carry over the relevant information to simplify the enrolment process, e.g., same destination, home address, flight number, purpose of travel.

o The platform should allow parents and guardians to make health-related declarations on behalf of their children or when responsible for another person's care.

o The platform should validate the email address and/or the cell phone number to ensure they will successfully receive further communications from authorities, including the notification of approval for travel or a change in status and travel rules.

o When required, the platform should collect all information required to determine the health-related status of applicants, e.g., vaccination and test certificates, and other personal information regarding the applicant, such as travel document, contact tracing information, travel history, hotel booking, quarantine plans and/or test appointments, etc.

4.2 Platform Capabilities

Agility - The platform should include built-in tools to reduce manual entry errors and improve data collection such as:

- Built-in logic to accommodate for minor name discrepancies. The vaccination certificate or test result may not be in the exact name and format as the passenger's passport, e.g., John Smith may be Jonathan James Smith in the passport.
- Guidance on the specific data elements needed with visuals on where these can be located.
- Digitally reading of the passports machine readable zone (MRZ) or the integrated circuit chip in cases of ePassports.

o Health threats can be dynamic and change quickly. The lodgement platform should have an agile rules engine that can be changed and updated at short notice when needed. To ensure timely

communication of such changes from authorities to the traveler, additional functionalities may be planned for informing through emails or SMS of the changes. Opting in/out options should be made available to the passengers.

o When country entry rules are to be changed at a future date, the platform should be able to run both the existing and future health entry rules simultaneously but applied on different dates. The platform can recognize the date of travel and apply either the 'existing' or 'future' rule set.

Supported languages - To ensure most travelers can complete the online health platform, the application should be in the language(s) of the country implementing the platform, in the languages used by most of their international visitors and other commonly used languages.

System failure - The traveler should be encouraged to carry the paper printout of their notification of approval for travel, along with the proof of vaccination and/or test results in the event of an outage in the government system on arrival, or failure of the passenger's personal device.

o Allow for paper applications to be completed and presented on arrival in the event of an extended platform failure that will impact a passenger's ability to apply prior to departure.

o In the event of extended system outages, once declared and/or reported, the development of communication protocols to enact in these situations will reduce the disruption to the passenger and the carrier. In such situation, carriers should receive a blanket authorization to board without implications of penalties. For instance, the electronic travel authorization (eTA) status pertaining to immigration is ignored when there is a reported system outage.

4.3   Vetting and Assessment by National Authorities

o A digital health platform should include built-in system logic to be able to electronically accept and verify the main recognized health certificates. Four digital certificate formats were prevailing amidst the COVID-19 pandemic:
  • SMART Health Card
  • EU DCC
  • ICAO VDS-NC
  • Digital Infrastructure for Vaccination Open Credentialing (DIVOC)
o For paper-issued certificates, passenger should be notified that they can get equivalence in digital format where available. Alternatively, systems should accept manual input of information by the traveler complemented by a picture of the paper certificate.
o Application processing time: Upon completing the application, the traveler should receive a notification of approval for travel within minutes of completing the application. Where this is not possible, the length of time until a decision will be issued should be indicated.
o Where additional information is required to be submitted by the traveler to complete the application, instructions should be presented and followed up by an email or SMS containing the steps necessary to complete the application.

Notification of approval for travel - The notification of approval for travel is the outcome of the lodgement by the traveler of their health-related information on the digital health platform. This serves as a proof to produce to airlines or any other verifying party.

- o The instructions displayed on a notification of approval for travel must be easy to understand, including a confirmation that the passenger may travel. This acceptance to travel may however not preclude for additional health measures to be applied upon arrival.
- o Instructions to passengers on what to do with the notification of approval should be provided, including information on when and where it will need to be presented:
    - Examples:
        - The notification must be presented to the air carrier at check-in or boarding. Failure to show will result in denied travel.
        - The notification must be presented on arrival to a border/health officer. Failure to show will result in delays upon arrival and possible additional medical screening or denied entry.
- o Separate detailed instructions should be available (through email, SMS or available directly through the platform) for travelers who are allowed to travel but require additional medical screening on arrival.
    - Example: Testing and/or quarantine instructions e.g., locations, timeframe and costs associated to the additional medical screening.
- o For countries that have implemented a mobile app, the traveler should be provided with the option to present an email that includes the notification of approval for travel. This receipt displayed as an email attachment, or when printed, is additionally useful in case of a system failure.

4.4 Verification

- o The task of any verifier is simplified and streamlined when documents or credentials are subject to regional or international standards. This standardization enables the automation of the verification, or at least creates a baseline for the verifier to know what information and security features to look for.
- o However, the notification of approval for travel has not been subject to international standardization, providing no possibility for automating its verification by airlines. The responsibility of airlines in Annex 9 has been limited to check that the passenger is in possession of this health-related documentation (Recommended Practice 10.5).
- o To harmonize the notification of approval for travel, the display should incorporate:
    - o A binary yes/no code to the effect that the passenger is admissible to travel. For instance, a coloured symbol green/red can support expediting the checks
    - o Basic information required to verify the approval is associated to a traveler. e.g., name, date of birth, travel document number
    - o Include validity dates for acceptance for travel
    - o Incorporating a security feature would mitigate against the use of fraudulent notification of approval for travel. This security feature could take the form of a digitally signed 2D

barcode, such as those incorporated into the digital vaccination certificates, i.e. the ICAO VDS-NC, the EU-DCC, the Smart Health Cards or DIVOC
o   To further streamline the verification, integration with an interactive API (iAPI) system is recommended (refer to [Section 5.5](#)).

5. Additional Considerations

5.1   User Support and Web Accessibility

o   Governments should set up a support network for enquiries from the traveling public. Tools and resources for travelers to self-solve queries improves the user experience, for instance, Frequently Asked Questions (FAQs), reference/guidance materials, live chat with a human or artificial intelligence driven, etc.
o   To take into consideration various traveler preferences and accessibility needs, telephone and email helpdesk should be available. The helpdesk should be sufficiently resourced (especially during peak travel periods) and operational 24/7 to enable a rapid and accurate response to travelers.
o   Governments should additionally ensure that principles of accessibility are first and foremost in the design and implementation of any electronic solutions, including providing paper-based or other alternatives where necessary. Accessibility improves user experience and ensures that content is available and accessible to all individuals.
o   The digital health platform should comply with the W3C Web Content Accessibility Guidelines (WGAG), which promotes recommendations for making Web content more accessible for people with disabilities such as allowing for resizing (must be able to go up to 200% without loss of resolution), colour contrast (high contrast, black on white, yellow on black or the like), and either keyboard only navigation or plain language, etc.[6]

5.2   Public Communication Strategies

o   Building public awareness on the health-related entry requirements and on the digital health platform is key to ensure usage and compliance of travelers. Different communication platforms should be considered to inform the public of the requirement to complete an online application before travel, e.g., government websites such as foreign affairs, overseas offices, tourism, immigration agencies, etc.; external websites such as airlines, travel agencies, travel aggregators, etc.; and social media platforms.
o   The platform can be used to provide additional information regarding how to access health care and reporting requirements if the traveler becomes ill at the destination.
o   When health requirements change, ample lead time to distribute the information and prepare operations for the upcoming changes should be planned for. Authorities should make arrangements

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[6] Web Content Accessibility Guidelines (WCAG) 2.1, W3C Recommendations, June 2018, https://www.w3.org/TR/WCAG21/

to enable all airlines and agencies concerned to make available to passengers, sufficiently in advance of departure, information concerning the vaccination requirements of the countries of destination (refer to Section 3.2.)

5.3   Sunset of a Platform

o   In accordance with ICAO guidance[7] and WHO recommendations[8], governments are encouraged to implement a multilayered risk management strategy, and to assess the effectiveness and applicability of the combination of measures that they put in place. Establishing the internal risk level of a government should be performed through a collaborative assessment, which can take place within the NATFC.

o   Mitigation measures should undergo a periodic review process, as per the risk-based stages for mitigation measures suggested by the ICAO CART[9]. A state should determine which mitigation measures should be retained or sunset.

o   As such, authorities must decide when the public interface of their digital health platform should be decommissioned, as defined in their legislation and policies. Authorities should consider archiving the IT infrastructure developed to support their health platforms and use this off-the-shelf solution as part of their pandemic preparedness plan. Authorities may as well repurpose this IT infrastructure to digitalize passenger admissibility processes.

5.4   Digitalization and Integration

o   The scope and functionalities of pre-travel verification models are expanding, given the benefits for all stakeholders (passengers, authorities, airlines, and airports). When done correctly, they can improve security, reduce inadmissible arrivals, and expedite the passenger throughput on arrival.

o   A comprehensive pre-travel verification model combines information readily available in a government database with verifiable credentials and information collected directly from international passengers (through platforms or other means), in conjunction with passenger data transmitted by airlines (API/PNR).

o   As part of repurposing the IT infrastructure developed for the digital health platform, consideration should be given to setting-up a single 'Travel Portal' to integrate the digital collection of information that is typically collected manually throughout the travel journey, e.g., entry/exit card, customs declaration, tourism information.

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[7] ICAO Doc 10152 Manual on COVID-19 Cross-border Risk Management, Third Edition, 2021
[8] WHO Technical considerations for implementing a risk-based approach to international travel in the context of COVID-19, Interim guidance, 2021
[9] ICAO Council Aviation Recovery Task Force (CART) Guidance for Air Travel through the COVID-19 Public Health Crisis

- o Creating different portals for different entry requirements (immigration, health, customs, entry/exit declaration, etc.) should be avoided as this will create confusion for passengers and complicate the public communications. Ideally, a single travel portal would meet the needs for the different national agencies.
- o When integrating various components of a travel portal, due considerations should be given to the legal weight of different requirements. For instance, non-compliance with immigration requirements may lead to heavy legal consequences. e.g., an improperly documented passenger will be denied boarding by airline staff or could face legal or administrative penalties imposed by authorities upon arrival. Other components integrated in a travel portal, such as a custom or health declaration, is self-declared information that is not subject to verification by airline staff.
- o The implementation of a travel portal that replaces the completion of customs and immigration cards and/or contract tracing information, should not form the basis to deny boarding a passenger or require the airline to confirm the portal has been completed prior to travel. The option for the passenger to complete a card or make a verbal declaration to the control authorities should be maintained as an on-arrival option.

5.5   Interactive Advance Passenger Information

- o Countries that have an iAPI system should consider integrating the health-related vetting in their CUSRES message back to the airline, based on their assessment performed in the digital health platform. This provides an alternative way to the verification by airlines of the notification of approval for travel carried by passengers.
- o ICAO recommends states to combine their platform with their iAPI system, providing an OK/Not OK to board message (Recommended Practice 10.7). Further to this ICAO Recommended Practice, the iAPI Best Practice developed by the IATA CAWG and PAXLST working groups recommend Customs Response Message (CUSRES) health status codes to be used by control authorities developing such capabilities in their iAPI system. The health-related status code is recommended to be returned as the third component, in addition to security and immigration status code.
- o Integrating the health-related response to iAPI response does not change existing submission standards, as the same travel document and flight information is transmitted from the operator to the destination government. The CUSRES message includes the same authority (or not) to board the passenger, with any additional conditions that must be applied.
- o The iAPI integration of a health CUSRES would render all processes digital (lodgement, acceptance and verification). Despite the attractiveness of this proposal, when integrating the health status code in the CUSRES message, authorities must establish a clear and consistent legal basis in order for the carrier to deny or accept boarding. Some legislations may provide a passenger with the option to meet additional and alternate health requirements upon arrival, instead of being denied boarding.

6. Conclusion

The COVID-19 pandemic created barely manageable responsibilities on airlines and border control authorities to verify and check that passengers were meeting transit and destination health-related requirements. Travelers were confused by the various health-related requirements and lacked confidence they could travel to their intended destinations. The result was congested airports during a time with reduced flights and less manpower available to take on these additional responsibilities.

As a result of these constraints, many countries implemented digital health platforms. These platforms created the benefit of establishing a direct relationship between the traveler and the control authority regarding health entry requirements. Implementing a digital health platform can ensure travelers successfully comply with these requirements prior to arriving at the airport and avoid disruptions to travel plans and health risks to other travelers. Additionally, when an easy-to-verify notification of approval for travel is issued to travelers, it offers an opportunity to expedite the airline check-in process and the border arrival process at the destination.

Digital health platforms contribute to the advancement of pre-travel verification models, i.e., these sets of tools, systems and solutions that can enable border authorities to determine the admissibility of passengers to travel and enter their country in advance of the travel journey. When authorities have established that their digital health platform should be sunset, it is recommended that the IT infrastructure be kept for providing an off-the-shelf in case such platform should be reinstated in case of an outbreak of a communicable disease posing a health risk of international concern.

Authorities may as well repurpose this IT infrastructure to digitalize passenger admissibility processes. consideration should be given to setting-up of a single 'Travel Portal' to integrate the digital collection of information that is typically collected manually throughout the travel journey, e.g., entry/exit card, customs declaration, tourism information. This is with a view for all entry requirement (immigration, health, customs and security) to be comply with by passengers prior to their journey.

IATA CAWG Best Practice for Government Health Digital Platforms (2023)