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Recognition of COVID-19 Vaccination Status and International Travel Restrictions

Evidence-Based Public Health (ZIG 2) | Center for International Health Protection (ZIG)

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Summary

An internationally harmonized and widely recognized COVID-19 vaccination certification scheme remains elusive. This report maps how Bahrain, France, Germany, Israel, Seychelles, the United Kingdom, the United States and Seychelles define full vaccination status within country and for incoming travelers, which vaccination schemes are applied in country and which are accepted in incoming travelers and which certifications of vaccination status are recognized. The report also provides an overview of the exemptions from testing and quarantining requirements associated with full vaccination status.

Weekly COVID-19 incidence per 100,000 population has been increasing in Bahrain and decreasing in France, Germany, Israel, the United Kingdom and the United States. Incidence in Seychelles experienced a peak in mid-May 2021. Incidence is high in France and very high in Bahrain and Seychelles. As of 25 May 2021, full vaccination coverage was below 35% of the population in France, Germany and the United Kingdom and near or above 40% in Bahrain, Israel, Seychelles and the United States. Relaxation of COVID-19 containment measures can be observed across many policy areas in all seven countries. Most countries, however, continue to maintain strict international travel regulations, cancellation of public events and restrictions on public gatherings. The available evidence suggests that the vaccine types administered in countries are effective against most circulating virus variants and especially the dominant variant B.1.1.7. However, available data was limited to Germany, France, Israel, the United Kingdom and the United States.

The mapping exercise on the recognition of vaccination status showed that three out of seven countries apply the same definition of full vaccination status to residents as well as incoming travelers. Countries differ widely in the vaccines they accept in incoming travelers, ranging from accepting only those vaccines that are also administered in-country, to those admitted for use by WHO or even any vaccine administered in any country. There is also no internationally harmonized certification scheme in use, with most countries relying on national app systems in addition to paper-based certificates. Finally, some countries have eased international travel restrictions for arriving travelers, granting exemptions from testing and quarantine for fully vaccinated individuals upon arrival. Given this patchwork of rules, countries are presented with several challenges. Diverging definitions of vaccination status as well as differing certification schemes and ensuing failure to recognize vaccinations carried out in other countries may impede travel. With summer holiday travel on the horizon in the Northern hemisphere, governments may be eager to partake in the economic benefits of tourism. However, in certain situations easing international travel restrictions for fully vaccinated travelers may harbor public health risks. As the epidemiological situation in Bahrain and Seychelles demonstrates, even countries with higher full vaccination coverage can experience surges in COVID-19 cases.

Germany could take the following recommendations under consideration:

- An interoperable system to certify the status of vaccinated individuals is needed to reinstate international travel as safely and swiftly as possible. The EU Digital Green Certificate, if put in place and adopted widely across the EU, could be a step in the right direction;*
- However, recognition and certification of vaccination status is also needed for travelers outside the EU. The WHO vaccination booklet is an international certificate that is available to use;*
- Both COVID-19 incidence and full vaccination coverage must be monitored carefully by countries when deciding on exemptions from travel measures for fully vaccinated travelers. Here, policy makers should stay abreast of effectiveness of the available vaccine types;*
- If COVID-19 variants with proven immune escape circulate, exemptions from quarantine for fully vaccinated travelers should be reviewed.*

Zusammenfassung

Aktuell gibt es noch keinen international anerkannten und breit genutzten COVID-19-Impfnachweis. Dieser Bericht untersucht, wie Bahrain, Frankreich, Deutschland, Israel, die Seychellen, Großbritannien und die Vereinigten Staaten einen vollständigen COVID-19 Impfstatus für im Land Geimpfte und Reisende definieren sowie welche Impfschemata und Impfnachweise anerkannt werden. Der Bericht bietet ebenfalls einen Überblick über die Befreiung von Test- und Quarantänepflichten für vollständig Geimpfte bei internationalen Reisen.

Die wöchentliche COVID-19 Inzidenz pro 100.000 Einwohner steigt in Bahrain und fällt in Frankreich, Deutschland, Israel, dem Vereinigten Königreich und den Vereinigten Staaten. Bis Mitte Mai stieg die Inzidenz in den Seychellen an, seit kurzem fällt sie. Die Inzidenz in Frankreich ist hoch und in Bahrain und den Seychellen sehr hoch. Zum 25. Mai 2021 lag die vollständige Durchimpfungsrate bei weniger als 35% der Bevölkerung in Frankreich, Deutschland und dem Vereinigten Königreich und in Bahrain, Israel, Seychellen und den Vereinigten Staaten um oder über 40%. In allen sieben Ländern wurden COVID-19 Maßnahmen in verschiedenen Bereichen gelockert. Die meisten Länder halten jedoch weiterhin strenge Reisebeschränkungen und Maßnahmen bezüglich öffentlicher Veranstaltungen und öffentlicher Versammlungen aufrecht. Die in den Ländern verabreichten Impfstoffe sind nach aktuellem Kenntnisstand vermutlich gegen die meisten zirkulierenden Virusvarianten und insbesondere die dominierende Variante B.1.1.7 wirksam. Die Daten zur Verbreitung von Virusvarianten sind jedoch auf Deutschland, Frankreich, Israel, das Vereinigte Königreich und die Vereinigten Staaten beschränkt.

Die meisten Länder stellen für eine Anerkennung des COVID-19 Impfstatus dieselben Anforderungen an im Inland Geimpfte wie Einreisende. Die Länder unterscheiden sich jedoch hinsichtlich der Impfstoffe, die anerkannt werden. Hier reicht das Spektrum von der Anerkennung von Impfungen ausschließlich mit den im eigenen Land zugelassenen Impfstoffen bis hin zur Anerkennung von Impfungen mit allen weltweit zugelassenen Impfstoffen. Die erforderlichen Impfnachweise sind international nicht einheitlich. Die meisten Länder vertrauen auf nationale App-Systeme sowie analoge Impfbzertifikate. Einige Länder gewähren Ausnahmen von Test- und Quarantänepflichten für vollständig geimpfte Einreisende.

Angesichts dieses Flickenteppichs an Vorschriften stehen die Länder vor verschiedenen Herausforderungen. Unterschiedliche Definitionen des Impfstatus sowie unterschiedliche Zertifizierungssysteme und die mögliche Nichtanerkennung von Impfungen, die in Drittländern durchgeführt wurden, können das Reisen erschweren. Angesichts der bevorstehenden sommerlichen Reiseperiode in der nördlichen Hemisphäre sind Regierungen möglicherweise auch durch den potentiellen wirtschaftlichen Aufschwung durch Tourismus motiviert, internationale Reisebeschränkungen zu lockern. Unter gewissen Umständen kann eine Lockerung der Reisebeschränkungen für vollständig geimpfte Reisende jedoch Risiken für die öffentliche Gesundheit mit sich bringen. Wie die epidemiologische Situation in Bahrain und auf den Seychellen zeigt, kann es auch in Ländern mit einer höheren Durchimpfungsrate zu einem Anstieg der COVID-19-Fälle kommen.

Deutschland könnte die folgenden Empfehlungen in Erwägung ziehen:

- *Ein international kompatibles System zum Nachweis des Impfstatus ist gefragt, um internationale Reisen auf sichere Art bald wieder zu ermöglichen. Das EU Digital Green Certificate könnte ein Schritt in die richtige Richtung sein, wenn es eingeführt und in der gesamten EU übernommen wird.*
- *Anerkennung und Nachweis des Impfstatus ist jedoch auch für Reisende außerhalb der EU erforderlich. Mit dem Internationalen Impfausweis der WHO steht ein internationaler Nachweis zur Verfügung, der genutzt werden könnte.*
- *Sowohl die COVID-19-Inzidenz als auch die Durchimpfungsrate sollten von Ländern sorgfältig überwacht werden, wenn sie über Ausnahmen von Test- und Quarantänepflichten für vollständig geimpfte Reisende entscheiden. Regierungen sollten sich ebenso von der wachsenden wissenschaftlichen Evidenz u. a. zur Wirksamkeit der verfügbaren Impfstoffe leiten lassen.*

- *Wenn COVID-19-Varianten mit „immune escape“ zirkulieren, sollten bestehende Ausnahmen von der Quarantänepflicht für vollständig geimpfte Reisende geprüft werden.*

1. Problem Statement

With increasing COVID-19 vaccination coverage, some countries have started easing travel restrictions, especially for fully vaccinated individuals. However, an internationally harmonized and widely recognized vaccination certification scheme has not yet been put in place. This report maps how Bahrain, France, Germany, Israel, Seychelles, the United Kingdom, the United States and Seychelles define full vaccination status within country and for incoming travelers, which vaccination schemes are applied in country and which are accepted in incoming travelers and which certifications of vaccination status are recognized. The report also provides an overview of which exemptions from testing and quarantining requirements are associated with full vaccination status. The report discusses the risks to COVID-19 containment associated with the observed exemptions from international travel measures.

2. Epidemiological Comparison

2.1 Weekly new COVID-19 cases per 100,000 population in Bahrain, France, Germany, Israel, Seychelles, the United Kingdom and the United States, February -May 2021 (Figure 1): Weekly COVID-19 incidence per 100,000 population has been increasing in Bahrain since early April 2021. In Germany, weekly COVID-19 incidence increased in early April, but has decreased since late April 2021. In Seychelles, weekly COVID-19 incidence experienced a peak in week 19-2021. Weekly COVID-19 incidence has been decreasing in France, Israel, the United Kingdom and the United States since early April 2021. As of 25 May 2021, COVID-19 incidence stands at 2.31 in Israel, 23.59 in the United Kingdom, 53.44 in the United States, 65.31 in Germany, 132.31 in France, 589.79 in Seychelles and 927.20 per 100,000 population in Bahrain.^{[1], 1}

2.2 Variants of Concern: VOC B.1.1.7 is dominant (accounting for at least 50% of circulating variants) in France, Germany, Israel, the United Kingdom, and the United States.[2-6] In the United Kingdom, VOC P.1 has been prevalent in 0.06% and VOC B.1.351 has been prevalent in 0.4% of sequenced cases between October 2020 and late May 2021. VOC B.1.617 has been prevalent in 1.3% of cases in the country between October 2020 and late May 2021 and continues to increase over time.[5] In Germany, B.1.617 is prevalent in 2% of samples, also with an increasing trend over time. B.1.351 is prevalent in 3% of samples and P.1 in 0.3% of samples.[3] In France, B.1.351 and P.1 comprised 5.9% of circulating variants in the country as of late May.[2] Between mid- to late April, P.1 comprised 5.2% of circulating variants in the United States. B.1.617.1 and B.1.617.2 together comprised 0.7% of circulating variants in the country.^[6] No systematic data on circulating virus variants was available for Seychelles and Bahrain.²

¹ In early April 2021, public holidays due to Easter celebrations were observed in a number of the seven countries. This likely affected reported incidence.

² Data quality on COVID-19 variants varies greatly across countries. See "Evidence Rating" in this report.

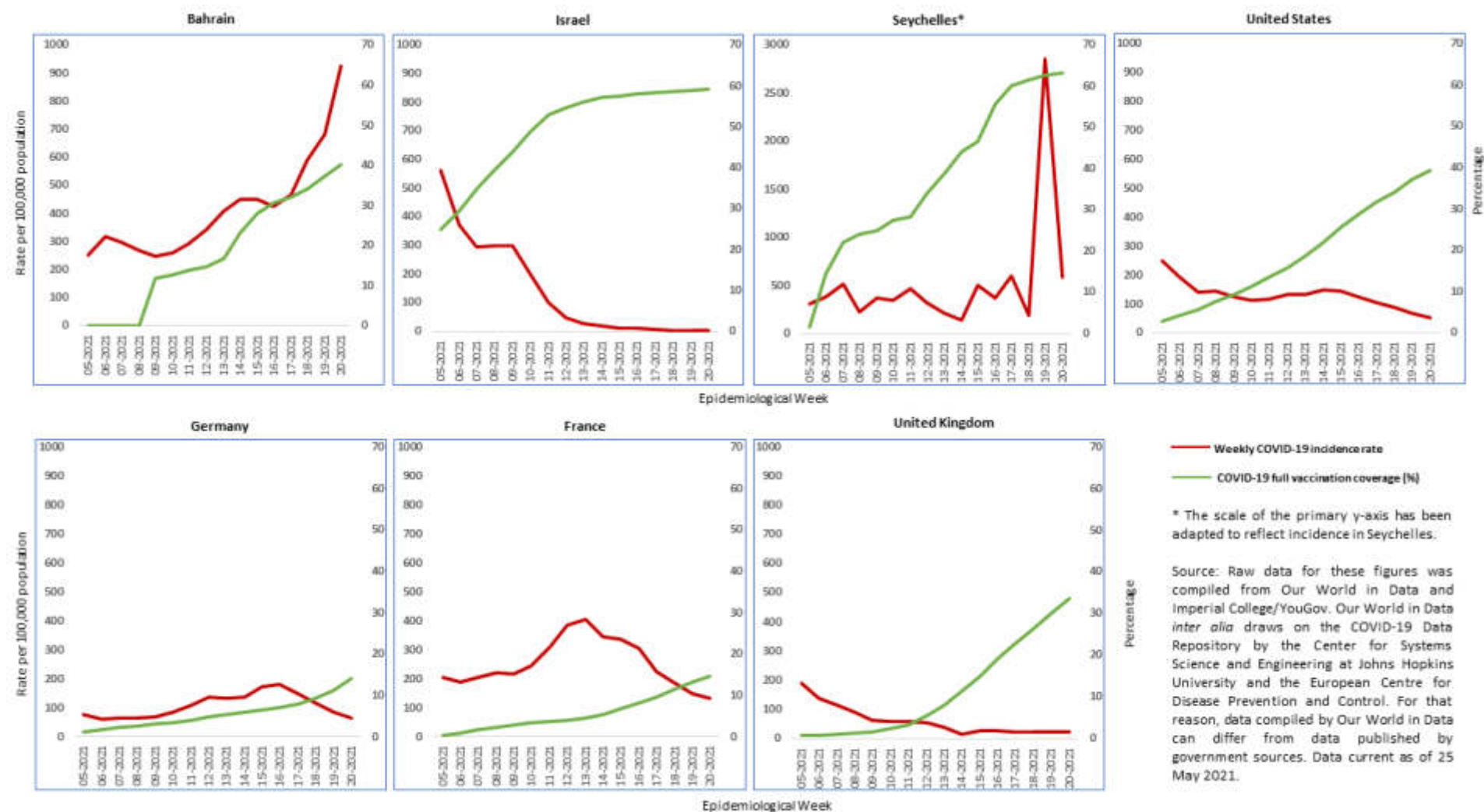


Figure 1: Weekly COVID-19 incidence and full vaccination coverage in Bahrain, France, Germany, Israel, Seychelles, the United Kingdom and the United States, weeks 5-2021 – 20-2021

3. Vaccination Coverage and Access

3.1 Vaccination coverage in Bahrain, France, Germany, India, Israel, Seychelles, the United Kingdom and the United States, February – May 2021 (Figure 1): As of 25 May 2021, 49.3, 51.5, 56.1, 62.9 and 71.3% of the population had received at least one dose of a COVID-19 vaccine in the United States, Bahrain, the United Kingdom, Israel and Seychelles, respectively. By the same date, 33.9 and 40.1% of the population in France and Germany had received at least one dose. As of 12 May 2021, full vaccination coverage was at 14, 14.5, 33.7, 39.2, 40.2, 59.1 and 63.1% in Germany, France, the United Kingdom, the United States, Bahrain, Israel and Seychelles, respectively.^[7]

Bahrain administers vaccines by Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing and Sputnik V. France and Germany administer vaccines by Johnson&Johnson, Moderna, Oxford/AstraZeneca and Pfizer/BioNTech. The two countries predominantly administer the Pfizer/BioNTech vaccine and the Oxford/AstraZeneca vaccine. Both countries, as well as several other European countries temporarily paused vaccinations with the Oxford/AstraZeneca vaccine in mid-March 2021, due to the occurrence of rare blood clots in people vaccinated with the Oxford/AstraZeneca vaccine.^[8] Israel administers vaccines by Moderna and Pfizer/BioNTech. Seychelles administers Oxford/AstraZeneca and Sinopharm/Beijing. The United Kingdom administers Moderna, Oxford/AstraZeneca and Pfizer/BioNTech vaccines. The United States administers vaccines by Johnson&Johnson, Moderna and Pfizer/BioNTech. The country predominantly administers the Pfizer/BioNTech and the Moderna vaccines.^[9, 10] In late April 2021, the United States paused vaccination with the Janssen vaccine to investigate rare blood clots in people vaccinated with that vaccine.^{[11], 3}

3.2 Vaccination access in Bahrain, France, Germany, Seychelles, the United Kingdom and the United States, May 2021: Bahrain, Israel, Seychelles and the United States currently universally offer a COVID-19 vaccination to their populations. In the United States, anyone aged 12 and older can receive the vaccination. In Bahrain, anyone aged 18 and older is eligible. In Israel, those aged 16 and older are eligible. In France, anyone aged 18 and up will be eligible from 31 May 2021 onwards.^[12-15] German federal states currently vaccinate different groups prioritized by age and co-morbidities. Prioritization does not apply to vaccinations with the Oxford/AstraZeneca and Johnson&Johnson vaccines, meaning all aged 18 and older can be vaccinated with those vaccines. All vaccines will be universally offered to the entire population from 7 June 2021 onwards.^[16] The United Kingdom is offering a vaccination to anyone aged 30 and over, as well as to specific priority groups.^[17]

³ Information on predominantly administered vaccine types in Bahrain, Israel, Seychelles and the United Kingdom was not readily available at time of report writing.

4. COVID-19 Containment Measures

4.1 COVID-19 containment measures in Bahrain, France, Germany, Israel, Seychelles, the United Kingdom and the United States, February – May 2021 (Figure 2): The overall trend in COVID-19 containment measures from 1 February 2021 to 25 May 2021 shows gradual relaxation of measures across all seven countries, including school closures, workplace closures, public transportation closures, stay-at-home requirements and to a lesser extent restrictions on internal movement. Most countries, however, continue to maintain strict international travel regulations, cancellation of public events and restrictions on public gatherings. Germany continues to maintain strict school closure regulations. All other countries have from the beginning of March and May progressively loosened regulations pertaining to school closures. Seychelles had no measure in place for school closure between Mid-April and early May, but tightened the school closures in the second week of May. Workplace closures have been relaxed among all the countries except France, which continues to have strict measures in place. Germany, Seychelles, France and the United Kingdom continue to have strict measures in place for the cancellation of public events and together with the United States maintain strict measures for public gatherings. From the beginning of April, Israel and the United States relaxed regulations on public events and, from the beginning of May, restrictions on public gatherings. Bahrain tightened cancellations of public events and restrictions on public gatherings starting April. Stay-at-Home-Requirements remain strict in Germany and in France. The United States, Seychelles and Bahrain have relaxed stay-at-home requirement at varying periods between March and May, while in Israel and United Kingdom there are currently no stay-at-home restrictions in place. Regulation of public transportation has been continuously relaxed between March and May, and currently there are no measures in place in Bahrain, Seychelles, France and Israel. Germany, the United Kingdom and the United States have continued to maintain the same strict measures on public transportation since the beginning of February. Bahrain and the United Kingdom tightened restrictions on internal movement from the beginning of March and mid of May respectively, France and Seychelles have had no measures in place since the beginning of May. The United States have loosened restrictions on internal movement in May. Restrictions on internal movement have remained the same in Germany between February and May.^[18]

		1 February 2021	1 March 2021	1 April 2021	1 May 2021	25 May 2021	
Bahrain	School Closures	Required (all levels)		Recommended			
	Workplace Closures	Required for some					
	Cancellation of Public Events	Required cancellations	Recommended cancellations	Required cancellations			
	Restrictions on Public Gatherings	< 10 people	> 1000 people	100-1000 people			
	Stay-at-Home Requirements	Recommended					
	Public Transport Closures	No measures	Recommended closing (or reduced volume)	No measures			
	Restrictions on Internal Movement	No measures	Recommend movement restriction				
	International Travel Controls	Screening		Quarantine from high-risk regions			
France	School Closures	Required (some levels)		Recommended	Required (some levels)		
	Workplace Closures	Required for some	Required for all but key workers		Required for some		
	Cancellation of Public Events	Required cancellations					
	Restrictions on Public Gatherings	< 10 people					
	Stay-at-Home Requirements	Required (except essentials)					
	Public Transport Closures	No measures	Required closing (or prohibiting most using it)	No measures			
	Restrictions on Internal Movement	No measures	Restrict movement	No measure			
	International Travel Controls	Ban on high-risk regions					
Germany	School Closures	Required (all levels)					
	Workplace Closures	Required for all but key workers	Required for some				
	Cancellation of Public Events	Required cancellations					
	Restrictions on Public Gatherings	< 10 people					
	Stay-at-Home Requirements	Required (except essentials)					
	Public Transport Closures	Recommended closing (or reduced volume)					
	Restrictions on Internal Movement	Recommend movement restriction					
	International Travel Controls	Ban on high-risk regions					
Israel	School Closures	Required (some levels)		Recommended			
	Workplace Closures	Required for all but key workers		Required for some			Recommended
	Cancellation of Public Events	Required cancellations		Recommended cancellations			
	Restrictions on Public Gatherings	< 10 people					10 – 100 people
	Stay-at-Home Requirements	Required (except essentials)		No measures			

	Public Transport Closures	Recommended closing (or reduced volume)		No measures	
	Restrictions on Internal Movement	Restrict movement		No measures	
	International Travel Controls	Total border closure			
Seychelles	School Closures	Required (all levels)		Required (some levels)	Required (all levels)
	Workplace Closures	Required for all but key workers	Required for some	Recommended	
	Cancellation of Public Events	Required cancellations			
	Restrictions on Public Gatherings	< 10 people			
	Stay-at-Home Requirements	Required (except essentials)	Recommended		Required (except essentials)
	Public Transport Closures	Recommended closing (or reduced volume)		No measure	Recommended closing (or reduced volume)
	Restrictions on Internal Movement	Recommended Movement restriction		No measures	
	International Travel Controls	Ban on high-risk regions	Screening		Ban on high-risk regions
United Kingdom	School Closures	Required at all levels		Required (some levels)	Recommended
	Workplace Closures	Required for all but key workers		Required for some	Required for some
	Cancellation of Public Events	Required cancellations			
	Restrictions on Public Gatherings	< 10 people			
	Stay-at-Home Requirements	Required (except essentials)		No measures	
	Public Transport Closures	Recommended closing (or reduced volume)			
	Restrictions on Internal Movement	Restrict movement		Recommended movement restrictions	Restrict movement
	International Travel Controls	Ban on high-risk regions			
United States	School Closures	Required (all levels)		Required (some levels)	
	Workplace Closures	Required for some		Recommended	
	Cancellation of Public Events	Required cancellations		Recommended cancellations	
	Restrictions on Public Gatherings	< 10 people			
	Stay-at-Home Requirements	Required (except essentials)		Recommended	
	Public Transport Closures	Recommended closing (or reduced volume)			
	Restrictions on Internal Movement	Restrict movement		Recommend movement restrictions	
	International Travel Controls	Ban on high-risk regions			

Figure 2: Heatmap COVID-19 Containment Measures in Bahrain, France, Germany, Israel, Seychelles, the United Kingdom and the United States, 1 February – 25 May 2021

5. Recognition of COVID-19 Vaccination Status, Schemes, Vaccine Types, Vaccination Certificates and Associated Exemptions from International Travel Measures in Bahrain, France, Germany, Israel, Seychelles, the United Kingdom and the United States, May 2021 (Table 1): Bahrain, Germany, Seychelles and the United States apply the same definition of full vaccination status to their residents as incoming travelers. France and the United Kingdom have not yet specified how they define fully vaccinated status and exemptions for fully vaccinated individuals are not yet in use. Bahrain and Israel have concluded agreements with select countries on mutual recognition of vaccination status, implying automatic acceptance of vaccinations administered in countries with agreements in place. Concerning recognition of vaccination schemes and vaccine types, Germany and Israel accept only those vaccine types in incoming travelers that are also administered to residents. The United States accepts those administered in the country as well as those approved by WHO. Seychelles accepts any vaccine approved in emitting countries of incoming travelers. There was no data on which vaccine types and vaccination schemes Bahrain, France, and the United Kingdom require for incoming travelers. Most countries use an app-based vaccination certificate for their residents in addition to issuing paper-based formats. Bahrain and Germany accept digital and paper-based formats for international travelers, with digital formats requiring a QR code. Israel only accepts vaccination certificates issued within the country. Incoming travelers vaccinated outside of Israel are required to have a paper certificate and must prove vaccination status through a serological test taken upon arrival in Israel. France, Seychelles, the United Kingdom and the United States have not specified which certificates they accept as proof of vaccination status from incoming travelers. Overall, it can be noted that there is no internationally harmonized certification scheme in use in the seven countries. The WHO vaccination booklet, an existing vaccination certification scheme, is explicitly mentioned as acceptable proof of COVID-19 vaccination status only by Germany. With the Digital Green Certificate, there is a process for EU-wide mutual recognition of vaccinations under way, which is planned to be in use starting this summer. Bahrain and Germany grant exemptions from testing and quarantine for fully vaccinated individuals upon arrival. Israel, Seychelles and the United States exempt fully vaccinated individuals from quarantine when entering the country. France and the United Kingdom have no such exemptions in place yet.

Table 1: Mutual Recognition of Vaccination Status, Schemes, Vaccine Types, Vaccination Certificates in Bahrain, France, Germany, Israel, Seychelles, the United Kingdom and the United States, May 2021. Legend: grey = no data

	Definition “Fully Vaccinated”		Vaccination Schemes, Vaccine Types		Vaccination Certificates	
	Within Country	Incoming Travelers	Within Country	Incoming Travelers	Within Country	Incoming Travelers
Bahrain	14 days after 2 nd dose of approved vaccine ^[19]	Mutual recognition with Cyprus, Greece, Gulf Cooperation Council countries, Hungary, Israel, United Arab Emirates ^[20-25]	Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm, Sputnik V: 2 doses, 21 days apart ^[26, 27]	Mutual recognition with Cyprus, Greece, Gulf Cooperation Council countries, Hungary, Israel (only vaccines recognized in Israel), United Arab Emirates ^[20-25]	BeAware Bahrain App ^[28]	Vaccination Certificate or App ^[29] , 4 Mutual recognition with Cyprus, Greece, Gulf Cooperation Council countries, Hungary, Israel, United Arab Emirates ^[20-25]
France	Moderna, Oxford/AstraZeneca, Pfizer/BioNTech: 14 days after 2 nd dose; Johnson&Johnson: 4 weeks after 1 st dose ^[30]	No data	Johnson&Johnson: 1 dose; Moderna: 2 doses, 28 days apart; Oxford/AstraZeneca: heterologous vaccination scheme with 2 nd dose mRNA vaccine after 12 weeks; Pfizer/BioNTech: 2 doses, 21 days apart ^[31, 32]	No data	Paper vaccination certificate and planned use in TousAntiCovid App ^[30]	No data
Germany	14 days after completing required doses of approved vaccine OR 14 days after getting one dose of any approved vaccine for recovered individuals ^[33]	Same as within country ^[34] Planned: EU Digital Green Certificate ^[35]	Johnson&Johnson: 1 dose; Moderna: 2 doses, 6 weeks apart; Oxford/AstraZeneca: 2 doses, 12 weeks apart; Pfizer/BioNTech: 2 doses, 6 weeks apart ^[34, 36, 37]	Same as within country ^[34] Planned: Accepting all vaccine types that have been approved by EMA for EU Digital Green Certificate ^[38]	WHO Vaccination booklet, digital vaccination certificate (QR-code), used with Corona-Warn-App ^[39]	Digital or paper format (incl. WHO vaccination booklet) ^[34] Planned: EU Digital Green Certificate ^[35, 38]
Israel	7 days after 2 nd dose of approved vaccine ^[40]	If travelers were not vaccinated in Israel, a serological test is required as proof of vaccination upon arrival ^[41]	Moderna, Pfizer/BioNTech: 2 doses, 21 days apart	If travelers were not vaccinated in Israel, a serological test is required as proof of vaccination upon arrival ^[41]	Green Pass and paper vaccination certificate ^[40]	If travelers were not vaccinated in Israel, a serological test is required as proof of vaccination upon arrival ^[41]

⁴ Vaccination certificates stemming from outside countries with mutual recognition, Canada, the EU, the United Kingdom or the United States must feature a QR code.

	Definition "Fully Vaccinated"		Vaccination Schemes, Vaccine Types		Vaccination Certificates	
	Within Country	Incoming Travelers	Within Country	Incoming Travelers	Within Country	Incoming Travelers
		Mutual recognition with Bahrain, Cyprus, Georgia, Greece ^[24, 42]		Mutual recognition with Bahrain, Cyprus, Georgia, Greece ^[24, 42]		Mutual recognition with Bahrain, Cyprus, Georgia, Greece ^[24, 42]
Seychelles	14 days after completing required doses of approved vaccine ^[43]	Same as within country ^[43]	Oxford/AstraZeneca and Sinopharm/Beijing	Any approved COVID-19 vaccine	Valid proof of vaccination ^[43]	No data
United Kingdom	After 2 nd dose of any approved vaccine ^[44]	No data	Moderna: 2 doses, min. 28 days apart; Oxford/AstraZeneca: 2 doses, min. 8 weeks apart; Pfizer/BioNTech : 2 doses, min. 21 days apart ^{[45], 5}	No data	NHS App or paper vaccination certificate ^[46]	No data
United States	Moderna, Pfizer/BioNTech: 14 days after 2 nd dose; Johnson&Johnson: 14 days after 1 st dose ^[47]	Same as within country ^[48]	U.S. Food and Drug Administration (FDA) authorized vaccines: Johnson&Johnson: 1 dose; Moderna: 2 doses, 28 days apart; Pfizer/BioNTech: 2 doses, 21 days apart ^[47]	FDA-authorized vaccines or vaccines authorized for emergency use by the World Health Organization ^[48]	No	No data

⁵ Currently, the United Kingdom is administering a 2nd dose for all vaccines after 12 weeks.

Table 2: Testing and Quarantine Exemptions for Fully Vaccinated Travelers entering Bahrain, France, Germany, Israel, Seychelles, the United Kingdom and the United States, May 2021.

Legend: red = no exemptions, green = exemptions, white = not applicable

	Exemptions from Testing	Exemptions from Quarantine
Bahrain	Yes ⁶	Yes ⁷
France	No ^[49]	Not applicable ^{[49], 8}
Germany	Yes ^[34]	Yes ^[34]
Israel	No ^[41, 50]	Yes ^{[41, 51], 9}
Seychelles	No ^[43]	Yes ^[43]
United Kingdom	No ^[52]	No ^[52]
United States	No ^[53]	Yes ^[53]

⁶ Only for countries with mutual vaccination recognition.⁷ Only for countries with mutual vaccination recognition.⁸ Travel outside of select European and other countries generally banned except for imperative reasons. Quarantine upon entry is currently not in effect in France for any travelers.⁹ Travel to Israel for non-citizens or residents is currently mostly prohibited and only allowed in exceptional circumstances following a successful application to Israeli authorities. Exemptions from quarantine upon arrival in Israel are only granted for travelers fully vaccinated outside of Israel if travelers take a serological test upon arrival in Israel.

5. Synthesis

Weekly COVID-19 incidence per 100,000 population has been increasing in Bahrain and decreasing in France, Germany, Israel, the United Kingdom and the United States. Incidence in Seychelles experienced a peak in mid-May 2021. Incidence is high in France and very high in Bahrain and Seychelles. Meanwhile, as of 25 May 2021, full vaccination coverage was below 35% of the population in France, Germany and the United Kingdom and near or above 40% in Bahrain, Israel, Seychelles and the United States. Relaxation of COVID-19 containment measures can be observed across many policy areas in all seven countries. Most countries, however, continue to maintain strict international travel regulations, cancellation of public events and restrictions on public gatherings. The available evidence suggests that the vaccine types administered in countries are effective against most circulating variants and especially the dominant variant B.1.1.7.^[54] However, available data was limited to Germany, France, Israel, the United Kingdom and the United States.

The mapping exercise on the recognition of vaccination status revealed that three out of seven countries apply the same definition of full vaccination status to residents as well as incoming travelers. Bahrain and Israel have also concluded agreements with select countries on mutual recognition of vaccination status, meaning vaccinations carried out in countries with mutual recognition are automatically recognized. Countries differ widely in the vaccines they accept in incoming travelers, ranging from accepting only those vaccines that are also administered in-country, to those admitted for use by WHO or even any vaccine administered in any country. There is also no internationally harmonized certification scheme in use, with most countries relying on national app systems in addition to paper-based certificates. Finally, some countries have eased international travel restrictions for arriving travelers, with Bahrain and Germany granting exemptions from testing and quarantine for fully vaccinated individuals upon arrival. Israel, Seychelles and the United States exempt fully vaccinated individuals from quarantine when entering the country.

Given this patchwork of rules, countries are presented with several challenges. Diverging definitions of vaccination status as well as differing certification schemes and ensuing failure to recognize vaccinations carried out in other countries may impede travel. With summer holiday travel on the horizon in the Northern hemisphere, governments may be eager to partake in the economic benefits of tourism. However, in certain situations easing international travel restrictions for fully vaccinated travelers may harbor public health risks. As the epidemiological situation in Bahrain and Seychelles demonstrates, even countries with higher full vaccination coverage can experience surges in COVID-19 cases.

Germany could take the following recommendations under consideration:

- An interoperable system to certify the status of vaccinated individuals is needed to reinstate international travel as safely and swiftly as possible. The EU Digital Green Certificate, if put in place and adopted widely across the EU, could be a step in the right direction;
- However, recognition and certification of vaccination status is also needed for travelers outside the EU. The WHO vaccination booklet is an international certificate that is available to use;
- Both COVID-19 incidence and full vaccination coverage must be monitored carefully by countries when deciding on exemptions from travel measures for fully vaccinated travelers. Here, policy makers should stay abreast of effectiveness of the available vaccine types;
- If COVID-19 variants with proven immune escape circulate, exemptions from quarantine for fully vaccinated travelers should be reviewed.

6. Evidence Rating

The evidence presented in this report builds on data in the public domain from Our World in Data that was used to calculate weekly COVID-19 incidence and vaccination coverage. Our World in Data builds on epidemiological data from the Center for Systems Science and Engineering at Johns Hopkins University, the European Centre for Disease Prevention and Control and government sources. Data on prevalence of COVID-19 virus variants stems from analyses conducted by the Public Health Intelligence Unit at Robert Koch Institute and government sources. Data on COVID-19 containment measures stems from the Oxford COVID-19 government response tracker. Data on vaccine types administered stems from Our World in Data. Data on the recognition of vaccination status, vaccination schemes, vaccination certificates and associated exemptions from international travel restrictions stems from government sources and was occasionally supplemented with media reports.

Data on COVID-19 incidence and vaccination coverage was available for all countries. Data on VOC circulation was available for five out of seven countries. The representativeness and validity of data on VOC is limited for Israel, good for France and Germany and very good for the United Kingdom. The representativeness and validity of VOC data for the United States could not be evaluated. Data on vaccine types administered was available for all countries. Data on COVID-19 containment measures was available for all countries. Due to the coding scheme applied by the Oxford COVID-19 government response tracker, containment policies at the sub-national level may not be fully represented in the tracker's data. It should be kept in mind that data from the Oxford COVID-19 government response tracker do not reflect actual implementation and adherence to measures at the population level. Evidence on recognition of vaccination status, vaccination schemes, vaccination certificates and associated exemptions from international travel restrictions was complete for 3 out of seven countries, four out of seven countries had at least some missing data.

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