



Version 3.0

Lockdown rollback checklist: Do countries meet WHO recommendations for rolling back lockdown?

Research note

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Thomas Hale
Toby Phillips
Anna Petherick
Beatriz Kira
Noam Angrist
Katy Aymar
Sam Webster

As countries begin to roll back ‘lockdown’ measures, how and when do we know it is safe to do so?

The [Oxford COVID-19 Government Response Tracker](#) (OxCGRT) provides a cross-national overview of which countries meet four of the World Health Organisation’s (WHO) six recommendations for relaxing physical distancing measures.

While the OxCGRT data cannot fully say how ready countries are to leave lockdown, it does provide for a rough comparison across nations. Even this “high level” view reveals that few countries are close to meeting the WHO criteria for rolling back lockdown measures.

At the time of writing, only a handful of countries are doing well at the four “checklist” criteria OxCGRT is able to track.

World Health Organization criteria

The WHO [has recently outlined six categories](#) of measures governments need to have in place before rolling back “lockdown” measures. In brief, these are as follows (quoted in part; for full descriptions see [here](#)):

1. COVID-19 transmission is controlled to a level of sporadic cases and clusters of cases, all from known contacts or importations; at a minimum, new cases would be reduced to a level that the health system can manage based on health care capacity.
2. Sufficient public health workforce and health system capacities are in place to enable the major shift from detecting and treating mainly serious cases to detecting and isolating all cases, irrespective of severity and whether there is local transmission or an importation.
3. Outbreak risks in high-vulnerability settings are minimised, which requires all major drivers or amplifiers of COVID-19 transmission to have been identified, with appropriate measures in place to maximise physical distancing and minimise the risk of new outbreaks.
4. Preventive measures are established in workplaces.
5. Manage the risk of exporting and importing cases from communities with high risks of transmission.
6. Communities are fully engaged and understand that the transition away from large-scale movement restrictions and public health and social measures – from detecting and treating serious cases to detecting and isolating all cases – is a ‘new normal’ in which prevention measures would be maintained, and that all people have key roles in preventing a resurgence in case numbers.

What does the Oxford data measure?

OxCGRT currently provides information relevant to recommendations 2, 4, and 6. We combine this with:

- epidemiological data from the European Centre for Disease Control on cases and deaths, provided by [Our World in Data](#), which address recommendation 1
- data collected by Our World in Data on the number of tests conducted in each country, which further addresses recommendation 2
- data from [Apple](#) and [Google](#) on travel and mobility, which further address recommendation 6

OxCGRT also tracks emergency investments in the healthcare system since 1 January 2020, which can provide useful contextual information. See our [codebook on GitHub](#) or our [working paper](#) for a complete description of the data.

From this information, we construct a “Lockdown rollback table,” defined below, which roughly describes how close countries are to achieving four of the six current WHO recommendations.

Because the data only measure four of six recommended actions, we should be cautious about inferring what countries are ready to rollback lockdown from this measure. Indeed, the data provides a better indication of what countries are *not* ready.

Moreover, we stress that the WHO recommendations are more specific and extensive than cross-national measures like OxCGRT can readily provide. The checklist below should therefore be seen as a starting point for assessing a country’s preparedness for leaving lockdown. In particular, we note that the OxCGRT data measure countries’ stated policies, not how well they implement them.

We will continue to develop our assessment of the WHO checklist as new indicators become available. Detailed formula are available at the end of this document in an appendix.

WHO recommendation	Data sources	Rollback readiness
Transmission controlled	<i>No OxCGRT indicators</i> Daily cases and deaths (from European CDC via Our World in Data)	A metric between 0 and 1 based on new cases confirmed each day.
Test / trace / isolate	OxCGRT: H2 (testing policy) OxCGRT: H3 (contact tracing policy) Testing data from Our World in Data	A metric between 0 and 1, half based on testing and contact tracing policy, and half based on the number of tests-per-case a country has conducted. (does not measure isolation)
High vulnerability settings	<i>Not currently measured</i>	<i>Not currently measured</i>
Preventative measures established in workplaces	<i>Not currently measured</i>	<i>Not currently measured</i>

Manage risk of exporting and importing cases	OxCGRT: C8 (international travel restrictions)	A metric between 0 and 1 based on the stringency of the country's restrictions on travel arrivals. (does not measure risk of exporting cases)
Communities understanding and behaviour change	OxCGRT: H1 (public information campaigns) Travel and mobility data from Apple and Google. Daily cases and deaths (from European CDC via Our World in Data)	A metric between 0 and 1 based on whether a country has a public information campaign and the level of mobility reduction, weighted for current transmission risk.

Assessing countries on the Lockdown Rollback Checklist

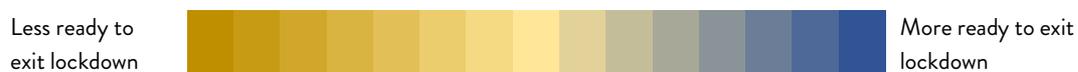
As of 29 May 2020, we estimate that only a handful of countries come close to meeting the 4 WHO recommendations we are able to estimate with the OxCGRT data, however there are about 30-50 which are close on several measures.

Many of the best-performing countries are those with no new COVID-19 cases, as this will contribute to a good score on two metrics: controlling transmission and community understanding/behaviour change. The biggest variation in well-performing countries is around testing and tracing, likely a reflection of different testing levels.

We conclude that further steps are likely needed to ensure a safe re-opening of society in the next weeks.

Table 1: Lockdown Rollback Checklist 29 May 2020

(NB: Not every country is updated every day, so data for any particular country may be several days out of date)



	Cases controlled	Test, trace, isolate	Vulnerable settings (no data)	Preventative measures in workplaces (no data)	Manage imported cases	Community understanding	Overall (average of metrics)
New Zealand	1.0	0.9			1.0	0.9	1.0
Cyprus	1.0	0.8			1.0		0.9
Rwanda	0.9	0.9			1.0	0.8	0.9
Taiwan	1.0	0.9			1.0	0.7	0.9
Seychelles	1.0	0.7			1.0		0.9
Gambia	1.0	0.7			1.0		0.9
Trinidad and Tobago	1.0	0.6			1.0	0.9	0.9
Spain	1.0	0.5			1.0	1.0	0.9
Vietnam	1.0	0.8			1.0	0.7	0.9
Brunei	1.0	0.6			1.0		0.9
Australia	0.8	0.7			1.0	0.9	0.9
Botswana	1.0	0.5			1.0	0.9	0.8
Dominica	1.0	0.5			1.0		0.8
Cape Verde	0.9	0.5			1.0	0.9	0.8
Mauritius	1.0	0.3			1.0	1.0	0.8
Paraguay	0.9	0.6			1.0	0.8	0.8
Georgia	1.0	0.4			1.0	0.9	0.8
Myanmar	1.0	0.7			0.8	0.8	0.8
Iceland	1.0	0.7			0.8	0.8	0.8
Palestine	0.9	0.5			1.0		0.8
Lithuania	0.8	0.8			0.8	0.8	0.8
Burkina Faso	0.9	0.6			1.0	0.7	0.8
Belize	1.0	0.3			1.0	0.9	0.8
Tunisia	1.0	0.6			0.8		0.8
Kosovo	0.9	0.5			1.0		0.8
Barbados	1.0	0.7			0.5	0.9	0.8
Jordan	0.9	0.3			1.0	0.9	0.8
Laos	1.0	0.3			1.0	0.8	0.8
Liberia	1.0	0.6			0.8		0.8
Bosnia and Herzegovina	0.8	0.5			1.0	0.8	0.8
Slovenia	1.0	0.7			0.5	0.8	0.8
Macao	1.0	0.3			0.8	1.0	0.8
Guyana	1.0	0.3			1.0		0.8
Bulgaria	0.8	0.6			0.8	0.9	0.8
Angola	1.0	0.2			1.0	0.8	0.7

Lesotho	1.0	0.2			1.0		0.7
Burundi	1.0	0.2			1.0		0.7
Suriname	1.0	0.2			1.0		0.7
China	0.9	0.5			0.8		0.7
Niger	0.9	0.2			1.0	0.7	0.7
Tanzania	1.0	0.1			1.0	0.7	0.7
Aruba	1.0	0.2			0.8	0.9	0.7
Switzerland	0.8	0.4			0.8	0.8	0.7
Hungary	0.6	0.6			0.8	0.8	0.7
Lebanon	0.7	0.2			1.0	0.8	0.7
Guam	1.0	0.3			0.8		0.7
Austria	0.5	0.7			0.8	0.8	0.7
Estonia	0.9	0.5			0.5	0.8	0.7
Kuwait	0.0	0.7			1.0	1.0	0.7
El Salvador	0.0	0.7			1.0	0.9	0.7
Croatia	1.0	0.8			0.0	0.9	0.7
Morocco	0.0	0.6			1.0	1.0	0.7
Luxembourg	0.9	0.7			0.0	0.9	0.6
Denmark	0.2	0.8			1.0	0.6	0.6
Mauritania	0.6	0.3			1.0		0.6
Chad	0.7	0.2			1.0		0.6
South Africa	0.0	0.8			1.0	0.8	0.6
Papua New Guinea	1.0	0.4			0.5	0.6	0.6
Romania	0.0	0.7			1.0	0.9	0.6
Andorra	1.0	0.4			0.5		0.6
Nepal	0.0	0.7			1.0	0.9	0.6
Kazakhstan	0.0	0.9			1.0	0.7	0.6
United Arab Emirates	0.0	0.8			1.0	0.7	0.6
San Marino	1.0	0.4			0.5		0.6
France	0.0	0.6			1.0	0.9	0.6
Hong Kong	0.0	0.9			1.0	0.6	0.6
Japan	0.5	0.4			0.8	0.8	0.6
Colombia	0.0	0.6			1.0	0.9	0.6
Malaysia	0.0	0.9			0.8	0.8	0.6
Argentina	0.0	0.5			1.0	1.0	0.6
Dominican Republic	0.0	0.6			1.0	0.9	0.6
Turkey	0.0	0.6			1.0	0.8	0.6
India	0.0	0.8			0.8	0.9	0.6
Panama	0.0	0.4			1.0	1.0	0.6
Oman	0.0	0.7			1.0	0.7	0.6
Saudi Arabia	0.0	0.6			1.0	0.8	0.6
Zimbabwe	0.0	0.7			1.0	0.7	0.6
Slovak Republic	0.0	0.7			1.0	0.7	0.6
Philippines	0.0	0.7			0.8	1.0	0.6
Ecuador	0.0	0.5			1.0	0.9	0.6
Albania	0.0	0.6			1.0	0.8	0.6
Greenland	0.0	0.8			1.0		0.6
Djibouti	0.0	0.8			1.0		0.6

Canada	0.0	0.6			1.0	0.7	0.6
Uruguay	0.0	0.5			1.0	0.8	0.6
Russia	0.0	0.8			1.0	0.6	0.6
Portugal	0.0	0.7			0.8	0.9	0.6
Qatar	0.0	0.6			1.0	0.7	0.6
Italy	0.0	0.6			0.8	0.9	0.6
Indonesia	0.0	0.5			1.0	0.8	0.6
Peru	0.0	0.3			1.0	1.0	0.6
Thailand	0.0	0.7			0.8	0.8	0.6
Sri Lanka	0.0	0.4			1.0	0.9	0.6
Bahrain	0.0	0.7			1.0	0.6	0.6
Pakistan	0.0	0.6			1.0	0.7	0.6
Brazil	0.0	0.5			1.0	0.8	0.6
Uganda	0.0	0.7			0.8	0.8	0.6
Guatemala	0.0	0.4			1.0	0.9	0.6
Senegal	0.0	0.6			1.0	0.6	0.6
Ghana	0.0	0.8			1.0	0.5	0.6
Sierra Leone	0.0	0.7			1.0		0.6
Eswatini	0.0	0.7			1.0		0.6
Israel	0.0	0.6			1.0	0.6	0.6
Chile	0.0	0.6			0.8	0.9	0.6
South Korea	0.0	0.9			0.8	0.6	0.6
Namibia	0.0	0.6			1.0	0.6	0.6
Venezuela	0.2	0.3			1.0	0.7	0.6
Bolivia	0.0	0.2			1.0	1.0	0.5
Cuba	0.0	0.6			1.0		0.5
Costa Rica	0.0	0.4			1.0	0.7	0.5
Honduras	0.0	0.2			1.0	0.9	0.5
Azerbaijan	0.0	0.6			1.0		0.5
Bhutan	0.0	0.6			1.0		0.5
Kenya	0.0	0.5			1.0	0.6	0.5
Puerto Rico	0.0	0.6			0.8	0.8	0.5
Nigeria	0.0	0.5			1.0	0.6	0.5
Poland	0.0	0.4			1.0	0.7	0.5
Solomon Islands	1.0	0.3			0.8	0.0	0.5
Libya	0.0	0.6			1.0	0.5	0.5
Greece	0.0	0.5			0.8	0.7	0.5
Singapore	0.0	0.6			0.5	0.9	0.5
Bangladesh	0.0	0.5			0.8	0.8	0.5
Germany	0.0	0.7			0.8	0.6	0.5
Norway	0.0	0.5			1.0	0.5	0.5
Egypt	0.0	0.3			1.0	0.7	0.5
Iraq	0.0	0.5			1.0	0.5	0.5
Bermuda	0.0	0.5			1.0		0.5
United States	0.0	0.6			0.8	0.6	0.5
Ukraine	0.0	0.4			1.0	0.5	0.5
Ireland	0.0	0.5			0.5	0.9	0.5
Finland	0.0	0.5			0.8	0.7	0.5

Mexico	0.0	0.3			0.8	0.8	0.5
Jamaica	0.0	0.2			1.0	0.7	0.5
Turkmenistan	1.0	0.1			0.8	0.0	0.5
Netherlands	0.0	0.4			0.8	0.7	0.4
Czech Republic	0.1	0.7			0.3	0.7	0.4
Yemen	0.8	0.0			1.0	0.0	0.4
Mali	0.0	0.3			1.0	0.5	0.4
Malawi	0.0	0.6			0.8		0.4
Cote d'Ivoire	0.0	0.3			1.0	0.5	0.4
Guinea	0.0	0.3			1.0		0.4
Sudan	0.0	0.3			1.0		0.4
Uzbekistan	0.0	0.3			1.0		0.4
Belgium	0.0	0.4			0.5	0.8	0.4
Cameroon	0.0	0.3			1.0	0.4	0.4
Ethiopia	0.0	0.7			0.5		0.4
Sweden	0.0	0.4			0.8	0.5	0.4
Congo	0.0	0.2			1.0		0.4
Madagascar	0.0	0.2			1.0		0.4
Democratic Republic of Congo	0.0	0.2			1.0		0.4
Central African Republic	0.0	0.2			1.0		0.4
Serbia	0.2	0.6			0.0	0.8	0.4
Somalia	0.1	0.1			1.0		0.4
Gabon	0.0	0.5			1.0	0.0	0.4
Mozambique	0.0	0.6			0.5	0.4	0.4
Belarus	0.0	0.7			0.8	0.0	0.4
Mongolia	0.0	0.3			1.0	0.2	0.4
Zambia	0.0	0.6			0.5	0.4	0.4
Moldova	0.0	0.4			1.0	0.0	0.3
Afghanistan	0.0	0.5			0.3	0.6	0.3
Benin	0.0	0.4			0.5	0.4	0.3
South Sudan	0.0	0.4			0.5		0.3
Kyrgyz Republic	0.0	0.2			1.0	0.0	0.3
United Kingdom	0.0	0.3			0.0	0.9	0.3
Syria	0.0	0.1			0.8		0.3
Algeria	0.0	0.0			0.8		0.3
Iran	0.0	0.6			0.0	0.0	0.2
Nicaragua	0.0	0.2			0.0	0.5	0.2

Appendix: formulas for calculating metrics

1. Transmission under control

$$cases\ controlled = \frac{50 - \Delta cases_t}{50}$$

Where $\Delta cases$ is the average new daily cases from the last 3 days.

Cases controlled is automatically set to 0 if:

$$\begin{aligned} &\Delta cases_t \geq 50 \\ \text{or } &\Delta cases_t \geq \Delta cases_{t-7} \end{aligned}$$

2. Testing and tracing

$$testing\ and\ tracing = 0.25 \left(\frac{H2}{3} \right) + 0.25 \left(\frac{H3}{2} \right) + 0.5 \left(\frac{\ln(tests) - \ln(tests_{global_min})}{\ln(tests_{global_max}) - \ln(tests_{global_min})} \right)$$

Where:

- H2 is the latest value of the testing policy indicator (H2) in OxCGRT database
- H3 is the latest value of the contact tracing policy indicator (H3) in the OxCGRT database
- $\ln(tests)$ is the natural logarithm of the number of tests-per-case conducted by that country
- $\ln(tests_{global_max/min})$ is the natural logarithm of the number tests-per-case conducted by the country that has conducted the most/least tests-per-case

If the Our World in Data team has not included a country in their testing database, the portion of the metric based on testing data is set to the global average.

if the Our World in Data team tried to include a country in their testing database but could not find publicly available numbers, the portion of the metric based on testing data is set to 0.

3. Managing vulnerable settings

No data.

4. Putting preventative measures into workplaces

No data.

5. Manage the risk of imported cases

$$\text{manage imported cases} = \frac{C8}{4}$$

Where C8 is the latest value of the international restrictions policy indicator in the OxCGRT.

6. Communities are fully engaged and understand

$$\text{community} = 0.5(\text{cases controlled}) + (1 - 0.5(\text{cases controlled})) \left(\frac{120 - \text{mob}}{100} \right)$$

Where

- *cases controlled* is the metric between 0 and 1 calculated in the first item above.
- *mob* is the level of mobility as a percentage of pre-COVID baseline levels reported by Apple (average of all three reported mobility types) or Google (average of “retail and recreation”, “transit stations”, and “workplaces” mobility types).

If a country does not have a national public information campaign (that is, the OxCGRT database reports H1≠2), then the entire metric is set to 0.

If a country has both Apple and Google mobility data, then *mob* is set to whichever reports the greatest reduction in mobility.

If a country has neither Apple nor Google mobility, then this metric is left blank.

If *mob* is less than 20 (that is: a reduction to less than 20% of pre-COVID levels), it is set to 20.

If *mob* is greater than 120 (that is: mobility has increased to 120% of pre-COVID levels), it is set to 120.