



# Guidelines International Network COVID-19 Taskforce

## Navigating evidence and guidance in a pandemic: Challenges, initiatives, and solutions for guideline developers

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### Summary

The COVID-19 pandemic has resulted in unprecedented impacts across the globe and has prompted decision makers to seek evidence-based solutions to reduce the risk of transmission and the associated morbidity and mortality overwhelming health services. This has led to substantial pressure and heightened expectations for accelerated or urgent systematic reviews and rapid guidelines. The research, evidence and guidance community have reacted swiftly to address these needs.

During the pandemic, the guideline community has faced an exacerbation of the existing challenges in developing timely and trustworthy guidance, as well as new difficulties related to the pandemic itself. Such challenges, inevitably, lead to duplication of effort and a proliferation of poorer quality guidance. Guidelines International Network (GIN), as part of its mandate to support the guideline community, has been working to address as many of the challenges as possible.

It is essential that the recent advances in collaboration, efficiencies in guideline and systematic reviews development, sharing and coordination are maintained following the pandemic. Lessons learned and solutions initiated must be sustained and used in diverse settings, creating preparedness for subsequent pandemics (or infodemics) but also improving the inefficiencies in the evidence ecosystem into the future.

This overview discusses the specific challenges faced in meeting the pressure to develop guidance during a pandemic. It identifies sources of guidance and evidence synthesis likely to be relevant to the needs of the guideline community, collaborative initiatives, and other resources to support the production of systematic reviews and guidelines during a pandemic. This paper has its origins in the presentation for the first of the GIN COVID-19 Webinars.

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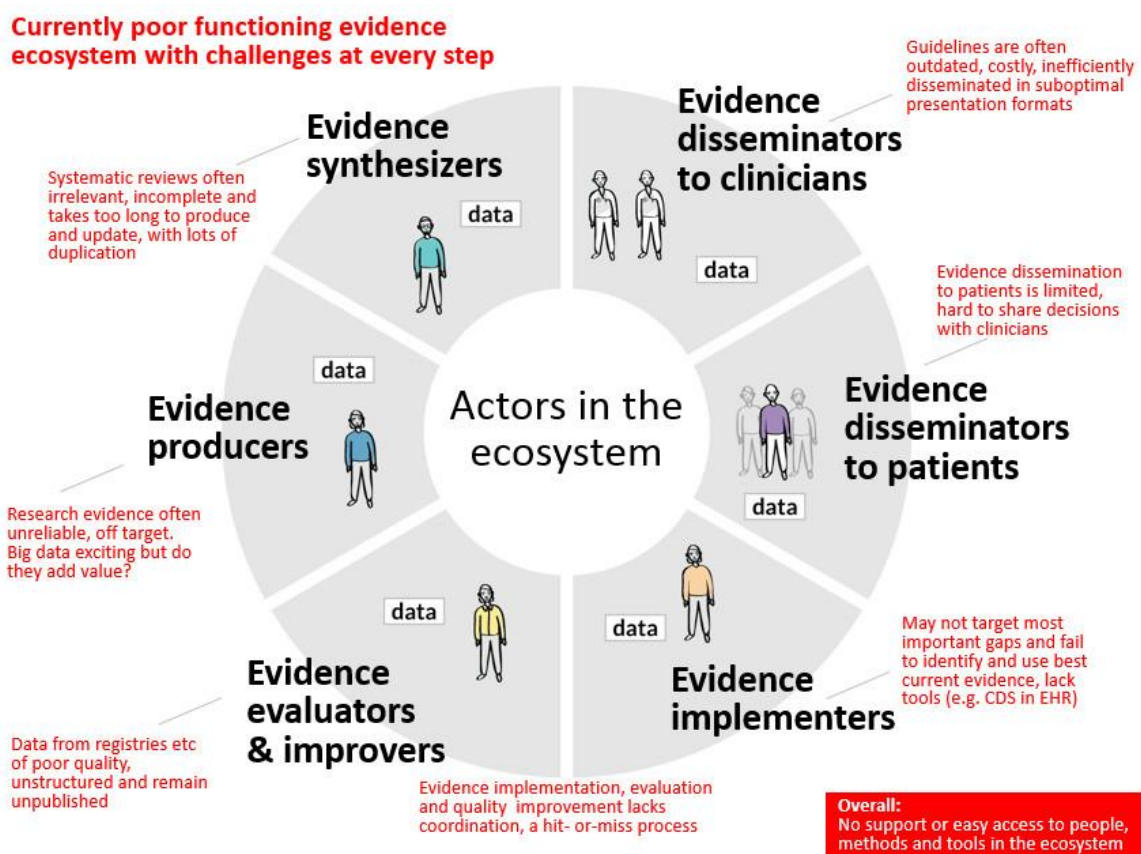
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## Introduction

The COVID-19 pandemic has resulted in unprecedented human, social and economic impacts across the globe, with 216 countries reporting cases.(1) The pandemic has prompted decision makers to seek evidence-based solutions to reduce the risk of transmission and the associated morbidity and mortality to avoid overwhelming health services. This pursuit has been made more difficult however by the associated ‘infodemic’, the rapid and far reaching spread of both accurate and inaccurate information, with the Director General of WHO stating ‘we’re not just fighting an epidemic, we’re fighting an infodemic’ in February 2020.(2)

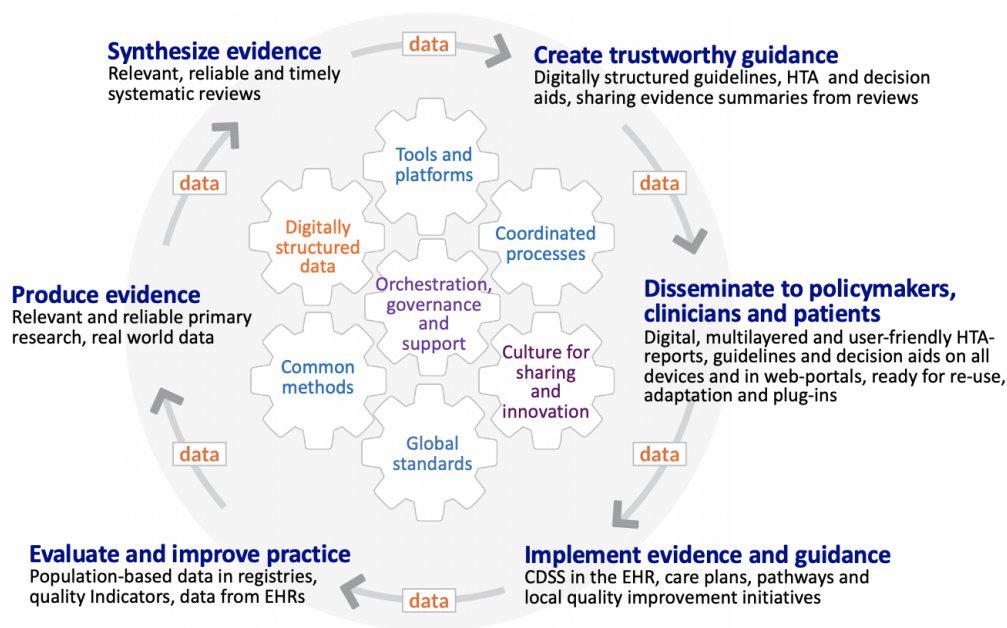
The COVID-19 pandemic has seen a rise in the use of ‘following the science’ terminology by Governments and decision makers to support actions such as lockdown and relaxation of lockdown. The urgent need for evidence and guidance to inform decision-making has resulted in substantial challenges for all those involved in the generation and translation of knowledge, from clinical trialists, systematic reviewers, guideline developers and knowledge implementers. Historically, the production and updating of trustworthy guidance is a deliberative process, requiring substantial investment of time and resources and taking years to complete. In many cases, the process of developing trustworthy recommendations is also plagued with inefficiencies, redundancies, duplication, and a lack of collaboration and sharing (Figure 1). Although members of the guideline and evidence-based healthcare community have been working for many years to improve this situation(3) (exemplified by current discussions surrounding the evolving evidence ecosystem(4) [Figure 2]), as yet the underlying collaborations, tools and processes for wholesale efficiencies in the translation of evidence into practice were not widely established when the COVID-19 pandemic first occurred (and are yet to be achieved). The combined pandemic and infodemic has had the dual effect of exacerbating the current strains on the evidence ecosystem whilst the pressure to produce fast answers to research questions and develop guidance has (in some cases) led to lower scientific standards and missed opportunities for collaboration.(5)



**Figure 1:** The currently poor function evidence ecosystem

This figure displays the current inefficiencies at the various stages of the evidence ecosystem (courtesy of Per Olav Vandvik, <https://magicproject.org/>)

The role of Guidelines International Network (GIN) is to lead, strengthen and support collaboration within the guideline development, adaptation and implementation community. During the COVID-19 pandemic, GIN has been working to support the guideline community to reduce duplication of effort and inefficiencies, as well as sharing and promoting best practice through the development of opportunities for learning and building capacity. Through consultations with the network and the wider guideline development and evidence-based healthcare communities, a number of specific challenges have been identified for evidence producers, synthesisers and implementers at this time. The purpose of this article is to bring attention to some of the challenges whilst also providing an overview of potential solutions and initiatives for developing trustworthy guidance during the COVID-19 pandemic, and for future pandemics.



**Figure 2:** The proposed digital and trustworthy evidence ecosystem

This figure displays the a more efficiently functioning evidence ecosystem and the requirements that need to be met to facilitate this vision (courtesy of Per Olav Vandvik, <https://magicproject.org/>)

### Current challenges for guideline developers

All guideline producers face multiple challenges to produce timely and trustworthy guidelines. External factors include pressure from decision makers, perceived lack of collaboration or missed opportunities for collaboration. Internal factors include limited resources and the uncertain impact of changes in working practices. Such challenges, may lead to duplication of effort and a proliferation of poorer quality guidance and omissions in focusing on structured processes for evidence assessment and guidance development.(5, 6) These challenges are intensified within a pandemic, whilst the nature of COVID-19 has also resulted in additional difficulties as addressed in further detail below.

### The urgent demand for evidence

The sudden emergence and scale of the COVID-19 pandemic raised a multitude of questions for decision makers throughout society. This has led to substantial pressure and heightened expectations for accelerated or urgent systematic reviews and rapid guidelines. Traditional timescales, where the development of systematic reviews alone could take anywhere from 6 months to 2 years to complete, (7- 9) with an average development time of 67.3 weeks, (10) is unacceptable in a pandemic. Researchers,

systematic reviewers and guideline developers have been tasked with resolving uncertainty in much shorter timeframes than ever before (e.g. 1 week), in an emerging field and with types of evidence (i.e. unpublished/pre-prints and of lower quality) that may not have been relied on previously.

### **Duplication and lack of collaboration**

There is currently significant duplication of efforts in systematic review and guideline development, with this being typified in COVID-19. There may be a number of causes for this duplication, from those that may be warranted to those that are entirely wasteful.(11)

The pandemic affords an opportunity to change the culture within the guideline community to that of sharing, but although the willingness to share has increased, vested interests, bureaucracy, and inability to change remain limiting factors. Additional barriers to collaboration include the lack of practical support for collaboration, such as coordination of activities, and the lack of easily accessible and comprehensive portals including (a) a registry of work in progress and (b) a repository of open access and quality-appraised guidelines in shareable or adaptable formats. Collaboration to reduce duplication of effort is not only important in the context of guidance around COVID-19, but also in managing the resulting impact on other work that has been displaced as a result of the focus on COVID-19.

### **Lack of high-quality evidence**

There has been a tremendous response by the research community to the challenges presented by COVID-19, with an explosion of research being conducted and disseminated on all aspects of the pandemic. Unfortunately, the evidence base for COVID-19 is still characterised by a large number of poorly designed and conducted studies and systematic reviews.(12) Some of this is being made available via pre-print platforms without undergoing peer review, raising additional challenges. The exponential expansion of this diverse and largely low-quality evidence base has presented a number of complications for guideline developers. Firstly, it is difficult and time consuming to sort through the published and unpublished quagmire to identify relevant studies to use as the basis for developing guidance. Secondly, there is only a small number of high quality studies that directly address the problem to use as the basis of their work, with many recommendations having to rely on lower quality evidence, which also presents challenges for methodologists and guideline panels. The use of indirect evidence, e.g. from other viral infections which may be appropriate for some recommendations, is controversial and experts often do not agree on its use which exacerbates the problems further.

### **The process of guideline development**

Restrictions on movement of individuals and the pressure faced by those delivering health services has changed the way that guidance is produced. Face-to-face meetings involving all relevant stakeholders where evidence can be discussed and challenged and judgements made explicit are no longer possible and it is somewhat unsettling that a pandemic (as opposed to the many other considerations including environmental and resource considerations) leads to the recognition that remote collaboration tools should be utilized. In addition, many stakeholders engaged in guideline development (such as practising clinicians) are facing overwhelming demands on their time and attention. As a result, many guideline development processes have become remote, less diverse and less rigorous.(5)

### **Low Resource Settings**

Clinical and policy guidance in low and middle income countries (LMIC) is particularly challenging.(13) Although experiences with coping with epidemics, pandemics, and endemics are common, the capacity and skills to identify, appraise and translate the little available evidence into guidance for practice and policy is lacking.(14) These regions face enormous economic challenges, resource issues, weak health systems, poor healthcare seeking behaviour, and low compliance with evidence-based clinical practice, (15-17) all of which are placed under considerable strain during a pandemic.

### Solutions and initiatives

Despite the enormous challenges that COVID-19 presents (both the exacerbation of existing challenges and the simultaneous introduction of new challenges), the research, evidence and guidance community have reacted swiftly to address these front on. Promising platform trials of COVID-19 drug treatments (e.g. RECOVERY and WHO Solidarity) have published practice-changing evidence at record-speed. The RECOVERY trial(18) exemplifies how guideline panels need to react rapidly on reported impressive effects of Dexamethasone in severely ill-patients with COVID-19 with trustworthy guidance, through systematic reviews carefully appraising all available evidence. Core questions for guideline developers to increase efficiency and reduce duplication are: 1) how to find the high-quality systematic reviews or trustworthy guidelines to re-use or adapt and 2) how can guideline developers collaborate more efficiently.

GIN, as part of its mandate to support the guideline community during the COVID-19 pandemic, has been working to address as many of the challenges as possible, identifying trustworthy sources of information and initiatives which can reduce duplication of effort, whilst providing education in the form of webinars regarding issues in guideline development during COVID-19. The first webinar on guideline development during COVID-19 formed the basis of this article.(19)

### **GIN Response to COVID-19**

#### *Methodological support*

Trustworthy guideline development in times of external pressure, such as that brought about by the pandemic, requires that rigorous methodology be applied. Well accepted standards for trustworthy guidelines, both from Institute of Medicine and GIN,(20-22) are critical to direct guideline development or adaptation in such times. Appropriate methods for guideline development and updating are equally important. The use of GRADE to critically appraise evidence and to move from evidence to recommendations in a systematic and transparent manner has several advantages, including during a pandemic.(6) GRADE evidence summaries and recommendations, ideally in digitally structured formats, facilitate sharing and adaptation across guideline efforts.

#### *Sources of trustworthy guidance and evidence synthesis*

GIN is continuously collating links to COVID-19 evidence and guidance resources to allow direct access to trustworthy sources of methodologies, guidance, systematic reviews and evidence, as well as guidance from our member organisations. These resources have been selected as likely sources of trustworthy information, relevant to the needs of the guideline community.

### **Providing timely and up-to-date guidance through living evidence approaches and rapid (but still systematic) reviews and guidelines**

With a rapidly evolving and fluid situation such as that presented by the pandemic, where new studies and evidence become available on a daily basis, there is a dire need to keep up with literature to ensure all guidance is current and relevant. As such the COVID-19 pandemic has resulted in a breakthrough for a long-standing quest for living evidence and guidance; the dynamic updating of systematic reviews and guideline recommendations in the face of new evidence.(23, 24) The Australian COVID-19 Clinical

Evidence Taskforce ([www.covid19evidence.net.au](http://www.covid19evidence.net.au)) revises and adds recommendations each week as priority clinical questions are identified and new research is synthesised. Where research is available to address priority questions, living systematic reviews are conducted as the basis of evidence summaries and updating of evidence-based recommendations following GRADE methods(25) and making use of an electronic authoring and publication platform. The American Society of Hematology (ASH) has committed to living reviews and recommendations on the emerging problem of thromboembolic disease in COVID-19 using tools that facilitate remote guideline work.(26)

Living systematic reviews where all the available evidence addressing specific clinical outcomes related to COVID-19 is continuously collected and critically appraised afford an opportunity for guideline developers to use the resulting GRADE evidence summaries. Cochrane France is heading a collaboration undertaking living systematic reviews and network meta-analysis (<https://covid-nma.com/>) focusing on two main questions: 1) the effectiveness of preventive interventions for COVID-19 and 2) the effectiveness of treatment interventions for COVID-19 by the severity of the disease. Major journals, such as the Annals of Internal Medicine and the British Medical Journal, have also published living reviews related to COVID-19.(27)

The efforts of the Australian COVID-19 Clinical Evidence Taskforce, the published living reviews published in the Annals of Internal Medicine and ASH guidelines for antithrombotic management of COVID-19 are important to highlight as, in the face of the pandemic, they have managed to apply systematic and trustworthy methods as opposed to other projects where methodological shortcuts have been applied liberally.(7-9, 28, 29) Rapid reviews have been defined as ‘systematic reviews with shortcuts,’(30) and in some ways the term ‘rapid reviews’ can be a misnomer(31), as many rapid approaches are of compromised quality whilst still taking a significant amount of time.(7-9, 28, 29) It has now been shown that ‘full’ systematic reviews can be done over short time frames without cutting corners. The ‘urgent’ reviews that are emerging, although performed over a short time period, do not particularly fit the description of a rapid review as they still use trustworthy methods.(6, 32) For those with a need to develop recommendations urgently, the GIN McMaster checklist(33) provides an extension for developing rapid recommendations. (34)

### **Evidence maps and single source searching**

Evidence maps are another approach to synthesis which are becoming increasingly popular and are particularly useful during a pandemic.(35) The purpose of evidence maps is to identify and analyse gaps in the knowledge base.(35, 36) These maps normally produce a visual database or schematic which assists the user in interpreting where evidence exists and where there are gaps.(36) If evidence maps are accurate, comprehensive, up-to-date and trustworthy they may potentially act as a single source for systematic reviewers and guideline developers when identifying evidence related to a single condition or disease. A number of evidence maps and single source databases have emerged in response to the COVID-19 pandemic. These evidence maps and single source repositories aim to carefully curate collections of evidence, populated following searching, selecting, and coding processes over a number of databases. Epistemonikos, for example, has released a large repository of COVID-19 evidence through their Living Overview of Evidence (LOVE) platform. Cochrane has launched a register of studies. The Norwegian Institute for Public Health (NIPH) and the EPPI-Centre have both released evidence maps for COVID-19.

### **Guideline Repositories and Recommendation Maps**



To reduce duplication of effort, promote sharing and collaboration and as a means of improving dissemination of guidance, repositories and registries of guidelines are available with many of these providing tailored resources for COVID-19. The ECRI Guidelines Trust ([www.ecri.org/covid-19-clinical-guidelines/](http://www.ecri.org/covid-19-clinical-guidelines/)) provides a centralised repository of evidence-based guidance developed by nationally and internationally recognised medical organizations and medical specialty societies. The ECRI Guidelines Trust undertakes quality assessment of guidelines using TRUST (**T**ransparency and **R**igor **U**sing **S**tandards of **T**rustworthiness) Scorecards, although to date no COVID-19 guidelines have been assessed. The Pan American Health Organization (<https://covid19-evidence.paho.org/>) provides a searchable database of guidelines in English, Spanish, Portuguese and French (no quality assessment is undertaken in this site). The World Health Organisation provides access to technical guidance for all aspects of COVID-19. The International Practice Guideline Registry is available for developers to register prospective guidelines, whilst the GIN guideline library is being developed into both a registry and repository.

A new concept is recommendation mapping (RecMap) which will interlink with the NIPH evidence map through partnership with McMaster University and a large international consortium supported by the Canadian Institutes of Health Research (CIHR) (<https://covid19.evidenceprime.com/>).<sup>(6)</sup> This RecMap, already available for other infectious diseases through WHO (<https://tuberculosis.evidenceprime.com/>), will include a listing of quality appraised individual recommendations on COVID-19 and tools to adapt recommendations to various contexts which we believe is required to ensure trustworthiness.

Ongoing rigorous evaluation of evidence and guidance repositories and maps, in terms of their usefulness and completeness for various groups of stakeholders such as guideline developers will be required into the future.

### **Software and tools to support systematic review and guideline development for COVID-19**

Specialist software applications for assisting in the development of clinical guidelines and systematic reviews are available to support researchers during the pandemic. These tools have been developed to facilitate, streamline and support the systematic review and guideline development process.<sup>(37)</sup> During the pandemic, many of these tools have offered additional solutions or support. The GRADE Working Group's GRADEPro guideline development tool used for the RecMap is offering a free teams solution for COVID-19 related guidelines, which can also be used to facilitate remote, virtual guideline panels through its free PanelVoice app. MAGICapp, in use for the Australian living guidelines, is providing their tool for free for those working on COVID-19 guidelines. Covidence and DistillerSR are also providing support for systematic reviewers addressing COVID-19 topics. If searching for systematic review tools, the SR Toolbox is a good place to begin.<sup>(38)</sup>

### **Resources to support remote working**

Stakeholder engagement and convening guideline panels are particularly challenging during the pandemic due to social distancing and pressures on time. Remote panels, such as those hosted by PanelVoice, or on videoconferencing software, may be a viable alternative. The current generation of videoconferencing software platforms incorporate many useful features that can support guideline panel discussions, such as screen sharing, annotation, chat forums, breakout rooms, online polls, voting and more. If time is a concern, online modified Delphi approaches can also be an option.<sup>(39)</sup>

### **Collaboration opportunities**



Communication, collaboration, and coordination of efforts during the COVID-19 pandemic are critical to address and overcome some of the challenges we face. Around the globe organisations have set up networks, task forces and working groups to coordinate efforts. GIN is a leading example of a network established to foster collaboration, capacity building and networking and is involved in two specific initiatives to enhance collaboration. The COVID-19 Evidence Network to support Decision-making (COVID END) is a working group with representatives from the evidence synthesis, guideline development and health technology assessment communities, working together to support researchers, policy makers and decision makers to find and use evidence to support decision making whilst improving coordination and reducing duplication in the development of evidence resources. The CIHR supported COVID-19 RecMap consortium will interlink with various WHO groups, such as the WHO Essential Medicine List, and other collaborators, including government and scientific institutions from all continents.

Evidence ecosystems and learning health systems have emerged as models to enhance collaboration across organisations working with evidence, guidance, and downstream implementation. For those involved in systematic reviews and guidelines core requirements for efficient collaboration are explicit agreement on standards, methods and processes and the use of platforms with digitally structured data to further enhance production.(3, 4)

Global experiences with pandemics and epidemics have been common in Low and Middle Income Countries (LMIC), including Ebola, Cholera, and Lassa in Africa and Zika in South America. There could be useful learning lessons on guidance for practice and policy from these examples. Although there has been significant increase in LMIC contributions to the evidence ecosystem through intervention from Cochrane, GIN, JBI, and the African Evidence Network, more is still required.

### Lessons for the future and areas still requiring work

Despite the solutions and initiatives, we have outlined above, there is still much more work required to support those within the systematic review and guideline development communities during COVID-19. Although the evidence maps, repositories and collections of primary studies, systematic reviews and guidelines have many benefits, there are some critical features missing that would greatly assist with addressing challenges. Firstly, many of the entries in these repositories and maps have not been assessed for their risk of bias or trustworthiness, and it is difficult to separate the trustworthy information (and guidance) from that which is not so trustworthy. Additionally, to better foster adoption, adaptation and adoption of recommendations,(40) what is required is the ability and the commitment to share systematic review and guideline outputs in formats (ranging from simple excel extractions to digitised information packets (such as RevMan files, and MAGICapp or GRADEpro recommendations, evidence summaries and decision aids) that will enable reuse and reproduction.

The other challenge is to ensure that the recent advances in collaboration, efficiencies in guideline and systematic reviews development, sharing and coordination are maintained following the pandemic. These efforts should include representatives from across the globe and particularly LMIC settings, where there is an ever-present risk of new pandemics and experience with dealing with past pandemics by researchers, developers, and governments in these regions. We need to ensure that lessons learned and solutions initiated are sustained and can be used in diverse settings, creating preparedness for subsequent pandemics (or infodemics) but also improving the inefficiencies in the evidence ecosystem into the future.

### Conclusion

The COVID-19 pandemic and infodemic has had an enormous impact on all those involved in research, evidence synthesis and guidance for healthcare and has presented many challenges. However, rather than using the challenges as justification for the slipping of methodological standards, rigour, and

trustworthiness, it is now more important than ever that decision makers are provided with credible information and guidance on which to base their decisions. The work of GIN and other organisations has resulted in many collaborations to ensure this is possible and there are some promising initiatives underway to achieve this goal.

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