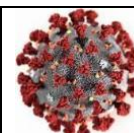


National COVID-19 Science Task Force (NCS-TF)



Type of document: Policy brief	
In response to a request from:	Date of request: 02/06/2020
Expert groups involved: lead from Public Health group, input from all other groups	Date of response: 14/06/2020; 25/06/2020; 13/07/2020; 16/07/2021
Contact person: Antoine Flahault, Nicola Low	
Comment on planned updates: updates according to the epidemiological situation	
SARS-CoV-2 prevention and border control measures for Switzerland	
Summary of original request/problem	
<p>The first policy brief on border control measures followed the first wave of COVID-19 in 2020. The original request stated:</p> <p>From 15 June 2020 onwards, Switzerland will re-open its borders, particularly to the European Union Schengen area. Switzerland is a land-locked country, with travelers arriving and leaving by road, rail and air. It is essential to prepare for the arrival of travelers with SARS-CoV-2 infection.</p> <p>Which conditions should apply with regards to preventing importing SARS-CoV-2 by the different travelers arriving by road, rail and air?</p> <p>Since the last version of this policy brief (August 2020), two events are noteworthy:</p> <p>First, several effective vaccines against SARS-CoV-2 have been licensed, providing varying levels of protection against infection, disease and death. Second SARS-CoV-2 variants of concern continue to emerge, with increased transmissibility and/or pathogenicity and/or that evade immune responses. What further measures could reduce the import of SARS-CoV-2?</p>	
Executive summary	
<p>Travelers, including Swiss residents, are a sentinel population for SARS-CoV-2 transmission in Switzerland because they arrive from countries that might have higher levels of infection than Switzerland. Since the last version of this policy brief (August 2020), two important events have influenced assessments of the risk of travel and of imported SARS-CoV-2. First, several highly effective vaccines for COVID-19 have been licensed. The vaccines provide varying levels of protection against infection, transmission, disease and death. Second SARS-CoV-2 variants of concern have emerged and circulated globally, making new outbreaks resulting from imported infection harder to control by the time they are detected. The SARS-CoV-2 alpha variant (World Health Organization nomenclature, also known as B.1.1.7) was first detected in the UK in late 2020. This variant is more transmissible and more pathogenic than previously circulating variants. As of June 2021, the alpha variant has caused almost all new SARS-CoV-2 in Switzerland. The delta variant (also known as B.1.617.2) was originally detected in India in late 2020. This variant is more transmissible than the alpha variant and may also cause more severe disease. It has now spread widely in the UK, and parts of Europe and is present in Switzerland. Circulation of the delta variant in Europe coincided with mass gatherings at UEFA European football championship matches in June 2021, highlighting the importance of travel and mass gatherings as a source of SARS-CoV-2 infections.</p> <p>SARS-CoV-2 transmission in Switzerland in mid-2021 declined to levels similar to those in April 2020, but started rising again in early July 2021. Control measures at the border will not identify all imported SARS-CoV-2 cases, but active measures for detection, contact tracing, isolation and quarantine and follow-up can reduce the risk of undetected transmission in Switzerland, and will provide information for travelers on SARS-</p>	

CoV-2 control measures that should be observed in Switzerland. Slowing the spread of new variants allows time, whilst the severity of the threat is being assessed, to determine the appropriate level of control measures

The objective of this policy brief is to describe an approach that allows for travel between countries whilst managing the public health risks and controlling the spread of SARS-CoV-2 in Switzerland.

The policy brief addresses: 1) the categorization of countries according to the risk of importation of SARS-CoV-2 infection; 2) management of travelers, according to the presence or absence of symptoms, at the border; and 3) recommendations for persons leaving Switzerland and traveling to countries where the risk of SARS-CoV-2 is higher than in Switzerland.

This update has the following changes: 1) simplified categories of risk of imported SARS-CoV-2; 2) consideration of vaccination status of travelers; 3) requirement for negative SARS-CoV-2 testing before entry; 4) enhanced genomic surveillance and active follow-up of imported SARS-CoV-2 cases, particularly from countries with high levels of variants of concern; and 5) consideration of measures for returnees from mass gatherings to prevent outbreaks of infection.

Background

SARS-CoV-2 transmission in Switzerland in mid-2021 declined to levels similar to those in April 2020, but started rising again in early July 2021. Switzerland's efforts to control transmission of SARS-CoV-2 should aim to maintain a low level of domestic transmission so that the vaccination coverage can increase and keep transmission under control. Since international borders are not closed, there will be imported cases of infection. Spread of imported SARS-CoV-2, particularly with new variants of concern with increased transmissibility, can cause outbreaks that may be hard to control if they remain undetected. The European Centre for Disease Prevention and Control (ECDC) has monitored SARS-CoV-2 infections in travelers to matches as part of the mass gathering UEFA European football championship in June and July 2021 (European Centre for Disease Prevention and Control 2021a). Denmark and Finland detected cases of infection with the delta variant in fans returning home from countries that did not have extensive genomic surveillance¹. After the first wave of SARS-CoV-2 in early 2020, the Federal Council first announced the opening of Swiss borders on 15 June, 2020, providing general advice, but few specific measures for early detection and control of SARS-CoV-2 in arriving travelers². Subsequent announcements introduced mandatory quarantine for people arriving in Switzerland from certain "at risk" countries and areas. Mandatory testing is also requested from all travelers coming from these countries and from all travelers arriving by air. The Swiss Federal Office of Public Health publishes updates about its guidance for travelers on its website³. Travelers are responsible for paying the costs of testing and costs incurred for being in quarantine.

Since the last version of this policy brief (August 2020), SARS-CoV-2 variants of concern have been identified. These variants carry multiple mutations, some of which result in one or more of the following characteristics: increased transmissibility; increase in severe disease and mortality; and evasion of natural or vaccine-induced immune responses (World Health Organization 2021a). The variants have emerged in different countries and some have circulated globally. Variants are named using Greek letters, to avoid the potential stigmatization of association with specific countries, using a system announced by the World Health Organization (WHO) in May 2021 (World Health Organization 2021b). The alpha variant (also widely known as B.1.1.7), first detected in England, is more transmissible than previous variants, and started circulating widely in Switzerland in December 2020, when large numbers of tourists arrived for the winter season. By April 2021, the alpha variant accounted for almost all new SARS-CoV-2 in Switzerland, but has already been largely replaced by the delta variant (also known as B.1.617.2) (CovSpectrum⁴). The delta variant was originally detected in India, and is more transmissible than the alpha variant. As of June 2021, this variant accounts for almost all new SARS-CoV-2 infections in India and the UK. It was first detected in Switzerland in March 2021. After a period of stable low level detection, the delta variant accounted for an increasing number of samples that has been fully sequenced in Switzerland and was the dominant strain, accounting for 70% of samples tested, in the week commencing 28th June, 2021 (CovSpectrum⁵). The beta (also known as B.1.351) and gamma (P.1) variants each account for around 1% of samples.

In countries, such as Switzerland, where SARS-CoV-2 transmission was controlled until early July 2021, reducing importation and delaying the spread of highly transmissible variants of concern is important. Vaccines against COVID-19 have been licensed and rolled out in many countries, starting in late December 2020. In Switzerland, as of 28.06.2021, 32.3% of the population has received two doses and a further 16.5% has received one dose of an mRNA vaccine (Federal Office of Public Health, vaccination⁶), so the majority of the population is not fully protected against SARS-CoV-2 infection. Vaccines provide high levels of protection to the individual from severe disease and death from COVID-19, including disease caused by the delta variant (Lopez Bernal et al. 2021). For the context of travel, the level of protection against infection and transmission is critical. Travelers who have been vaccinated are much less likely to become infected with SARS-CoV-2 than unvaccinated travelers. If infected, vaccinated people are less likely to transmit infection than unvaccinated people. Some SARS-CoV-2 variants of concern carry mutations that reduce the ability of the immune system to produce neutralizing antibodies (Harvey et al. 2021). Vaccination can reduce transmission of the alpha variant by 30-60% (European Centre for Disease Prevention and Control 2021b). The level of protection against asymptomatic infection and transmission of the delta variant, is still uncertain because of limited data.

Control measures at the border do not identify all imported cases, but active measures for detection, contact tracing isolation and quarantine can reduce the risk of undetected transmission in Switzerland, and will provide information for travelers on SARS-CoV-2 control measures that should be observed in Switzerland. Slowing the spread of new variants allows buying time, whilst the severity of the threat is being assessed, to determine the appropriate level of control measures. Particular attention should be given to the implementation of border control measures of incoming travelers by plane, as this is currently the most likely initial route of introduction of new variants of concern.

The objective of this policy brief is to describe an approach that allows for travel between countries whilst managing the public health risk and controlling the spread of SARS-CoV-2 transmission in Switzerland.

Two questions are addressed:

(1) How can the epidemiological status with regard to SARS-CoV-2 transmission in any country be classified?

(2) What measures should be proposed for countries, according to their epidemiological status?

The identification of countries with a high risk of SARS-CoV-2 transmission should take into account the both the epidemiological situation in the country, including the presence of variants of concern, and the differences in the availability of data for surveillance and monitoring of SARS-CoV-2.

The management of travelers to Switzerland should take into account the level of risk in the country where the journey started, the symptom status of the traveler, and the vaccination status of the traveler. This document does not address the technical issues about the security and international recognition of methods for the confirmation of vaccination status.

Rapid risk assessment of countries according to COVID-19 surveillance data

Response to question 1, “How can the epidemiological status with regard to SARS-CoV-2 transmission in any country be classified?”

Since 26.06.2021, the Swiss Federal Office of Public Health publishes a list of countries with high levels of a SARS-CoV-2 variant of concern (criteria not stated)⁷.

To define categories of countries according to the risk of SARS-CoV-2 importation, the following factors should be taken into consideration a) the level of testing; b) the infection rate in Switzerland (since early June 2021, <60 per 100,000 over 14 days; c) the level of infection in the country in which travel started (ECDC uses a cut-off of 60 per 100,000 over a 14 day period); and d) the presence and level of variants of concern. This

update, unlike earlier versions, does not propose detailed methods for determining the epidemiological situation of SARS-CoV-2 transmission in different countries. Any method for categorizing the number of new cases detected and reported depends, however, on the level of testing and on reporting in a national surveillance system. If the number of tests is very low, or unknown, a low number of reported cases cannot be interpreted as a low level of risk of exposure to SARS-CoV-2 in that country. Countries in which the level of testing is very low or unknown are likely to be those with poor social and healthcare infrastructure. These countries are at high risk of large outbreaks of SARS-CoV-2 that may be difficult to control and are unlikely to have widespread access to genomic surveillance to detect and monitor variants of concern. A simplified classification would be:

1. Unknown transmission (color code grey) if there are no data about the level of testing, or if the overall number of tests is below 10,000 tests per million population, as recorded in⁸. These countries are documented on the Swiss COVID-19 Daily Epidemic Forecasting website⁹.
2. For all countries or territories in which the overall cumulative number of tests is above 10,000 per million population,
 - a. Green, if the number of cases over 14 days, is below 60 per 100,000 population;
 - b. Red, if the number of cases over 14 days, is equal to or higher than 60 per 100,000 population;
 - c. Purple, if there is widespread circulation of a SARS-CoV-2 variant of concern, even if the reported rate of infection is lower than in Switzerland (e.g. delta variant in India, UK and Nepal, beta variant in South Africa, gamma variant in Brazil, as of June 2021).

2. Measures for Swiss travelers and visitors arriving from or traveling to countries in each category (see Appendices 1 and 2)

Response to question 2, “What measures should be proposed for countries, according to their epidemiological status?”

2.1 General information

Active measures at the border for detection of SARS-CoV-2 infection should aim to minimize the risk of new SARS-CoV-2 outbreaks arising from undetected imported infection, particularly from new variants of concern. The destination of incoming travelers should be able to be tracked. A travel history should be documented for all people with newly diagnosed SARS-CoV-2 infection and their contacts. The precautionary principle should be applied when the characteristics of a new variant of concern have not yet been determined (e.g. transmissibility, severity of disease, reduction in vaccine effectiveness against transmission, infection or disease) (World Health Organization 2021a). Measures to reduce arrival of people from countries in which the variant of concern is circulating widely, and enhanced measures for testing, and for isolation or quarantine on arrival can delay the introduction and allow time to develop appropriate measures for prevention and surveillance.

A clear communication strategy should provide information to potential travelers. Swiss embassies, air, bus, and train companies should be provided with clear and regularly updated information about the risk category for all countries and territories and recommendations for testing passengers. All travelers arriving in Switzerland by any mode of transport are strongly advised to wear a mask, in accordance with the Task Force policy brief¹⁰, and made aware of the current epidemiological situation in the country were they came from, along with reasons and rules for screening and isolation and quarantine.

Any suggested actions should apply to the country or territory from which people arrive, or to where they are going. The categorization of a country refers to the risk of exposure to SARS-CoV-2 in that country, irrespective of the nationality or country of origin of an individual. Recommendations for travelers should apply to arrivals by road, rail, or air. Travelers arriving from countries in purple, red, and grey categories, who have stopped over in a green category country for fewer than 14 days (determined from passport or landing card), are considered as coming from countries in purple, red, or grey categories.

2.2 Vaccination against COVID-19

Vaccination should be encouraged for all eligible people and travelers who are fully vaccinated should be treated appropriately, in terms of travel restrictions. Full vaccination with a licensed vaccine gives very high levels of protection against severe illness and death from COVID-19, including that caused by alpha and delta variants of concern (Lopez Bernal et al. 2021). Full vaccination also reduces the risk of acquiring and transmitting SARS-CoV-2. These benefits have already allowed exemptions from requirements such as the need for quarantine on arrival in some countries (European Centre for Disease Prevention and Control 2021b). Measures that facilitate travel for fully vaccinated people should be commensurate with their risk of becoming infected or transmitting infection.

People who are vaccinated may still become infected and may still transmit SARS-CoV-2. The level of transmission is lower than from unvaccinated infected people (Harris et al. 2021). Vaccine efficacy against some variants of concern may be reduced, and is still under investigation (Lopez Bernal et al. 2021). Travelers from countries with high levels of variants of concern could therefore still introduce the SARS-CoV-2 variant of concern, even if fully vaccinated. These infections may then spread in Switzerland, since the majority of the population is still not fully vaccinated.

The measures for travelers who have received a full course of a licensed COVID-19 vaccine should take into consideration the level of infection and the circulation of variants of concern in the country from which they arrive. Fully vaccinated people arriving from a country in the green category have a low risk of being infected and of transmitting infection. Exemption from testing before travel and on arrival and exemption from quarantine poses an acceptably low risk of imported infection.

Vaccinated travelers coming from countries with highly transmissible variants of concern may still be infected with and may transmit, especially if community transmission is widespread. Reducing the number of introductions of variants of concern is an important epidemiological goal, even if the variant is already present in people without a history of travel to an affected area. If the majority of the Swiss population is not protected against SARS-CoV-2, there is the potential for large outbreaks, including severe disease and death in unvaccinated people. There are therefore reasons to control the possibility of importation of SARS-CoV-2 variants of concern among vaccinated people. A combination of testing on arrival and testing during quarantine to shorten the period of quarantine for fully vaccinated travelers could be considered (European Union Aviation Safety Agency and European Centre for Disease Prevention and Control 2021). The Task Force has published information to help determine appropriate quarantine duration¹¹ and testing¹² during quarantine.

2.3 Measures for all arriving travelers, including children aged 12 years and older, regardless of the region of provenance, of symptoms, and of travel mode:

1. **Information about procedures** on arrival in Switzerland should be made available to all travelers in advance.
2. **Negative RT-PCR test result <72 hours (or rapid antigen test done by a trained professional <24hrs)** before departure should be requested at entry. People who have received a full course of a SARS-CoV-2 vaccine (approved by WHO¹³) at least two weeks before departure could be considered exempt from testing. Children <12 years are exempted from testing if the parent is negative or fully vaccinated and the child does not have symptoms.
3. **Symptom checklist** should be handed out before landing and completed by all air passengers, reporting the presence or absence of the six most common symptoms named by the FOPH (fever or feeling hot, dry cough, sore throat, shortness of breath, muscle pain, recent loss of smell or taste). Parents should complete a symptom checklist for children <12 years old. If the child has no symptoms, or if the parents have tested negative or are fully vaccinated, a test is not required. If the child has symptoms, see below.

2.4 Travelers coming from countries with high levels of new variants of concern:

In addition to the measures in section 2.3, travelers arriving from countries in which new variants of concern are circulating widely should also have a rapid antigen or RT-PCR test on arrival. Travelers should enter mandatory quarantine if the test result is negative, or isolation if test result is positive (confirmed with laboratory RT-PCR and whole genome sequencing). If positive, the infection should be assumed to be caused by a variant of concern. Isolation and quarantine should be in specific facilities (such as dedicated hotels). Mandatory use of SwissCovid App or another GAEN app, which is interoperable with the SwissCovid App.

Countries with undetected circulation of SARS-CoV-2 variants of concern need to be designated quickly and new border restrictions may need to be introduced at short notice to prevent outbreaks. The mass gathering event, the UEFA European football championships, has shown the need for intersectoral plans for prevention and mitigation, including border restrictions, coordinated monitoring of travel-associated SARS-CoV-2 with genomic surveillance, and rapid responses to changing epidemiological situations (European Centre for Disease Prevention and Control 2021a). The UEFA championships have coincided with widespread circulation of the delta variant in Europe, a relaxation in non-pharmaceutical interventions in several countries, and limited surveillance and monitoring in others. Pre-travel testing, testing on arrival and mandatory quarantine should be considered for all returning travelers from these events, including those who have been vaccinated. Enhanced genomic surveillance and contact tracing should also be implemented to prevent a surge in new cases of delta variant (European Centre for Disease Prevention and Control 2021a).

2.5 Travelers with symptoms (see 'symptom checklist' above):

Travelers who have COVID-19 symptoms on arrival should have an immediate medical assessment in a separate room.

Green, red, or grey categories: provision of mask and virological testing by rapid test or RT-PCR, including for children <12 years. All people with a positive test should have a sample sent for whole genome sequencing. While waiting for the results, isolation at a documented, registered address at home, in a hotel, or dedicated isolation facility. If test is positive, follow FOPH rules of conduct and medical follow-up while in isolation (7). Contact tracing among other travelers from the same coach (train, bus) or plane with the help of a Federal Service Contact Office (see below). If RT-PCR test negative, stay in isolation and repeat test at day 5-7, with release on day 7.

Purple category: as above, but isolation in a dedicated facility, e.g. designated hotel, or hospital if clinically indicated.

2.6 Travelers with no symptoms (no fever or other named symptoms):

Green category: for all travelers, a leaflet with regulations for prevention of SARS-CoV-2 transmission in Switzerland (one page, with pictograms). Except for cross-border commuters, named tickets are recommended, including train tickets, to facilitate contact tracing if cases are identified in the same coach, bus, train or plane.

Red and grey categories:

Persons entering Switzerland: quarantine for 10 days at a documented, registered address at home, in a hotel or other dedicated quarantine facility, except for those fully vaccinated. Follow FOPH rules of conduct for people in quarantine (8). Testing during quarantine at day 5-7 possible, and release on day 7 if test is negative (9). Mandatory use of SwissCovid App or other GAEN app, which is interoperable with the SwissCovid app. Employers should promote self-quarantine for all travelers coming from these zones.

Persons leaving Switzerland: travel is not advised in non-green zones except for essential reasons (as defined by the Federal Council); in case travel takes place, registration of name, purpose of visit, date of exit and expected date of re-entry should be collected and stored in a dedicated database of a Federal Service Contact Office (see details below).

Purple category: See section 2.4.

2.7 Virological testing by RT-PCR for SARS-CoV-2 and systematic whole genome sequencing of samples with a positive result: Travelers are a sentinel population in whom enhanced surveillance for SARS-CoV-2 infection should be conducted. All samples with positive RT-PCR results, detected in connection with border control, should be submitted for whole genome sequencing to improve understanding of SARS-CoV-2 importation and spread in Switzerland.

2.8 Federal Service Contact Office: There should be a service contact point at the federal level through which adherence to requirements for quarantine or isolation of arriving travelers is enforced and contact tracing across borders is conducted. The cantonal doctor's office must notify the service point if a person tests positive and had close contacts with people in the country of origin. This service point is also notified by any foreign country in which an inhabitant from these countries had close contacts to someone in Switzerland. This service will retrieve contacts in coaches, trains and planes when cases are identified since it will have access to the passenger lists from travel companies. The service point is in regular daily exchange with the cantonal physicians.

2.9 Migrants, refugees and asylum-seekers entering the country

All migrants, refugees and asylum-seekers follow the procedures for entering Switzerland outlined above and then follow the procedures of border health controls that involves (i) comprehensive information about measures, risks, and legal rights and protections; complemented by the recommendation to download the SwissCovid, unless they use another GAEN app and (ii) RT-PCR-testing as part of TTIQ and (iii) TTIQ-procedures.

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Links

¹ <https://www.ecdc.europa.eu/en/publications-data/communicable-disease-threats-report-20-26-june-2021-week-25>

² <https://www.admin.ch/gov/en/start/documentation/media-releases/media-releases-federal-council.msg-id-79248.html>

³ <https://www.bag.admin.ch/bag/en/home/krankheiten/ausbrueche-epidemien-pandemien/aktuelle-ausbrueche-epidemien/novel-cov/empfehlungen-fuer-reisende.html>

⁴ <https://cov-spectrum.ethz.ch/explore/Switzerland/AllSamples/AllTimes/variants/json=%7B%22variant%22%3A%7B%22name%22%3A%22B.1.617.2%22%2C%22mutations%22%3A%5b%5d%7D%2C%22matchPercentage%22%3A%7D>

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¹³ <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines>