

Where living systematic reviews fits in the evidence ecosystem – now and in the future

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NIHR Complex Reviews Support Unit
(CRSU) Webinar

22 september 2020



UMC Utrecht
Julius Centrum



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**FAST TRACK**

Prediction models for diagnosis and prognosis of covid-19 infection: systematic review and critical appraisal

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Additional material is published online only. To view please visit the journal online.

Cite this as: *BMJ* 2020;369:m1328

To review and critically appraise published and preprint reports of prediction models for diagnosing coronavirus disease 2019 (covid-19) in patients with suspected infection, for prognosis of patients with covid-19, and for detecting people in the general population at risk of being admitted to hospital for covid-19 pneumonia.

Original aim and set-up: not an LSR

- Prognosis and diagnosis -> **not intervention studies** review (and no MA)
- Not set-up as a living review -> **set-up as a single rapid review**

MARCH 2020



SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Success factors rapid review

- Highly experienced team: **14 prediction modeling experts**
- Collaboration with the **Cochrane Prognosis Methods Group**
- Sense of high **urgency** (lockdown just started in NL)
 - **Dedicated time** of coordinators (LW, MVS)
- Experience with reporting (**TRIPOD**) and risk-of-bias tools (**PROBAST**)
 - **Template data extraction** form available

But... fast moving field

MARCH 2020

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8	9	10	11	12	13	14
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22	23	24	25	26	27	28
29	30	31 bmj				

First search: 1916 titles to screen

First update: 774 titles to screen
(while waiting for peer review feedback)

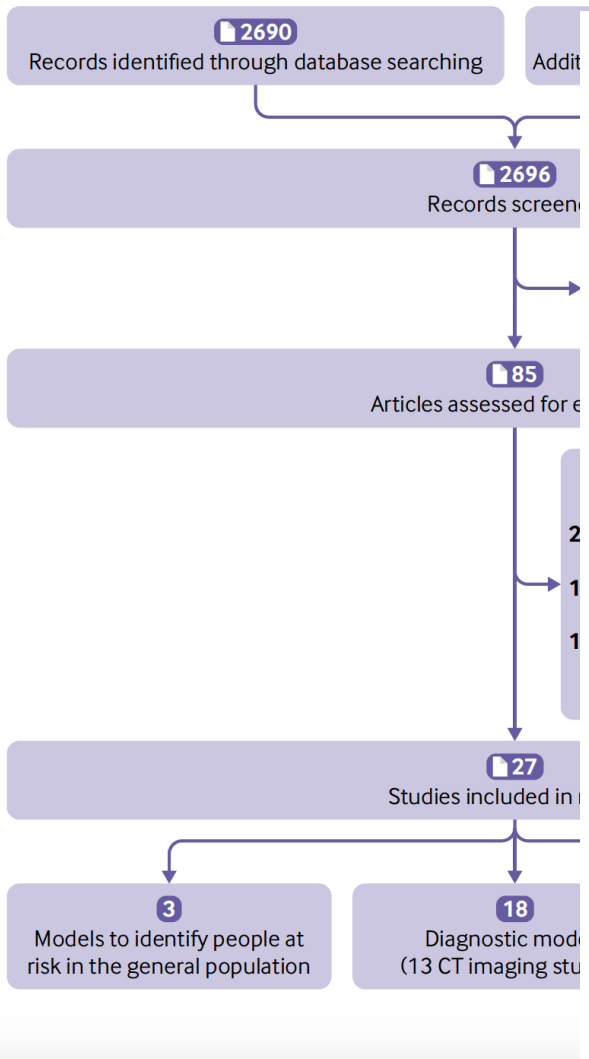
BMJ editor comment

“We would like to take you up on your offer to update the review, as we realise this is a fast-moving area. We also wonder whether we might explore the possibility of periodic updates to this work, in other words to proceed with this as a “living” systematic review.”

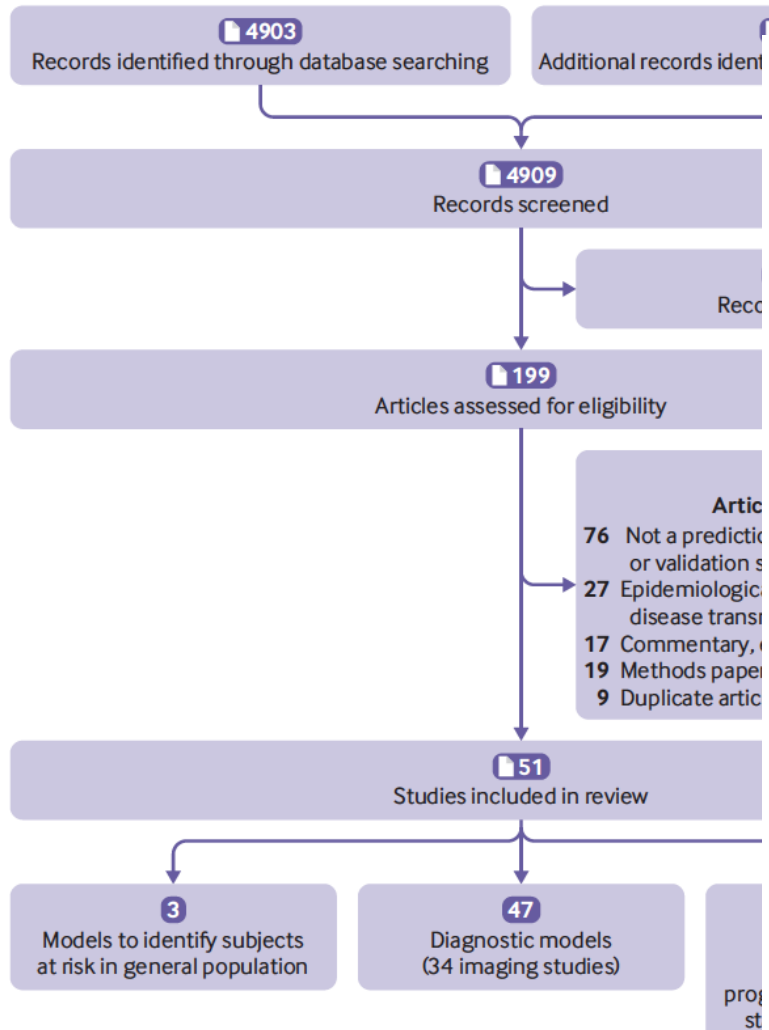
18 day sprint -> **endurance race**

currently working on our **3rd update**

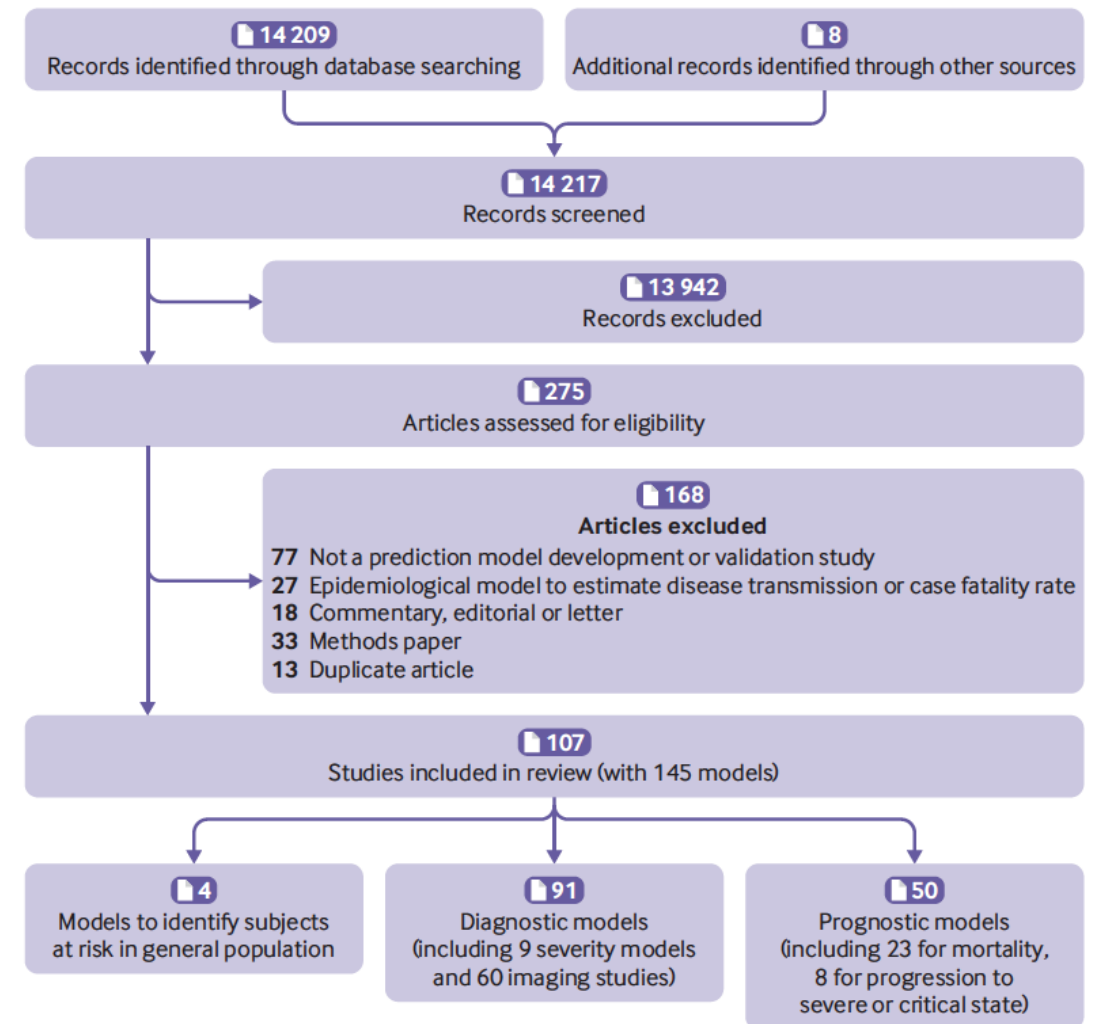
Published: April 7



Published: June 1



Published: July 22





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Drug treatments for covid-19: living systematic review and network meta-analysis

So far:

- 359 citations (Google scholar)
- ~150k access on BMJ.com
- Picked-up by (some) media
- No end-of-update date



[See more details](#)



Who is talking about this article?





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Cite this as: *BMJ* 2020;370:m2925
<http://dx.doi.org/10.1136/bmj.m2925>

Published: 31 July 2020

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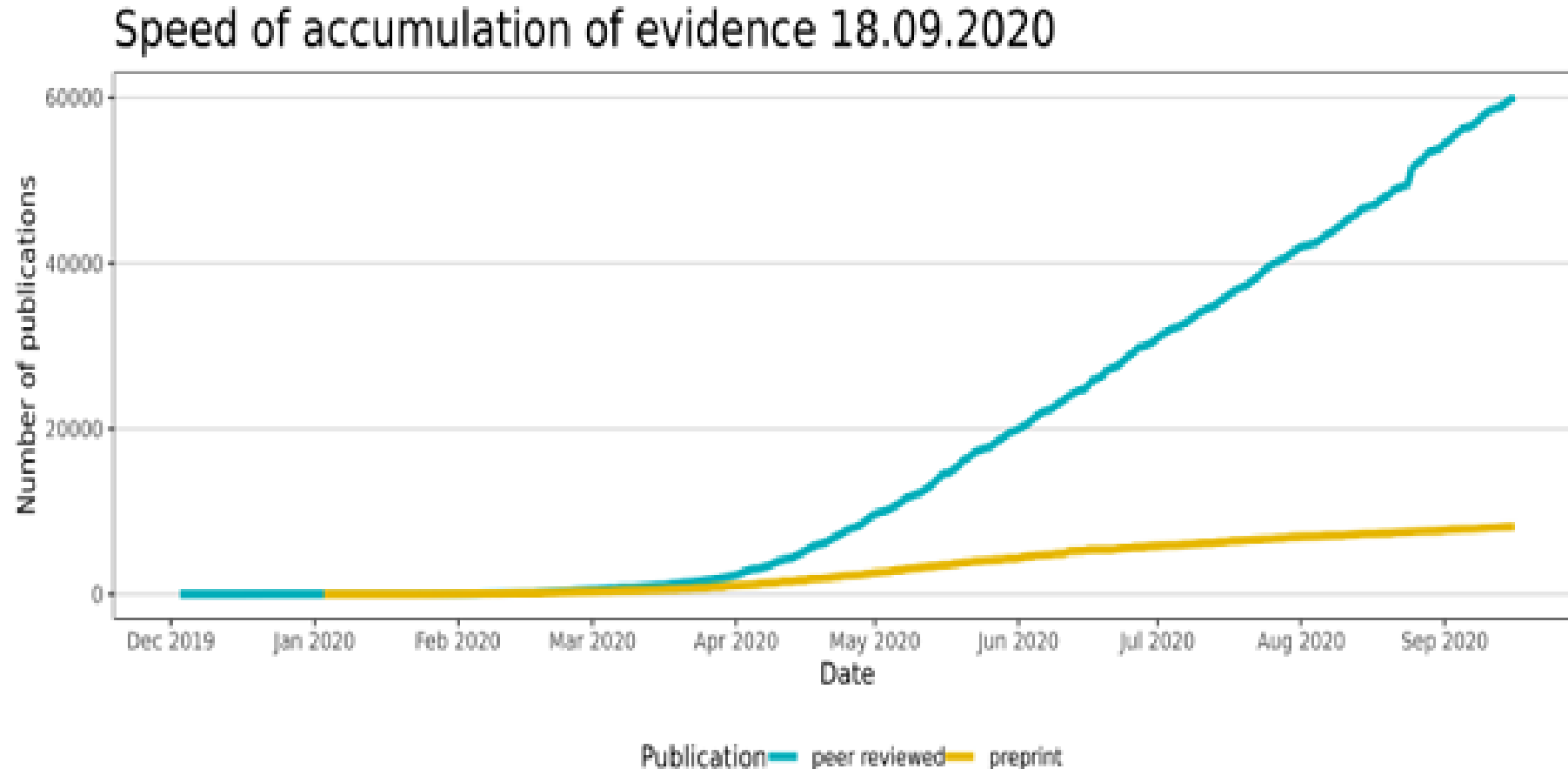
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The concept of living systematic reviews is gathering momentum. The Cochrane Collaboration and *Annals of Internal Medicine* are also testing this format.^{5 6} There are no broadly accepted criteria for when a living systematic review should be preferred to a traditional review, although guidance might be developed based on existing consensus about when to update traditional reviews.⁷ Reasons include methodological developments, changing clinical scenarios, and new information. Nor is there consensus about when is it time to stop one review and start work on a new one. Nonetheless, we will consider living systematic reviews in dynamic research areas, and we are willing to learn as we go.

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Reasons for continuing the living review



Continuing flow of new articles coming out every day (>68k COVID articles)

Source: https://zika.ispm.unibe.ch/assets/data/pub/search_beta/

Reasons for continuing the living review

Coordination team

Laure Wynants (Maastricht)
Maarten van Smeden (Utrecht)
Carl Moons
Ben Van Calster (Leuven)

Information specialist

René Spijker (Utrecht)

Advisors

Marc Bonten (Utrecht)
Maarten De Vos (Leuven)
Liesbet Henckaerts

Experienced and dedicated team

Reviewers

Thomas Debray (Utrecht)
Valentijn de Jong
Ewoud Schuit
Hans Reitsma
Toshi Takada
Lotty Hooft
Anneke Damen
Constanza Navarro
Florien van Royen
Pauline Heus
Luc Smits (Maastricht)
Sander van Kuijk

Bas van Bussel
Iwan van der Horst
Ewout Steyerberg (Leiden)
Anna Lohmann
Kim Luijken
Georg Heinze (Vienna)
Maria Haller
Christine Wallisch
Michael Kammer
Nina Kreuzberger (Cologne)
Nicole Skoetz
Darren Dahly (Cork)

Robert Wolff (York)
Ioana Tzoulaki (London)
Gary Collins (Oxford)
Jie Ma
Paula Dhiman
Richard Riley (Keele)
Kym Snell
Matthew Sperrin (Manchester)
Jamie Sergeant
Glen Martin
Jack Wilkinson
Chunhu Shi

Jan Verbakel (Leuven)
David McLernon (Aberdeen)
Michael Harhay (Philadelphia)

Reasons for continuing the living review

- No “saturation” yet: 145 models all evaluated at **high risk of bias**
- Important source of **up-to-date information** for ongoing prediction model validation projects (covid-precise IPD-MA consortium)

The screenshot shows the PROSPERO website interface. At the top left is the NIHR logo (National Institute for Health Research). At the top right is the PROSPERO logo (International prospective register of systematic reviews). Below the logos, there are navigation links: Home | About PROSPERO. The main heading reads "2165 records found for covid-19". Below this, there is a search bar containing "covid-19" and buttons for "Go", "MeSH", "Clear filters", and "Show filters". Below the search bar, there are navigation buttons: "First", "Previous", "Next", "Last" (page 1 of 44). At the bottom, it says "2165 records found for covid-19" and "Show checked records only | Export".

NIHR | National Institute for Health Research

PROSPERO
International prospective register of systematic reviews

Home | About PROSPERO

2165 records found for covid-19

Click to **show your search history and hide search results**. Open the **filters** panel to find records with specific characteristics (e.g. all reviews about cancer or all diagnostic reviews etc)

Click to **hide the standard search and use the Covid-19 filters**.

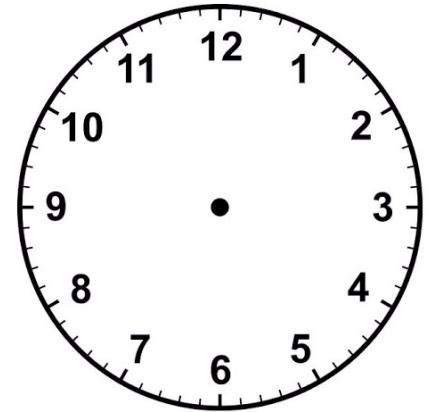
Q covid-19 X Go MeSH Clear filters Show filters

First Previous Next Last (page 1 of 44)

2165 records found for covid-19 Show checked records only | Export

“Living” with a living systematic review

- Lack of traditional academic/financial incentives
 - No “**new publication reward**” after first paper is published
 - No **funding**
 - Relies heavily on **intrinsic motivation** of reviewers
- Updates remain a large time investment
 - Re-evaluating the **total evidence**
 - Updating tables and figures, **rewriting** large pieces of text
 - Currently considering **changing methods of presentation**
(30 vs 200 studies)



Other challenges

- Commitment to a project **without end date**
- How to deal with a **dynamic pool of reviewers/contributors** and authorship?
- How to handle 40 authors that want to **comment on the updated paper?**
- Editorial process

LSR when there is not a pandemic?

- For many research topics: keeping evidence synthesis up-to-date with a (dynamic) team of experts

But we will have to think carefully about:

- **incentives** for reviewers without pandemic urgency
- Agreed upon scheduled **periodic updates** and setting an **end date**
- **Dynamic pool of reviewers**

Also, make living reviews more doable

REPORTING GUIDELINES!

In our LSR we found very often:

- Inadequate description of the study populations
- Unclear intended use (and timing) of the models
- Model performance measures inadequately assessed/reported

Points to discuss

- How do we change **the incentive system** for LSR reviewers/contributors/journals?
- LSR: risks giving **too much power to a small group** of individuals?
- In slower pacing research fields: what is the **incremental value of LSRs**?