



## THE ECOSYSTEM OF EVIDENCE

Lessons learned in the pandemic  
era and future challenges

10<sup>th</sup> International Conference for EBHC Teachers and Developers  
10<sup>th</sup> Conference of the International Society for EBHC  
Taormina, 25<sup>th</sup> - 28<sup>th</sup> October 2023

#EBHC2023



# When seemingly essential methods don't hold up in a pandemic:

## An adaptive approach to a living, rapid review on the SARS-CoV-2 antibody response

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Scientific Resource Center

*AHRQ Evidence-based Practice Center  
Program*

Nothing to disclose

## Co-authors

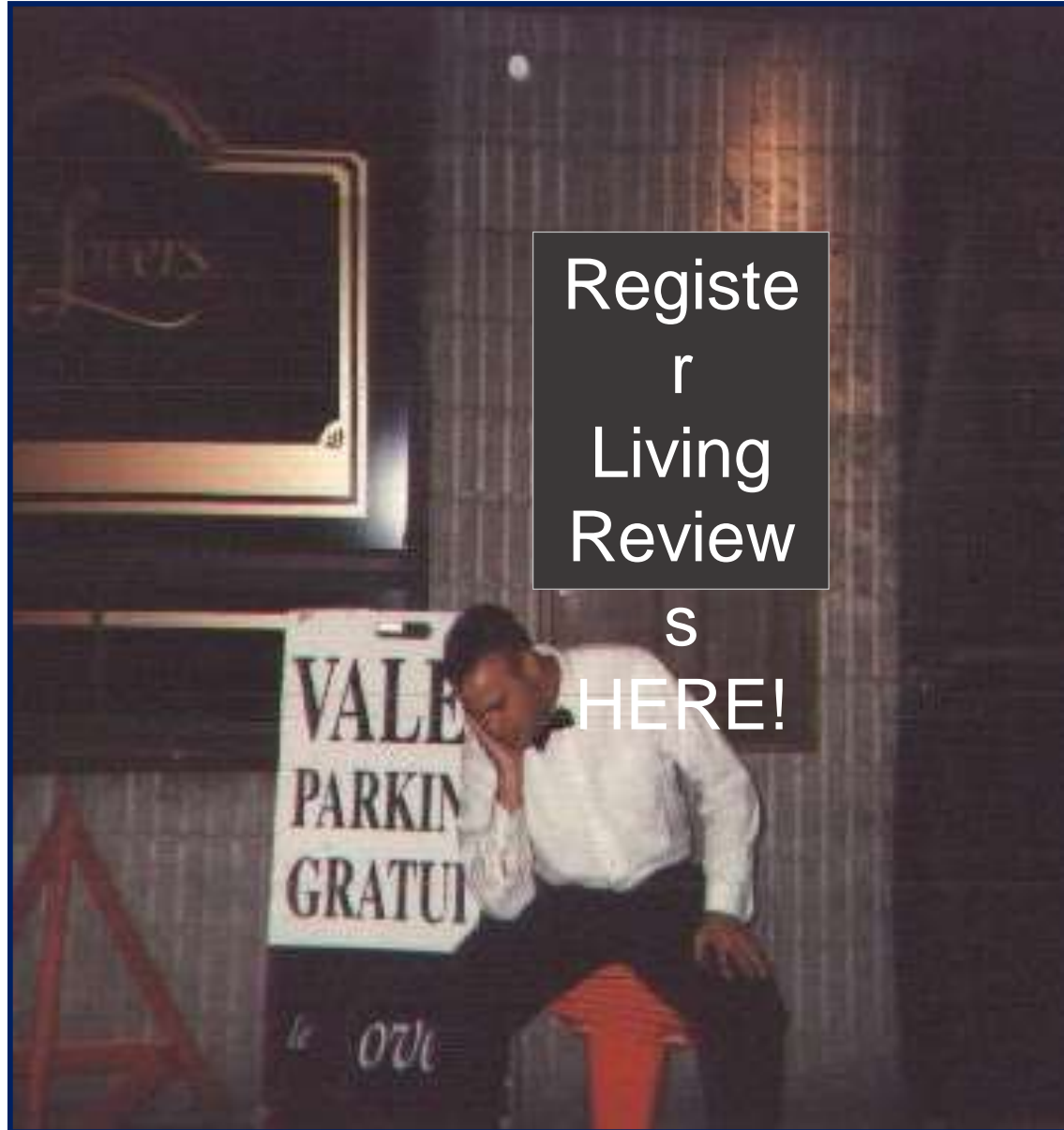
Kate Mackey, Celia Fiordalisi, Mark Helfand: Nothing to disclose

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The authors are responsible for the content of this presentation. It does not necessarily represent the views of the Agency for Healthcare Research and Quality (AHRQ). No statement in this presentation should be construed as an official position of AHRQ or of the US Department of Health and Human Services. This work was funded by AHRQ through the Scientific Resource Center (290-2017-00003-C) contract.



# Background





# Background



To describe our novel “SWATH” approach to conducting a living, rapid review on the SARS-CoV-2 antibody response.



- Conducted a living, rapid review on SARS-CoV-2 antibody response

Reviews | June 2021

**Antibody Response After SARS-CoV-2 Infection and Implications for Immunity** FREE

A Rapid Living Review

**Annals of Internal Medicine**<sup>®</sup>

Reviews | April 2022

**Risk for Reinfection After SARS-CoV-2: A Living, Rapid Review for American College of Physicians Practice Points on the Role of the Antibody Response in Conferring Immunity Following SARS-CoV-2 Infection** FREE

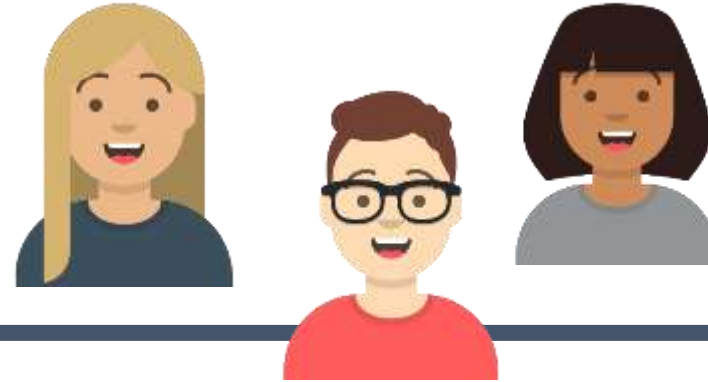
Reviews | January 2023

**Major Update 2: Antibody Response and Risk for Reinfection After SARS-CoV-2 Infection—Final Update of a Living, Rapid Review** FREE

- Demonstrate step-by-step approach to keep review living



June 2020  
Version 1



- KQ1:** What is the prevalence, level, and duration of SARS-CoV-2 antibodies among adults infected with or recovered from SARS-CoV-2 infection?
- KQ2:** Do antibodies acquired from SARS-CoV-2 infection confer immunity against reinfection?
- KQ3:** If antibodies to SARS-CoV-2 confer immunity against reinfection, how long does immunity last?

June 2020  
Version 1

# Time to write the protocol...



**KQ1:** What is the prevalence, level, and duration of SARS-CoV-2 antibodies among adults infected with or recovered from SARS-CoV-2 infection?

**KQ2:** Do antibodies acquired from SARS-CoV-2 infection confer immunity against reinfection?

**KQ3:** If antibodies to SARS-CoV-2 confer immunity against reinfection, how long does immunity last?



Guess what the literature will be like in the future?



Based on what? Seems arbitrary!



Let's think about this before we commit.





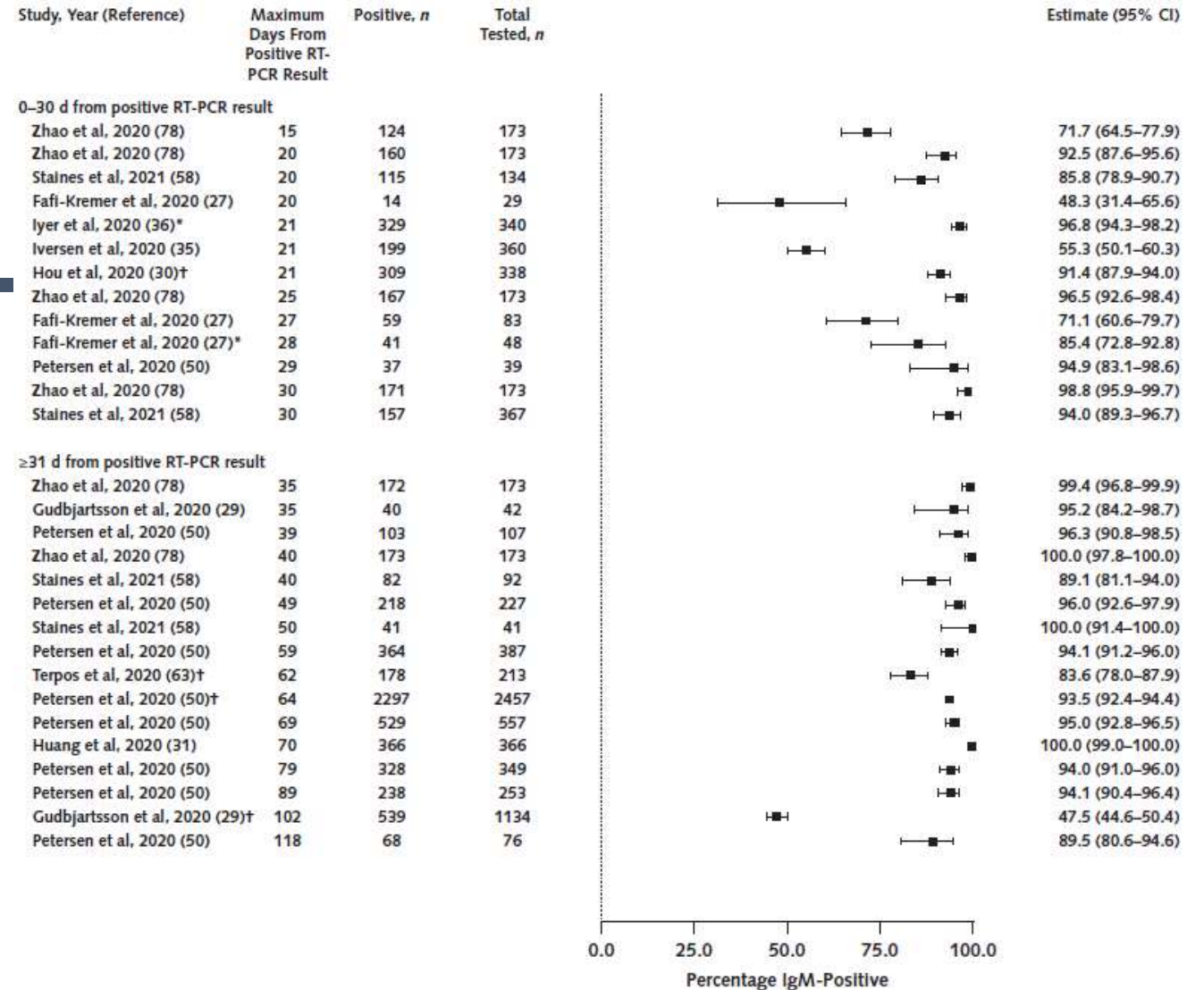
# June 2020

## Version 1: RR Findings

**KQ1:** What is the prevalence, level, and duration of SARS-CoV-2 antibodies among adults infected with or recovered from SARS-CoV-2 infection?

**KQ2:** Do antibodies acquired from SARS-CoV-2 infection confer immunity against reinfection?

**KQ3:** If antibodies to SARS-CoV-2 confer immunity against reinfection, how long does immunity last?



# June 2020

## Version 1: RR Findings

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- KQ1:** What is the prevalence, level, and duration of SARS-CoV-2 antibodies among adults infected with or recovered from SARS-CoV-2 infection?
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June 2020  
Version 1

June 2021 11  
Version 2  
(Update 1)



**KQ1:** What is the prevalence, level, and duration of SARS-CoV-2 antibodies among adults infected with or recovered from SARS-CoV-2 infection?

**KQ2:** Do antibodies acquired from SARS-CoV-2 infection confer immunity against reinfection?

**KQ3:** If antibodies to SARS-CoV-2 confer immunity against reinfection, how long does immunity last?

*POSTPONED*



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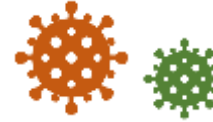
June 2020  
Version 1

June 2021  
Version 2  
(Update 1)

Vaccines!



Variants!



**KQ1:** What is the prevalence, level, and duration...?

*- More of the same*

**KQ1:** Not addressed

**KQ2:** Do antibodies acquired from SARS-CoV-2 infection confer immunity against reinfection?

*- No more low-quality studies; Prospective cohort / test-negative case-control studies only?*

**KQ2:** What is the risk of reinfection from SARS-CoV-2 among adults in the general population compared with the risk of infection in people who have never been infected or vaccinated?

**KQ3:** If antibodies to SARS-CoV-2 confer immunity against reinfection, how long does immunity last?

*- Omicron 'era' only!*





# What concerns were raised about our methods?



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**Annals of Internal Medicine**

EDITORIAL

## Living, Rapid Reviews in a Rapidly Evolving World

Ann Intern Med. 2023;176:135–136. doi:10.7326/M22-3283

*“This living, rapid review demonstrated novel methods to maintain flexibility and relevance in a rapidly changing environment. As interest and experience in living reviews increase, the systematic review field will continue to learn and experiment with different approaches to handle changing questions and methods.”*



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What does “SWATH” stand for?



# 'SWATH'

- **Systematic Without All The Hassle**
  - **Strategic While Also Timely & Helpful**
  - **Systematic With All The Headaches**
- **Send other suggestions to [Mark.Helfand@va.gov](mailto:Mark.Helfand@va.gov)**





- This is a story based on our observations over the course of 3 years.
- There was no formal evaluation of our approach.



# Conclusions

- Protocol rigidity in systematic reviews is ensconced in our methods for good reason → to reduce bias
- Need research: which protocol changes are more likely to introduce bias? Reduce bias?
- How do we best meet end-user needs in the setting of new disease / evolving context?



# Acknowledgements

- Mark Helfand, MD, MS, MPH
- Kate Mackey, MD, MPP
- Celia Fiordalisi, MS
- Charlotte Armstrong, BA
- Devan Kansagara, MD, MCR
- Susan Norris, MD, MPH

