NUS National University of Singapore | Saw Swee Hock School of Public Health

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COVID-19

Situation Report 491

Centre for Infectious Disease Epidemiology and Research (CIDER)

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i. Background

In December, China notified the World Health Organization (WHO) of several cases of human respiratory illness, which appeared to be linked to an open seafood and livestock market in the city of Wuhan. The infecting agent has since been identified as a novel coronavirus, previously known as 2019-nCoV and now called SAR-CoV-2; The new name of the disease has also been termed COVID-19, as of 11th February 2020. Although the virus is presumed zoonotic in origin, person-to-person spread is evident. Screening of travellers, travel bans and quarantine measures are being implemented in many countries. Despite these precautions, it is anticipated that more cases will be seen both inside China and internationally. The WHO declared the outbreak of COVID-19 constitutes a Public Health Emergency of International Concern on 30 January. On 11 March, 2020, WHO declared the coronavirus outbreak a pandemic as the global death toll rose above 4,600 and the number of confirmed cases topped 125,000. This report aims to update Global Risk Assessment, Global Epidemiology, Quarantine Orders, Travel Ban/Advisory by countries, WHO's and CDC's Guidance and Protocols and Scientific publication on a daily basis. **New updates in the tables are bolded.**

ii. Global Risk Assessment

Table 1. Risk assessment of COVID-19 by WHO regions (Updated as of 26 November 2021, 1430H SGT)

Environmental Risk	Transmissibility	Severity of Disease	Availability of Treatment/ Vaccination[#]	Overall Risk[%]
Global (n=198 countries)				
High Globally, 191 (96.5%) countries (excluding territories[*]) have reported the outbreak. Using an incidence >20 cases/100,000 people over the past 14-days as cut-off for a surge in cases, the number of countries reporting a surge in cases in each region are as follows: Combined WPRO and SEARO (**13 countries**), EURO (49 countries), EMRO (**7 countries**), Americas (29 countries), and Africa (**6 countries**). Only 4 (2%) countries/territories have no reported restrictions on inbound arrivals, while 154 (83%) countries/territories have partially reopened their borders – require arrivals to produce a negative COVID-19 test result and/or undergo self-quarantine upon arrival. 41 (22%) countries/territories are totally closed to international arrivals. [1] On October 7, the Centers for Disease Control and Prevention (CDC) confirmed airborne transmission of SARS-CoV-2. [2] The U.S. CDC has revised its guidance on COVID-19 quarantine period from 14 days to 7-10 days, based one's test results and symptoms. Individuals without symptoms only need quarantine for 10 days without testing; those tested negative can quarantine for 7 days. [14] The US Centers for Disease Control and Prevention (CDC) on 10 Feb announced that fully vaccinated people did not need to quarantine if they received their last dose within three months and 14 days after their last shot, the time it takes to develop immunity. [16]	Based on CDC data, median R_0 is estimated to be 5.8 (95% CI 4.4–7.7), but the estimated effective reproduction number in 177 countries ranged from **0.3 to 3.1**.[$]	Case fatality rate is currently at **2.00%** globally. Most cases present as flu-like illness.	**Limited** The number of countries that have commenced mass vaccination in each region are as follows: Combined WPRO and SEARO (33 countries), EURO (53 countries), EMRO (21 countries), Americas (35 countries), and Africa (46 countries).[&] International clinical trials published on 2 September confirm that cheap, widely available steroid drugs can help seriously ill patients survive Covid-19. The World Health Organization issued new treatment guidance, strongly recommending steroids to treat severely and critically ill patients, but not to those with mild disease. [4] Researchers have found all regimens of anticoagulants to be far superior to no anticoagulants in COVID-19 patients. More specifically, patients on both a "therapeutic" or full dose and those on a "prophylactic" or lower dose, showed about a 50% higher chance of survival and roughly a 30% lower chance of intubation, than those not on anticoagulants. It was observed that therapeutic and prophylactic subcutaneous low-molecular weight heparin and therapeutic oral apixaban may lead to better results. [3] A new strain known as B.1.525 containing the same E484K mutation found in the Brazilian and South African variants has been detected in Britain [18]. As of 6 July, the WHO recommended using arthritis drugs Actemra (tocilizumab) and Kevzara (sarilumab) with corticosteroids for severe and critical COVID-19 patients. [27]	**High**

			On 4 Aug, the WHO called for a moratorium on COVID-19 vaccine boosters until at least the end of September, to enable that at least 10% of the population of every country was vaccinated. [28] On 3 Sept, emergency use of the Soberana 2 vaccine was authorized in Cuba for minors between the ages of two and 18. [31] On 8 Sep, World Health Organization called for a moratorium on using coronavirus booster shots until the end of the year or longer especially among healthy people who are fully vaccinated. [32] On 29 October, the US Food and Drug Administration (FDA) approved Pfizer's Covid-19 vaccine for emergency use in children aged five to 11 which was later signed off by the CDC on 2 November. [34]	
Western Pacific Region and South-East Asia Region (n=41 countries)				
Moderate 35 (85.4%) countries have reported outbreaks; but only **13 (31.7%)** countries are reporting a surge in cases. **14 (34.2%)** countries have either a constant decreasing change in incidence or no case in the last 14 days. Highest incidence over the past 14 days were reported from Laos, Malaysia, Maldives, Mongolia and Singapore, and highest case numbers were reported from India, Malaysia, **South Korea**, Thailand and Vietnam. At least 15 countries have closed their borders, 25 countries have opened their borders partially conditionally, and none is allowing free travel.	As of Nov 24, the estimated effective reproduction no. of 25 countries ranged from **0.41-3.1**. [$]	Case fatality rate is 1.55%.	**High** 33 countries have commenced vaccination as of 26 November 2021. Coverage was available for the following: i) at least 1 dose was at 51-80% for **19 countries**; >80% for 6 countries ii) full vaccination was at 51-80% for **16 countries**; >80% for 3 countries.[&] Indonesia has approved Russian drug Avifavir for emergency use. [22] China has approved the use of 3 traditional chinese medicines, Qingfei Paidu Formula, Huashi Baidu Formula and Xuanfei Baidu Formula, for COVID-19 treatment. [20] As of 4 June, India has approved a combination of monoclonal antibodies, bamlanivimab and etesevimab for restricted use in emergency situations in hospital settings in adults [24]. As of 8 Oct 2021, Philippines authorized the emergency use of Ronapreve as a treatment against mild and moderate COVID-19 for patients aged 12 and above [33].	**High**

European Region (n=53 countries)				
High 52 (98.1%) countries have reported with outbreaks; 49 (92.5%) countries are reporting a surge in cases. 1 (1.9%) country has either a constant decreasing change in incidence or no case in the last 14 days. Highest incidence over the past 14 days were reported from Austria, **Belgium**, **Czechia**, Slovakia, and Slovenia, and highest case numbers were reported from Germany, **Netherlands**, Russia, Turkey, and United Kingdom. At least 5 countries have closed their borders, 47 countries have opened their borders partially conditionally, and only 1 country is allowing free travel.	As of Nov 24, the estimated effective reproduction no. of 52 countries ranged from **0.38-1.4**.[$]	Case fatality rate is **1.79%.**	**High** 53 countries have commenced vaccination as of 26 November 2021. Coverage was available for the following i) at least 1 dose was at 51-80% for 32 countries; >80% for 3 countries; ii) full vaccination was at 51-80% for 30 countries; >80% for 3 countries. [&] On February 28, France authorized its first ever use of synthetic monoclonal antibody, bamlanivab by Eli Lilly, for use on severe COVID-19 patients. [19] As of February 14, Italy authorized the use of the two monoclonal antibodies of companies Eli Lilly and Regeneron aimed mainly at more serious patients with COVID-19 [17]. On 12 November, the European Commission (EC) has authorized Regeneron-Roche's antibody cocktail, Ronapreve, for treatment of adults and adolescents who do not required oxygen supposed and are at high risk of severe diseases in the EU. [35]	**High**

Eastern Mediterranean Region (n=22 countries)				
Moderate 22 (100%) countries have reported with outbreak; **7 (31.8%)** countries are reporting a surge in cases. **0 (0%)** country has either a constant decreasing change in incidence or no case in the last 14 days. Highest incidence over the past 14 days were reported from Iran, Jordan, Lebanon, Libya and Qatar, and highest case numbers were reported from Egypt, Iran, Iraq, Jordan and Lebanon. At least 3 countries have closed their borders, 18 countries have opened their borders partially conditionally, and only 1 country is allowing free travel.	As of Nov 24, the estimated effective reproduction no. of 21 countries ranged from **0.76-1.1**.[$]	Case fatality rate is 1.85%.	**High** 20 countries have commenced vaccination as of 26 November 2021. Coverage was available for the following: i) at least 1 dose was at 51-80% for 6 countries; >80% for 2 countries; ii) full vaccination was at 51-80% for 6 countries; >80% for 1 country. [&] As of June 25, the Abu Dhabi Stem Cell Centre has treated more than 2,000 COVID-19 patients using UAECell19. 1,200 have fully recovered. [6] As of April, an Israeli firm is using placenta pluristem cells to treat COVID-19 patients on a compassionate use basis. [5] As of June 4, UAE authorised the emergency use of Sotrovimab, a kind of monoclonal antibody drug [25]**.** As of 19 November, Bahrain approved Astrazeneca's drug Evusheld for emergency use amongst immunodeficient adults, those taking immunosuppressants, or exposed to increased risk of infections due to their occupations. [36]	**High**
Region of the Americas (n=35 countries)				
High 35 (100%) countries have reported with outbreak; 29 (82.9%) countries are reporting a surge in cases. **1 (2.9%)** country has either a constant decreasing change in incidence or no case in the last 14 days. Highest incidence over the past 14 days were reported from Barbados, Belize, Dominica, Trinidad and Tobago, and USA, and highest case numbers were reported from Brazil, Canada, Chile, Mexico and USA. At least 9 countries have closed their borders, 24 countries have opened their borders partially conditionally, and 2 countries are allowing free travel.	As of Nov 24, the estimated effective reproduction no. of 35 countries ranged from **0.71**-1.6.[$]	Case fatality rate is **2.43%.**	**High** 35 countries have commenced vaccination as of 26 November 2021. Coverage was available for the following: i) at least 1 dose was at 51-80% for **17 countries**; >80% for **3 countries** ii) full vaccination was at 51-80% for **13 countries**; >80% for **2 countries**.[&] With the increase of multiple variants of COVID-19, the U.S. FDA will limit the use of monoclonal antibody treatments developed by Regeneron and Eli Lilly due to concerns the medications are not effective against these new strains. Eli Lilly's bamlanivimab will not be distributed to California, Arizona and Nevada, where those variants are more common. [21] FDA has issued EUA to Eli Lilly's combination antibody therapy of	**High**

			bamlanivimab and etesevimab to treat mild to moderate COVID-19 patients who are at risk of serious illness or hospitalization. [15] The Food and Drug Administration has allowed the combination use of baricitinib and Remdesivir under emergency use authorization. The EUA covers dosing of patients (above the age of two) who are on supplemental oxygen, receiving invasive mechanical ventilation or extracorporeal membrane oxygenation. [12] Health Canada has approved bamlanvimab, for the treatment of COVID-19 in patients 12 years and older with mild to moderate symptoms who are at risk of severe disease progression. [11] FDA has allowed emergency use of Eli Lilly & Co's bamlanivimab for non-hospitalized patients at risk of serious illness due to age or other conditions. [10] FDA has issued emergency authorisation for convalescent plasma to treat COVID-19. [9] RLF-100 (aviptadil) by NeuroRx and Relief Therapeutics was approved for emergency use in COVID-19 patients who are too ill to participate in the trial. [8] As of October 22, remdesivir is the first and only FDA-approved COVID-19 treatment in the U.S. [7]. FDA has issued emergency authorisation for sotrovimab to treat mild-to-moderate Covid-19 adults and paediatric patients (12 years old and older weighing at least 40kg) who are at risk of severe disease progression. [23] As of 25 June, US FDA has issued emergency authorisation for Actemra/RoActemra (tocilizumab) to treat hospitalized adults and pediatric patients receiving corticosteroids and requiring supplemental oxygen, breathing support or ECMO. [26]	

			As of 5 Aug, FDA has expanded the use of antibody cocktail, REGEN-COV, updating its emergency use authorisation (EUA) to include those at high risk of developing severe COVID-19 who have been exposed to the virus. [29] As of Aug 11, Brazil has issued emergency authorisation to Celltrion's regdanvimab for high-risk patients with mild and moderate Covid-19. [30]	
African Region (n=47 countries)				
Moderate 47 (100%) countries have reported with outbreak; **6 (13.0%)** countries are reporting a surge in cases. **1 (2.1%)** country has either a constant decreasing change in incidence or no case in the last 14 days. Highest incidence over the past 14 days were reported from Botswana, Gabon, Mauritius, Seychelles and **South Africa**, and highest case numbers were reported from Algeria, Botswana, Ethiopia, **Mauritius** and South Africa. At least 9 countries have closed their borders, 38 countries have opened their borders partially conditionally, and no country is allowing free travel.	As of Nov 24, the estimated effective reproduction no. of 44 countries ranged from **0.3-1.6**.[$]	Case fatality rate is **2.47%.**	**High** 45 countries have commenced vaccination as of 26 November 2021. Coverage was available for the following: i) at least 1 dose was at 51-80% for 2 countries; >80% for 1 country; ii) full vaccination was at 50-80% for 1 country; >80% for 1 country. [&] Ethiopia has approved the use of Dexamethasone treatment for seriously ill COVID-19 patients. [13]	**High**

*Only WHO member states are included. 30 territories that have reported cases (with the exception of Palestine) are excluded from the tabulation of total countries affected/imported/local cases and case fatality rate. Refer to WHO situation reports or table 4 for information.

[$] https://epiforecasts.io/covid/posts/global/

[^]Differences between R0 and effective R can be found here https://www.coronavirustoday.com/r-number-refers-either-basic-or-effective-reproduction-number

[&] https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/; High vaccine coverage defined as >70% population with full vaccination

[%] In view of the reduction in case fatality rate and effective reproduction number with increasing vaccination, the two metric are no longer conferred a risk level in our risk assessment matrix; overall risk of each region is compiled using risk of the environment and availability of treatment only.

iii. Global Epidemiology

Table 2. Summary of COVID-19 cases & fatalities globally (Updated as of 26 November 2021, 1430H SGT)

No. of Countries/ Territories with Cases	Total Global Cases	Total Cases Outside Mainland China	Total Deaths	Case-Fatality Rate (%) [overall]	Case-Fatality Rate (%) [outside China]	R_0
222	260,327,487	260,228,904	5,200,088	2.00%	2.00%	5.8 (95% CI 4.4–7.7)^

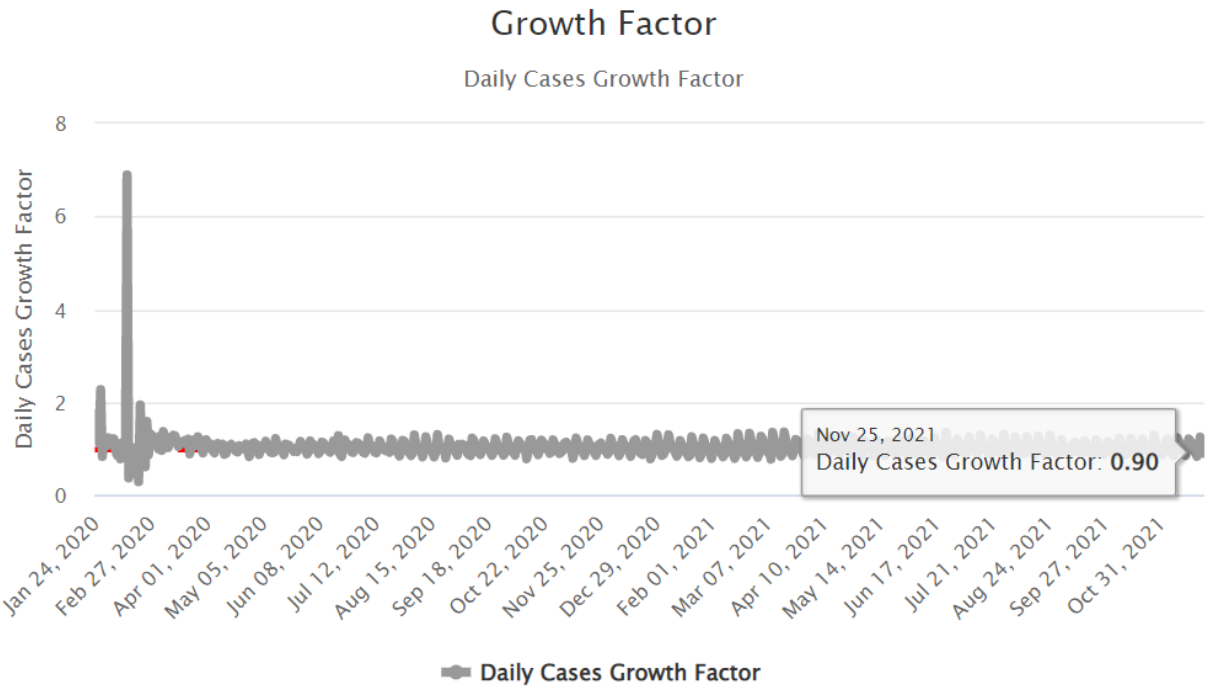
^Based on early release as of 10th April, 2020: https://wwwnc.cdc.gov/eid/article/26/7/20-0282_article

Table 3. Comparison with other viruses

Virus	Incubation Period (Days)	Case Fatality Rate (%)	R_0
SARS-CoV-2	Median = 5.1$ (2-14) or up to 24*	2.00	5.8 (95% CI 4.4–7.7) ^
SARS-CoV	2-7	9.6	2.0
MERS-CoV	5 (2-14)	34	<1 (higher in health care setting)
Swine Flu	1-4	0.02	1.2-1.6

*Data on 1099 patients from 552 hospitals in 31 provinces of China
^https://wwwnc.cdc.gov/eid/article/26/7/20-0282_article
$Data on 181 cases outside china

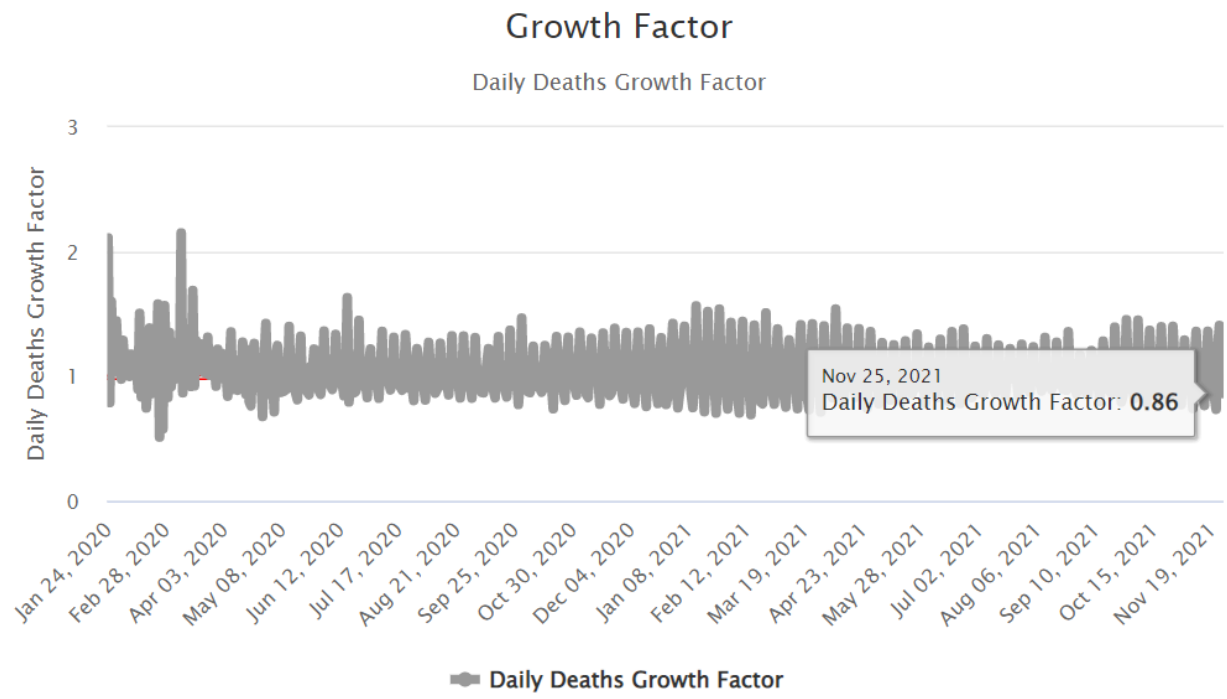
Figure 1. Growth Factor of Daily New Cases (Mainland China+ Other countries)



Growth Factor = every day's cases/cases on previous day. A growth factor above 1 indicates an increase, whereas one between 0 and 1 is a sign of decline, with the quantity eventually becoming zero. A growth factor below 1 (or above 1 but trending downward) is a positive sign, whereas a growth factor constantly above 1 is the sign of exponential growth.
*Huge jump in cases on Feb. 12 is attributed to the change in diagnostic criteria in China.

Figure 2. Growth Factor excluding mainland China

Figure 3. Growth Factor of Novel Coronavirus Daily Deaths (Mainland China + Other Countries)



Growth Factor = every day's cases/cases on previous day. A growth factor above 1 indicates an increase, whereas one between 0 and 1 is a sign of decline, with the quantity eventually becoming zero. A growth factor below 1 (or above 1 but trending downward) is a positive sign, whereas a growth factor constantly above 1 is the sign of exponential growth.
Source: https://www.worldometers.info/coronavirus/coronavirus-cases/

Case Breakdown by Countries

Live update of COVID-19 global cases can be found at
https://storymaps.arcgis.com/stories/a1746ada9bff48c09ef76e5a788b5910

Table 4. Breakdown of COVID-19 confirmed cases and deaths from 20 – 26 November 2021 (Updated as of 26 November 2021, 1430H SGT)

No.	Country	Total Cases	Change in Cases	Total Deaths	Change in Deaths	Total Recovered	Region
1	USA	48,999,737	+601,282	798,551	+9,396	38,799,986	Americas
2	Germany	5,623,047	+389,226	100,796	+1,627	4,775,300	EURO
3	UK	10,021,497	+299,581	144,433	+874	8,874,965	EURO
4	Russia	9,468,189	+248,277	269,057	+8,722	8,164,826	EURO
5	Turkey	8,676,639	+173,419	75,840	+1,412	8,208,159	EURO
6	France	7,516,746	+165,422	118,777	+404	7,080,555	EURO
7	Netherlands	2,534,137	+155,314	19,158	+295	2,074,448	EURO
8	Poland	3,434,272	+154,485	82,186	+2,192	2,934,027	EURO
9	Belgium	1,679,861	+119,863	26,793	+267	1,295,650	EURO
10	Czechia	2,062,064	+104,248	32,523	+644	1,789,742	EURO
11	Vietnam	1,168,228	+102,759	24,407	+931	942,888	WPRO
12	Austria	1,108,889	+97,424	12,233	+330	944,173	EURO
13	Ukraine	3,400,340	+96,282	84,149	+3,918	2,877,021	EURO
14	Italy	4,968,341	+74,454	133,486	+452	4,668,257	EURO
15	Hungary	1,057,017	+69,818	33,704	+1,059	857,451	EURO
16	India	34,555,431	+65,808	467,468	+2,386	33,977,830	SEARO
17	Brazil	22,055,608	+65,646	613,697	+1,520	21,275,209	Americas
18	Slovakia	641,903	+56,079	14,107	+382	526,102	EURO
19	Greece	908,222	+47,105	17,693	+618	810,420	EURO
20	Spain	5,121,100	+47,073	87,931	+127	4,912,818	EURO
21	Thailand	2,094,886	+43,906	20,643	+340	1,993,964	SEARO
22	Malaysia	2,608,979	+39,446	30,195	+303	2,510,029	WPRO
23	Switzerland	974,317	+39,275	11,472	+92	853,154	EURO
24	Iran	6,097,672	+33,897	129,376	+742	5,830,653	EMRO
25	Ireland	546,909	+31,218	5,652	+43	429,857	EURO
26	Croatia	589,015	+30,745	10,569	+456	543,493	EURO
27	Denmark	466,817	+28,006	2,841	+49	403,118	EURO
28	Jordan	932,539	+26,801	11,459	+149	874,583	EMRO
29	South Africa	2,952,500	+25,001	89,771	+216	2,843,961	Africa
30	S. Korea	432,901	+23,802	3,440	+225	383,551	WPRO
31	Georgia	826,714	+22,143	11,736	+384	768,559	EURO
32	Mexico	3,876,391	+21,397	293,449	+1,520	3,234,360	Americas
33	Slovenia	411,301	+19,624	5,125	+125	363,576	EURO
34	Serbia	1,244,169	+18,927	11,433	+371	1,171,640	EURO
35	Canada	1,777,814	+18,254	29,600	+138	1,725,101	Americas
36	Portugal	1,133,241	+18,161	18,385	+90	1,065,331	EURO
37	Colombia	5,057,897	+17,232	128,290	+327	4,897,986	Americas

38	Romania	1,771,887	+16,708	55,829	+1,486	1,663,637	EURO
39	Norway	254,367	+16,628	1,050	+54	88,952	EURO
40	Chile	1,751,769	+16,582	38,218	+169	1,646,390	Americas
41	Bulgaria	684,922	+16,559	27,891	+906	551,853	EURO
42	Azerbaijan	580,507	+12,418	7,736	+185	545,035	EURO
43	Belarus	646,743	+12,012	5,010	+109	632,470	EURO
44	Lithuania	462,431	+12,010	6,627	+187	426,745	EURO
45	Singapore	258,785	+11,932	681	+56	242,132	WPRO
46	Peru	2,229,741	+10,124	200,987	+220	N/A	Americas
47	Argentina	5,322,127	+10,038	116,480	+139	5,186,639	Americas
48	Australia	205,277	+9,653	1,985	+52	188,482	WPRO
49	Sweden	1,196,688	+9,081	15,110	+33	1,154,394	EURO
50	Laos	67,322	+8,524	143	+27	7,339	WPRO
51	Philippines	2,829,618	+7,865	47,875	+1,453	2,763,947	WPRO
52	Lebanon	663,779	+7,587	8,685	+69	629,896	EMRO
53	Finland	180,878	+7,246	1,302	+56	46,000	EURO
54	Kazakhstan	968,340	+6,606	12,635	+118	931,796	EURO
55	Bolivia	533,756	+6,376	19,121	+72	489,832	Americas
56	Venezuela	428,453	+6,224	5,115	+66	415,284	Americas
57	Egypt	353,923	+6,204	20,172	+392	294,354	EMRO
58	Sri Lanka	560,345	+5,886	14,232	+160	528,400	SEARO
59	Dominican Republic	405,513	+5,740	4,197	+15	396,983	Americas
60	Latvia	250,132	+5,571	4,083	+182	231,789	EURO
61	French Polynesia	45,609	+5,431	636	0	N/A	Non
62	Iraq	2,077,665	+5,187	23,748	+141	2,038,189	EMRO
63	Guatemala	616,554	+5,180	15,885	+110	598,773	Americas
64	Moldova	361,116	+4,668	8,985	+276	344,414	EURO
65	Estonia	219,878	+4,511	1,773	+59	196,765	EURO
66	Bosnia and Herzegovina	272,063	+4,212	12,412	+232	192,218	EURO
67	Myanmar	520,213	+4,067	19,058	+69	494,107	SEARO
68	Trinidad and Tobago	68,288	+3,886	2,040	+132	56,642	Americas
69	Mongolia	380,130	+3,788	1,981	+56	313,256	WPRO
70	Armenia	336,330	+3,617	7,419	+207	311,078	EURO
71	Libya	370,187	+3,398	5,425	+79	337,022	EMRO
72	Albania	198,292	+3,271	3,068	+46	187,506	EURO
73	North Macedonia	213,779	+2,841	7,492	+102	197,998	EURO
74	Ecuador	524,432	+2,640	33,128	+40	443,880	Americas
75	Indonesia	4,254,815	+2,470	143,782	+73	4,102,993	SEARO
76	Cyprus	131,462	+2,304	591	+2	124,370	EURO
77	Montenegro	156,004	+2,261	2,275	+44	150,553	EURO
78	Pakistan	1,283,475	+2,235	28,697	+49	1,241,289	EMRO
79	Luxembourg	87,773	+2,113	864	+2	83,016	EURO
80	Israel	1,341,305	+2,047	8,182	+28	1,327,046	EURO
81	Nepal	820,285	+1,978	11,516	+27	801,420	SEARO
82	Mauritius	20,913	+1,934	240	0	19,034	Africa
83	Réunion	59,048	+1,875	381	+2	56,040	Non

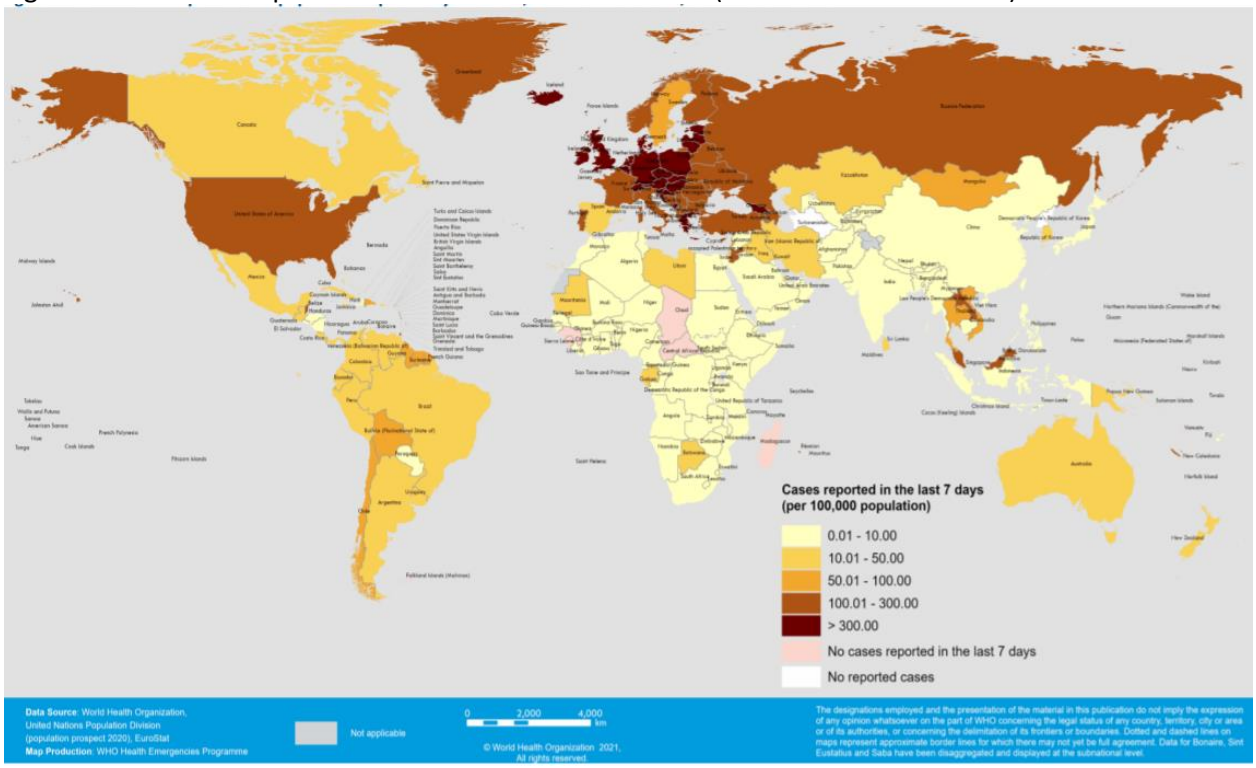
84	Cuba	961,698	+1,829	8,299	+10	952,206	Americas
85	Sudan	42,056	+1,818	3,114	+15	32,905	EMRO
86	Bangladesh	1,575,185	+1,727	27,970	+31	1,539,553	SEARO
87	Channel Islands	17,116	+1,598	100	0	14,938	Non
88	Uzbekistan	192,381	+1,531	1,392	+22	189,046	EURO
89	Palestine	429,123	+1,529	4,521	+19	421,829	EMRO
90	Papua New Guinea	34,846	+1,509	542	+106	33,356	WPRO
91	Panama	476,813	+1,444	7,360	+10	466,850	Americas
92	Uruguay	398,676	+1,358	6,123	+13	390,492	Americas
93	New Zealand	10,966	+1,314	42	+4	5,549	WPRO
94	Cayman Islands	6,459	+1,303	4	0	2,315	Non
95	Barbados	24,432	+1,257	218	+13	16,457	Americas
96	Ethiopia	370,886	+1,219	6,714	+59	347,873	Africa
97	Algeria	209,624	+1,092	6,041	+32	143,771	Africa
98	Costa Rica	566,429	+1,082	7,284	+36	543,602	Americas
99	Iceland	17,294	+1,051	35	+1	15,531	EURO
100	Qatar	242,673	+1,001	611	0	240,159	EMRO
101	Tunisia	716,861	+873	25,357	+27	690,463	EMRO
102	Syria	47,664	+826	2,724	+35	28,699	EMRO
103	Japan	1,726,705	+804	18,352	+16	1,707,291	WPRO
104	Maldives	91,122	+782	248	0	89,029	SEARO
105	Morocco	949,378	+745	14,770	+15	931,548	EMRO
106	Cameroon	106,794	+604	1,791	+21	102,716	Africa
107	Malta	39,011	+562	466	+4	37,145	EURO
108	Belize	30,060	+559	570	+12	28,292	Americas
109	Andorra	16,566	+531	131	+1	15,741	EURO
110	Guyana	37,613	+523	983	+15	35,019	Americas
111	Mauritania	38,950	+510	825	+13	37,194	Africa
112	UAE	741,720	+506	2,145	+1	736,511	EMRO
113	Honduras	377,859	+499	10,403	+17	120,304	Americas
114	Jamaica	90,961	+494	2,367	+24	62,171	Americas
115	Botswana	194,909	+464	2,416	0	191,961	Africa
116	Isle of Man	10,895	+440	66	+2	10,315	Non
117	Nigeria	213,883	+419	2,975	+2	207,094	Africa
118	Kyrgyzstan	183,140	+413	2,737	+19	177,869	EURO
119	Afghanistan	157,144	+405	7,307	+10	140,435	EMRO
120	Madagascar	44,072	+400	967	+3	41,322	Africa
121	Paraguay	462,533	+387	16,366	+17	445,486	Americas
122	Liechtenstein	4,359	+383	61	0	3,897	Non
123	Brunei	14,771	+372	97	+1	14,210	WPRO
124	Seychelles	23,197	+366	125	0	22,590	Africa
125	Mali	17,144	+348	601	+12	15,070	Africa
126	Kenya	254,862	+321	5,332	+7	248,070	Africa
127	Gibraltar	7,092	+312	98	0	6,408	Non
128	Suriname	50,656	+300	1,158	+15	29,563	Americas
129	Congo	18,837	+298	349	+18	12,421	Africa

130	Gabon	37,223	+280	276	+6	31,636	Africa
131	Dominica	5,819	+269	37	+2	5,396	Americas
132	Haiti	24,974	+264	723	+12	20,901	Americas
133	DRC	58,060	+257	1,104	+5	50,930	Africa
134	Cambodia	120,038	+252	2,922	+31	116,417	WPRO
135	Faeroe Islands	3,337	+247	13	+2	2,940	Non
136	Saudi Arabia	549,618	+241	8,829	+8	538,740	EMRO
137	New Caledonia	12,033	+234	276	+3	55	Non
138	Uganda	127,299	+226	3,250	+3	97,397	Africa
139	French Guiana	45,802	+219	325	+3	11,254	Non
140	Bahrain	277,510	+206	1,394	+1	275,849	EMRO
141	Greenland	1,311	+195	0	0	1,011	Non
142	Ghana	130,920	+193	1,209	+2	129,042	Africa
143	Zimbabwe	133,774	+181	4,704	+5	128,540	Africa
144	Somalia	23,016	+179	1,327	+14	12,046	EMRO
145	Caribbean Netherlands	2,825	+165	22	+1	2,591	Non
146	Anguilla	1,334	+159	3	0	1,207	Non
147	Eritrea	7,269	+157	58	+5	7,019	Africa
148	China	98,583	+156	4,636	0	93,087	WPRO
149	Niger	6,921	+148	251	+14	6,514	Africa
150	San Marino	5,790	+136	93	+1	5,519	EURO
151	Kuwait	413,224	+134	2,465	+1	410,520	EMRO
152	Monaco	3,669	+133	36	0	3,489	EURO
153	Nicaragua	17,152	+129	209	+1	4,225	Americas
154	Angola	65,105	+120	1,732	+3	63,178	Africa
155	Aruba	16,263	+114	174	+1	15,917	Non
156	Rwanda	100,303	+113	1,341	+2	45,521	Africa
157	Ivory Coast	61,665	+112	704	+2	60,648	Africa
158	St. Vincent Grenadines	5,469	+110	74	+1	4,907	Americas
159	South Sudan	12,717	+108	133	0	12,395	Africa
160	Curaçao	17,374	+104	178	+3	17,072	Non
161	Mayotte	20,914	+77	185	0	2,964	Non
162	Zambia	210,112	+76	3,667	+1	206,344	Africa
163	Namibia	129,133	+59	3,572	+5	125,462	Africa
164	Bahamas	22,696	+56	671	0	21,588	Americas
165	Saint Lucia	12,927	+55	279	+7	12,528	Americas
166	Oman	304,519	+53	4,113	0	299,951	EMRO
167	Togo	26,232	+47	243	0	25,892	Africa
168	Burundi	20,351	+46	38	0	773	Africa
169	CAR	11,708	+42	101	0	6,859	Africa
170	Comoros	4,478	+41	150	+1	4,254	Africa
171	British Virgin Islands	2,765	+40	38	+1	N/A	Non
172	Mozambique	151,512	+40	1,940	+4	149,467	Africa
173	Taiwan	16,554	+38	848	0	15,589	WPRO
174	Guinea	30,751	+36	387	0	29,716	Africa
175	Tanzania	26,261	+34	730	+3	N/A	Africa

176	Cabo Verde	38,347	+34	349	-1	37,927	Africa
177	Fiji	52,474	+30	695	+1	50,897	WPRO
178	Eswatini	46,514	+29	1,248	0	45,229	Africa
179	Equatorial Guinea	13,547	+28	170	+1	13,315	Africa
180	Yemen	9,977	+27	1,943	+9	6,804	EMRO
181	Turks and Caicos	3,093	+26	24	+1	3,020	Non
182	Saint Pierre Miquelon	59	+26	0	0	32	Non
183	Hong Kong	12,418	+22	213	0	12,123	WPRO
184	Sint Maarten	4,573	+19	75	0	4,475	Non
185	Bermuda	5,730	+16	106	0	5,603	Non
186	Lesotho	21,735	+16	662	+1	13,601	Africa
187	Grenada	5,880	+15	200	0	5,622	Americas
188	Malawi	61,872	+14	2,304	+1	58,763	Africa
189	Senegal	73,975	+13	1,885	+2	72,081	Africa
190	Antigua and Barbuda	4,141	+12	117	+9	4,000	Americas
191	Saint Kitts and Nevis	2,774	+10	28	0	2,716	Americas
192	Falkland Islands	79	+7	0	0	N/A	Non
193	St. Barth	1,601	+6	6	0	N/A	Non
194	Timor-Leste	19,820	+6	122	0	19,696	SEARO
195	Tajikistan	17,095	+4	124	0	16,966	EURO
196	Benin	24,850	+4	161	0	24,546	Africa
197	Bhutan	2,633	+4	3	0	2,620	SEARO
198	Djibouti	13,504	+4	186	0	13,291	EMRO
199	Sierra Leone	6,400	+4	121	0	N/A	Africa
200	Guinea-Bissau	6,438	+4	146	0	6,250	Africa
201	Gambia	9,989	+3	342	+1	9,638	Africa
202	Liberia	5,821	+3	287	0	5,523	Africa
203	Montserrat	44	+3	1	0	43	Non
204	El Salvador	118,041	0	3,764	+23	101,092	Americas
205	Burkina Faso	15,514	0	265	0	15,009	Africa
206	Guadeloupe	55,147	0	746	0	2,250	Non
207	Saint Martin	3,949	0	56	0	1,399	Non
208	Sao Tome and Principe	3,731	0	56	0	3,675	Africa
209	Martinique	44,318	0	700	0	104	Non
210	Chad	5,105	0	175	0	4,874	Africa
211	Macao	77	0	0	0	77	WPRO
212	Tonga	1	0	0	0	1	WPRO
213	Vanuatu	6	0	1	0	3	WPRO
214	Diamond Princess	712	0	13	0	699	NA
215	Wallis and Futuna	445	0	7	0	438	Non
216	Palau	8	0	0	0	8	WPRO
217	Vatican City	27	0	0	0	27	Non
218	Samoa	3	0	0	0	3	WPRO
219	Solomon Islands	20	0	0	0	20	WPRO
220	Western Sahara	10	0	1	0	8	Non
221	MS Zaandam	9	0	2	0	7	NA

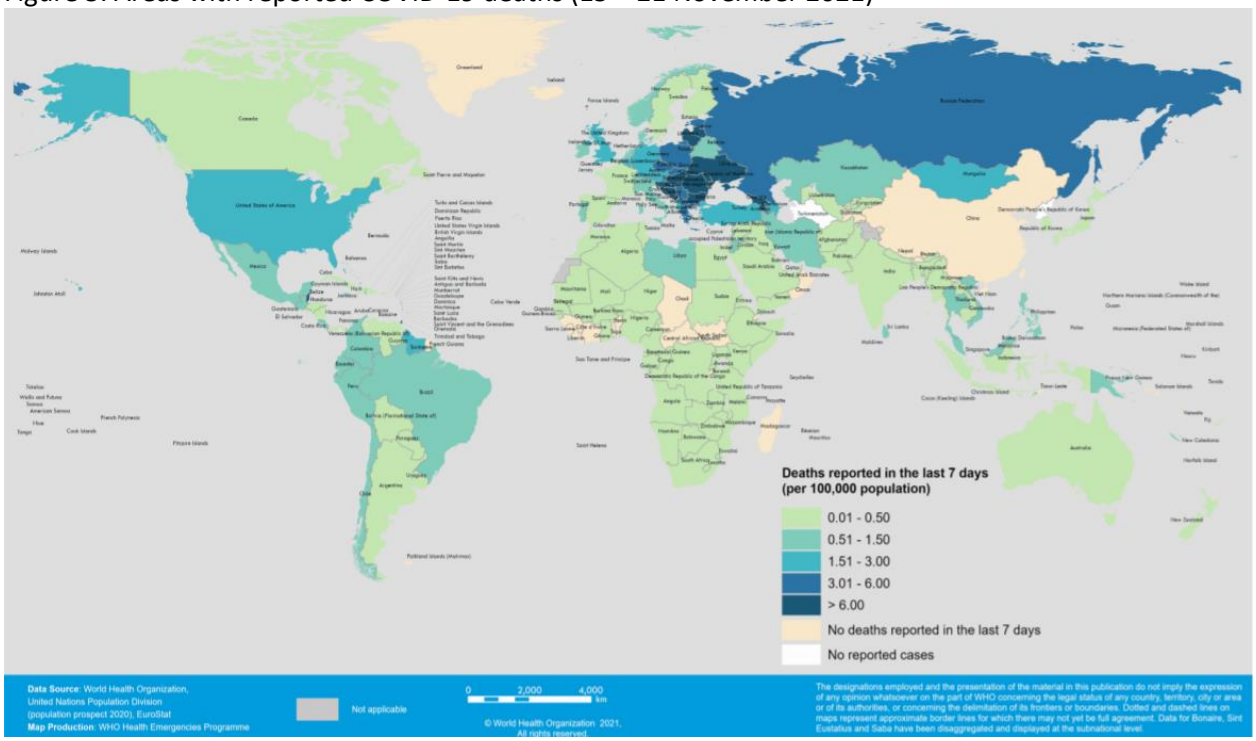
222	Marshall Islands	4	0	0	0	4	WPRO
223	Saint Helena	2	0	0	0	2	Non
224	Micronesia	1	0	0	0	1	WPRO
	Total	**260,327,487**	**3,939,666**	**5,200,088**	**51,988**	**233,549,799**	

Figure 4. Areas with reported confirmed cases of COVID-19 (15 – 21 November 2021)



Source: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

Figure 5. Areas with reported COVID-19 deaths (15 – 21 November 2021)



Source: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

Table 5. COVID-19 cases and deaths reported by states/UT in India between 20 – 26 November, 2021 (Updated as of 26 November 2021, 1430H SGT)

Name of State / UT	Total Diagnosed Cases	Change from previous week	Total Active Cases	Change from previous week	Total Recovered	Change from previous week	Total Deaths	Change from previous week
Andaman and Nicobar Islands	7677	+2	3	-2	7545	+4	129	0
Andhra Pradesh	2072014	+1276	2194	-366	2055389	+1634	14431	+8
Arunachal Pradesh	55258	+16	34	-20	54944	+36	280	0
Assam	616137	+1274	2835	-307	607216	+1560	6086	+21
Bihar	726204	+26	46	+7	716495	+19	9663	0
Chandigarh	65430	+36	41	+13	64569	+23	820	0
Chhattisgarh	1006673	+214	312	+40	992768	+172	13593	+2
Dadra and Nagar Haveli and Daman and Diu	10683	+1	1	+1	10678	0	4	0
Delhi	1440784	+209	309	-53	1415380	+262	25095	0
Goa	178765	+171	255	+3	175130	+165	3380	+3
Gujarat	827327	+215	315	+3	816920	+210	10092	+2
Haryana	771622	+127	156	+20	761412	+105	10054	+2
Himachal Pradesh	226757	+544	835	-309	222083	+840	3839	+13
Jammu and Kashmir	336063	+1240	1706	+125	329891	+1108	4466	+7
Jharkhand	349184	+95	109	-29	343935	+123	5140	+1
Karnataka	2994561	+1664	6521	-857	2949853	+2499	38187	+22
Kerala***	5119941	+35846	52452	-10468	5028752	+44424	38737	+1890
Ladakh	21435	+165	235	+24	20987	+140	213	+1
Lakshadweep	10383	+13	18	+13	10314	0	51	0
Madhya Pradesh	793088	+95	102	+24	782458	+68	10528	+3
Maharashtra	6633105	+5267	12852	-2531	6479396	+7633	140857	+165
Manipur	125070	+370	687	+103	122417	+257	1966	+10
Meghalaya	84378	+228	339	+68	82571	+159	1468	+1
Mizoram	133562	+2650	4338	-931	128737	+3567	487	+14
Nagaland	32092	+60	141	+10	31255	+49	696	+1
Odisha	1048009	+1692	2221	-97	1037387	+1774	8401	+15
Puducherry	128794	+233	318	-8	126604	+236	1872	+5
Punjab	603132	+226	314	+6	586227	+206	16591	+14
Rajasthan	954694	+126	155	+59	945584	+66	8955	+1
Sikkim	32198	+69	125	+19	31670	+49	403	+1
Tamil Nadu	2723245	+5267	8442	-636	2678371	+5807	36432	+96
Telangana	675148	+967	3531	-163	667631	+1122	3986	+8

Tripura	84761	+63	76	-11	83865	+72	820	+2
Uttarakhand	344156	+82	157	-22	336592	+101	7407	+3
Uttar Pradesh	1710360	+54	91	-10	1687360	+64	22909	0
West Bengal	1612741	+5225	7867	-205	1585444	+5355	19430	+75
Total	**34555431**	**+65808**	**110133**	**-16487**	**33977830**	**+79909**	**467468**	**+2386**

Source: https://www.mohfw.gov.in/

iv. Travel Bans/Advisories & Quarantine Orders

[1] **Australia-** From 1 Dec, vaccinated students, business visa holders and refugees will be allowed to travel to the country. Vaccinated tourists from South Korea and Japan will also be allowed.

[2] **Bulgaria-** From 23 Nov, 14 countries – Andorra, Austria, Belgium, The Czech Republic, Denmark, Germany, Greece, Hungary, Iceland, Ireland, Liechtenstein, The Netherlands, Poland and Switzerland have been added to the red list. Travelers excluding Bulgarian citizens and nationals of EU and EEA countries with a valid digital EU COVID-19 certificate, will be banned from entering the country. Finland, France, the Principality of Monaco, Portugal and Moldova have been added to the orange list where travelers with valid EU COVID passport will be allowed to enter.

[3] **New Zealand-** From 30 Apr 2020, fully vaccinated international travelers will be allowed to enter. Fully vaccinated New Zealanders and residence visa holders in Australia will be allowed to enter from 16 Jan while vaccinated New Zealanders and residence visa holders from other countries from 13 Feb.

[4] **Portugal-** Travelers including fully vaccinated individuals entering the country are required to show negative test on arrival.

[5] **Saudi Arabia-** From 1 Dec 1am, direct entry for fully vaccinated expatriates from Indonesia, Pakistan, Brazil, Vietnam, Egypt, and India will be allowed to enter the country without undergoing 14 days in transit outside of their countries. However, they will be required to undergo 5 days quarantine regardless of vaccination status.

[6] **Singapore-** Land vaccinated travel lane via Causeway to Malaysia will be launched on 29 Nov for travelers – citizens, permanent residents or long-term pass holders of the entering country and travelling by the designated VTL bus service.

[7] **Singapore-** Vaccinated travel lanes will be extended to six more countries in Dec for travelers from Thailand from 14 Dec and travelers from Cambodia, Fiji, Maldives, Sri Lanka and Turkey from 16 Dec. From 2 Dec, Austria, Belgium, Croatia, the Czech Republic, Liechtenstein and Slovakia will be added to Category III where travelers will be required to undergo 10 days stay home notice at their accommodation and COVID-19 testing.

[8] **Slovakia-** From 22 Nov, travel restrictions will be tightened especially for people who are not fully vaccinated. Fully vaccinated travelers will not be subjected to the measures when travelling to the Balkan country and those who had recovered will be exempted from the new measures.

[9] **United Kingdom-** On 26 Nov, South Africa, Namibia, Zimbabwe, Botswana, Lesotho and Eswatini have been added to the red list and flights between these countries and UK will be banned. Non-UK and Irish resident with travel history to these countries in the past 10 days will not be allowed to enter England. British or Irish resident entering the country from 4am on 28 Nov will be quarantined in hotel while those arriving on Friday and Saturday will be self-isolated and undergo PCR testing on the 2nd and 8th day. Individuals who had arrived in the last 10 days will also be required to do PCR testing.

[10] **United States-** Travel advisories were issued on 22 Nov advising Americans to avoid travelling to Germany and Denmark.

v. Lockdowns

[1] **Austria-** From 22 Nov, full lockdown will be imposed in Austria where people will only be allowed to leave their house for few reasons including shopping for essentials and exercising.

[2] **China-** Travel agencies in Shanghai have been suspended from organizing tourism trip between the city and other province-level region. Xuzhou city has suspended three subway lines, reduced citywide and long-distance bus services and closed some entrance on highways connecting to surrounding areas. Residents were also advised against leaving town for non-essential purposes and if required they will need to show proof of negative test result before leaving. Large face-to-face public activities will be suspended. Schools will suspend offline classes between Friday and Sunday while universities will tighten the management on request to leave the campus.

[3] **Czechia-** 30-days state of emergency will take effect from 26 Nov. Christmas markets and drinking alcohol in public places will be banned. Bars restaurants, night clubs, discotheques and casino have to be closed by 10pm. Cultural and sports events will be limited to 1,000 vaccinated people or those who had recovered from COVID-19 while other public gathering will be limited to 100 visitors.

[4] **Indonesia-** Civil servants and employees in state-owned and private companies have been banned from taking leave around Christmas and New Year. Arts, cultural and sports events will not be allowed between 24 Dec and 2 Jan while all town squares have to be closed on 31 Dec and 1 Jan.

[5] **Italy-** From 6 Dec, unvaccinated people will not be allowed to enter venues such as cinemas, restaurants and sports events. From 15 Dec, mandatory vaccination will extend to school staff, police and military.

[6] **Kenya-** From Dec, people will be required to show proof of vaccination before allowed to enter restaurants, government office and any businesses serving more than 50 people daily. Drivers of public transport, pilots and air hosts will be required to carry proof of vaccination.

[7] **Portugal-** Fully vaccinated individuals are required to show negative test result before entering nightclubs, bars, large events and care homes. Mandatory mask-wearing in indoor spaces was also re-imposed.

[8] **Singapore-** From 22 Nov, up to 5 fully vaccinated people will be allowed to dine together. Social gathering and household visits will be increased to 5 people. Wedding couple can remain unmasked during reception or solemnization and singing at reception will be allowed but with additional precautions.

[9] **Slovakia-** On 24 Nov, the government ordered a two-week lockdown whereby restaurant and non-essential ships will be closed and movement will be limited to essential shopping, work, school, medical visit and walks in nature.

[10] **Spain-** From 26 Nov, COVID-19 passports will be required to access gyms, bars, restaurants and nursing homes.

[11] **United States-** From 1 Dec, Hawaii will lift social distancing requirement in restaurants and bars and customers will be allowed to interact with other parties.

vi. Military Surveillance

Germany [1]

- As of 22 Nov, there were 1,215 active cases in the military and the ministry's civilian staff. Two deaths have been reported since the beginning of the pandemic.

India [2,3]

- As of 24 Nov, 11 fully vaccinated India Army officers who were pursuing a certificate course in business management at the Indian Institute of Management in Madhya Pradesh have been tested positive. They were all asymptomatic and have been placed in isolation. 65 contacts have been identified and samples have been send for testing.
- On 25 Nov, another 3 fully vaccinated Army officers pursuing the course in Indian Institute of Management in Madhya Pradesh's Indore were tested positive bringing the number of infected personnel to 14 in the last five days.

South Korea [4-9]

- On 20 Nov, 7 new cases were reported, bringing the total cases among the military personnel to 2,182. The cases consist of an Army soldier who had returned from vacation while remaining cases include commissioned officers from Army, Air Force and an employee at the defense ministry.
- On 22 Nov, 5 new cases were reported, bringing the total cases among the military personnel to 2,193. The cases include an Army officer in Paju who had return from vacation, an officer from defense ministry in Seoul and three service members who had contact with their infected family members.
- On 23 Nov, 10 new cases were reported, bringing the total cases among the military personnel to 2,203. The cases consist of an officer of the South Korea-US Combined Forces Command in Seoul, a civilian employee of the Air Force in Osan, an Army officer in Daejeon, an Army officer in Pocheon whose family member was tested positive and three service members who had returned from their vacation.
- On 24 Nov, 14 new cases were reported, bringing the total cases among the military personnel to 2,217. The cases include 6 Army service members following their vacation, an officer of Air Force unit in Osan and another service member from the same unit after having contact with the officer, a draftee of an Army unit in Pyeongtaek and an officer of an Army unit in Suncheon who both had contact with infected individuals in their bases and an officer of a military unit in Mungyeong whose family member was infected.
- On 25 Nov, 28 new cases were reported, bringing the total cases among the military personnel to 2,245. The cases include 2 Army officers and 4 troops from Gyeryong who were identified after a civilian employee in their base were tested positive, 5 Army officers in Seoul after a fellow was tested positive after vacation, 7 service members who were identified following their vacation and 3 individuals whose family members were infected.
- On 26 Nov, 19 new cases were reported, bringing the total cases among the military personnel to 2,264. The cases consist of 2 Army conscript in Paju after one of their fellows was tested

positive, an officer in a unit under direct control of the ministry in Seoul and an Army conscript in Pyeongtaek following the detection of a case in both bases, a conscript in another ministry-controlled base in Seongnam who was identified prior hospitalization for other reason, a civilian employee of the Army in Jeonju and 8 members following their vacations.

United States Forces Korea (USFK) [10]

- From 16 Nov to 22 Nov, 39 cases were tested positive, bringing the total cases in the USFK-affiliated population to 1,738.

vii. WHO Guidance & Other Protocols

The following update was published by WHO from 20 – 26 November 2021:

- **Living guidance for clinical management of COVID-19**
  Available at: https://www.who.int/publications/i/item/WHO-2019-nCoV-clinical-2021-2
- **Interim recommendations for use of the Moderna mRNA-1273 vaccine against COVID-19**
  Available at: https://www.who.int/publications/i/item/interim-recommendations-for-use-of-the-moderna-mrna-1273-vaccine-against-covid-19
- **Annexes to the recommendations for use of the Moderna mRNA-1273 vaccine against COVID-19**
  Available at: https://www.who.int/publications/i/item/WHO-2019-nCoV-vaccines-SAGE-recommendation-mrna-1273-GRADE-ETR-annexes
- **Interim recommendations for use of the Pfizer–BioNTech COVID-19 vaccine, BNT162b2, under Emergency Use Listing**
  Available at: https://www.who.int/publications/i/item/WHO-2019-nCoV-vaccines-SAGE_recommendation-BNT162b2-2021.1
- **Annexes to the recommendations for use of the Pfizer–BioNTech vaccine BNT162b2 against COVID-19**
  Available at: https://www.who.int/publications/i/item/WHO-2019-nCoV-vaccines-SAGE-recommendation-BNT162b2-GRADE-ETR-annexes

viii. CDC Guidance & Protocols

US CDC

The following update was published by the US CDC from 20 – 26 November 2021:

- **Selected Adverse Events Reported after COVID-19 Vaccination**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/adverse-events.html
- **Improving Ventilation in Your Home**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/Improving-Ventilation-Home.html
- **Different COVID-19 Vaccines**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines.html
- **COVID-19 Vaccines for Children and Teens**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/children-teens.html
- **COVID-19 Vaccines for Moderately to Severely Immunocompromised People**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations/immuno.html
- **Frequently Asked Questions about COVID-19 Vaccination**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html
- **Frequently Asked Questions about COVID-19 Vaccination in Children**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq-children.html
- **Myths and Facts about COVID-19 Vaccines for Children**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/children-facts.html
- **Quick Conversation Guide on COVID-19 Vaccines for Children**
  Available at: https://www.cdc.gov/vaccines/covid-19/hcp/pediatrician/quick-guide.html
- **What to Do if You Had an Allergic Reaction after Getting a COVID-19 Vaccine**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/allergic-reaction.html
- **Getting a COVID-19 Vaccine for Yourself or Your Child**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/vaccines/expect.html
- **Requirement for Proof of Negative COVID-19 Test or Documentation of Recovery from COVID-19**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/travelers/testing-international-air-travelers.html
- **Requirement for Proof of COVID-19 Vaccination for Air Passengers**
  Available at: https://www.cdc.gov/coronavirus/2019-ncov/travelers/proof-of-vaccination.html

EU CDC

The following update was published by the EU CDC from 20 – 26 November 2021:

- **Assessment of the current SARS-CoV-2 epidemiological situation in the EU/EEA, projections for the end-of-year festive season and strategies for response, 17th update**
  Available at: https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-sars-cov-2-situation-november-2021

ix. Vaccines/Therapeutics Development

Noteworthy reports are included to inform main developments of COVID-19 pharmaceutics. Past updates are available from situation report 211 onwards. A global map and registry of trials is also visualised & accessible at: https://www.covid-nma.com/dataviz/ and trial results are available at: https://covid-nma.com/living_data/index.php. A living systematic review of vaccine trials is also accessable at https://covid-nma.com/vaccines/ or https://covid-nma.com/ .

Vaccines

[1] **Canada-** On 19 Nov, Pfizer's COVID-19 vaccine has been authorized for use in children 5-11 years old.

[2] **China-** Clover Biopharmaceuticals will commence the phase 2 trial of its vaccine candidate, SCB-2019 (CpG 1018/Alum) as a booster dose in participants vaccinated with CoronaVac or recombinant COVID-19 vaccine (AstraZeneca/Fiocruz). About 520 healthy adult participants in Brazil will be recruited. The study will be conducted in two stages, stage one to evaluate the optimal vaccine formulation and stage two to evaluate the immunogenicity and safety of the booster formulation.

[3] **European Union-** On 25 Nov, the EU's drug regulator has approved the use of Pfizer COVID-19 vaccine for children 5 to 11 years old.

[4] **France-** Booster shots will be extended to all individuals 18 years and above with interval between full vaccination and booster shot shortened to 5 months.

[5] **Hong Kong-** Sinovac Covid-19 vaccine have been approved for children 3-17 years old.

[6] **India-** ITC has begun clinical trials on nasal spray to prevent COVID-19.

[7] **Israel-** On 22 Nov, Israel begun vaccinating children aged 5 to 11 years old with Pfizer vaccine.

[8] **Russia-** The real-world data of the Republic of San Marino showed that Sputnik V vaccine has 80% effectiveness against coronavirus infection for 6th to 8th months after receiving the second dose.

[9] **Switzerland-** Swissmedic has approved the use of COVID-19 boosters for Pfizer vaccine to all people who are 16 years old and above.

[10] **United States-** Pfizer and Moderna COVID-19 vaccine boosters have been authorized for use in people 18 years old and above.

[11] **United States-** A follow-up finding on Pfizer phase 3 trial in 2,226 children 12 to 15 years old showed 100% effectiveness in preventing symptomatic infection up to 4 months after full vaccination. There was also no serious adverse safety event reported across a follow-up of at least 6 months.

Therapeutics

No updates were reported between 20 – 26 November 2021.

Vaccine Approval Status

Table 6: Number of approving countries per vaccine as of 24 November 2021

Developer	Vaccine	Number of countries approving
Anhui Zhifei Longcom	RBD-Dimer	3
Bharat Biotech	Covaxin	10
CanSino	Ad5-nCoV	9
Center for Genetic Engineering and Biotechnology (CIGB)	CIGB-66	4
Chumakov Center	KoviVac	1
FBRI	EpiVacCorona	2
Gamaleya	Sputnik Light	19
Gamaleya	Sputnik V	73
Johnson & Johnson	Ad26.COV2.S	**78**
Kazakhstan RIBSP	QazVac	2
Medigen	MVC-COV1901	1
Minhai Biotechnology Co	SARS-CoV-2 Vaccine (Vero Cells)	**2**
Moderna	mRNA-1273	**77**
Oxford/AstraZeneca	AZD1222	**125**
Pfizer/ BioNTech	BNT162b2	**107**
Serum Institute of India	Covishield	46
Serum Institute of India	COVOVAX (Novavax formulation)	**2**
Shifa Pharmed Industrial Co	COVID-19 Inactivated Vaccine	1
Sinopharm	BBIBP-CorV	68
Sinopharm	Inactivated	2
Sinovac	CoronaVac	**43**
Takeda	TAK-919 (Moderna formulation)	1
Vaxine/CinnaGen Co.	COVAX-19	1
Zydus Cadila	ZyCoV-D	1

Source: https://covid19.trackvaccines.org/vaccines/

Adverse Reactions & Effects

[1] **Fiji-** Since the rollout of the vaccine, 64 cases of adverse events were reported consisting of 61 adults, 1 child and 2 under investigation. 55 cases were non-serious and 9 were serious that required hospitalization and had resulted in deaths. Common side effects include fever body pains and hives. None of the reported serious AEFI were found to be vaccine related.

[2] **Iran-** A cross-sectional questionnaire-based study was conducted between 1 June to 21 June 2021 with 867 patients. The Iranian population were mostly vaccinated with AstraZeneca, Sputnik V, Sinopharm, and Bharat vaccines. 30% of the vaccinated individuals had cutaneous reaction with the most common complication- focal infection site reaction, exanthematous rash and urticarial. Vesicular eruption, pernio-like lesions, angioedema, erythema multiform-like eruption, and zoster were less common.

[3] **Malaysia-** Among the 51,842,386 doses of Pfizer, AstraZeneca, Sinovac, CanSino and Sinopharm vaccine administered between Feb and 20 Nov, 23,163 (0.045%) reports of adverse effects were received. 93.3% had experienced mild symptoms such as fever and headache and had recovered

within a day. 1,549 (0.003%) reported severe side effects and were admitted to hospitals for several days.

[4] **United States-** COVID-19 Vaccine Booster Dose Safety report published on 19 Nov reported 11,904 side effects from Pfizer, Moderna and J&J's Janssen booster with common side effects of headache, fever, fatigue, pain and chill. During the same period, more than 26 million booster doses were administered. Of the cases reported, 46% were 65 years old and above and 67% were female.

x. Scientific Publications with Epidemiology and Clinical Focus

Description of Epidemiological Features, Symptoms and Mortality of the Patients with COVID-19 in Some Provinces of Iran [1]

Background: Clinical manifestations of COVID-19 are different. There are some risk factors for COVID-19. This study aimed to describe the epidemiological features, symptoms and mortality of the patients with COVID-19 in Iran.

Methods: This were a cohort study performed on 103,179 patients with COVID-19. The demographic and clinical data were collected in selected provinces. The required data of all patients was extracted from the COVID registry system and analyzed using STATA version 14 and Excel 2016.

Results: The mean age was 52.40 years for men and 52.41 years for women. About 55.2% of the study population were male and 44.8% were female. Totally, 60.9% (5085) of deaths happened in men and 39.1% (3263) in women. The mean time from onset of symptoms to hospitalization in men and women were 3.47 and 3.48 days, respectively. The mean time from onset of symptoms to isolation was 2.81 days in men and was 2.87 days in women, from onset of symptoms to death was 9.29 and 9.54 days, respectively, from onset of symptoms to discharge was 7.47 and 7.39 days, and from hospitalization to death was 6.76 and 7.05 days. Cough and shortness of breath were the most common symptoms in the patients.

Conclusion: According to the results, the overall mortality rate was higher in men than women. Women with cardiovascular disease and diabetes were more likely to die. The mean time from onset of symptoms to hospitalization, isolation, and discharge was similar in men and women.

Comparing COVID-19 mortality across selected states in India: The role of age structure [2]

Background: Mortality rates provide an opportunity to identify and act on the health system intervention for preventing deaths. Hence, it is essential to appreciate the influence of age structure while reporting mortality for a better summary of the magnitude of the epidemic.

Objectives: We described and compared the pattern of COVID-19 mortality standardized by age between selected states and India from January to November 2020.

Methods: We initially estimated the Indian population for 2020 using the decadal growth rate from the previous census (2011). This was followed by estimations of crude and age-adjusted mortality rate per million for India and the selected states. We used this information to perform indirect-standardization and derive the age-standardized mortality rates for the states for comparison. In addition, we derived a ratio for age-standardized mortality to compare across age groups within the state. We extracted

information regarding COVID-19 deaths from the Integrated Disease Surveillance Programme special surveillance portal up to November 16, 2020.

Results: The crude mortality rate of India stands at 88.9 per million population (118,883/1,337,328,910). Age-adjusted mortality rate (per-million) was highest for Delhi (300.5) and lowest for Kerala (35.9). The age-standardized mortality rate (per million) for India is (<15 years = 1.6, 15-29 years = 6.3, 30-44 years = 35.9, 45-59 years = 198.8, 60-74 years = 571.2, ⩾75 years = 931.6). The ratios for age-standardized mortality increase proportionately from 45 to 59 years age group across all the states.

Conclusion: There is high COVID-19 mortality not only among the elderly ages, but we also identified heavy impact of COVID-19 on the working population. Therefore, we recommend further evaluation of age-adjusted mortality for all States and inclusion of variables like gender, socio-economic status for standardization while identifying at-risk populations and implementing priority public health actions.

COVID-19 mortality in women and men in sub-Saharan Africa: a cross-sectional study [3]

Introduction: Since sex-based biological and gender factors influence COVID-19 mortality, we wanted to investigate the difference in mortality rates between women and men in sub-Saharan Africa (SSA).

Method: We included 69 580 cases of COVID-19, stratified by sex (men: n=43 071; women: n=26 509) and age (0-39 years: n=41 682; 40-59 years: n=20 757; 60+ years: n=7141), from 20 member nations of the WHO African region until 1 September 2020. We computed the SSA-specific and country-specific case fatality rates (CFRs) and sex-specific CFR differences across various age groups, using a Bayesian approach.

Results: A total of 1656 deaths (2.4% of total cases reported) were reported, with men accounting for 70.5% of total deaths. In SSA, women had a lower CFR than men (mean [Formula: see text] = -0.9%; 95% credible intervals (CIs) -1.1% to -0.6%). The mean CFR estimates increased with age, with the sex-specific CFR differences being significant among those aged 40 years or more (40-59 age group: mean [Formula: see text] = -0.7%; 95% CI -1.1% to -0.2%; 60+ years age group: mean [Formula: see text] = -3.9%; 95% CI -5.3% to -2.4%). At the country level, 7 of the 20 SSA countries reported significantly lower CFRs among women than men overall. Moreover, corresponding to the age-specific datasets, significantly lower CFRs in women than men were observed in the 60+ years age group in seven countries and 40-59 years age group in one country.

Conclusions: Sex and age are important predictors of COVID-19 mortality globally. Countries should prioritise the collection and use of sex-disaggregated data so as to design public health interventions and ensure that policies promote a gender-sensitive public health response.

Risk of severe COVID-19 and mortality in patients with established chronic liver disease: a nationwide matched cohort study [4]

Background and aims: Some, but not all, prior studies have suggested that patients with chronic liver disease are at increased risk of contracting COVID-19 and developing more severe disease. However, nationwide data are lacking from well-phenotyped cohorts with liver histology and comparisons to matched general population controls.

Methods: We conducted a nationwide cohort study of all Swedish adults with chronic liver disease (CLD) confirmed by liver biopsy between 1966 and 2017 (n = 42,320), who were alive on February 1, 2020. CLD cases were matched to ⩽ 5 population comparators by age, sex, calendar year and county (n =

182,147). Using Cox regression, we estimated multivariable-adjusted hazard ratios (aHRs) and 95% confidence intervals (CIs) for COVID-19 hospitalization and severe COVID-19 (intensive care admission or death due to COVID-19).

Results: Between February 1 and July 31, 2020, 161 (0.38%) CLD patients and 435 (0.24%) general population controls were hospitalized with COVID-19 (aHR = 1.36, 95% CI = 1.11-1.66), while 65 (0.15%) CLD patients and 191 (0.10%) controls developed severe COVID-19 (aHR = 1.08, 95% CI = 0.79-1.48). Results were similar in patients with CLD due to alcohol use, nonalcoholic fatty liver disease, viral hepatitis, autoimmune hepatitis, and other etiologies. Among patients with cirrhosis (n = 2549), the aHRs for COVID-19 hospitalization and for severe COVID-19 were 1.08 (95% CI 0.48-2.40) and 1.23 (95% CI = 0.37-4.04), respectively, compared to controls. Moreover, among all patients diagnosed with COVID-19, the presence of underlying CLD was not associated with increased mortality (aHR = 0.85, 95% CI = 0.61-1.19).

Conclusions: In this nationwide cohort, patients with CLD had a higher risk of hospitalization for COVID-19 compared to the general population, but they did not have an increased risk of developing severe COVID-19.

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Ms Chua Ee Yong Pearleen

Ms Chua Hui Lan

Ms Gwee Xiao Wei Sylvia

Ms Shah Shimoni Urvish

Ms Wang Min Xian

Any queries? Email Sylvia Gwee @ ephsgxw@nus.edu.sg

Centre for Infectious Disease Epidemiology and Research

Saw Swee Hock School of Public Health
National University of Singapore
Tahir Foundation Building
12 Science Drive 2 #10-01
Singapore 117549

For more information, please visit:

Our NUS website: https://sph.nus.edu.sg/partnerships/cider/
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