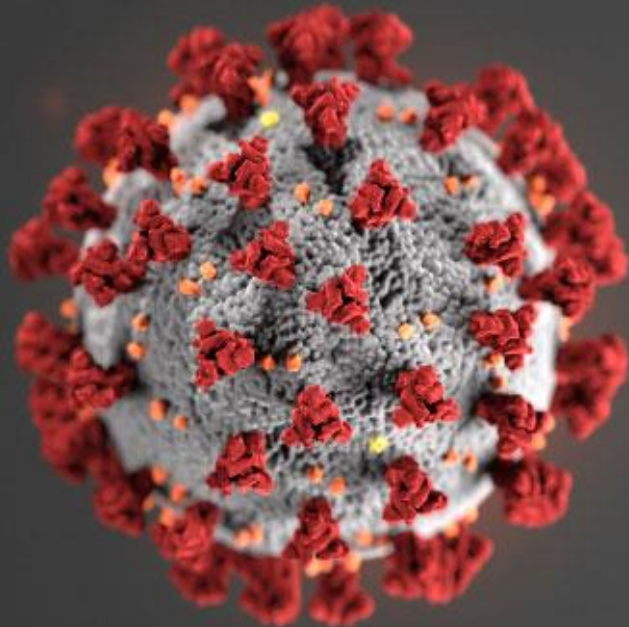


# **SARS-Cov-2 Report**

**José Luis Pires**

31 Julho 2020



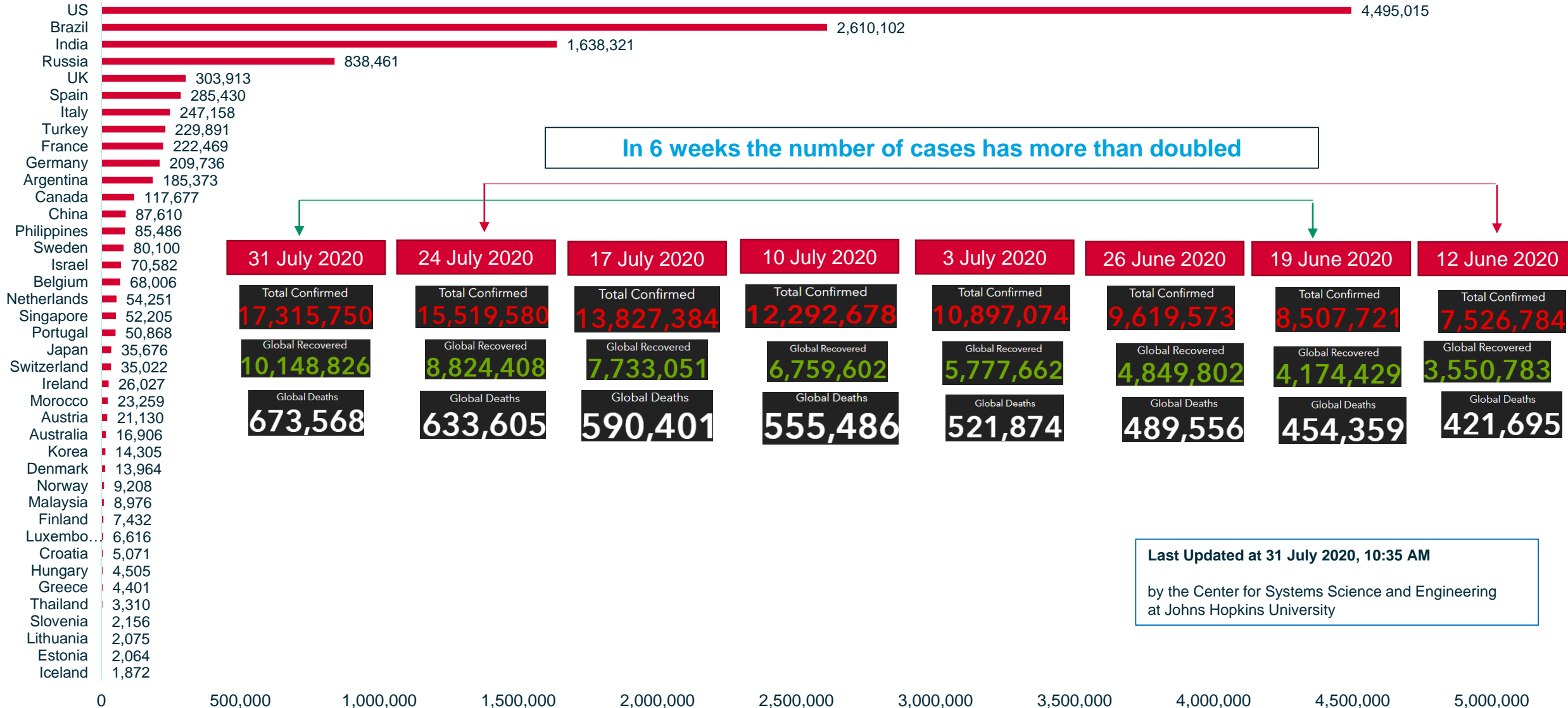
# Contents

## SARS-Cov-2

- Confirmed cases by Country
- Deaths by Country
- Total confirmed Covid-19 cases and deaths per million people
- Daily new confirmed Covid-19 cases and deaths per million people
- New cases vs 7-day average
- **Portugal**
  - Cases, Deaths and Projections
- **Ireland**
  - Cases, Deaths and Projections
- **New Jersey/US**
  - Cases, Deaths and Projections
- Recent News

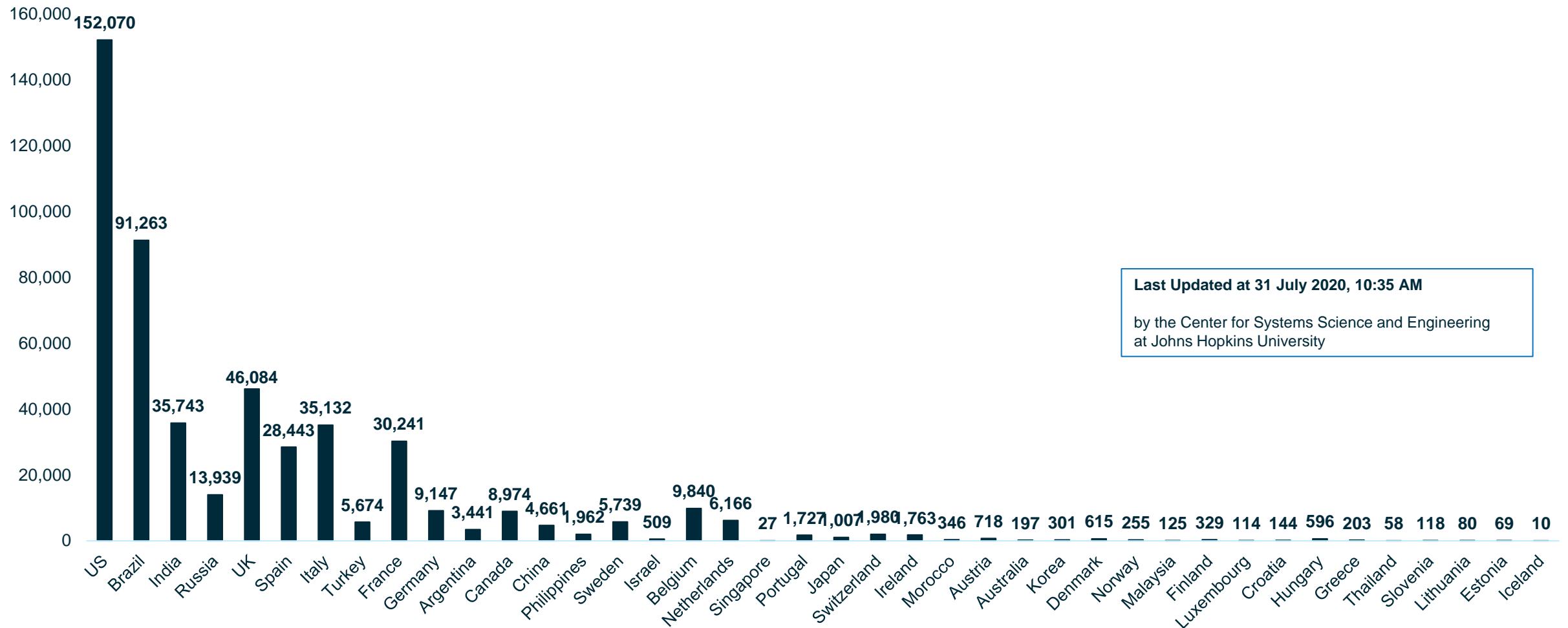
# Coronavirus (SARS-CoV-2 / Covid-19) – Confirmed cases by country

Note: Selected Countries, sorted by # of cases



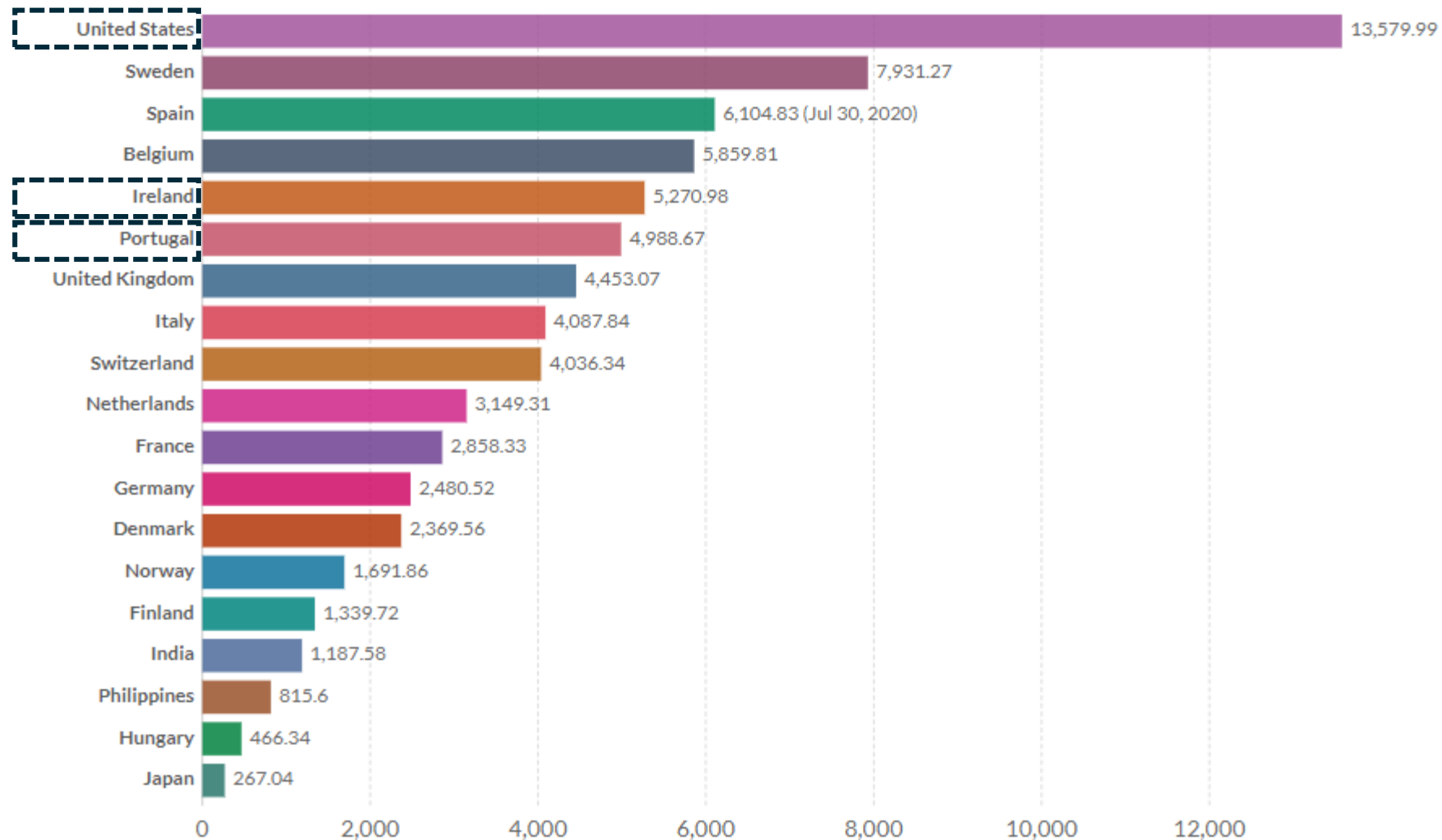
# Coronavirus (SARS-CoV-2 / Covid-19) – Deaths by Country

Note: Selected Countries, sorted by # of cases



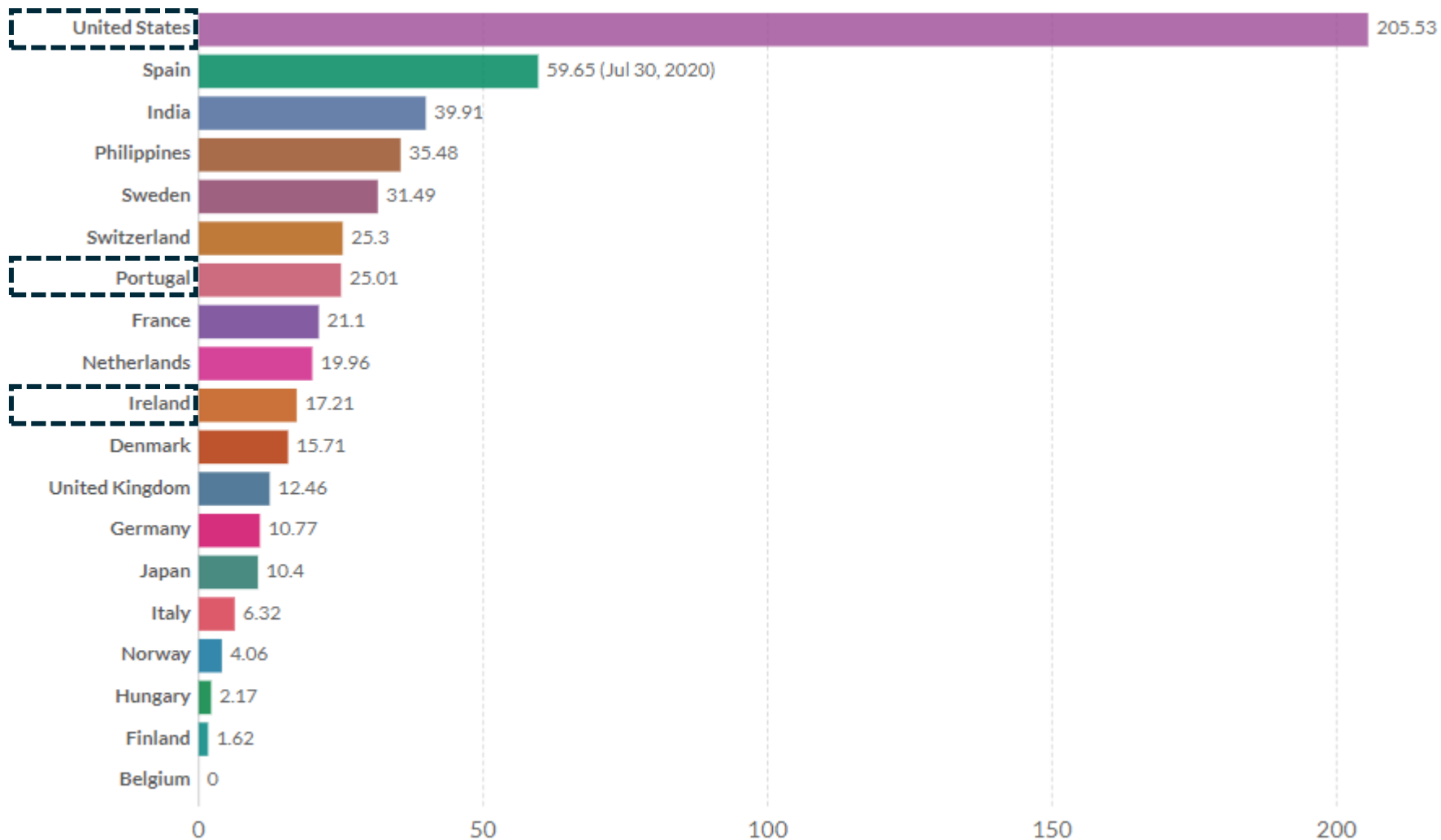
Source: <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

# Total confirmed Covid-19 cases per million people



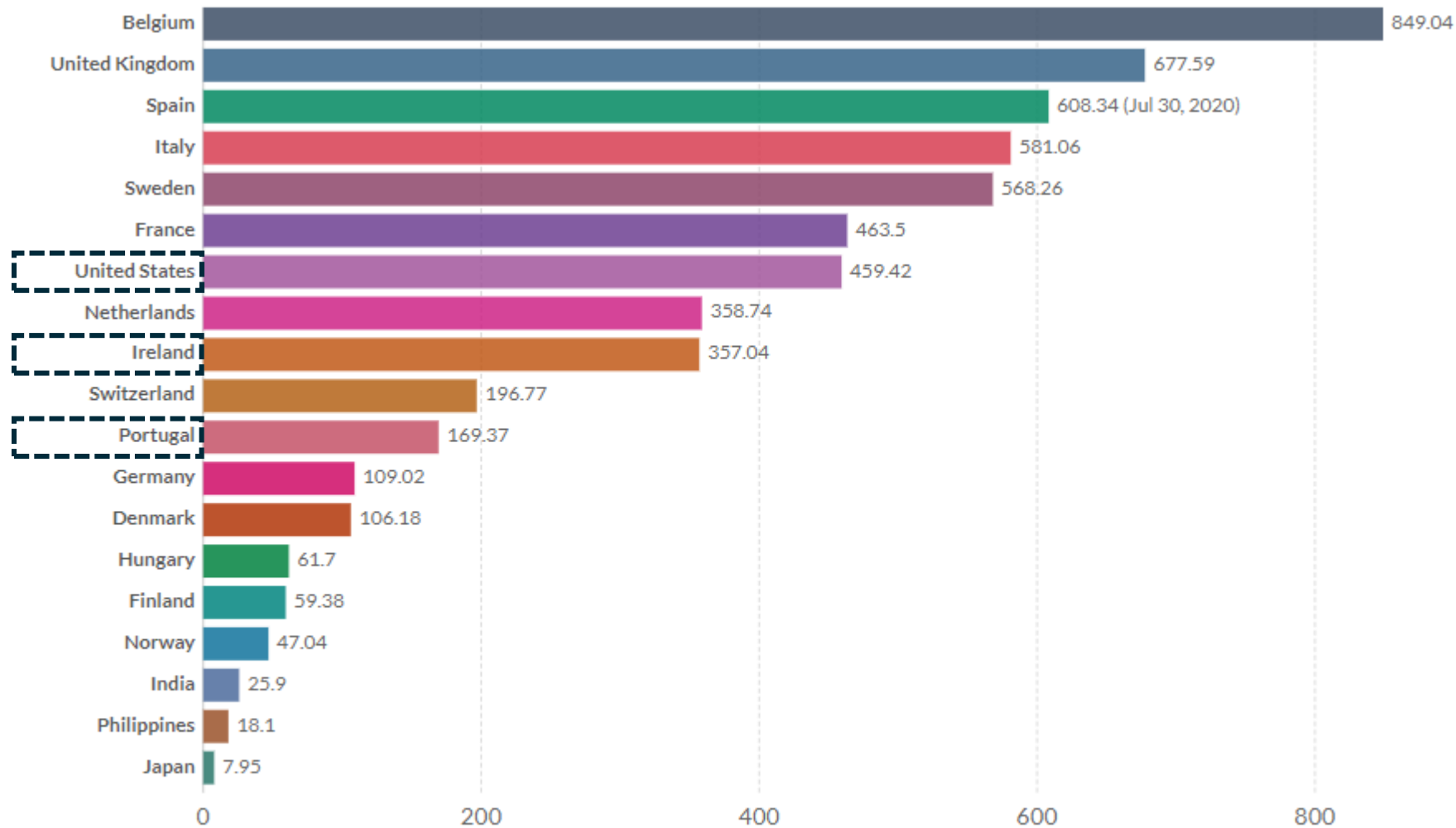
Source: European CDC - Situation Update Worldwide - Last updated 31 July, 10:02 (London time)

# Daily new confirmed Covid-19 cases per million people



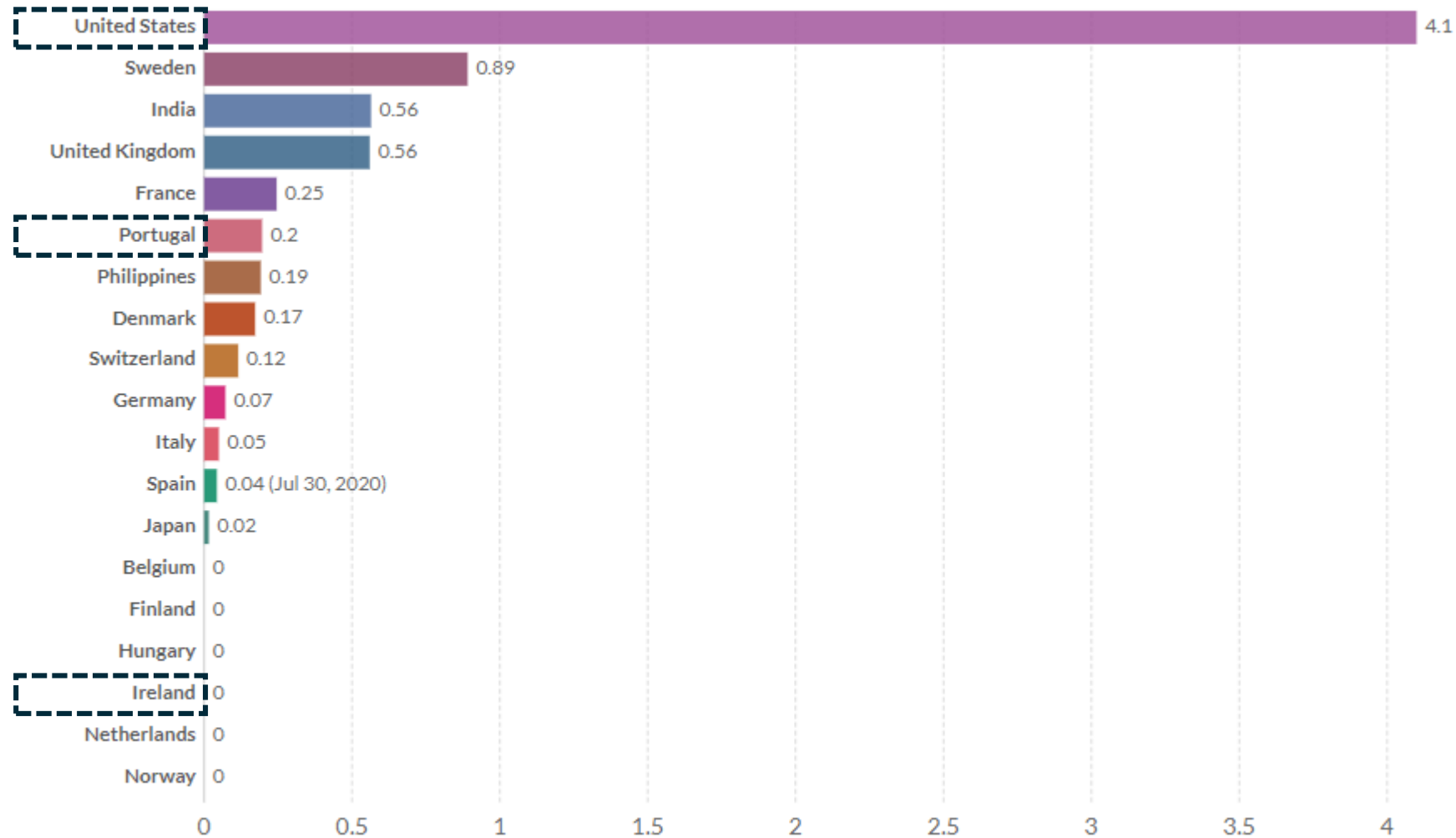
Source: European CDC – Situation Update Worldwide – Last updated 31 July, 10:02 (London time)

# Total confirmed Covid-19 deaths per million people



Source: European CDC – Situation Update Worldwide – Last updated 31 July, 10:02 (London time)

# Daily new confirmed Covid-19 deaths per million people



Source: European CDC - Situation Update Worldwide - Last updated 31 July, 10:02 (London time)

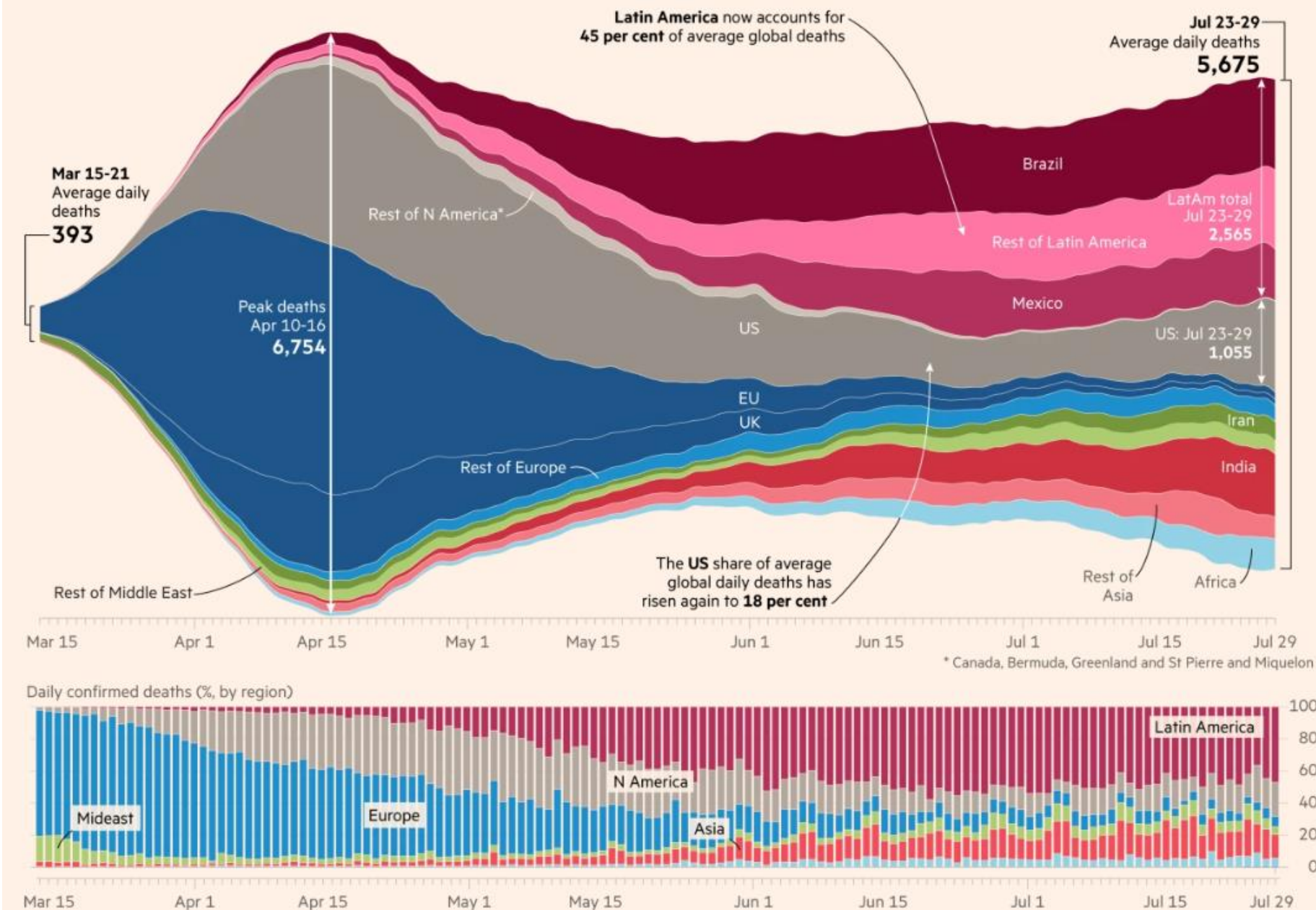


Country/City	Total cases	Total deaths	New daily cases: reported on 30 July	New daily cases: 7-day avg	New cases vs 7-day average 30 July 20202	New cases vs 7-day average 23 July 202022	New cases vs 7-day average 16 July 202022	New cases vs 7-day average 9 July 202022	New cases vs 7-day average 2 July 202022	New cases vs 7-day average 25 June 202022	New cases vs 7-day average 18 June 202022	New cases vs 7-day average 11 June 202022	New cases vs 7-day average 4 June 202022	New cases vs 7-day average 28 May 2020	New cases vs 7-day average 21 May 2020
Loures	2,284		0	12	Down	Down	Down	Down	Down	Down	Up	Down	Up	Up	Up
Lisbon	4,408		0	24	Down	Down	Down	Down	Down	Down	Up	Up	Up	Up	Down
Lisbon and Tagus V.	25,939	596	176	155	Up	Down	Down	Up	Up	Down	Up	Down	Up	Up	Up
LTV vs PT			69%	72%	Down	Down	Up	Down	Up	Down	Down	Up	Up	Up	Up
New Jersey	180,970		204	440	Down	Up	Down	Down	Up	Up	Up	Up	Down	Up	Down
Cork	1,563		0	0	Down	Down	Down	Up	Down	Down	Down	Down	Down	Down	Down
Argentina	185,373	3,441	5,939	5,320	Up	Up	Up	Up	Down	Up	Up	Up	Up	Down	Up
Australia	16,906	197	278	384	Down	Up	Up	Down	Up	Up	Up	Down	Down	Down	Down
Austria	21,130	718	164	115	Up	Up	Down	Up	Down	Down	Down	Up	Up	Down	Down
Belgium	68,006	9,840	-	157	Down	Up	Up	Up	Up	Down	Down	Up	Down	Down	Down
Brazil	2,610,102	91,263	40,816	46,220	Down	Up	Up	Up	Down	Up	Up	Up	Up	Down	Up
Canada	117,677	8,974	397	471	Down	Up	Up	Down	Down	Down	Down	Down	Down	Down	Down
China	87,610	4,661	223	188	Up	Up	Down	Up	Up	Down	Up	Up	Down	Down	Down
Croatia	5,071	144	-	56	Down	Up	Up	Down	Down	Up	Up	Up	Up	Down	Down
Denmark	13,964	615	57	41	Up	Up	Up	Down	Up	Up	Up	Down	Down	Up	Up
Estonia	2,064	69	4	2	Up	Up	Down	Up	Down	Up	Down	Up	Up	Down	Down
Finland	7,432	329	10	7	Up	Up	Down	Down	Up	Up	Down	Down	Down	Up	Down
France	222,469	30,241	1,307	857	Up	Up	Up	Up	Up	Down	Down	Down	Down	Down	Down
Germany	209,736	9,147	-	508	Down	Up	Up	Up	Down	Up	Up	Up	Down	Down	Up
Greece	4,401	203	57	37	Up	Up	Down	Up	Up	Down	Up	Down	Up	Up	Down
Hungary	4,505	596	19	15	Up	Down	Down	Down	Down	Up	Down	Down	Down	Down	Up
Iceland	1,872	10	4	3	Up	Down	Up	Up	Up	Up	Up	Up	Up	Up	Up
India	1,638,321	35,743	52,123	49,308	Up	Up	Up	Up	Up	Up	Up	Up	Up	Down	Up
Ireland	26,027	1,763	13	18	Down	Down	Down	Down	Down	Down	Down	Down	Up	Down	Down
Italy	247,158	35,132	288	249	Up	Up	Down	Down	Up	Up	Up	Down	Down	Up	Down
Japan	35,676	1,007	1,148	860	Up	Up	Up	Down	Up	Up	Down	Up	Down	Down	Down
Korea	14,305	301	18	47	Down	Up	Up	Down	Up	Down	Up	Up	Down	Up	Down
Malaysia	8,976	125	13	18	Down	Up	Down	Down	Down	Down	Down	Down	Up	Down	Down
Netherlands	54,251	6,166	247	197	Up	Up	Up	Up	Down	Down	Down	Down	Down	Up	Up
Norway	9,208	255	18	14	Up	Up	Up	Up	Down	Up	Down	Down	Down	Up	Down
Philippines	85,486	1,962	1,813	1888	Down	Down	Up	Up	Up	Down	Up	Up	Up	Up	Up
Portugal	50,868	1,727	203	213	Down	Up	Up	Up	Up	Up	Down	Down	Up	Up	Up
Russia	838,461	13,939	5,509	5,637	Down	Down	Down	Down	Up	Down	Up	Up	Down	Down	Down
Singapore	52,205	27	334	398	Down	Up	Up	Down	Up	Down	Up	Up	Up	Up	Down
Spain	285,430	28,443	2,031	2,024	Up	Down	Up	Down	Down	Down	Down	Up	Down	Down	Down
Sweden	80,100	5,739	288	183	Up	Up	Up	Down	Up	Up	Down	Up	Up	Up	Up
Switzerland	35,022	1,980	192	131	Up	Up	Up	Up	Down	Up	Down	Up	Up	Down	Up
Thailand	3,310	58	6	5	Up	Up	Down	Up	Up	Down	Up	Down	Up	Up	Up
Turkey	229,891	5,674	942	932	Up	Down	Down	Down	Down	Up	Up	Down	Down	Up	Down
UK	303,913	46,084	763	725	Up	Down	Down	Up	Down	Down	Down	Down	Up	Down	Down
US	4,495,015	152,070	59,629	61,496	Down	Up	Down	Down	Up	Up	Up	Down	Up	Up	Up

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

Surge in Latin America means global daily death toll on the rise once again

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

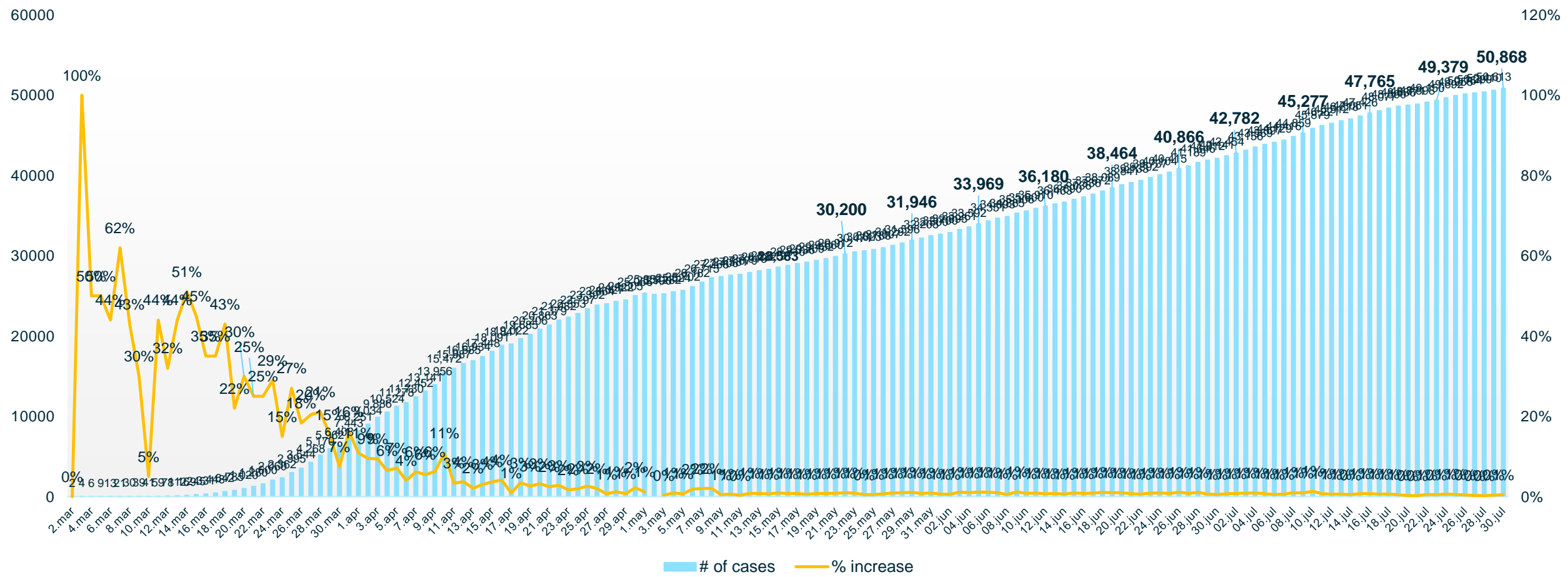


FT graphic: Steven Bernard / @sdbarnard  
Source: FT analysis of ECDC and Covid Tracking Project data  
© FT

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

Portugal

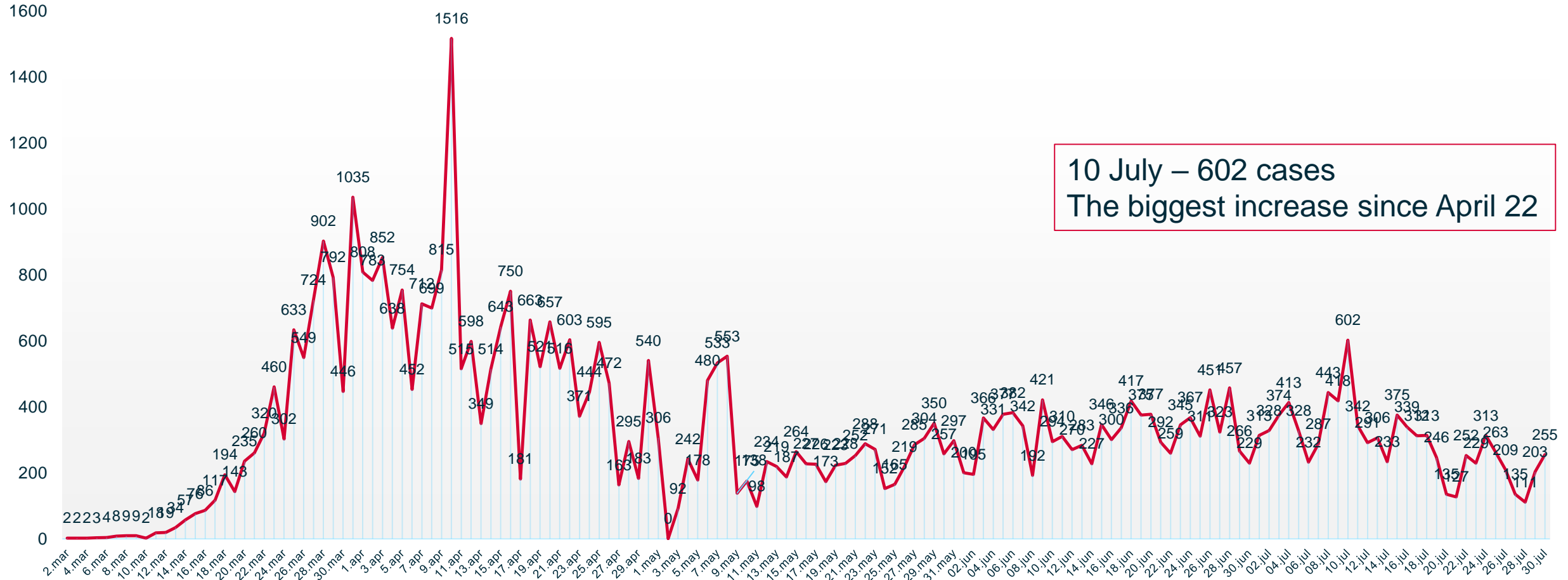
# Coronavirus (SARS-CoV-2 / COVID 19) – Portugal - Total cases by day



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



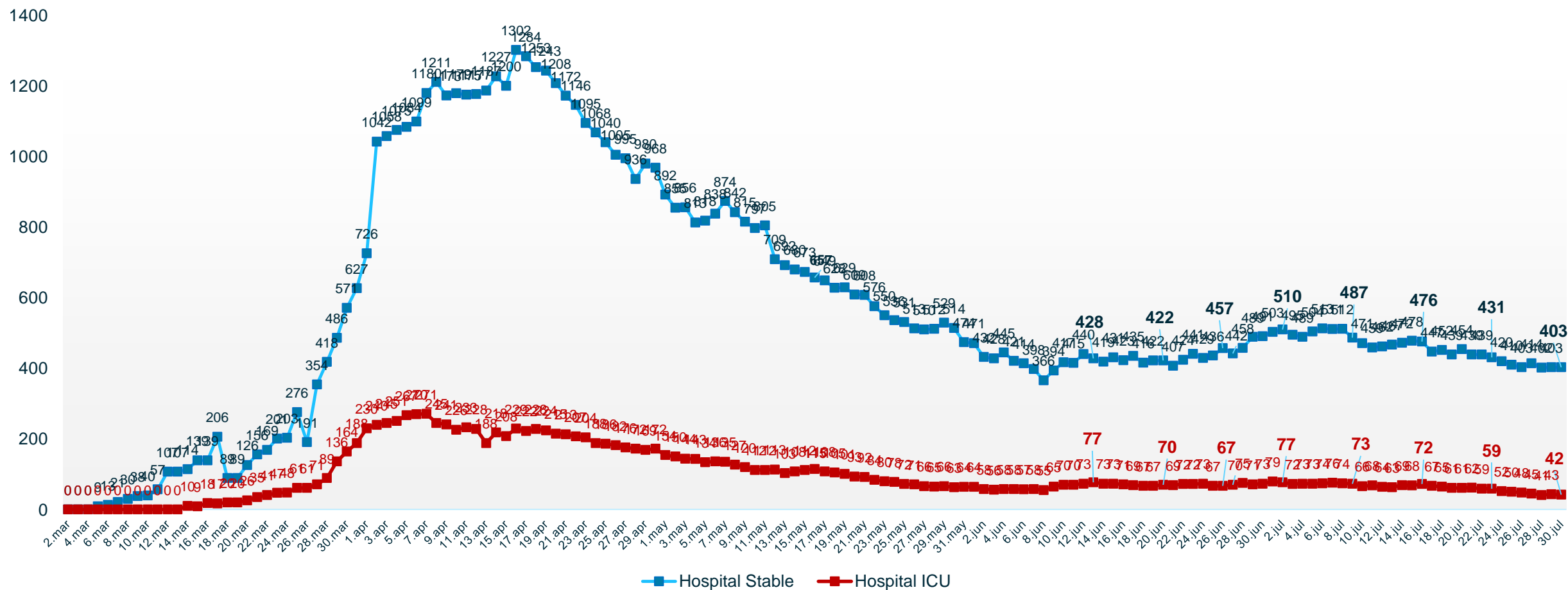
# Coronavirus (SARS-CoV-2 / COVID 19) – Portugal - Confirmed cases by day



10 July – 602 cases  
The biggest increase since April 22

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

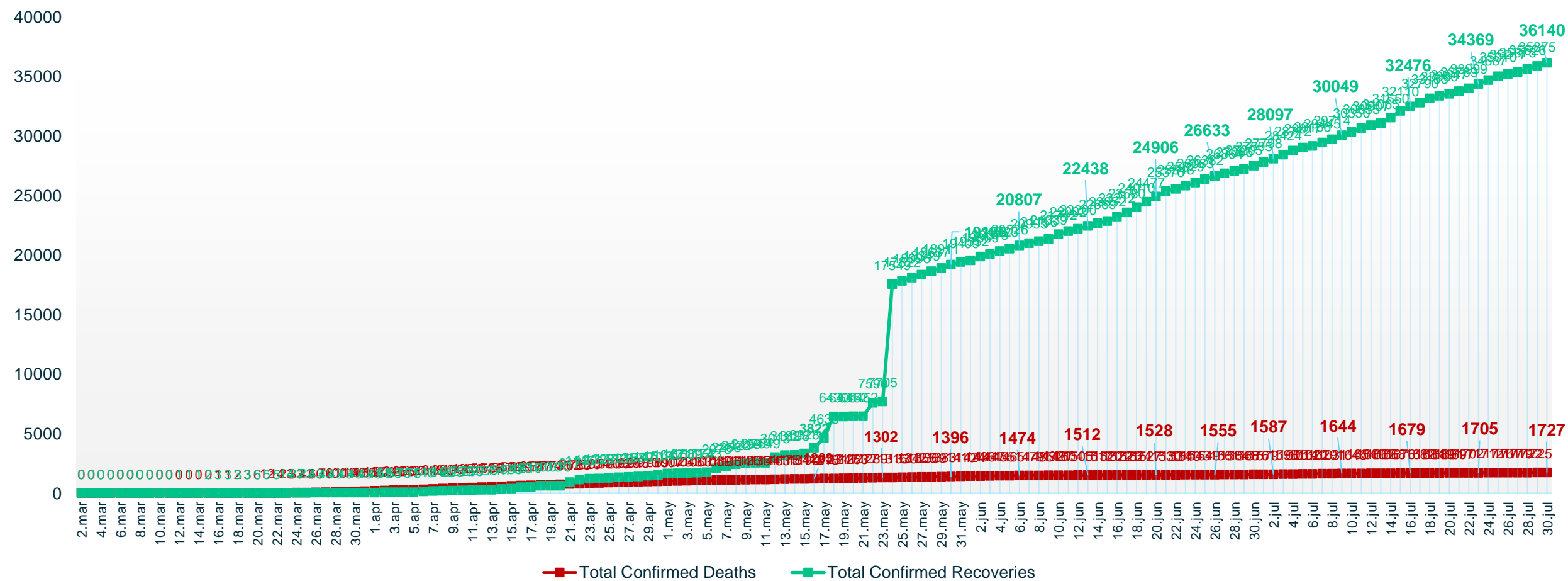
# Coronavirus (SARS-CoV-2 / COVID 19) – Portugal – Hospital: Stable vs ICU



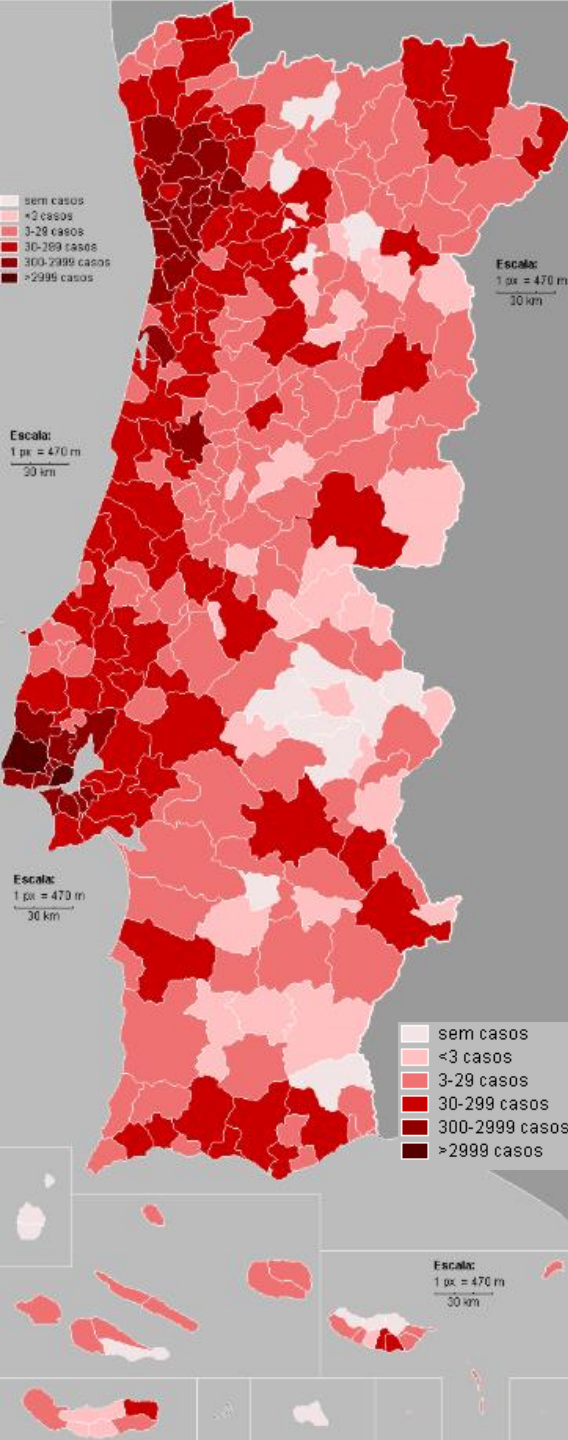
Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>



# Coronavirus (SARS-CoV-2 / COVID 19) – Portugal – Deaths vs Recoveries



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



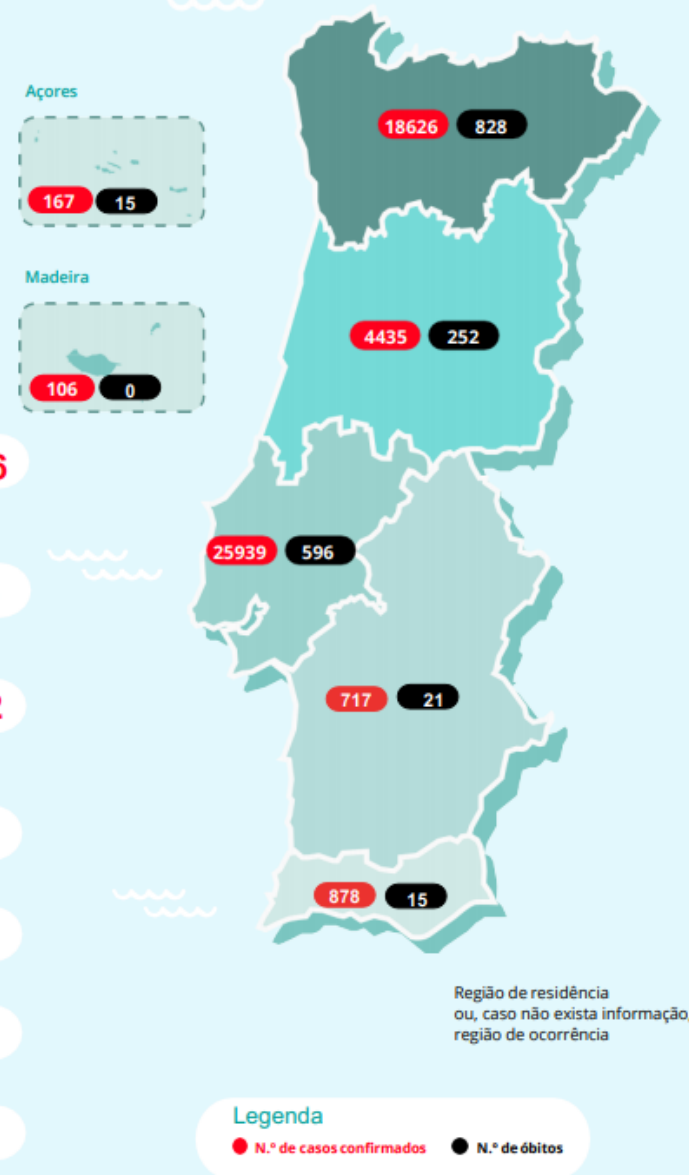
# Coronavirus (SARS-CoV-2 / COVID 19)

Portugal

30 July 2020

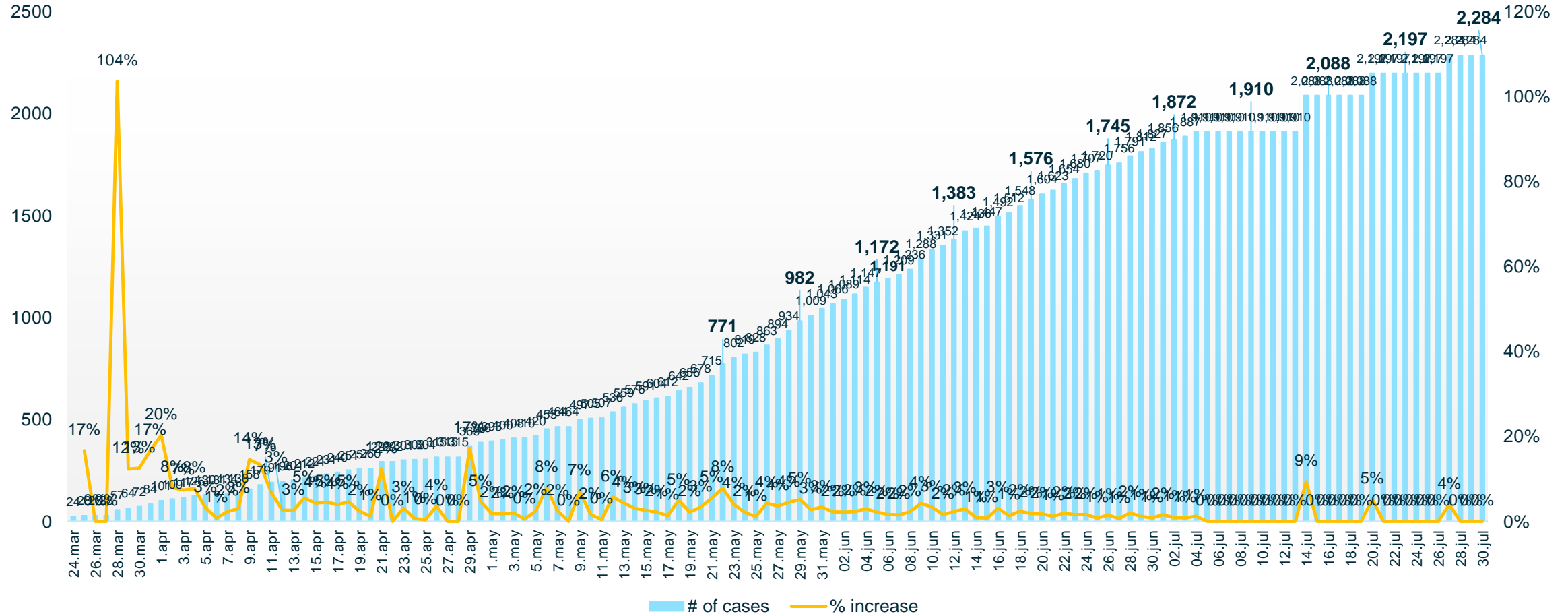
## SITUAÇÃO EPIDEMIOLÓGICA EM PORTUGAL

Total de casos suspeitos (desde 1 de janeiro 2020)	440046
Total de casos confirmados	50868
Total de casos não confirmados	387562
Aguardam resultado laboratorial	1616
Casos recuperados	36140
Óbitos	1727
Contactos em Vigilância pelas Autoridades de Saúde	35741



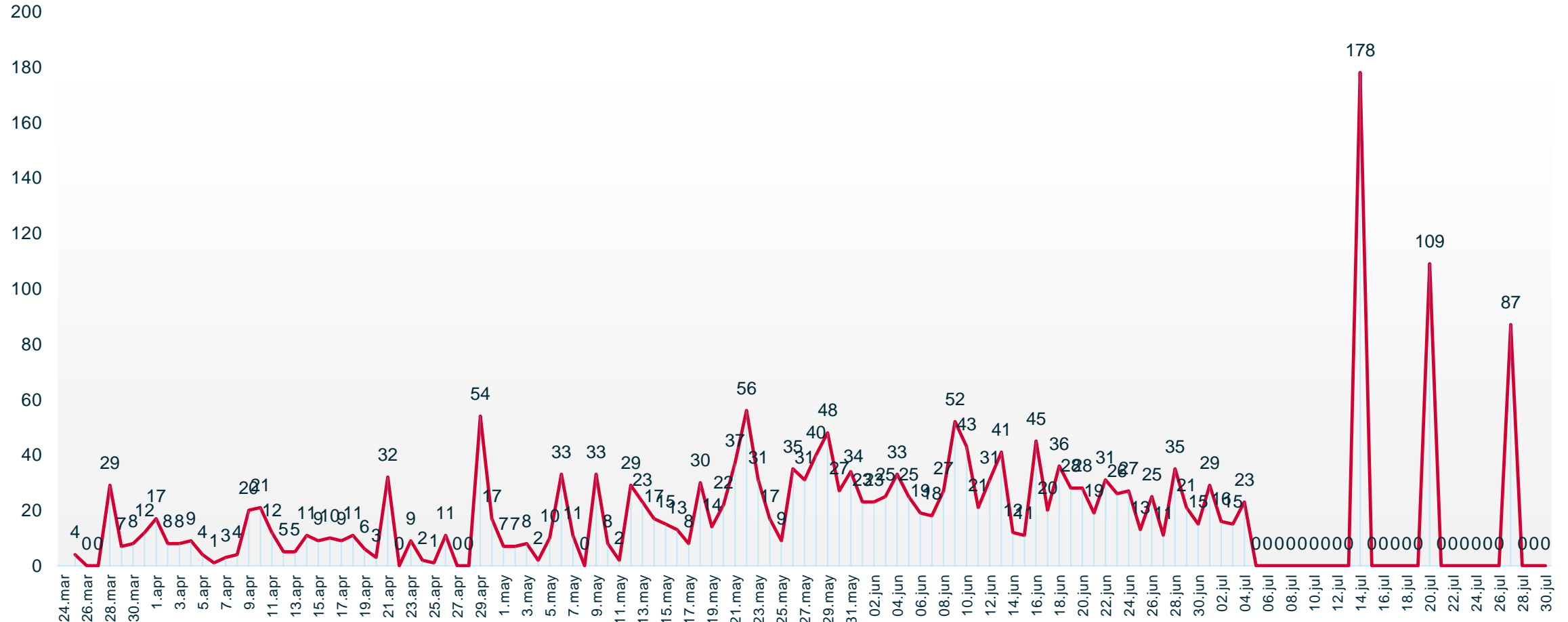


# Coronavirus (SARS-CoV-2 / COVID 19) – Loures - Total cases by day



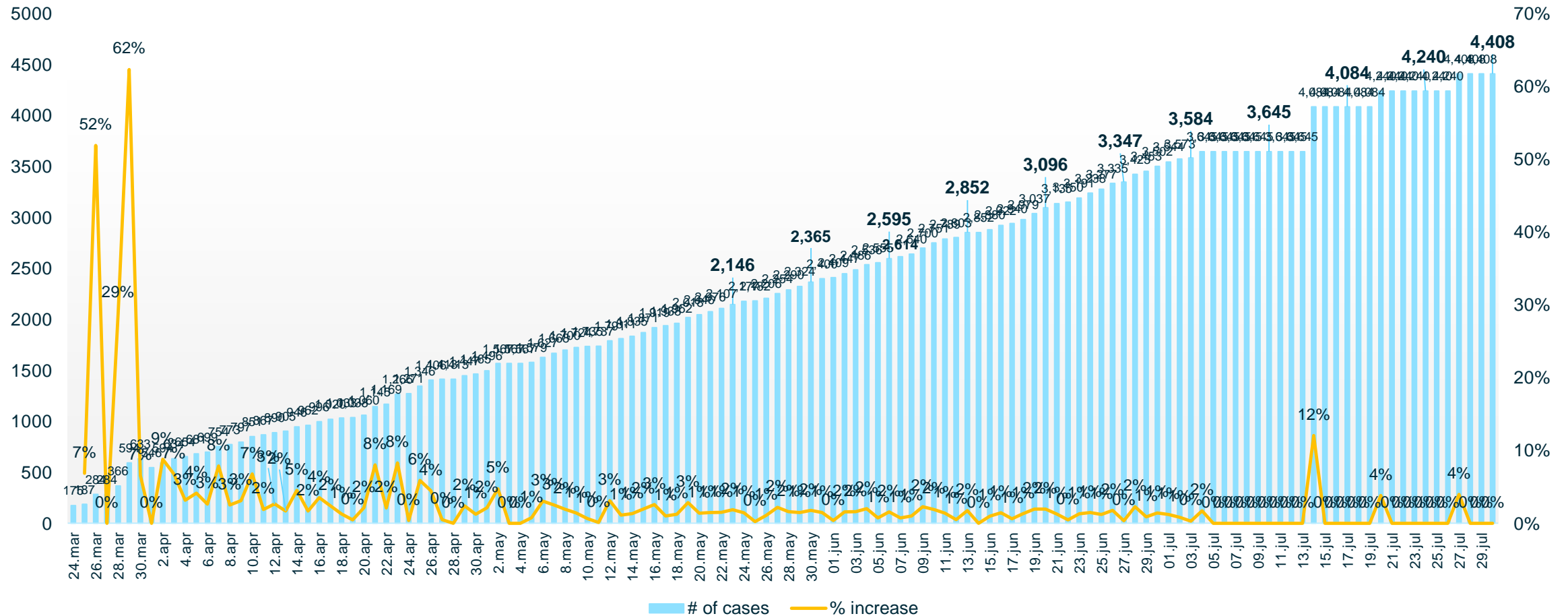
Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

# Coronavirus (SARS-CoV-2 / COVID 19) – Loures - Confirmed cases by day



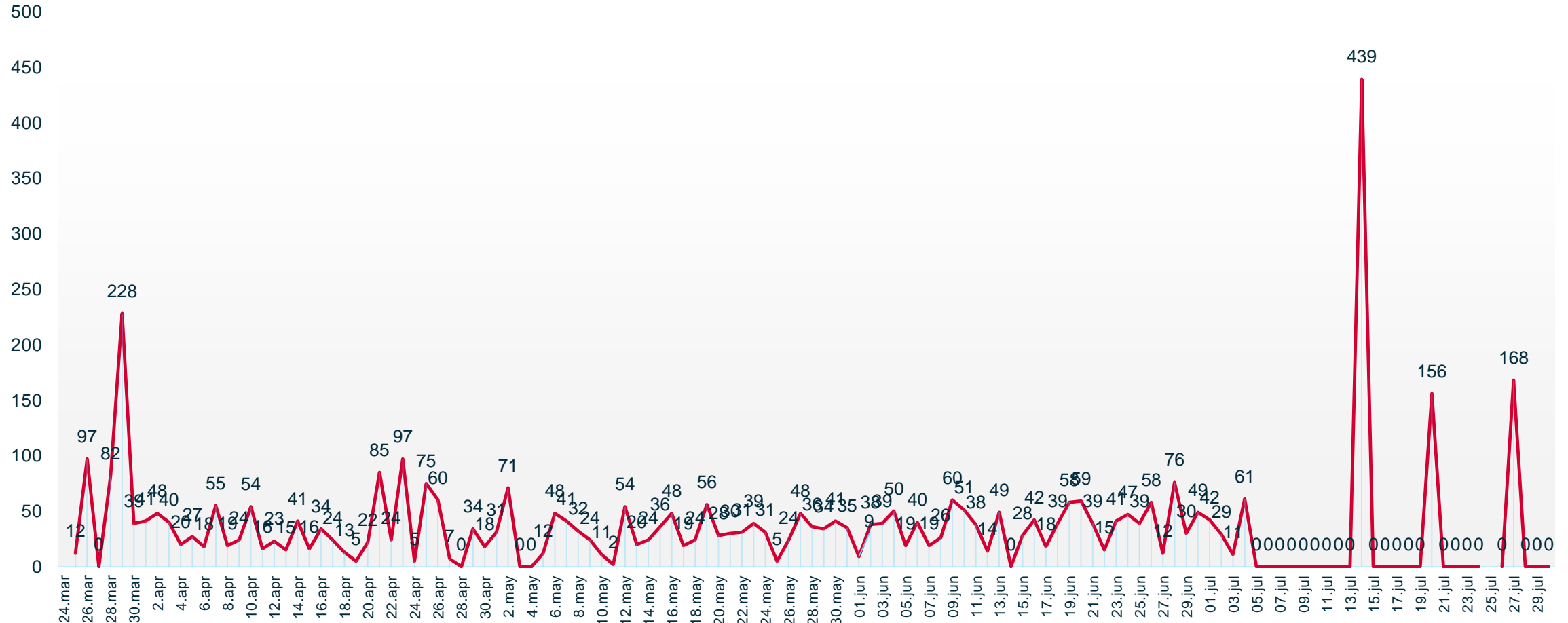
Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

# Coronavirus (SARS-CoV-2 / COVID 19) – **Lisbon** - Total cases by day



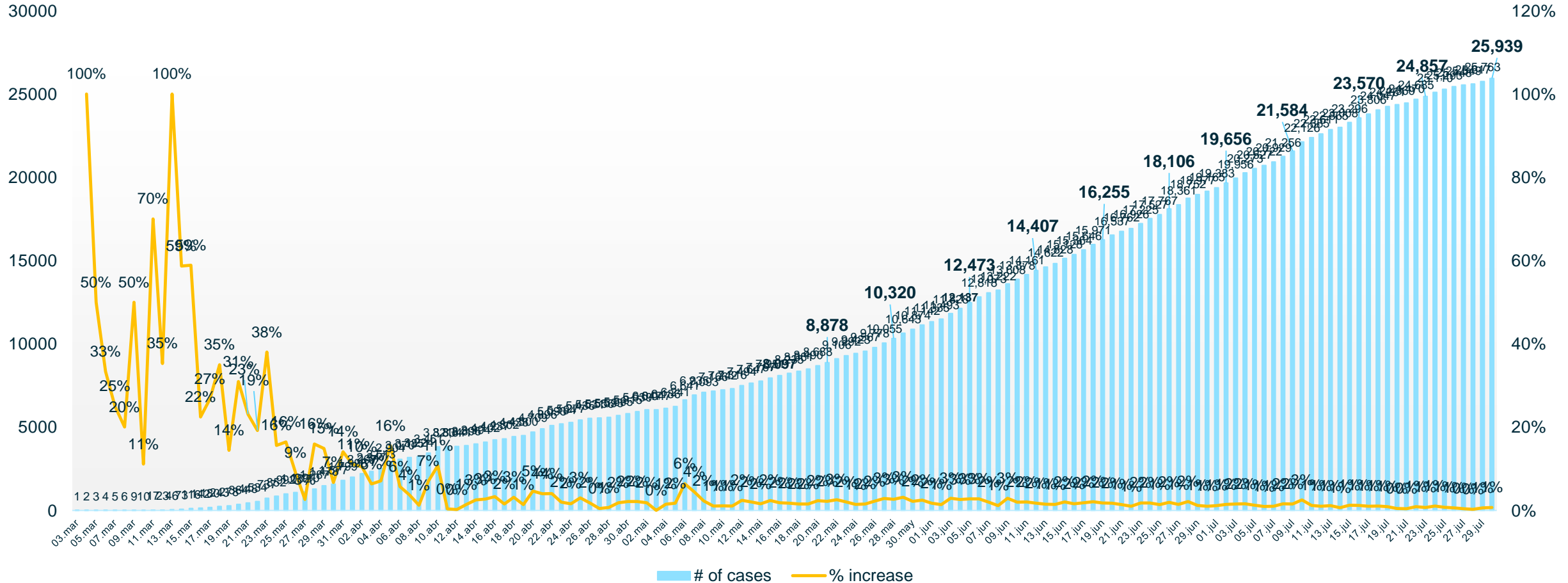
Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

# Coronavirus (SARS-CoV-2 / COVID 19) – **Lisbon** - Confirmed cases by day



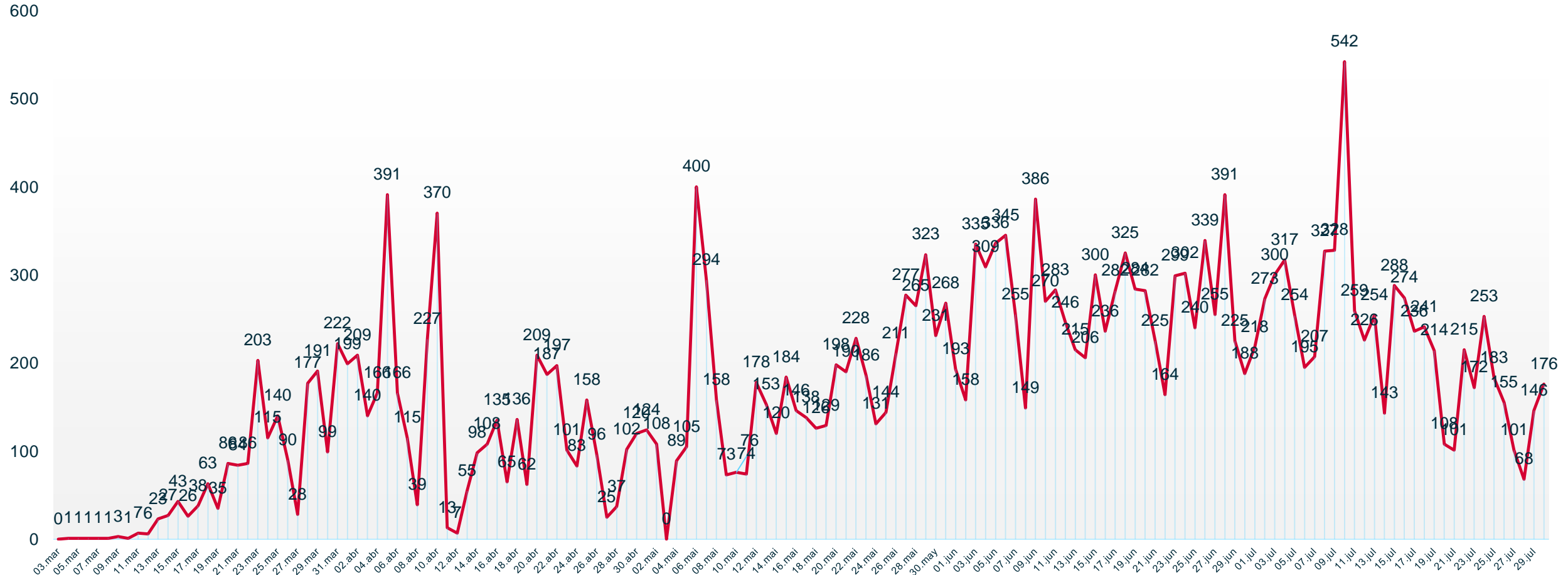
Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

# Coronavirus (SARS-CoV-2 / COVID 19) – Lisbon and Tagus Valley - Total cases by day



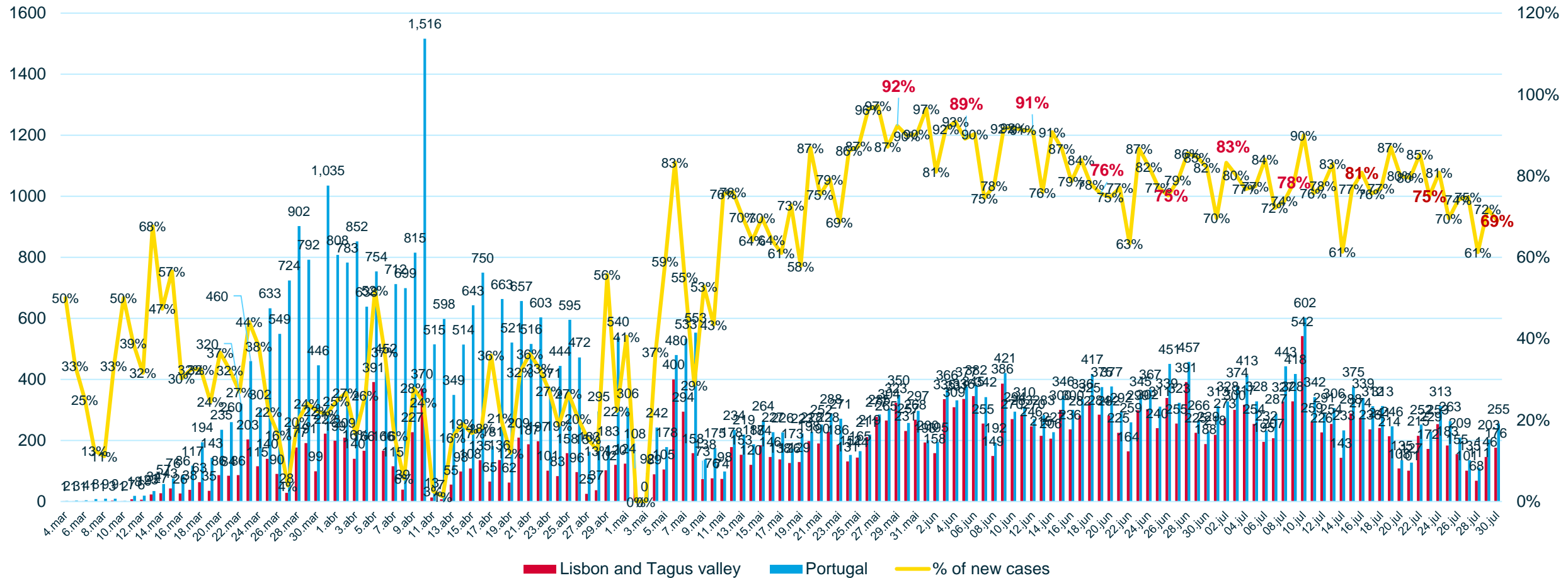
Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

# Coronavirus (SARS-CoV-2 / COVID 19) – Lisbon and Tagus Valley - Confirmed cases by day



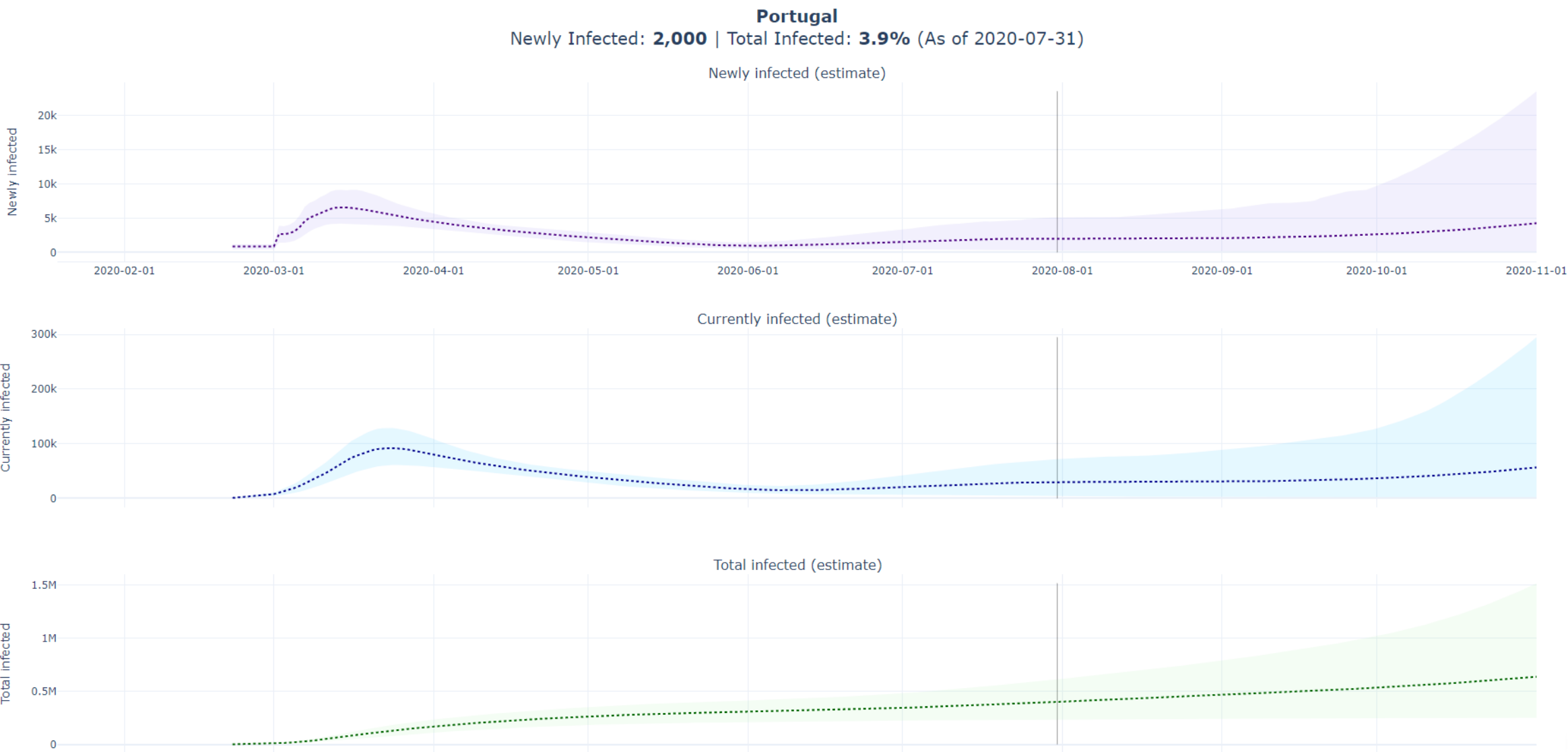
Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

# Coronavirus (SARS-CoV-2 / COVID 19) – % of new cases in Lisbon and Tagus valley



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

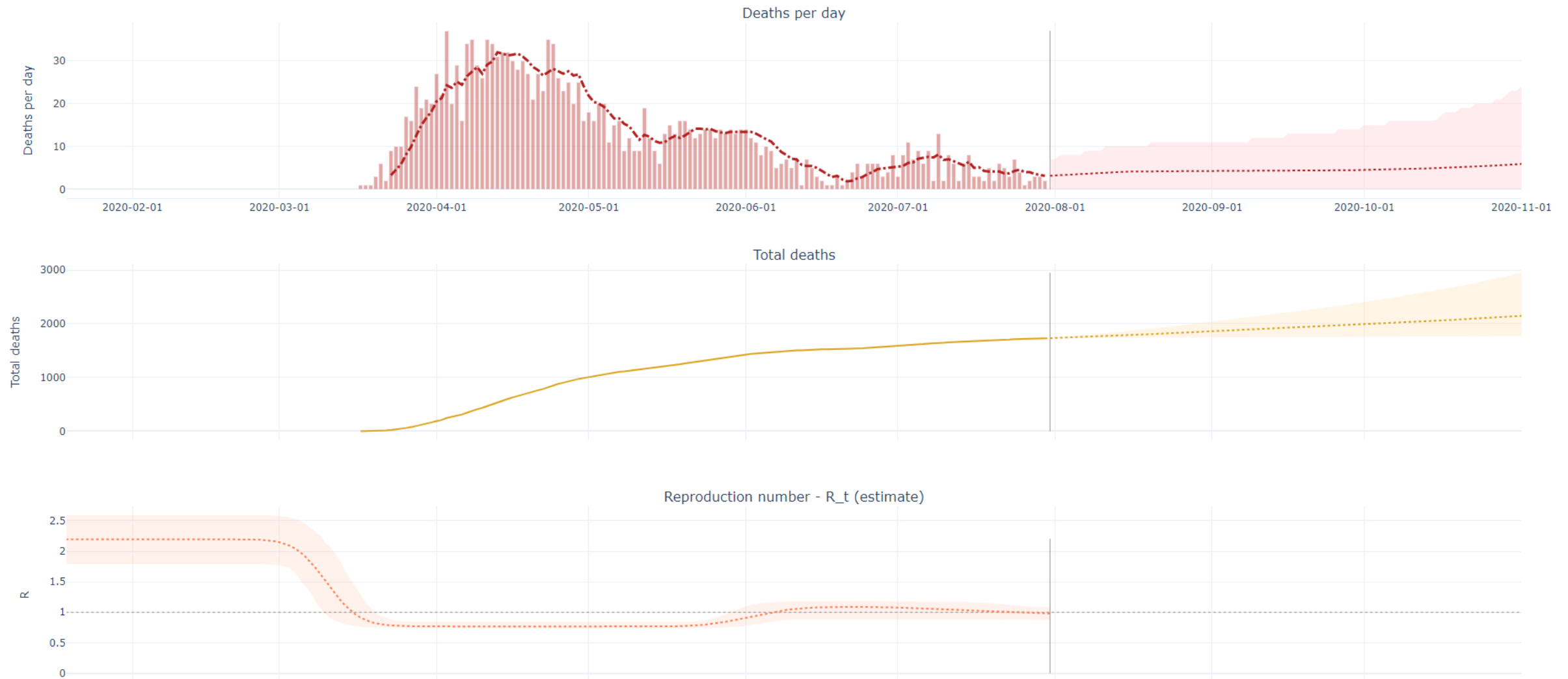
# Covid-19 Projections Using Machine Learning – Portugal - Cases





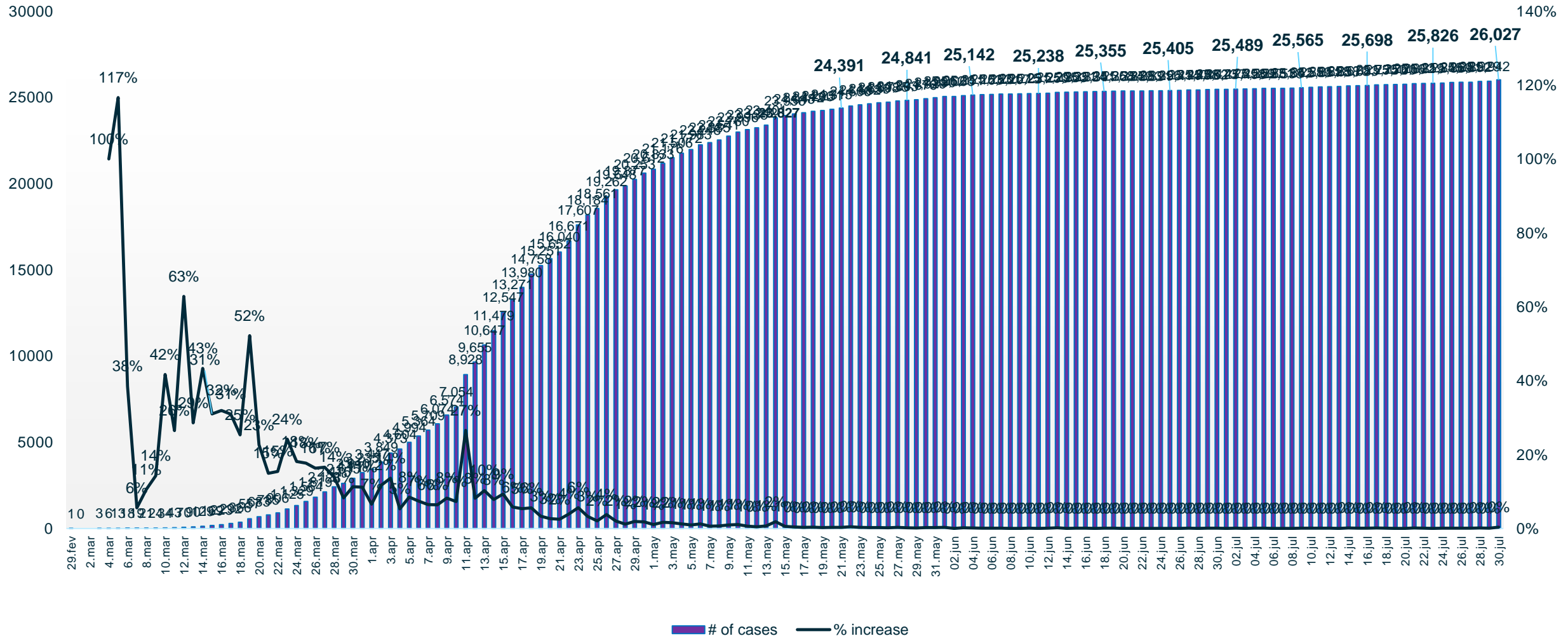
# Covid-19 Projections Using Machine Learning – Portugal - Deaths

**Portugal**  
Current deaths: **1,727** | Projected total deaths: **2,146** (by 2020-11-01)



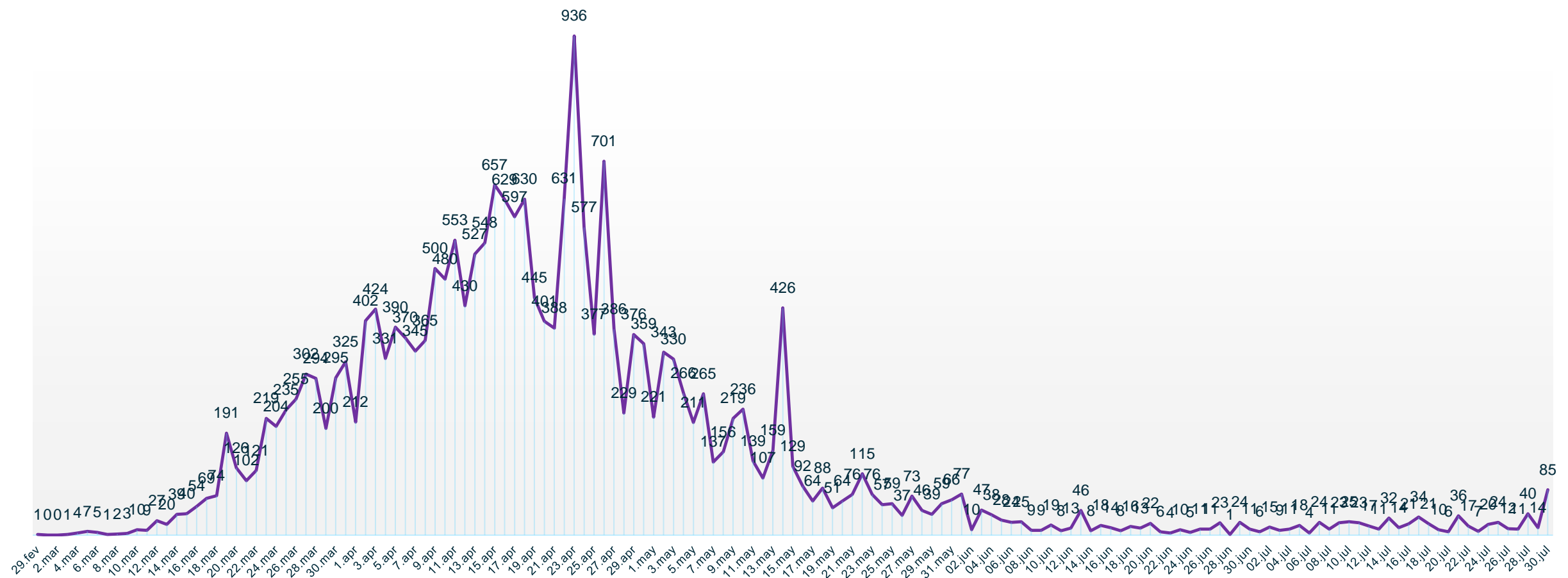
Ireland

# Coronavirus (SARS-CoV-2 / COVID 19) – Ireland - Total cases by day



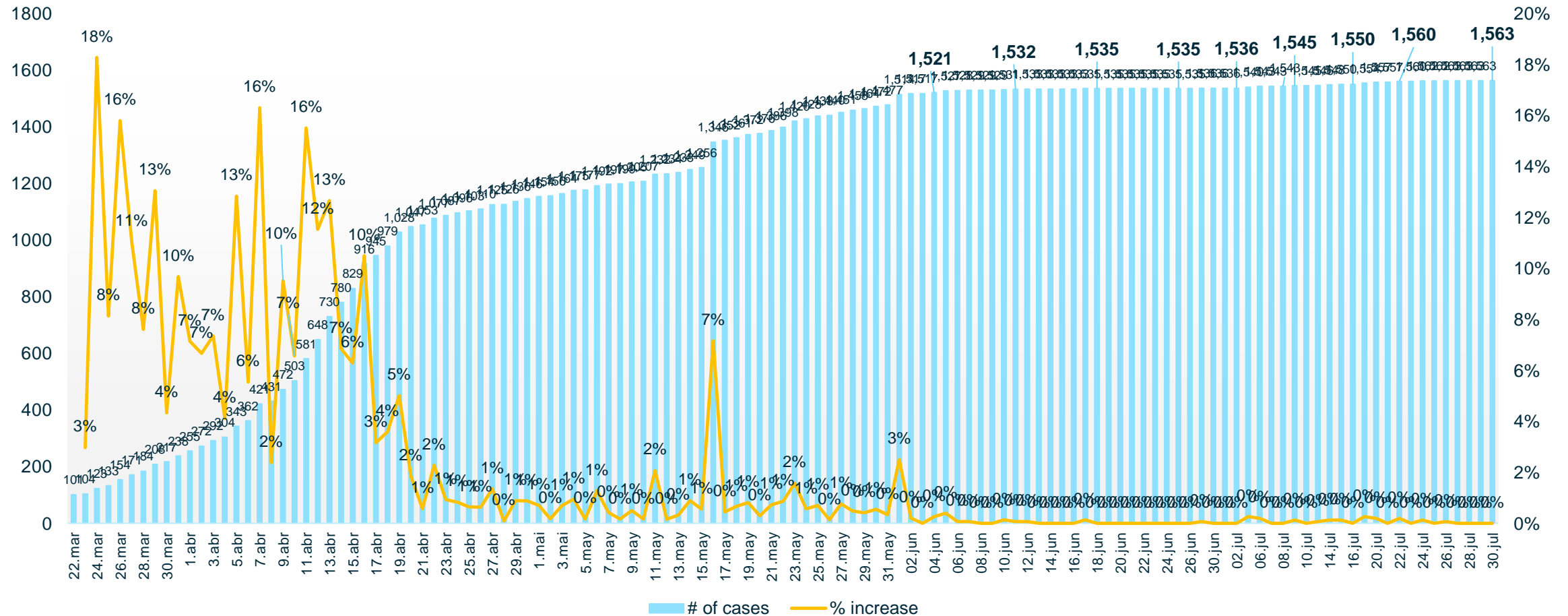
Source: <https://geohive.maps.arcgis.com/apps/opsdashboard/index.html#/29dc1fec79164c179d18d8e53df82e96>

# Coronavirus (SARS-CoV-2 / COVID 19) – Ireland - Confirmed cases by day



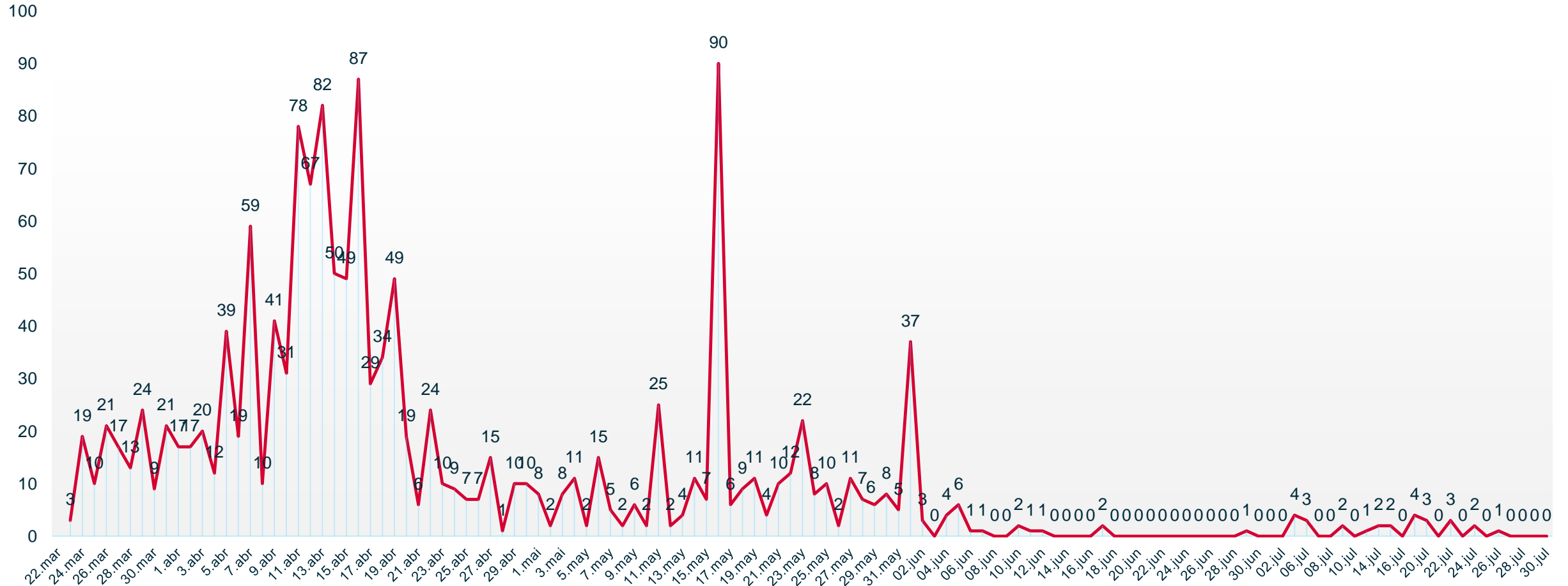
Source: <https://geohive.maps.arcgis.com/apps/opsdashboard/index.html#/29dc1fec79164c179d18d8e53df82e96>

# Coronavirus (SARS-CoV-2 / COVID 19) – **Cork** - Total cases by day



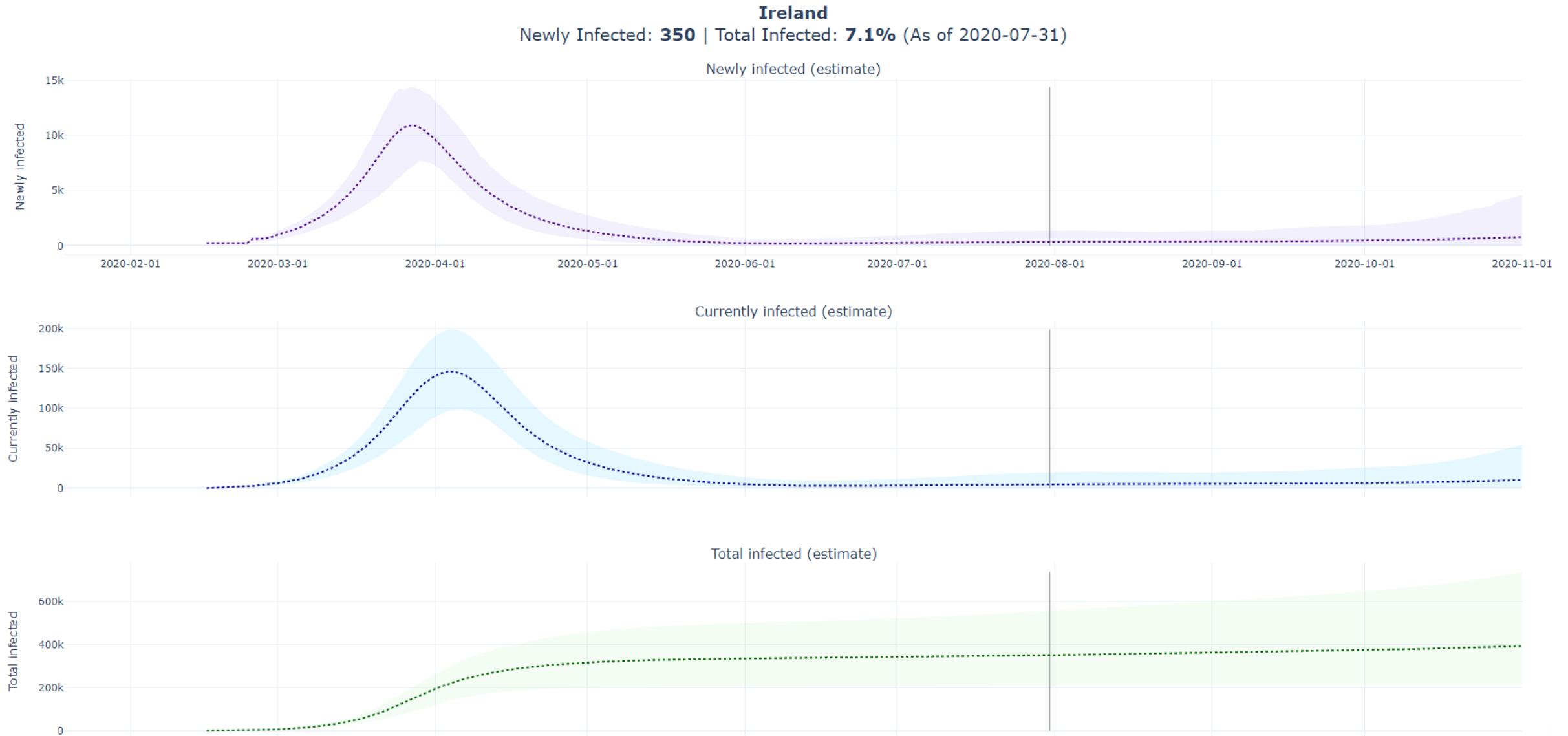
Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

# Coronavirus (SARS-CoV-2 / COVID 19) – **Cork** - Confirmed cases by day

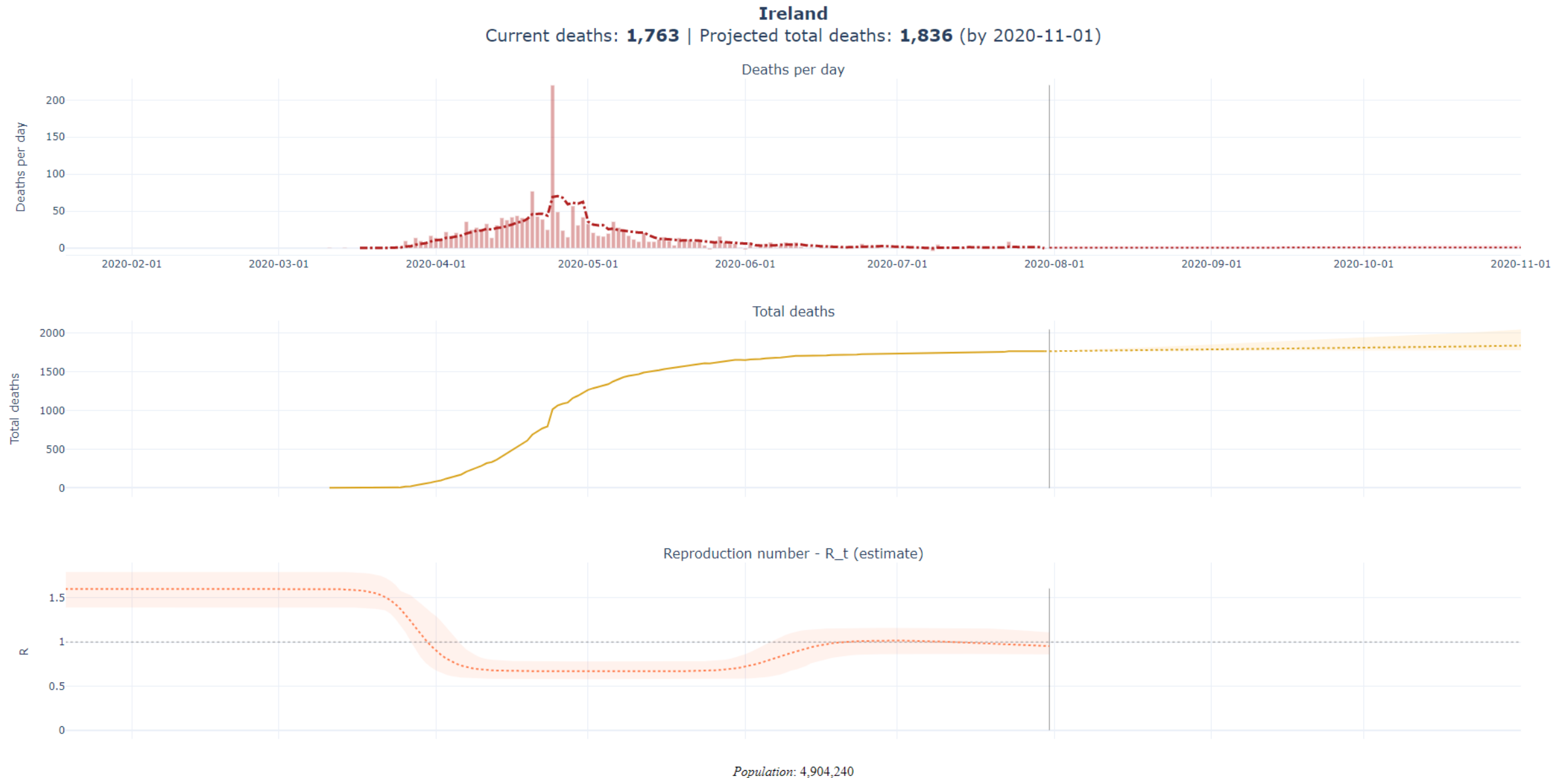


Source: <https://covid19.min-saude.pt/ponto-de-situacao-atual-em-portugal/>

# Covid-19 Projections Using Machine Learning – Ireland - Cases



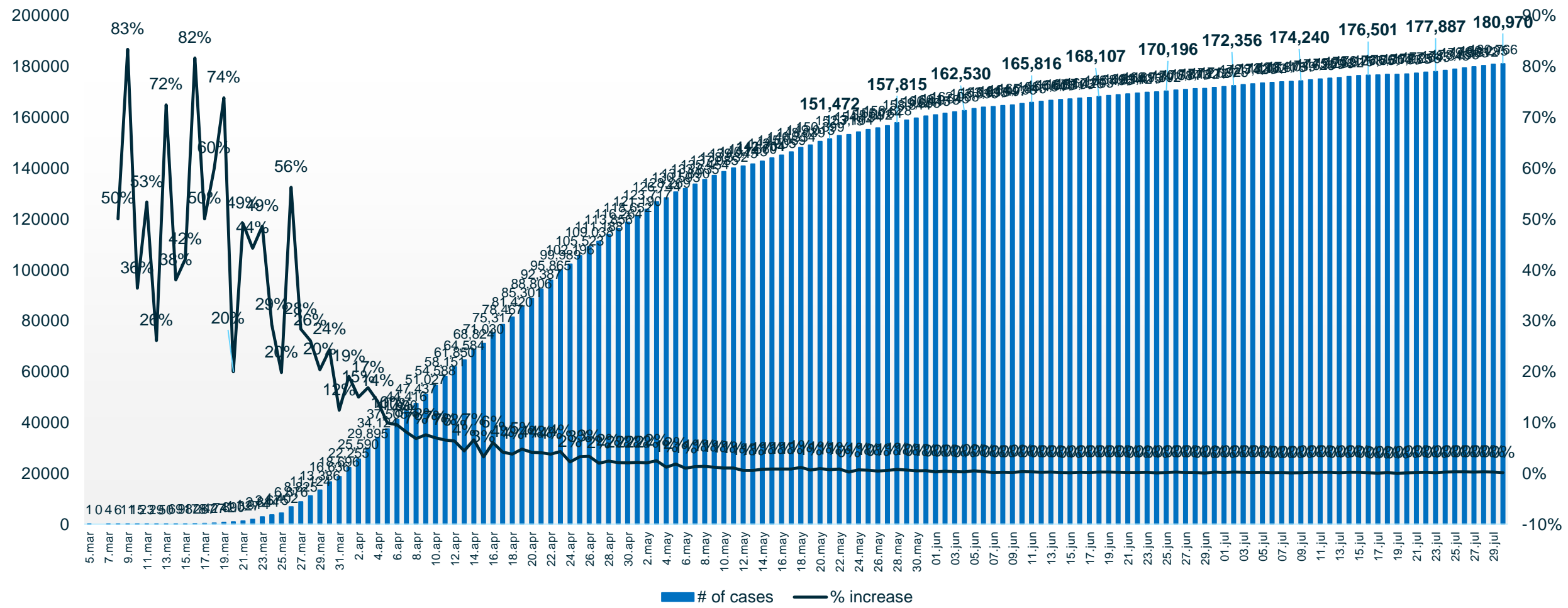
# Covid-19 Projections Using Machine Learning – Ireland - Deaths





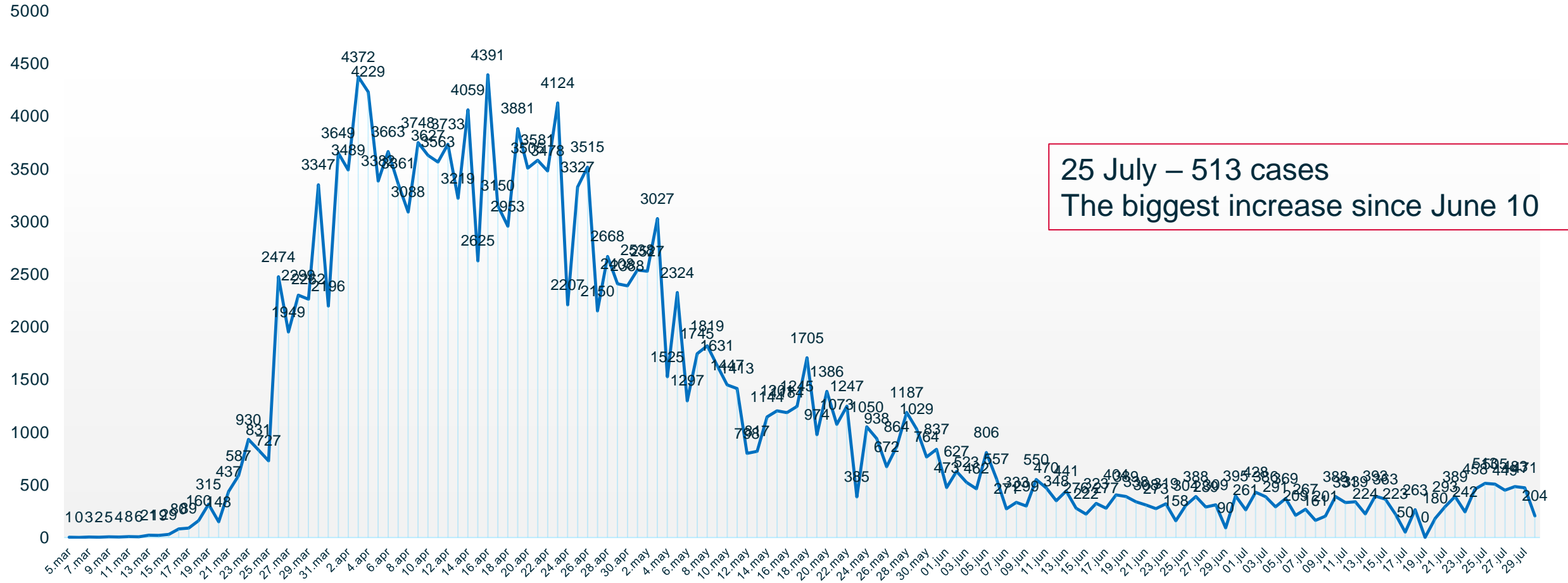
New Jersey

# Coronavirus (SARS-CoV-2 / COVID 19) – New Jersey - Total cases by day



Source: <https://www.nj.com/coronavirus/2020/03/see-the-spread-of-nj-coronavirus-in-charts-map-sunday-march-22-2020.html>

# Coronavirus (SARS-CoV-2 / COVID 19) – New Jersey - Confirmed cases by day

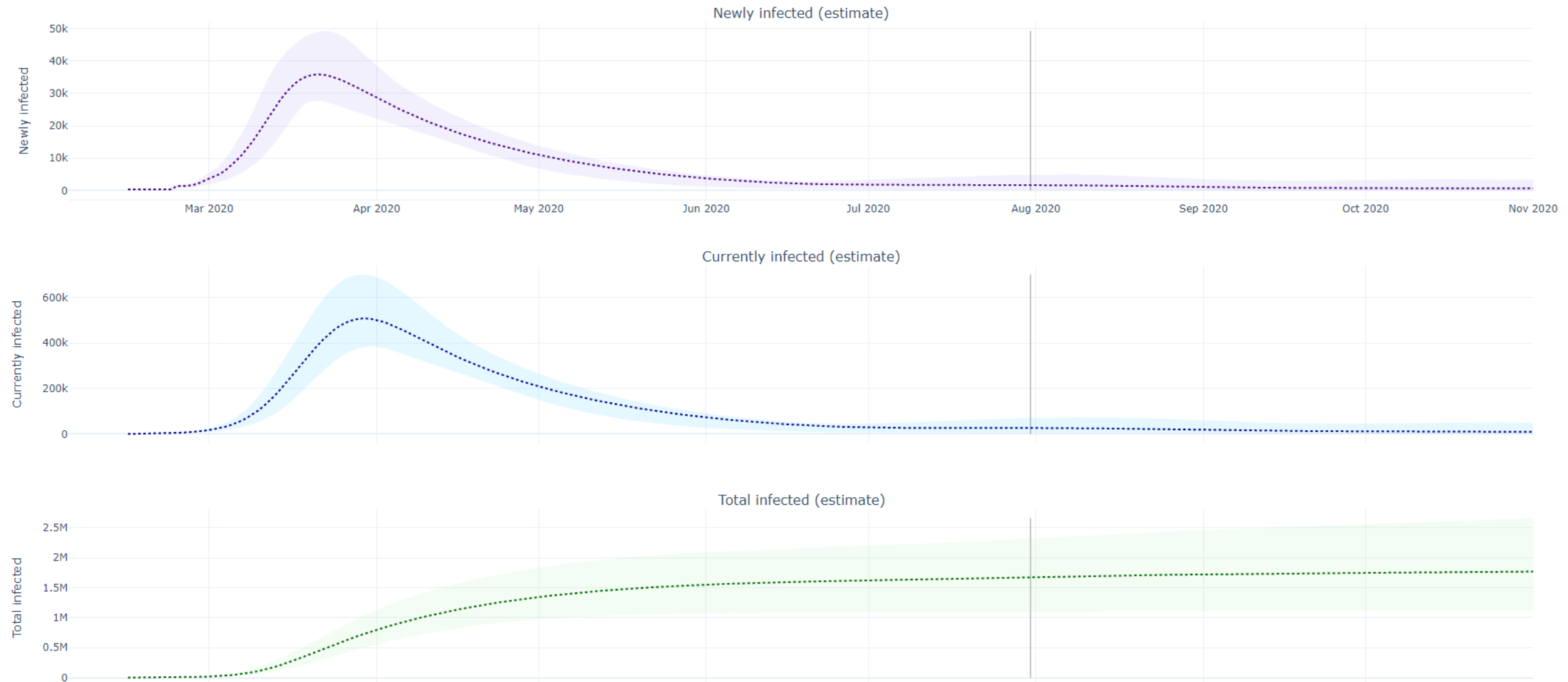


25 July – 513 cases  
The biggest increase since June 10

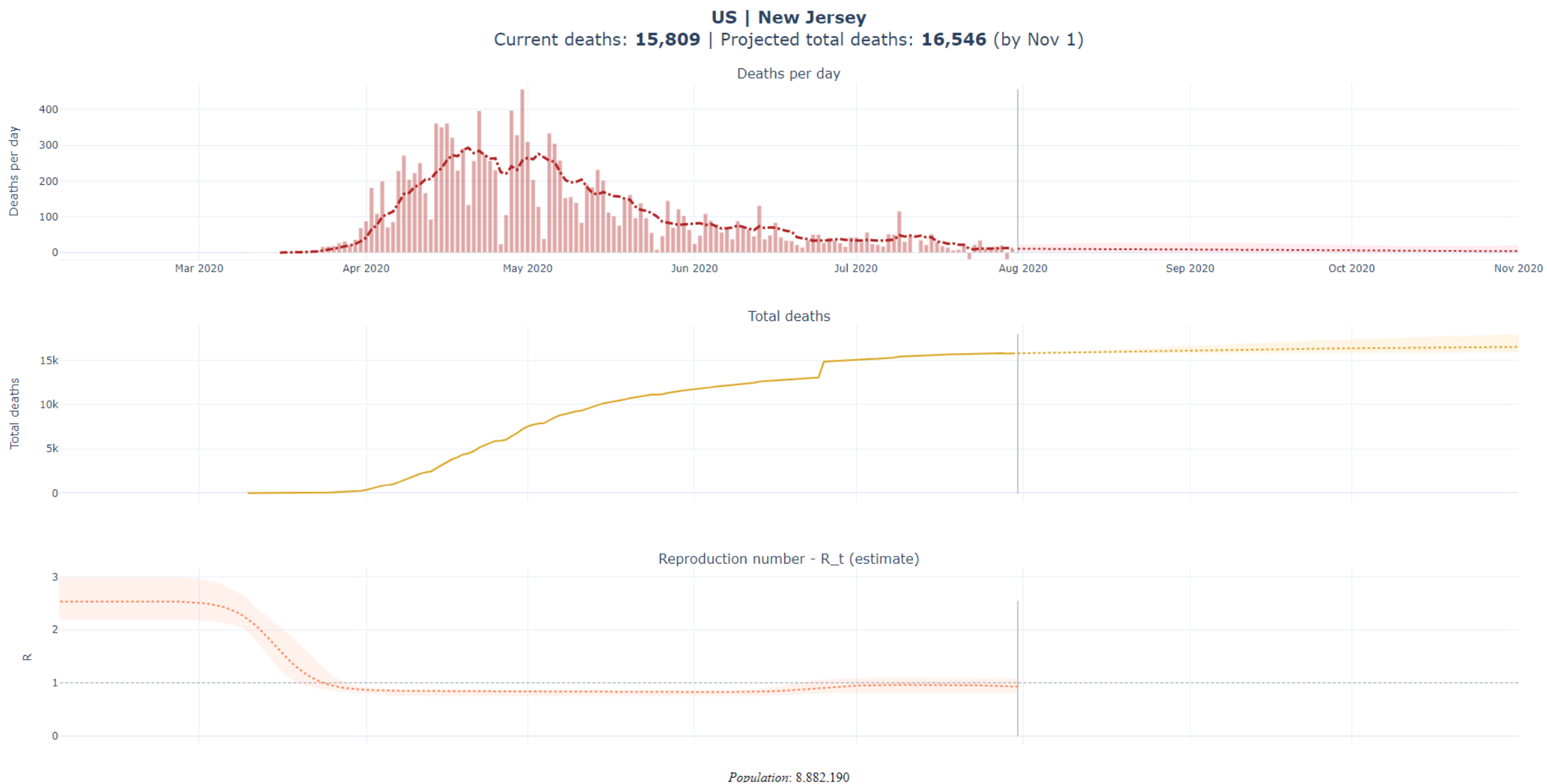
Source: <https://www.nj.com/coronavirus/2020/03/see-the-spread-of-nj-coronavirus-in-charts-map-sunday-march-22-2020.html>

# Covid-19 Projections Using Machine Learning – New Jersey - Cases

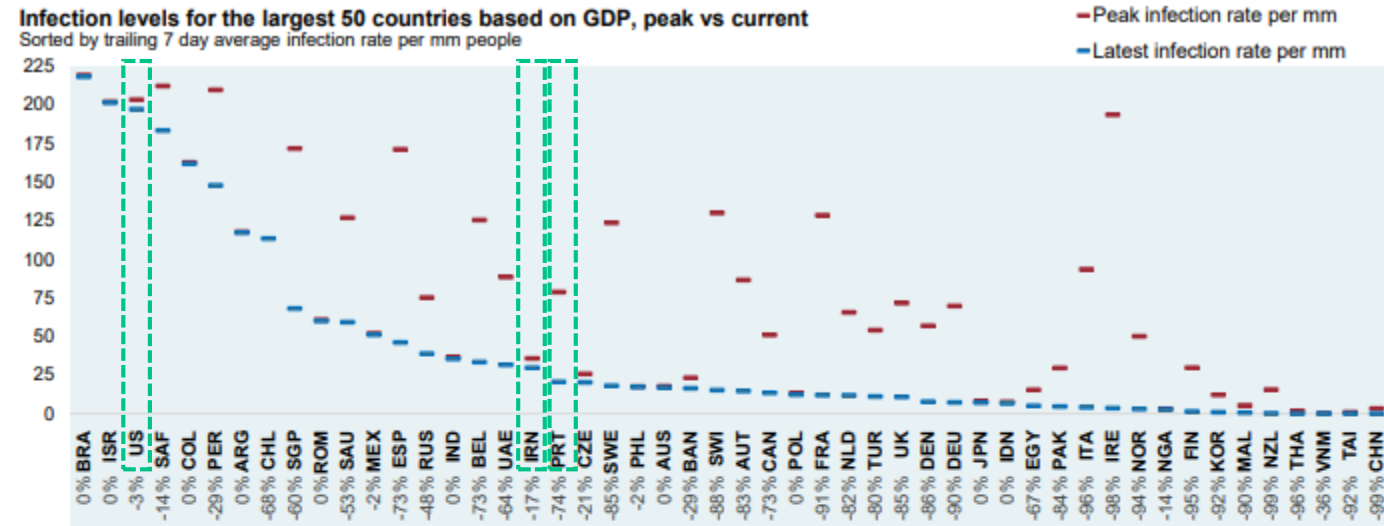
US | New Jersey  
Newly Infected: **1,777** | Total Infected: **18.9%** (As of Jul 31)



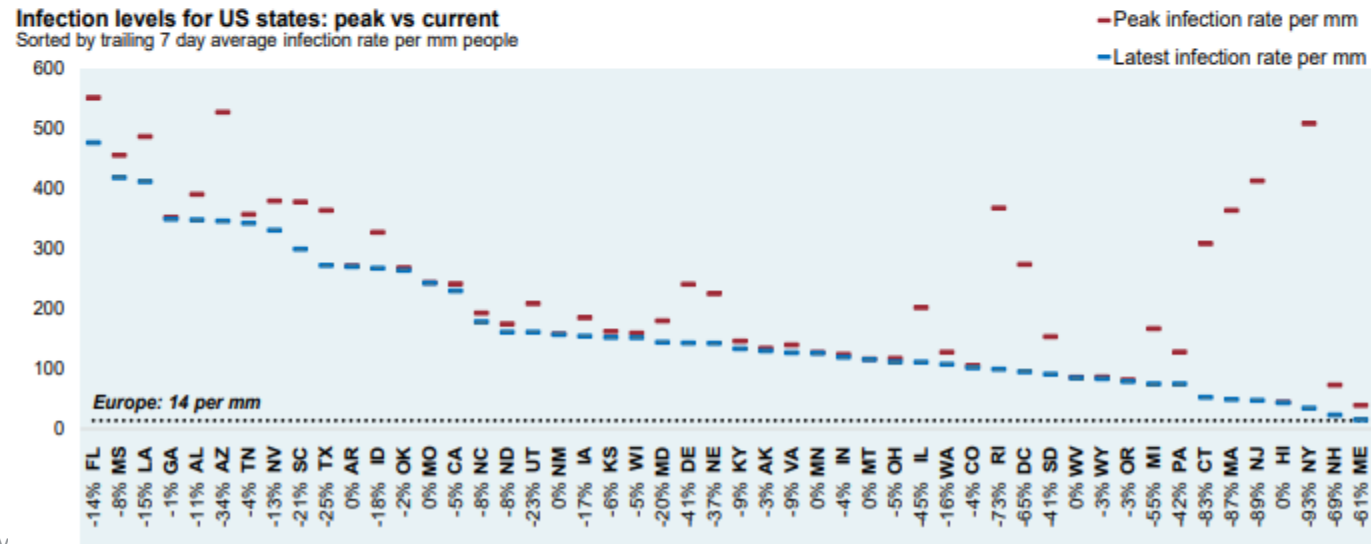
# Covid-19 Projections Using Machine Learning – New Jersey - Deaths



# Highest levels of infection, global and US

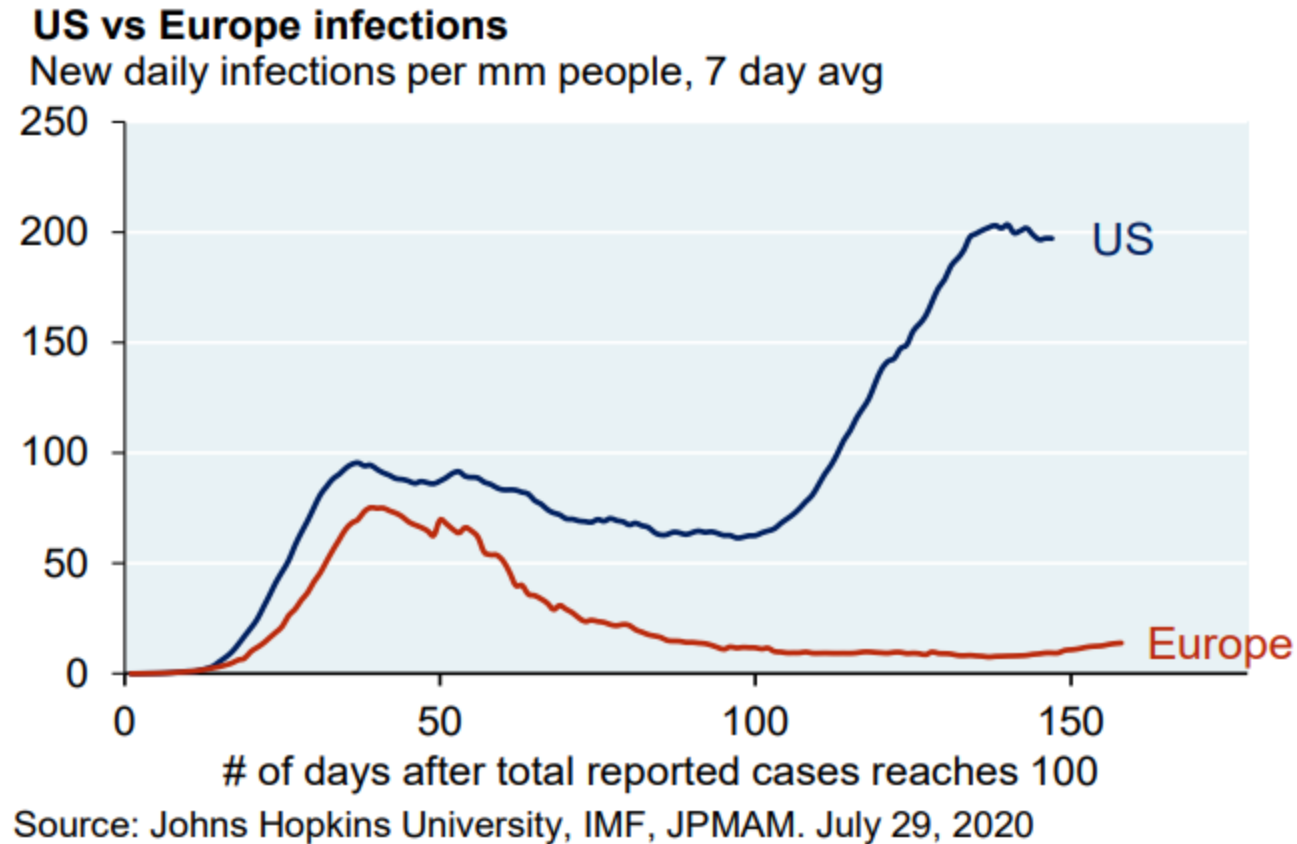


Source: Johns Hopkins University, IMF, JPMAM. Countries shown represent 94% of World GDP. Asterisk denotes countries with infection levels over 225 per mm people. July 29, 2020

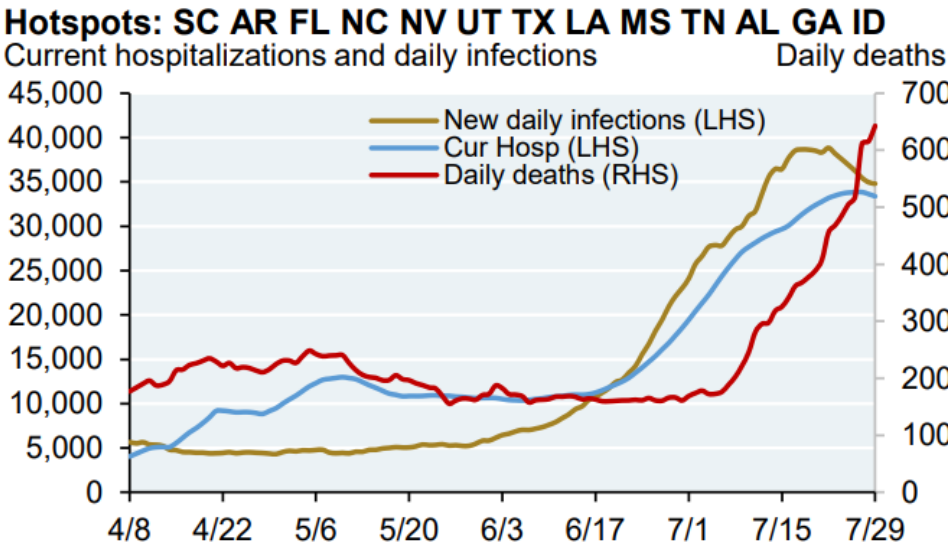


Source: Johns Hopkins University, IMF, JPMAM. July 29, 2020

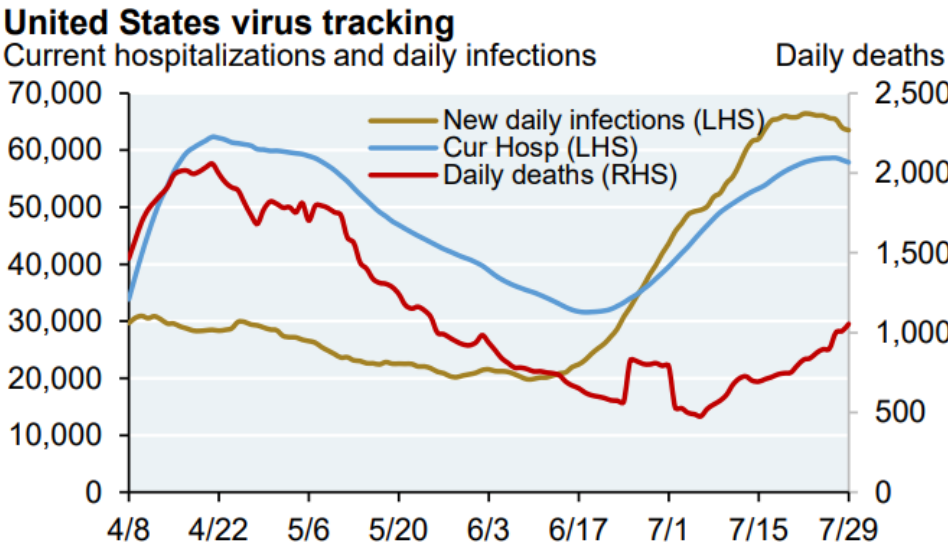
# New daily infections per 1 million people



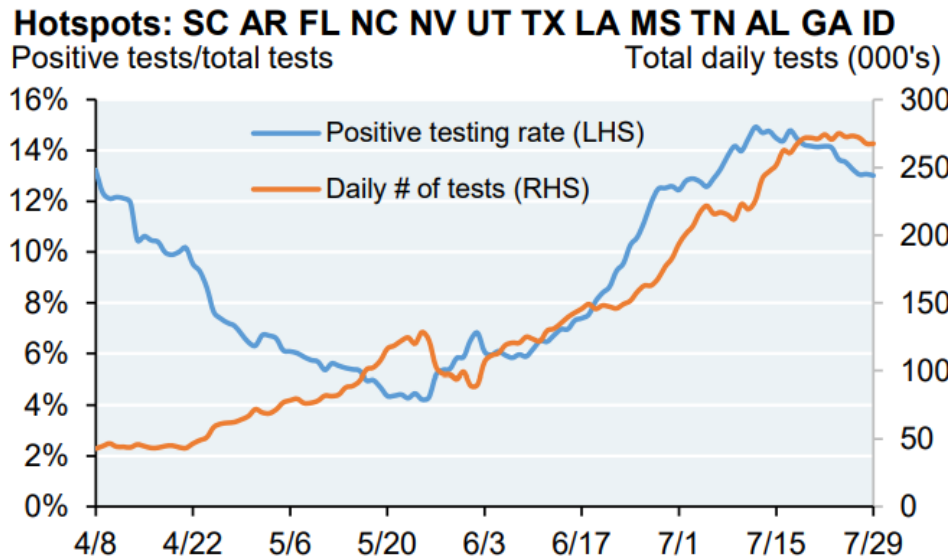
# US new daily infections, current hospitalizations and daily deaths, 7 day avg



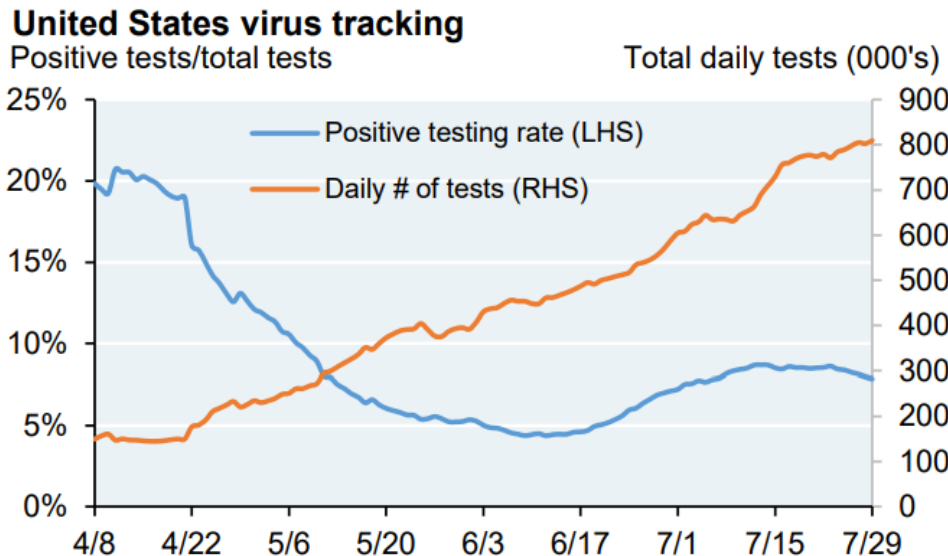
Source: COVID Tracking Project, JPMAM. 07/29/2020. 7 day avgs.



Source: COVID Tracking Project, JPMAM. 07/29/2020. 7 day avgs.



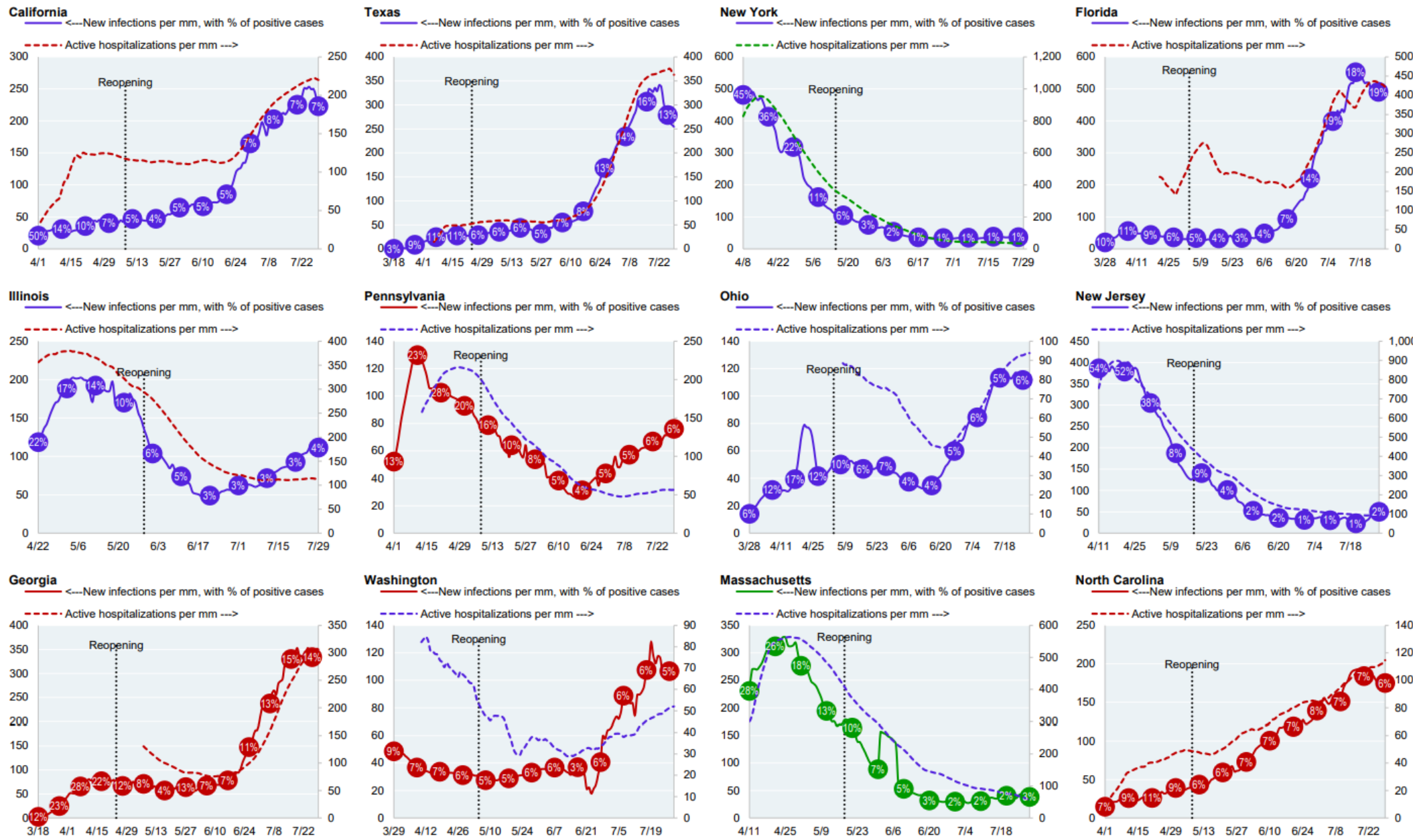
Source: COVID Tracking Project, JPMAM. 07/29/2020. 7 day avgs.



Source: COVID Tracking Project, JPMAM. 07/29/2020. 7 day avgs.



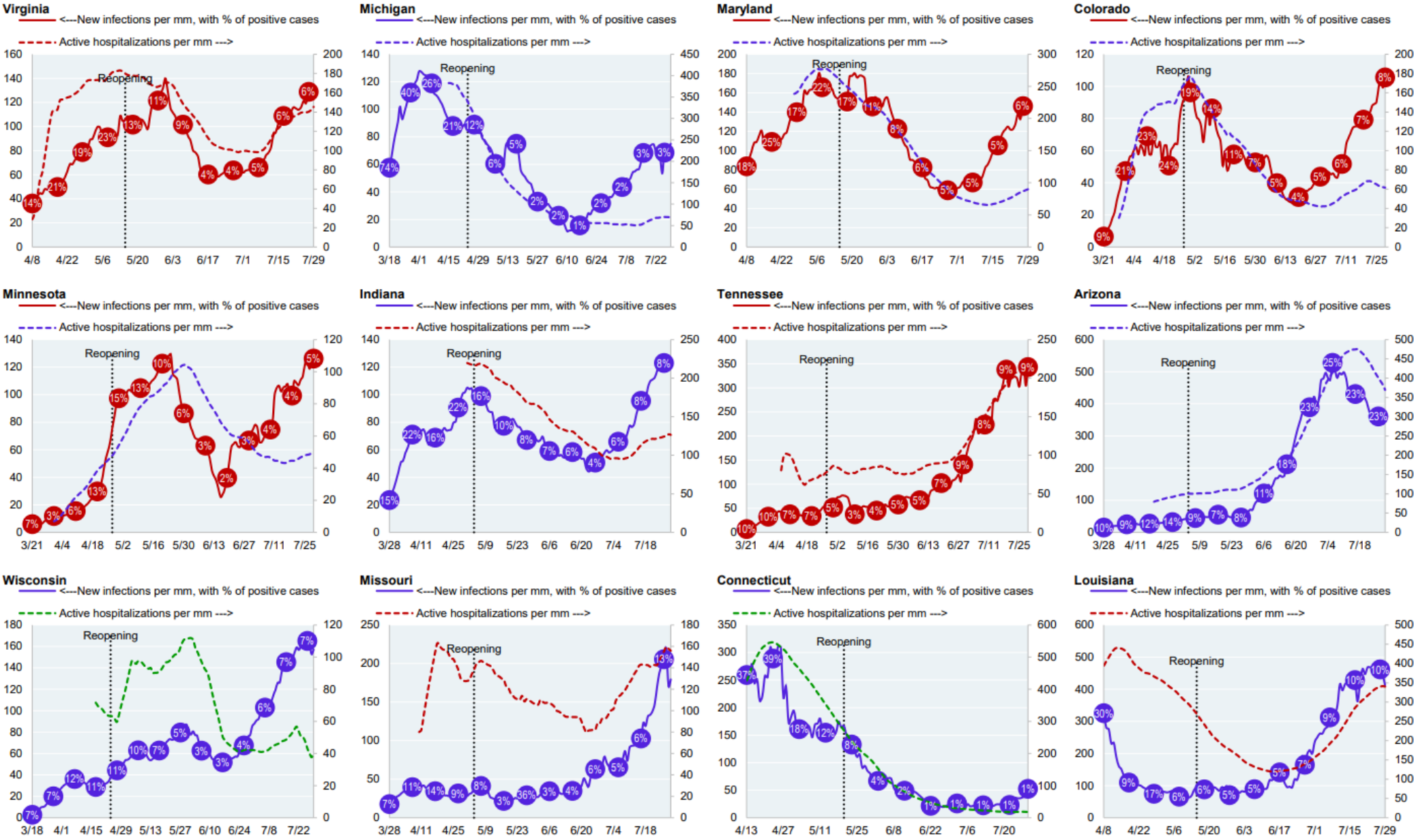
# US: 24 largest states: reopening dates, infections and hospitalizations



Ho

for life

# US: 24 largest states: reopening dates, infections and hospitalizations



# Recent News

# The latest coronavirus updates and developments impacting the global pharmaceutical supply chain...

## • 30 July

- Gilead Sciences aims to produce more than two million doses of its Covid-19 drug remdesivir by the end of the year, according to Bloomberg. In its earnings report, the company said that it has donated its existing stock of 1.5 million doses of the drug. Gilead expects to make several million more courses in 2021.
- A powdered formulation of Gilead Sciences' remdesivir could prove more potent and easier to administer, thanks to researchers at the University of Texas at Austin who have used their novel thin-film-freezing technology to create an inhaled form of the antiviral COVID-19 treatment. Remdesivir is currently given to patients via IV; by developing an inhaled version, the antiviral might reach more patients, prevent contact between infected individuals and health care workers, and lessen symptoms before they become potentially fatal, the research team said.

## • 29 July

- Developed nations making advance purchase deals for Pfizer's mRNA-based coronavirus vaccine should expect to pay no less than the \$19.50-per-dose price tag set under the drugmaker's recent U.S. supply pact, CEO Albert Bourla said. The full two-dose course will run for \$39 in the U.S.
- The E.U. handed over €63 million (\$74 million) to Gilead Sciences for enough doses of its antiviral remdesivir to treat 30,000 COVID-19 patients. The initial supply deal will satisfy "immediate needs," the European Commission said, adding that it hopes to secure more doses in October.
- Meanwhile, hospitals in U.S. regions hard-hit by COVID-19 reported widespread shortages of Gilead's remdesivir. While the U.S. government started sending out remdesivir shipments after trials confirmed its benefit in COVID-19, doctors have blasted its distribution model; overwhelmed hospitals have missed out on deliveries while clinics in regions with lower case counts received ample supply.

## • 28 July

- Moderna's 2020 delivery of a safe and effective coronavirus vaccine is a "stretch goal," National Institutes of Health director Francis Collins said, "but it's the right goal for the American people." Meanwhile, NIAID director Anthony Fauci said trial results could arrive by November, December or possibly even earlier—plus, Fauci is confident in the shot's safety after reviewing early trial data.
- But Moderna would do well to keep quiet about its trial results timeline, CNBC's Jim Cramer said. By pinning down late-stage readouts to the early fall, the Massachusetts-based biotech could affect political decisions about stimulus packages and other measures, Cramer said. Meanwhile, Moderna execs' stock sales could portray the company in a negative light given its massive backing from the U.S. government.

## • 27 July

- Moderna kicked off its phase 3 coronavirus vaccine study across 89 U.S. clinical research sites Monday, with results expected as early as November, government and health officials said. Patients will receive two doses of the mRNA-based shot about four weeks apart, with researchers comparing immune response between the vaccine and placebo arms two weeks after the second dose.
- The Biomedical Advanced Research and Development Authority (BARDA) upgraded its contract with Moderna, pledging an extra \$472 million to support late-stage shot development and fund the drugmaker's 30,000-patient phase 3 vaccine trial—set to begin Tuesday, the company said. Moderna previously snagged \$483 million from BARDA to support development of its mRNA-based coronavirus vaccine

# The latest coronavirus updates and developments impacting the global pharmaceutical supply chain... (cont.)

## • 23 July

- It may take multiple doses of an approved COVID-19 vaccine to grant immunity, Bill Gates said Wednesday, which could require over 7 billion vaccinations globally. Moderna's frontrunner shot will require two doses a month apart, and at Tuesday's Congressional hearing, AstraZeneca R&D executive Mene Pangalos said the drugmaker was eyeing multiple doses for its University of Oxford-partnered candidate, too.
- Pfizer and BioNTech's \$1.95 billion deal to supply 100 million vaccine doses to the U.S. drew ire from watchdogs, who warned that the move could lead to price-gouging later. The agreement includes an option for 500 million more doses at an as-yet-undetermined price. AstraZeneca and Johnson & Johnson both pledged to sell vaccines at no profit to the U.S.—which has shelled out funding for development in both cases—while Pfizer has expressed interest in making at least a marginal return on its shot.
- Sinopharm's COVID-19 vaccine candidate could roll out for public use by the end of the year, China reported Wednesday. In June, the state-owned firm delayed its expectations for an approved shot until 2021, citing a lack of trial participants at home. Since then, Sinopharm launched a 15,000-person phase 3 in the United Arab Emirates. Late-stage trials are set to wrap in about three months, Sinopharm chairman Liu Jingzhen said.

## • 22 July

- The University of Oxford's AstraZeneca-partnered COVID-19 vaccine could grant lasting immunity to the virus, but patients will likely need two initial doses and one to two annual boosters after that, Vaccitech CEO Bill Enright told FiercePharma.
- Brazil aims to lock down doses of Moderna's mRNA vaccine hopeful, and talks with the U.S. biotech are already underway, the country's interim Health Minister Eduardo Pazuello said. Brazil has another deal in place to secure 30 million doses of AstraZeneca and the University of Oxford's shot.
- Japan's health ministry gave low-cost steroid dexamethasone the OK for use in COVID-19 patients. The drug, first shown to slash death rates in hospitalized COVID-19 patients in a widely-publicized U.K. trial, joins Gilead Sciences' remdesivir as the second treatment approved by Japan against COVID-19.

## • 20 July

- AstraZeneca and the University of Oxford's COVID-19 vaccine candidate spurred a strong immune response in a phase 1 trial that enrolled over 1,000 patients, data published Monday in the Lancet showed.
- Mylan launched its generic form of Gilead Sciences' remdesivir in India Monday, marketed under the name Desrem. The drug is approved to treat COVID-19 in adults and children hospitalized with severe symptoms. Indian drugmakers Cipla and Hetero Drugs have also launched licensed versions of Gilead's antiviral in the country.

## • 17 July

- The European Union is hashing out advance purchase deals for COVID-19 vaccines with Moderna, Sanofi, Johnson & Johnson, CureVac and BioNTech, two E.U. sources told Reuters. The news comes on the heels of a deal in June between four European nations and AstraZeneca to secure 400 million doses of the drugmaker's vaccine hopeful. The E.U. is reportedly furthest along in talks with J&J, already working out dose counts. Meanwhile, Sanofi, with the aid of GlaxoSmithKline, aims to provide the bloc with 300 million doses of its shot in the second half of 2021.



# The latest coronavirus updates and developments impacting the global pharmaceutical supply chain... (cont.)

- **16 July**
  - Executives and directors from Moderna have sold about \$171 million in shares since the start of the year, CNBC reported, far outstripping other companies involved in researching COVID-19 drugs and vaccines.
  - With phase 1 data on Moderna's mRNA vaccine candidate now available, UBS analyst Navin Jacob thinks Pfizer and BioNTech's rival mRNA shot could still be competitive: While Moderna's shot proved most effective at the 100mcg dose, BioNTech's vaccine performed well at 10-35% of that dose. Paired with Pfizer's vaccine manufacturing brawn, the partners' shot has a better chance at meeting global demand, Jacob figures.
- **15 July**
  - Moderna's mRNA vaccine candidate triggered "robust" levels of neutralizing antibodies in coronavirus patients, newly published phase 1 data show, but some side effects showed up, too. Forty-five patients were given two injections of the vaccine—at three different dose levels—two weeks apart, with those on the 100 microgram dose yielding the highest antibody count when compared against a control group of 38 people who recovered from the disease. Now, Moderna is ramping up for a 30,000-participant, phase 3 trial later this month, with plans to recruit participants from the U.S. states hardest hit by the virus.
  - A \$99 million federal investment breathed new life into remdesivir early on in the pandemic, but taxpayers are being repaid with "price gouging," Rep. Lloyd Doggett said in a Wall Street Journal op-ed. Last month, Gilead set its price for remdesivir at \$520 per vial, or \$3,120 for a five-day course, in a move that the president of cost watchdog group ICER called "responsible." While Gilead also revealed a lower price for the full course under certain government programs, Doggett has called that initiative "misleading," as it excludes patients on Medicare, Medicaid, private insurance and those who are uninsured.
- **13 July**
  - Jefferies analysts pegged Moderna's coronavirus vaccine candidate for a likely approval early next year and figure it could rake in billions in sales, too. The analysts predict 50 million people will get the vaccine in 2021 at \$50 per dose, netting Moderna about \$2 billion in 2021 and \$5 billion over the next few years. But if the shot doesn't work, the company's stock would be "hit hard," they warned. Moderna's mRNA-based candidate is slated to enter phase 3 testing this month.
  - Swiss contract manufacturer Lonza said Monday that it had licensed its gene expression system to China's Junshi Biosciences to produce its neutralizing COVID-19 antibody, JS016, which entered an early-stage safety trial in June. Junshi is co-developing its antibody candidate with Eli Lilly and will head up clinical testing in China while Lilly tackles trial work elsewhere. Warp Speed finalist Moderna tapped Lonza in May for a 10-year manufacturing agreement to churn out doses of its mRNA vaccine candidate.
  - Analysts and health officials continued questioning Gilead Sciences' decision to release data on remdesivir Friday that compared clinical trial data with a historical, standard-of-care patient cohort. Former FDA commissioner Scott Gottlieb called the results encouraging but said they "[need] to be confirmed in a prospective trial." Meanwhile, Raymond James analyst Steven Seedhouse said, "The aggregate clinical data still pretty clearly point to an inconclusive impact on survival at best."
- **10 July**
  - Gilead Sciences released new data Friday showing its antiviral remdesivir slashed death rates by 62% compared with standard treatment, but health experts aren't convinced. Gilead compared 312 patients dosed with remdesivir in its phase 3 SIMPLE trial against a historical cohort of 818 patients with similar disease severity on "standard of care," but because that comparison wasn't performed in a controlled trial, the numbers are "deeply flawed," one expert said. Gilead itself said the findings "[require] confirmation in prospective clinical trials."

# The latest coronavirus updates and developments impacting the global pharmaceutical supply chain... (cont.)

- **9 July**
  - Officials from Merck, Moderna, Pfizer, AstraZeneca and Johnson & Johnson plan to testify before the House's Oversight and Investigation Subcommittee on July 21 to discuss their progress on a COVID-19 vaccine. The companies are also expected to share info on upcoming plans to market and distribute those shots should they pass muster in the clinic.
  - Moderna tapped contract manufacturer Laboratorios Farmacéuticos Rovi to complete fill-finish work on its mRNA vaccine candidate. Rovi will carry out the work at its Madrid, Spain, facility, and plans to ramp up a new production line and buy new equipment to help Moderna meet its goal to churn out hundreds of millions of shot doses for deployment outside of the U.S. by early 2021. Rovi will also recruit additional staff to meet the new manufacturing demand.
  - Gilead Sciences dosed the first patients in a phase 1a trial studying an inhaled formulation of remdesivir for early stage COVID-19. The drugmaker aims to recruit about 60 U.S. patients aged 18 to 45 for the trial, which will compare a nebulized version with placebo. Delivering remdesivir straight to the lungs could cut the risk of side effects and expand its use to outpatients, Gilead said; remdesivir is currently given to hospital patients intravenously.
  - Gilead plans to boost worldwide production of remdesivir to supply the antiviral in Europe based on each country's rate of infection, the company's German managing director Bettina Bauer said. Talks are already underway with the German government, Bauer told German business magazine WirtschaftsWoche. The drugmaker aims to ramp up its monthly supply from 190,000 treatment cycles to 2 million by December, she said.
  - Indian drugmaker Cipla has deployed its version of remdesivir in the country, setting the sticker price at INR 4,000 per 100mg vial, or about \$53.38—one of the lowest prices globally. For comparison, Mylan has capped its generic form of the drug at INR 4,800 (\$64.05) per 100mg vial, while Hetero set a maximum retail price of INR 5,400 (\$72.06). Cipla aims to dispense 80,000 vials in the first month, and will make them available through government and hospital channels, CEO Nikhil Chopra said.
- **8 July**
  - Cipla announced that its version of remdesivir is slated to hit Indian markets in the next few days. Cipla partnered with Mumbai-based BDR Pharma to manufacture the drug, which in turn sub-contracted Sovereign Pharma to complete fill-finish work. The partners haven't said how much they plan to ship, but Sovereign said it can scale up to 95,000 vials per month.
- **7 July**
  - Moderna's shares dropped 5% last week when news surfaced that it might delay the launch of its phase 3 vaccine trial due to protocol changes. Now, some of those potential hiccups have come to light: Moderna sparred with government experts over how to run its trial, sought a lower bar for approval than the 50% efficacy rate outlined by the FDA, and submitted trial protocols late, three sources close to the vaccine project told Reuters. Moderna has dismissed the snags as "differences of opinion."
- **6 July**
  - The European Commission granted a conditional OK for Gilead's remdesivir to treat COVID-19 patients 12 years and older with pneumonia requiring oxygen support. The conditional approval is good for one year, but the commission may extend it if the drug shows promise in trials testing it in younger patients and in earlier stages of the disease.

# Sources

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