Journal of Clinical Epidemiology 184 (2025) 111823

Journal of Clinical Epidemiology

ORIGINAL RESEARCH

Adapting World Health Organization COVID-19 living guidelines balancing methodological rigor with efficiency and flexibility: a case study from Argentina

Carlos Zaror[a,b,c,*], Maura Klenner[d], Yang Song[e,f], Thomas Agoritsas[a,g,h], Giselle Balaciano[i], Verónica Sanguine[i], Débora Lev[i], Fernando Tortosa[j], Agustín Bengolea[i], Ariel Izcovich[k], Stijn Van de Velde[h], Ludovic Reveiz[l], Per Vandvik[h,m], Romina Brignardello-Petersen[a]

[a]*Department of Health Research Methods, Evidence, and Impact, McMaster University, Hamilton, Ontario, Canada*
[b]*Faculty of Dentistry, Department of Pediatric Dentistry and Orthodontics, Universidad de La Frontera, Temuco, Chile*
[c]*Faculty of Dentistry, Center for Research in Epidemiology, Economics and Oral Public Health (CIEESPO), Universidad de La Frontera, Temuco, Chile*
[d]*Faculty of Education, Social Sciences and Humanities, Department of Languages, Literature and Communication, Universidad de La Frontera, Temuco, Chile*
[e]*School of Medicine, Chinese University of Hong Kong, Shenzhen, China*
[f]*Iberoamerican Cochrane Centre, Biomedical Research, Institute Sant Pau (IIB Sant Pau), Barcelona, Spain*
[g]*Faculty of Medicine, Division of General Internal Medicine, University Hospitals of Geneva, Geneva, Switzerland*
[h]*MAGIC Evidence Ecosystem Foundation, Oslo, Norway*
[i]*Ministerio de Salud de la Nación, Buenos Aires, Argentina*
[j]*Carrera de medicina, Universidad Nacional de Rio Negro, Viedma, Río Negro, Argentina*
[k]*Facultad de Medicina, Universidad del Salvador, Buenos Aires, Argentina*
[l]*Science and Knowledge for Impact Unit, Department of Evidence and Intelligence for Action in Health, Pan American Health Organization, Washington, DC, USA*
[m]*Faculty of Medicine, Institute of Health and Society, University of Oslo, Oslo, Norway*

Accepted 5 May 2025; Published online 9 May 2025

Abstract

Objectives: We assessed the perceptions about a new methodological process to translate and adapt the World Health Organization living guidelines for COVID-19 recommendations for therapeutics in Argentina from the guideline development group's (GDG) perspective.

Methods: A tailored adaptation process, linked to a prototype tool and created as part of the GATEWAY project by the MAGIC Evidence Ecosystem Foundation, starts by assessing the recommendation and justification and then examining evidence to decision factors. We focused our evaluation on the adaptation process steps carried out from December 2022 to June 2023. We collected information through (1) observations of the panel meeting, (2) focus group with methods team, (3) semistructured interviews with panel members, (4) postpanel meeting survey, and (5) a satisfaction survey. We carried out descriptive analyses of surveys and content analysis of focus groups and interviews.

Results: GDG adapted four recommendations, of which two were modified in direction or strength and elaborated one de novo. The survey showed that most GDG members found the training session (89%) and prepanel meeting survey (100%) facilitated adaptation. Focus groups and interviews showed that GDG agreed that the process considered the relevant local factors to adapt the recommendations and that it was transparent and easy to understand, allowing it to reach a consensus efficiently. GDG valued the process's flexibility and time optimization. They considered the premeeting survey analysis crucial in facilitating the consensus.

Conclusion: From the GDG perspective, this case study demonstrated that this tailored approach provides a transparent, efficient, and rigorous methodology for translating and adapting the World Health Organization living guidelines for COVID-19.

Keywords: COVID-19; Practice guidelines; Adaptation framework; Argentina; Evidence-based practice; World Health Organization

Funding: The World Health Organization partially supported this work under the Agreement for Performance of Work number 2022/1,198,572-0 in response to Request for Proposals number 2021-030_SCI-QNS_LivPlat.

* Corresponding author. Faculty of Dentistry, Department of Pediatric Dentistry and Orthodontics, Universidad de La Frontera, #01145 Francisco Salazar Avenue, Temuco 4811230, Chile.
E-mail address: carlos.zaror@ufrontera.cl (C. Zaror).

https://doi.org/10.1016/j.jclinepi.2025.111823

What is new?

Key findings

- This tailored approach provided a transparent, efficient, and rigorous methodology for translating and adapting the World Health Organization COVID-19 guidelines
- Methodological innovations, such as the prepanel survey, can be especially useful in facilitating better use of time during the panel meeting and providing additional specific contributions about the context

What this adds to what is known?

- Although frameworks exist for adapting or adopting guidelines, this particular framework emphasizes the importance of considering the local context and tailoring the approach to the resources and capabilities of the responsible organizations.

What is the implication, and what should change now?

- This tailored new methodological process can assist clinicians, researchers, funders, policymakers, and other stakeholders seeking to adapt CPGs to specific settings. The process of adaptation, translation, and dynamic updating of living guidelines can be made more efficient by adding technology, as exemplified by a prototype tool developed in the GATEWAY. Future research should aim to assess this process and tool with other health problems, health systems, and levels of methodological expertise by guideline developers

1. Introduction

During the COVID-19 pandemic, clinical practice guidelines (CPGs) proved critical to inform national policy and practice effectively by offering rapidly updated, evidence-oriented recommendations [1,2]. With the growing body of research, such guidelines needed continual evidence surveillance and frequent recommendation updating to ensure that guidance for health decisions remained consistent with the best available evidence [3,4]. Living CPGs aimed to maintain the methodological rigor of traditional guideline development while ensuring guideline recommendations' currency, validity, and relevance [5].

Many organizations worldwide, including the World Health Organization (WHO) and the Pan American Health Organization, developed living CPGs for COVID-19 to provide decision-makers with rapid and trustworthy advice [6,7]. However, their widespread use requires adaptation to specific contexts (local, regional, or national) [8]. Adaptation means considering local contextual factors, such as language, availability, and accessibility of services and resources, the health-care setting, and the relevant stakeholders' cultural and ethical values [9]. Although there are some frameworks to adapt or adopt guidelines [10,11], addressing and reporting context differences between source and adapted CPG remains one of the main challenges of the adaptation process [12]. Other challenges include the need for adequate methodological expertise, financial resources, and time from the local guideline adaptation group [12,13]. Furthermore, evidence suggests that most WHO guidelines lack sufficient information to help local health workers adapt specific guidelines to their local context [14]. Therefore, it may not be surprising that 2 years into the pandemic, 93% of WHO member states recommended treatments that had been proven ineffective in trials and were not recommended by WHO [15].

In response, the MAGIC Evidence Ecosystem Foundation (MAGIC), a nonprofit organization supporting WHO in developing their living guidelines for COVID-19, through the GATEWAY project, developed a tailored new methodological process and a prototype tool to support efficient and flexible adaptation of trustworthy living guidelines. The full remit of the GATEWAY project included supporting and maintaining the production of living guidelines, enhancing mechanisms for dissemination of these guidelines, and developing and improving methodological processes and tools for efficient guideline adaptation at the WHO member-state level (https://magicevidence.org/gateway).

The main objective of this case study was to learn the *perceptions about this tailored new methodological process* to adapt the WHO living guidelines for COVID-19 (WLGC-19) therapeutics in Argentina from the guideline development group's (GDG) perspective. The specific objectives were to (S1) learn about the GDG's perception of the *usefulness of the specific steps* of this process used to translate and adapt the WLGC-19, (S2) learn about GDG's perception of the usefulness of the adapted recommendations resulting from the application of this process, (S3) learn about the GDG's perception about the *consideration of all relevant local factors* when applying this process, and (S4) identify *other factors* relevant to the GDG;s experience to be considered for future applications of this process.

2. Methods

2.1. Study design

The adaptation process was created by a group of methodologists from MAGIC with extensive experience in guideline development and adaptation in the context of the GATEWAY project, where MAGIC provided technical

support as part of the fulfillment of WHO's request (via a Request for Proposal 2021-030_SCI-QNS_LivPlat) to enhance further the dissemination, adaptation, and adoption of COVID-19 living guidelines by Member States so that the most current, best available evidence is used for decision-making.

This case study focused on the adaptation process carried out in Argentina corresponding to the GATEWAY project objective aimed to translate, adapt, and disseminate the WLGC-19 therapeutics guidelines in member states, using a tailored adaptation framework that balances efficiency with methodological rigor. We did not perform user-testing of the prototype tool for adaptation developed in GATEWAY, given delays in making the tool available for real-time use in Argentina. All participants signed an informed consent.

The adaptation framework focuses on the recommendation level, ensuring feasibility by allowing panel members (ie, members of the multidisciplinary group of making judgments about the balance between desirable and undesirable consequences of an intervention when adapting the recommendations) to review source recommendations and justifications and their applicability to the local context individually before the meeting. During the recommendation formulation meeting, the panel starts by discussing each recommendation direction and strength, and then focuses only on specific evidence-to-decision (EtD) factors for which they have already identified potential applicability issues. Next, based on this discussion, they confirm or modify the recommendation. Figure 1 depicts the 6 steps of this framework. This tailored approach adapts to the available resources and the expertise of the methods team where the adaptation will be carried out. To achieve this, first, it assesses the local capacities and determines the need for support or training. Second, it enables groups to decide whether to focus only on factors with identified applicability issues or consider all EtD factors. Third, it allows considering contextual factors regardless of the availability of local evidence.

1. *Setting up process and plan:* For the Argentinian Ministry of Health, having a CPG about ambulatory care for COVID-19 was a priority. A methods team comprised researchers from the Argentinian Ministry of Health Methods team (AMT), Pan American Health Organization, WHO country office, and MAGIC created a plan for the adaptation process that, following the process for adaptation, met the specific needs of the Member State, using WLGC-19 (v11.0, 13/7/2022) as the source guideline [16].
2. *Selecting recommendations:* The AMT selected and prioritized the recommendations from the source guideline based on the interventions' widespread use

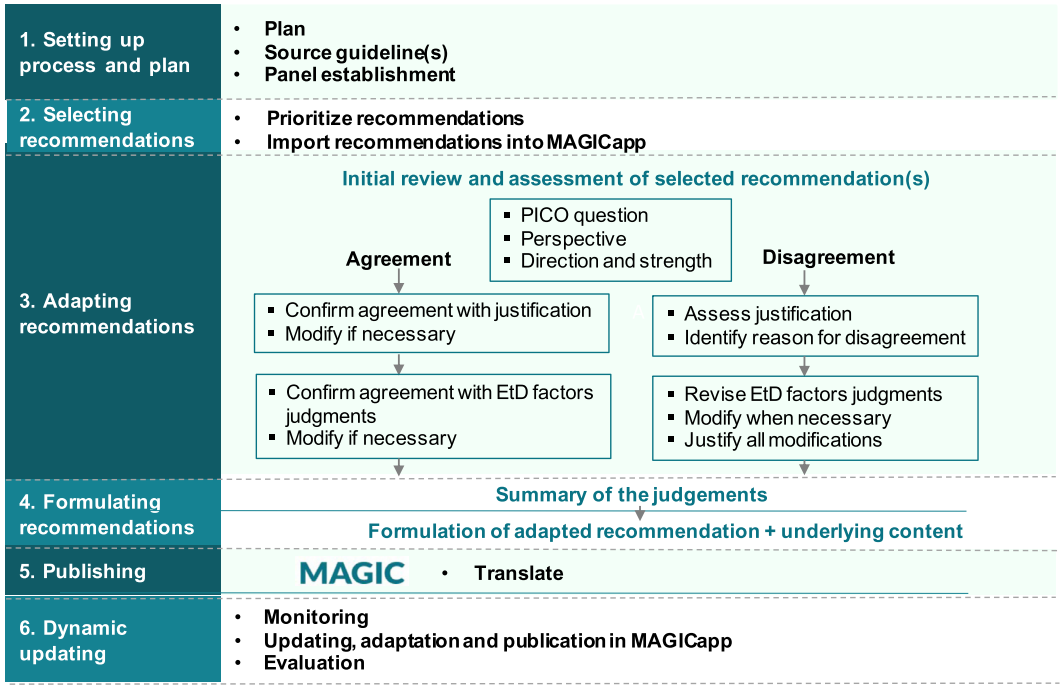

Figure 1. Adaptation framework from the GATEWAY project. EtD, evidence-to-decision; PICO, Participants, Interventions, Comparisons, and Outcomes.

in Argentina, possibilities of future implementation, route of administration (oral), and use in ambulatory care. They selected recommendations addressing the following four drugs: nirmatrelvir and ritonavir, molnupiravir, ivermectin, and hydroxychloroquine.

3. *Adapting recommendations:* The GDG in charge of adapting the recommendations comprised seven methodologists of the AMT and a panel of seventeen clinical experts, mainly specialists in infectious disease, general medicine, epidemiology, and professionals responsible for overseeing COVID-19 management programs in the provinces of Argentina who knew the health-care system. The AMT selected panel members based on their technical, clinical, and management expertise, ensuring representation from all five regions of Argentina. Political representatives included officials from the State Ministries of Health who were responsible for implementing the recommendations in their respective regions. The AMT appointed the panel chair, a respected physician with extensive experience in the clinical management of COVID-19 patients and a solid foundation in evidence-based medicine. All experts approached accepted the invitation to participate. The GDG did not consider patient partners but they were considered when discussing the judgments of the source guidelines. All panel members submitted conflict of interest declarations according to the international guidance [17−19], which were reviewed and managed by the AMT according to their existing policies. None of the panel members, including the chairs, had any conflicts of interest as defined and judged by the AMT. The AMT translated the source guidelines into Spanish to carry out this process. Then, they provided training about the process, methodology, and the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach in an *initial meeting* (December 2022). Subsequently, they sent the panel members a *prepanel online survey* to ask panel members to read each recommendation and justification from the source guideline and analyze if they have any concerns with them (and, if so, if these are minor or major). The analysis of this survey was presented in a second in-person panel meeting in February 2023 (from now *panel meeting*) and used as input to adapt the recommendations. When there were no concerns, the panel reviewed and confirmed (or modified, if needed) the judgments the source guideline made for each EtD factor. When there were concerns, the panel identified and discussed in more detail the EtD factors in which they had concerns.
4. *Formulating recommendations:* In the panel meeting, the panel members adapted the recommendations based on their assessment made in the prepanel survey and considering local information such as hospitalization risk (stratified by age, comorbidities, and vaccination status), costs of the interventions in Argentina (either incurred costs if available or estimated costs if not); and budget impact analysis determining the out-of-pocket expenses for the patients and the health system provided by the Economics team from the Ministry of Health.
5. *Publishing:* Methods team wrote and published the adapted guideline on the MAGICapp platform in June 2023 [20], following methodological and reporting standards [21].
6. *Dynamic updating:* The methods team created a plan to update the guideline when new updates of the WLGC-19 will be notified.

2.2. Participants and data generation

We collected information through diverse sources:

1. Observations of the panel meeting: The panel meeting was video recorded at the offices of the Ministry of Health of Argentina. When formulating the recommendations, we registered relevant issues that facilitated or hindered the discussion, for which we designed an observation guide (see Appendix 1).
2. Postpanel meeting survey: At the end of the panel meeting, panel members responded to an anonymous survey to learn their perceptions of the different steps of the adaptation process they participated in (see Appendix 2).
3. Focus group with methods team: After the postpanel meeting survey, a researcher conducted a 60-minute focus group with the whole AMT to learn about their experience and satisfaction with the process and gather suggestions to improve it. Appendix 3 shows the characteristics of the sample. We asked the participants for their consent to audio record the session, ensuring the confidentiality and anonymity of their statements. In addition, the researcher took notes of relevant data from the discussion and recorded observations about nonverbal messages. The researcher stimulated the interrelationship between the participants through a script for conducting the focus group (see Appendix 4). We transcribed the data and notes for further analysis. The researcher conducting focus group, the project leader, and the qualitative expert researcher reviewed the transcriptions and notes to ensure accuracy and consistency.
4. Semistructured interviews with panel members: With the same objective as the focus group, we conducted semistructured individual interviews with seven panel members. Appendix 5 shows the characteristics of the sample. We selected participants to ensure the representativeness of disciplines and health-care contexts. We conducted interviews via Zoom (Zoom Communications, Inc) an interview script (see Appendix 4)

and scribed notes of the responses. The same research team from the focus group reviewed the transcriptions and notes to ensure accuracy and consistency. All invitees agreed to participate.

5. Satisfaction survey: After publishing the guideline, the panel members responded to the Spanish version of PANELVIEW [22], an anonymous survey designed to identify strengths and weaknesses of a GDG's process and methods [23].

2.3. Data analysis

We performed a descriptive analysis of the postpanel meeting survey and the satisfaction survey. For the postpanel meeting survey, we calculated the number and percentage of panel members who selected each response option (a seven-point Likert scale, from ''totally disagree'' to ''totally agree'') and then combined the ''agree'' and ''totally agree'' responses for reporting purposes. For the satisfaction survey, we calculated measures of central tendency (median and mean) and dispersion (SDs and IQR).

We analyzed the interviews and focus group following Bengtsson's content analysis steps [24]. We analyzed the transcriptions of the interviews and focus groups using the software Atlas.TI (version 23.2.1) for Mac. The principal researcher and a qualitative health research expert concurrently conducted steps one to three of the analysis. Then, they combined their analyses to compare findings and conduct steps four and five. We carried out manifest and latent analyses concurrently. In step 1, we created codes for the five general thematic units of the interview following a deductive approach to data. For step 2, we created codes for the emerging meaning units from participants' discourse following an inductive approach. In step 3, we compared the codes within the same lexical families to the original data to maintain one code for all similar meaning units. In step 4, we created homogeneous groups of codes and organized them according to the five thematic units. In step 5, we drew conclusions from the data analyzed concerning the five thematic units addressed in the interviews. As our main objective was to evaluate the adaptation process from the GDG perspective, we jointly analyzed the information provided by AMT in the focus group and panel members through semistructured interviews (all part of the GDG) to draw conclusions. Finally, to ensure confirmability, we presented the analysis process and its corresponding results to the research team to ensure triangulation and dependability.

2.4. Reflexivity statement

The group of researchers acknowledges that our professional backgrounds, including our experience as guideline methodologists and the affiliation of some of us to the MAGIC, shape our perspectives and interpretation of the findings. The research team comprised primarily health professionals with medical specializations and formal training in health research methodology or clinical epidemiology. Although the team already had substantial experience in both quantitative and qualitative research, we strategically integrated a qualitative research expert to support the qualitative design and analysis phases. To minimize biases, we engaged in journaling and member-checking practices.

3. Results

The GDG considered all 17 recommendations and selected five recommendations to adapt from the WLGC-19 based on what they deemed relevant to Argentina. Of these five, two were modified in direction or strength. In addition, for ivermectin, rather than adapting, they developed a de novo recommendation due to new available and relevant published evidence, with no change in direction or strength of the recommendation (Table 1). The panel meeting in which they adapted the recommendations lasted 3 hours and 40 minutes. Adapting each recommendation took an average of 27 minutes; nirmatrelvir and ritonavir in patients at high risk of hospitalization was the

Table 1. Summary of adapted recommendations from WLGC-19

Intervention	WHO recommendation	Adapted recommendation
Nirmatrelvir-ritonavir (high risk of hospitalization)	Strong recommendation in favor of patients at high risk of hospitalization	No changes in direction or strength of recommendation
Nirmatrelvir-ritonavir (low risk of hospitalization)	Conditional recommendation against patients at low risk of hospitalization	Change in the strength of recommendation to strong against
Molnupiravir (high risk of hospitalization)	Conditional recommendation in favor	Change in the direction of recommendation to conditional against
Hydroxychloroquine	Strong recommendation against	No changes in direction or strength of recommendation
Ivermectin	Strong recommendation against	No changes in direction or strength of recommendation (de novo recommendation)

WHO, World Health Organization; WLGC-19, World Health Organization living guidelines for COVID-19.

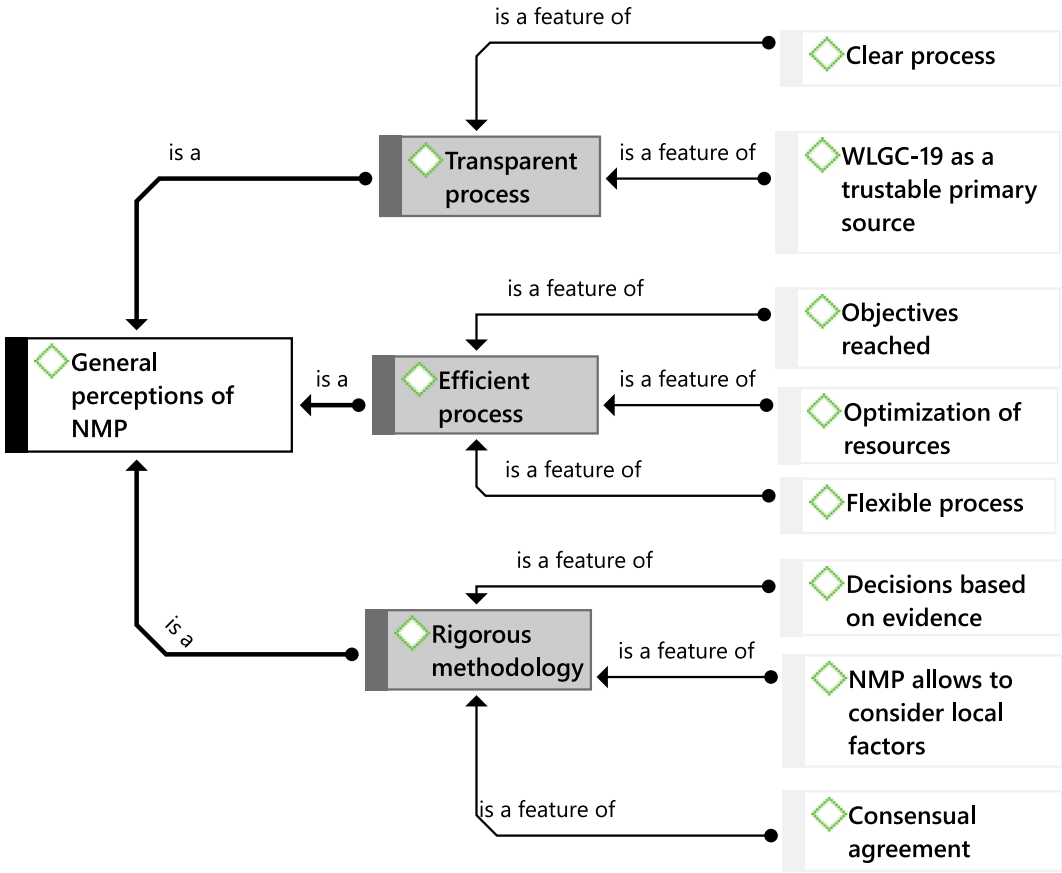

Figure 2. General perceptions about the new methodological process to adapt recommendations. WLGC-19, World Health Organization living guidelines for COVID-19.

recommendation that took the longest (57 minutes). The adaptation process took 7 months, from its planning to publication.

3.1. Content analysis of interviews and focus group

The interviews and focus group resulted in five main themes, each related to this study's general and specific objectives.

3.1.1. Perceptions of the general process (main objective)

Despite GDG considering that WLGC-19 recommendations were trustworthy and encompassed the Argentinian context, they considered it necessary to undergo an adaptation process that incorporated specific local factors to facilitate the implementation of these recommendations.

The GDG assessed the new methodological process comprising three main positive characteristics (Fig. 2):

1. GDG perceived the process as a *transparent process:* The process was clear because the rules for decision-making when consensus among the panelists could not be reached were established from the beginning, and the source guideline was trustworthy.
2. They acknowledged the process as an *efficient process*: GDG members complimented the organization and flexibility of the process steps, which allowed it to reach the objective with optimal use of time and resources. This tailored attribute allowed the elaboration of a high-quality final product.
3. GDG members perceived the process as following a *rigorous methodology*. Mainly because decisions were based on evidence and not personal opinions, political motivations, or personal interests; local factors were considered to make decisions that modified WHO's initial recommendations for their effective application in the Argentinian context; and the final product was reached through consensus among the panel members.

3.1.2. Usefulness of specific new methodological process steps (objective S1)

In general terms, GDG apprised the specific steps of the process as being well organized and necessary to contribute to the final aim of adapting WLGC-19 to the Argentine context (Fig. 3).

GDG members identified four main qualities of the *initial meeting*:

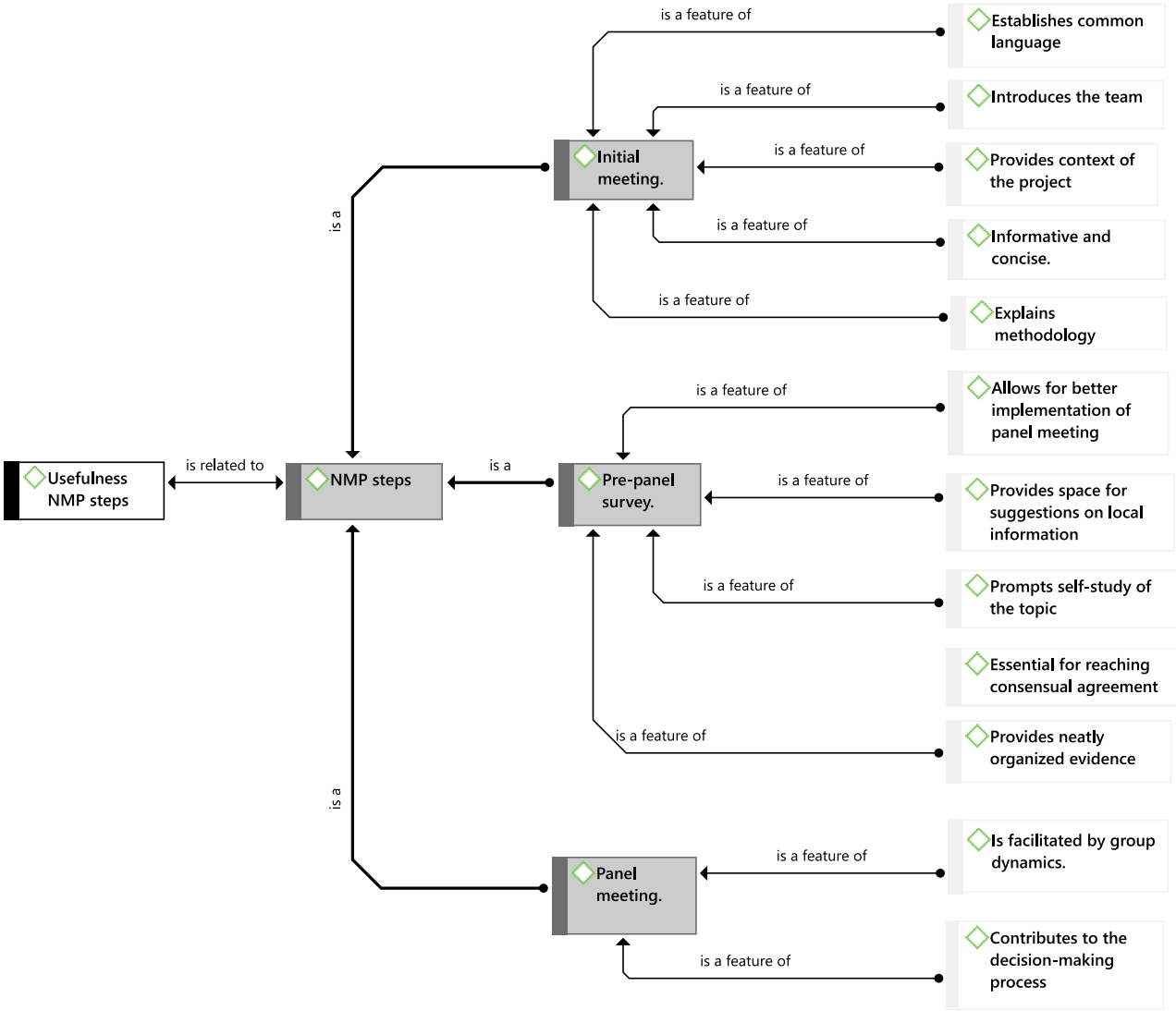

Figure 3. The usefulness of the new methodological process steps.

1. It was necessary to introduce the team and the project, to learn about other panel members' experiences, affiliations, and expertise on the topic.
2. It allowed *establishing a common language* between methodologists and clinical experts, which increased the panel's knowledge about the purposes and aims of the process and ensured that all GDG members understood, in the same way, the technical vocabulary.
3. It allowed explaining the methodology, including steps, processes, rules for decision-making, and the roles to be adopted by the panelists.
4. It was informative and concise, addressing preexisting concerns about using time from previous experiences adapting guidelines.

GDG members evaluated the *prepanel online survey* very positively. They reported it was useful because:

1. It *facilitated better use of time during the panel meeting* because they used the information collected by the survey, making their contributions more efficient.
2. It *provided additional contributions* because the survey provided the possibility to contribute with more evidence when explaining their decisions in agreement with the recommendations.
3. It *prompted self-study on clinical considerations.* Although self-study was not required as part of the process, participants reported feeling the need to study the topic further to make decisions regarding the recommendations.

4. It *provided an optimal summary of the evidence*, making it more user-friendly for analysis. Participants from the GDG mentioned that this evidence accurately summarized relevant evidence on the topic and was enough to make reliable decisions about its effective application to clinical practice.

GDG members reflected on two main features of the panel meeting:

1. Panel's dynamics: GDG highlighted that it was an efficient process due to the efficient time management (staying within time restrictions) and topic development (staying on topic). These two qualities were reached due to the moderators' ability to facilitate the panel meeting appropriately. Another quality was respect for differences in opinions: panelists did not impose their viewpoints based on having more experience (authority) on the topic. The above was facilitated by a balanced panel regarding clinical and political representativeness.
2. D*ecision-making process*: Participants highlighted dialogue and expertise, added to the optimal summary of the evidence provided in the survey, as sources for optimal decision-making. This, in addition to the presentation of local factors, permitted reaching consensus based on the evidence presented.

3.1.3. Usefulness of adapted recommendations (objective S2)

GDG highlighted three features:

1. *Concise and reader-friendly.* It would allow for an appropriate interpretation and implementation of the treatment.
2. *Appropriate to the local context* because the adapted recommendation considered the local factors.
3. *Implementation depends on resources and local factors.* The GDG agrees that the adapted recommendations' feasibility of implementation depends on the access to the resources involved in medical care related to differences in private and public sectors, patients' access to health-care establishments in remote areas, and medical staff's access to the interventions.

3.1.4. Consideration of local factors (objective S3)

Participants mentioned that the baseline risk and costs presented during the panel meeting were relevant to reaching the final recommendations. Otherwise, participants mentioned other local factors that needed consideration and could have influenced the recommendations, including national access to medications, patient voices, equitable access, cultural aspects, local studies, available resources, and political and logistical decisions.

3.1.5. Other elements to consider (objective S4)

The GDG suggested several improvements for the process. These included incorporating visual aids and a manual, holding a prepanel meeting to discuss local factors, and providing more in-depth training on evidence interpretation.

Appendix 6 provides a detailed analysis of the results regarding the consideration of local factors (objective S3) and other elements in the new methodological process (objective S4). Appendix 7 shows example of quotes from participants of the focus group and semistructured interviews.

3.2. Postpanel meeting and satisfaction surveys

Ten out of 17 panel members answered the postpanel meeting survey. Panel members agreed that the training session (90%) and prepanel meeting survey (100%) facilitated adaptation. All agreed that the process considered the relevant local factors to adapt the recommendations, and 90% agreed that it was transparent, allowing to reach a consensus efficiently. Table 2 shows the percentage of panel members who agreed or strongly agreed with each stage's statements.

Five out of the 17 panel members answered satisfaction survey. PANELVIEW's mean score was 6.4 (SD 0.43; on a scale from 1 to 7, with higher scores representing better satisfaction with the whole guideline development process), with the overall satisfaction domain obtaining the best possible score corroborating the excellent perception of the guideline adaptation process (Table 3).

4. Discussion

This case study explored the GDG's perceptions about the new methodological process to adapt the WLGC-19. It showed that this approach provides a transparent, efficient, and rigorous methodology for translating and adapting the WLGC-19 with optimal time and resources.

The main challenge for this adaptation process was the context in which the guideline was adapted. The COVID-19 pandemic required prompt response, so having timely recommendations was vital. Our framework completed the adaptation process in a shorter period (7 months) than other frameworks, which can take 18 months to 3 years [25,26]. Although this timeframe may be considered slow in a pandemic, the public health crisis had calmed down and the AMT was satisfied with the length of the process. It is worth noting that the GDG completed the adaptation of 5 recommendations in a three-hour meeting. The planning, translation, downstream clearance of the guideline, and publication; as well as the development of methods and processes in the GATEWAY project and coordination between AMT and MAGIC took most of the time. We believe that an organization that has used this approach,

and has expertise and availability of a good source guideline can, if needed, complete the adaptation and publication of recommendations within a few weeks.

Guideline adaptation frameworks can focus on identifying source guidelines for adaptation, recommendations of interest, or the evidence underpinning the candidate recommendations [27]. Our process selected a trustworthy source guideline and specific recommendations within such guidelines and then modified the recommendations of interest for the local context. In our case study, the GDG recognized the use of WLGC-19 as a trustworthy source to ensure an efficient and appropriate process. Guideline teams aiming to use the process described in this article should have a good methodological quality source [28,29]. Because the GRADE EtD frameworks guide the consideration and reporting of local issues according to each EtD factor, research suggests that guidelines using this framework may perform better as source guidelines [30,31].

The main challenge reported in the literature for using previous frameworks for guideline adaptation was the need for more methodological expertise in the local organizations to plan the resources/time needed to carry out the adaptation process [13,32]. Our case study benefited from an experienced local team (the AMT), which likely influenced the successful outcomes. The team experience, however, allowed them to provide relevant insights on the process that we would not have obtained from an inexperienced team.

The GDG highlighted flexibility as the main aspect of making this process tailored and efficient. The ability to adjust according to available resources and the expertise of the methods team involved in the adaptation indicates that the perception of the process may be similar in other contexts.

For the AMT, the prepanel survey was the main innovation of this process. This was also the most highly valued step by the panel members. According to their perception, the prepanel survey was the key to making the panel meeting efficient and adapting all recommendations in one session. Although its use should be tested in other health contexts, based on this case study and our experience, we believe it is a useful tool to prepare for recommendation development meetings.

It is important to note that although the WLGC-19 considered the context of Latin American countries, it

Table 2. Panel members who agreed or totally agreed with postpanel meeting survey statements ($N = 10$)

Item	Agree or totally agree n (%)
Training session	
To what extent do you agree that the training was useful for the adaptation process?	9 (90%)
To what extent do you agree that the contents delivered were sufficient to understand the methodological framework?	8 (80%)
To what extent do you agree that the training adequately prepared you for the panel meeting	8 (80%)
To what extent do you agree that the time allocated to the training was sufficient to understand the methodological framework?	8 (80%)
Prepanel online survey	
To what extent do you agree that the prepanel meeting survey facilitated the adaptation process?	10 (100%)
To what extent do you agree that the prepanel meeting survey facilitated the assessment of relevant factors for adapting the recommendations?	10 (100%)
To what extent do you agree that the survey adequately prepared you for the panel meeting?	10 (100%)
Panel meeting	
To what extent do you agree that the panel meeting allowed careful consideration of all relevant factors in adapting the recommendations?	10 (100%)
To what extent do you agree that the discussions during the panel meeting paid sufficient attention to relevant local factors to adapt the recommendations?	10 (100%)
To what extent do you agree that the meeting length allowed sufficient time to discuss each of the relevant factors in adapting the recommendations?	10 (100%)
Efficiency of the adaptation process	
To what extent do you agree that the adaptation process was efficient (optimal use of time and resources)?	9 (90%)
To what extent do you agree to use this adaptation process again?	9 (90%)
To what extent do you agree that the adaptation process is transparent?	9 (90%)
Results of the process	
To what extent do you agree that the process will result in recommendations that will be useful in your clinical context?	10 (100%)
To what extent do you agree that the process will result in recommendations that will have an impact on people's health?	10 (100%)

Table 3. Descriptive data of the satisfaction survey score

Domain	Observed range	Median [IQR]	Mean [SD]
Administration	6.2–7.0	6.7 [6.4–7.0]	6.7 [0.4]
Training	6.0–7.0	6.0 [6.0–7.0]	6.4 [0.5]
Panel chair	6.0–7.0	7.0 [7.0–7.0]	6.8 [0.4]
Conflict of interest	5.0–7.0	6.5 [6.0–7.0]	6.3 [0.8]
Scoping the guideline	6.0–7.0	6.5 [6.5–7.0]	6.6 [0.4]
Methodology and process	6.0–7.0	7.0 [6.5–7.0]	6.7 [0.5]
Considering the evidence and contributing through expertise	5.5–7.0	6.0 [5.5–6.3]	6.1 [0.6]
Formulating the recommendations	6.0–7.0	6.6 [6.0–6.8]	6.5 [0.5]
Group composition	5.5–7.0	7.0 [6.0–7.0]	6.5 [0.7]
Group roles	6.0–7.0	7.0 [6.0–7.0]	6.6 [7.0]
Group interaction	7.0–7.0	7.0 [7.0–7.0]	7.0 [0.0]
Implementation and dissemination planning	4.0–7.0	5.0 [4.0–6.3]	5.3 [1.4]
Writing guideline	4.0–7.0	7.0 [6.0–7.0]	6.2 [1.3]
Incentive	4.0–7.0	6.0 [6.0–6.0]	5.8 [1.1]
Overall satisfaction	7.0–7.0	7.0 [7.0–7.0]	7.0 [0.0]
Total score	5.9–6.9	6.5 [6.1–6.7]	6.4 [0.4]

was not country-specific, limiting the applicability of the recommendations at that level. Our framework is characterized by paying special attention to the local context, which the GDG highlighted as a positive aspect. Despite this, the GDG noted that there were additional local factors not considered during the process, which may impact applicability in specific contexts, such as remote communities. However, identifying and incorporating all relevant local factors when the information is not always available remains a challenge, an issue that has been reported previously for other adaptation processes [32,33]. The GDG suggested providing information about local factors earlier in the process and proposed a prepanel meeting to present and discuss local evidence, ensuring that all relevant contextual local factors are incorporated.

Another opportunity for improvement suggested by the GDG is a longer training session, during which they could go deeper into interpreting evidence and assessing its certainty, among other methodological topics. Evidence shows that web-based training sessions could help deepen the content according to the participants' schedules [34].

We applied the same methodology in Kazakhstan. Although our perception regarding the efficiency and ability to adapt to available resources were similar, the process was not evaluated with the same rigor to compare results or include in this paper.

Finally, the prototype tool for the stepwise adaptation process developed in GATEWAY was not ready for real-time use by the GDG in Argentina. Such a tool, with digitally structured data and versioning, may further enhance efficiency in adaptation, translation, and dynamic updating of recommendations in living guidelines and represents an area of active investigation by MAGIC.

4.1. Strengths and limitations

The main strength of our case study was the integration of qualitative and quantitative findings, which helped us to better understand the GDG's perception of this process. This data triangulation allowed us to obtain knowledge from different sources, which were consistent and gave us more confidence about such conclusions. Because the AMT had experience in guideline development using the GRADE methodology, which could have facilitated the process, we cannot generalize the results to inexperienced guideline teams.

The low response rate of 30% on the satisfaction survey is a limitation, which could affect the sample's representativeness. We believe that this low response rate may be attributed to our use of multiple data collection instruments. However, despite the low response rate, these results are consistent with the findings obtained through the prepanel survey and qualitative data.

Another limitation is that the researchers who evaluated the process were also part of the team that developed it. As mentioned in our reflexivity statement, this may have influenced our interpretation of the findings.

Lastly, although the protocol was not registered previously, and there is no appropriate reporting guideline for

this type of study, this report provides a detailed synthesis of the methodology as it was designed.

4.2. Conclusions and future research

This tailored new methodological process can assist clinicians, researchers, funders, policymakers, and other stakeholders seeking to adapt CDGs to specific settings according to methodological expertise, resources, and time available. This report describes how to carry out this process using a transparent, efficient, and rigorous methodology. The results suggest that the prepanel survey can be especially useful in facilitating better use of time during the panel meeting and providing additional specific contributions about the context. This tailored process addresses limitations reported by other frameworks when adapting to available resources.

Future research should aim to assess this process, and associated tools, with other health problems, health systems, and levels of methodological expertise by guideline developers. Specific considerations could include analyzing the differences in the opinions according to different participants' roles in the adaptation process.

Following the breakthrough for living evidence during the COVID-19 pandemic, large scale funding now supports development of global infrastructure focusing on the use of data, tools, and artificial intelligence [8,35]. In this context, having digitally structured content available in formats that are easier to share and reuse underpins the rationale for adding a tool to achieve more efficient adaptation, translation, and dynamic updating of global living guidelines.

Ethics statement

Norway's Regional Committee for Medical and Health Research Ethics waived the ethics approval process.

CRediT authorship contribution statement

Carlos Zaror: Writing − review & editing, Writing − original draft, Methodology, Investigation, Formal analysis, Conceptualization. **Maura Klenner:** Writing − review & editing, Formal analysis. **Yang Song:** Writing − review & editing, Investigation. **Thomas Agoritsas:** Writing − review & editing, Investigation. **Giselle Balaciano:** Writing − review & editing, Investigation. **Verónica Sanguine:** Writing − review & editing, Investigation. **Débora Lev:** Writing − review & editing, Investigation. **Fernando Tortosa:** Writing − review & editing, Investigation. **Agustín Bengolea:** Writing − review & editing, Investigation. **Ariel Izcovich:** Writing − review & editing, Investigation. **Stijn Van de Velde:** Writing − review & editing, Investigation, Conceptualization. **Ludovic Reveiz:** Writing − review & editing, Investigation, Conceptualization. **Per Vandvik:** Writing − review & editing, Supervision, Investigation, Conceptualization. **Romina Brignardello-Petersen:** Writing − original draft, Supervision, Investigation, Conceptualization.

Declaration of competing interest

T. A. and P. V. are board members of the MAGIC Evidence Ecosystem Foundation. S. V. is an employee of MAGIC. R.B.P received a consultancy payment from MAGIC as part of this project. MAGIC also made a payment to Fundación Instituto para la Excelencia Clínica y Sanitaria for Y.S.'s contributions to the research. L.R. is a staff member of the Pan American Health Organization. The author alone is responsible for the views expressed in this publication, and they do not necessarily represent the decisions or policies of the Pan American Health Organization. There are no competing interests for any other author.

Acknowledgments

The authors appreciate the guideline development group's willingness to participate in the interviews.

The authors thank WHO regional and country office authorities, as well as the country's Ministries of Health authorities and staff, who supported and facilitated the adaptation of the WHO guidelines.

The authors also thank Katalina Muñoz for her help in the transcriptions of the audio recording from the focus group and interviews.

Finally, the authors would like to express their gratitude to Lisa Askie for reviewing a draft version of the manuscript.

Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.jclinepi.2025.111823.

Data availability

Data will be made available on request.

References

[1] Deana NF, Zaror C, Seiffert A, Aravena-Rivas Y, Munoz-Millan P, Espinoza-Espinoza G, et al. Quality appraisal of clinical practice guidelines on provision of dental services during the first months of the covid-19 pandemic. J Evid Based Dent Pract 2021;21(4):101633.

[2] Yao X, Jin YH, Djulbegovic B. Some thoughts on conducting and implementing clinical practice guidelines in a pandemic. Chin Med J (Engl) 2020;134(8):910−2.

[3] Florez ID, Amer YS, McCaul M, Lavis JN, Brouwers M. Guidelines developed under pressure. The case of the COVID-19 low-quality

"rapid" guidelines and potential solutions. J Clin Epidemiol 2022; 142:194−9.
[4] Tendal B, Vogel JP, McDonald S, Norris S, Cumpston M, White H, et al. Weekly updates of national living evidence-based guidelines: methods for the Australian living guidelines for care of people with COVID-19. J Clin Epidemiol 2021;131:11−21.
[5] Akl EA, Meerpohl JJ, Elliott J, Kahale LA, Schunemann HJ, Living Systematic Review N. Living systematic reviews: 4. Living guideline recommendations. J Clin Epidemiol 2017;91:47−53.
[6] Agarwal A, Hunt B, Stegemann M, Rochwerg B, Lamontagne F, Siemieniuk RA, et al. A living WHO guideline on drugs for covid-19. BMJ 2020;370:m3379.
[7] Cheyne S, Fraile Navarro D, Hill K, McDonald S, Tunnicliffe D, White H, et al. Methods for living guidelines: early guidance based on practical experience. Paper 1: Introduction. J Clin Epidemiol 2023;155:84−96.
[8] Vandvik PO, Askie L, Glen F, Tendal B, Agoritsas T. COVID-19: living guidelines help fix cracks in evidence pipeline. Nature 2021; 595(7866):172.
[9] Burgers JS, Anzueto A, Black PN, Cruz AA, Fervers B, Graham ID, et al. Adaptation, evaluation, and updating of guidelines: article 14 in Integrating and coordinating efforts in COPD guideline development. An official ATS/ERS workshop report. Proc Am Thorac Soc 2012; 9(5):304−10.
[10] Darzi A, Abou-Jaoude EA, Agarwal A, Lakis C, Wiercioch W, Santesso N, et al. A methodological survey identified eight proposed frameworks for the adaptation of health related guidelines. J Clin Epidemiol 2017;86:3−10.
[11] Pan American Health Organization. Handbook for Adapting and Implementing Evidence-Informed Guidelines. Washington, D.C.: PAHO; 2023.
[12] Song Y, Ballesteros M, Li J, Martinez Garcia L, Nino de Guzman E, Vernooij RWM, et al. Current practices and challenges in adaptation of clinical guidelines: a qualitative study based on semistructured interviews. BMJ Open 2021;11(12):e053587.
[13] Wang Z, Norris SL, Bero L. The advantages and limitations of guideline adaptation frameworks. Implement Sci 2018;13(1):72.
[14] Wang Z, Grundy Q, Parker L, Bero L. Variations in processes for guideline adaptation: a qualitative study of World Health Organization staff experiences in implementing guidelines. BMC Public Health 2020;20(1):1758.
[15] Cokljat M, Cruz CV, Carrara VI, Puttaraksa K, Capriglioni C, Insaurralde SM, et al. Comparison of WHO versus national COVID-19 therapeutic guidelines across the world: not exactly a perfect match. BMJ Glob Health 2024;9(4):e014188.
[16] Organization WH. Therapeutics and COVID-19: living guideline 2023. Available at: https://app.magicapp.org/#/guideline/nBkO1E/rec/LwrMyv. Accessed January 12, 2024.
[17] Parker L, Bero L. Managing risk from conflicts of interest in guideline development committees. BMJ 2022;379:e072252.
[18] Schunemann HJ, Al-Ansary LA, Forland F, Kersten S, Komulainen J, Kopp IB, et al. Guidelines international network: principles for disclosure of interests and management of conflicts in guidelines. Ann Intern Med 2015;163(7):548−53.
[19] Traversy G, Barnieh L, Akl EA, Allan GM, Brouwers M, Ganache I, et al. Managing conflicts of interest in the development of health guidelines. CMAJ 2021;193(2):E49−54.
[20] Nación MdSdl. Tratamientos para COVID-19: Adaptación para Argentina de la guía de la OMS 2023. Available at: https://app.magicapp.org/#/guideline/7267. Accessed January 12, 2024.
[21] Brouwers MC, Kho ME, Browman GP, Burgers JS, Cluzeau F, Feder G, et al. Agree II: advancing guideline development, reporting and evaluation in health care. CMAJ 2010;182(18): E839−42.
[22] Zaror C, Bravo-Soto G, Oliveros MJ, Burdiles P, Wiercioch W, Etxeandia-Ikobaltzeta I, et al. Cross-cultural adaptation and validation to Spanish of the panelview instrument to evaluate the health guidelines development process. J Clin Epidemiol 2024;176:111569.
[23] Wiercioch W, Akl EA, Santesso N, Zhang Y, Morgan RL, Yepes-Nunez JJ, et al. Assessing the process and outcome of the development of practice guidelines and recommendations: PANELVIEW instrument development. CMAJ 2020;192(40):E1138−45.
[24] Bengtsson M. How to plan and perform a qualitative study using content analysis. NursingPlus Open 2016;2:8−14.
[25] Amer YS, Elzalabany MM, Omar TI, Ibrahim AG, Dowidar NL. The 'Adapted ADAPTE': an approach to improve utilization of the ADAPTE guideline adaptation resource toolkit in the Alexandria Center for Evidence-Based Clinical Practice Guidelines. J Eval Clin Pract 2015;21(6):1095−106.
[26] Chakraborty SP, Jones KM, Mazza D. Adapting lung cancer symptom investigation and referral guidelines for general practitioners in Australia: reflections on the utility of the ADAPTE framework. J Eval Clin Pract 2014;20(2):129−35.
[27] Kristiansen A, Brandt L, Agoritsas T, Akl EA, Berge E, Bondi J, et al. Adaptation of trustworthy guidelines developed using the GRADE methodology: a novel five-step process. Chest 2014; 146(3):727−34.
[28] Andrews J, Guyatt G, Oxman AD, Alderson P, Dahm P, Falck-Ytter Y, et al. GRADE guidelines: 14. Going from evidence to recommendations: the significance and presentation of recommendations. J Clin Epidemiol 2013;66(7):719−25.
[29] Andrews JC, Schunemann HJ, Oxman AD, Pottie K, Meerpohl JJ, Coello PA, et al. GRADE guidelines: 15. Going from evidence to recommendation-determinants of a recommendation's direction and strength. J Clin Epidemiol 2013;66(7):726−35.
[30] Alonso-Coello P, Irfan A, Sola I, Gich I, Delgado-Noguera M, Rigau D, et al. The quality of clinical practice guidelines over the last two decades: a systematic review of guideline appraisal studies. Qual Saf Health Care 2010;19(6):e58.
[31] Zaror C, Seiffert A, Deana NF, Espinoza-Espinoza G, Atala-Acevedo C, Diaz R, et al. Emergency and sequalae management of traumatic dental injuries: a systematic survey of clinical practice guidelines. BMC Oral Health 2023;23(1):704.
[32] Coronado-Zarco R, Olascoaga-Gomez de Leon A, Faba-Beaumont MG. Adaptation of clinical practice guidelines for osteoporosis in a Mexican context. Experience using methodologies ADAPTE, GRADE-ADOLOPMENT, and RAND/UCLA. J Clin Epidemiol 2021;131:30−42.
[33] McCaul M, Ernstzen D, Temmingh H, Draper B, Galloway M, Kredo T. Clinical practice guideline adaptation methods in resource-constrained settings: four case studies from South Africa. BMJ Evid Based Med 2020;25(6):193−8.
[34] Dorneles G, Stein C, Araujo CP, Parahiba S, da Rosa B, Graf DD, et al. The impact of an online course on agreement rates of the certainty of evidence assessment using Grading of Recommendations, Assessment, Development, and Evaluation Approach: a before-and-after study. J Clin Epidemiol 2024;172:111407.
[35] Wellcome. Evidence synthesis infrastructure collaborative 2025. Available at: https://wellcome.org/news/evidence-synthesis-infrastructure-collaborative. Accessed July 3, 2025.