

1. Develop Practice Questions and Outcomes

1.1. Develop the Wording of the Practice Question

The GRADE process has been most extensively validated with intervention-type practice questions (PQs). While GRADE processes exist for questions pertaining to diagnosis or prognosis, PEN will initially focus only on using GRADE for intervention-type practice questions.

There are several possible scenarios for PEN questions (see [Appendix 1](#)):

- new intervention question which is assessed to be GRADEable
- new questions which are best answered using the traditional PEN process
- existing PEN intervention question needing updating which is assessed to be GRADEable
- existing PEN question best answered using the traditional PEN process

Creating a clear structured question makes finding evidence easier. Use of PICO is encouraged when feasible. Refer to [Appendix 2](#): Practice Question and Recommended Outcomes Worksheet

- P** Population - who are the relevant patients, clients or groups
I Intervention or exposure
C Comparison or control
O Outcome(s) of interest

Example:

Should vitamin D and/or calcium be recommended to prevent fractures in elderly in long term care?

Population	Elderly in long term care (LTC)
Intervention	Vitamin D and/or calcium to prevent fractures
Comparison	No vitamin D or calcium
Outcomes	Hip fractures, vertebral and other fractures, pain, agitation, mobility, independence for activities of daily living (quality of life), mortality, resource use or costs, acceptability, severe adverse events, minor adverse events requiring medical attention

Note: Long term care can refer to the following depending on country: Long Term Care Home, Retirement Home, Nursing Home, Skilled Nursing Facility, Care Home, Care Home (with Nursing), Residential Aged Care Facility, and Hostels.

1.2. Define and Approve Expected/Relevant Intervention Outcomes Related to the PQ

1. For each of the approved questions, the author completes the GRADE Outcomes Worksheet. See [Appendix 2](#) for a sample worksheet to assist with question(s) and outcome(s) development and [Appendix 5](#) for a Summary table of steps for considering the relative importance of outcomes.
 - Purpose of the Intervention - e.g. instead of: what is the effect of a low carbohydrate diet on cardiovascular outcomes among overweight or obese individuals? Select numerous specific outcomes that will allow users to understand whether to recommend a low carbohydrate diet for the population of interest. Risks and benefits need to both be considered. Hence outcomes could include: weight, body fat, mortality, waist circumference, BMI, satiety, serum lipids, C-reactive protein, markers of kidney function, bone mineral density, bone resorption markers.
 - Consider risks, harms, costs and benefits, baseline risk, burden of disease, resource use, effects on equity & other information
 - Include relevant “standard” outcomes such as: patient values etc.
2. Aim for a **maximum** of seven outcomes for each question/intervention. The mentor and author develop the list of outcomes and send to the IRP who can provide justified suggestions for consideration; the author and mentor settle on a maximum of seven.

3. It may be necessary to use surrogate outcomes if little information is available on outcomes of interest (e.g. interested in Vitamin K and fractures but only bone mineral density data is available). In these cases try to find a reference about how good a surrogate measure it is (i.e. has the surrogate measure been associated with mortality or highly associated with disease progression)?
4. Use the following strategies to help identify a broad list of outcomes to consider:
 - Look at a couple of narrative or systematic reviews on the topic
 - Check the COMET outcomes database: <http://www.comet-initiative.org/> and the International Consortium for Health Outcomes Measurement: <http://www.ichom.org>
 - Seek out related practice guidelines (including those received from country partners).
 - Consider the TRIP database (search engine with emphasis on evidence based medicine and clinical guidelines): <https://www.tripdatabase.com/>
 - Add any other outcomes that you think might be important to someone making a decision about the intervention addressed in the practice question.
5. Send outcomes worksheet along with International Review Panel questionnaire ([Appendix 3](#)) to core reviewers for feedback.

1.3. Incorporate Feedback from Review of Outcomes

- Information from the Outcomes worksheet ([Appendix 2](#)) will be transferred to the Data Abstraction spreadsheet (see **Section 3**).
- PEN Responsible Administrator will be informed of the chosen outcomes.
- All final documents are saved in PEN Content Management System (PCMS).

1.4. Related Tools, Resources and Learning Materials

- Training Modules and Course for Selecting and rating importance of outcomes <http://cebgrade.mcmaster.ca/QuestionsAndOutcomes/index.html>
- International Society for Evidence-Based Health Care: http://www.isehc.net/?page_id=9