

COVID-19 Reflection session

My pandemic (a very abridged tale)

Sam Abbott

fosstodon.org/@seabbs

samabbott.co.uk

LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE

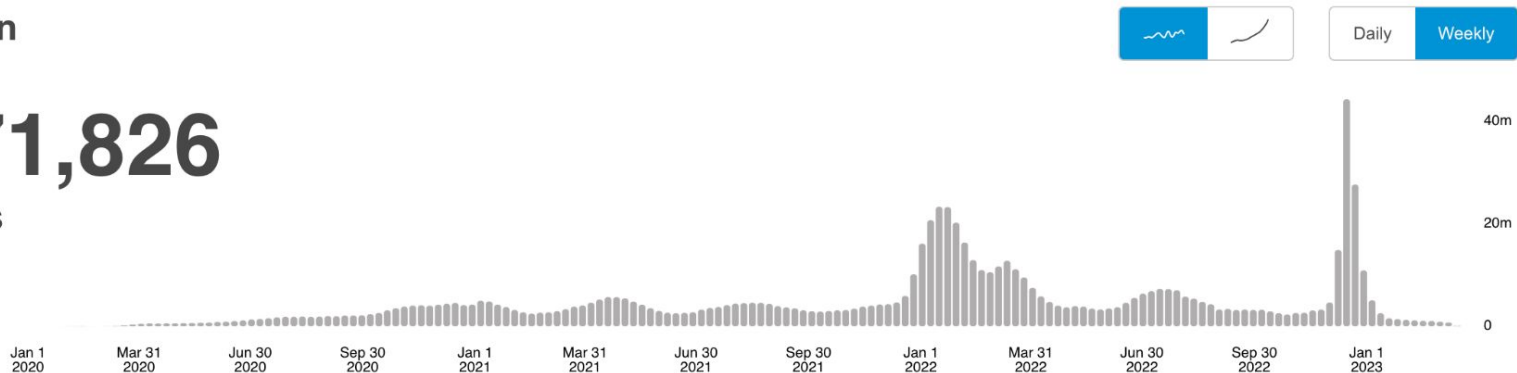


Globally, as of **6:06pm CET, 21 March 2023**, there have been **761,071,826 confirmed cases** of COVID-19, including **6,879,677 deaths**, reported to WHO. As of **21 March 2023**, a total of **13,260,401,200 vaccine doses** have been administered.

Global Situation

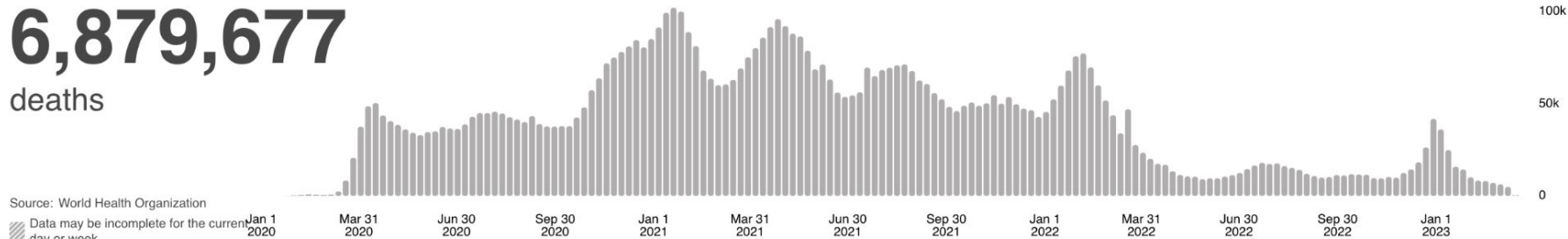
761,071,826

confirmed cases



6,879,677

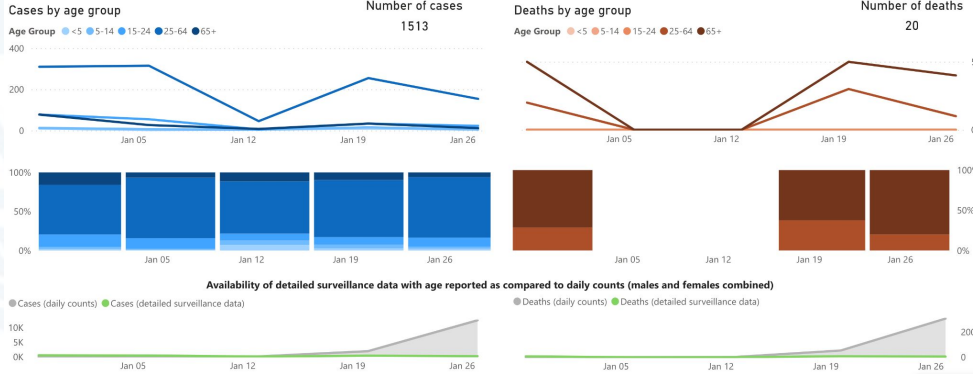
deaths



Source: World Health Organization

▨ Data may be incomplete for the current day or week.

2020: January



- Jan 6th: Joined the school to work on real-time forecasting of infectious disease
- Jan 18th: First COVID-19 working group meeting -> Full-time on COVID-19.
- Jan 30th: Report: **Reporting delays and R_t in China** (led by Sebastian Funk)
- Jan 30th: Paper: **Size of spillover and reproduction number estimates**

RESEARCH ARTICLE

The transmissibility of novel Coronavirus in the early stages of the 2019-20 outbreak in Wuhan: Exploring initial point-source exposure sizes and durations using scenario analysis [version 1; peer review: 2 approved]

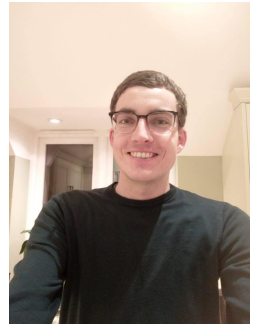
Sam Abbott , Joel Hellewell , James Munday , CMMID nCoV working group, Sebastian Funk

Reporting delays and temporal variation in transmission in China during the 2019-nCoV outbreak

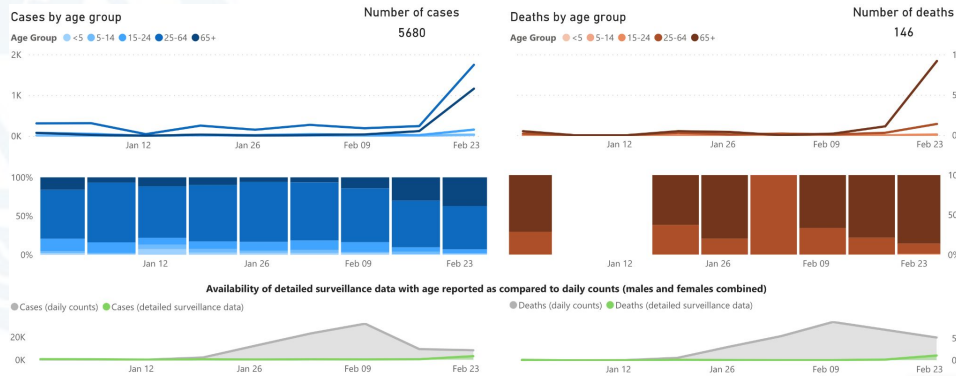
Status: In Progress | First online: 30-01-2020 | Last update: 30-01-2019

Authors: Sebastian Funk*, Sam Abbott, Stefan Flasche & CMMID COVID-19 working group.

* corresponding author



2020: February



- Feb 5th: Presented PhD work to the JVCI BCG meeting (first Dr Abbott plaque)
- Feb 7th: **Feasibility of contact tracing** (led by Joel Hellewell)
- Feb 19th: In person PhD graduation @Bristol
- Feb: 1st/20+ reports to SPI-M-O (??)



Feasibility of controlling COVID-19 outbreaks by isolation of cases and contacts

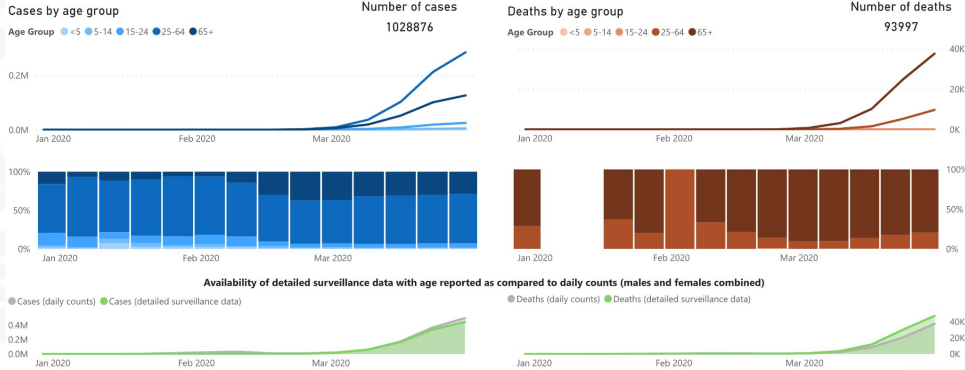
Joel Hellewell, PhD • Sam Abbott, PhD * • Amy Gimma, MSc * • Nikos I Bosse, BSc • Christopher I Jarvis, PhD •

Timothy W Russell, PhD • et al. [Show all authors](#) • [Show footnotes](#)

[Open Access](#) • Published: February 28, 2020 •

DOI: [https://doi.org/10.1016/S2214-109X\(20\)30074-7](https://doi.org/10.1016/S2214-109X(20)30074-7)

2020: March



- March 2nd: Temporal variation in transmission (R_t) + release of EpiNow
- March 10th: In person teaching (first and last @LSHTM)
- March 10th: Pointing at graphs as an intro to John's newnight interview



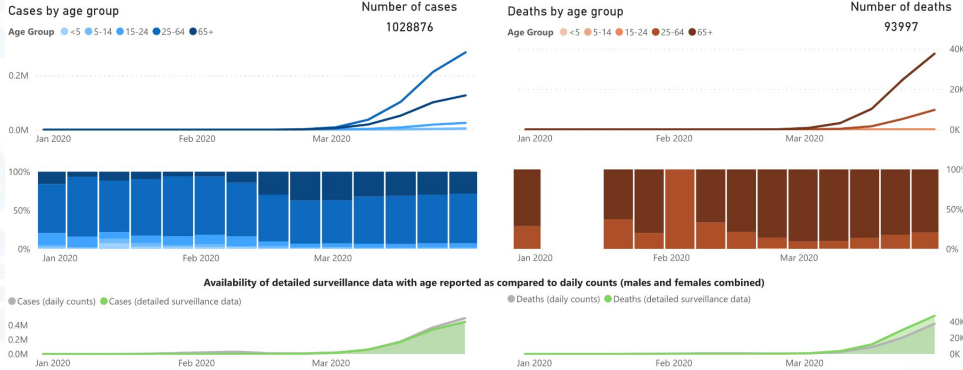
Temporal variation in transmission during the COVID-19 outbreak

Status: In Progress | First online: 02-03-2020 | Last update: 04-04-2020

Authors: Sam Abbott*, Joel Hellewell, James D Munday, June Young Chun, Robin N. Thompson, Nikos I Bosse, Yung-Wai Desmond Chan, Timothy W Russell, Christopher I Jarvis, CMMID COVID-19 working group, Stefan Flasche, Adam J Kucharski, Rosalind M Eggo & Sebastian Funk.

* corresponding author

2020: March



- March 20th: Partner flew back from Postdoc in the US
- March 23rd: London -> Bristol
- March 31st: epiforecasts.io/covid
 - Rt + short-term forecasts
 - Daily for 2+ years
 - Initially manually
 - 2000+ locations



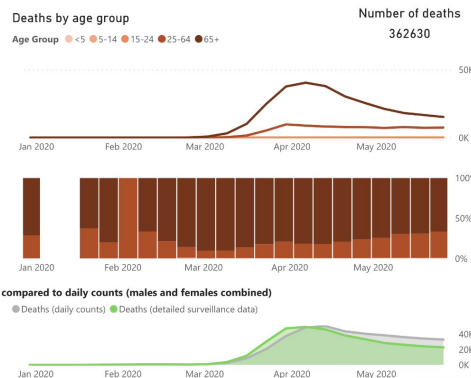
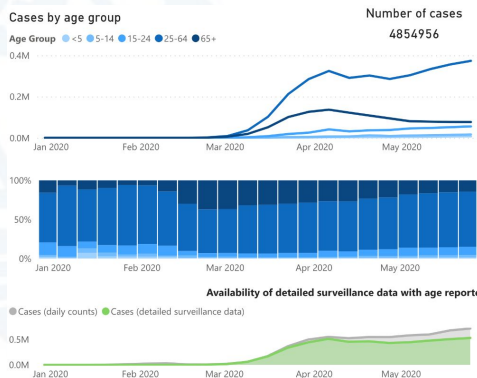
RESEARCH ARTICLE

UPDATE Estimating the time-varying reproduction number of SARS-CoV-2 using national and subnational case counts [version 2; peer review: 1 approved, 1 approved with reservations]

Sam Abbott , Joel Hellewell , Robin N. Thompson, Katharine Sherratt , Hamish P. Gibbs, Nikos I. Bosse , James D. Munday , Sophie Meakin , Emma L. Doughty, June Young Chun , Yung-Wai Desmond Chan, Flavio Finger , Paul Campbell , Akira Endo , Carl A. B. Pearson , Amy Gimma , Tim Russell , CMMID COVID modelling group, Stefan Flasche , Adam J. Kucharski, Rosalind M. Eggo , Sebastian Funk



2020: April - May



- April 1st: Start of 3 times a week short-term forecasts and Rt estimates for SPI-M-O
- April: More reports (5+(?)) for SPI-M-O
- April: Became effectively non-verbal outside of work.
- May: Forecasts -> Weekly

Estimates of nosocomial and community transmission of COVID-19 in the England

Authors: Sam Abbott, Joel Hellewell, Jonathan Read, Nikos I Bosse, Kath Sherratt, James D Munday, and Sebastian Funk on behalf of the LSHTM COVID-19 Modelling Team

Date: 2020-04-12

Aim

To identify changes in the reproduction number, rate of spread, and doubling time during the course of the COVID-19 outbreak in nosocomial and community populations whilst accounting for potential biases due to delays in case reporting.

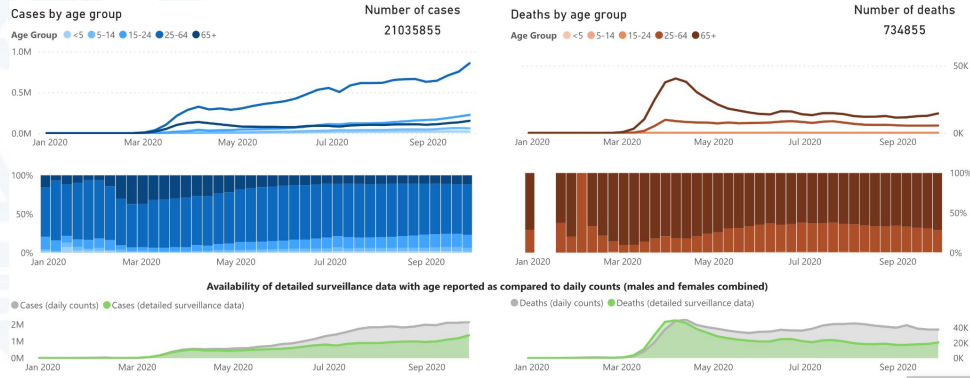
Short-term forecasts to inform the response to the Covid-19 epidemic in the UK

© S Funk, © S Abbott, BD Atkins, M Baguelin, © JK Baillie, P Birrell, J Blake, © NI Bosse, © J Burton, J Carruthers, © NG Davies, D De Angelis, L Dyson, WJ Edmunds, © RM Eggo, NM Ferguson, K Gaythorpe, © E Gorsich, © G Guyver-Fletcher, J Hellewell, © EM Hill, © A Holmes, TA House, C Jewell, © M Jit, T Jombart, I Joshi, © MJ Keeling, E Kendall, ES Knock, AJ Kucharski, KA Lythgoe, © SR Meakin, © JD Munday, © PJM Openshaw, CE Overton, © F Pagani, J Pearson, PN Perez-Guzman, L Pellis, F Scarabel, © MG Semple, K Sherratt, M Tang, MJ Tildesley, © E Van Leeuwen, © LK Whittles, CMMID COVID-19 Working Group, Imperial College COVID-19 Response Team, ISARIC4C Investigators

doi: <https://doi.org/10.1101/2020.11.11.20220962>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

2020: June - September



- June: Stopped forecasts and started projections for SPI-M-O
- June: Started speaking outside of work again.
- June: Email from Katie Gostic -> Rt method is flawed
- June: Start forecasting weekly for the CDC forecast hub
- July 23rd: First stable EpiNow2 release
- Sept 31st: Moved in with parents in Cornwall to try and deal with panic attacks

Practical considerations for measuring the effective reproductive number, R_t

Katelyn M. Gostic , Lauren McGough, Edward B. Baskerville, Sam Abbott, Keya Joshi, Christine Tedijanto, Rebecca Kahn, Rene Niehus, James A. Hay, Pablo M. De Salazar, Joel Hellewell, Sophie Meakin, James D. Munday, [...], Sarah Cobey [view all]

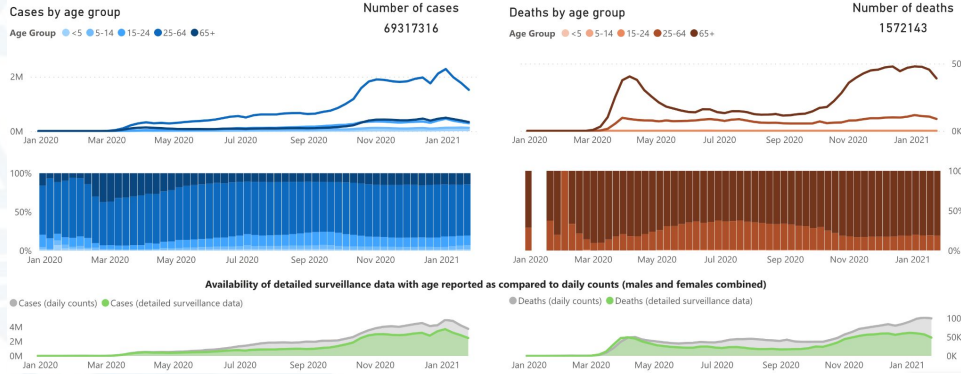
Published: December 10, 2020 • <https://doi.org/10.1371/journal.pcbi.1008409>

EpiNow2: Estimate real-time case counts and time-varying epidemiological parameters

lifecycle maturing R-CMD-check passing codecov 75% downloads 2.1K

License MIT contributors 13 r-universe 1.3.4 commits since v1.3.4 16 DOI 10.5281/zenodo.7611804

2020-2021: October - January



- Oct 22nd: Grandma's funeral (10 people)
- Oct 22nd: Worked overnight implementing susceptibility for SPI-M-O projections.
- Oct: Sisters wedding (14 people)
- Nov-Jan: Worked with Met office to productionise our Rt estimates
- Jan 1st: Moved to partner's parent's house to start our own house hunt
- Jan 8th: Local area Rt and S-gene target failure



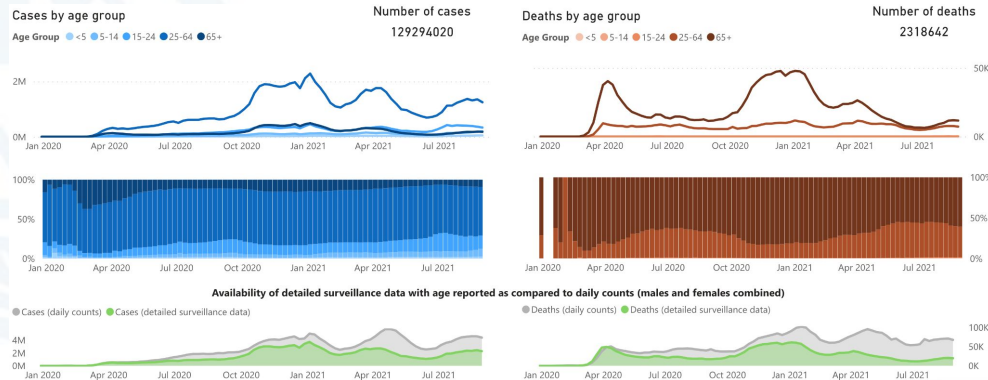
Local area reproduction numbers and S-gene target failure

Status: Real time report | First online: 08-01-2021 | Last update: 08-01-2021

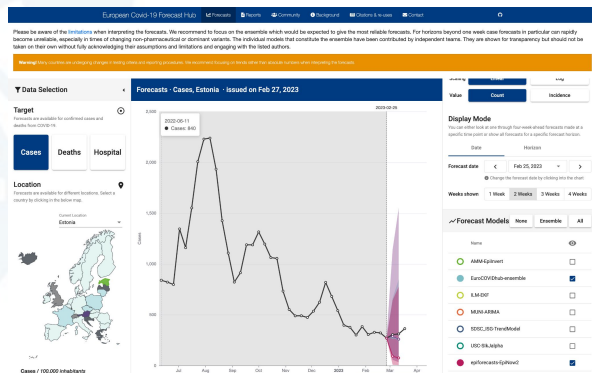
Authors: Sam Abbott, Sebastian Funk* & CMMID COVID-19 working group.

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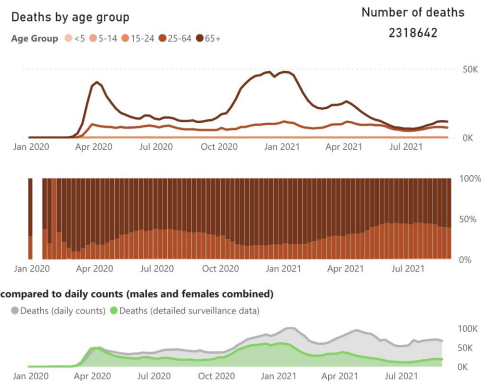
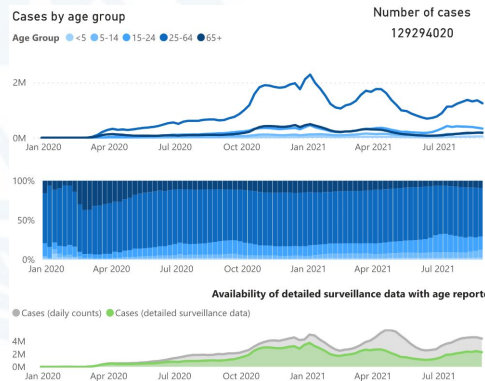
2021: February - August



- Feb: Started forecasting weekly for the European forecasting Hub
- March 1st: Start on EpiNow2 v2 dev
- March 18th: Moved out of and sold Bristol flat
- 20th April: Gave up on house buying -> Cornwall



2021: February - August



- April: Started being able to talk to people in shops etc. again
- April 21st: Grandad's funeral (30 people)
- May: Burned out on EpiNow2 dev
- May - August: Short-term forecasts of variant dynamics + cases

forecast_vocs 0.1.0-2000 Reference Articles · Changelog Search for

Forecast case and sequence notifications using variant of concern strain dynamics

Overview · GitHub · Issues · Discussions

Contains models and tools to produce short-term forecasts for both case and sequence notifications assuming circulation of either one or two variants. Tools are also provided to allow the evaluation of the use of sequence data for short-term forecasts in both real-world settings and in user-generated scenarios.

Installation

Installing the package

Install the stable development version of the package with:

```
!install stable::("forecast_vocs", repo = "https://gitlab.com/forecast_vocs-dev")
```

Install the unstable development from GitHub using the following:

```
!remotes::install_github("epiforecasts/forecast_vocs", dependencies = TRUE)
```

Installing CmdStan

If you don't already have CmdStan installed then, in addition to installing `forecast_vocs`, it is also necessary to install CmdStan using CmdStan's `install_cmdstan()` function to enable model fitting in `forecast_vocs`. A detailed C++ handbook is also required. Instructions are provided in the [Getting started with CmdStan vignette](#). See the [CmdStan documentation](#) for further details and support.

```
!cmdstanr::install_cmdstan()
```

Quick start

Links

- [Browse source code](#)
- [Report a bug](#)

License

- [Full license](#)
- [MIT - No license](#)

Community

- [Code of conduct](#)
- [Citation](#)
- [City forecast team](#)

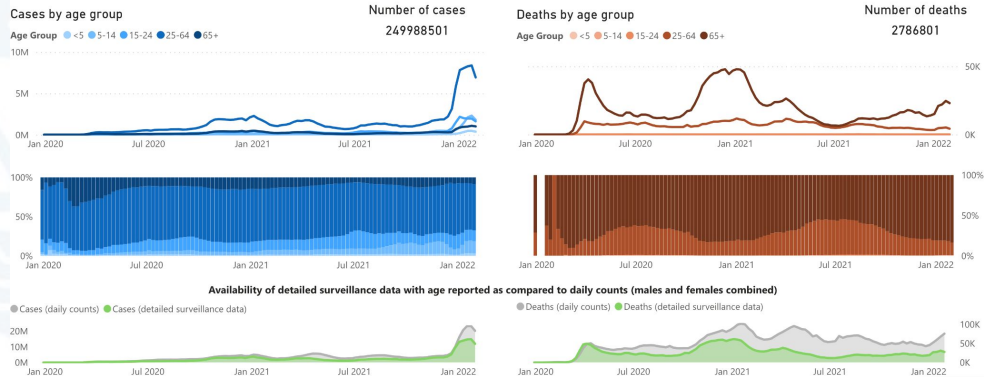
Developers

- [Sam Abbott](#)
- Author, maintainer
- [More about authors...](#)

Dev status

- [CI](#)
- [Coverage](#)

2021-2022: September - January



- Sept 1st: Cornwall -> Bristol (staff flat).
House buying round 2

- Oct 1st: Dev on epinowcast.org begins

- Nov: Niece born + 1st day
@office

- Nov 21st: Daily nowcasting of
hospitalisations in Germany

- Dec 22nd: Daily Omicron short-term
forecasts

- Jan 1st: Had 1st round of COVID-19

- Jan 7th: Estimate of Omicron's generation
time (last SPI-M-O report)



Estimation of the test to test distribution as a proxy for generation interval distribution for the Omicron variant in England

Sam Abbott, Katharine Sherratt, Moritz Gerstung, Sebastian Funk

doi: <https://doi.org/10.1101/2022.01.08.22268920>

2022-2023: Feb - Now

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Global Situation

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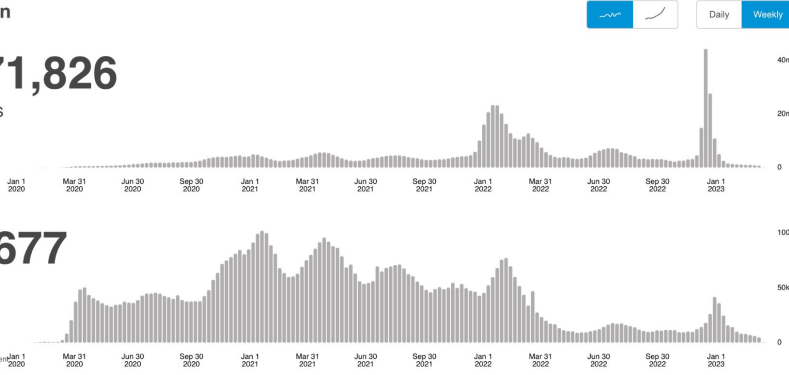
confirmed cases

6,879,677

deaths

Source: World Health Organization

Data may be incomplete for the current day or week.



- March 10th: First successful house offer (note 1st...)
- March 17th: Had COVID round 2
- March 25th: Turned off Rt pipeline after 2 years
 - 500k unique users
 - 1.2 million page views
 - Was it worth it?

Sem Abbott

Reflections on two years estimating effective reproduction numbers

Over the last two years we have estimated reproduction numbers daily for several thousand locations, generated these estimates as a current data set and visualised them as global maps. In this post we reflect on the project, summarising its utility, its integration with other projects, unanticipated challenges, and finally whether we would do it again.

Author: Sem Abbott
London School of Hygiene and Tropical Medicine
London School of Hygiene and Tropical Medicine

Published: March 25, 2022
Mimosa Park, 2022

Contents
An attempt to design a useful resource for regional awareness
Setting the scene
Thinking and writing together
Unexpected challenges
Back to 2020... and then it's right!

This post was originally posted to [gatesandpipe.com](#) and has been reposted here with consent of the author.

31 March, in just under a week time, we'll mark the last day we are producing global national and subnational Rt estimates and forecasts at [https://gatesandpipe.com/global-rt-forecasts](#) more than 2 years after we published the first set of estimates. This is a good opportunity to reflect on what we have learned from this, what went well and what went wrong, and what we would aim to do better next time.

An attempt to design a useful resource for regional awareness



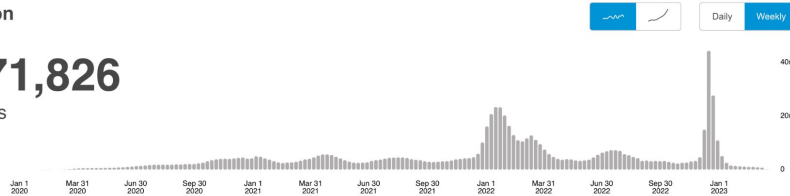
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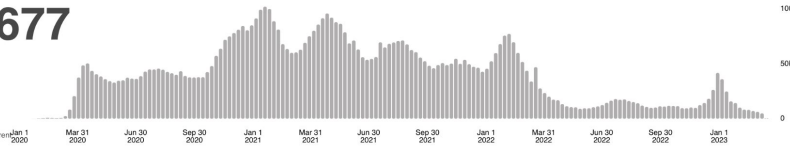
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Source: World Health Organization

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(in the sense of nearly now and in the sense of right truncated count correction)

EpinoCast: Flexible hierarchical nowcasting

Forecasting infectious disease incidence for public health

w/ Adrian Lison, Sang Woo Park, Felix Gunther, Kelly Charniga, Johannes Bracher, Carl Pearson, Hannah Choi, Michael DeWitt, Sebastian Funk and many more

Sam Abbott
fosstodon.org/@seabbs
samabbott.co.uk

Slides: samabbott.co.uk/presentations/2023/royal-society-epinowcast.pdf



- First Christmas not working in 3 years
- Sept 2022: House (yay!)
- Working on
 - Estimating delay distributions during outbreaks
 - Flexible methods for situational awareness during outbreaks (epinowcast.org)
- Start at CDC-CFA as a consultant on 1st April (ish (?)) -> July 31st
- August 1st: ???

What was your pandemic like?

