



Quenching the thirst for access to  
Living guidelines



**Holger Schünemann, MD, MSc, PhD, FRCPC**

@schunemann\_mac | schuneh@mcmaster.ca

**On behalf of the eCOVID RecMap team**

**HEI @McMaster**

**CERC @Humanitas**

**EBHC, Taormina 27 | 10 | 2023**

# Disclosures

No direct financial conflicts

GRADE Working Group Co-Chair

Cochrane Canada - Director

Guidelines International Network – chair

INGUIDE – steering committee lead

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Hematology (ASH), WHO, Public Health

Agency of Canada

Thank you: WHO Global TB program, ASH,

RecMap team, CAN-PCC team &

**Elie Akl!**

Views expressed my own



# Land Acknowledgment

**McMaster University sits on the traditional territories of the Mississauga and Haudenosaunee nations and within the lands protected by the Dish With One Spoon wampum agreement.**



# Today's talk

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Living guidelines....

What they are

Beyond single guidelines: Recommendation Mapping

One role for AI

# Introduction of living guidelines (Cochrane Canada 2017):

In a living guideline, the unit of update is the individual recommendation and not necessarily the whole guideline (underlying principle).



Journal of Clinical Epidemiology 91 (2017) 47–53

**Journal of  
Clinical  
Epidemiology**

## Living systematic reviews: 4. Living guideline recommendations

Elie A. Akl<sup>a,\*</sup>, Joerg J. Meerpohl<sup>b</sup>, Julian Elliott<sup>c</sup>, Lara A. Kahale<sup>d</sup>, Holger J. Schünemann<sup>e</sup>,  
on behalf of the Living Systematic Review Network

<sup>a</sup>*Department of Internal Medicine and Clinical Research Institute, American University of Beirut, Beirut, Lebanon*

<sup>b</sup>*Cochrane Germany, Medical Center - University of Freiburg, Freiburg, Germany*

<sup>c</sup>*Department of Infectious Diseases and Cochrane Australia, School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia*

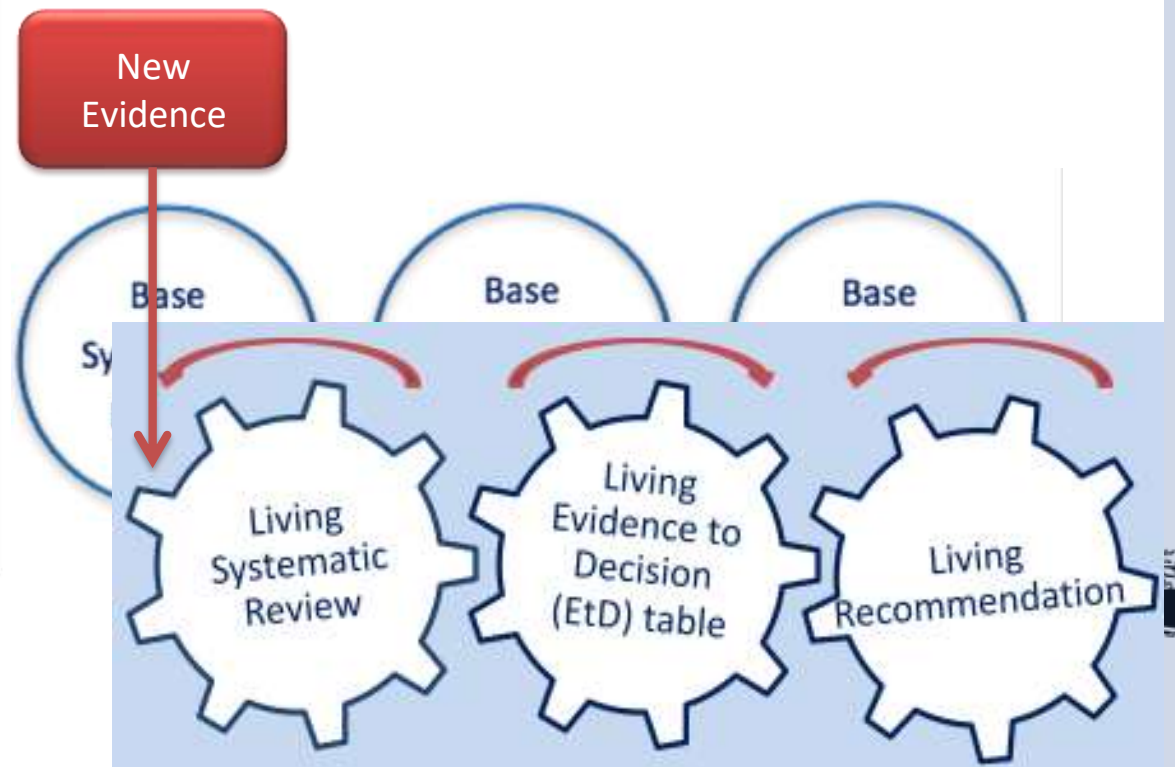
<sup>d</sup>*Clinical Research Institute, American University of Beirut, Beirut, Lebanon*

<sup>e</sup>*Department of Medicine and Department of Health Research Methods, Evidence, and Impact, Hamilton, Ontario, Canada*

Accepted 17 August 2017; Published online 11 September 2017

### Box 3 Elements necessary for producing living recommendations

- Living systematic review
- Living Evidence Profile
- Living Evidence to Decision (EtD) table
- Living guideline panel
- Living peer review process
- Living publication and dissemination
- Living budget



# Definitions 2017

- Living practice guideline: an optimization of the guideline development process to allow updating of individual recommendations as soon as relevant new evidence becomes available.
- Living recommendation: a recommendation which is updated as soon as relevant new evidence becomes available.
- Living systematic review: a systematic review which is continually updated, incorporating relevant new evidence as it becomes available.



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on behalf of the Living Systematic Review Network



Cochrane's first living  
systematic review: to  
inform guidelines...



Cochrane Database of Systematic Reviews

## Parenteral anticoagulation in ambulatory patients with cancer (Living Systematic Review)

Akl EA, Kahale LA, Hakoum MB, Matar CF, Sperati F, Barba M, Yosuiico VED, Terrenato I, Synnot A, Schünemann H

Akl EA, Kahale LA, Hakoum MB, Matar CF, Sperati F, Barba M, Yosuiico VED, Terrenato I, Synnot A, Schünemann H.  
Parenteral anticoagulation in ambulatory patients with cancer.  
Cochrane Database of Systematic Reviews 2017, Issue 9. Art. No.: CD006652.  
DOI: 10.1002/14651858.CD006652.pub5.

[www.cochranelibrary.com](http://www.cochranelibrary.com)

Parenteral anticoagulation in ambulatory patients with cancer (Review)  
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WILEY





Thirsty for  
"Living  
guidelines"

# Definitions

- Living practice guideline: a guideline development process to allow updating of individual recommendations as relevant new evidence becomes available.
- Living recommendation: a recommendation updated as soon as relevant new evidence becomes available.
- Living systematic review: a systematic review updated, incorporating relevant new evidence as it becomes available.

**we tried to make it simple, but it was too simple**



Why too simple?  
to not say naïve

## American Society of Hematology living guidelines on the use of anticoagulation for thromboprophylaxis in patients with COVID-19: May 2021 update on the use of intermediate-intensity anticoagulation in critically ill patients

Adam Cuker,<sup>1\*</sup> Eric K. Tseng,<sup>2,4</sup> Robby Nieuwlaat,<sup>3</sup> Pantep Angchaisukain,<sup>4</sup> Clifton Blair,<sup>5</sup> Kathryn Dane,<sup>6</sup> Jennifer Davila,<sup>7</sup> Maria T. DeSancho,<sup>8</sup> David Diuguid,<sup>9</sup> Daniel O. Griffin,<sup>10-12</sup> Susan R. Kahn,<sup>13</sup> Frederikus A. Klok,<sup>14</sup> Alfred Ian Lee,<sup>15</sup> Ignacio Neumann,<sup>18</sup> Ashok Pai,<sup>17</sup> Marc Righini,<sup>18</sup> Kristen M. Santilippo,<sup>19</sup> Deborah Siegal,<sup>20</sup> Mike Sklar,<sup>21</sup> Deirdra R. Terrell,<sup>22</sup> Kamshad Touri,<sup>23</sup> Ele A. Akl,<sup>24</sup> Imad Bou Akl,<sup>24</sup> Antonio Bognanni,<sup>3</sup> Mary Boulos,<sup>25</sup> Romina Brignardello-Petersen,<sup>3</sup> Rana Charide,<sup>26</sup> Matthew Chan,<sup>27</sup> Karin Dearness,<sup>28</sup> Andrea J. Darzi,<sup>3</sup> Philipp Kolb,<sup>29</sup> Luis E. Colunga-Lozano,<sup>29</sup> Razan Mansour,<sup>30</sup> Gian Paolo Morgano,<sup>3</sup> Rami Z. Morsi,<sup>31</sup> Giovanna Muti-Schünemann,<sup>3</sup> Atefeh Noon,<sup>2,32</sup> Binu A. Philip,<sup>3</sup> Thomas Piggott,<sup>3</sup> Yuan Qiu,<sup>25</sup> Yetiani Roldan,<sup>3</sup> Finn Schünemann,<sup>32</sup> Adrienne Stevens,<sup>3</sup> Karla Solo,<sup>3</sup> Wojtek Wiercioch,<sup>3</sup> Reem A. Mustafa,<sup>3,24</sup> and Holger J. Schünemann<sup>3,32</sup>

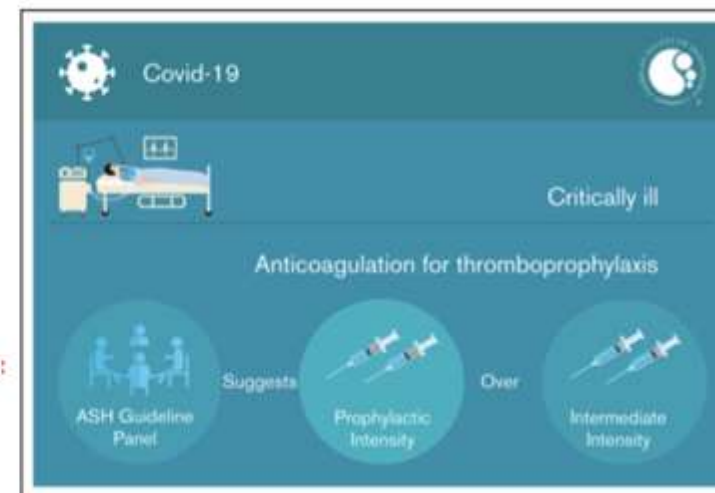
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### Critically Ill Patients

*In patients with COVID-19 related critical illness who do not have confirmed or suspected venous thromboembolism, should we use prophylactic-intensity vs. intermediate-intensity anticoagulation?*

**Access the guidelines published in Blood Advances on February 8, 2021:**

American Society of Hematology living guidelines on the use of anticoagulation for thromboprophylaxis in patients with COVID-19: May 2021 update on the use of intermediate-intensity anticoagulation in critically ill patients



#### RECOMMENDATION 1A (PUBLISHED IN BLOOD ADVANCES ON FEB 8, 2021)

The American Society of Hematology (ASH) guideline panel *suggests* using prophylactic-intensity over intermediate-intensity anticoagulation for patients with coronavirus disease 2019 (COVID-19)-related critical illness who do not have suspected or confirmed venous thromboembolism (VTE) (low certainty of evidence).

Living recommendation: a recommendation which is updated as soon as relevant new evidence becomes available.

# Update as soon as new evidence becomes available?

- Update meaning what exactly?
- And what evidence?
  - E.g., systematic reviews on baseline risk – pretty complicated...
  - On EtD factors that determine a recommendation
- And even if there was evidence... working with trialists was challenging
  - Did not really share data
  - Different outcomes than what we needed for guidelines
  - Disagreement on analytical approaches



Journal of Clinical Epidemiology 162 (2023) 136–139

Journal of  
Clinical  
Epidemiology

## COMMENTARY

Prospective collaborative recommendation development: a novel model for more timely and trustworthy guidelines

Elie A. Akl<sup>a,b,c</sup>, Adam Cuker<sup>d,e,f</sup>, Reem A. Mustafa<sup>g</sup>, Robby Nieuwlaar<sup>h</sup>, Adrienne Stevens<sup>i</sup>, Holger J. Schünemann<sup>b,c</sup>

## Consequential evidence

If the chairs decide to move forward with reconsidering a recommendation, the panel will be asked whether or not the new evidence will warrant discussion of a revised EP and EtD based on the following criteria:

- Information on a critical outcome that previously had no included studies
- Magnitude of the absolute effect changed importantly for at least one critical outcome
  - The panel will be asked to make judgments of the magnitude of effects for individual outcomes going forward and subsequently if this magnitude of effect may change (including the direction of change), e.g. from moderate to large for a critical outcome
- Certainty of the evidence for absolute effect increased for at least one critical outcome
  - Suggestion: increase from Very low or Low to **Moderate or High**
- Potential change in the judgments regarding any other criteria that **had an important bearing on the recommendation (costs, feasibility, acceptability, equity)**

How we determined if we should update a recommendation

- If >50% of panel members agree, we will proceed to update.
  - Introduced decision thresholds for magnitudes of effect to ensure internal consistency

PanelVoice ASH Guidelines on Anticoagulation in Patients with COVID-19 - PICO 2a - Update 2023 Language: English

[← BACK TO QUESTIONS LIST](#)

**Question:** Should DOACs, LMWH, UFH, Fondaparinux, Argatroban, or Bivalirudin at Intermediate-intensity vs. Prophylactic-intensity be used for Patients with COVID-19 related acute illness who do not have suspected or confirmed VTE (PICO 2a)?

**Population:** Patients with COVID-19 related acute illness who do not have suspected or confirmed VTE (PICO 2a)

**Intervention:** DOACs, LMWH, UFH, Fondaparinux, Argatroban, or Bivalirudin at Intermediate-intensity

**Comparison:** Prophylactic-intensity

**Main outcomes:** All-cause mortality; Pulmonary embolism - Moderate severity; Deep Vein Thrombosis of the upper leg - Moderate severity; Major bleeding; Multiple organ failure; Ischemic stroke - Severe; Intracranial hemorrhage; Invasive mechanical ventilation - Long term; Limb amputation; ICU hospitalization; ST-elevation myocardial infarction

**Setting:**

**Population:**

**Background:** Patients hospitalized with COVID-19 related acute illness may develop hemostatic abnormalities and hypercoagulability. Early studies demonstrated high rates of venous thrombotic complications. Furthermore, COVID-19 may be associated with arterial thrombotic complications and microvascular thrombosis, particularly in the lungs. The extent to which hypercoagulability contributes to respiratory failure and multiorgan failure remains unclear.

Early reports suggested that patients with COVID-19 related acute illness have improved clinical outcomes with anticoagulant prophylaxis. However, the optimal intensity of anticoagulation and its effect on clinical outcomes is uncertain and there is substantial variation in clinical practice (Be et al., 2020; Harris et al., 2020; Fara et al., 2020; Ackermann et al., 2020; Reoniky et al., 2020; Tang et al., 2022; Tang et al., 2020).

**Coll:** ASH conflict of interest declaration and management policies were applied and the following panel members were voting panel members (determining the direction and strength of the recommendation): Arghachoukian, Blair, Calver, Dano, Dupard, Griffin, Klok, Lee, Mustafa, Neumann, A. Pai, Righini, Sanfilippo, Schünemann, Siegel, Skala, Terrell, Tsai, Tang. Two panel members (McSorchie, Kahn) were recused.

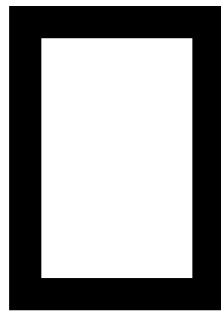
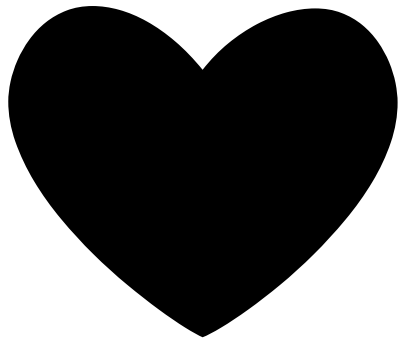
Please review the table below and decide whether you agree or disagree with the proposed judgments. The table summarizes the evidence available for this guideline question. Some of the judgments may have been suggested by the guideline team based on their expertise and/or previous panel responses. Please note if you agree or disagree with each judgment, by selecting the appropriate answer. **If you disagree, you must provide a rationale for your decision in the comment.** If a criterion has no suggested answers, please mark your own judgments based on the provided evidence.

[Instructions](#)

PROBLEM: Is the problem a priority?	PROPOSED JUDGMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
	<input type="radio"/> No	<b>As of June 2023, COVID-19 has affected more than 765 million people (https://covid19.who.int). While many infected individuals remain asymptomatic, others develop severe illness requiring acute inpatient or outpatient care. Patients with COVID-19 related acute illness may develop hemostatic abnormalities and hypercoagulability. Early studies demonstrated high rates of venous thrombotic complications. Furthermore, COVID-19 may be associated with arterial thrombotic complications and microvascular thrombosis, particularly in the lungs. Early reports have suggested that hospitalized medical patients with COVID-19 related acute</b>	The panel prioritized this question through question rating and discussions given the high perceived burden of thrombotic disease or complications in COVID-19 patients. The benefits and harms of different intensity anticoagulation for preventive purposes remain unclear. The panel acknowledged that this question
	<input type="radio"/> Probably no		
	<input type="radio"/> Probably yes		
	<input checked="" type="radio"/> Yes		
	<input type="radio"/> Varies		

# Evaluation

- Panelview tool
  - Evaluation of the process etc by panel
- Scores on a 7-point scale
  - All means > 6.2!
  - A whole lot of love in the panel



**Table 1:** PANELVIEW evaluation at the initial and living phase of developing recommendations

Wiercioch et al. (GIN 2023)

PANELVIEW Item Ratings <i>(1 – strongly disagree; 7 – strongly agree)</i>	December 2020	March 2022
	Rating (n=19)	Rating (n=15)
	Mean	Mean
1. The logistical support provided for organization of the guideline project and panel meeting was appropriate (e.g. scheduling of meeting)	6.9 (0.3)	6.6 (0.6)
2. There was adequate preparatory work and meetings/teleconferences prior to the final panel meeting.	6.9 (0.3)	6.6 (0.5)
3. Adequate time was given for guideline group members to complete tasks (e.g. surveys, providing feedback) throughout the development of the guideline, and to review the evidence summary and other material prior to the panel meeting.	6.3 (1.3)	6.4 (0.7)
4. Adequate time was allotted for the final panel meeting for all guideline questions to be discussed and recommendations to be formulated.	6.9 (0.3)	6.6 (0.5)
5. The panel meeting(s) had a clearly defined agenda and objectives.	6.9 (0.2)	6.9 (0.4)
6. Information was provided about the specific methodology and frameworks to ensure understanding of the overall process and steps that would be used to develop the guideline.	6.9 (0.3)	6.5 (0.7)
7. The panel chair(s) was able to provide clinical and methodological guidance during the meeting, providing direction and support for decision-making.	6.9 (0.2)	6.8 (0.4)
8. The panel chair(s) was able to manage the group process, establishing an atmosphere of support that ensured involvement of all panel members in the discussion and free expression of opinions.	6.9 (0.3)	6.7 (0.5)
9. There was appropriate management of potential interests (financial, academic) of guideline group members, of the organization, and in the evidence synthesis being free from bias.	6.9 (0.3)	6.8 (0.4)
10. There was appropriate management of potential bias in panel members' interpretation of evidence and alignment with prior beliefs.	6.8 (0.4)	6.6 (0.5)
11. The panel was given sufficient opportunity to be involved in the prioritization of questions and scoping of the guideline.	6.8 (0.4)	6.5 (0.8)
12. The final scope of the guideline was clearly communicated to the guideline development group and 6ment was sought.	6.8 (0.4)	6.7 (0.5)
13. The evidence synthesis was rigorous.	6.8 (0.4)	6.6 (0.6)
14. A transparent and usable summary of the evidence was made available for the panel discussion.	6.7 (0.6)	6.6 (0.6)
15. Appropriate consideration was given to the evidence, including all relevant types, and balanced with panel members' input and opportunity to use their experience to interpret the evidence.	6.8 (0.4)	6.6 (0.5)
16. The method or process used for decision making with the available evidence was appropriate:	6.7 (0.6)	6.6 (0.5)
17. There was appropriate involvement and consultation with key stakeholders during the guideline development.	6.4 (1)	6.2 (1)
18. Appropriate consideration was given to patients' views, perspectives, values and preferences.	6.5 (0.6)	5.6 (1.5)
19. An appropriate method was used for formulating the recommendations with transparency of judgements made.	6.7 (0.5)	6.5 (0.6)
20. Appropriate consideration was given to relevant external factors (e.g. policy implications, setting-specific healthcare factors, acceptability of recommendations) in formulating the guideline recommendations.	6.6 (0.6)	6.5 (0.7)
21. The consensus method used by the panel was appropriate, allowing ability to reach consensus.	6.7 (0.5)	6.5 (0.6)
22. The wording of the guideline recommendations formulated was clear and actionable.	6.8 (0.4)	6.5 (0.6)
23. There was transparency in going from the panel's recommendation to the final recommendations that appear in the guideline report and notice was given about any changes made.	6.8 (0.4)	6.7 (0.5)
24. There was diversity in membership and adequate representation of backgrounds, specialties and balance of expertise in the panel composition.	6.8 (0.4)	6.2 (1.4)
25. The panel size was appropriate.	6.8 (0.5)	6.6 (0.5)
26. The required commitment was at an appropriate level for the guideline group members.	6.8 (0.4)	6.6 (0.5)
27. The contributions of the guideline group members were valued and appropriate credit was given.	6.8 (0.4)	6.7 (0.5)
28. There was mutual respect between guideline group members with friendly and professional conduct.	6.9 (0.3)	6.8 (0.4)
29. Appropriate consideration was given to the discussion of research gaps and needs for future research.	6.8 (0.4)	6.2 (1.1)
30. Appropriate consideration was given for the planning of dissemination and implementation of the guideline.	6.8 (0.4)	6.3 (1.3)
31. The writing of the guideline was well planned, with 6ment on the format(s) and opportunity for panel members to provide input and review the guideline draft.	6.7 (0.7)	6.7 (0.5)



# Qualitative study

- N = 15 panel members

**Table 2:** Highlights of key themes identified by the guideline panel and evidence synthesis team as barriers, challenges, and facilitators in the living guideline process:

Challenges and Barriers	Facilitators
<b>Evidence Synthesis and Formulating Recommendations</b>	
<b>Dealing with very low certainty evidence</b> <ul style="list-style-type: none"> <li>○ “The time frame and the pace of the movement in this area have combined to increase pressure to produce guidelines even in the absence of adequate data.”</li> </ul>	Applying rigorous evidence synthesis methods following a priori protocol.
<b>Handling of pre-prints, concerns about inaccuracy of data, and waiting for full publication and access to full data</b> <ul style="list-style-type: none"> <li>○ “Out of the control for anyone. Trials announced a long time ago but we have been waiting for data. Concern about inaccuracy of data and getting it wrong with the recommendation.”</li> </ul>	Clear triggers for updating recommendations.
Tracking of changes in inclusion and exclusion criteria through living process. Information overload with volume of evidence to screen.	Use of online systematic review tools, detailed data abstraction forms, guidance documents.
Changing evidence and changing baseline risk estimates for health condition in question	Weekly meetings with evidence synthesis team and methods advisory group.
<b>Panel Group Process</b>	
<b>Maintaining patient representative engagement</b> <ul style="list-style-type: none"> <li>○ “It was challenging to include input from patient representatives. I think the virtual format made this more difficult.”</li> </ul>	<b>Virtual meetings</b> <ul style="list-style-type: none"> <li>○ “I think the virtual format was key. The living phase would not have been possible if in person meetings had been required.”</li> </ul>
<b>Maintaining frequency of panel meetings, and requiring ad hoc meetings</b> <ul style="list-style-type: none"> <li>○ “Issue of timing and bandwidth. We can only do so many updates and have monthly meetings organized, can we have weekly updates and panel meetings?”</li> </ul>	<b>Chairing of group process and panel meetings. Central coordination of guideline development and evidence synthesis.</b> <ul style="list-style-type: none"> <li>○ “Nobody tried to be leader and impose his opinions.”</li> </ul>
<b>Publication and Dissemination of Living Recommendations</b>	
<b>Delays in publication of updated recommendations</b> <ul style="list-style-type: none"> <li>○ “The articles took much too long to be published. ASH could consider streamlining approval and publication processes.”</li> </ul>	Arrangement, discussion and submission of publication to host journal.
Speed at which primary studies and trials are published and made available.	

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Adam Cukier,<sup>1,\*</sup> Eric K. Tseng,<sup>2,4</sup> Robby Nieuwlaet,<sup>3</sup> Pantep Angchaisuksin,<sup>4</sup> Clifton Blair,<sup>5</sup> Kathryn Dane,<sup>6</sup> Jennifer Davila,<sup>7</sup> Maria T. DeSancho,<sup>8</sup> David Diuguid,<sup>9</sup> Daniel O. Griffin,<sup>10-12</sup> Susan R. Kahn,<sup>13</sup> Frederikus A. Klok,<sup>14</sup> Alfred Ian Lee,<sup>15</sup> Ignacio Neumann,<sup>16</sup> Ashok Pai,<sup>17</sup> Marc Righini,<sup>18</sup> Kristen M. Sanfilippo,<sup>19</sup> Deborah Siegal,<sup>20</sup> Mike Skara,<sup>21</sup> Deirdra R. Terrell,<sup>22</sup> Kamshad Touri,<sup>23</sup> Elie A. Akl,<sup>24</sup> Imad Bou Akl,<sup>24</sup> Antonio Bognanni,<sup>3</sup> Mary Boulos,<sup>25</sup> Romina Brignardello-Petersen,<sup>3</sup> Rana Charide,<sup>26</sup> Matthew Chan,<sup>27</sup> Karin Deamess,<sup>28</sup> Andrea J. Darzi,<sup>3</sup> Philipp Kolb,<sup>29</sup> Luis E. Colunga-Lozano,<sup>29</sup> Razan Mansour,<sup>30</sup> Gian Paolo Morgano,<sup>3</sup> Rami Z. Morsi,<sup>31</sup> Giovanna Muti-Schünemann,<sup>3</sup> Atefeh Noori,<sup>3,32</sup> Binu A. Philip,<sup>3</sup> Thomas Piggott,<sup>3</sup> Yuan Qiu,<sup>25</sup> Yetiani Roldan,<sup>3</sup> Finn Schünemann,<sup>33</sup> Adrienne Stevens,<sup>3</sup> Karla Solo,<sup>3</sup> Wojtek Wiercioch,<sup>3</sup> Reem A. Mustafa,<sup>3,34</sup> and Holger J. Schünemann<sup>3,35</sup>

Downloaded from https://www.bloodadvances.org

## Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis

Derek K Chu, Elie A Akl, Stephanir Duda, Karla Solo, Sally Yaacoub, Holger J Schünemann, on behalf of the COVID-19 Systematic Urgent Review Group Effort (SURGE) study authors\*



Original research

BMJ Global Health

## Safe management of bodies of deceased persons with suspected or confirmed COVID-19: a rapid systematic review

Sally Yaacoub <sup>1</sup>, Holger J Schünemann<sup>2,3</sup>, Joanne Khabisa <sup>1</sup>, Amena El-Harakeh,<sup>1</sup> Assem M Khamis <sup>4</sup>, Fatimah Chamseddine,<sup>1</sup> Rayane El Khoury,<sup>1</sup> Zahra Saad,<sup>5</sup> Layal Hneiny,<sup>6</sup> Carlos Cuello Garcia,<sup>7</sup> Giovanna Elsa Ute Muti-Schünemann,<sup>8</sup> Antonio Bognanni,<sup>7</sup> Chen Chen,<sup>9</sup> Guang Chen,<sup>10</sup> Yuan Zhang,<sup>7</sup> Hong Zhao,<sup>11</sup> Pierre Abi Hanna,<sup>12</sup> Mark Loeb,<sup>13</sup> Thomas Piggott,<sup>7</sup> Marge Reinap,<sup>14</sup> Nesrine Rizk,<sup>15</sup> Rosa Stalteri,<sup>7</sup> Stephanie Duda,<sup>7</sup> Karla Solo <sup>7</sup>, Derek K Chu <sup>7</sup>, Elie A Akl,<sup>1,7,16</sup> the COVID-19 Systematic Urgent Reviews Group Effort (SURGE) group

REVIEW

Annals of Internal Medicine

## Ventilation Techniques and Risk for Transmission of Coronavirus Disease, Including COVID-19

### A Living Systematic Review of Multiple Streams of Evidence

Holger J. Schünemann, MD, PhD, MSc; Joanne Khabisa, MPH\*; Karla Solo, MSc\*; Assem M. Khamis, MD; Romina Brignardello-Petersen, DDM; Amena El-Harakeh, MPH; Andrea Darzi, MD, MPH; Anisa Hajizadeh, MPH; Antonio Bognanni, MD; Anna Bak, PharmD; Ariel Izcovich, MD; Carlos A. Cuello-García, MD, PhD; Chen Chen, MM; Ewa Borowiack, MSc; Fatimah Chamseddine, MD; Finn Schünemann, MD; Gian Paolo Morgano, MSc; Giovanna E.U. Muti-Schünemann, Cand. Med; Guang Chen, MD, PhD; Hong Zhao, PhD; Ignacio Neumann, MD, PhD; Jan Brozek, MD; Joel Schmidt, MD; Layal Hneiny, MPH, MLIS; Leila Harrison, MPH; Marge Reinap, MA; Mats Junek, MD; Nancy Santesso, PhD, MLIS; Rayane El-Khoury, MPH; Rebecca Thomas, MPH, MBChB; Robby Nieuwlaet, PhD; Rosa Stalteri, BSH; Sally Yaacoub, MPH; Tamara Lotfi, MD, MPH; Tejan Baldeh, MPH; Thomas Piggott, MD, MSc; Yuan Zhang, PhD, MSc; Zahra Saad, MSc; Bram Rochwerg, MD, MSc; Dan Perri, MD; Eddy Fan, MD; Florian Stehling, MD; Imad Bou Akl, MD; Mark Loeb, MD, MSc; Paul Garner, MD; Stephen Aston, MD; Waleed Alhazzani, MD, MSc; Wojciech Szczeklik, MD; Derek K. Chu, MD, PhD; and Elie A. Akl, MD, MPH, PhD

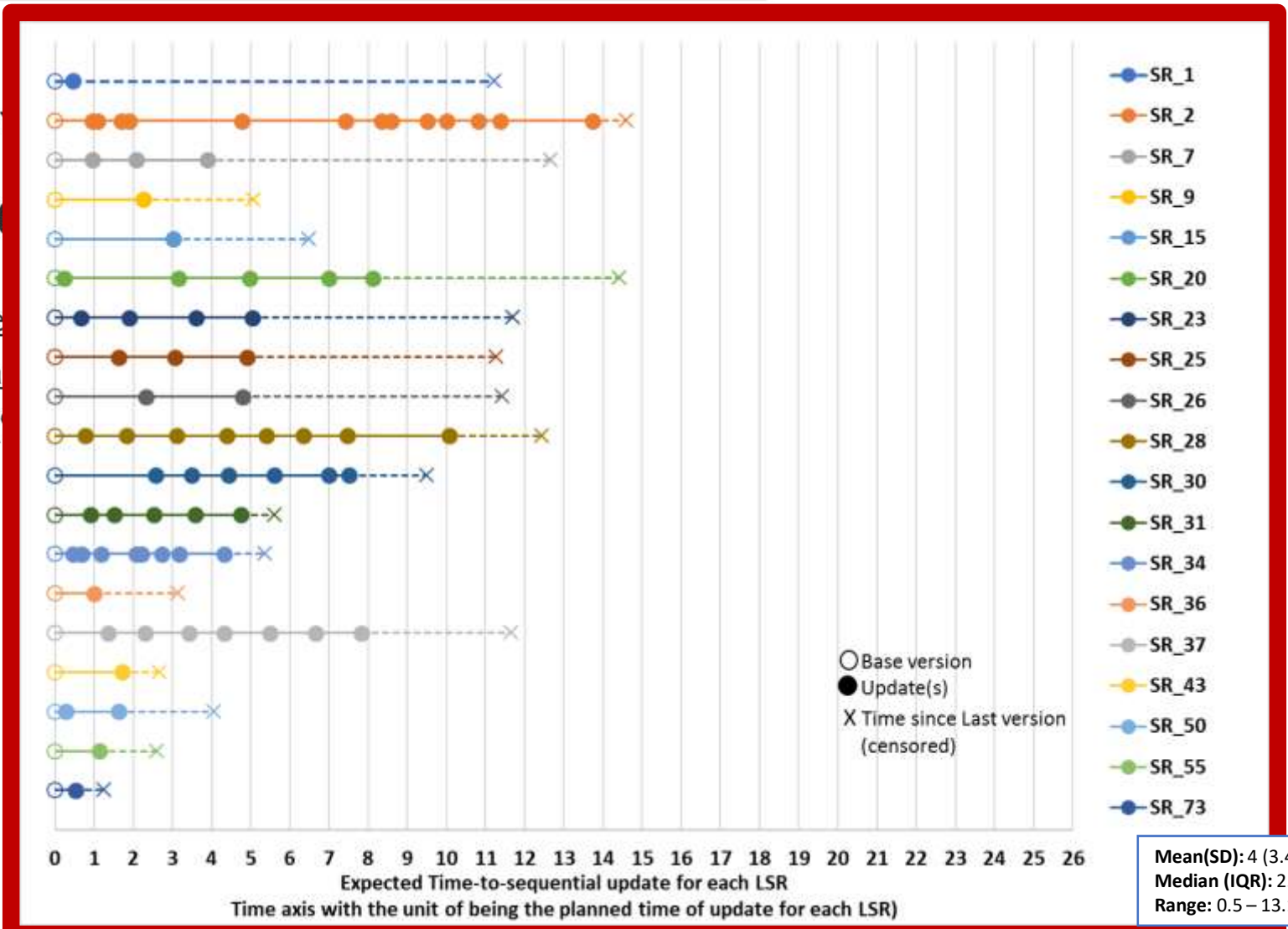
Many SR are not actually kept up to date

Review Article

# The life and death of living systematic reviews: a methodological survey

Elie A. Akl<sup>a b</sup>, Rayane El Khoury<sup>c d</sup>, Assef T. Hader<sup>e</sup>, Hector Pardo-Hernandez<sup>g h</sup>, Sarah Farran<sup>i</sup>, Raquel Garcia<sup>j</sup>, Holger J. Schunemann<sup>b m n o p</sup>, Lara A. Kahale<sup>q</sup>

**76 eligible LSRs:**  
**32 with ≥ 1 update**  
**35 used GRADE**  
**21 machine learning**



Thirst quenched



# Updates and living process possible but ...

Certainly, not when new evidence becomes  
available

There is loads of “not so good” evidence or evidence  
that is not consequential

# Updated way of thinking about “living”

1. Living recommendation: a recommendation that is kept current by an optimized guideline-updating process that accounts for potentially consequential evidence as soon as or shortly after it becomes available.
2. Living guideline: a guideline that includes 1 or more related recommendations that are kept current by an optimized guideline-updating process that accounts for potentially consequential evidence as soon as or shortly after it becomes available. In a living guideline, the unit of update is the individual recommendation and not necessarily the whole guideline.

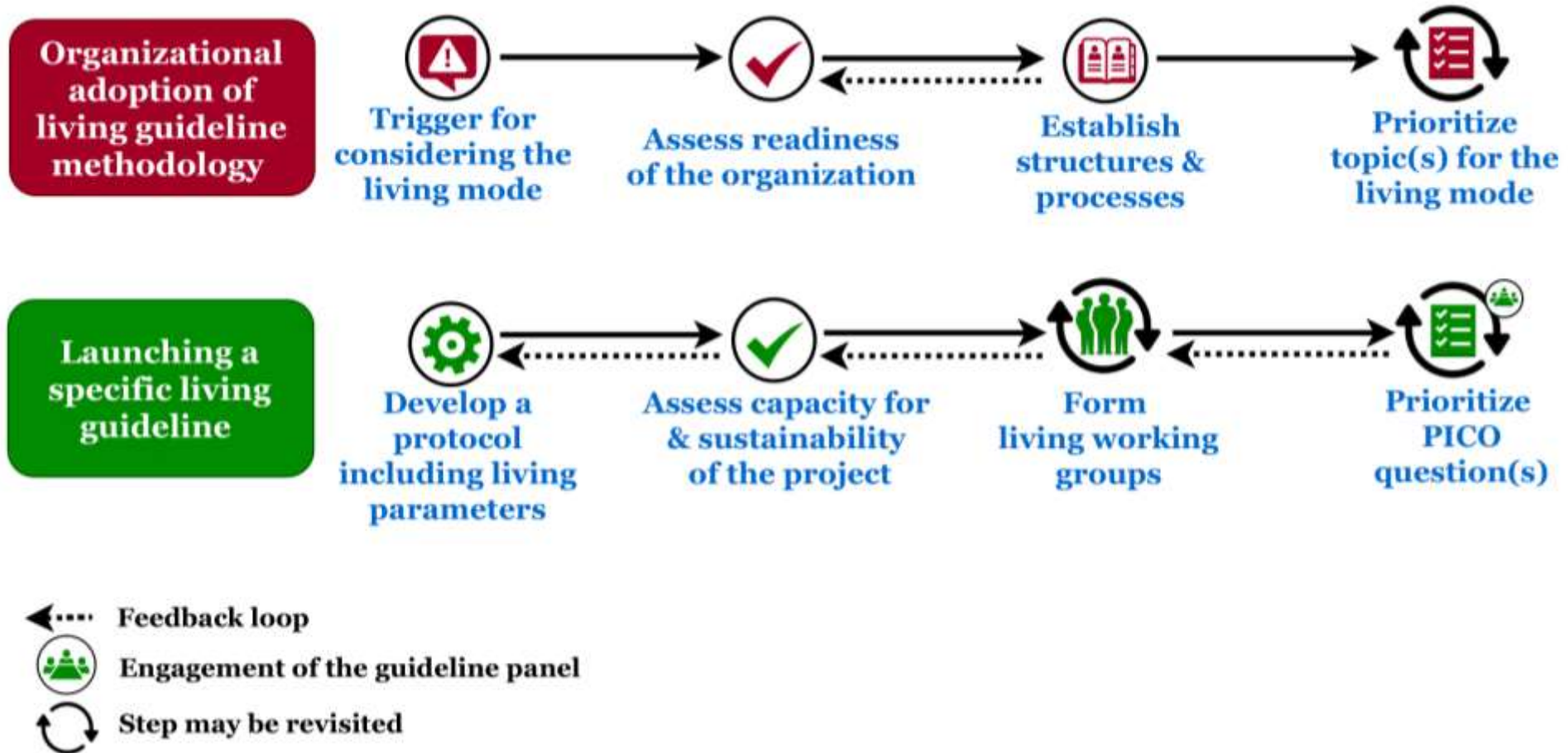
## A Framework for the Development of Living Practice Guidelines in Health Care

Ibrahim K. El Mikati, MD\*; Joanne Khabisa, BS Pharm, MPH\*; Tarek Harb, MD; Mohamed Khamis, MD; Arnav Agarwal, BHSc, MD; Hector Pardo-Hernandez, BA, MPH, PhD; Sarah Farran, MD; Assem M. Khamis, MD, MPH; Ola El Zein, PhD; Rayane El-Khoury, MPH; Holger J. Schünemann, MD, MSc, PhD; Elie A. Akl, MD, MPH, PhD; and the Living Guidelines Group†

Modelled on the GIN-McMaster checklist for guideline development – used for the ISO certified guideline training & certification program **INGUIDE**

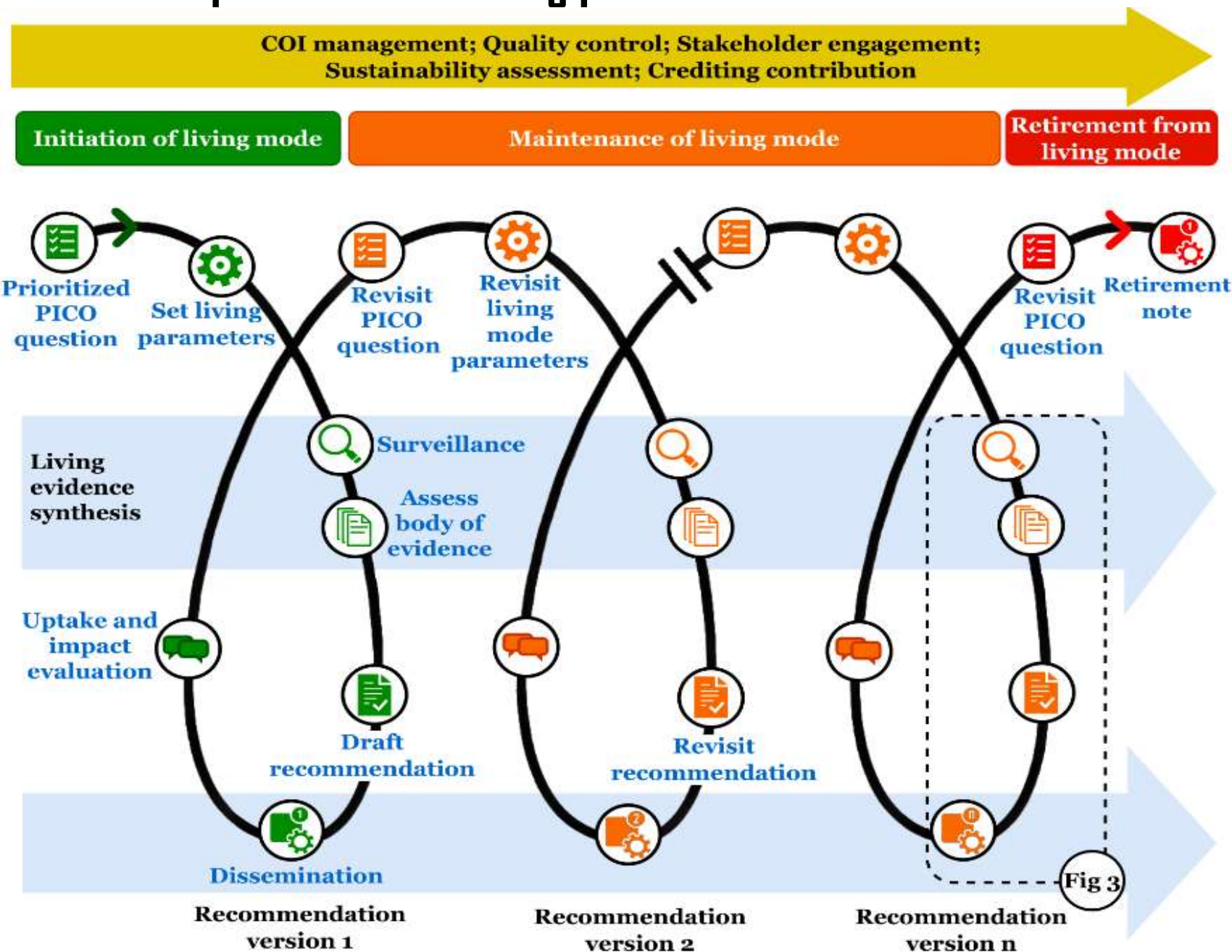


# Organizational planning process for living practice guidelines





# Production process for a living practice recommendation



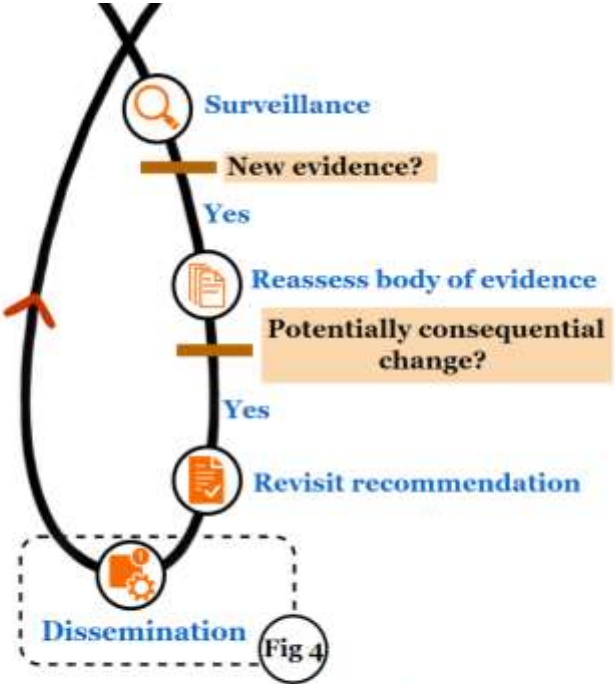
# Three possible scenarios for the maintenance phase



**Scenario 1:**  
no new evidence

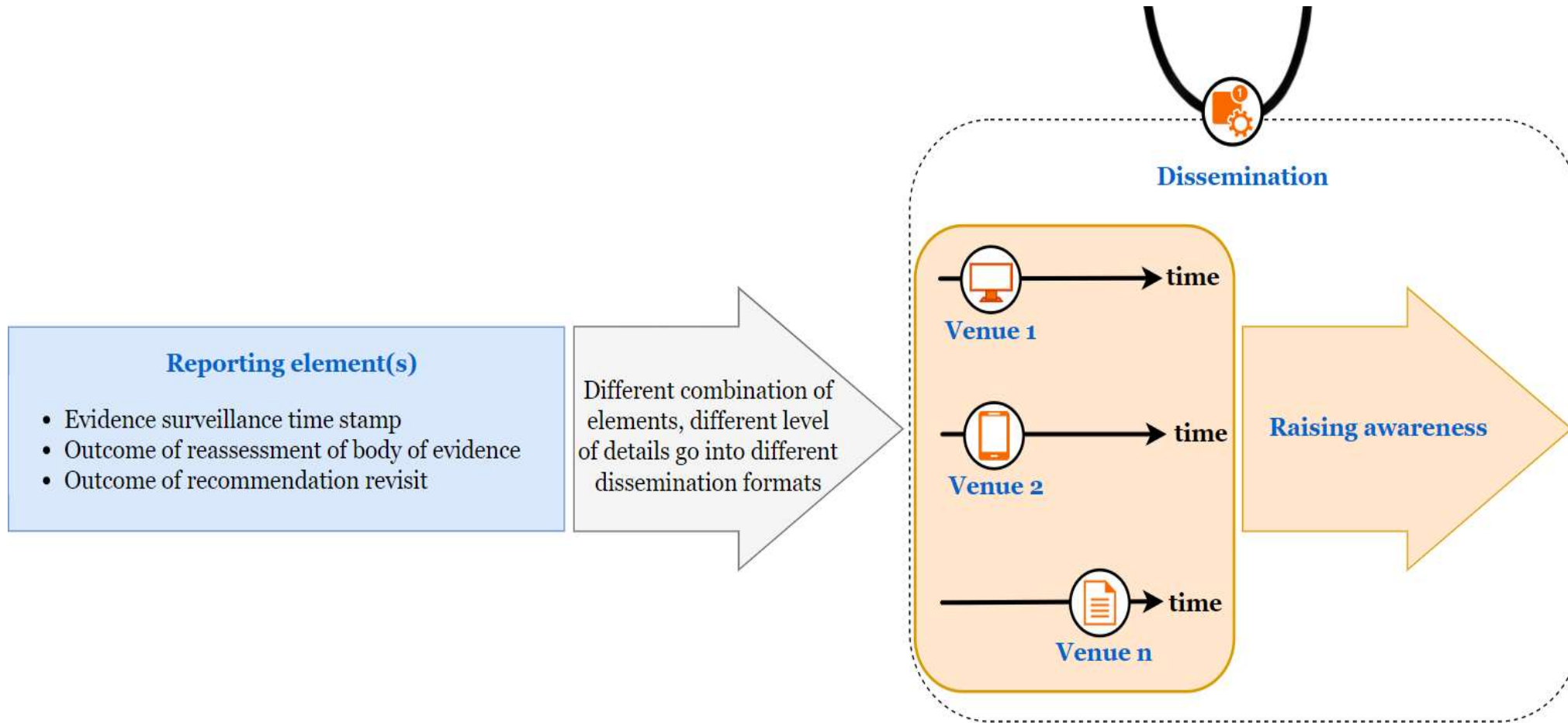


**Scenario 2:**  
new evidence with no potentially consequential change

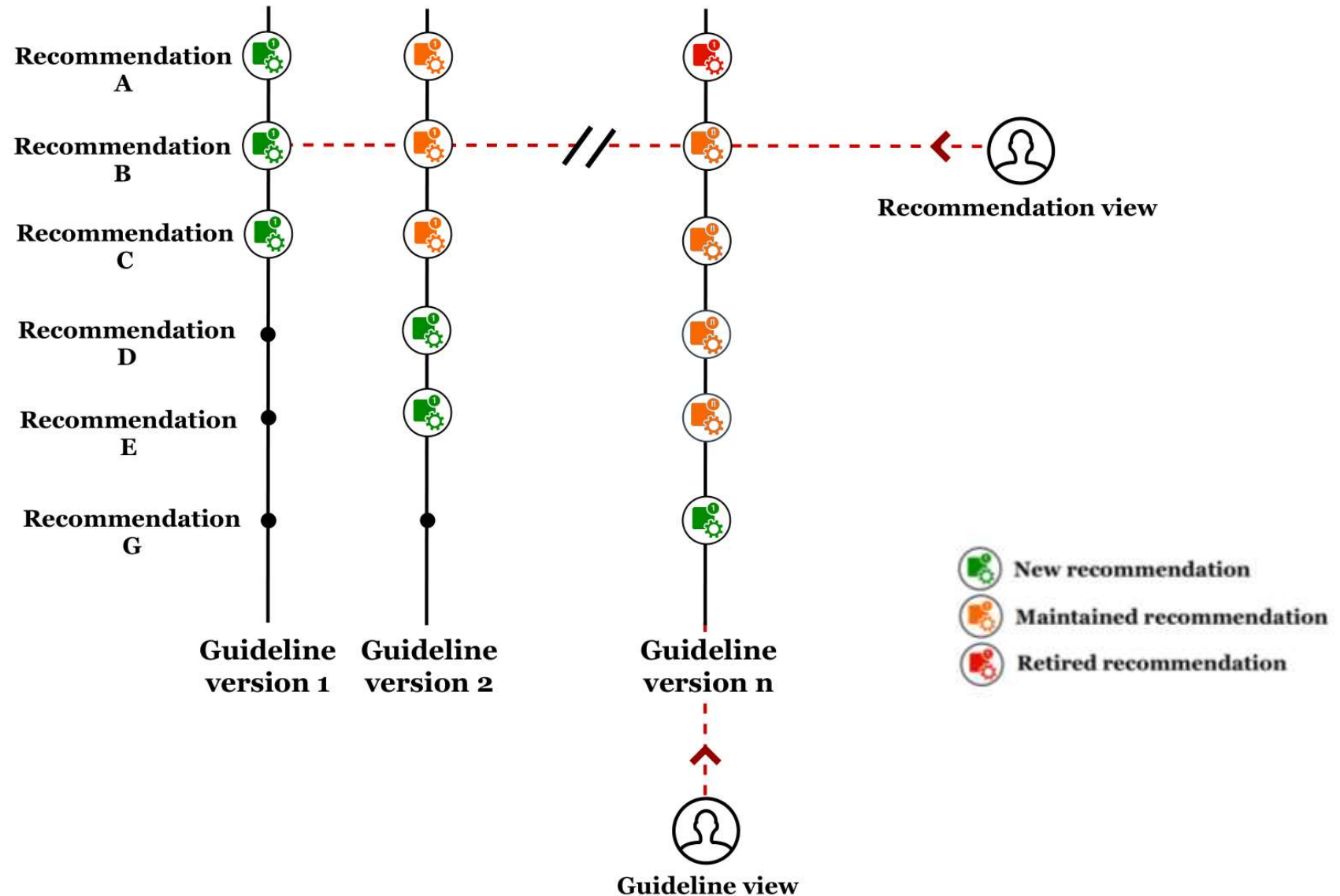


**Scenario 3:**  
new evidence with potentially consequential change

# Reporting and dissemination processes



# Versioning and accessibility



## Example of reporting living recommendation development

In population X, intervention Y is recommended over intervention Z.  
(conditional recommendation, moderate certainty of evidence)

- **Evidence surveillance current to:** November 7, 2021;
- **Outcome of recommendation revisit:** Modified/Unmodified;
- **Whether this version is the latest;**
- **Link to latest version** (if applicable).

**PRISMA coming**

But there is a much bigger  
problem...

Many organizations produce guidelines or some organizations produce many guideline (recommendations)

# Living recommendation maps

- Provide decision-makers and other stakeholders (including the public) with:
  - an easy-to-navigate
  - living
  - freely accessible
  - digital platform
    - that includes all available trustworthy COVID-19 recommendations and allows for easy contextualization
- Developed for WHO global tuberculosis recommendations




**ORIGINAL ARTICLE**

## Recommendation mapping of the World Health Organization's guidelines on tuberculosis: A new approach to digitizing and presenting recommendations

Anisa Hajizadeh<sup>a</sup>, Tamara Lotfi<sup>a,b</sup>, Dennis Falzon<sup>c</sup>, Dominik Mertz<sup>a,b,d</sup>, Robby Nieuwlaat<sup>a,b</sup>, Nebiat Gebreselassie<sup>c</sup>, Ernesto Jaramillo<sup>c</sup>, Alexei Korobitsyn<sup>c</sup>, Matteo Zignol<sup>c</sup>, Fuad Mirzayev<sup>c</sup>, Nazir Ismail<sup>c</sup>, Jan Brozek<sup>a,b,d</sup>, Mark Loeb<sup>a,b,d</sup>, Thomas Piggott<sup>a</sup>, Andrea Darzi<sup>a</sup>, Qi Wang<sup>a</sup>, Al Subhi Mahmood<sup>a</sup>, Praveen Saroey<sup>a</sup>, Micayla Matthews<sup>a</sup>, Finn Schünemann<sup>c</sup>, Bart Dietl<sup>f</sup>, Artur Nowak<sup>f</sup>, Kuba Kulesza<sup>f</sup>, Giovanna E.U. Muti-Schünemann<sup>a</sup>, Antonio Bognanni<sup>a</sup>, Rana Charide<sup>g</sup>, Elie A. Akl<sup>g</sup>, Tereza Kasaeva<sup>c</sup>, Holger J. Schünemann<sup>a,b,d,\*</sup>

World Health  
Organization

## WHO eTB Guidelines

A database of WHO recommendations for TB prevention and care

Search in recommendations



This website provides access to the latest WHO recommendations on all aspects of tuberculosis prevention and care. The user can search, filter and cross-tabulate the recommendations through built-in functions. For each individual recommendation one can also access key background information, such as the evidence summaries and the Guideline Development Group decisions underpinning it.



Recommendations map



List of recommendations



<https://who.tuberculosis.recmapp.org>

# Trial to learn how if recommendation mapping is a good idea...

<https://doi.org/10.1371/journal.pgph.0001166> October 14, 2022

1 / 12

## PLOS GLOBAL PUBLIC HEALTH



### RESEARCH ARTICLE

## Comparing the usability of the World Health Organization's conventional tuberculosis guidelines to the eTB recommendations map: A two-arm superiority randomised controlled trial

Micayla Matthews<sup>1,2</sup>, Tamara Lotfi<sup>1,2</sup>, Nancy Santesso<sup>1,2</sup>, Mark Loeb<sup>1,2</sup>,  
Dominik Mertz<sup>1,3</sup>, Zain Chagla<sup>1,3</sup>, Anisa Hajizadeh<sup>1,4</sup>, Thomas Piggott<sup>1</sup>, Bart Dietl<sup>5</sup>,  
Holger J. Schünemann<sup>1,2,6\*</sup>

**1** McMaster University Department of Health Research Methods, Evidence and Impact, Hamilton, Ontario, Canada, **2** McMaster University Michael G. DeGroot Cochrane Canada and GRADE Centre, Hamilton, Ontario, Canada, **3** Department of Medicine, McMaster University, Hamilton, Ontario, Canada, **4** Department of Primary Care, Oxford University, Oxford, United Kingdom, **5** Evidence Prime Incorporated, Hamilton, Ontario, Canada, **6** Department of Biomedical Sciences, Humanitas University, Milano, Italy

\* [schuneh@mcmaster.ca](mailto:schuneh@mcmaster.ca)



**Table 3. Overall accessibility of information [mean (SD)].**

	WHO eTB <sup>a</sup> (n = 122)	WHO TB <sup>a</sup> (n = 122)	MD (95% CI) <sup>b</sup> p value
<b>Overall Accessibility<sup>c</sup></b>	<b>5.6 (1.0)</b>	<b>4.7 (1.5)</b>	<b>0.9 (0.6, 1.2)</b> < 0.001
It was <b>easy to find</b> the information	5.6 (1.1)	4.4 (1.9)	1.1 (0.7, 1.5) < 0.001
This website was <b>easy to navigate</b>	5.6 (1.2)	4.3 (1.8)	1.3 (0.9, 1.7) < 0.001
It was <b>easy to understand</b> the information	5.6 (1.0)	5.0 (1.6)	0.6 (0.3, 0.9) 0.001
The information was presented in a way that would <b>help me make a decision</b>	5.7 (1.0)	5.0 (1.5)	0.7 (0.3, 1.0) < 0.001

Abbreviations: SD, standard deviation; WHO, World Health Organization; TB, tuberculosis; MD, mean difference; CI, confidence interval.

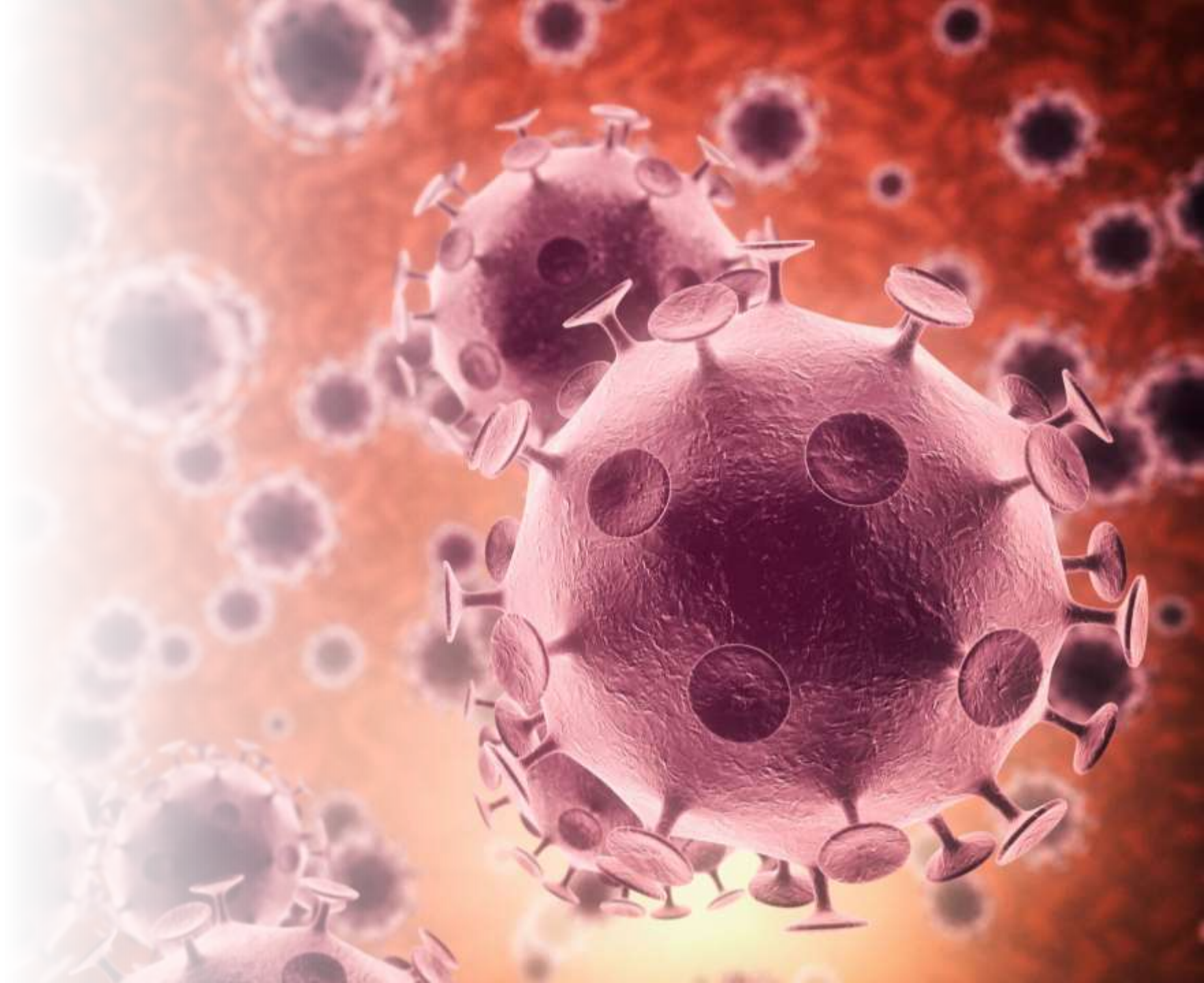
<sup>a</sup> Likert-scale from 1 = strongly disagree to 7 = strongly agree.

<sup>b</sup> Equal variances could not be assumed using Levene's test, degrees of freedom adjusted.

<sup>c</sup> Composite of four domains (primary outcome).

<https://doi.org/10.1371/journal.pgph.0001166.t003>

**Then came ...**




# Living map of guideline recommendations on COVID19 (covid19.recmap.org)

The screenshot shows the top navigation bar with the COVID19 Recommendations logo, a feedback link, and navigation options for the map and list. The main content area features a search bar with a virus icon, a QR code, and six interactive cards for different recommendation views and resources.

**COVID19 Recommendations** Share your feedback! Recommendations map Recommendations List EN

**COVID19 Recommendations**  
Enter the keyword to search in recommendations   
[Search instructions](#)

 bittly

**Recommendations map**  
Would you like to learn more about a specific population and/or intervention? You can easily find topics that interest you using our RecMap.  
[Recommendations map](#)

**List of recommendations**  
Explore all available COVID-19 guidelines on the eCOVID19 RecMap platform. You can filter and narrow down your search results using the search bar.  
[Recommendations](#)

**Plain Language Recommendations**  
Looking for COVID-19 recommendations that are easy to understand? Click here to access a selection of our plain language recommendations.  
[Plain Language Recommendations](#)

**Gateway to contextualization**

**Change of Care in Times of COVID-19 and Pandemic Preparedness**

**See our detailed videos**



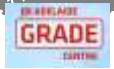
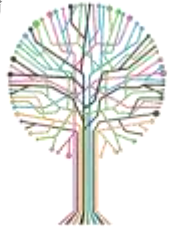
# COVID19 Recommendations



Ontario



WHO/PAHO



GIN  
Guidelines  
International  
Network

## Global partners



# Quality appraisal

## Recommendation

On this page you can find

### Infection prevention and control in the context of coronavirus disease (COVID-19): a living guideline, 25 April 2022: updated chapter: mask use, part 1: health care settings

Source: World Health Organization (WHO)

#### Intent: Infection control

In settings where there is community or cluster transmission of SARS-CoV-2, irrespective of vaccination status or history of prior infection, wearing a well-fitting mask that covers the nose and mouth is recommended for the general public when interacting with individuals who are not members of their household.

#### Certainty of evidence

⊕⊕⊕○ Moderate

#### Recommendation strength

✔ strong

#### AGREE II score ⓘ

Scope and purpose:	75%
Rigor of development:	64.6%
Editorial Independence:	50%

Request for adoption

### APPRAISAL OF GUIDELINES FOR RESEARCH & EVALUATION II



AGREE II

INSTRUMENT

The AGREE Next Steps Consortium  
May 2009

UPDATE: December 2017



# Extraction

**GRADEpro**

Covid19 Extraction ▼ NICE - COIVD19 rapid guideline: Interstitial lung disease - Joanne/Elizabeth

Help  

## General information

Link to the source document

ISBN (International Standard Book Number)

DOI (Digital Object Identifier)

PMID (PubMed Identifier)

Were guideline group details provided?  YES  NO

Declaration of interest  YES  NO In case of "NO COI" reported, classify as "YES".

Described as rapid  YES  NO

Described as living  YES  NO

Did the search include non-English databases? (e.g., Chinese, others)  YES  NO  Not Reported

Latest date of literature search  Not reported  

Method of grading evidence  not graded  GRADE  Other method





## List view

### Recommendation [See more](#)

In settings where there is community or cluster transmission of SARS-CoV-2, irrespective of vaccination status or history of prior infection, wearing a well-fitting mask that covers the nose and mouth is recommended for the general public when interacting with individuals who are not members of their household.

#### Certainty of evidence

 Moderate

#### Recommendation strength

 **strong**

### Good Practice Statement [See more](#)

Commercial vehicle operators who are federally regulated for Occupational Health and Safety should ensure that their Hazard Prevention Program is current to address the hazards of COVID-19 in their workplaces, including in truck cabs.

### Good Practice Statement [See more](#)

Commercial vehicle drivers should be aware of the public health requirements and advice of the areas they are in and should follow local public health advice (e.g., travel restrictions, wearing of non-medical masks in various settings).

### Additional Guidance [See more](#)

The network of SARS-CoV-2 testing facilities should leverage and build on existing capacities and capabilities, be able to integrate new diagnostic technologies and adapt capacity according to the epidemiological situation, available resources and country specific context.



## Map view

Intent

Enter the keyword to search in recommendations  Instructions

All	Infection control	Vaccination	Screening	Diagnosis	Treatment and rehabilitation	Prognosis	Planning and monitoring	Health services and systems
COVID-19 confirmed 1907	303	49	42	87	1244	6	86	90
Healthcare professional 861	432	112	45	72	38		20	140
Public 800	350	159	43	49	9		82	108
COVID-19 suspected 664	291	14	58	136	76	1	28	60
Patient 593	121	85	26	66	215	1	25	54
Healthcare facility 440	195	8	40	43	14		19	121

Population

# Filters

Enter the keyword to search in recommendations



Instructions

**FILTERS**

All	Infection control	Vaccination	Screening	Diagnosis	Treatment and rehabilitation	Prognosis	Planning and monitoring
COVID-19 confirmed <span>1907</span>	303	49	42	87	1244	6	86
Healthcare professional <span>861</span>	432	112	45	72	38		20
Public <span>800</span>	350	159	43	49	9		82
COVID-19 suspected <span>664</span>	291	14	58	136	76	1	28
Patient <span>593</span>	121	85	26	66	215	1	25
Healthcare facility <span>440</span>	195	8	40	43	14		19
Healthcare services <span>427</span>	132	51	20	63	22		10

Source

Publication Year

Adolopment



AGREE II score

World region

Age group



# Linkage between living platforms

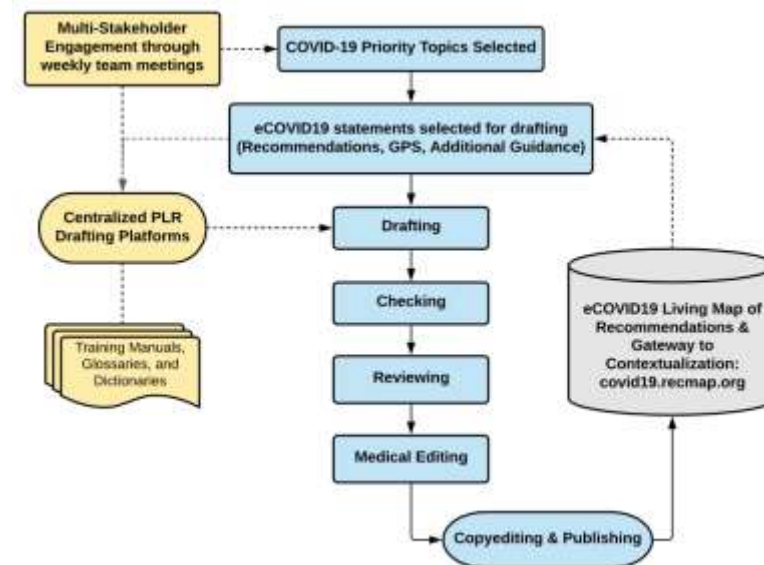
<b>Population/Health problem</b>	Patients with COVID-19
<b>Intervention</b>	Interferon $\beta$ -1a plus lopinavir-ritonavir
<b>Links to WHO Model List of Essential Medicines</b>	Lopinavir + ritonavir 
<b>URL to evidence table</b>	<a href="https://app.magicapp.org/#/guideline/L4Q5An/section/j9WARn">https://app.magicapp.org/#/guideline/L4Q5An/section/j9WARn</a>
<b>URL to L·OVE portal</b>	URL to L·OVE portal 



# Plain language recommendations



PLRs are **easy-to-read summaries** of up-to-date, published, and quality-checked recommendations from guideline organizations.



PLRs go through a **multi-stakeholder process** before it is published on the eCOVID19 RecMap. **Hope to avoid this in the future by creating them in the first place**

# Living gateway to contextualization of recs

- Request access to Adolopment module
- Contribute back to map
- Others benefit from your decision-making
- Labelled as 'adoloped' on map



Adolopment ⓘ

This functionality allows your group to perform the adolopment process for this recommendation in GRADEpro software. By submitting the request, you will be contacted by our employee to set the details of the adaptation project, in particular setting a GRADEpro project and creating your guideline adaptation team.

You can learn more about the adolopment process in our [knowledgebase](#).

Full name

Email address

Additional information about your guideline team (organization, number of team members etc.)

Your data will be used to allow us to perform the services you require.  
 I accept [Privacy Policy](#)

[Send request for adolopment](#)



# Getting trustworthy guidelines into the hands of decision-makers and supporting their consideration of contextual factors for implementation globally: recommendation mapping of COVID-19 guidelines

Tamara Lotfi · Adrienne Stevens · Elle A. Akl · ... · Joseph L. Mathew · Holger J. Schünemann  
on behalf of the eCOVID Collaborators<sup>a</sup> · Show all authors · Show footnotes

Published: April 06, 2021 · DOI: <https://doi.org/10.1016/j.pecp.2021.03.034> 

## Comment

### BIGG, the international database of GRADE Guidelines

Marcela Torres,<sup>a</sup> Martín Ragusa,<sup>a</sup> Verónica Abdala,<sup>a</sup> Eva Brocard,<sup>a</sup> Holger Schunemann,<sup>b,c,d,e,f</sup>  
Sebastian García-Saís,<sup>g</sup> and Ludovic Reveiz<sup>h,\*</sup>

<sup>a</sup>Evidence and Intelligence for Action in Health Department, Pan American Health Organization

<sup>b</sup>Department of Health Research Methods, Evidence and Impact, McMaster University, 1280 Main St West, Hamilton, ON, L8S 4L8, Canada.

<sup>c</sup>Michael G. DeGroot Cochrane Canada & McMaster GRADE Centres; Department of Health Research Methods, Evidence, and Impact, McMaster University, Hamilton, ON, Canada

<sup>d</sup>Department of Medicine, McMaster University, Hamilton, ON, Canada

<sup>e</sup>Dipartimento di Scienze Biomediche Humanitas University, Milan, Italy

<sup>f</sup>Institute for Evidence in Medicine, Medical Center & Faculty of Medicine, University of Freiburg, Freiburg, Germany

Health and equity have a central place in the 2030 Agenda for Sustainable Development that was adopted by all United Nations Member States. Implementation of evidence-based practice (EBP) principles has resulted in major advances in improving the quality of delivered health care. One of the EBP instruments are evidence-based trustworthy guidelines.<sup>1</sup> The Pan American Health Organization (PAHO), the World Health Organization (WHO) and

indexed and hard to find which threatens the extent evidence is used.

Several scientific repositories such as Health Systems Evidence, Epistemonikos or Trip database are available for those interested in public health or clinical practice. BIGG<sup>1</sup> from the acronym in Spanish "International Database of Grade Guidelines", includes a comprehensive list of worldwide guidelines developed with the GRADE system and classified according to the Sustainable Development Goal

**The Lancet Regional Health - Americas**  
2022;6: 100099  
Published online 30 November 2021  
<https://doi.org/10.1016/j.lana.2021.100099>



ELSEVIER



Journal of Clinical Epidemiology 159 (2023) 257–265

Journal of  
Clinical  
Epidemiology

#### OTHER GRADE PAPERS

### The BIGG-REC database makes available all WHO/PAHO evidence informed recommendations

Martín Ragusa<sup>a</sup>, Fernando Tortosa<sup>a</sup>, Gabriel Rada<sup>b</sup>, Camilo Vergara<sup>b</sup>, Leslie Zaragoza<sup>a</sup>,  
Jenee Farrell<sup>a</sup>, Marcela Torres<sup>a</sup>, Verónica Abdala<sup>a</sup>, Ariel Izcovich<sup>a</sup>, Michelle Haby<sup>a</sup>,  
Holger J. Schunemann<sup>c,d,e,f,g</sup>, Sebastian García-Saís<sup>a</sup>, Ludovic Reveiz<sup>h,\*</sup>

# BIGG REC

PAHO/WHO GRADE recommendations for the SDG-3 

Search in BIGG-REC



Browse by  SDG-3 target:

 Maternal Health

 Infant Health

 Communicable  
Diseases

 Non-Communicable  
Diseases

 Consumption of  
Psychoactive  
Substances

 Sexual and  
Reproductive  
Healthcare

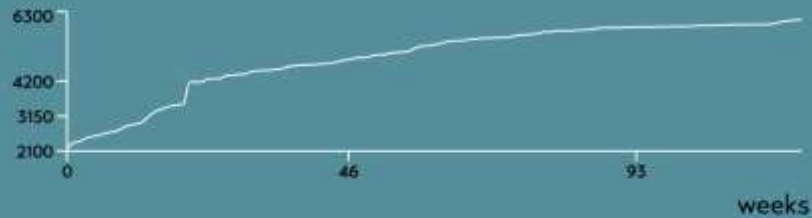
 Universal Health

 Air, Water and Soil  
Pollution



# Our Project in Numbers

Retrieved citations for screening



6063  
Citations

10 new  
since Oct 16, 2023

Guidelines extracted on platform



759  
Guidelines

6 new  
since Oct 16, 2023

Recommendations extracted on platform



10361  
Recommendations

97 new  
since Oct 16, 2023



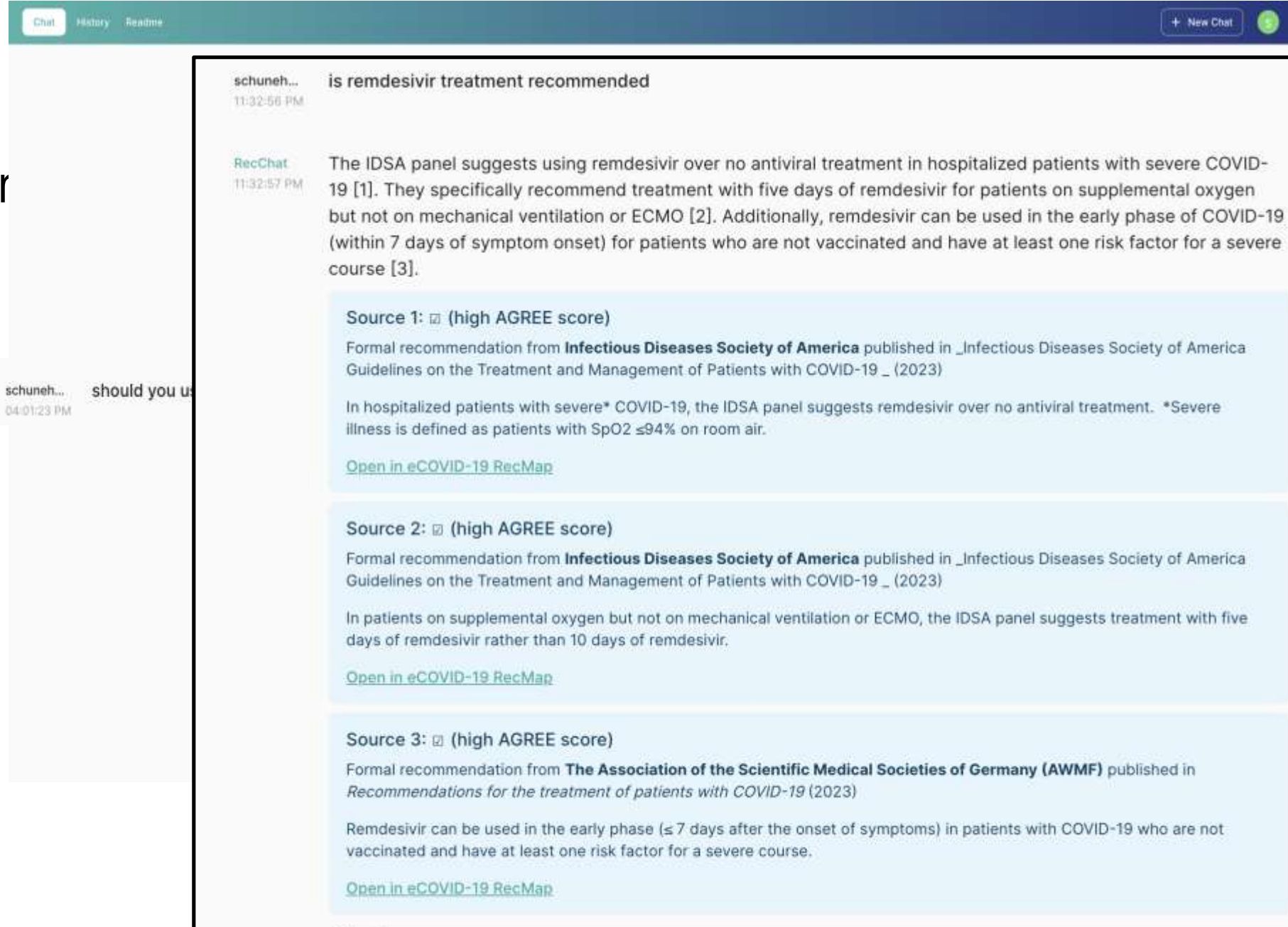
But many of low  
credibility 😞

AGREE II score for quality of guidelines (N=1574)						
	Scope & Purpose	Rigour of development	Editorial Independence	Stakeholder involvement	Clarity of presentation	Applicability
Mean	66.6%	12.4%	22.1%	34.6%	59.9%	18.4%

# RecChat

AI supported identification and summaries of guidelines recommendations

- Filter for credibility
- Based on RecMaps: [chat.recmap.org](https://chat.recmap.org)
- In testing but **pronto** very soon



The screenshot displays the RecChat interface. At the top, there are navigation tabs for 'Chat', 'History', and 'Readme', along with a '+ New Chat' button. The main chat area shows a conversation:

**schuneh...** 11:32:56 PM: is remdesivir treatment recommended

**RecChat** 11:32:57 PM: The IDSA panel suggests using remdesivir over no antiviral treatment in hospitalized patients with severe COVID-19 [1]. They specifically recommend treatment with five days of remdesivir for patients on supplemental oxygen but not on mechanical ventilation or ECMO [2]. Additionally, remdesivir can be used in the early phase of COVID-19 (within 7 days of symptom onset) for patients who are not vaccinated and have at least one risk factor for a severe course [3].

**schuneh...** 04:01:23 PM: should you u

The response from RecChat includes three sources, each with a 'high AGREE score' and a link to 'Open in eCOVID-19 RecMap':

- Source 1:** Formal recommendation from **Infectious Diseases Society of America** published in *Infectious Diseases Society of America Guidelines on the Treatment and Management of Patients with COVID-19* (2023). In hospitalized patients with severe\* COVID-19, the IDSA panel suggests remdesivir over no antiviral treatment. \*Severe illness is defined as patients with SpO2  $\leq$  94% on room air.
- Source 2:** Formal recommendation from **Infectious Diseases Society of America** published in *Infectious Diseases Society of America Guidelines on the Treatment and Management of Patients with COVID-19* (2023). In patients on supplemental oxygen but not on mechanical ventilation or ECMO, the IDSA panel suggests treatment with five days of remdesivir rather than 10 days of remdesivir.
- Source 3:** Formal recommendation from **The Association of the Scientific Medical Societies of Germany (AWMF)** published in *Recommendations for the treatment of patients with COVID-19* (2023). Remdesivir can be used in the early phase ( $\leq$  7 days after the onset of symptoms) in patients with COVID-19 who are not vaccinated and have at least one risk factor for a severe course.



Cochrane Canada and the McMaster GRADE Centre are scientifically and financially supported by the Public Health Agency of Canada (PHAC), to provide easily accessible and high-quality guidelines on PCC.

[Learn More](#)

### Canadian Guidelines on Post-COVID-19 Condition

**The McMaster University team, with financial and scientific support from the Public Health Agency of Canada (PHAC), will develop six evidence-based guidelines on post-COVID-19 condition using rigorous scientific methods.**

Our goal is to use the best available evidence to provide clinicians, decision-makers, policymakers, and the public in Canada with detailed guidance to make informed health decisions about post-COVID-19 condition (PCC). We intend to prioritize topics that are most important to these audiences through a careful and inclusive process, while also considering the needs of equity-deserving groups.

# Summary

- Living guidelines – what they are and aren't
  - Definitions help with understanding what they are
    - Change over time
  - **Consequential evidence**
  - Learnings along the way
- Better approaches to cataloguing in a live fashion and allowing for adaptation → RecMaps: Tb, eCOVID, BiggRec
- A taste of RecChat

