A novel framework for incorporating patient values and preferences in making guideline recommendations : guideline panel surveys

Zeng, Linan; Helsingen, Lise M; Bretthauer, Michael; Agoritsas, Thomas; Vandvik, Per O; Mustafa, Reem A; Busse, Jason; Siemieniuk, Reed A C; Lytvyn, Lyubov; Li, Shelly-Anne; Yang, Mengting; Yan, Lijiao; Zhang, Lingli; Brignardello-Petersen, Romina [**and 1 more**]

How to cite

ZENG, Linan et al. A novel framework for incorporating patient values and preferences in making guideline recommendations : guideline panel surveys. In: Journal of clinical epidemiology, 2023, vol. 161, p. 164–172. doi: 10.1016/j.jclinepi.2023.07.003

This publication URL: https://archive-ouverte.unige.ch/unige:185791

Publication DOI: 10.1016/j.jclinepi.2023.07.003

Journal of Clinical Epidemiology 161 (2023) 164−172

Journal of Clinical Epidemiology

GRADE RELATED SERIES

A novel framework for incorporating patient values and preferences in making guideline recommendations: guideline panel surveys

Linan Zeng[a,b,c,*], Lise M. Helsingen[d], Michael Bretthauer[d], Thomas Agoritsas[c,e], Per O. Vandvik[f], Reem A. Mustafa[c,g], Jason Busse[c,h], Reed A.C. Siemieniuk[c], Lyubov Lytvyn[c], Shelly-Anne Li[i], Mengting Yang[a,b], Lijiao Yan[j], Lingli Zhang[a,b], Romina Brignardello-Petersen[c], Gordon H. Guyatt[c,k]

[a]*Evidence-based Pharmacy Centre/Pharmacy Department, West China Second University Hospital, Sichuan University, Chengdu, China*
[b]*Key Laboratory of Birth Defects and Related Diseases of Women and Children, Sichuan University, Ministry of Education, Chengdu, China*
[c]*Department of Health Research Methods, Evidence and Impact, McMaster University, Hamilton, Ontario, Canada*
[d]*Clinical Effectiveness Research, Department of Transplantation Medicine, Oslo University Hospital, Oslo, Norway*
[e]*Division General Internal Medicine & Division of Clinical Epidemiology, University Hospital of Geneva, Geneva, Switzerland*
[f]*Department of Medicine, Lovisenberg Hospital Trust, Oslo, Norway*
[g]*Division of Nephrology and Hypertension, Department of Internal Medicine, University of Kansas Medical Center, Kansas City, KS, USA*
[h]*Department of Anesthesia, McMaster University, Hamilton, Ontario, Canada*
[i]*Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, Toronto, Ontario, Canada*
[j]*Centre for Evidence-based Chinese Medicine, Beijing University of Chinese Medicine, Beijing, China*
[k]*Department of Medicine, McMaster University, Hamilton, Ontario, Canada*

Accepted 7 July 2023; Published online 13 July 2023

Abstract

Objective: Universally acknowledged standards for trustworthy guidelines include the necessity to ground recommendations in patient values and preferences. When information is limited—which is typically the case—guideline panels often find it difficult to explicitly integrate patient values and preferences into their recommendations. Our objective was to develop and evaluate a framework for systematically navigating guideline panels in incorporating patient values and preferences in making recommendations.

Study Design and Setting: In the context of developing a guideline for colorectal cancer screening, we generated an initial framework for creating panel surveys to elicit guideline panelists' views of patient values and preferences and to inform panel discussions on recommendations. With further applications in guidelines of diverse topic areas, we dynamically refined the framework through iterative discussions and consensus.

Results: The finial framework consists of five steps for creating and implementing panel surveys. The surveys can serve three objectives following from the quantitative information regarding patient values and preferences that guideline panels usually require. An accompanying video provides detailed instructions of the survey.

Funding: No funding was received to develop this panel survey approach. The content reflects the views of it authors.

Author Contributions: All authors made a substantial contribution to the development of the panel survey approach they contributed to its development, refinement, and final approval. LNZ, LH, MB, RB-P, and GHG developed the initial framework of the panel survey approach. RAVS, TA, POV, LL, RAM, and JB tested the panel survey approach in several guidelines. LNZ, S-AL, MTY, LJY, LLZ, RB-P, and GHG designed and conducted the qualitative evaluation of the panel survey approach. LNZ and GHG drafted the manuscript. All authors provided feedback and edits on the framework and this paper. All authors approved the final version of the manuscript. LNZ, who led the project, is the guarantor of this article. The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted.

Funding: This project is supported by the Einstein Foundation Berlin as part of the Einstein Foundation. Award for Promoting Quality in Research. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, the Einstein Foundation or the award jury.

* Corresponding author. Sichuan University, No. 20, Section 3, South Renmin Road, Chengdu, China. Tel./fax: +86-028-88570235.
E-mail address: zengl15@mcmaster.ca (L. Zeng).

https://doi.org/10.1016/j.jclinepi.2023.07.003

Conclusion: The framework for creating and implementing panel surveys offers explicit guidance for guideline panels considering transparently and systematically incorporating patient values and preferences into guideline recommendations.

Keywords: Patient preferences; Guideline; Survey; Framework; Methods; Threshold

1. Introduction

Standards for the development of trustworthy clinical practice guidelines include the necessity to ground recommendations in patient values and preferences [1,2]. Patient values and preferences are the beliefs, expectations, affinities, and priorities for health and life that individuals may apply in considering the potential benefits, harms, burdens, and costs of different management options [1]. For guideline developers, patient values and preferences are critical in interpreting research evidence and formulating recommendations [3].

Over the last 25 years, the importance of patient values and preferences in clinical decision-making and in guidelines in particular has been increasingly recognized. In 1999, the JAMA Users' Guides to the medical literature identified the necessity for explicit incorporation of patient values and preferences in clinical practice guidelines [4] and in 2000 another Users' Guide labeled the necessity to consider patient values as a core principle of evidence-based medicine [5]. Both the Cochrane Collaboration and the National Institute for Clinical Excellence (NICE) have placed great emphasis on input from patients and caregivers [6,7]. The GRADE working group has from its outset emphasized the role of patient values in moving from evidence to decisions [8]. More recently, GRADE has offered an evidence to decision framework that directs guideline developers to examine evidence regarding patient values and preferences and to judge its certainty, as well as considering variability across patients [9,10].

Ideally, cross-sectional surveys among large samples of target patients will be able to inform the relative importance that patients place on different outcomes. Unfortunately, most of the time, such surveys among target population are scarce; even when available, survey results often differ, raising interpretation challenges [11−14]. Consulting with patient partners or advisory groups, conducting focus group interviews, or reflecting on experience in shared decision making may be helpful, but uncertainty regarding patient values and preferences inevitably remains [15−17]. Hence, guideline panels often need to make inferences of patient values and preferences. Many guidelines fail to make the process of arriving at their inferences regarding values and preferences, or their recommendations, explicit [11,12,14].

In the BMJ Rapid Recommendations—an international clinical practice guideline initiative aiming to produce trustworthy, accessible, and timely guidance [18]—we have struggled with appropriately incorporating patient values and preferences. To address the issue our team established a five-step framework for developing and implementing guideline panel surveys to quantitatively ascertain panels' inferences regarding patient values and preferences.

In this article, we describe the development of this framework and illustrate each step within the framework for creating and implementing guideline panel surveys. A paired paper reports the results of a qualitative study evaluating the influence of the surveys in the process of making guideline recommendations [19].

2. Methods

A steering group consisting of experts in guideline methodology and patient values and preferences (GHG, LMH, RAS, POV, TA, LL, MB and LZ) coordinated the development and refinement of the framework for creating and implementing guideline panel surveys.

2.1. Initial development of the framework

In the context of developing recommendations for colorectal cancer screening [20], the steering group constructed a survey for eliciting the guideline panel's view regarding the smallest benefit in colorectal cancer incidence and mortality that, given harms and burdens, the target population would require to undergo screening. Appendix 1 presents a brief introduction to this guideline.

Based on experience from this guideline, the steering group developed an initial framework for using surveys to guide guideline panels in making inferences regarding decision thresholds based on patient values and preferences (e.g., given the harms or burdens of an intervention, what is the smallest benefit patients would require for accepting the intervention). We refer to the overall approach to creating surveys to elicit panel's views regarding patient values and preferences as a ''framework'' [21].

2.2. Pilot application and refinement of the framework

The steering group applied the framework to another seven guideline panels addressing different topic areas, including the World Health Organization guideline panel addressing therapeutics for COVID-19 [22−28]

What is new?

Key findings

- We introduce a systematic framework incorporating patient values and preferences into guideline recommendations.
- Following the framework, one can develop and implement surveys that explicitly task guideline panelists to reflect on patients' perspective, and to make inferences regarding the distributions of patient values and preferences.
- Results from the panel surveys can establish thresholds for the minimally important difference (i.e., the smallest change associated with a single outcome that patients would perceive as important); establish decision thresholds (i.e., patients' choice of accepting or declining an intervention would reverse when the effect associated the intervention falls on one side or another of the threshold); or explicitly judge whether benefits of interventions outweigh harms or burdens.

What this adds to what was known?

- The panel survey approach allows guideline panels to systematically focus on their understanding of the patients' perspective, and in doing so make inferences regarding the distribution of patient values and preferences. Incorporating survey findings into the panel discussion clarifies the rationale for panels' decisions regarding the direction and strength of recommendations, thus enhancing the transparency of the process.

What is the implication and what should change now?

- This article highlights the need for guideline panels to make inferences regarding patient values and preferences—without such inferences, transparently trading off desirable and undesirable consequences of intervention is impossible.
- When the guideline recommendation is preference sensitive, the guideline panels might want to apply the framework introduced in this article to facilitate panelists making inferences regarding patient values and preferences.
- We are available for consultation for any guideline panel facing challenges in developing and implementing the panel survey.

(Appendix 2). Based on experience with these applications, the steering group, through a process of iterative discussions and consensus, dynamically refined the framework to *i)* extend the objectives of panel surveys, *ii)* finialize and standardize the steps for developing and implementing panel surveys, and *iii)* clarify when guideline panels should consider applying panel surveys (i.e., in which situation panel surveys would be useful).

2.3. Development of an educational video for implementing guideline panel surveys

To facilitate educating guideline panelists, the steering group developed a preliminary version of a video that introduced the key concepts in the panel surveys. Through online user-testing interviews, the steering group collected feedback on the clarity and usefulness of the video. Appendix 3 presents the interview guide for the user-testing interviews.

The steering group anticipated the feedback might vary based on interviewees' prior experience with the panel surveys, and thus using purposeful sampling included guideline panelists with and without experience of taking the panel survey (those who took the panel survey before the development of the video, who did not take the survey and will participate in the survey within the next 1−2 months, and who did not take the panel survey and do not yet have an explicit plan to apply the survey in the next 2 months). These interviewees acted as different roles including patient partner, clinical expert, methods co-chair, clinical chair, and guideline methodologist from eight different guideline panels.

A professional transcriber transcribed recordings of panel meetings and interviews in English and removed identifying information. Using qualitative description the steering group analyzed the transcripts of all interviews in Nvivo™ 12 and refined the video accordingly. Appendix Figure 1 summarizes the development process of the educational video.

The Hamilton Integrated Research Ethics Board (HiREB) approved the evaluation regarding the influence of the guideline panel survey approach on the process of making recommendations (Project Number: 13297) and the user-testing interviews of the educational video (Project Number: 14984).

3. Results

Fig. 1 outlines the five-step framework we propose to develop and implement a panel survey directing guideline panelists to make inferences of patient values and preferences. Box 1 illustrates each step using an example.

Box 1 An example of applying the five-step framework for developing and implementing a panel survey

Step 1: judging whether a recommendation is preference-sensitive

Consider a guideline panel making recommendations regarding plasma exchange in addition to usual care (***I***) vs. usual care alone (***C***) in patients with ANCA-associated vasculitis (***P***) [24]. The key potential benefit associated with plasma exchange was reduction in end-stage kidney disease (ESKD) (***O***) [24]. The key potential harm was increase in serious infections (***O***). The timeline for measuring both outcomes was 1 year (***T***).

The steering group of the guideline panel perceived that among patients with ANCA-associated vasculitis, the values and preferences toward plasma exchange varied widely and the survey could thus be useful.

Step 2: deciding on survey objective

Using data from current trials, the steering group established that the baseline risk of developing ESKD and serious infections varied widely and was strongly associated with the patients' serum creatinine level [29]. Recommendations probably would differ for subgroups of patients with different serum creatinine levels.

To inform the trade-off between the key benefit (reduction in ESKD) and harm or burden (increase in serious infections) associated with plasma exchange, the panel could either establish the minimum benefit that patients would require for accepting plasma exchange (Objective 2), or directly judge the percentage of patients who would elect for or against plasma exchange (Objective 3). As applying Objective 2 would elicit multiple decision thresholds for subgroups, which would require panelists to reflect on more questions, the steering group decided to apply Objective 3.

Step 3: formulating the survey

The survey for each subgroup of patients presented the baseline risks and corresponding decrease in ESKD and increase in serious infections associated with plasma exchange (informed by a systematic review) [29]. The first scenario was "for patients with serum creatinine level $\leq$200 μmol/L, plasma exchange lowers the risk of developing ESKD by 4 in 1,000 (from 50 to 46 in 1,000), but increases the risk of serious infections by 27 in 1,000 (from 100 to 127 in 1,000) at 1 year".

The survey asked the panelists "for patients with ANCA-associated vasculitis and with serum creatinine $<$ 200 μmol/L, how would patients view the trade-off between the benefit and harm of plasma exchange?"

The options include:

- All or almost all ($>$90%) would choose plasma exchange
- Most (75−90%) would choose plasma exchange
- Majority (50−75%) would choose plasma exchange
- Majority (50−75%) would decline plasma exchange
- Most (75−90%) would decline plasma exchange
- All or almost all ($>$90%) would decline plasma exchange

In the rest scenarios, the survey presented the benefit and harm associated with plasma exchange in other subgroups (serum creatinine levels at 200−300, 300−400, 400−500, or $>$500 μmol/L). Following each scenario, the survey asked, given the reduction in ESKD and the increase in serious infections associated with plasma exchange, what proportion of patients would choose or decline plasma exchange. Appendix 4 presents the full survey.

Step 4: educating panelists and collecting responses

At a panel meeting, the steering group introduced the survey, and had a separate meeting with the patient partners to help them understand the survey. Through an online survey tool, the steering group collected the panelists' responses.

According to these responses, the steering group identified that for patients with serum creatinine level $\leq$300 μmol/L, most panelists perceived that the majority would decline plasma exchange. While for patients with serum creatinine level $>$300 μmol/L, most panelists perceived the majority would choose plasma exchange.

Step 5: presenting the findings and eliciting panel discussions

At the next panel meeting the steering group presented the aggregated findings and launched discussions on the direction and strength of recommendations for subgroups of patients.

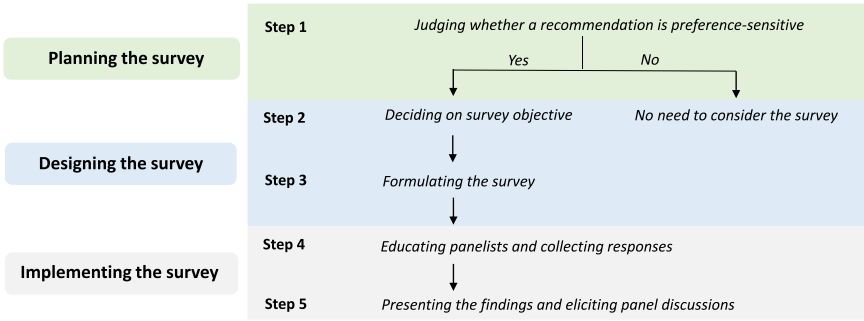

Fig. 1. Outlines the five-step framework we propose to develop and implement a panel survey directing guideline panelists to make inferences of patient values and preferences.

3.1. Step 1: judging whether a recommendation is preference-sensitive

The process begins with defining the PICOT (patient, intervention, comparison, outcomes and timeline for measuring the outcomes) of the recommendation. One (usually a steering group of a guideline panel) should consider whether the balance between benefits and harms or burdens is sufficiently close that the recommendation is preference-sensitive. If this is the case, the survey has proved relevant and useful. If the recommendation is not preference-sensitive—in other words, it is clear by the judgment of the steering group or the panel that all or almost all patients would choose or decline the intervention, one need not further consider the survey.

3.2. Step 2: deciding on survey objective

The objectives of surveys follow from three types of quantitative information regarding patient values and preferences that guideline panels may require:

Objective 1, Establishing the smallest change associated with a single outcome (a benefit or a harm or burden) that patients would perceive as important (minimal important difference, MID).

Objective 2, Given the benefits associated with an intervention, specifying a decision threshold for the maximum key harm or burden that patients would accept for using the intervention; or given the harms or burdens associated with an intervention, specifying a decision threshold for the minimum key benefit that patients would require for using the intervention.

Objective 3, Given best estimates of an intervention's benefits, harms, or burdens, making inferences regarding the choices that patients would likely make for or against an intervention.

Box 2 using examples illustrates the three objectives.

3.3. Step 3: formulating the survey

Achieving Objective 1 and 2 requires specifying a quantified threshold, usually a tough task for panelists. The survey design, acknowledging this challenge, elicits guideline panels' inferences regarding whether patients would perceive a particular magnitude of effect as above or below the underlying MID (Objective 1) or decision threshold (Objective 2). The survey provides a sequence of magnitudes of effect (the suggested threshold), gradually moving toward an intermediate number (a ping-pong approach going from one extreme to another, gradually narrowing the differences). When a panelist switches his or her response from an effect above the threshold to the effect below the threshold, or vice versa, the panelist effectively identifies a narrow range within which the underlying threshold lies.

For achieving Objective 3, the survey simultaneously presents the effect estimates on benefits and harms or burdens associated with the intervention (usually informed by systematic reviews), and directs panelists to consider whether patients would choose or decline the intervention.

As patient values and preferences differ, the survey asks panelists to infer the distribution of patient values and preferences they would anticipate from a representative group of patients. The standardized options in the survey are as follow: all or almost all (>90%), most (75−90%) or a majority (50−75%) of patients would consider a particular effect as trivial or important (Objective 1), or would choose or decline an intervention (Objective 2 or 3). Box 2 using the examples illustrates the survey designs.

3.4. Step 4: educating panelists and collecting responses

All guideline panelists including clinicians, content experts, patient partners (i.e., people with lived experience of having the condition or illness, and/or having cared for someone with the condition or illness), guideline methodologists and systematic reviewers can complete the surveys. To prepare panelists for the survey, one may want to consider the video that introduces the key concepts of the survey. Extra time to educate patient partners may be advisable.

Through online survey tools, one can collect individual panelists' responses to the survey. To summarize the findings, one can describe the median and the range of

Box 2 Examples of three different survey objectives and designs

Objective 1 Establishing an MID threshold

Consider a guideline panel making recommendations for patients with high risk of myocardial infarction regarding a new treatment to reduce that risk [25]. To interpret whether a certain effect of treatment on myocardial infarction is important or not, the panel required information about the smallest reduction in myocardial infarctions that patients would perceive as important (the MID threshold), and thus applied Objective 1.

The survey presented a series of scenarios in which the magnitude of effect on reducing myocardial infarctions varied. The first scenario was ''in adults considering the possibility of using the new treatment to reduce the risk of myocardial infarction, the treatment lowers their risk by 1 in 1000 over a period of 5 years''. In the following scenarios, the reduction in myocardial infarctions changed to 20, 3, 15, 5, 10, 8 and 12 in 1000 (a ping-pong approach going from one extreme to another, gradually narrowing the differences). Under each scenario, the survey asked panelists to make inferences regarding the proportion of patients who would consider the particular magnitude of effect on myocardial infarction as either important or trivial.

The options include the following:

- All or almost all would consider this an important effect
- Most would consider this an important effect
- A majority would consider this an important effect
- A majority would consider this a trivial effect
- Most would consider this a trivial effect
- All or almost all would consider this a trivial effect

When a panelist switched the response from ''a majority would consider this an important effect'' to ''a majority would consider this a trivial effect'' (or vice versa), the panelist identified a narrow range within which the MID lies. Appendix 5 presents the full surveys for the three examples in Box 2.

Objective 2 Establishing a decision threshold

Consider a guideline panel making recommendations regarding colorectal cancer screening in adults aged 50 −79 years [20]. The panel considered reduction in colorectal cancer related mortality as the key benefit and increase in gastrointestinal perforation and major gastrointestinal bleeding as the key harms or burdens.

To tradeoff the key benefit and harms or burdens, the panel required information on the smallest reduction in colorectal cancer related mortality that given harms or burdens people would require to accept screening (the decision threshold), and thus applied objective 2.

Before the panel reviewed evidence on benefit, the survey presented the harms or burdens associated with screening and a series of scenarios in which the absolute reduction in colorectal cancer related mortality varied. The first scenario was ''adults screened with colonoscopy have a 1 in 1,000 lower risk of dying from colorectal cancer over a period of 15 years''. In the remaining scenarios, the reduction in colorectal cancer related mortality changed to 15, 5, and 10 in 1,000 (a ping-pong approach). Following each scenario, the survey asked the panelists to estimate the proportion of adults that would choose or decline screening.

The options include the following:

- All or almost all would choose screening
- Most would choose screening
- A majority would choose screening
- A majority would decline screening
- Most would decline screening
- All or almost all would decline screening

When a panelist switched the response from ''the majority would choose screening'' to ''the majority would decline screening'' (or vice versa), the panelist identified a narrow range within which the decision threshold lies.

Objective 3 Explicitly specifying the percentage of patients who would elect for or against an intervention

Consider a guideline panel making recommendations regarding sodium-glucose transport protein 2 (SGLT 2) inhibitors for patients with type 2 diabetes [23]. The panel considered that the key benefit associated with SGLT 2 inhibitors

was reduction in mortality, and the key harms or burdens included increase in genital infection and diabetic ketoacidosis.

Using data from current trials, the panel established that the absolute reduction in mortality associated with SGLT 2 varied widely among patients with different baseline risks [30]. To judge the preferences toward SGLT 2 inhibitors among subgroups of patients, the panel applied Objective 3.

The survey presented the harms or burdens associated with SGLT 2 inhibitors that were constant across subgroups, and then presented the first scenario as ''for patients with type 2 diabetes without cardiovascular risk factor (very low risk group), taking SGLT 2 inhibitors has a 5 in 1,000 reduction in mortality (from 20 to 15 in 1,000) over a period of 5 years''. In the remaining scenarios, the reduction in mortality associated with SGLT 2 inhibitors changed to 48, 15, 34, and 5 in 1000 (a ping-pong approach). Following each scenario, the survey asked the panelists to estimate the proportion of patients that would choose or decline SGLT 2 inhibitors. The response reflected panelists' inferences regarding the distribution of choices among subgroups of patients.

panelists' inferences regarding the MID (Objective 1) or the decision threshold (Objective 2) or describe the number of panelists who consider majority of patients would elect for or against the intervention reflecting the panel's inferences regarding the distribution of patients' preferences (Objective 3).

3.5. Step 5: presenting the findings and eliciting panel discussions

One can present the aggregated findings from the survey in panel meetings to elicit panel's discussions on the interpretation of evidence, the trade-off between benefits and harms, or the direction and strength of recommendations.

4. Discussion

4.1. Main findings and interpretations

When judging the balance between benefits and harms associated with interventions, guideline panels need to interpret the available information and to make inferences regarding patient values and preferences that are necessary in moving from evidence to recommendations. We have developed a novel framework for directing guideline panels to make such inferences, and provided guidance on how those using the framework can develop and implement a panel survey to elicit guideline panelists' view of patient values and preferences.

The panel survey approach allows guideline panels to systematically take the patients' perspective and in doing so make inferences regarding the distribution of patient values and preferences. Incorporating survey findings into the panel discussion clarifies the rationale for panels' decisions regarding the direction and strength of recommendations, thus enhancing the transparency of the process.

The panel survey is not intended to replace primary studies of patient values and preferences (e.g., surveys among patients). Ideally, to optimize panelists' judgments in completing the surveys, practice guidelines can include a review of relevant primary studies (Appendix 5, Example 3 provides an example). Panelists can respond the surveys based on relevant primary studies from such a review, on focus groups commissioned by the guideline panel, on conversations addressing health care decisions with friends or family or, for panelists who are clinicians, on their experience in shared decision-making with patients.

4.2. Strengths and limitations

One prior survey approach, applied in a Chilean COVID-19 living guideline, asked guideline panelists to suggest values of the thresholds for large, moderate, small, or trivial effect [31,32]. The key differences between the survey applied in the Chilean guideline and ours include: we direct guideline panels to think from patients' perspective; surveys are not only applicable for setting thresholds (Objective 1 or 2) but also for directly trading off the benefits vs. harms or burdens (Objective 3); recognizing that patient values and preferences often vary, rather than asking panelists to directly specify a threshold or a choice, we ask panelists to infer the distributions of patient values and preferences; finally, we have conducted a qualitative study of the impact of our surveys to inform strengths and limitations [19]. The qualitative evaluation revealed that most panelists found the surveys primed them in considering patient values and preferences and facilitated the incorporation of patient values and preferences in the tradeoffs between benefits and harms or burdens. The variation of patient preferences (provided by responses regarding the distribution of preferences) and uncertainty regarding patient values and preferences (reflected in variation in panelists' responses to the survey questions) helped the panels ponder the strength of recommendations [19]. No other existing approaches provide a formal process for explicitly and systematically interpreting and incorporating patient values and preferences into making recommendations.

One may question guideline panelists' ability to generate insights in patient values and preferences. Indeed, several panelists who participated in our qualitative study raised this issue. Developing recommendations, however, always requires guideline panels to make inferences regarding typical values and preferences—without such

inferences, trading off desirable and undesirable consequences of interventions is not possible. Completing the panel survey not only provided best estimates of patient values and preferences, but through variable panel responses, revealed existing uncertainties. Highlighting such uncertainties can inform both the strength of recommendations (the greater the uncertainty, the more likely a conditional or weak recommendation) and the need for further research regarding values and preferences among target patients.

A survey among patients with ANCA-associated vasculitis towards plasma exchange and a survey among adults towards colorectal cancer screening provide some reassurance regarding the results of the panel surveys [33,34]. In both cases, although some respondents proved to be uninfluenced to the magnitude of benefits and harms (they chose or declined the intervention across all magnitudes presented), those whose decisions were influenced chose the thresholds consistent with panels' inferences.

5. Conclusion

When judging the balance between benefits and harms associated with interventions, to formulate recommendations guideline panels must make inferences regarding patient values and preferences. Our proposed framework has proved helpful in facilitating guideline panels' explicit consideration of patient values and preferences and in providing an explicit rationale for panels' decisions. We are available for consultation for any guideline panel seeking guidance in creating and implementing panel surveys.

Declaration of competing interest

The authors have no conflict of interests to declare.

Acknowledgments

We thank all the guideline panels that tested and provided feedback on the framework and the panel surveys.

Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.jclinepi.2023.07.003.

References

[1] Graham R, Mancher M, Wolman DM, Greenfield S, Steinberg E, Committee on Standards for Developing Trustworthy Clinical Practice Guidelines, Board on Health Care Services, Institute of Medicine. Clinical Practice Guidelines We Can Trust. Washington, DC: National Academies Press (US); 2011.

[2] 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:E839.

[3] Guidelines International Network PUBLIC Working Group. GIN PUBLIC toolkit: patient and public involvement in guidelines. 2019. Available at https://g-i-n.net/new-digital-gin-public-toolkit-patient-and-public-involvement-in-guidelines. Accessed October 18, 2022.

[4] Guyatt GH, Sinclair J, Cook DJ, Glasziou P, for the Evidence-Based Medicine Working Group and the Cochrane Applicability Methods Working Group. Users' guides to the medical literature: XVI. How to use a treatment recommendation. JAMA 1999;281:1836−43.

[5] Guyatt GH, Haynes RB, Jaeschke RZ, Cook DJ, Green L, Naylor CD, et al. Users' guides to the medical literature: XXV. Evidence-based medicine: principles for applying the users' guides to patient care. JAMA 2000;284:1290−6.

[6] Bouvy JC, Cowie L, Lovett R, Morrison D, Livingstone H, Crabb N. Use of patient preference studies in HTA decision making: a NICE perspective. Patient 2020;13:145−9.

[7] Cochrane. Cochrane consumer engagement and involvement framework to 2027. https://consumers.cochrane.org/sites/consumers.cochrane.org/files/uploads/inline-files/Cochrane%20consumer%20engagement%20and%20involvement%20framework%20to%202027_1.pdf. Accessed June 13, 2023.

[8] Guyatt GH, Oxman AD, Vist GE, Kunz R, Falck-Ytter Y, Alonso-Coello P, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. BMJ 2008;336:924−6.

[9] Alonso-Coello P, Schünemann HJ, Moberg J, Brignardello-Petersen R, Akl EA, Davoli M, et al. GRADE evidence to decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 1: introduction. BMJ 2016;353:i2016.

[10] Alonso-Coello P, Oxman AD, Moberg J, Brignardello-Petersen R, Akl EA, Davoli M, et al. GRADE evidence to decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 2: clinical practice guidelines. BMJ 2016;353:i2089.

[11] Blackwood J, Armstrong MJ, Schaefer C, Graham ID, Knaapen L, Straus SE, et al. How do guideline developers identify, incorporate and report patient preferences? An international cross-sectional survey. BMC Health Serv Res 2020;20:1−10.

[12] MacLean S, Mulla S, Akl EA, Jankowski M, Vandvik PO, Ebrahim S, et al. Patient values and preferences in decision making for antithrombotic therapy: a systematic review: antithrombotic therapy and prevention of thrombosis, 9th ed.: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest 2012;141:e1S−23S.

[13] Lytvyn L, Siemieniuk RA, Dilmitis S, Ion A, Chang Y, Bala MM, et al. Values and preferences of women living with HIV who are pregnant, postpartum or considering pregnancy on choice of antiretroviral therapy during pregnancy. BMJ Open 2017;7:e019023.

[14] Myeloma UK. Measuring patient preferences: an exploratory study to determine how patient preferences data could be used in health technology assessment (HTA). 2019. Available at https://www.myeloma.org.uk/wp-content/uploads/2019/07/NICE-Patient-Preferences-Report.pdf. Accessed October 18, 2022.

[15] Kim C, Berta WB, Gagliardi AR. Exploring approaches to identify, incorporate and report patient preferences in clinical guidelines: qualitative interviews with guideline developers. Patient Educ Couns 2021;104:703−8.

[16] Brett Hauber A, Fairchild AO, Reed Johnson F. Quantifying benefit−risk preferences for medical interventions: an overview of a growing empirical literature. Appl Health Econ Health Policy 2013;11:319−29.

[17] Food and Drug Administration. Guidance for industry and Food and Drug Administration staff; factors to consider when making benefit-

risk determinations in medical device premarket approval and de novo classifications. 2012. Available at https://www.federalregister.gov/documents/2012/03/28/2012-7418/guidance-for-industry-and-food-and-drug-administration-staff-factors-to-consider-when-making. Accessed October 18, 2022.

[18] Siemieniuk RA, Agoritsas T, Macdonald H, Guyatt GH, Brandt L, Vandvik PO. Introduction to BMJ rapid recommendations. BMJ 2016;354:i5191.

[19] Zeng L, Li SA, Yang M, Yan L, Helsingen LM, Bretthauer M, et al. Qualitative study of guideline panelists: innovative surveys provided valuable insights regarding patient values and preferences. J Clin Epidemiol 2023;161:173−80.

[20] Helsingen LM, Vandvik PO, Jodal HC, Agoritsas T, Lytvyn L, Anderson JC, et al. Colorectal cancer screening with faecal immunochemical testing, sigmoidoscopy or colonoscopy: a clinical practice guideline. BMJ 2019;367:l5515.

[21] Helsingen LM, Zeng L, Siemieniuk RA, Lytvyn L, Vandvik PO, Agoritsas T, et al. Establishing thresholds for important benefits considering the harms of screening interventions. BMJ Open 2020;10:e037854.

[22] Word Health Organization. Therapeutics and COVID-19: living guideline. 2022. Available at https://www.who.int/publications-detail-redirect/WHO-2019-nCoV-therapeutics-2022.2. Accessed April 21, 2022.

[23] Li S, Vandvik PO, Lytvyn L, Guyatt GH, Palmer SC, Rodriguez-Gutierrez R, et al. SGLT-2 inhibitors or GLP-1 receptor agonists for adults with type 2 diabetes: a clinical practice guideline. BMJ 2021;373:n1091.

[24] Zeng L, Walsh M, Guyatt GH, Siemieniuk RAC, Collister D, Booth M, et al. Plasma exchange and glucocorticoid dosing for patients with ANCA-associated vasculitis: a clinical practice guideline. BMJ 2022;376:e064597.

[25] Hao Q, Aertgeerts B, Guyatt G, Bekkering GE, Vandvik PO, Khan SU, et al. PCSK9 inhibitors and ezetimibe for the reduction of cardiovascular events: a clinical practice guideline with risk-stratified recommendations. BMJ 2022;377:e069066.

[26] Ye Z, Busse JW, Hill MD, Lindsay MP, Guyatt GH, Prasad K, et al. Endovascular thrombectomy and intravenous alteplase in patients with acute ischemic stroke due to large vessel occlusion: a clinical practice guideline. J Evid Based Med 2022;15:263−71.

[27] Conservative, pharmacological and surgical interventions for patients with temporomandibular disorder: a clinical practice guideline: [Forthcoming].

[28] Interventional procedures for axial and radicular chronic spine pain: a clinical practice guideline: [Forthcoming].

[29] Walsh M, Collister D, Zeng L, Merkel PA, Pusey CD, Guyatt G, et al. The effects of plasma exchange in patients with ANCA-associated vasculitis: an updated systematic review and meta-analysis. BMJ 2022;376:e064604.

[30] Palmer SC, Tendal B, Mustafa RA, Vandvik PO, Li S, Hao Q, et al. Sodium-glucose cotransporter protein-2 (SGLT-2) inhibitors and glucagon-like peptide-1 (GLP-1) receptor agonists for type 2 diabetes: systematic review and network meta-analysis of randomised controlled trials. BMJ 2021;372:m4573.

[31] Neumann I, Quiñelen E, Nahuelhual P, Burdiles P, Celedón N, Cerda K, et al. Using explicit thresholds for benefits and harms in partially contextualized GRADE guidelines. Pilot experience from a living COVID-19 guideline. J Clin Epidemiol 2022;147:69−75.

[32] Morgano GP, Mbuagbaw L, Santesso N, Xie F, Brozek JL, Siebert U, et al. Defining decision thresholds for judgments on health benefits and harms using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Evidence to Decision (EtD) frameworks: a protocol for a randomised methodological study (GRADE-THRESHOLD). BMJ Open 2022;12:e053246.

[33] Usher-Smith JA, Mills KM, Riedinger C, Saunders CL, Helsingen LM, Lytvyn L, et al. The impact of information about different absolute benefits and harms on intention to participate in colorectal cancer screening: a think-aloud study and online randomised experiment. PLoS One 2021;16:e0246991.

[34] Collister D, Farrar M, Farrar L, Brown P, Booth M, Firth T, et al. Plasma exchange for ANCA-associated vasculitis: an international survey of patient preferences. Kidney Med 2023;5:100595.