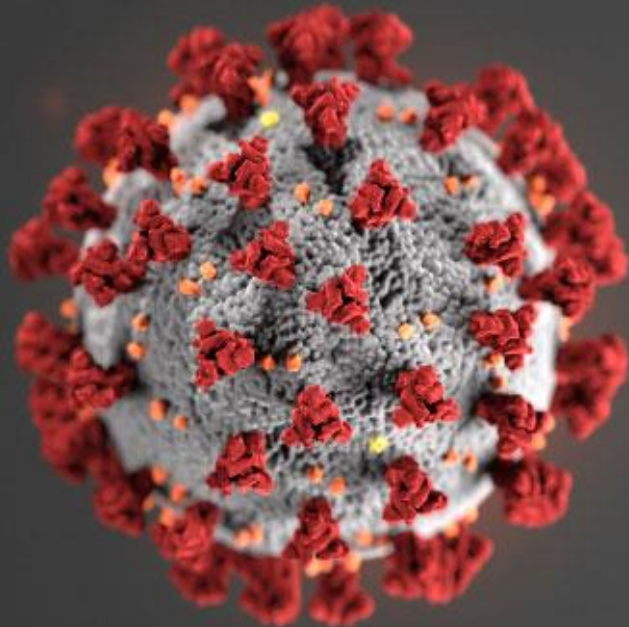


SARS-CoV-2 Report

José Luis Pires

4 May 2021



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SARS-Cov-2

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 - [Cases, Deaths and Projections](#) – per week
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Where each vaccine is being used

Portugal

- Doses administered per 100 people: 33 (29)
- Total doses administered: 3,421,792 (3,018,383)
- Population Vaccinated: 24% (21%)
- Population Fully vaccinated : 8.8% (8.0%)

3 May 2021 (26 April 2021)

Oxford-AstraZeneca
139 COUNTRIES



Pfizer-BioNTech
90 COUNTRIES



Moderna
42 COUNTRIES



Sinopharm-Beijing
35 COUNTRIES



Gamaleya (Sputnik V)
31 COUNTRIES



Sinovac
24 COUNTRIES



Johnson&Johnson
12 COUNTRIES



Sinopharm-Wuhan
2 COUNTRIES



CanSino
2 COUNTRIES



Bharat Biotech (Covaxin)
1 COUNTRY



Vector Institute (EpiVacCorona)
1 COUNTRY



When to Expect the Next Vaccine

Progress: ■ Trial ■ Awaiting approval ■ Available to public

👤 Trial size 💧 Doses required ❄️ Storage temperature ✅ Efficacy

Pfizer was the first company to report positive phase 3 clinical data. It plans to produce 50M doses in 2020 and 1.3B in 2021.

Moderna

👤 30K 💧 2 ❄️ 2-8°C ✅ 95%

Moderna and Pfizer both use a new vaccine approach involving messenger RNA. Moderna expects to have 20M doses for the U.S. in December and 100M globally in Q1.

AstraZeneca/Oxford

👤 65K 💧 2 ❄️ 2-8°C ✅ 70%

AstraZeneca struck deals for 3 billion doses even before any late-stage study results. That's more than twice as many as any other candidate. Initial clinical results were mixed.

Novavax

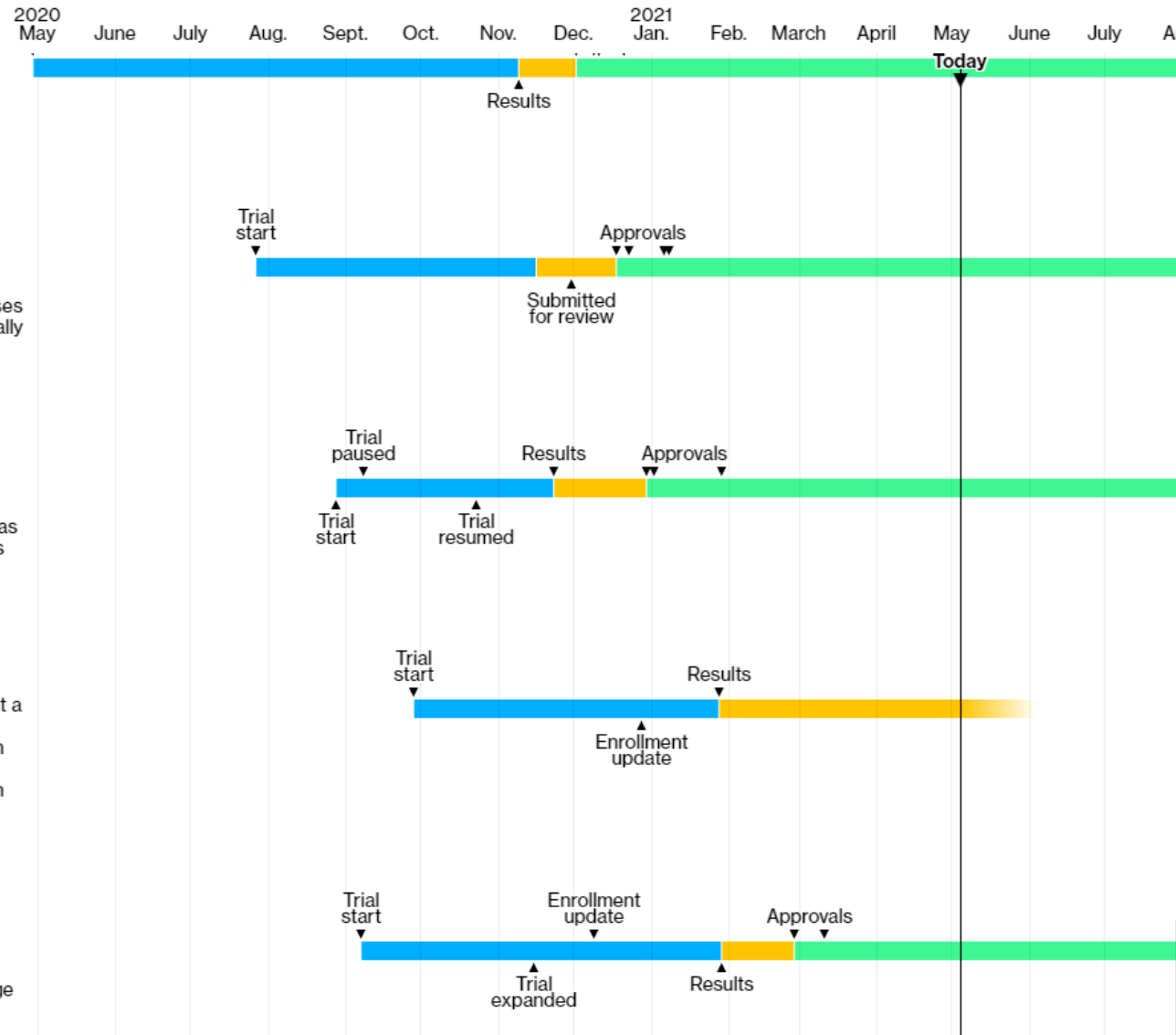
👤 45K 💧 2 ❄️ 2-8°C ✅ 89%

This small biotech firm has never brought a product to market. It received more than \$1.6 billion from the U.S. and \$399 million from the Coalition for Epidemic Preparedness. The stock rose 3,000% in nine months.

Johnson & Johnson

👤 70K 💧 1 ❄️ 2-8°C ✅ 66%

Of the leading candidates, this is the easiest to distribute, requiring just one dose and standard refrigeration. To hedge its bets, J&J announced a separate trial with two doses in November.



When to Expect the Next Vaccine

Progress: ■ Trial ■ Awaiting approval ■ Available to public

👤 Trial size 💧 Doses required ❄️ Storage temperature ✅ Efficacy

Sinovac Biotech

👤 26K 💧 2 ❄️ 2-8°C ✅ 50%

Sinovac's vaccine triggers an immune response using the Covid-19 virus itself, after it has been chemically inactivated.

Gamaleya

👤 40K 💧 2 ❄️ -18°C ✅ 92%

A variation of the Russian vaccine, known as Sputnik V, can be stored using standard refrigeration temperatures of 2-8°C. It's currently available in limited quantities.

CanSino Biologics

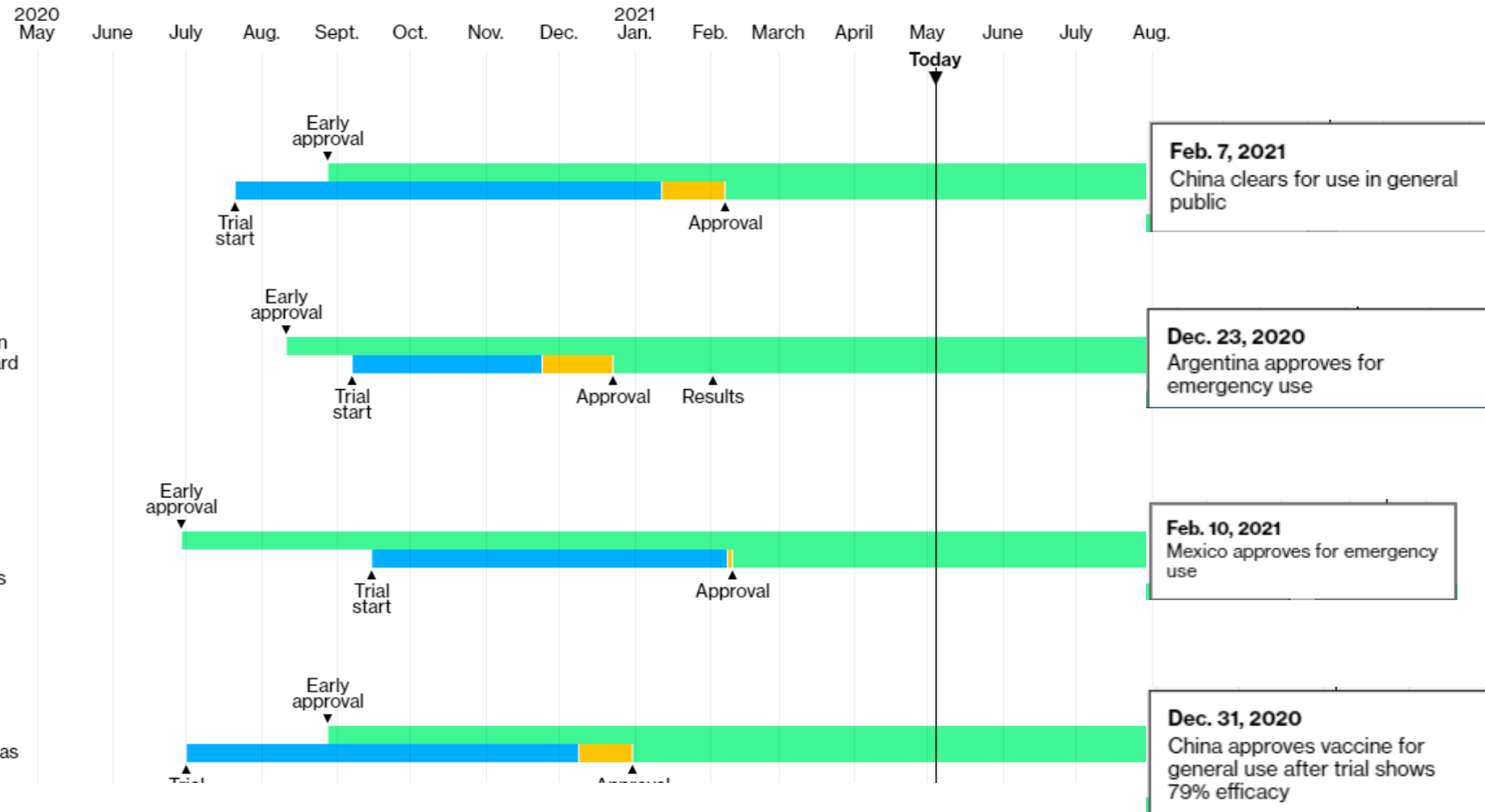
👤 40K 💧 1 ❄️ 2-8°C ✅ 66%

CanSino's shot was approved for the Chinese military even before late-stage tests began. It uses a harmless cold virus to deliver its genetic payload.

Sinopharm

👤 50K 💧 2 ❄️ 2-8°C ✅ 79%

Sinopharm administered hundreds of thousands of doses before its vaccine was fully tested.



The Global Vaccination Campaign – sorted by Doses Administered

More than 1.17 billion doses have been administered across 174 countries, according to data collected by Bloomberg. The latest rate was roughly 20.2 million doses a day.

Country	Doses administered	Enough for % of people ▼	% of population		Daily rate of doses administered
			given 1+ dose	fully vaccinated	
Global Total	1,179,525,798	–	–	–	20,163,125
China	275,338,000	9.8	–	–	7,205,286
U.S.	246,780,203	38.4	44.4	31.8	2,287,393
India	158,871,435	5.8	9.4	2.1	1,969,361
EU	152,297,276	17.1	24.9	9.1	2,876,577
U.K. +	50,089,549	37.5	51.8	23.2	491,363
Brazil	48,391,067	11.5	15.3	7.7	823,778
Germany	30,147,919	18.1	28.3	8.0	671,568
Turkey	23,525,114	14.1	16.9	11.4	281,334
France	22,821,849	17.6	24.9	10.3	404,717
Italy	20,885,469	17.3	24.2	10.4	429,194
Indonesia	20,422,518	3.8	4.7	2.9	218,081
Russia	19,800,000	6.7	8.2	5.2	400,000
Mexico	18,326,726	7.2	9.9	6.0	273,813
Spain	17,130,598	18.4	25.9	11.0	344,952
Chile	14,872,524	38.9	42.6	35.3	92,742
Canada +	13,941,587	18.6	29.7	2.6	249,745
Poland	11,944,959	15.7	23.6	7.8	228,713
UAE	10,666,924	49.6	–	–	55,842
Israel	10,462,554	57.8	59.7	55.9	8,097
Saudi Arabia	9,750,371	14.3	–	–	191,529
Morocco	9,389,397	13.2	14.4	12.0	62,583
Bangladesh	8,841,569	2.7	3.5	1.8	99,472

Country	Doses administered	Enough for % of people ▼	% of population		Daily rate of doses administered
			given 1+ dose	fully vaccinated	
Argentina	8,039,793	8.9	15.7	2.2	117,870
Hungary	6,150,309	31.5	41.7	21.3	125,906
Netherlands	5,651,041	16.4	24.2	–	63,364
Romania	5,408,309	13.9	17.4	10.5	70,757
Colombia	5,220,330	5.2	6.9	3.5	109,866
Belgium	3,905,671	17.0	26.8	7.3	67,689
South Korea	3,633,353	3.5	6.6	0.5	180,223
Serbia	3,612,405	25.9	30.9	21.0	146,088
Japan	3,489,719	1.4	2.0	0.8	166,859
Portugal	3,324,285	16.2	23.9	8.5	58,627
Sweden	3,266,894	15.8	24.3	7.3	96,447
Czech Republic	3,201,704	15.0	20.6	9.5	54,173
Austria	3,194,219	18.0	26.4	9.6	52,372
Greece	3,136,791	14.6	20.4	8.8	36,227
Switzerland +	2,642,062	15.5	20.0	10.9	62,497
Finland	1,866,796	16.9	30.8	3.1	26,248
Uruguay	1,857,713	26.4	33.4	19.4	32,109
Philippines	1,809,801	0.8	1.5	0.2	121,375
Peru	1,787,744	2.7	3.5	1.9	44,857
Norway	1,741,081	16.3	25.6	6.9	30,766
Qatar	1,635,398	29.3	36.9	21.6	27,527
Slovakia	1,623,934	14.9	20.5	9.3	25,664
Ireland	1,591,888	16.1	23.2	9.0	29,448

The Global Vaccination Campaign – sorted by Doses per % of people

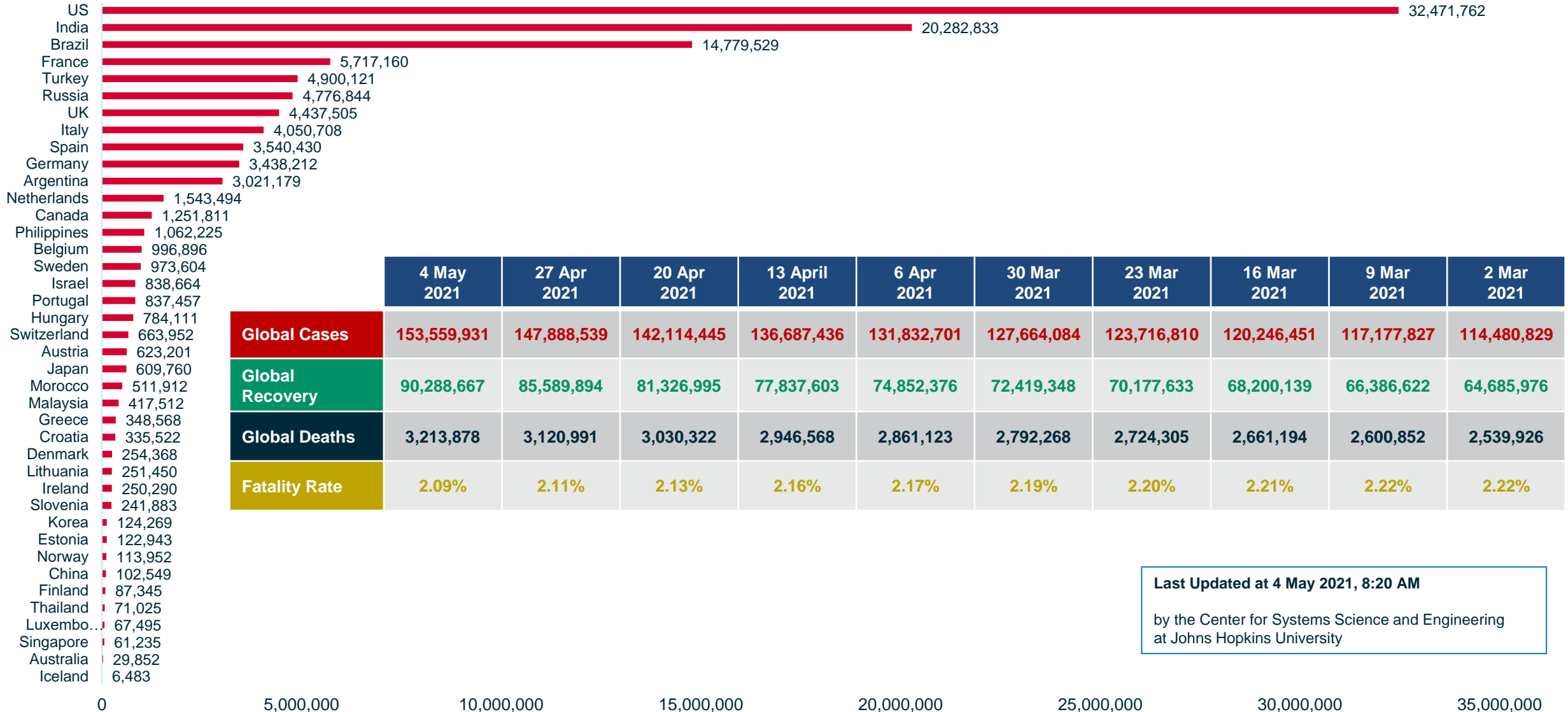
More than 1.17 billion doses have been administered across 174 countries, according to data collected by Bloomberg. The latest rate was roughly 20.2 million doses a day.

Country	Doses administered	Enough for % of people ▼	% of population		Daily rate of doses administered
			given 1+ dose	fully vaccinated	
Global Total	1, 179, 525, 798	–	–	–	20, 163, 125
Gibraltar	71, 114	104.6	110.3	98.9	588
Falkland Islands	4, 407	73.5	87.7	59.2	202
Seychelles	126, 840	66.1	70.5	61.6	1, 065
Israel	10, 462, 554	57.8	59.7	55.9	8, 097
Maldives	406, 133	54.6	80.0	29.2	4, 414
Cayman Islands	65, 680	50.5	53.5	–	263
UAE	10, 666, 924	49.6	–	–	55, 842
San Marino	29, 941	44.0	61.7	26.4	436
Bermuda	55, 319	43.9	50.5	16.4	618
Isle of Man	73, 446	43.2	67.8	18.6	377
Bahrain	1, 264, 087	42.6	48.3	36.9	11, 907
Chile	14, 872, 524	38.9	42.6	35.3	92, 742
U.S.	246, 780, 203	38.4	44.4	31.8	2, 287, 393
St. Helena	4, 572	38.1	59.4	16.8	43
U.K. +	50, 089, 549	37.5	51.8	23.2	491, 363
Turks & Caicos	28, 423	37.4	43.0	26.3	108
Malta	341, 909	34.6	47.2	22.0	4, 090
Aruba	74, 747	33.4	48.1	19.5	1, 772
Bhutan	480, 597	32.3	64.5	–	80
Monaco	25, 104	32.2	34.1	30.3	119
Hungary	6, 150, 309	31.5	41.7	21.3	125, 906
Qatar	1, 635, 398	29.3	36.9	21.6	27, 527

Country	Doses administered	Enough for % of people ▼	% of population		Daily rate of doses administered
			given 1+ dose	fully vaccinated	
Canada +	13, 941, 587	18.6	29.7	2.6	249, 745
Spain	17, 130, 598	18.4	25.9	11.0	344, 952
Germany	30, 147, 919	18.1	28.3	8.0	671, 568
Austria	3, 194, 219	18.0	26.4	9.6	52, 372
Lithuania	995, 557	17.9	24.8	10.9	16, 733
France	22, 821, 849	17.6	24.9	10.3	404, 717
Denmark	2, 037, 465	17.5	23.6	11.5	33, 727
Estonia	464, 935	17.5	25.6	9.5	7, 622
Italy	20, 885, 469	17.3	24.2	10.4	429, 194
EU	152, 297, 276	17.1	24.9	9.1	2, 876, 577
Greenland	19, 452	17.1	–	9.3	292
Belgium	3, 905, 671	17.0	26.8	7.3	67, 689
Finland	1, 866, 796	16.9	30.8	3.1	26, 248
Cyprus	287, 816	16.4	24.9	7.9	7, 614
Netherlands	5, 651, 041	16.4	24.2	–	63, 364
Luxembourg	200, 553	16.3	24.2	8.5	3, 108
Norway	1, 741, 081	16.3	25.6	6.9	30, 766
Portugal	3, 324, 285	16.2	23.9	8.5	58, 627
Ireland	1, 591, 888	16.1	23.2	9.0	29, 448
Sweden	3, 266, 894	15.8	24.3	7.3	96, 447
Poland	11, 944, 959	15.7	23.6	7.8	228, 713
Antigua and Barbuda	30, 427	15.7	31.3	–	61
Slovenia	645, 091	15.6	20.7	10.5	8, 615
Switzerland +	2, 642, 062	15.5	20.0	10.9	62, 497

Coronavirus (SARS-CoV-2 / Covid-19) – Confirmed cases by country

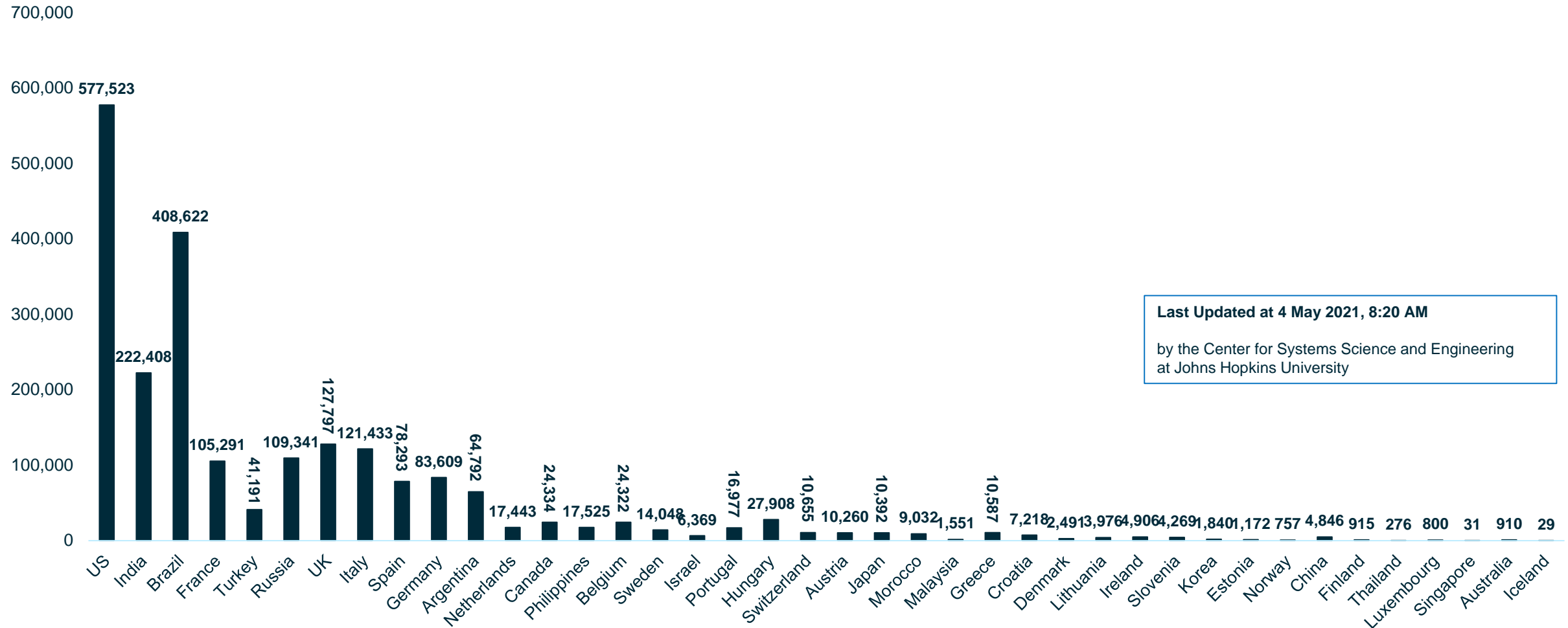
Note: Selected Countries, sorted by # of cases



Last Updated at 4 May 2021, 8:20 AM
by the Center for Systems Science and Engineering
at Johns Hopkins University

Coronavirus (SARS-CoV-2 / Covid-19) – Deaths by Country

Note: Selected Countries, sorted by # of cases



Source: <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

Latest Cases and Deaths by TOP 10 Countries – 3 May 2021

Total Cases	
1	USA
2	India
3	Brazil
4	France
5	Turkey
6	Russia
7	United Kingdom
8	Italy
9	Spain
10	Germany
31 (30)	Portugal

Cases in last 7 days	
1	India
2	Brazil
3	USA
4	Turkey
5	Iran
6	France
7	Argentina
8	Colombia
9	Germany
10	Italy
83 (83)	Portugal

Total Deaths	
1	USA
2	Brazil
3	India
4	Mexico
5	United Kingdom
6	Italy
7	Russia
8	France
9	Germany
10	Spain
29 (28)	Portugal

Deaths in last 7 days	
1	India
2	Brazil
3	USA
4	Colombia
5	Peru
6	Iran
7	Poland
8	Argentina
9	Russia
10	Turkey
109 (102)	Portugal

Total Cases per million people	
1	Czechia
2	Slovenia
3	Bahrain
4	Serbia
5	USA
6	Sweden
7	Moldova
8	Israel
9	Estonia
10	Lithuania
17 (15)	Portugal

Cases in last 7 days per million people	
1	Bahrain
2	Uruguay
3	Costa Rica
4	Cyprus
5	Lithuania
6	Croatia
7	Argentina
8	Mongolia
9	Netherlands
10	Turkey
85 (80)	Portugal

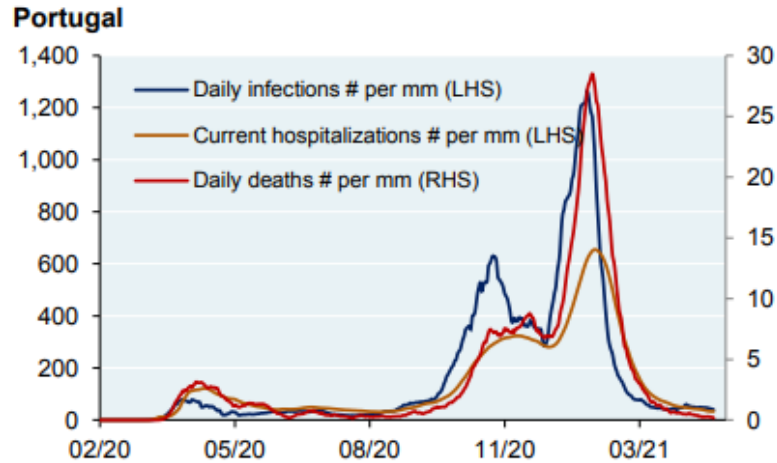
Total Deaths per million people	
1	Hungary
2	Czechia
3	Bosnia and Herzegovina
4	North Macedonia
5	Bulgaria
6	Moldova
7	Slovakia
8	Belgium
9	Slovenia
10	Italy
19 (18)	Portugal

Deaths in last 7 days per million people	
1	North Macedonia
2	Uruguay
3	Hungary
4	Paraguay
5	Peru
6	Brazil
7	Croatia
8	Colombia
9	Poland
10	Bulgaria
110(101)	Portugal

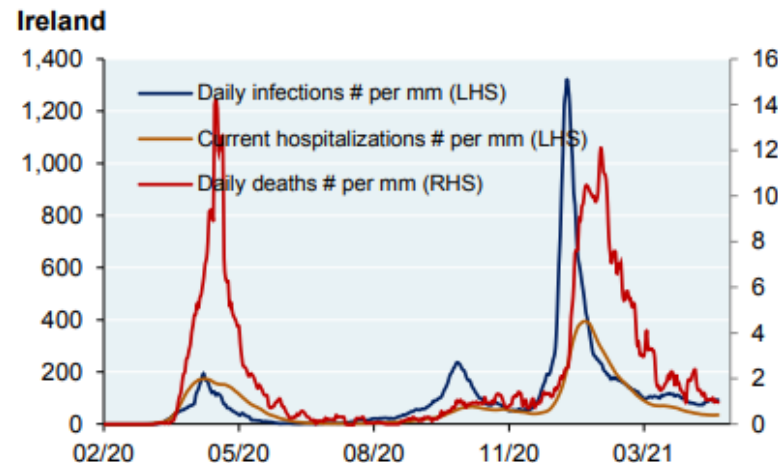
Daily infections vs mortality per million

LHS – Left Hand Scale
RHS – Right Hand Scale

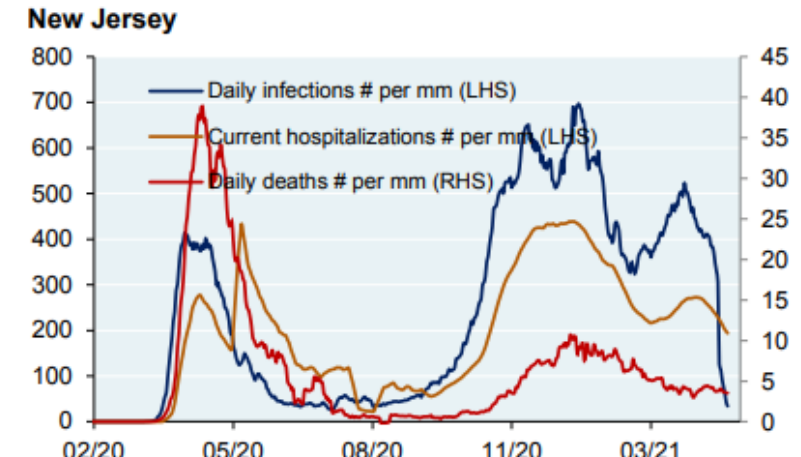
2 MAY 2021



Source: JHU, IMF, ECDC, JPMAM. May 2, 2021. 7 day smoothing.

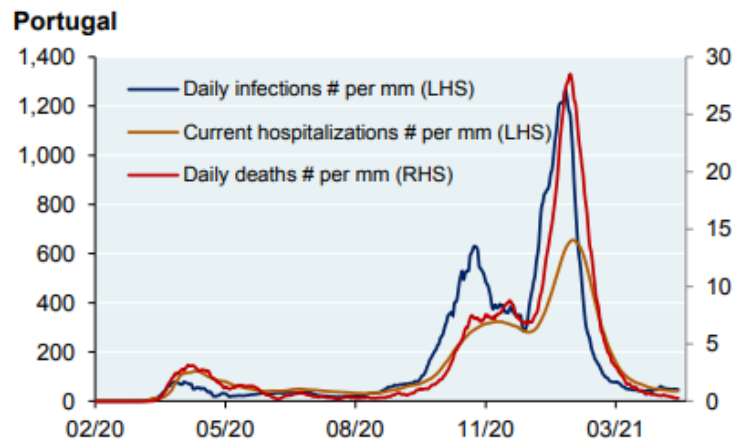


Source: JHU, IMF, ECDC, JPMAM. May 2, 2021. 7 day smoothing.

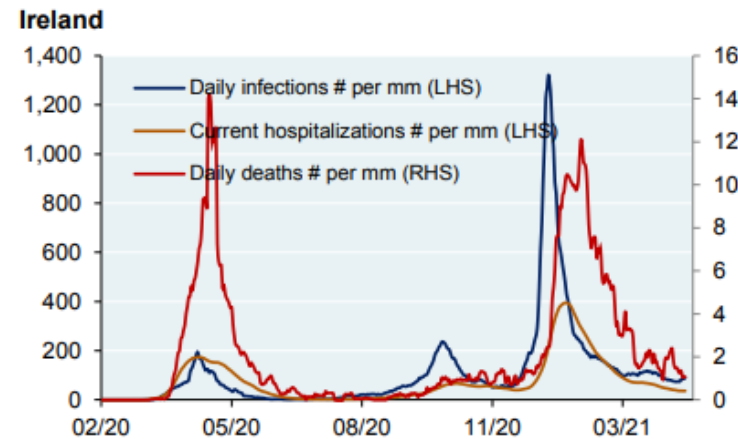


Source: JHU, IMF, HHS, JPMAM. May 2, 2021. 7 day smoothing.

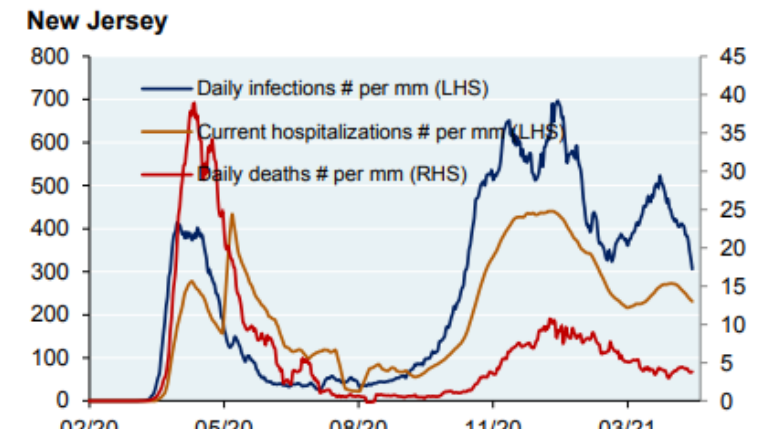
25 APRIL 2021



Source: JHU, IMF, ECDC, JPMAM. Apr 25, 2021. 7 day smoothing.



Source: JHU, IMF, ECDC, JPMAM. Apr 25, 2021. 7 day smoothing.

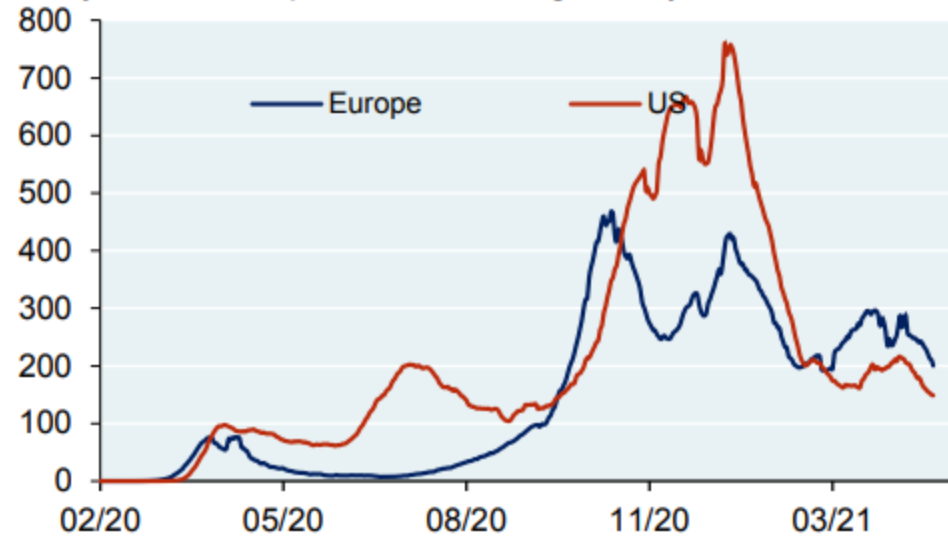


Source: JHU, IMF, HHS, JPMAM. Apr 25, 2021. 7 day smoothing.

US vs Europe infections and mortality

US vs Europe infections

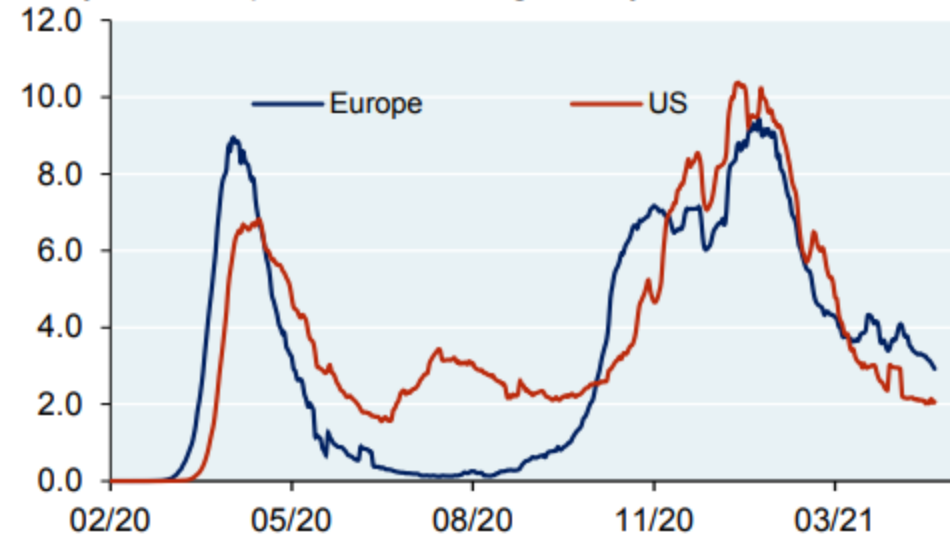
Daily infections, # per mm, smoothing = 7 days



Source: Johns Hopkins University, IMF, JPMAM. May 2, 2021.

US vs Europe mortality

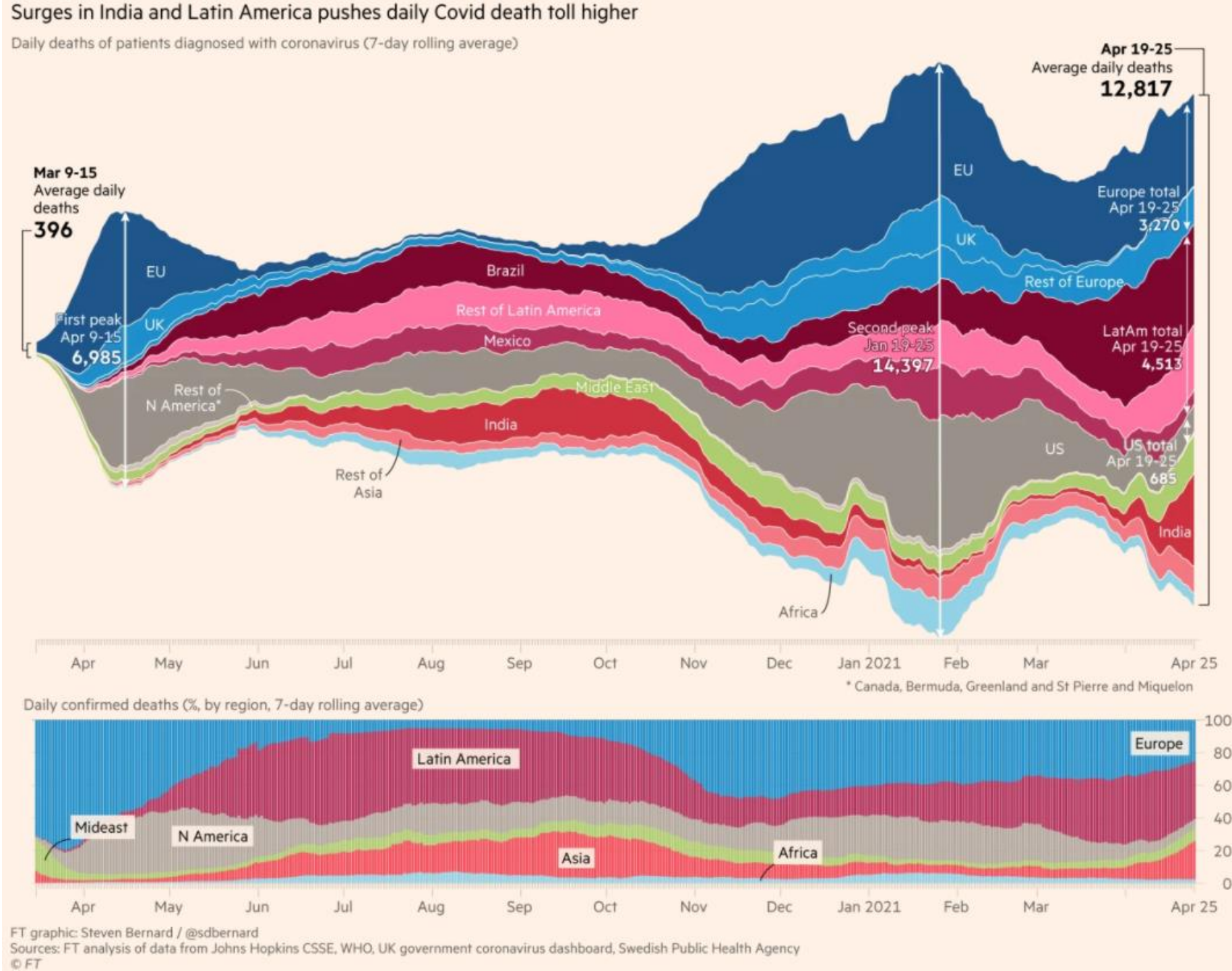
Daily deaths, # per mm, smoothing = 7 days



Source: Johns Hopkins University, IMF, JPMAM. May 2, 2021.

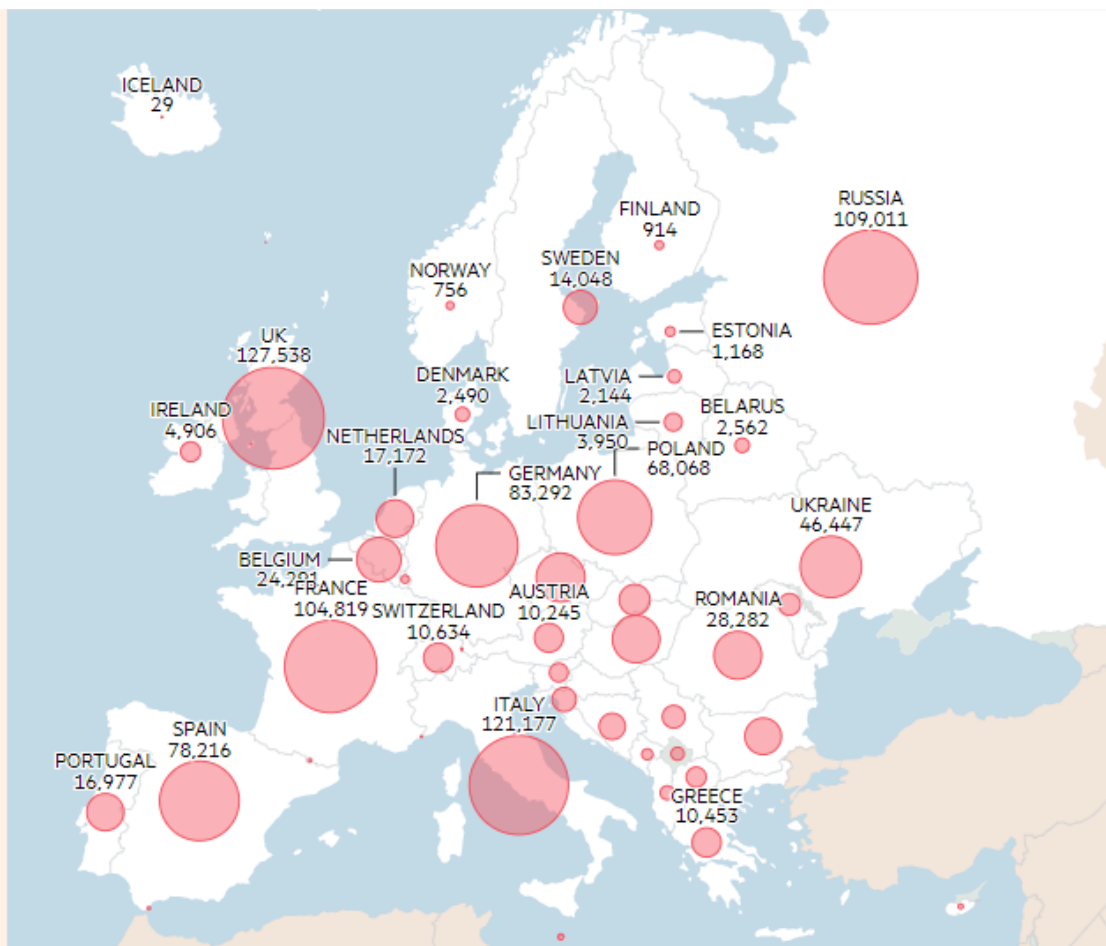
Source: <https://www.ft.com/content/a26fb7e-48f8-11ea-aeb3-955839e06441>

Daily deaths of patients diagnosed with coronavirus (7-day average)



Total deaths as of 1.01pm May 3 GMT

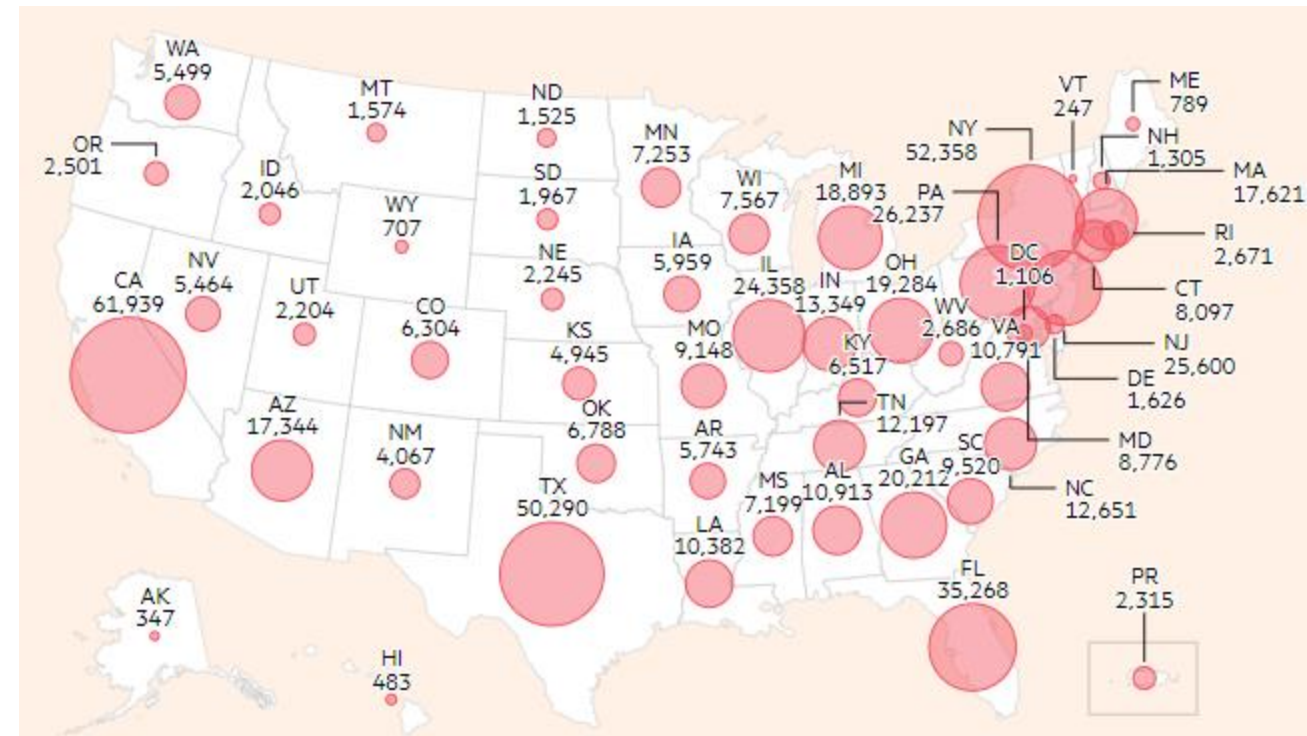
Europe



Graphic: Steven Bernard and Cale Tilford. Sources: WHO, JHU CSSE, UK gov Covid-19 dashboard, Swedish Public Health Agency; FT research © FT

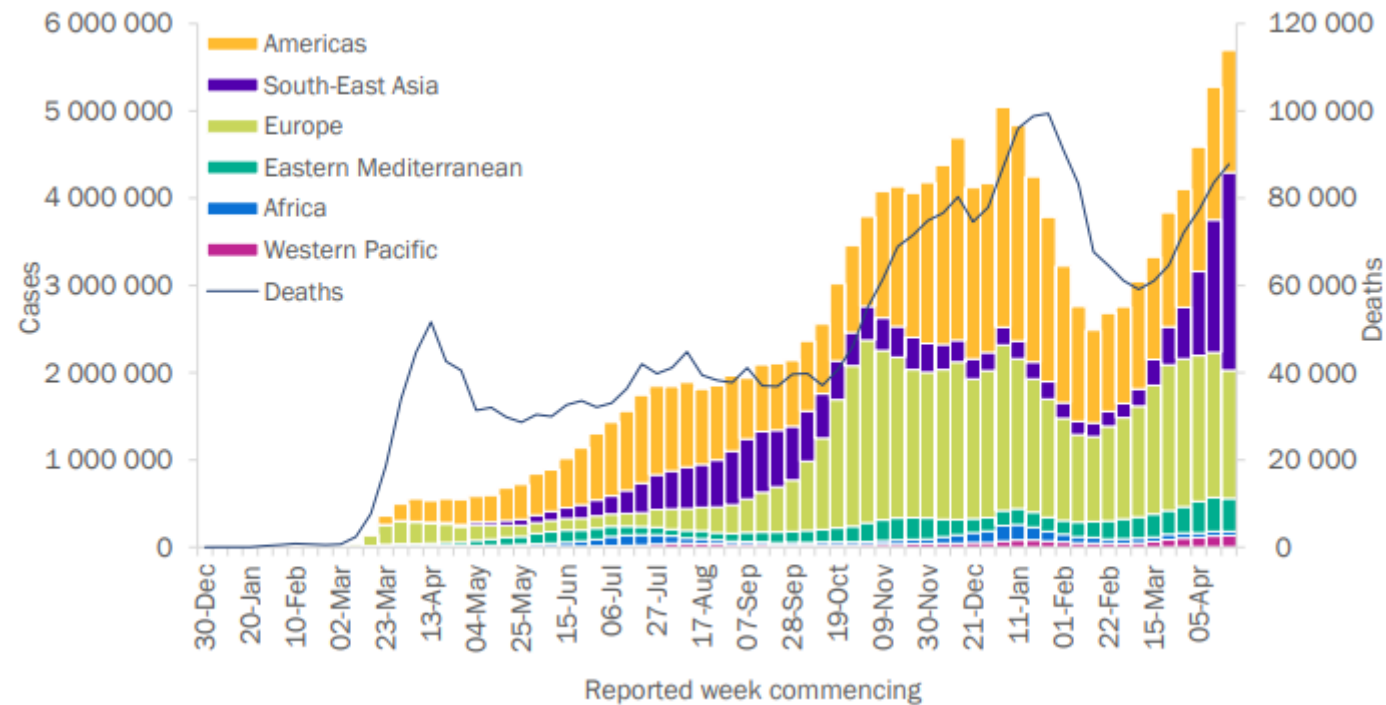
Crimea is annexed by Russia but this is not recognised by the international community

US



Graphic: Steven Bernard and Cale Tilford
Source: Johns Hopkins CSSE
© FT

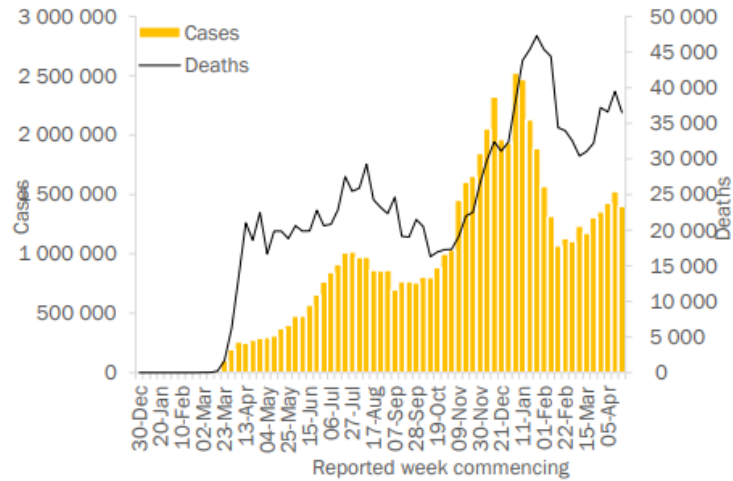
Number of COVID-19 cases reported weekly by WHO Region, and global deaths, as of 18 April 2021



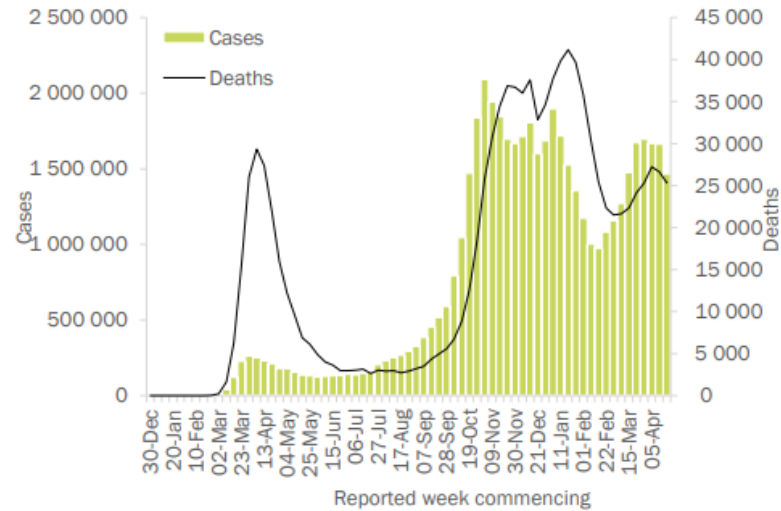
Source: WHO

Number of COVID-19 cases reported weekly by WHO Region, and global deaths, as of 18 April 2021

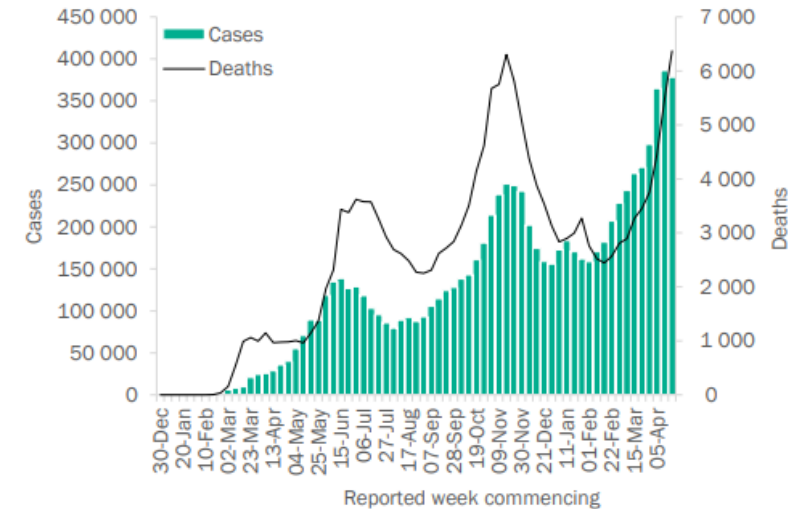
Americas



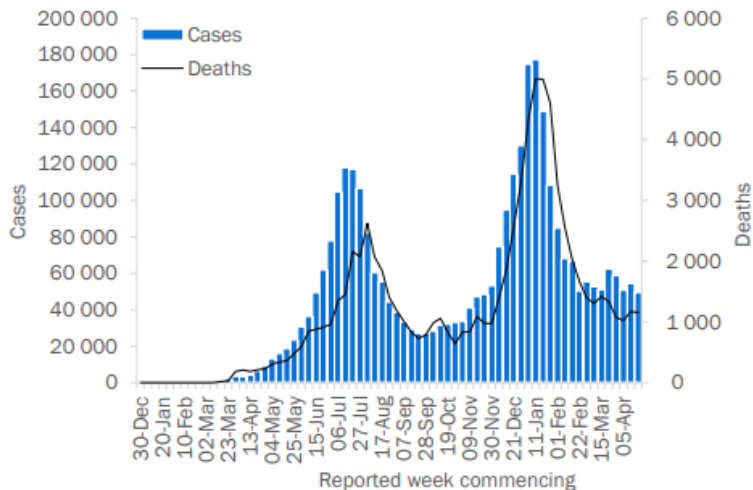
Europe



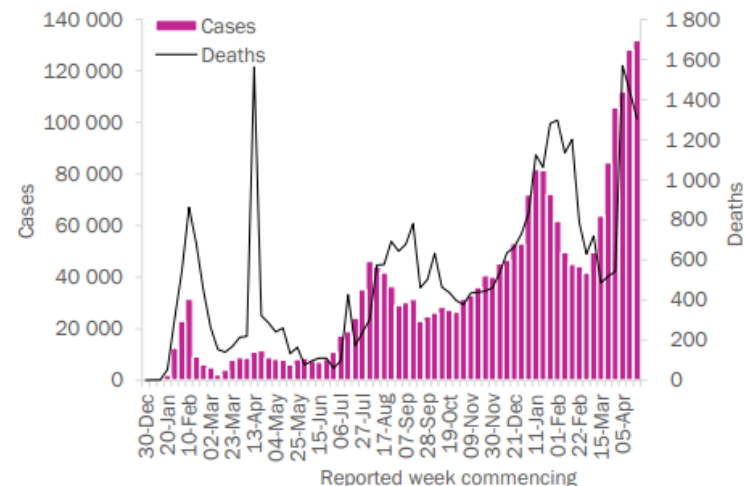
Eastern Mediterranean



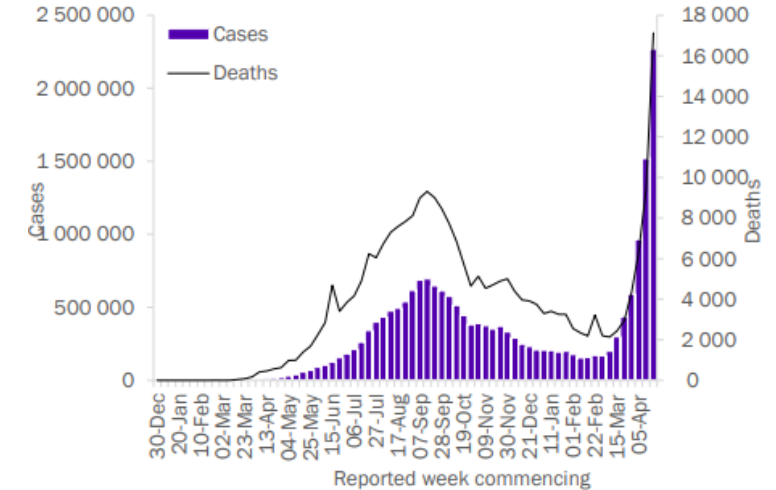
Africa



Western Pacific

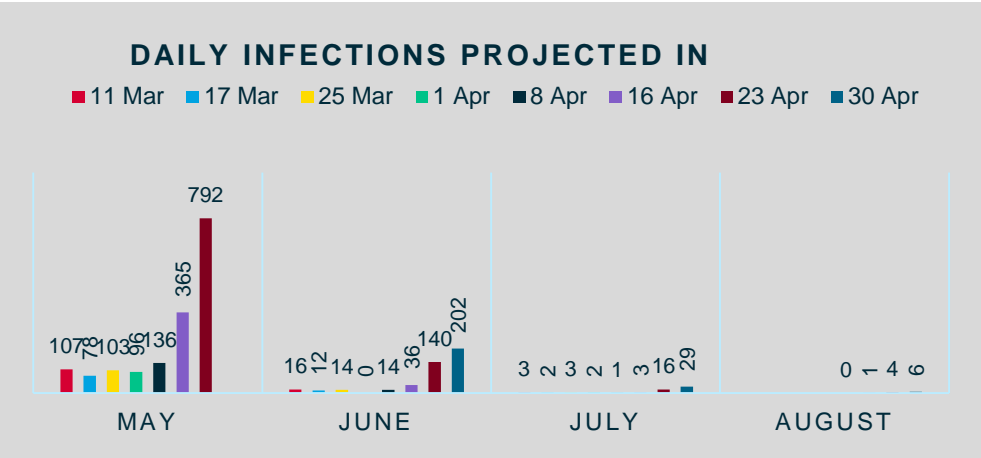


South-East Asia



Portugal

Covid-19 Daily Infection Projections in Portugal

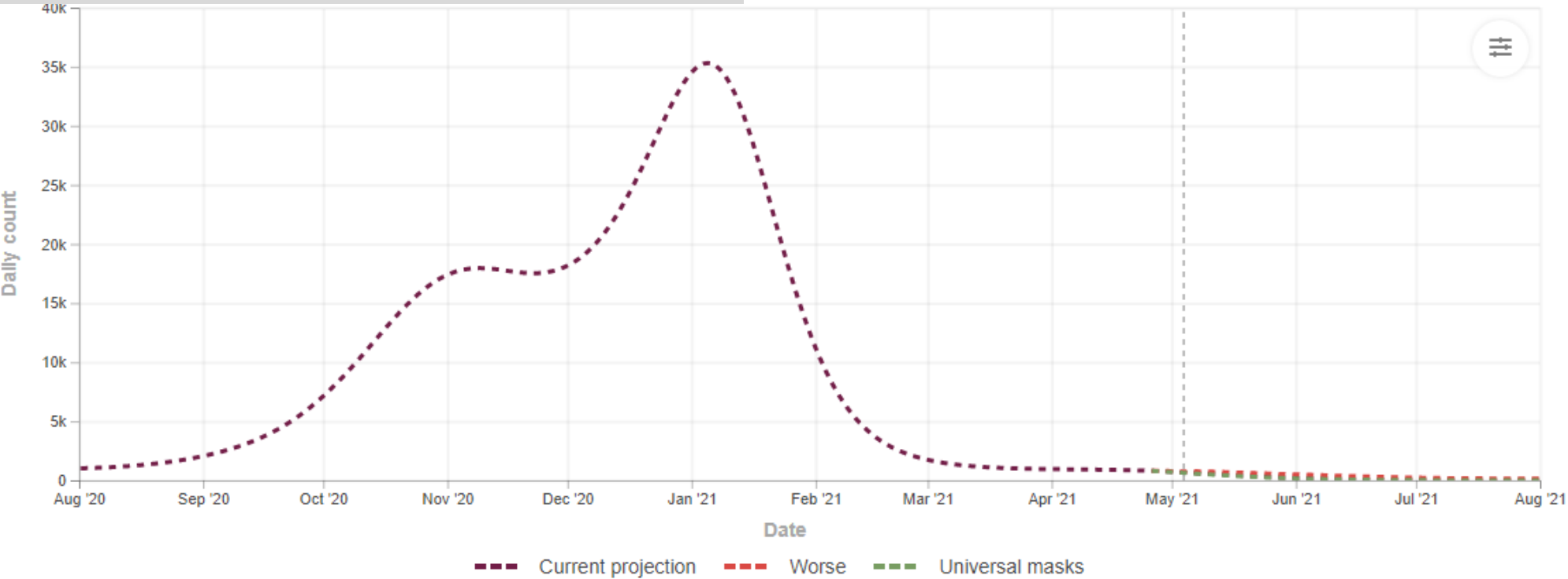


3 May 2021
180 infections
Projected: 688

Current projection : Vaccine distribution is scaled up over 90 days. Variant B.1.1.7 continues to spread in certain locations.

Worse : In those who are vaccinated, mobility moves toward pre-COVID-19 levels.

Universal masks : 95% mask usage is adopted in public.



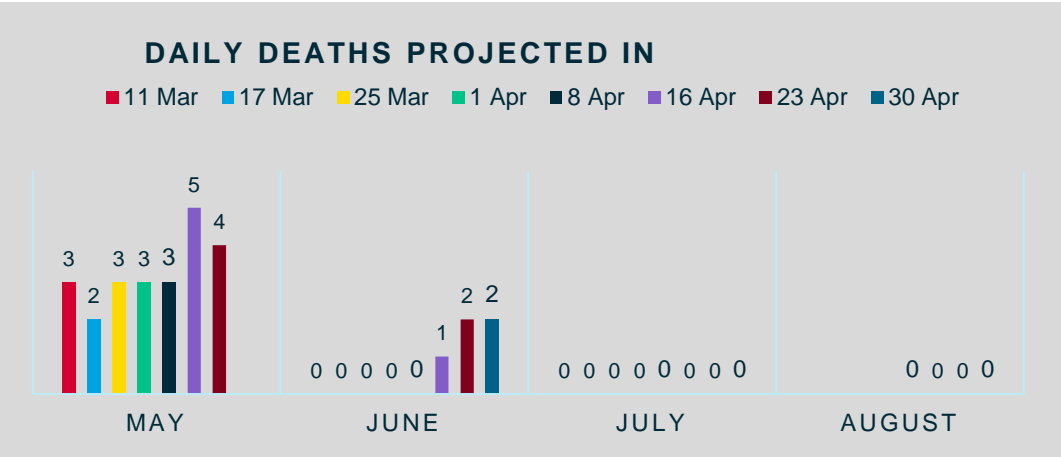
Source: Institute for Health Metrics and Evaluation / University of Washington - <https://covid19.healthdata.org/portugal?view=daily-deaths&tab=trend>

**Projection
Daily Infections**

For 1 August 2021

30 April Projection: 6

Covid-19 Daily Deaths Projections in Portugal

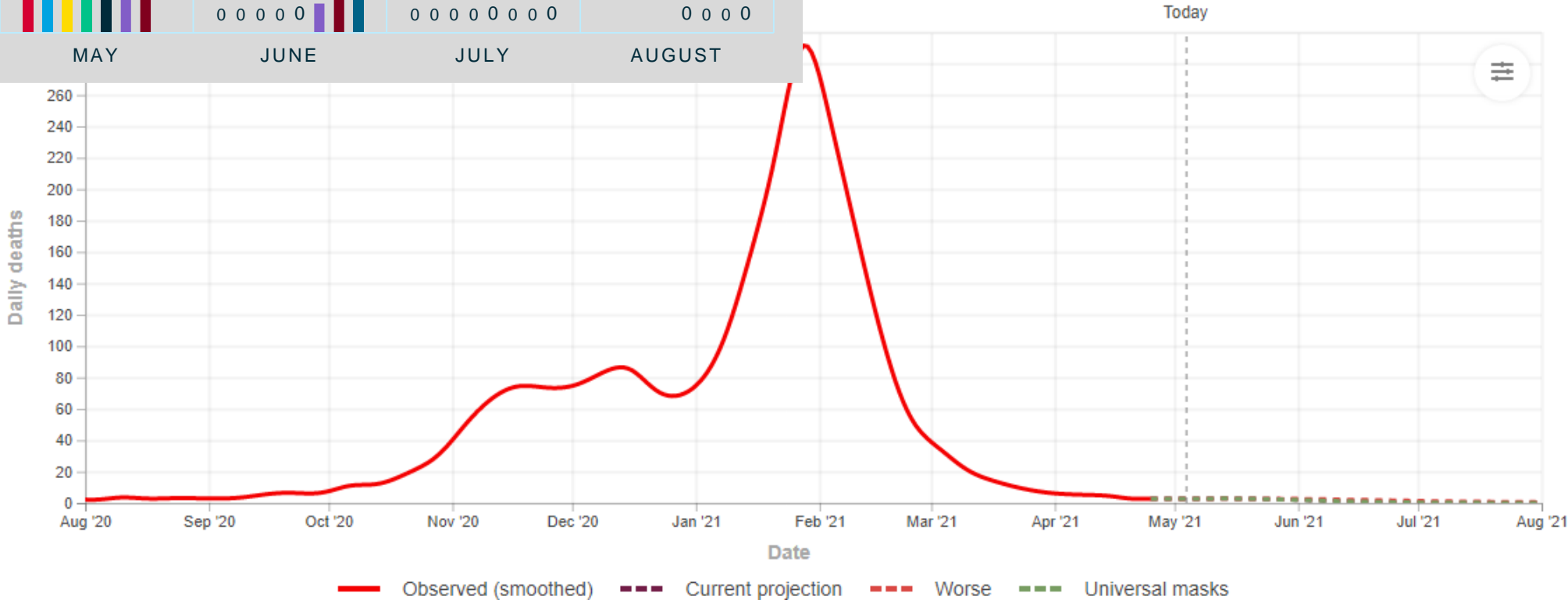


3 May 2021
0 deaths
Projected: 3

Current projection : Vaccine distribution is scaled up over 90 days. Variant B.1.1.7 continues to spread in certain locations.

Worse : In those who are vaccinated, mobility moves toward pre-COVID-19 levels.

Universal masks : 95% mask usage is adopted in public.



**Projection
Daily Deaths**

For 1 August 2021

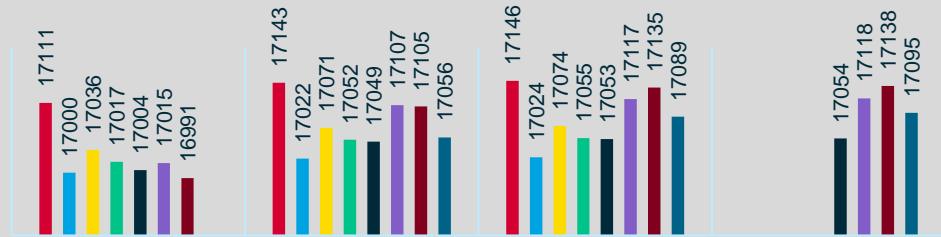
30 April Projection: 0

Source: Institute for Health Metrics and Evaluation / University of Washington - <https://covid19.healthdata.org/portugal?view=daily-deaths&tab=trend>

Covid-19 Total Deaths Projections in Portugal

TOTAL DEATHS PROJECTED IN

■ 11 Mar ■ 17 Mar ■ 25 Mar ■ 1 Apr ■ 8 Apr ■ 16 Apr ■ 23 Apr ■ 30 Apr



3 May 2021
16,977 deaths
Projected: 16,980

Current projection : Vaccine distribution is scaled up over 90 days. Variant B.1.1.7 continues to spread in certain locations.

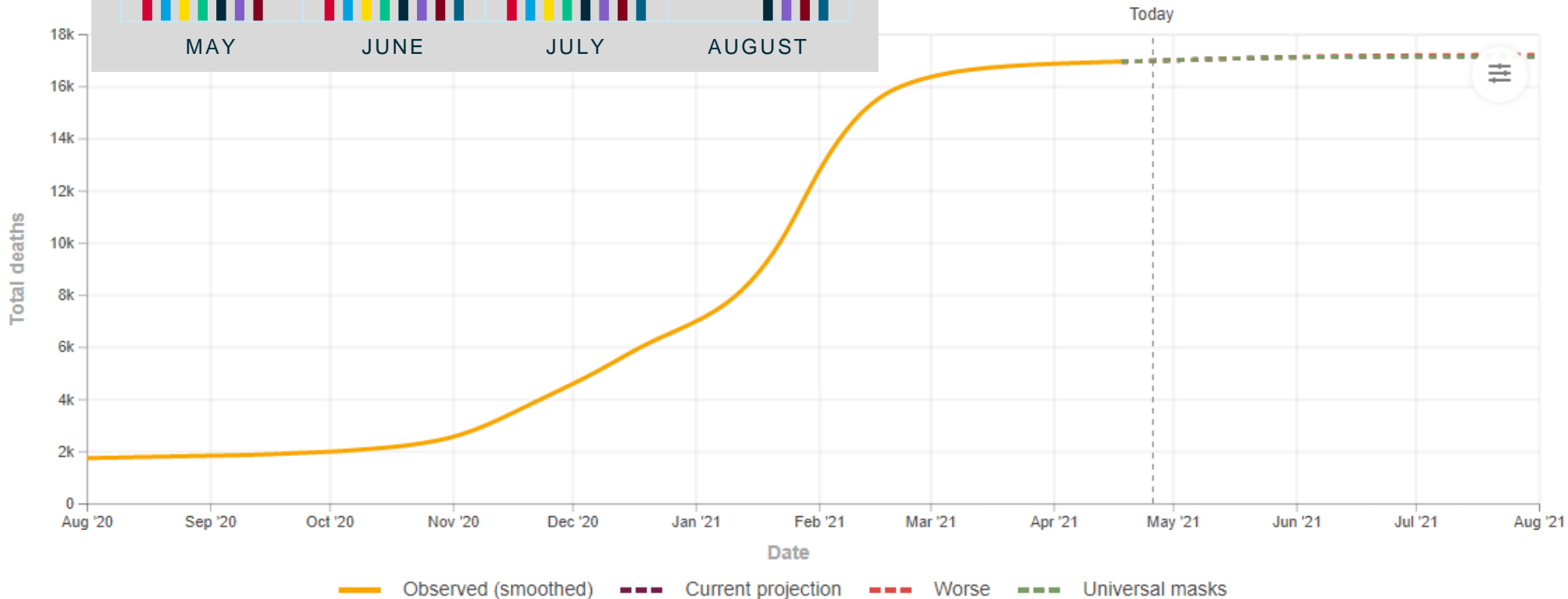
Worse : In those who are vaccinated, mobility moves toward pre-COVID-19 levels.

Universal masks : 95% mask usage is adopted in public.

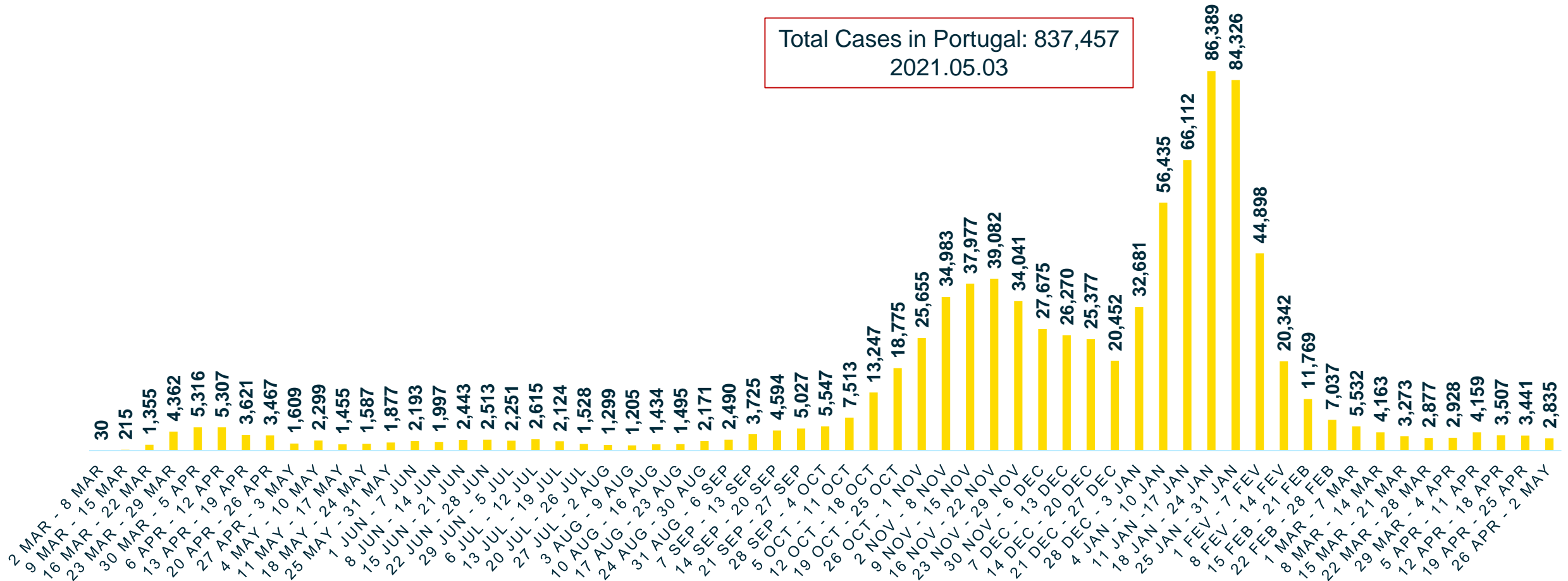
**Projection
Total Deaths**

For 1 August 2021

30 April Projection: 17,095



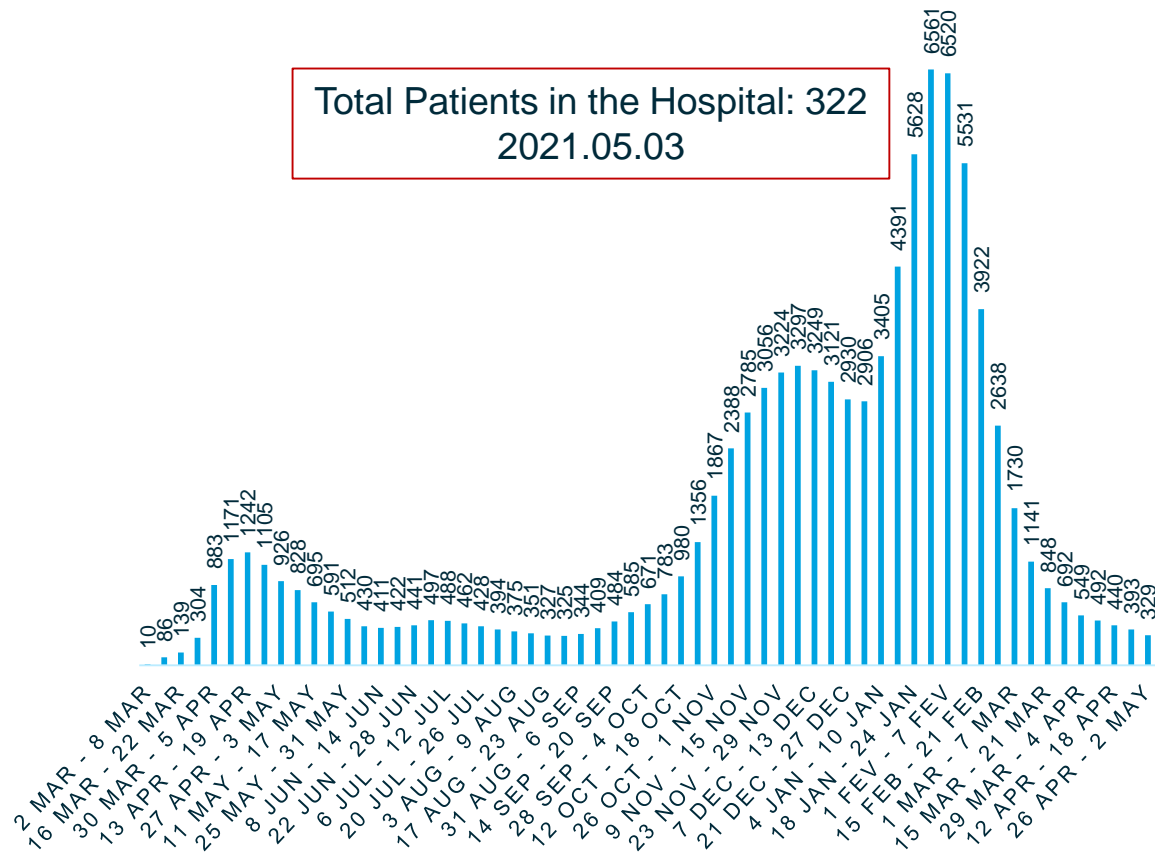
Coronavirus (SARS-CoV-2 / COVID 19) – Portugal – New cases per week



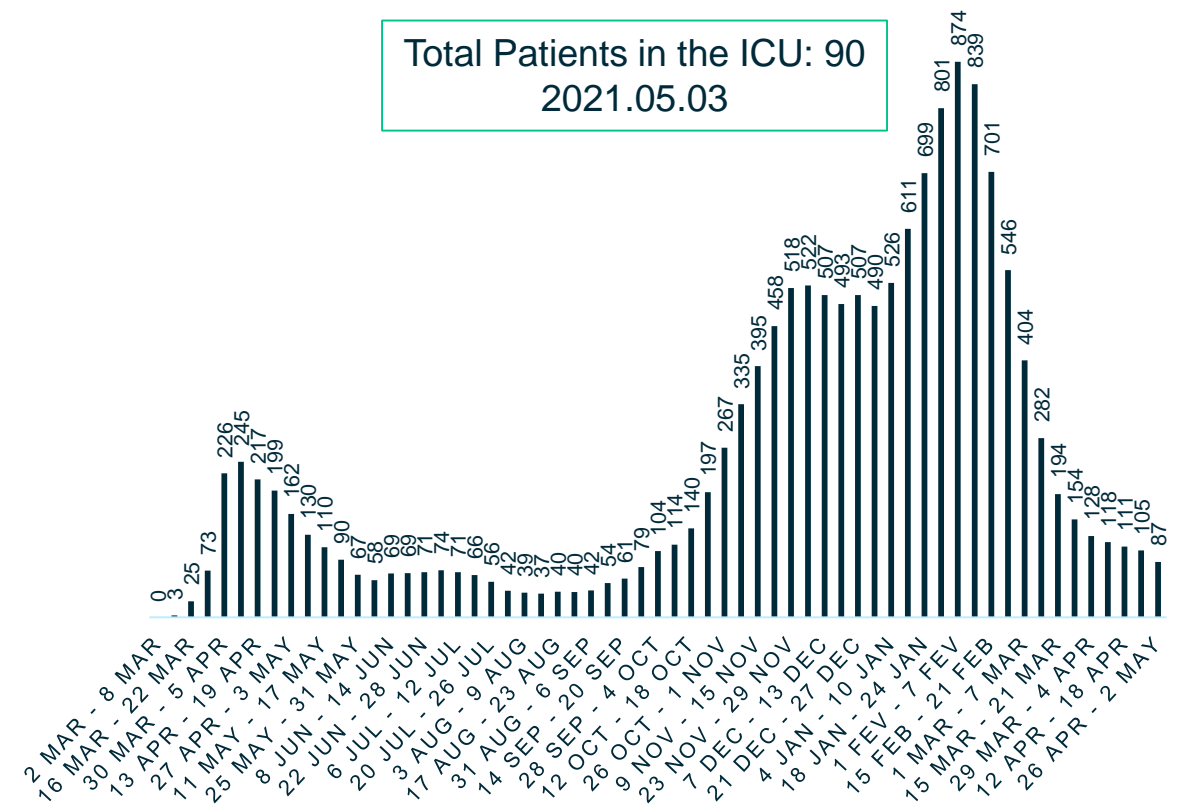
Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

Coronavirus (SARS-CoV-2 / COVID 19) – Portugal – Hospital stable/ICU per week

■ Average # of Patients stable in the Hospital per week

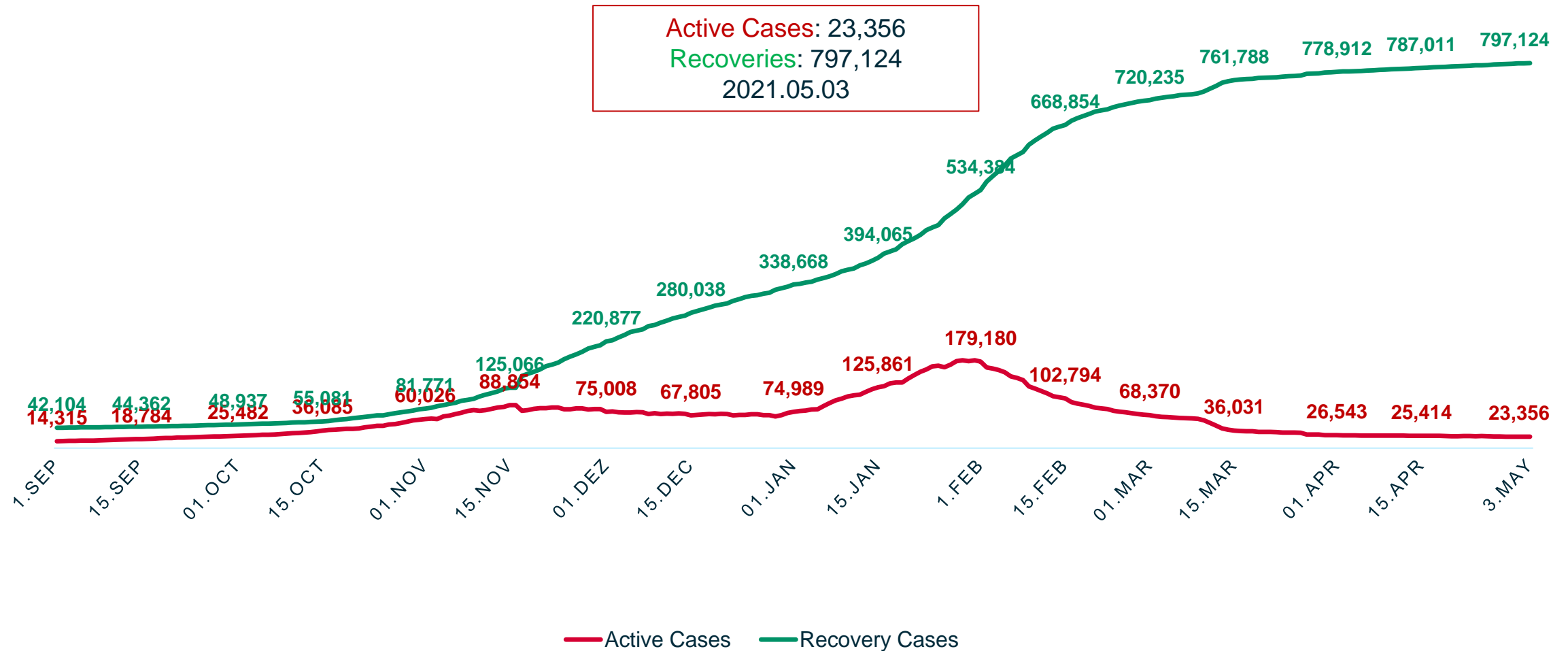


■ Average # of Patients in the ICU per week



Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

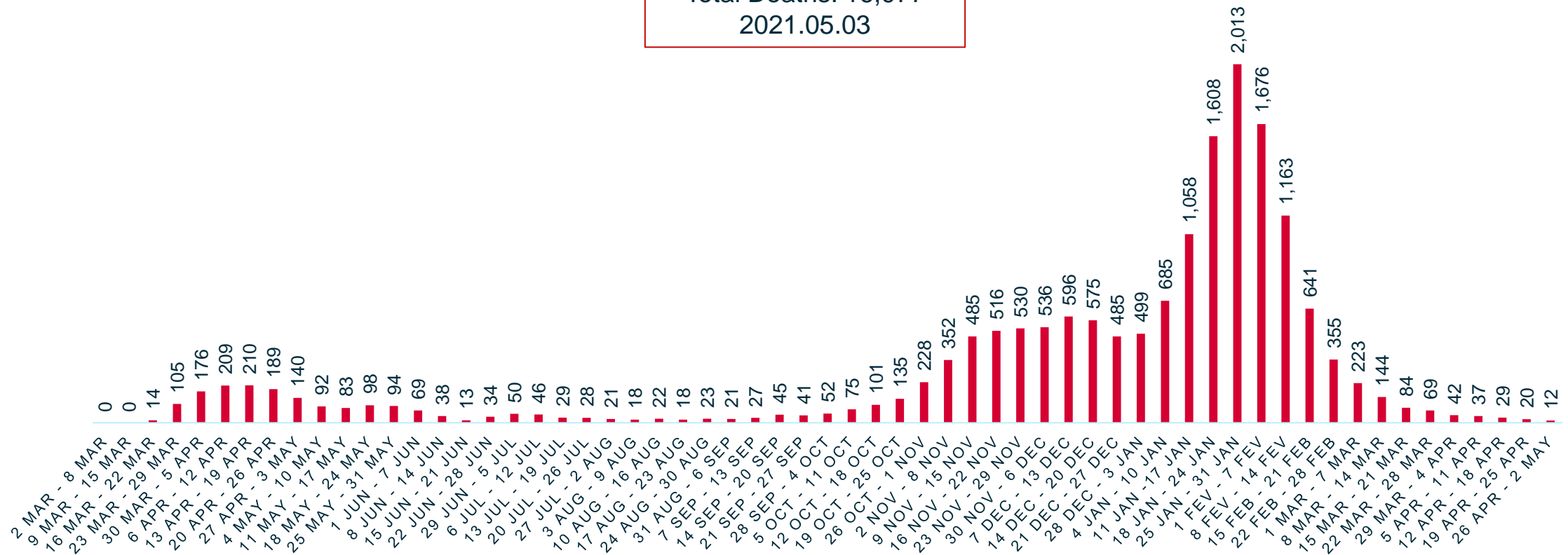
Coronavirus (SARS-CoV-2 / COVID 19) – Portugal – Active cases vs Recoveries



Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

Coronavirus (SARS-CoV-2 / COVID 19) – Portugal – New deaths per week

Total Deaths: 16,977
2021.05.03



Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>


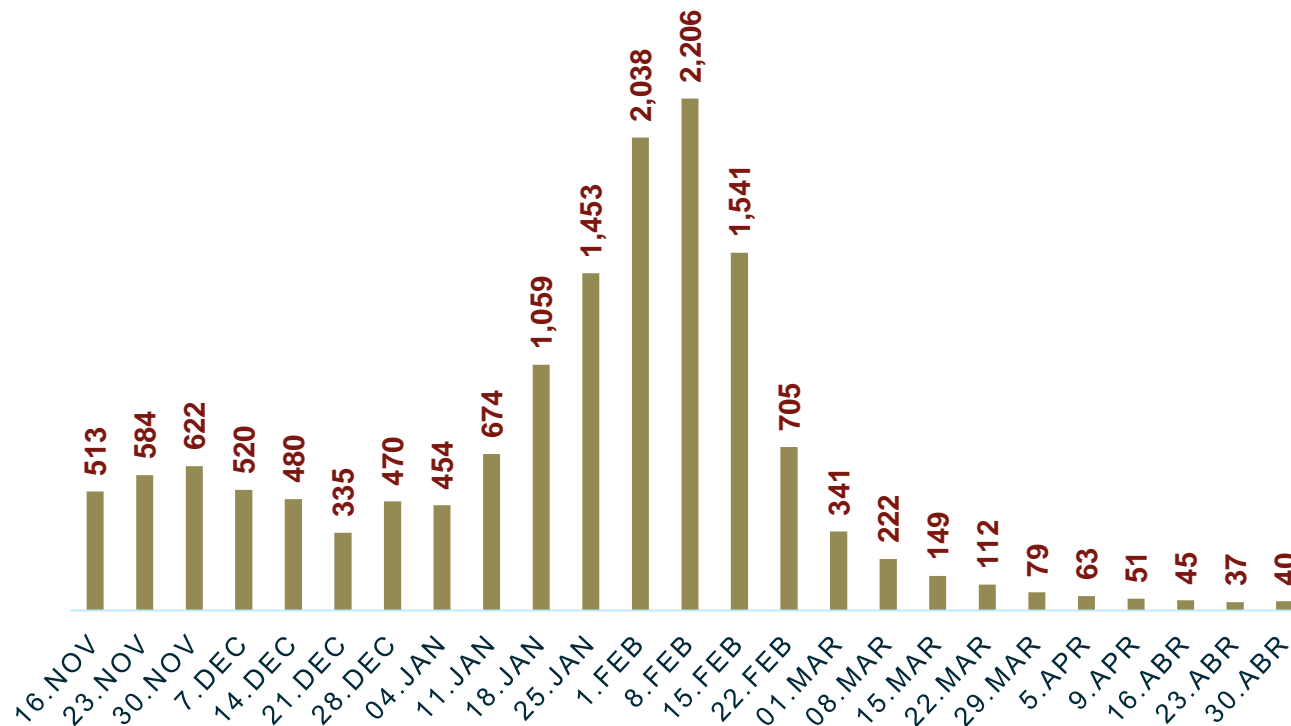
Portugal – Fatality Rate



Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

Coronavirus (SARS-CoV-2 / COVID 19)) – Loures

New Cases per 100,000 population


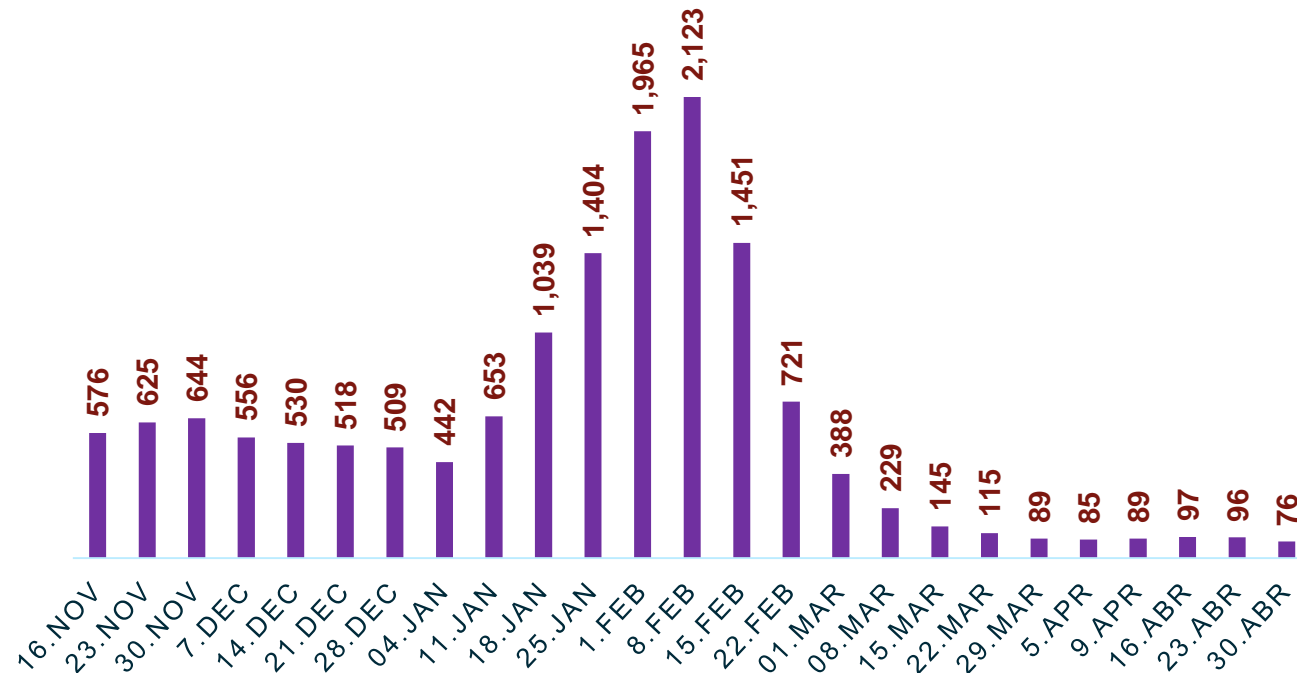


<20	
20 - 59,9	
60 - 119,9	
120 - 239,9	Moderate Risk
240 - 479,9	High Risk
480 - 959,9	Very High Risk
≥960	Extremely High Risk

Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

Coronavirus (SARS-CoV-2 / COVID 19) – Lisbon

New Cases per 100,000 population

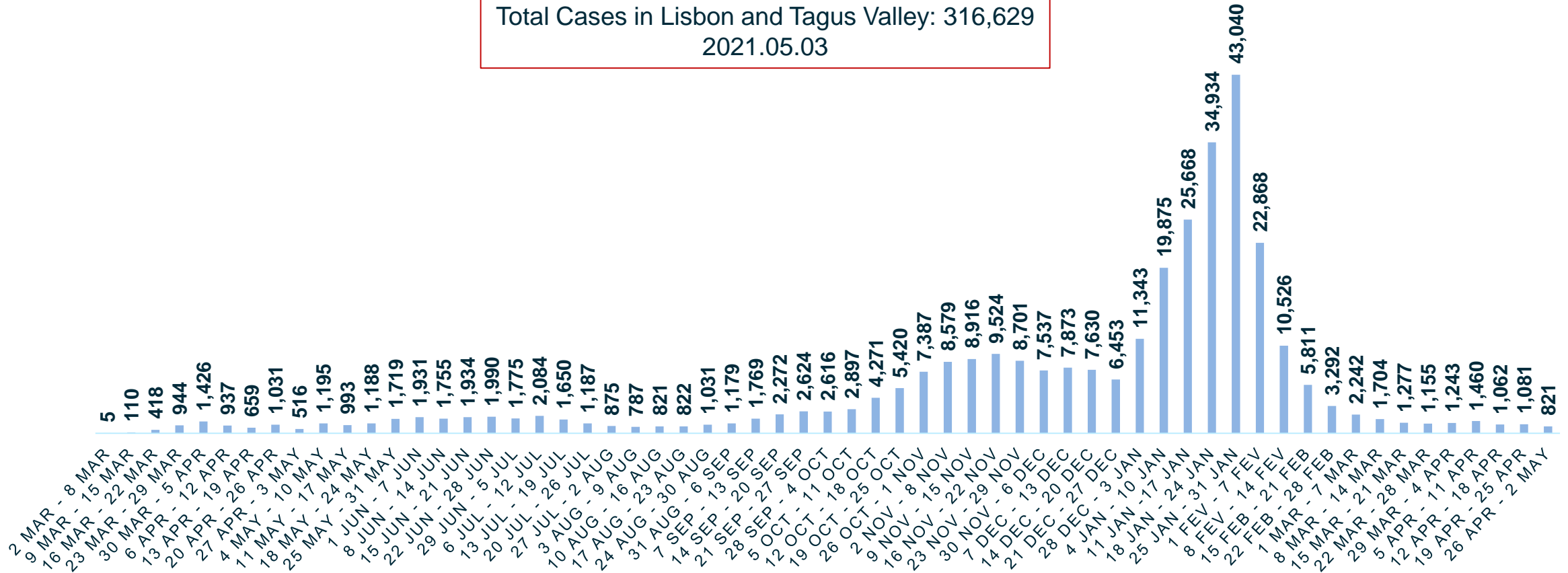


<20	
20 - 59,9	
60 - 119,9	
120 - 239,9	Moderate Risk
240 - 479,9	High Risk
480 - 959,9	Very High Risk
≥960	Extremely High Risk

Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

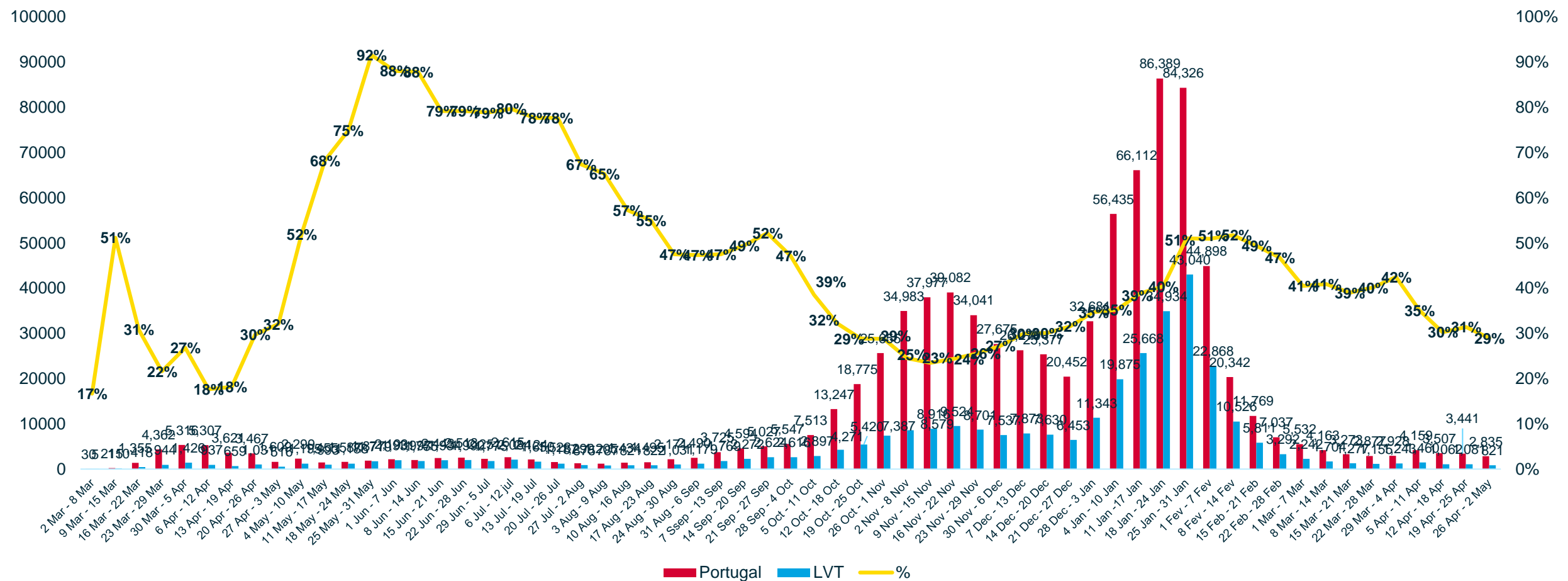
Coronavirus (SARS-CoV-2 / COVID 19) – Lisbon and Tagus Valley - New cases per week

Total Cases in Lisbon and Tagus Valley: 316,629
2021.05.03



Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

Coronavirus (SARS-CoV-2 / COVID 19) – % of new cases in Lisbon and Tagus Valley - New cases per week



Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

SARS-CoV-2 / COVID 19

Portugal - cases per 100.000

5 April

9 April

16 April

23 April

30 April

30 April 2021

Loures
40

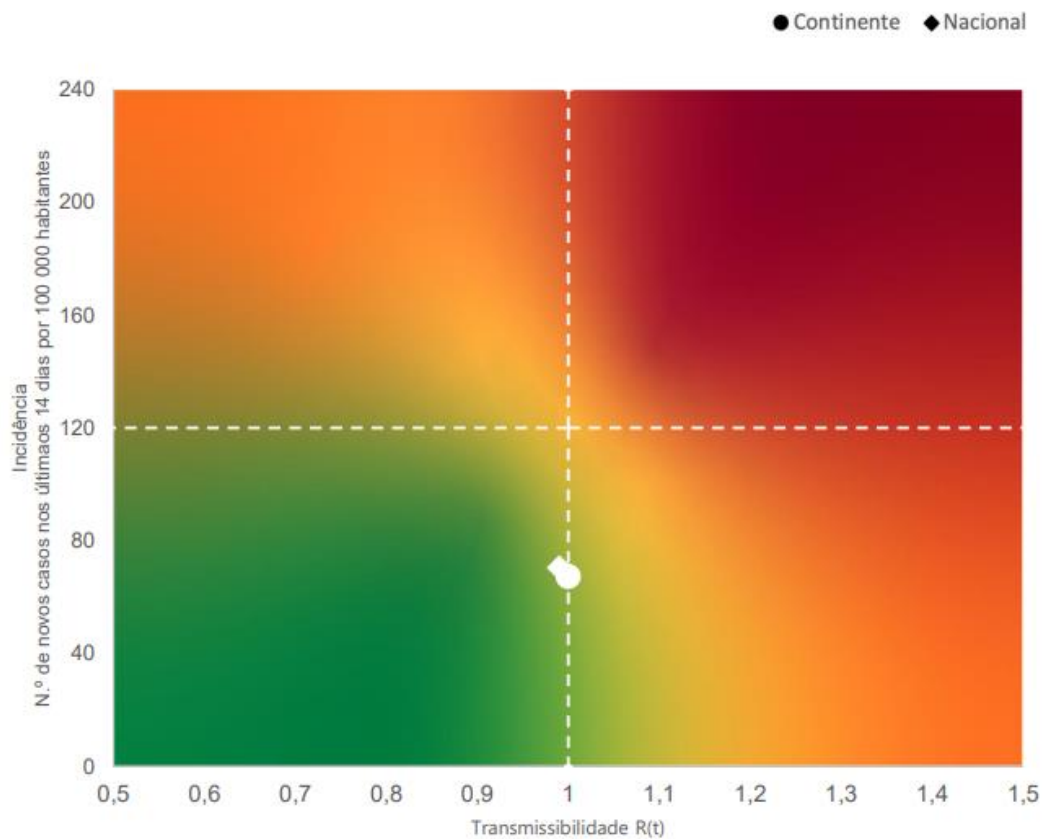
Lisbon
76

<20 20-59,9 60-119,9 120-239,9 240-479,9 480-959,9 ≥960

COVID-19 | RELATÓRIO DE SITUAÇÃO | 26-04-2021

MATRIZ DE RISCO

Realização da análise: 26-04-2021



INCIDÊNCIA

Nacional: **70,4** casos de infeção por SARS-CoV-2/ COVID-19 por 100 000 hab.

Continente: **67,3** casos de infeção por SARS-CoV-2/ COVID-19 por 100 000 hab.

$R(t)$

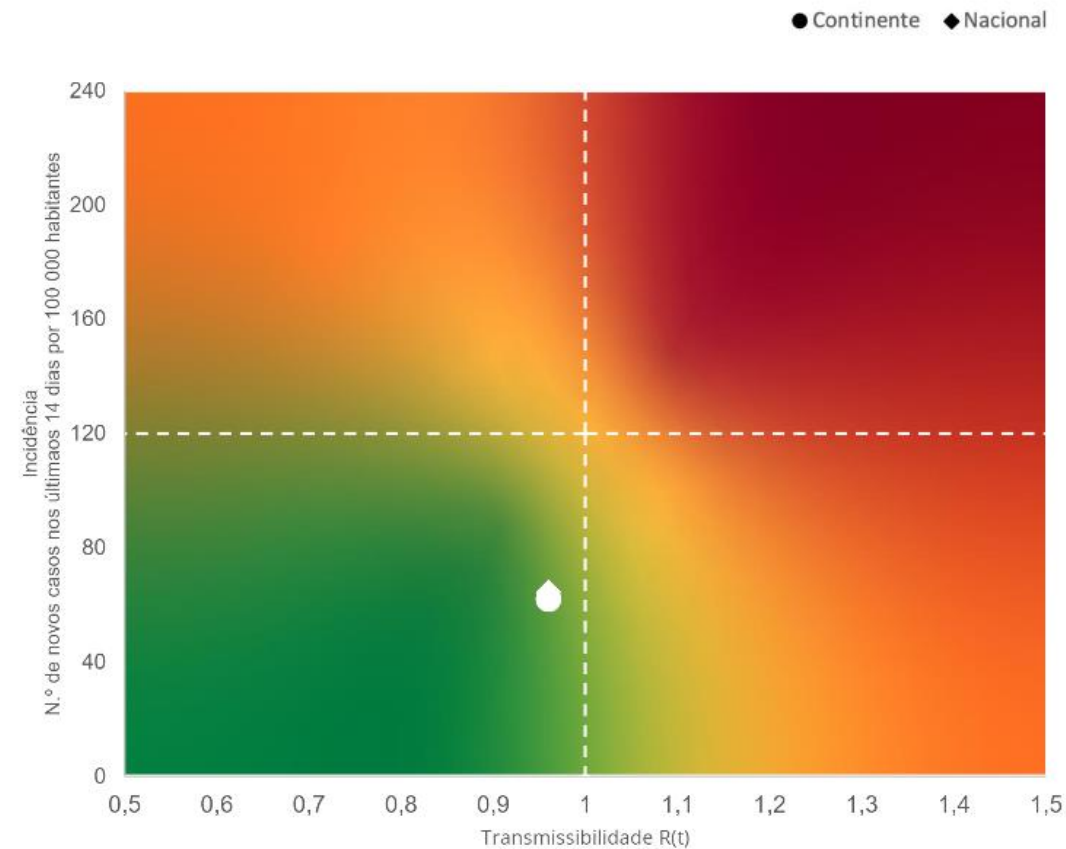
Nacional: **0,99**

Continente: **1,00**

COVID-19 | RELATÓRIO DE SITUAÇÃO | 03-05-2021

MATRIZ DE RISCO

Realização da análise: 03-05-2021



INCIDÊNCIA

Nacional: **64,4** casos de infeção por SARS-CoV-2/ COVID-19 por 100 000 hab.

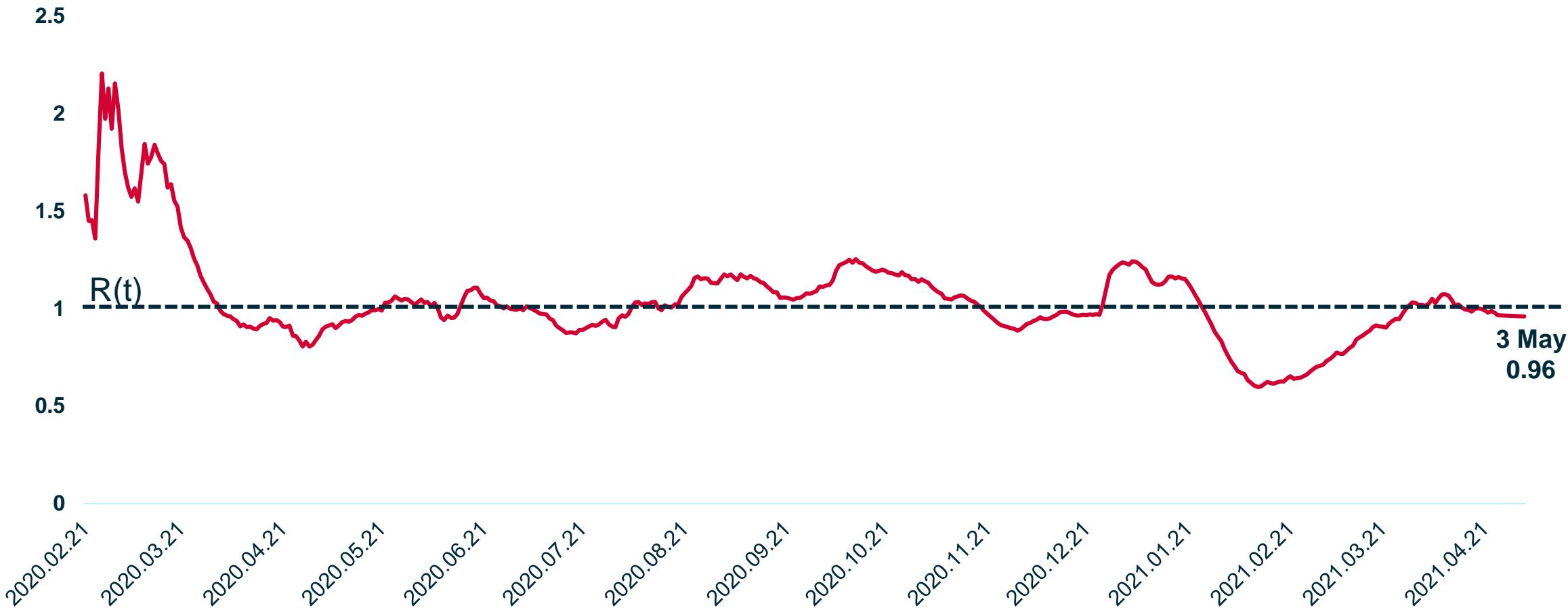
Continente: **62,0** casos de infeção por SARS-CoV-2/ COVID-19 por 100 000 hab.

$R(t)$

Nacional: **0,96**

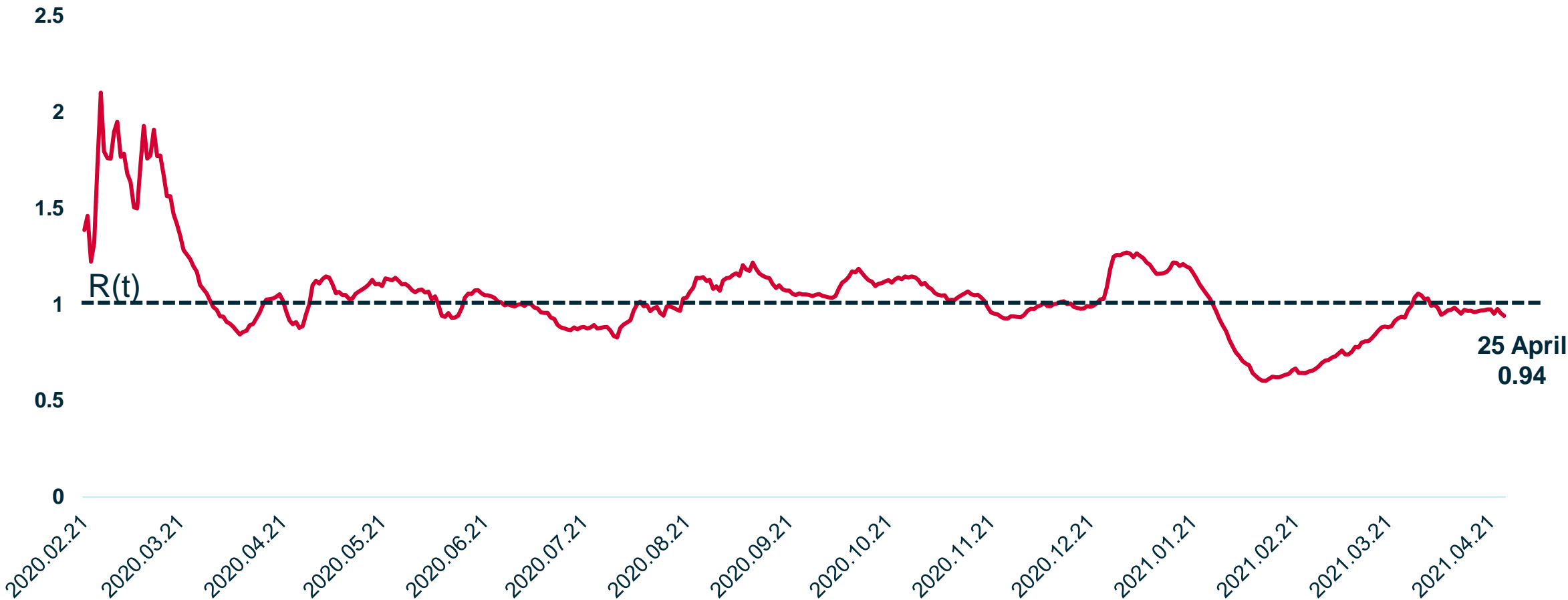
Continente: **0,96**

Transmission Rate - $R(t)$ in Portugal



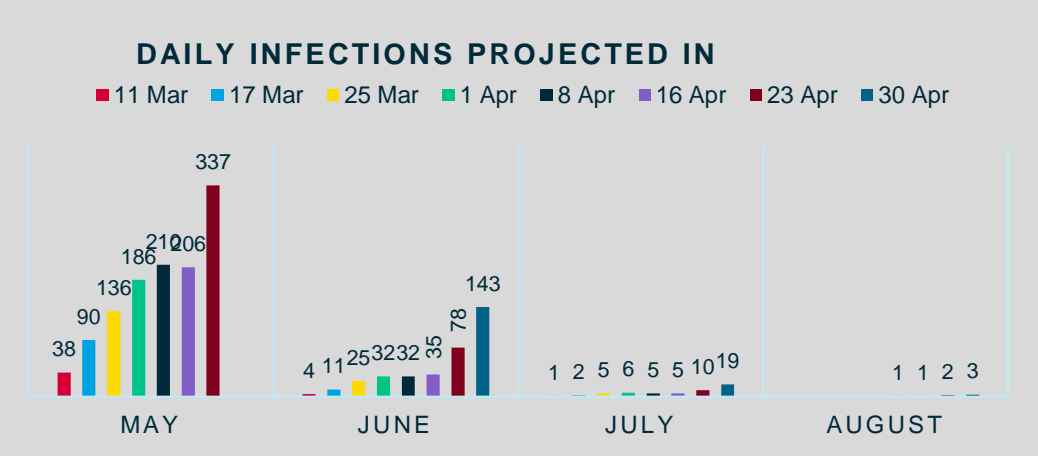
Source: SNS - <http://www.insa.min-saude.pt/category/areas-de-atuacao/epidemiologia/covid-19-curva-epidmica-e-parametros-de-transmissibilidade/>

Transmission Rate - $R(t)$ in **Lisbon and Tagus Valley**



Ireland

Covid-19 Daily Infection Projections in Ireland

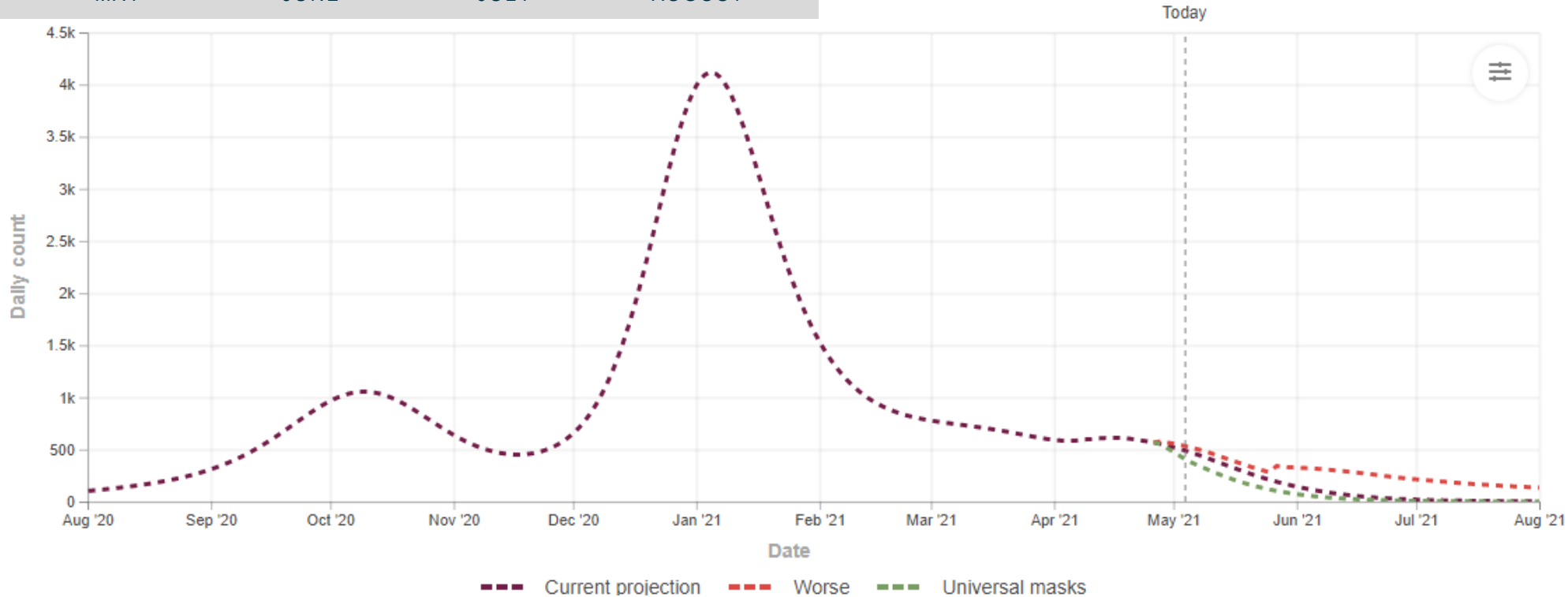


3 May 2021
453 infections
Projected: 500

Current projection : Vaccine distribution is scaled up over 90 days. Variant B.1.1.7 continues to spread in certain locations.

Worse : In those who are vaccinated, mobility moves toward pre-COVID-19 levels.

Universal masks : 95% mask usage is adopted in public.



**Projection
Daily Infections**

For 1 August 2021

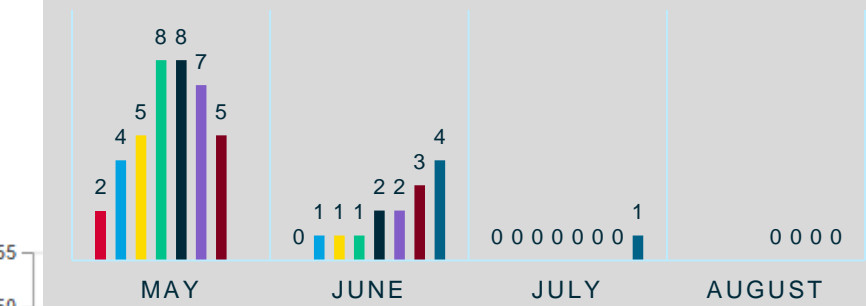
30 April Projection: 3

Source: Institute for Health Metrics and Evaluation / University of Washington - <https://covid19.healthdata.org/portugal?view=daily-deaths&tab=trend>

Covid-19 Daily Deaths Projections in Ireland

DAILY DEATHS PROJECTED IN

■ 11 Mar ■ 17 Mar ■ 25 Mar ■ 1 Apr ■ 8 Apr ■ 16 Apr ■ 23 Apr ■ 30 Apr



3 May 2021
0 deaths
Projected: 5

Current projection : Vaccine distribution is scaled up over 90 days. Variant B.1.1.7 continues to spread in certain locations.

Worse : In those who are vaccinated, mobility moves toward pre-COVID-19 levels.

Universal masks : 95% mask usage is adopted in public.

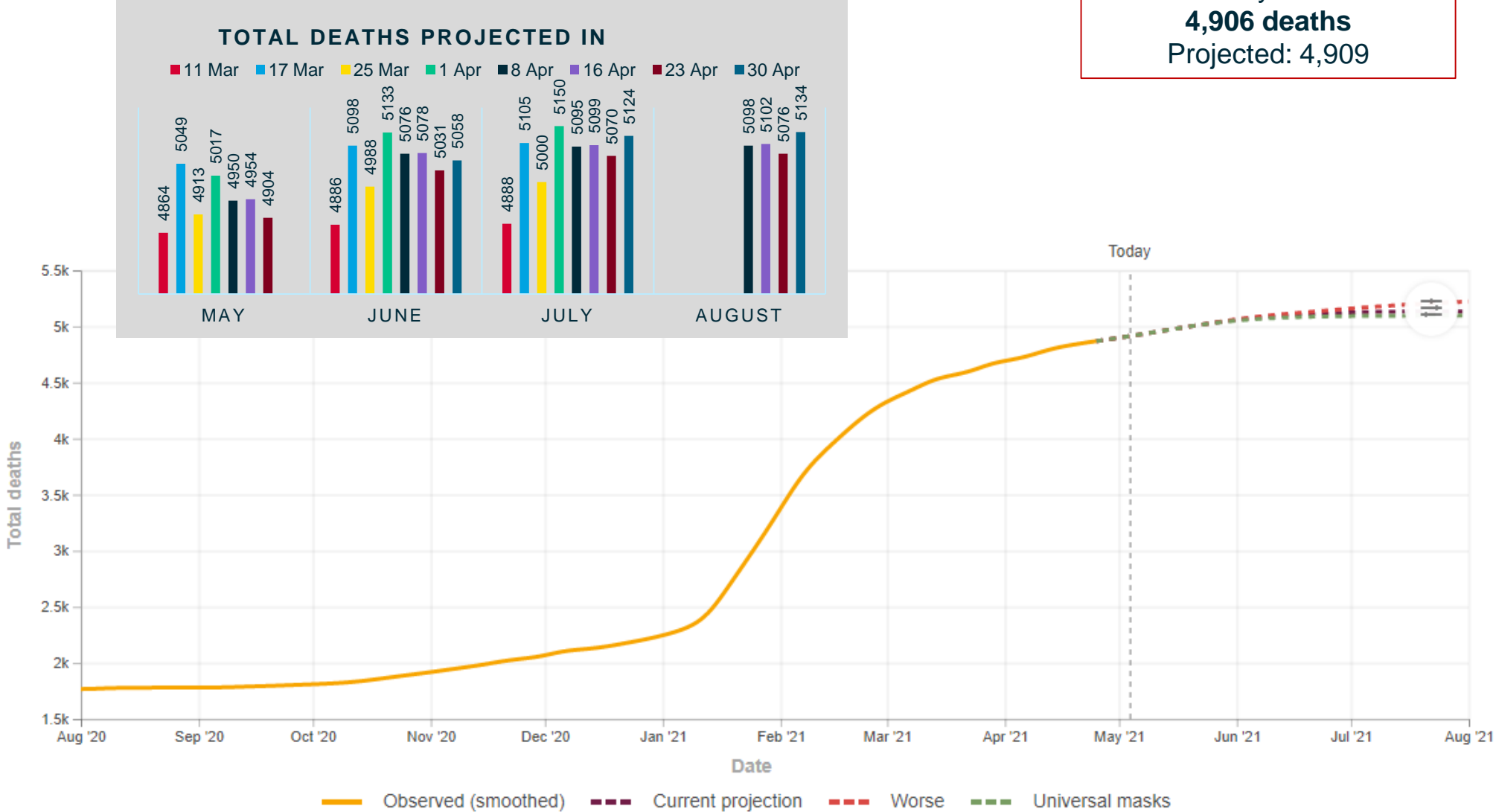


Projection Daily Deaths

For 1 August 2021

30 April Projection: 0

Covid-19 Total Deaths Projections in Ireland



Current projection : Vaccine distribution is scaled up over 90 days. Variant B.1.1.7 continues to spread in certain locations.

Worse : In those who are vaccinated, mobility moves toward pre-COVID-19 levels.

Universal masks : 95% mask usage is adopted in public.

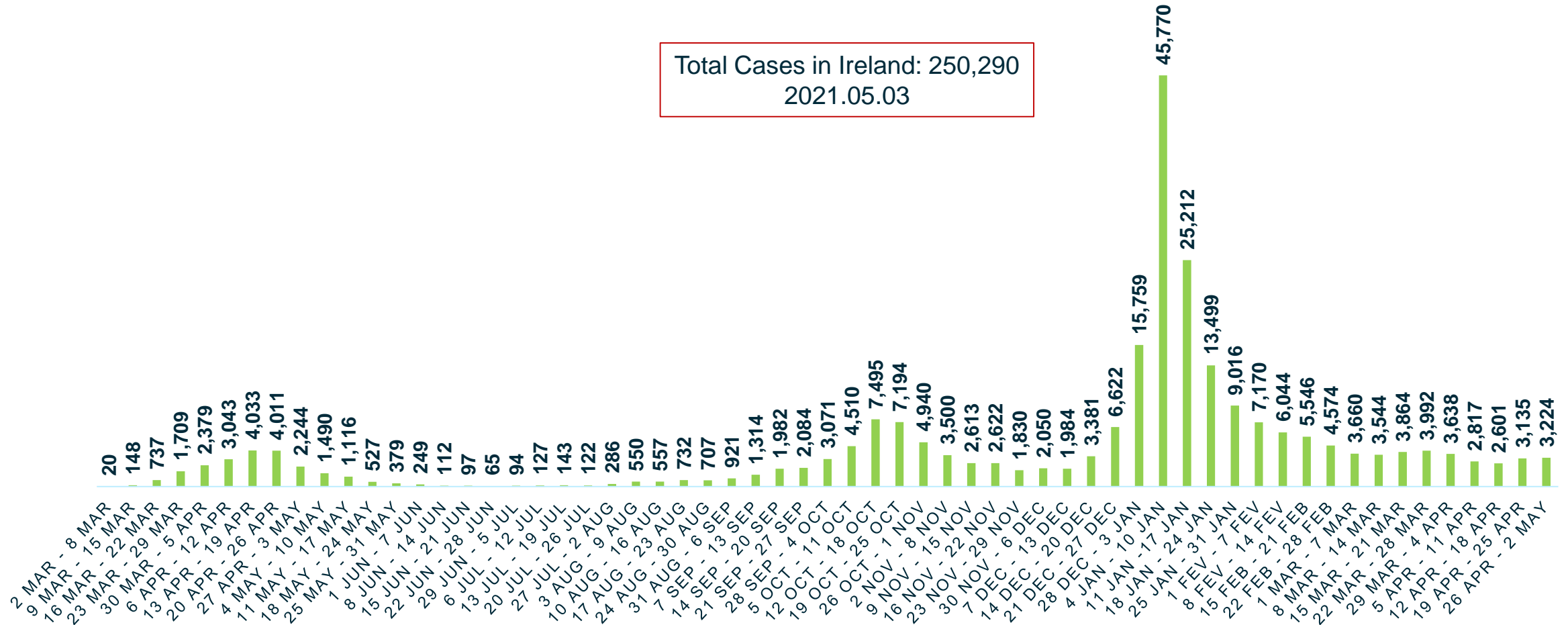
**Projection
Total Deaths**

For 1 August 2021

30 April Projection: 5,134

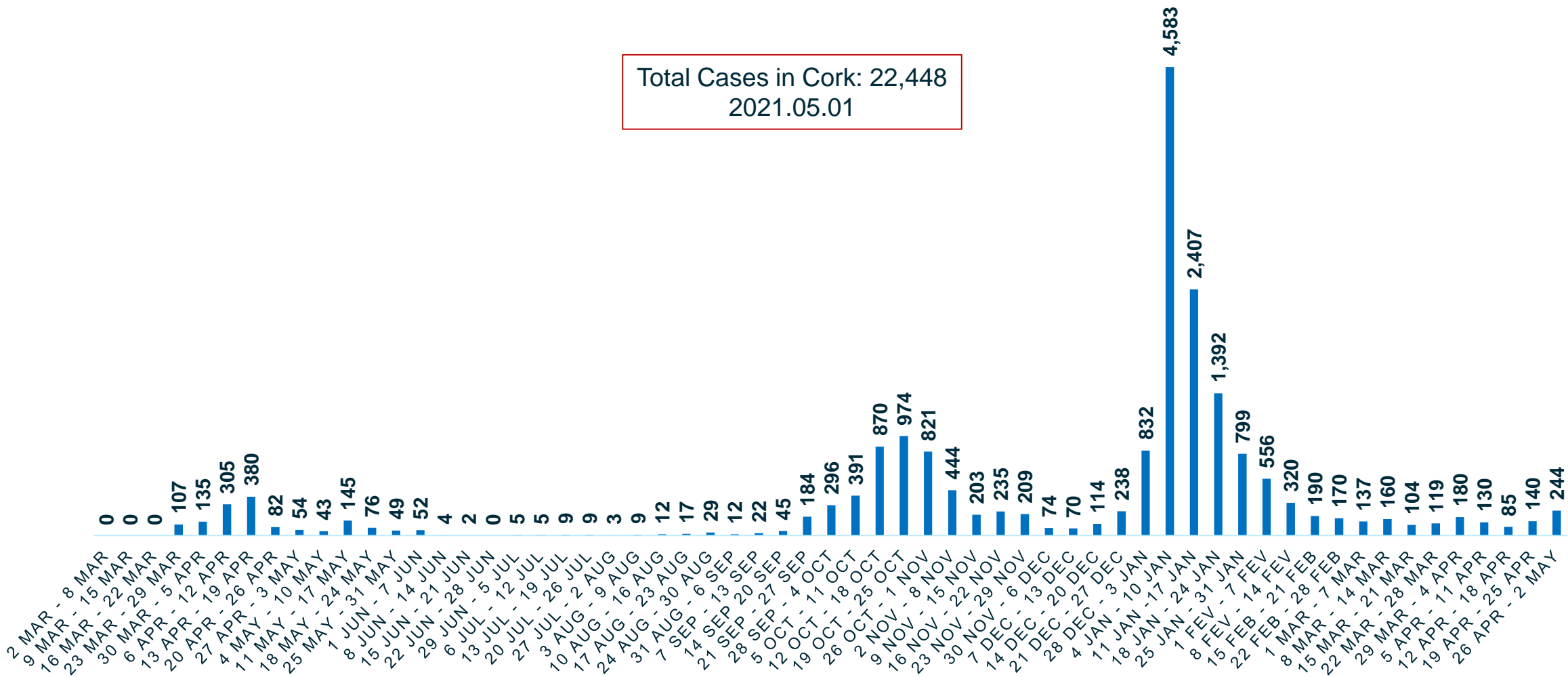
Coronavirus (SARS-CoV-2 / COVID 19) – Ireland - New cases per week

Total Cases in Ireland: 250,290
2021.05.03



Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

Coronavirus (SARS-CoV-2 / COVID 19)) – **Cork** - New cases per week



Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

New Jersey

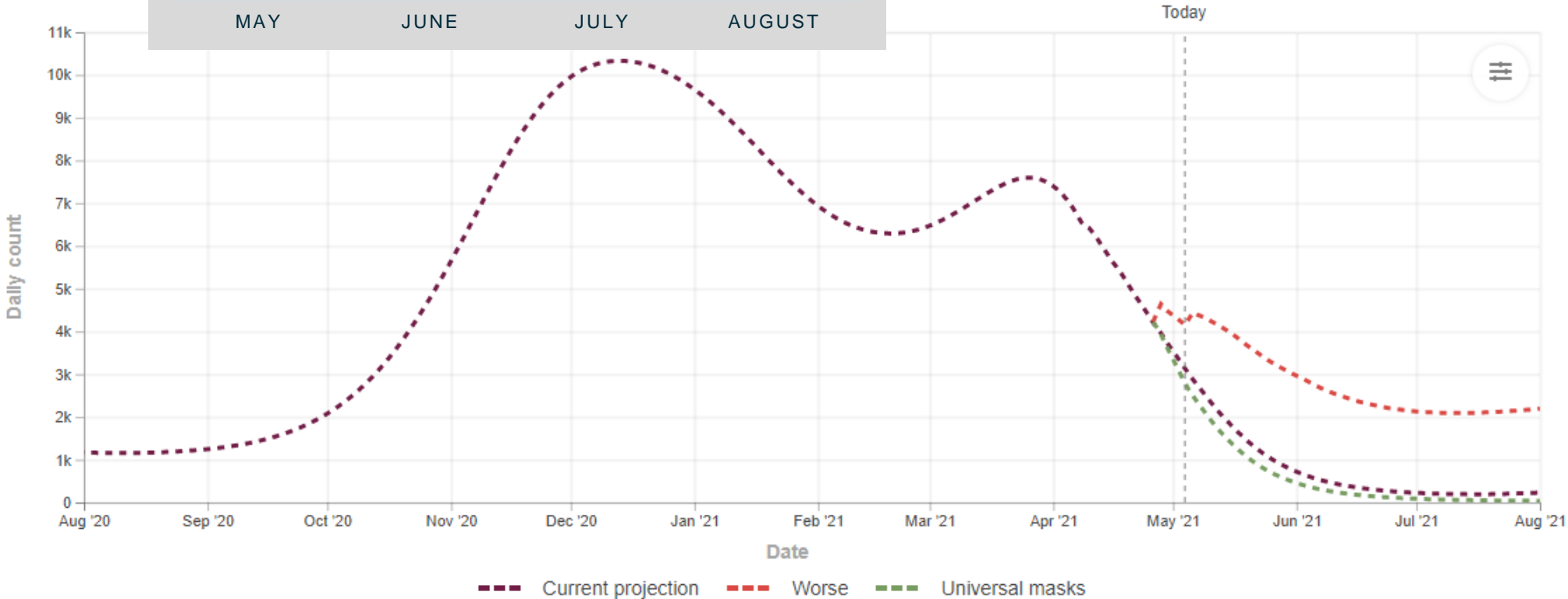
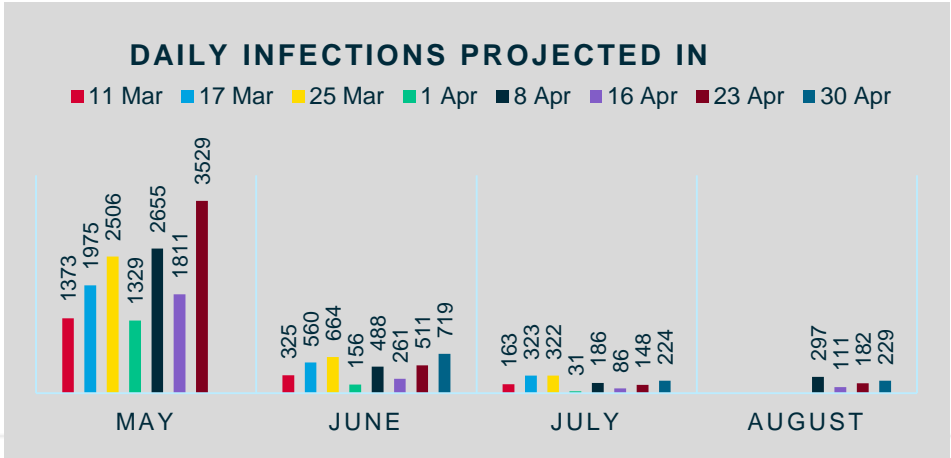
Covid-19 Daily Infection Projections in New Jersey

Current projection : Vaccine distribution is scaled up over 90 days. Variant B.1.1.7 continues to spread in certain locations.

Worse : In those who are vaccinated, mobility moves toward pre-COVID-19 levels.

Universal masks : 95% mask usage is adopted in public.

3 May 2021
864 infections
Projected: 3,273

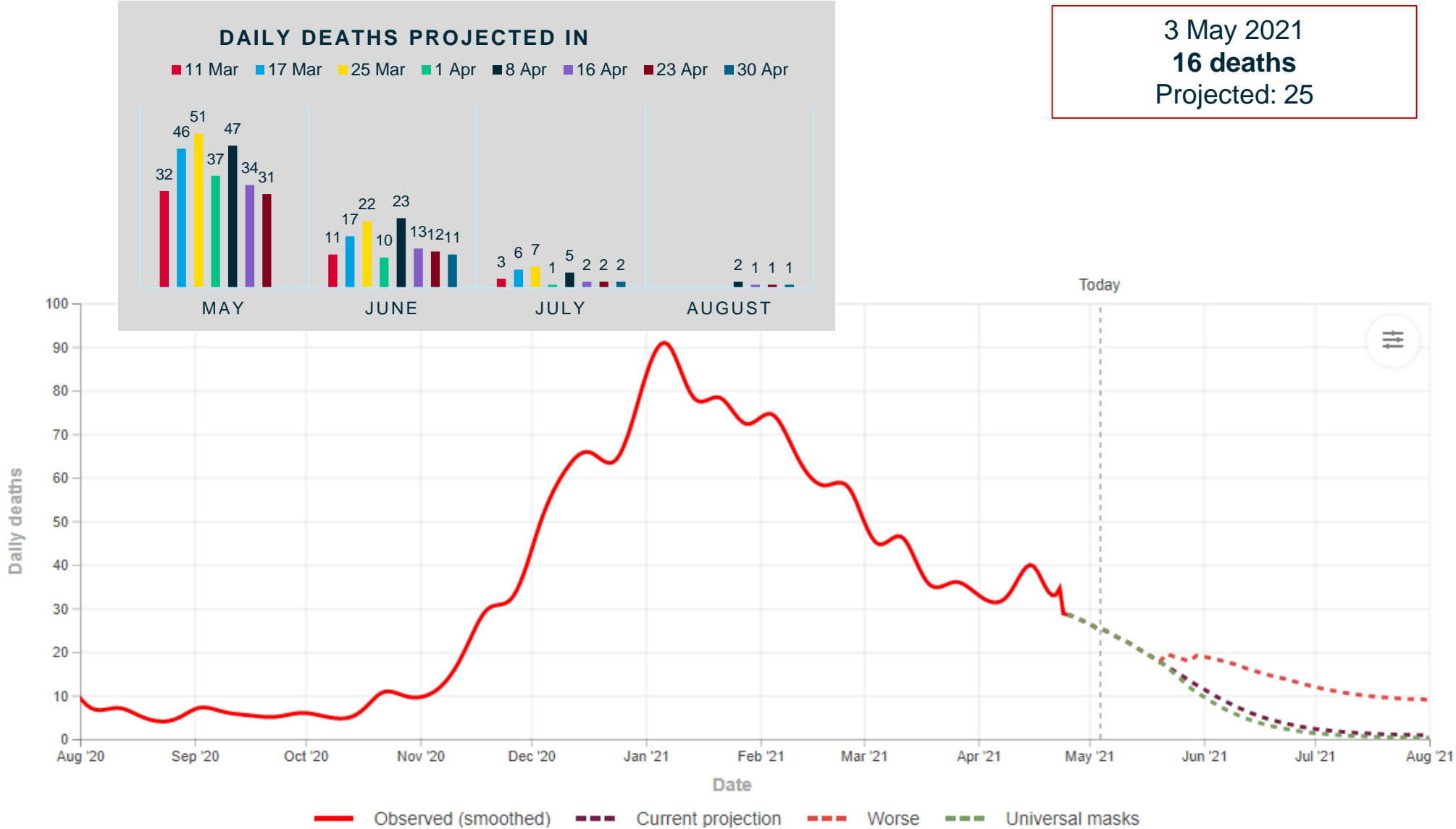


**Projection
Daily Infections**

For 1 August 2021
30 April Projection: 229

Source: Institute for Health Metrics and Evaluation / University of Washington - <https://covid19.healthdata.org/portugal?view=daily-deaths&tab=trend>

Covid-19 Daily Deaths Projections in New Jersey



3 May 2021
16 deaths
Projected: 25

Current projection : Vaccine distribution is scaled up over 90 days. Variant B.1.1.7 continues to spread in certain locations.

Worse : In those who are vaccinated, mobility moves toward pre-COVID-19 levels.

Universal masks : 95% mask usage is adopted in public.

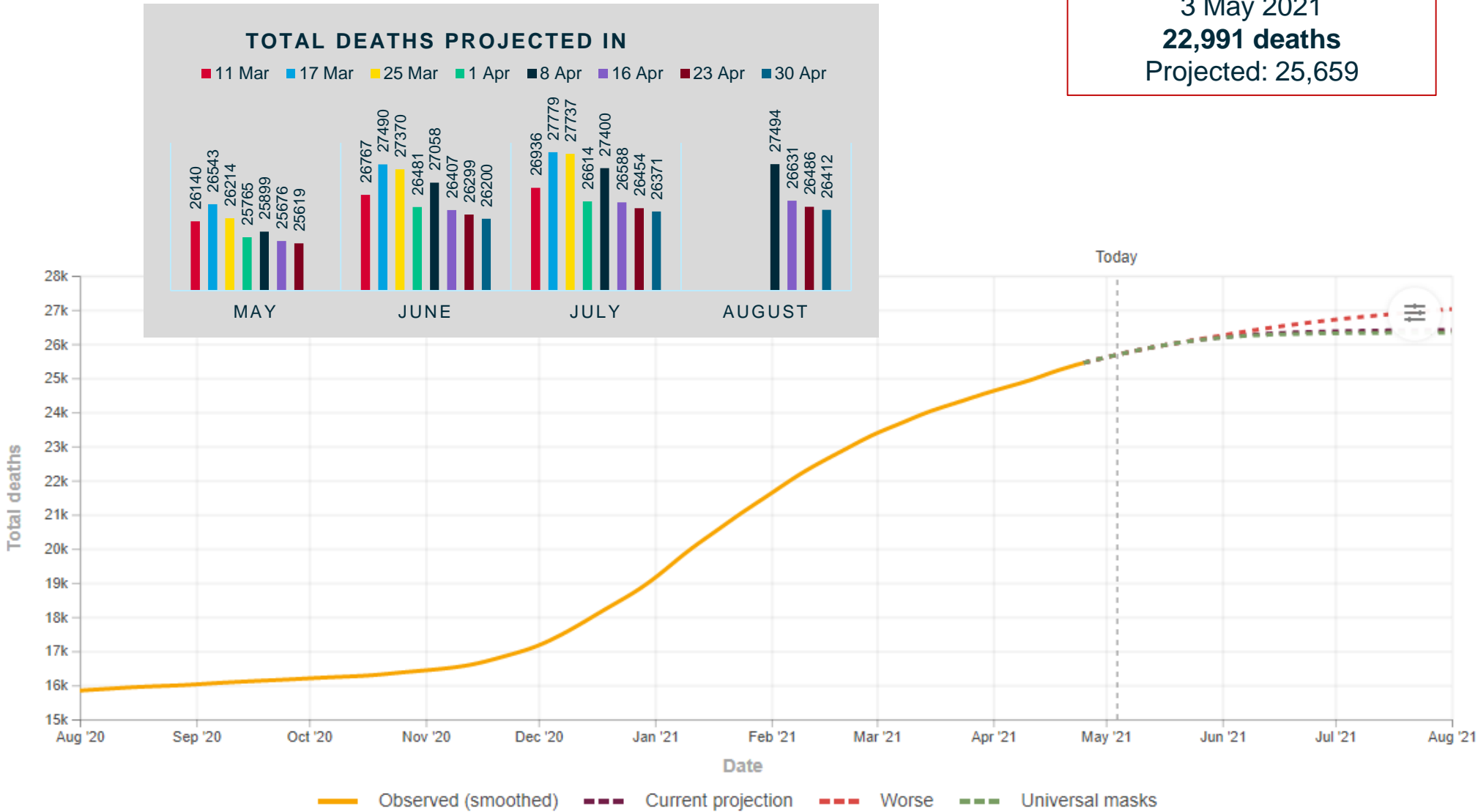
Projection Daily Deaths

For 1 August 2021

30 April Projection: 1

Source: Institute for Health Metrics and Evaluation / University of Washington - <https://covid19.healthdata.org/portugal?view=daily-deaths&tab=trend>

Covid-19 Total Deaths Projections in New Jersey



3 May 2021
22,991 deaths
Projected: 25,659

Current projection : Vaccine distribution is scaled up over 90 days. Variant B.1.1.7 continues to spread in certain locations.

Worse : In those who are vaccinated, mobility moves toward pre-COVID-19 levels.

Universal masks : 95% mask usage is adopted in public.

**Projection
Total Deaths**

For 1 August 2021

30 April Projection: 26,412

Source: Institute for Health Metrics and Evaluation / University of Washington - <https://covid19.healthdata.org/portugal?view=daily-deaths&tab=trend>

U.S. Vaccination

Distribution in the U.S. is directed by the federal government. Pfizer and BioNTech's vaccine, as well as Moderna's shot both require two doses taken several weeks apart. J&J's inoculation requires just a single dose.

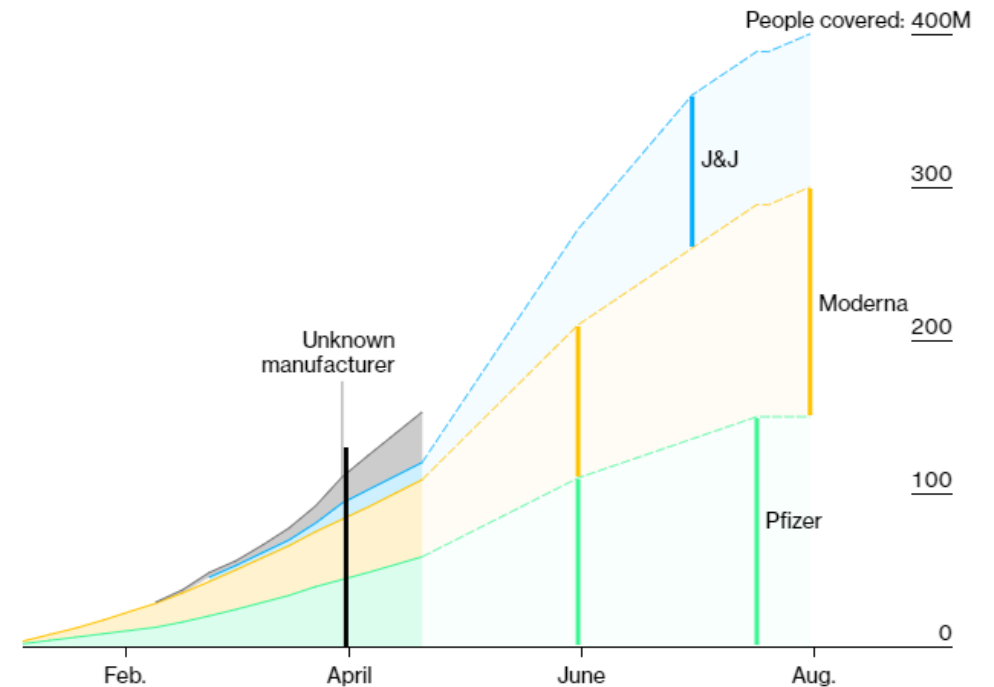
The U.S. leads the world in total vaccines administered, and more supply is on the way. Drugmakers have promised to deliver enough shots to fully vaccinate more than 300 million people by the end of June. That's more than enough for every adult, and clinical studies in children are underway.

Source: Bloomberg

Time to Deliver

Vaccine makers pledge 700M doses for the U.S. by the end of July—enough to cover 400M people

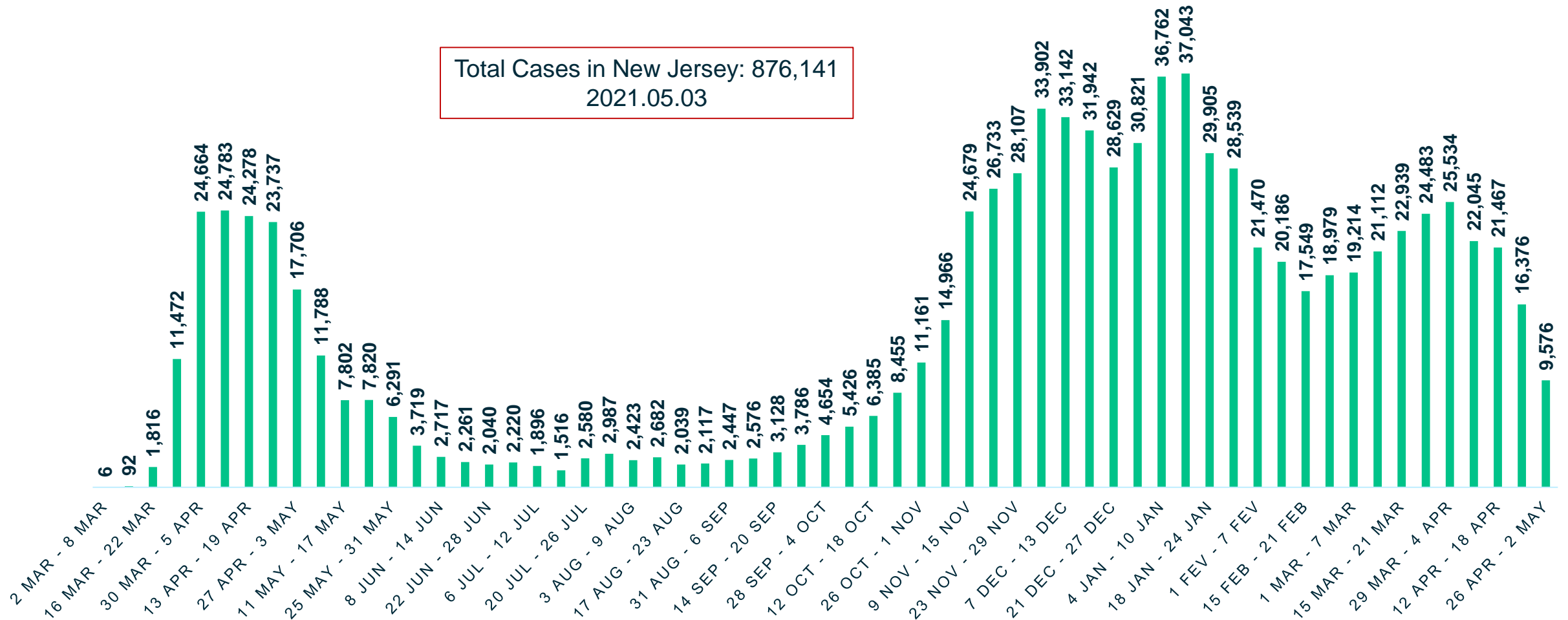
■ Vaccines available ■ Delivery targets ▬ Projected



Source: "Unknown manufacturer" refers to vaccine allocations reported by the White House that are not further identified; the coverage calculation assumes they are two-dose vaccines. Specified allocations are from CDC. Targets are provided by the manufacturers and don't always align with government forecasts for availability.

Coronavirus (SARS-CoV-2 / COVID 19) – New Jersey - New cases per week

Total Cases in New Jersey: 876,141
2021.05.03



Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

Recent News

Latest News

- **The US Food and Drug Administration is preparing to authorise the Pfizer/BioNTech Covid vaccine for adolescents between ages 12 and 15 years** by early next week, the New York Times reported on Monday, citing federal officials familiar with the agency's plans.
- **Denmark won't use J&J's vaccine due to concern about the risk of blood clots, the Danish Health Authority said.** The move comes less than a month after Denmark became the first European Union member to drop AstraZeneca Plc for similar reasons. Both shots are used in many other countries. Denmark had pre-ordered about 7 million vaccine shots from J&J, more than from any other producer, so the decision will delay the national vaccine rollout by four weeks.
- **BioNTech CEO Ugur Sahin is "confident" the company's Covid-19 vaccine with Pfizer will be effective against a variant of the virus first identified in India,** CNBC said. Sahin said BioNTech has tested its two-dose vaccine against similar "double mutants" and felt assured the shot will still be protective. The company is evaluating the strain and the data will be available in the coming weeks, he said on CNBC.
- **UK medical regulator the Medicines and Healthcare products Regulatory Agency (MHRA) has reported a total of 41 deaths following blood clots among people who received AstraZeneca's Covid-19 vaccine, an increase of nine since last week's report.** MHRA said a total of 209 clots with low platelet counts have now been reported after AstraZeneca vaccine shots, compared with 168 cases reported last week. The examination of blood clots following AstraZeneca vaccine doses showed that the incidence is higher among younger individuals. The regulator, however, maintained that the benefits of the vaccine outweighed its risks, and reported an overall blood clot case incidence of 9.3 per million doses.
- **Vaccines from Pfizer-BioNTech and Moderna reduced the risk of being hospitalized for Covid-19 among fully immunized older adults by 94%, and by 64% for those** who received only one of the two-shot regimens, according to a Centers for Disease Control and Prevention report.
- **The UK's Medicines and Healthcare products Regulatory Agency (MHRA) has reported that there are no heart inflammation or other safety concerns with regard to Pfizer's Covid-19 vaccine.** The announcement comes after cases of myocarditis were reported in Israel among people who had received Pfizer's vaccine. The MHRA's statement follows similar comments from the US Centers for Disease Control and Prevention that there were no observed links between Pfizer's vaccine and heart inflammation.
- **Merck has signed non-exclusive voluntary licensing agreements with five generic pharmaceutical manufacturers in India to accelerate access to investigational oral antiviral agent molnupiravir amid a surge in coronavirus cases in the country.** The manufacturers with whom Merck has signed the agreements include Cipla, Dr. Reddy's Laboratories, Emcure Pharmaceuticals, Hetero Labs and Sun Pharmaceutical Industries.
- **The Irish government has approved the Covid-19 vaccines developed by Johnson & Johnson and AstraZeneca for administration to people over the age of 50.** Administration of J&J's vaccine was previously paused, while AstraZeneca's vaccine was only approved for use in people over the age of 60 – both jabs have been the subject of safety reviews into potential links to rare blood clot events. Ireland plans to vaccinate 80% of its adult population by the end of June.

Latest News (cont.)

- **The European Commission has initiated legal action against AstraZeneca for breaching its Covid-19 vaccine supply contract** and for lacking a clear-cut strategy for ensuring timely supply of doses. AstraZeneca promised to supply 180 million vaccine doses to the European Union during the second quarter of 2021 under the contract, out of a total 300 million doses were planned to be delivered between December and June. The company, however, announced in March that it would deliver only 100 million doses by the end of June.
- **French pharma company Sanofi has signed an agreement with Moderna to manufacture around 200 million doses of latter's Covid-19 vaccine** in the US from September. The vaccine doses will be manufactured at Sanofi's facility in Ridgefield, New Jersey. **Other vaccine manufacturing commitments made by Sanofi in 2021 include supporting the production of 125 million doses of the Pfizer/BioNTech vaccine for the EU, and manufacturing 12 million doses a month of the Johnson & Johnson vaccine at one of its French plants.**
- **Johnson & Johnson will restart the use of its single-shot Covid-19 vaccine in adults aged 18 years and older in the US, following a safety review by the US Centres for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA).** The US CDC Advisory Committee on Immunisation Practices (ACIP) re-evaluated the data on possible links between the vaccine and blood clots in individuals with low platelet counts, a week or two after being vaccinated.
- **On the basis of additional evidence, the World Health Organization's (WHO) Strategic Advisory Group of Experts (SAGE) has updated its interim guidance on the use of the AstraZeneca Covid-19 vaccine to fight the SARS-CoV-2 virus.** WHO, on the advice of SAGE, maintains that the known and potential benefits of the vaccine outweigh its risks. SAGE also outlined the intended use, administration, the need for booster doses, interchangeability with AstraZeneca vaccines produced by other manufacturers, and other specifics.
- According to a European Union (EU) official, **the European Commission is seeking EU member states' approval to initiate talks with Pfizer and BioNTech to purchase up to 1.8 billion doses of their Covid-19 vaccine, to be supplied in 2022 and 2023.** Although there is no definite approval as yet, sources have stated that the EU has already decided to approach the companies. It is also being presumed that half of the purchase order will be optional.
- **Pfizer and BioNTech will supply an additional 100 million doses of their Covid-19 vaccine, Comirnaty, to the European Union (EU) member states in 2021.** This is a result of the European Commission's decision to activate its option of purchasing an additional 100 million doses under its expanded advanced purchase agreement signed on 17 February 2021. This brings the total number of Comirnaty doses to be supplied to the EU to 600 million.

Latest News (cont.)

- **Pfizer and BioNTech will supply an additional 100 million doses of their Covid-19 vaccine, Comirnaty, to the European Union (EU) member states in 2021.** This is a result of the European Commission's decision to activate its option of purchasing an additional 100 million doses under its expanded advanced purchase agreement signed on 17 February 2021. This brings the total number of Comirnaty doses to be supplied to the EU to 600 million.
- **Biotechnology company Adagio Therapeutics has completed a \$336m Series C financing led by RA Capital Management. The funding is expected to support the advancement of ADG20, an antibody therapy for the treatment and prevention of Covid-19 and other future coronaviruses.** Pre-clinical data suggests the drug candidate achieves complete neutralisation of the SARS-CoV-2 virus and all known variants of concern. Adagio has begun a Phase I study of ADG20 in healthy volunteers, and a pivotal Phase I/II/III trial in high-risk individuals with mild or moderate Covid-19.
- **The Russian Direct Investment Fund (RDIF) and Hualan Biological Bacterin, a subsidiary of Hualan Biological Engineering, are collaborating on the production of more than 100 million doses of the Sputnik V per year in China, enough to vaccinate 50 million people.** Sputnik V has been approved across 60 countries globally, and has an efficacy rate of 91.6%.
- **Chinese pharma company Sinovac's Covid-19 vaccine CoronaVac has demonstrated 67% efficacy against symptomatic Covid-19 infections in a large real-world study in Chile.** The vaccine showed effectiveness against admission to ICU, hospitalisation and death, with respective efficacy rates of 89%, 85% and 80%, according to a Chilean government report.
- **A US Centers for Disease Prevention (CDC) advisory panel is scheduled to meet on Friday 23 April to decide whether to continue the pause of J&J's Covid-19 vaccine rollout.** The panel will examine additional cases that have come up and assess risks arising from its administration. The use of the J&J vaccine was suspended following six cases of unusual brain blood clots reported in women out of approximately seven million people who received the one-shot vaccine in the US.
- **Eli Lilly has requested that the US Food and Drug Administration (FDA) revoke the emergency use authorisation (EUA) for bamlanivimab (LY-CoV555) 700mg as a Covid-19 monotherapy.**
- **Denmark has become the first country in the world to discontinue the use of AstraZeneca's Covid-19 vaccine altogether,** following a potential link between the vaccine and an unusual but serious form of blood clots.
- **The US Food and Drug Administration (FDA) and the Centers for Disease Control (CDC) have released a joint statement recommending a pause in the use of the Johnson & Johnson Covid-19 vaccine.** Both agencies are currently reviewing data involving six US cases of unusual blood clots among the 6.8 million shots administered in the country.
- **Pfizer and BioNTech are seeking US Food and Drug Administration (FDA) approval to expand the emergency use authorisation (EUA) for their Covid-19 vaccine to children aged between 12 and 15 years.** The request comes immediately after Pfizer released data showing its vaccine to be 100% effective and well tolerated by the younger group. The findings also indicated that children had stronger immune responses than adults one month after the second dose.

Latest News (cont.)

- **Pfizer and BioNTech are seeking US Food and Drug Administration (FDA) approval to expand the emergency use authorisation (EUA) for their Covid-19 vaccine to children aged between 12 and 15 years.** The request comes immediately after Pfizer released data showing its vaccine to be 100% effective and well tolerated by the younger group. The findings also indicated that children had stronger immune responses than adults one month after the second dose.
- **After AstraZeneca's Covid-19 vaccine made headlines due to a potential link to rare blood clots, European drug safety regulators are now investigating the possible clotting risks from Johnson & Johnson's single-dose Covid-19 vaccine.** According to the European Medicines Agency's Pharmacovigilance Risk Assessment Committee, four cases of unusual blood clots with low blood platelets following Covid-19 Vaccine Janssen have been reported in the US rollout. The vaccine is currently in use only in the US, under an emergency use authorisation.
- **According to real-world data from Israel, the South Africa coronavirus variant may evade the protection offered by the Pfizer-BioNTech Covid-19 vaccine.** The study compared nearly 400 individuals infected with the SARS-CoV-2 virus, 14 days or more after receiving one or two doses of the vaccine, against the same number of unvaccinated patients with the disease. The study revealed that the B.1.351 variant made up 1% of all the Covid-19 cases across all the people studied, while those who had received two doses of the vaccine, the variant's prevalence rate was eight times higher than those unvaccinated. The study has not been peer-reviewed.
- **North Carolina stopped administering Johnson & Johnson doses at a mass vaccination site in Raleigh as well as clinics in Hillsborough and Chapel Hill after at least 26 people experienced adverse reactions,** AP reports, citing local health officials. Reactions included fainting and at least four people were taken to hospitals for further examination, the report said. The CDC said that reactions like fainting are not uncommon after someone is vaccinated. All those taken to hospitals are expected to recover, local health officials said, according to the report
- **The US stockpile of the controversial AstraZeneca coronavirus vaccine has grown to more than 20 million doses,** according to people familiar with the matter, even as the shot looks increasingly unlikely to factor into President Joe Biden's domestic vaccination campaign. AstraZeneca has yet to request Food and Drug Administration authorization for the two-dose vaccine, and the company faces safety questions abroad and scrutiny from US regulators who've already rebuked it for missteps during clinical trials and partial data releases.
- **The EU has exported more than 80 million vaccine doses since the beginning of February,** a document with updated data circulated among the bloc's governments and seen by Bloomberg shows. **A total of 112 million doses had been delivered to EU member states as of April 5,** according to the memo circulated to diplomats in Brussels. Japan has overtaken the UK as the main export destination, getting 17.7 million shots produced in the EU, versus 13.3 million for shipment to Britain. European governments have been under pressure to curb exports as their rollout lags behind vaccination rates in the US and the UK. However, out of the 534 export requests submitted by drugmakers so far, only one has been refused and two are pending, according to the memo dated 8 April.

Sources

- https://en.wikipedia.org/wiki/Timeline_of_the_2019%E2%80%9320_Wuhan_coronavirus_outbreak
- <https://www.seattletimes.com/seattle-news/health/coronavirus-timeline-how-the-outbreak-unfolded/>
- <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>
- <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>
- <https://www.pharmaceutical-technology.com/news/coronavirus-a-timeline-of-how-the-deadly-outbreak-evolved/>
- <https://www.cphi-online.com/updated-covid19-pharma-tracker-news082415.html>
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