

Current situation

- Daily cases across the region decreased to approximately 17,500 per day in early June but have steadily increased since then, reaching 22,500 a day on average this week (Figure 1).
- COVID-19 reported deaths have not matched the recent increase in cases in but have increased in the last week. Due to the increase, COVID-19 has risen from the 11th cause of death to the 10th in the region (Table 1).
- The pooled analysis of cases, hospitalizations (where available), and deaths suggests that effective R (the number of new infections caused by each infection) is over 1 in Spain, France, Sweden, Lithuania, Latvia, Belarus, Ukraine, Moldova, North Macedonia, Albania, Turkey, Georgia, and Kazakhstan (Figure 3).
- The cumulative fraction of infections that are detected and reported as a confirmed case has been steadily rising over the course of the epidemic and is now just over 15% for the region overall (Figure 5).
- Currently the highest daily death toll in EURO is in Kazakhstan, followed by several countries in the Western Balkans and Romania, Bulgaria, and Moldova (Figure 6).

Trends in drivers of transmission (mobility, masks, testing, and seasonality)

- Across the region, most countries have some form of large group gathering restriction in place except Belarus, Germany, Russian Federation, and Turkey. No country has a mandate for all nonessential business closure. Partial business closures and school closures remain in place in the majority of countries. Stay-at-home orders are in place only in Azerbaijan. Bulgaria, Greece, and Uzbekistan have travel bans in place (Table 2, Figure 7).
- Mobility as measured through smartphone use (both Android and iOS) steadily increased from late March, when it was 60% below pre-COVID baseline, to 20% below baseline in mid-June. Since then there has been no further increase. The lowest levels of mobility today are in Ireland, UK, France, and the Netherlands (Figure 8).
- Mask use in EURO peaked in May at over 50%. From then until early July, mask use declined to around 45% and has slightly increased since then. Mask use remains over 65% in Portugal, Spain, Turkey, Kazakhstan, Uzbekistan, Turkmenistan, Georgia, and Armenia. Levels less than 30% are seen in Switzerland, Denmark, Norway, Sweden, Finland, Austria, Czechia, Slovakia, Belarus, and Serbia (Figure 9).
- Testing rates have risen steadily, but the EURO average of just over 100 per 100,000 per day is not high in comparison to some countries like the US. Some countries are testing at much higher rates, such as Denmark (Figure 10).

Projections

- We have extended our forecasts to January 1. Figures 12 and 13 show that we expect the daily death rate to start increasing in October, even with mandates being reimposed by countries when the daily death rate surpasses 8 per million. EURO's peak daily death rate from April of this year will be surpassed in late November, reaching nearly 10,000 deaths per day by late December. Cumulative deaths for EURO are forecasted to be 667,811 by January 1 (Figures 12 and 13).
- This forecast assumes 16 countries will have to reimpose a package of mandates in October or November: Kazakhstan, Montenegro, Ukraine, Israel, Spain, Belarus, the Netherlands, Bulgaria, Luxembourg, Sweden, North Macedonia, France, Bosnia and Herzegovina, Romania, Albania, and Republic of Moldova (Figure 15).

- If mask use can be increased to 95%, the level achieved in Singapore, through some combination of mask mandates with penalties and public information campaigns, the cumulative death toll by January 1 could be reduced from 667,811 to 396,761, saving 271,050 lives. Expected deaths from now until January 1 can be reduced by 64% through universal mask use.
- As the daily death rate in the region rises, we expect COVID-19 to rise from the 10th cause of death today to the third cause of death in the first week of January.

COVID-19 Results Briefing: the European Region

Institute for Health Metrics and Evaluation (IHME)

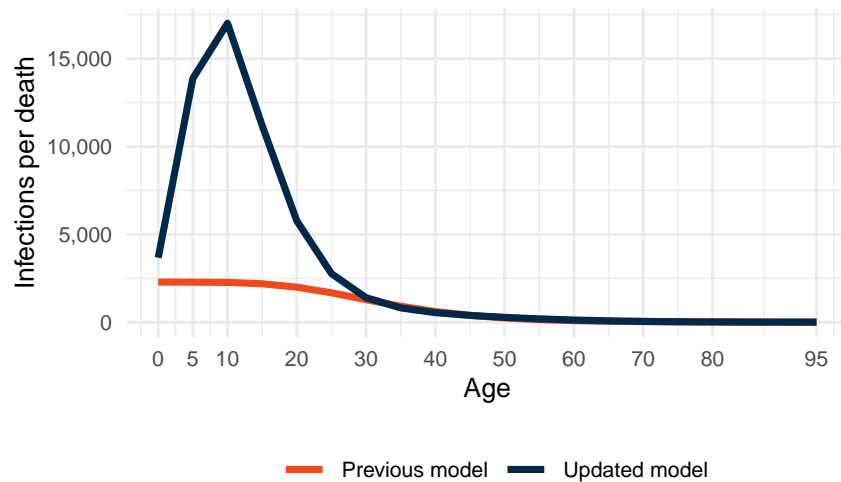
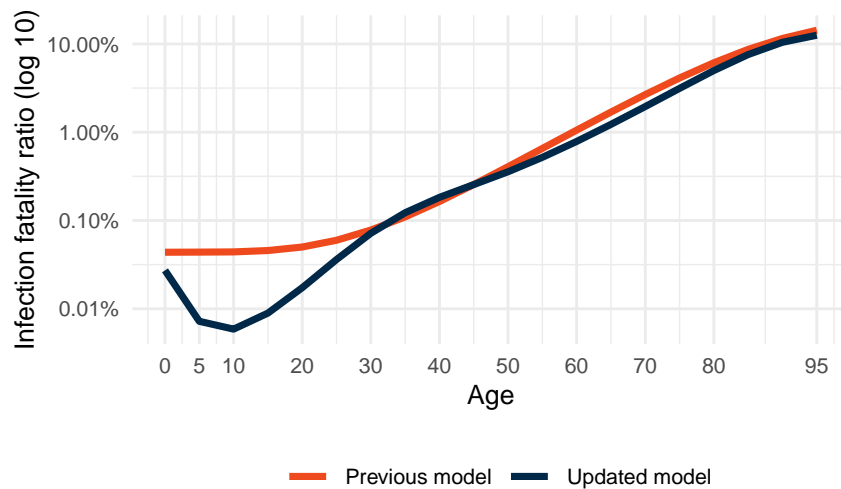
September 03, 2020

This briefing contains summary information on the latest projections from the IHME model on COVID-19 in the European Region. The model was run on September 02, 2020.

Model updates

Starting this week, we are reporting our projections up to January 01, 2021. Updates to the model this week include additional data on deaths, cases, and updates on covariates. Since our model two weeks ago, we have been using an updated infection to fatality ratio (IFR) that substantially affects the number of estimated infections, particularly in younger age groups. The Preface Figure shows the age pattern as previously used and the new age pattern. This curve is a global pattern and affects all locations.

Preface Figure.



Current situation

Figure 1. Reported daily COVID-19 cases

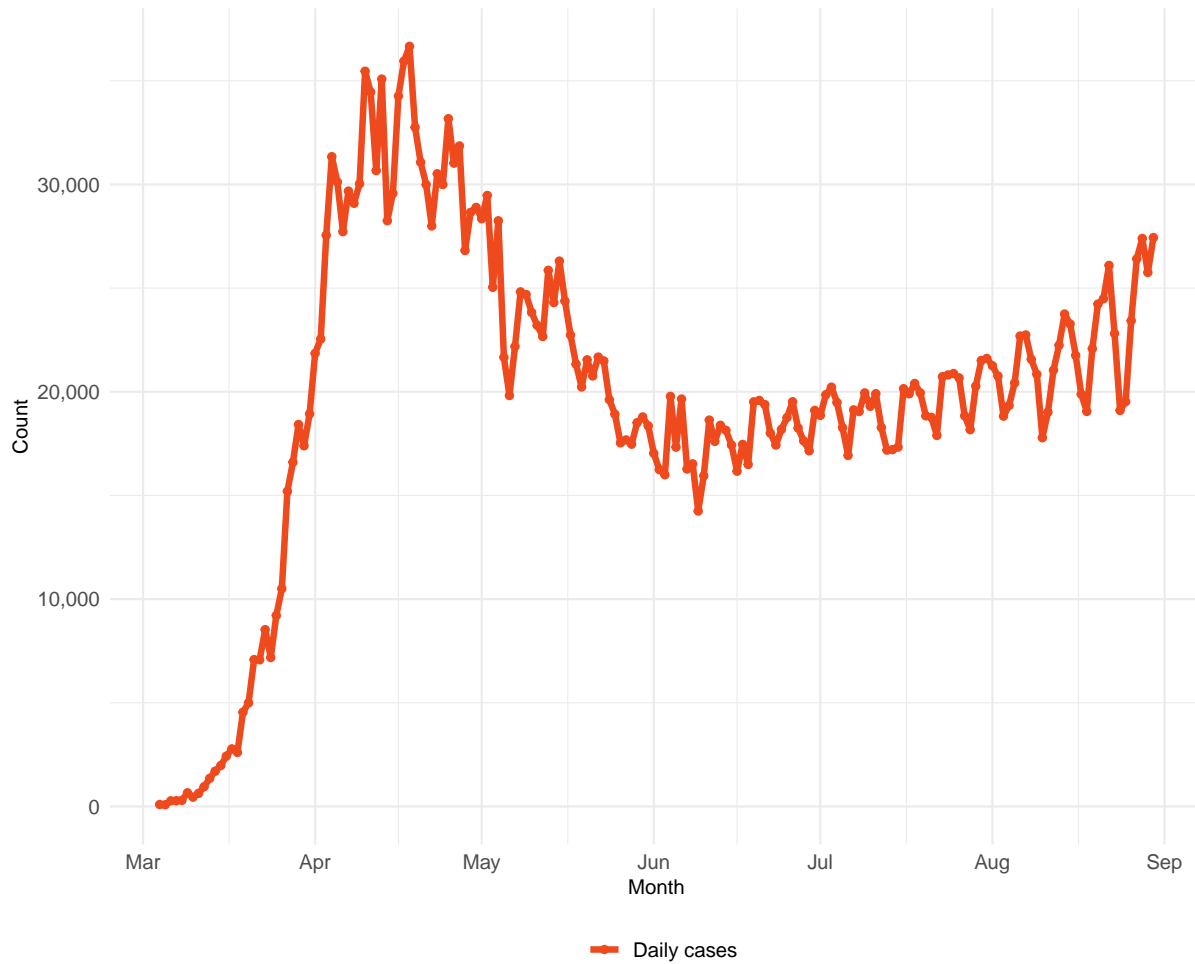


Table 1. Ranking of COVID-19 among the leading causes of mortality this week, assuming uniform deaths of non-COVID causes throughout the year

Cause name	Weekly deaths	Ranking
Ischemic heart disease	44,253	1
Stroke	22,622	2
Tracheal, bronchus, and lung cancer	8,918	3
Alzheimer's disease and other dementias	8,022	4
Chronic obstructive pulmonary disease	6,719	5
Colon and rectum cancer	5,881	6
Lower respiratory infections	5,254	7
Cirrhosis and other chronic liver diseases	4,290	8
Hypertensive heart disease	3,949	9
COVID-19	3,843	10

Figure 2a. Reported daily COVID-19 deaths and smoothed trend estimate

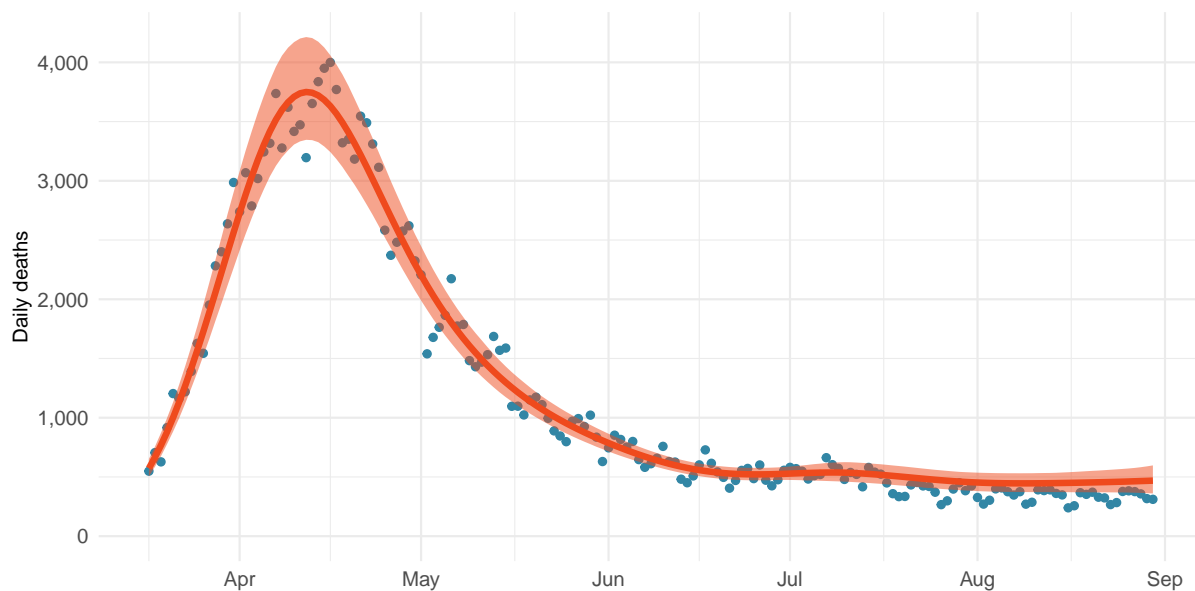


Figure 2b. Estimated cumulative deaths by age group

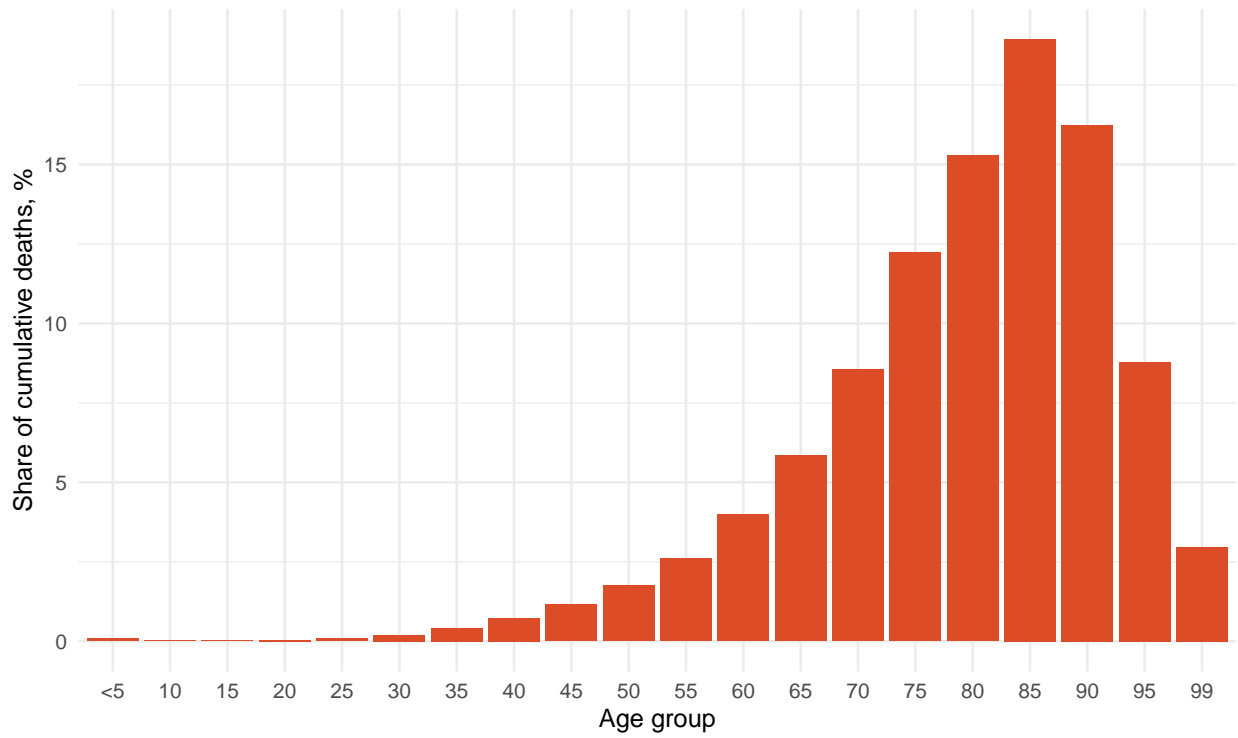


Figure 3. Mean effective R on August 20, 2020. The estimate of effective R is based on the combined analysis of deaths, case reporting and hospitalizations where available. Current reported cases reflect infections 11-13 days prior so estimates of effective R can only be made for the recent past. Effective R less than 1 means that transmission should decline all other things being held the same.

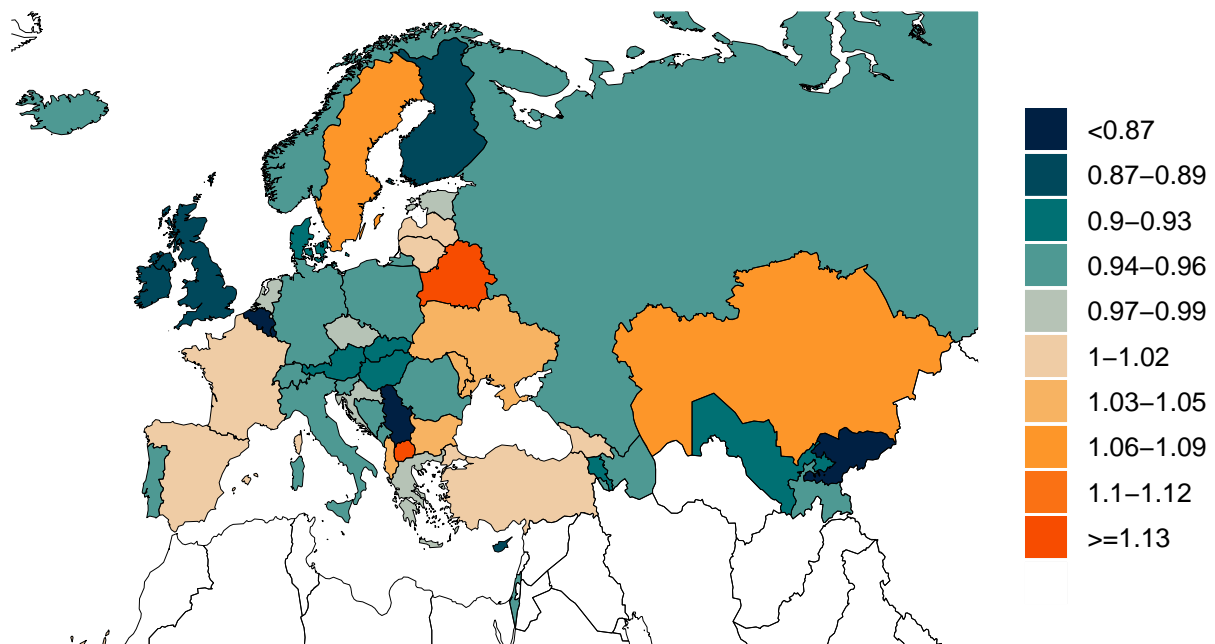


Figure 4. Estimated percent infected with COVID-19 on August 31, 2020

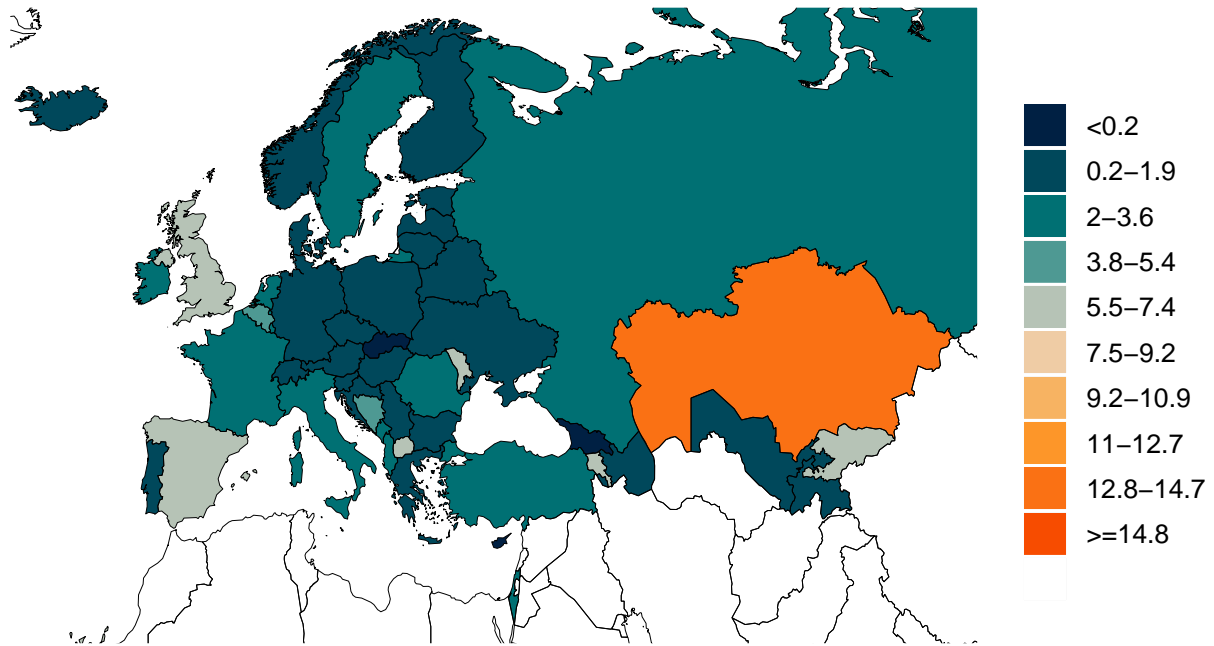


Figure 5. Percent of COVID-19 infections detected. This is estimated as the ratio of reported COVID-19 cases to estimated COVID-19 infections based on the SEIR model.

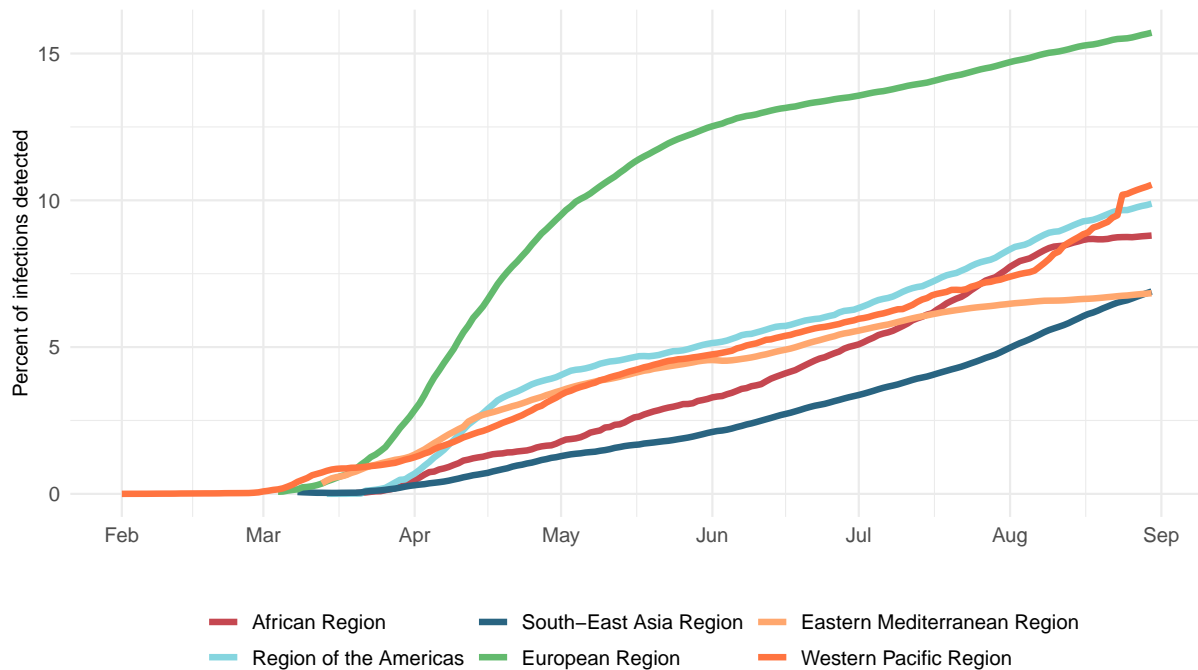
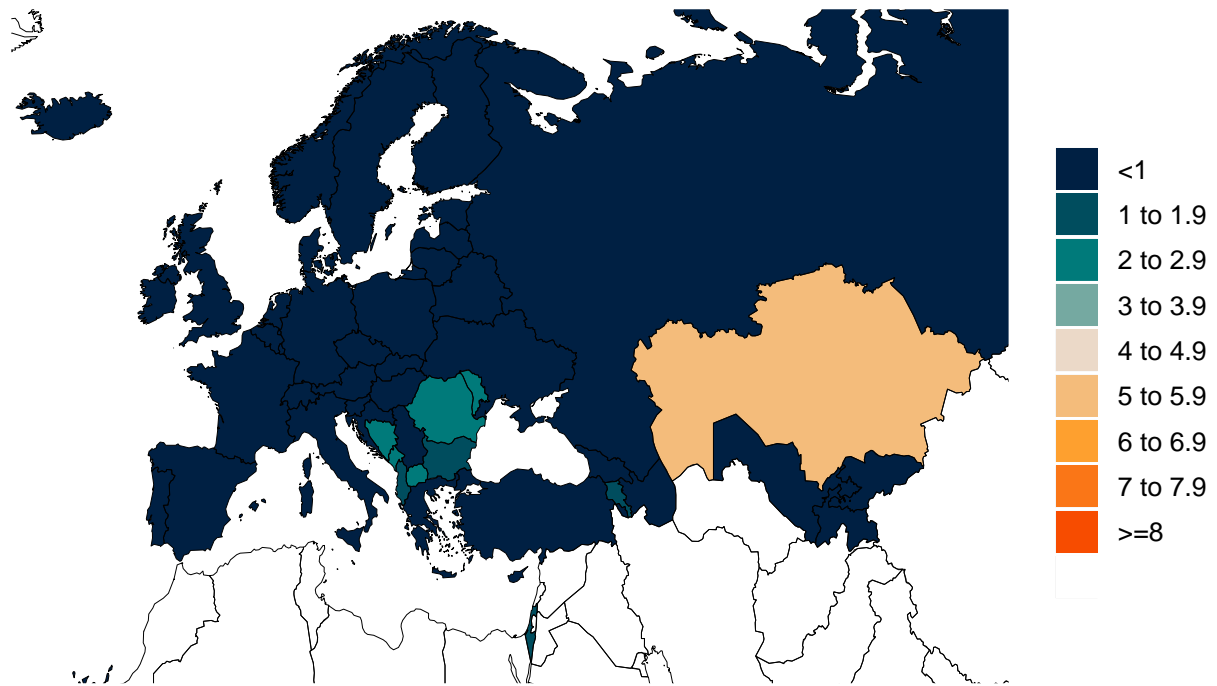


Figure 6. Daily COVID-19 death rate per 1 million on August 31, 2020



Critical drivers

Table 2. Current mandate implementation

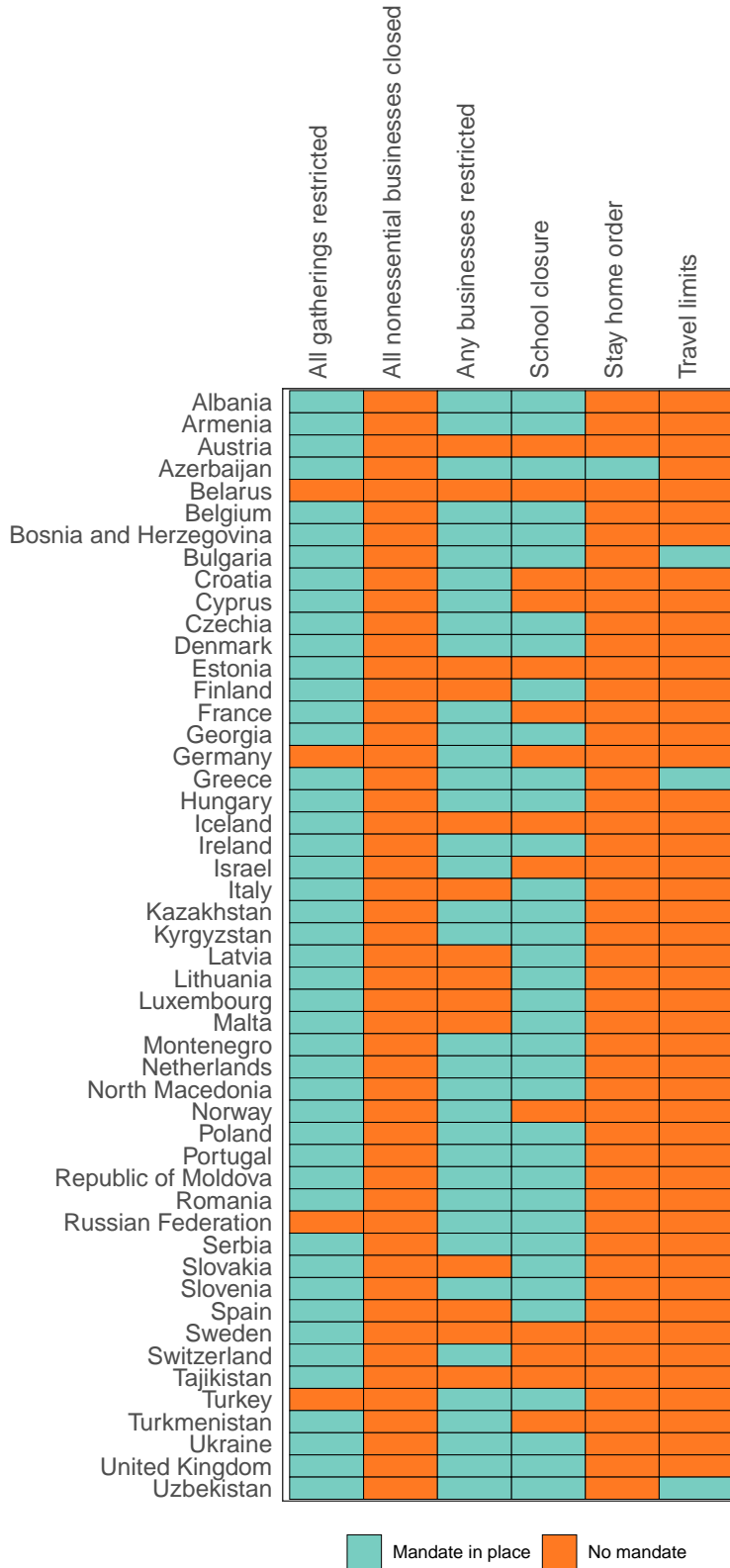


Figure 7. Total number of mandates

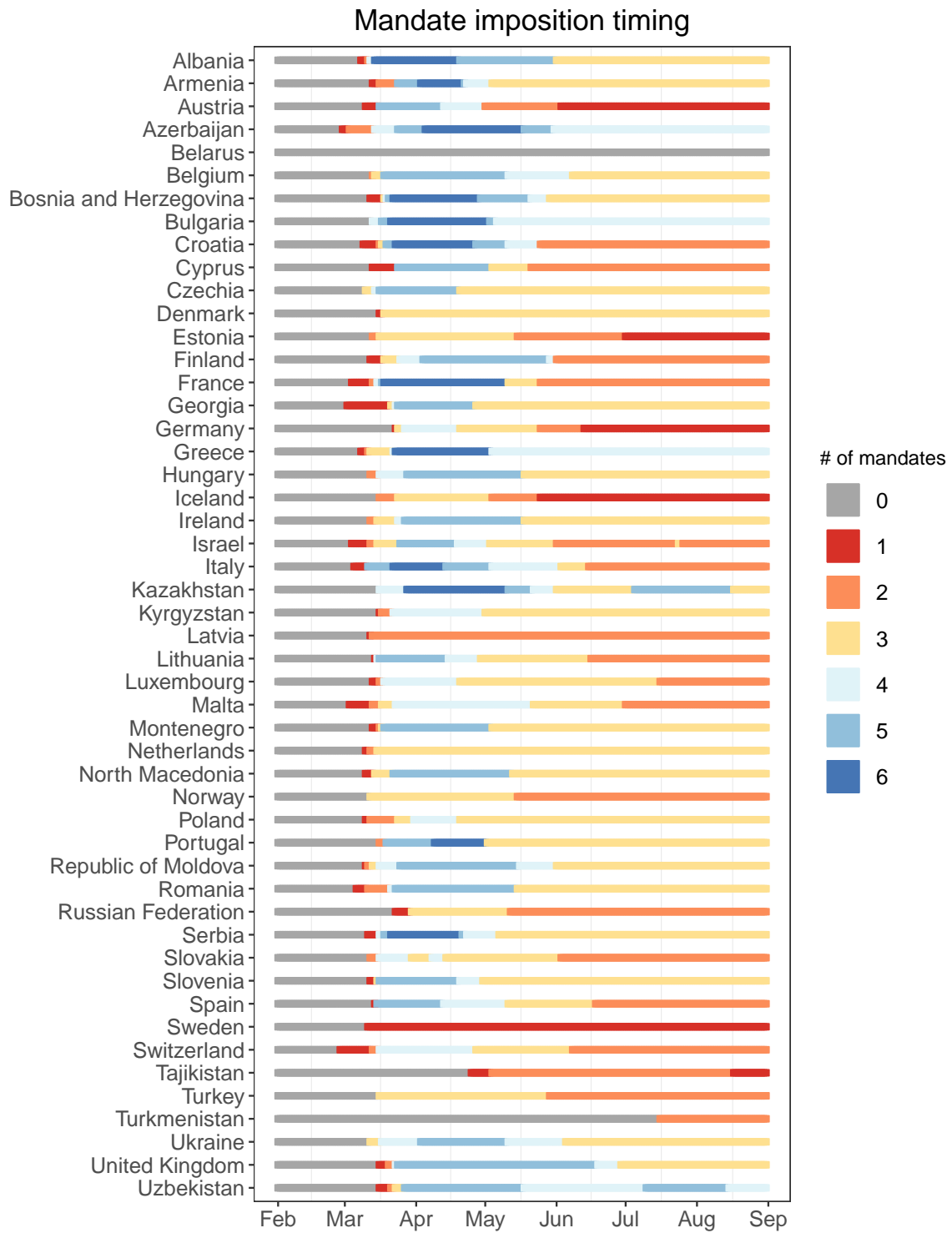


Figure 8a. Trend in mobility as measured through smartphone app use compared to January 2020 baseline

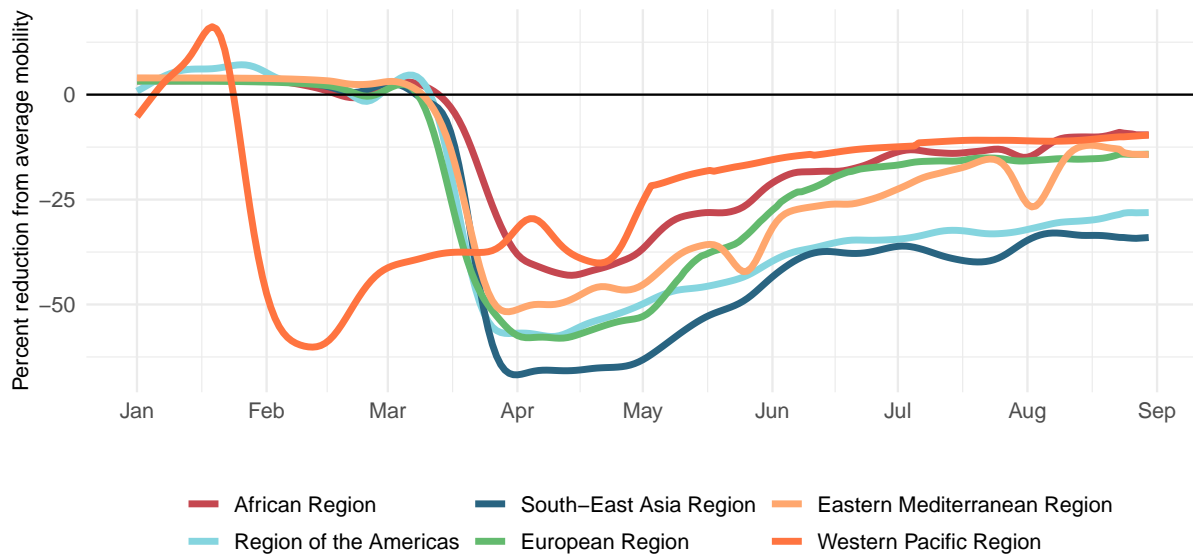


Figure 8b. Mobility level as measured through smartphone app use compared to January 2020 baseline (percent)

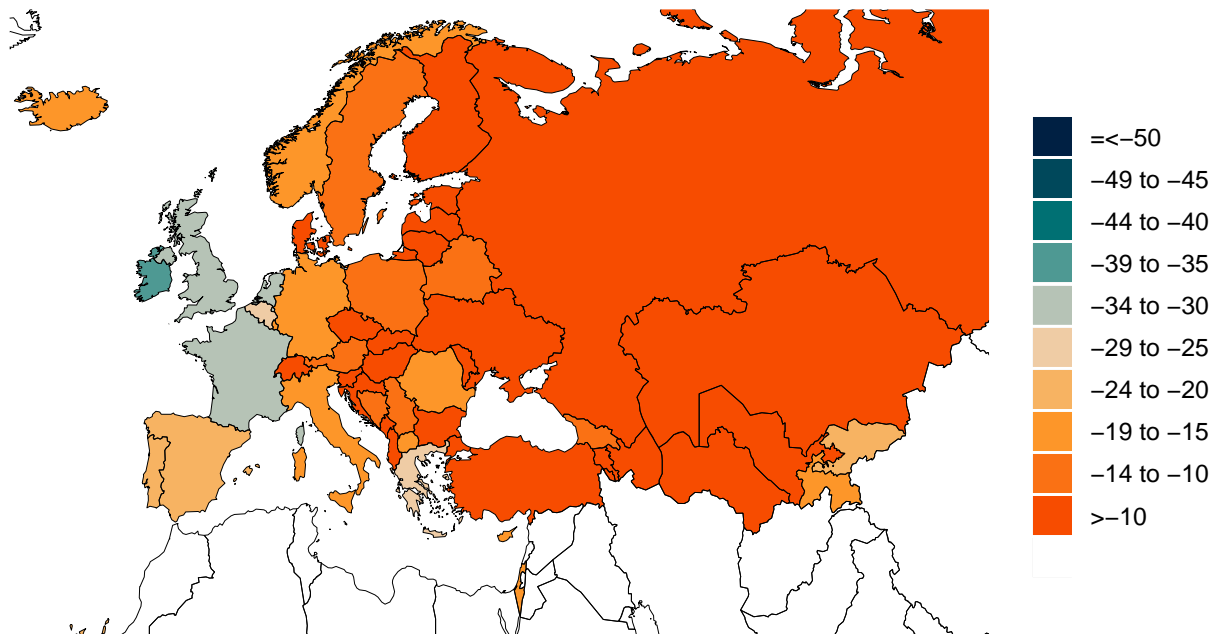


Figure 9a. Trend in the proportion of the population reporting always wearing a mask when leaving home

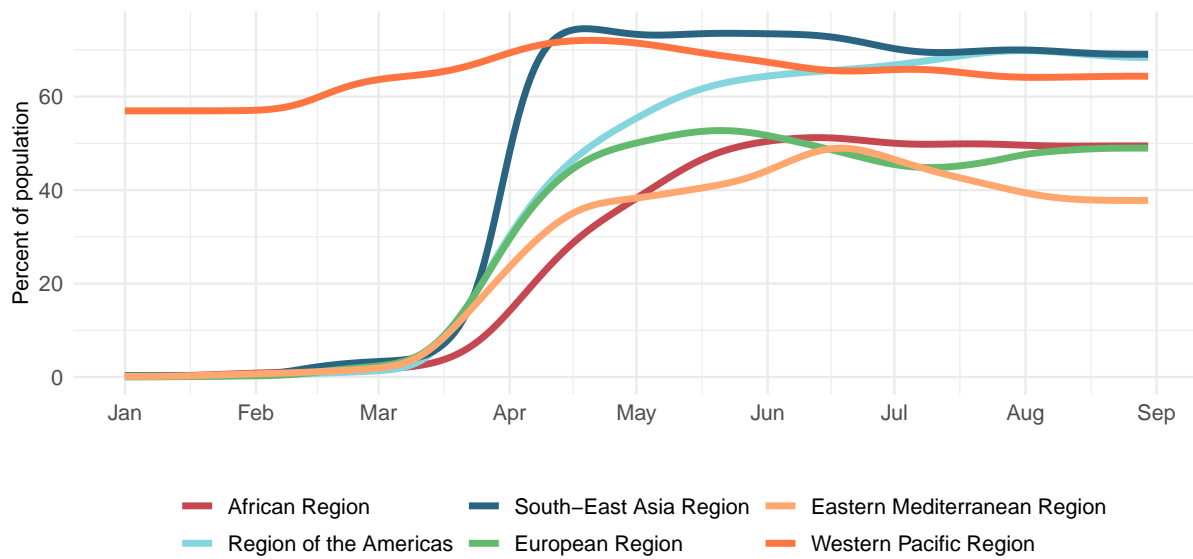


Figure 9b. Proportion of the population reporting always wearing a mask when leaving home on August 31, 2020

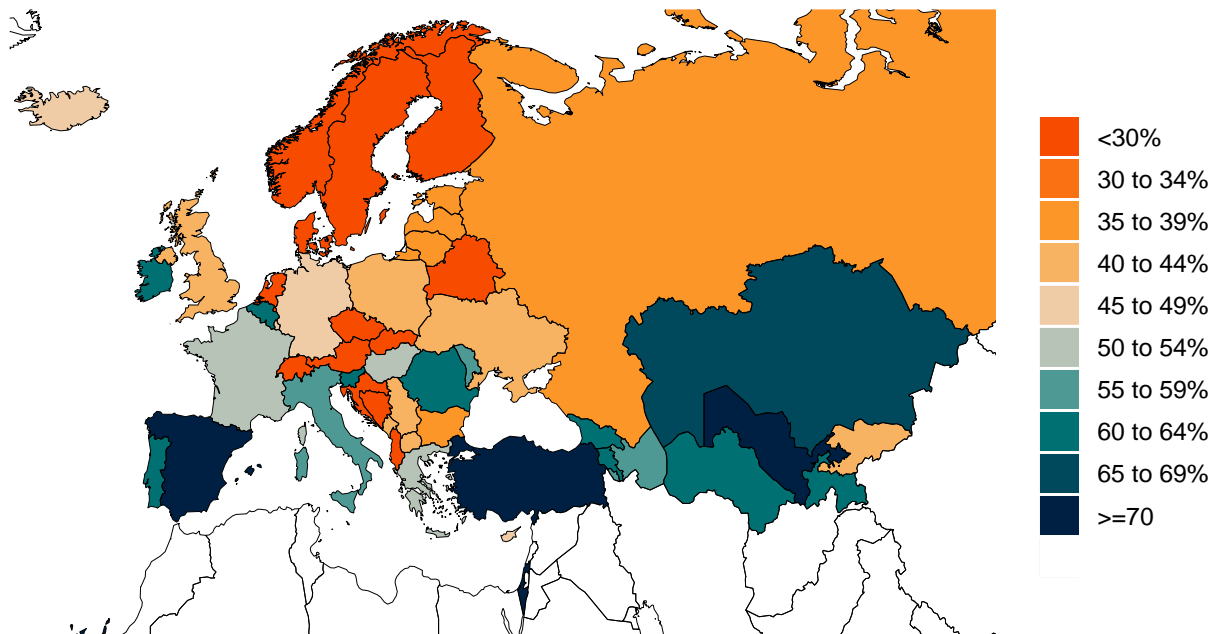


Figure 10a. Trend in COVID-19 diagnostic tests per 100,000 people

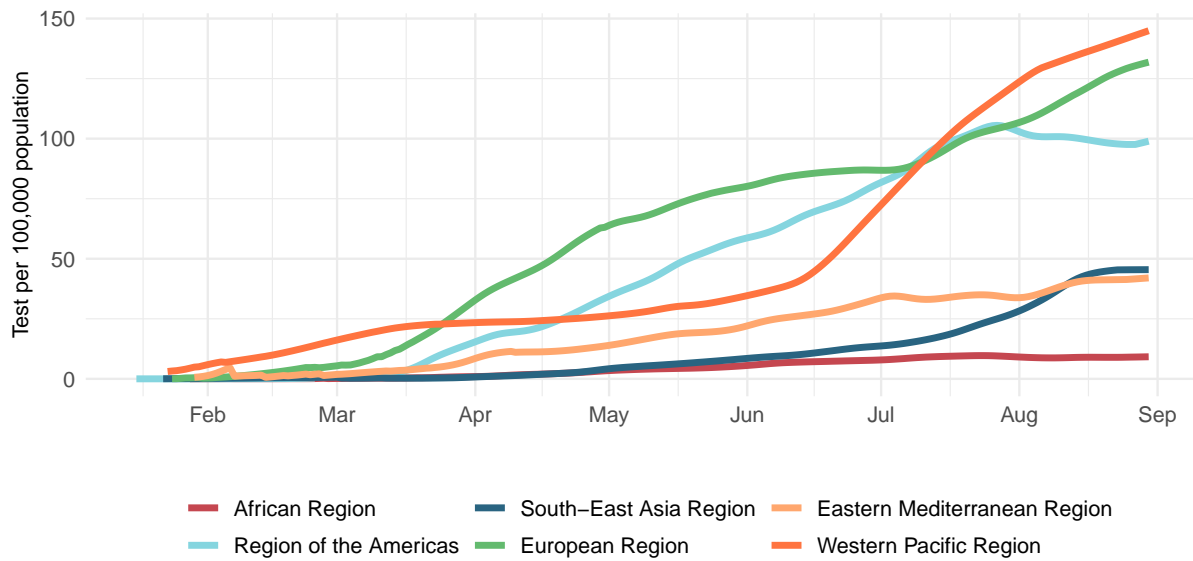


Figure 10b. COVID-19 diagnostic tests per 100,000 people on August 31, 2020

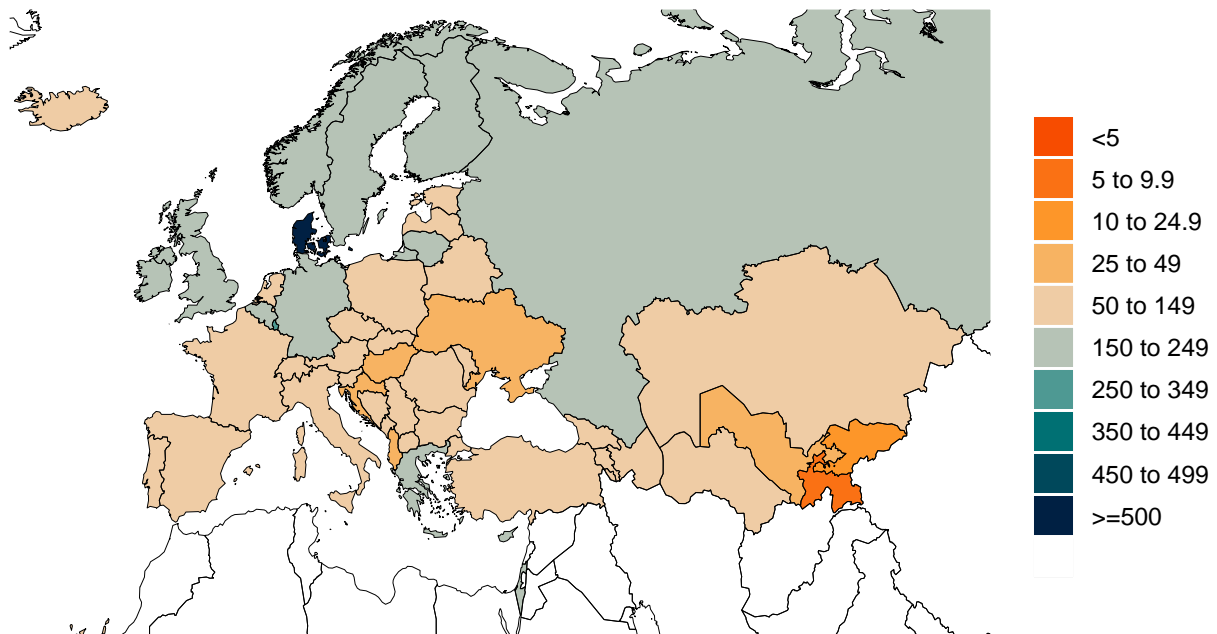
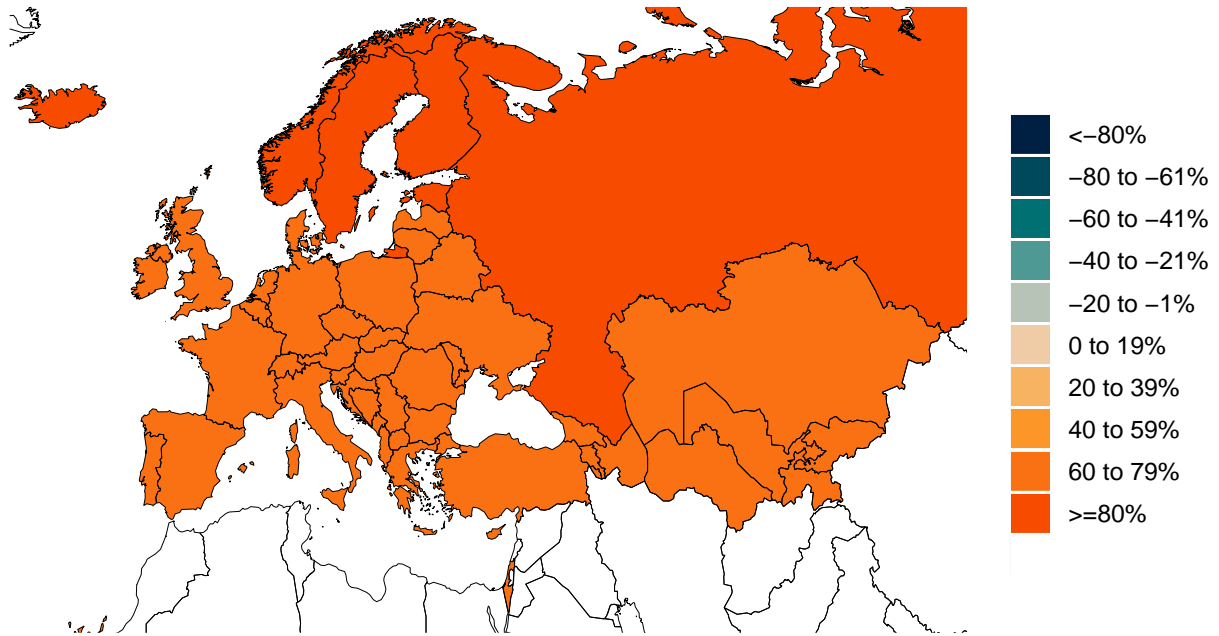


Figure 11. Increase in the risk of death due to pneumonia on February 1 compared to August 1



Projections and scenarios

Figure 12. Cumulative COVID-19 deaths until January 01, 2021 for three scenarios. The reference scenario is our forecast of what we think is most likely to happen. The mandate easing scenario is what would happen if governments continue to ease social distancing mandates. The universal mask mandate scenario is what would happen if mask use increased immediately to 95%.

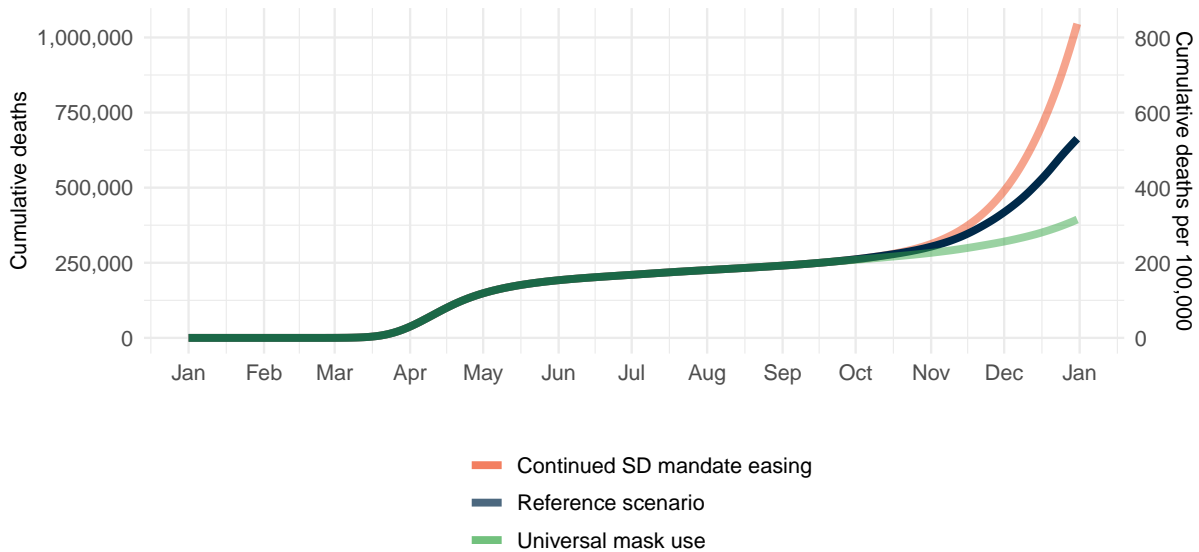


Fig 13. Daily COVID-19 deaths until January 01, 2021 for three scenarios. The reference scenario is our forecast of what we think is most likely to happen. The mandate easing scenario is what would happen if governments continue to ease social distancing mandates. The universal mask mandate scenario is what would happen if mask use increased immediately to 95%.

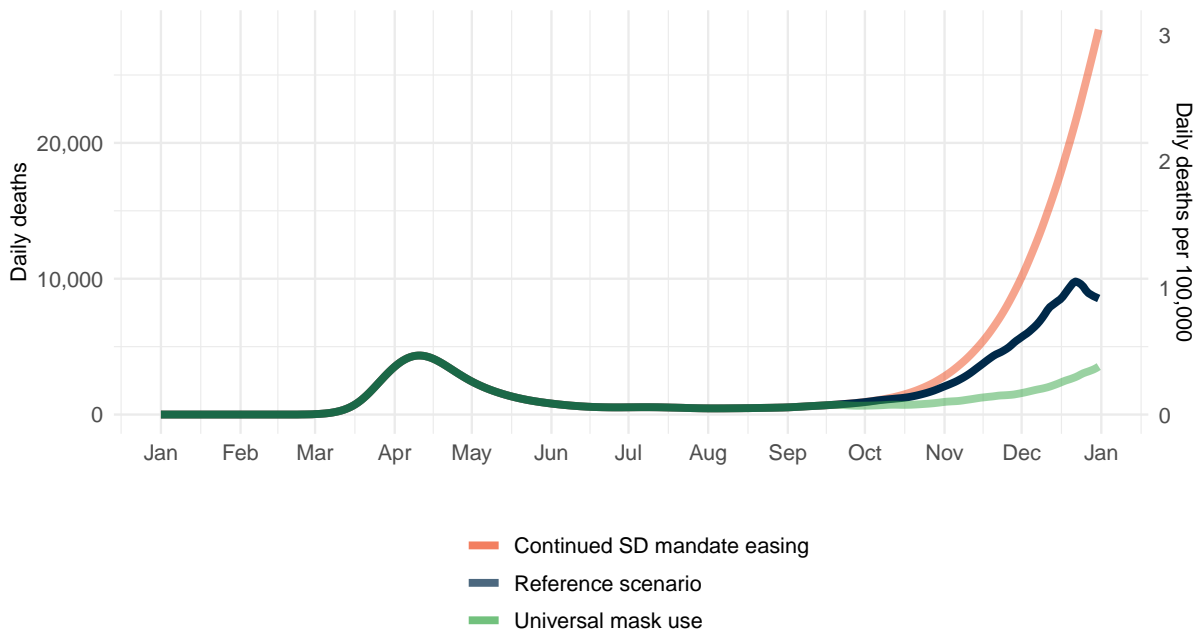


Fig 14. Daily COVID-19 infections until January 01, 2021 for three scenarios. The reference scenario is our forecast of what we think is most likely to happen. The mandate easing scenario is what would happen if governments continue to ease social distancing mandates. The universal mask mandate scenario is what would happen if mask use increased immediately to 95%.

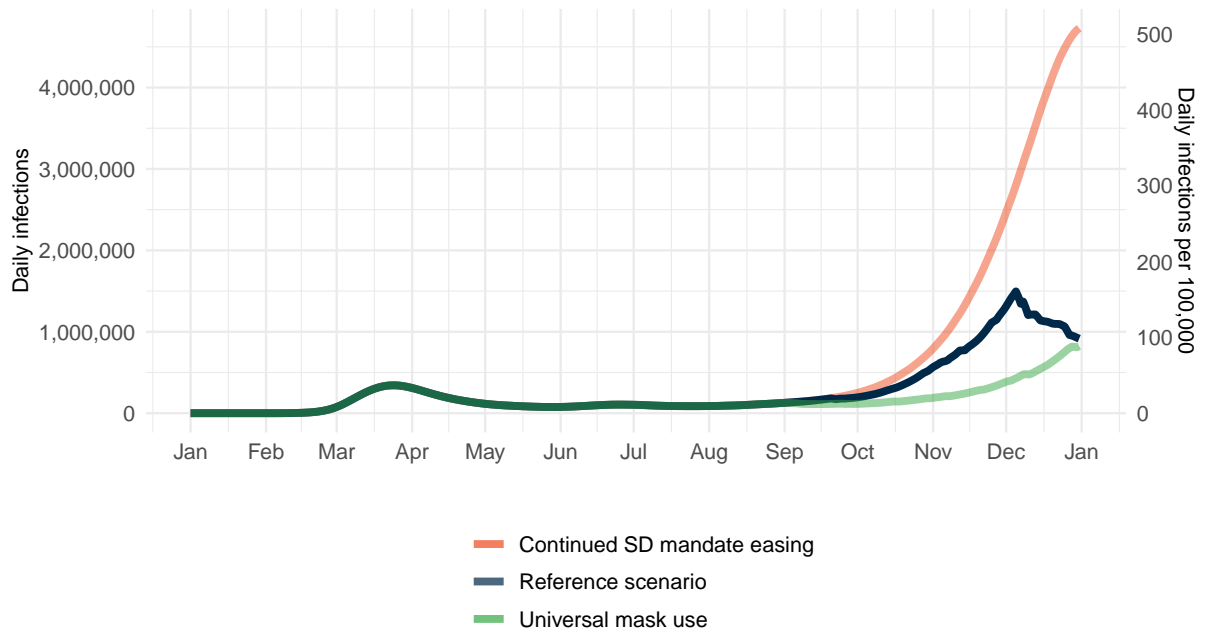


Fig 15. Month of assumed mandate re-implementation. (Month when daily death rate passes 8 per million, when model assumes mandates will be re-imposed.)

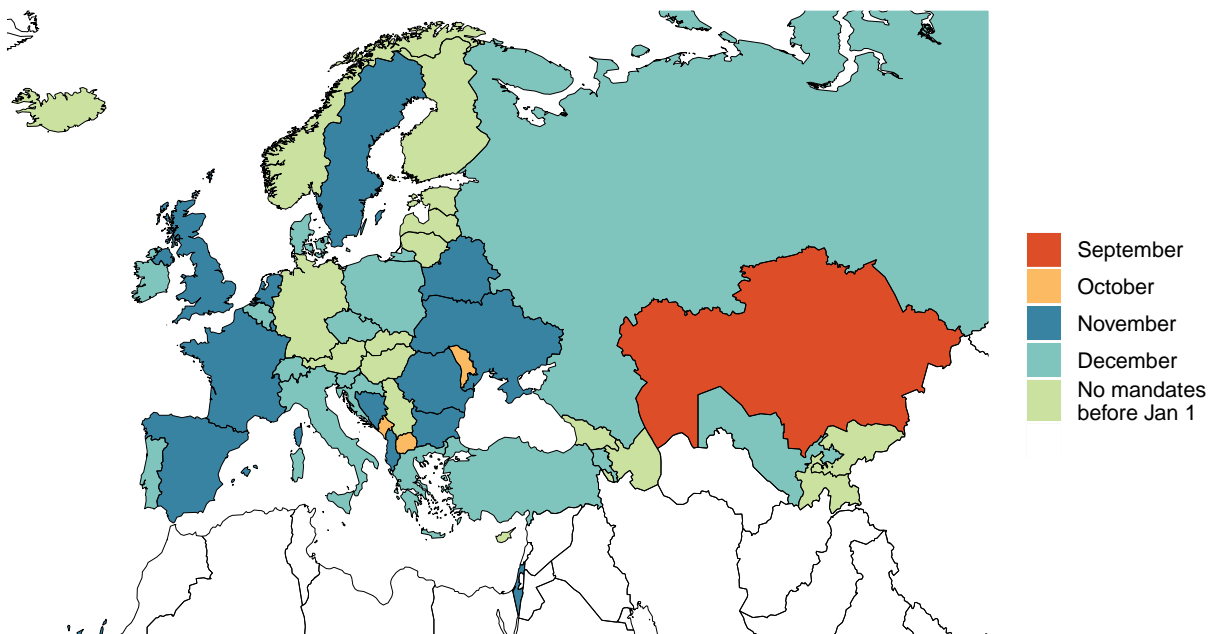


Figure 16. Forecasted percent infected with COVID-19 on January 01, 2021

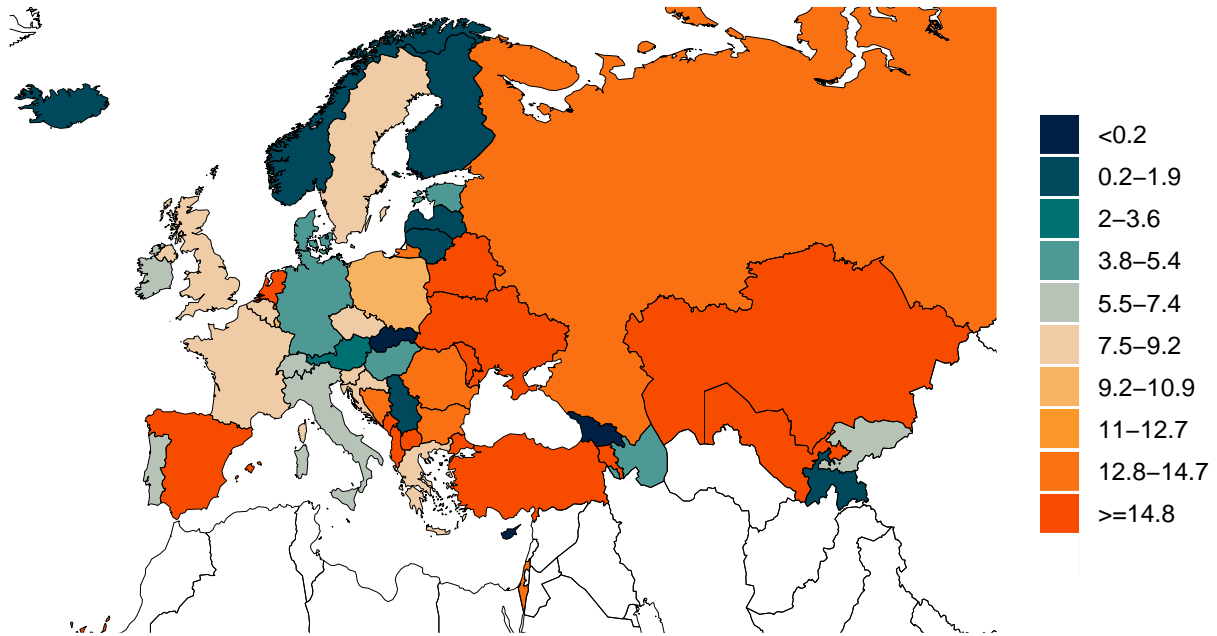


Figure 17. Daily COVID-19 deaths per million forecasted on January 01, 2021 in the reference scenario

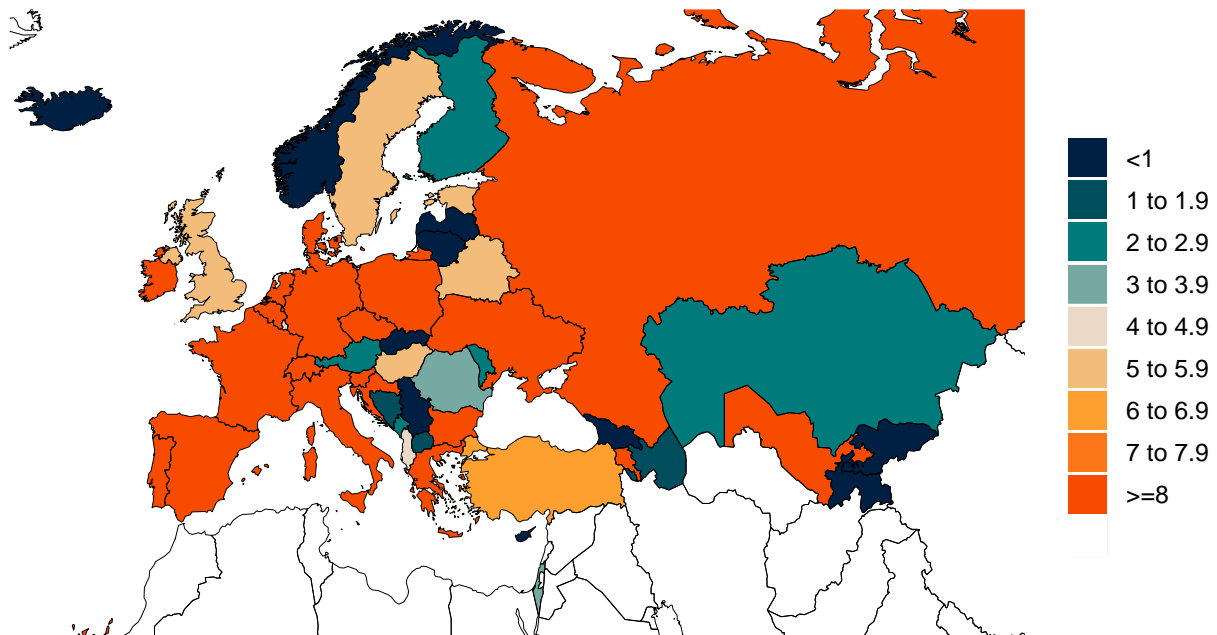


Table 3. Ranking of COVID-19 among the leading causes of mortality in the full year 2020. Deaths from COVID-19 are projections of cumulative deaths on Jan 1, 2021 from the reference scenario. Deaths from other causes are from the Global Burden of Disease study 2019 (rounded to the nearest 100).

Cause name	Annual deaths	Ranking
Ischemic heart disease	2,301,100	1
Stroke	1,176,300	2
COVID-19	671,388	3
Tracheal, bronchus, and lung cancer	463,800	4
Alzheimer’s disease and other dementias	417,200	5
Chronic obstructive pulmonary disease	349,400	6
Colon and rectum cancer	305,800	7
Lower respiratory infections	273,200	8
Cirrhosis and other chronic liver diseases	223,100	9
Hypertensive heart disease	205,400	10

Mask data source: Premise; Facebook Global symptom survey (This research is based on survey results from University of Maryland Social Data Science Center); Kaiser Family Foundation; YouGov COVID-19 Behaviour Tracker survey

A note of thanks:

We would like to extend a special thanks to the Pan American Health Organization (PAHO) for key data sources; our partners and collaborators in Argentina, Brazil, Bolivia, Chile, Colombia, Cuba, the Dominican Republic, Ecuador, Egypt, Honduras, Israel, Japan, Malaysia, Mexico, Moldova, Panama, Peru, the Philippines, Russia, Serbia, South Korea, Turkey, and Ukraine for their support and expert advice; and to the tireless data collection and collation efforts of individuals and institutions throughout the world.

In addition, we wish to express our gratitude for efforts to collect social distancing policy information in Latin America to University of Miami Institute for Advanced Study of the Americas (Felicia Knaul, Michael Touchton), with data published here: <http://observcovid.miami.edu/>; Fundación Mexicana para la Salud (Héctor Arreola-Ornelas) with support from the GDS Services International: Tómatelo a Pecho A.C.; and Centro de Investigaciones en Ciencias de la Salud, Universidad Anáhuac (Héctor Arreola-Ornelas); Lab on Research, Ethics, Aging and Community-Health at Tufts University (REACH Lab) and the University of Miami Institute for Advanced Study of the Americas (Thalia Porteny).

Further, IHME is grateful to the Microsoft AI for Health program for their support in hosting our COVID-19 data visualizations on the Azure Cloud. We would like to also extend a warm thank you to the many others who have made our COVID-19 estimation efforts possible.