KHA-CARI GUIDELINES DEVELOPMENT MANUAL

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1. BACKGROUND

The Kidney Health Australia - Caring for Australasians with Renal Impairment (KHA-CARI) Guidelines is an evidence-based project that commenced in 1999. The two bodies assuming responsibility for the KHA-CARI Guidelines at that time were the Council of the Australian and New Zealand Society of Nephrology (ANZSN) and the Board of Kidney Health Australia (KHA). In January 2011, KHA became the sole professional sponsor of the organisation, now called KHA-CARI Guidelines.

The aim of the KHA-CARI Guidelines is to improve the health care and outcomes of paediatric and adult patients with kidney disease by helping clinicians and health care workers to adhere to evidence-based clinical practice as often as possible. It is anticipated that the guidelines will serve as both a valuable educational resource and a means of enhancing the quality, appropriateness, consistency and cost-effectiveness of renal health care. The guidelines were developed for use in Australia and New Zealand; however, they are used more widely in the region.

KHA-CARI Guidelines are committed to the development of reliable and trustworthy clinical practice guidelines that follow best practice with respect to guideline development and have a high degree of transparency in all aspects of the process.

Why have guidelines?

Clinical practice guidelines have proved enormously valuable and are now available in most health care specialties. It is believed that adherence to the recommendations translates directly into benefits for patients through improved outcomes, benefits for practitioners through improved quality of care, and benefits for providers through improved cost effectiveness. Guidelines are considered to reduce the use of unnecessary, ineffective or harmful interventions, and to facilitate the treatment of patients with maximum chance of benefit, minimum risk of harm, and at an acceptable cost. Research has shown that clinical practice guidelines can be effective in bringing about change and improving health outcomes.

The KHA-CARI Guidelines

The KHA-CARI Guidelines are divided into three disease stages:

- Chronic Kidney Disease
- Dialysis
- Transplantation

All KHA-CARI Guidelines, their subtopics and their current publication status are available on the KHA-CARI website at http://www.cari.org.au .

More than 100 guideline writers have been involved in researching and writing KHA-CARI Guidelines. Guideline writers are invited to attend a one-day methods workshop run by the KHA-CARI Guidelines Office to help equip them for the task of scanning the literature and writing clinical practice guidelines. This workshop teaches participants how to critically review and summarise the relevant literature on their topic, how to grade the quality of studies and integrate them into their guidelines, and in general, improves their critical appraisal skills.

Staffs at the KHA-CARI Guidelines Office assist writers by conducting systematic literature searches, locating relevant trials and preparing summary evidence tables for each guideline subtopic.

Response from the nephrology community

Surveys of Australian and New Zealand nephrologists and renal nurses were undertaken in 2002 and 2006. Overall, the surveys show that support for the KHA-CARI Guidelines is high. The results of the 2006 survey showed that:

- 91% agree or strongly agree that KHA-CARI Guidelines provides a useful evidence summary
- 88% agree or strongly agree the KHA-CARI Guidelines cover appropriate areas
- 60% agree or strongly agree that KHA-CARI Guidelines have significantly influenced their practice
- 38% say KHA-CARI Guidelines have improved health outcomes for renal patients.

In addition to health practitioners, the overall process from a legal viewpoint has also been favourably endorsed. The KHA-CARI Guidelines are not intended to replace clinical judgement, but to complement it.

Guideline development and updating

The KHA-CARI Guidelines are strictly evidence-based and are drawn from the published literature, which is carefully assessed for its level of certainty with respect to both benefits and harms. The intention is to write guidelines based on evidence derived from the optimal studies for the specific question and for which quality and risk of bias have been assessed.

Since 2011, the evidence base for a guideline is evaluated and graded using the approach developed by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group (www.gradeworkinggroup.org). This is consistent with the approach used by many other international guideline groups and also consistent with requirements of the National Health and Medical Research Council (NHMRC). Section 6 provides an overview of the KHA-CARI Guidelines development process.

The guideline development process is demanding of those involved but clearly is an important and worthwhile venture. The NHMRC recommend that clinical practice guidelines are reviewed every five years, to ensure that guideline contents are kept relatively up to date. Some guideline subtopics may be updated prior to five years, when it is considered there is a need to do so. Convenors are expected to prompt this process when they become aware of key new evidence that is relevant to their guideline topic. Section 7 provides an overview of the KHA-CARI Guidelines update process.

Adaptation of guidelines

When published, KHA-CARI Guidelines plans to adapt or write a commentary on the international renal guidelines produced by KDIGO (Kidney Disease: Improving Global Outcomes). This process commenced in 2009 and follows the ADAPTE process. Adaptation of international guidelines should consider the following five key questions:

1. Is there important variation in need (prevalence, baseline risk or health status) that might lead to a different decision?
2. Is there important variation in the availability of resources that might lead to different decisions?
3. Is there important variation in costs that might lead to different decisions?
4. Is there important variation in the presence of factors that could modify the expected effects which might lead to different decisions?
5. Is there important variation in the relative values of the main benefits and downsides that might lead to different decisions?

Section 8 provides an overview of the KHA-CARI Guidelines adaptation process.

2. ORGANISATION OF KHA-CARI GUIDELINES

The primary activity of KHA-CARI Guidelines is the production of clinical practice guidelines, aimed at improving health care and outcomes for patients with kidney disease by helping clinicians to adhere to evidence-based medical practice as often as possible. KHA-CARI Guidelines produces these guidelines notionally under the oversight of KHA and the Australian and New Zealand Society of Nephrology (ANZSN), but more practically under the oversight of the KHA-CARI Steering Committee.

The organisational structure of KHA-CARI Guidelines is below:

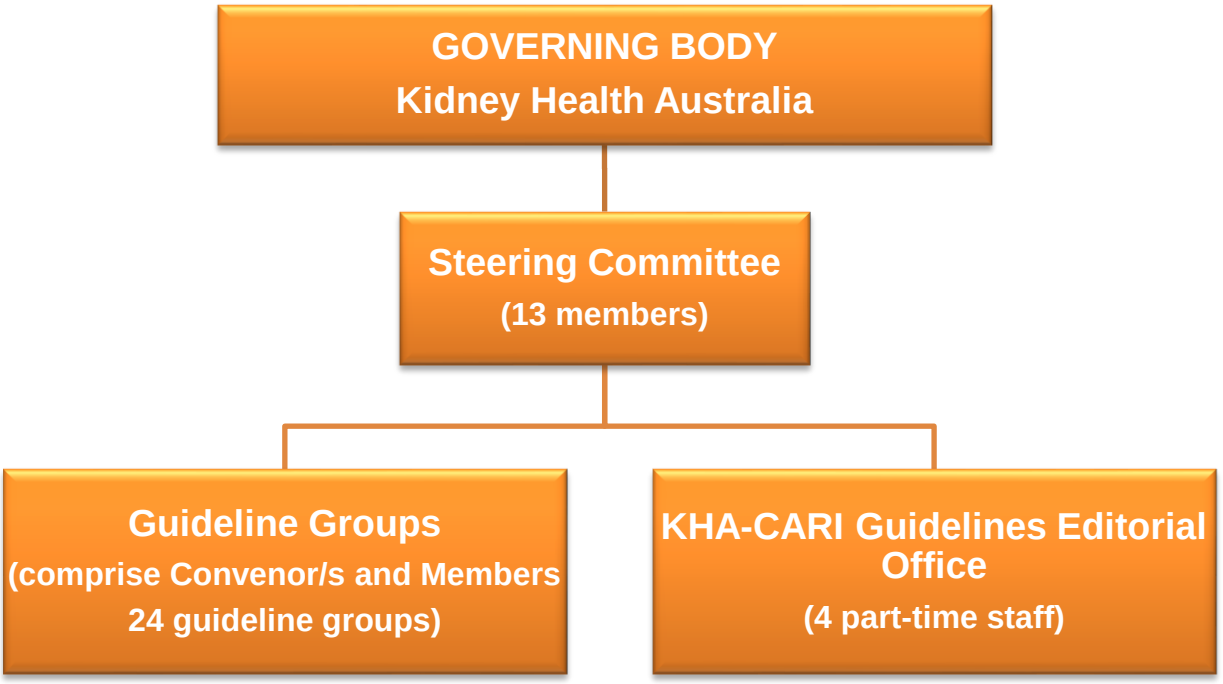

Figure 1: KHA-CARI Guidelines organisational structure

Role and responsibilities of KHA

KHA responsibility, through their appointees and/or representatives on the KHA-CARI Guidelines Steering Committee, is to ensure that the core activities of KHA-CARI Guidelines are to:

- Develop new guidelines for use in Australia and New Zealand;
- Adapt and approve, where appropriate, international documents as new guidelines for use in Australia;
- Review and update the existing guidelines on a regular and timely basis;
- Publish and promote the guidelines;
- Implement the guidelines into clinical practice;

Additional responsibilities of KHA are to:

- Obtain endorsement of KHA-CARI Guidelines Steering Committee membership and chairmanship from the Dialysis, Nephrology and Transplant (DNT) sub-committee of the ANZSN.

- Undertake fundraising for the specific purpose of KHA-CARI Guidelines.

Role and responsibilities of KHA-CARI Steering Committee

Members are chosen for their knowledge and expertise in a given area. They must be willing to assume responsibility for the work involved and are expected to serve a minimum 3-year term. Member responsibilities are listed below.

- Serve as the advisory body for KHA-CARI Guidelines;
- Set policy and priorities;
- Interact closely with and provide guidance to the KHA-CARI Guidelines Office;
- Produce and submit annually to KHA in the last quarter of each calendar year a detailed work plan outlining all aspects of guideline development, promotion and implementation for the next calendar year, for consideration and approval by KHA;
- Monitor the progress of the KHA-CARI Guidelines work plan on a quarterly basis to identify issues influencing delivery of the work plan. In consultation with the KHA-CARI Guidelines Office, identify, if necessary, any corrective actions required which may include, but not be limited to:
    - Changing the work plan (e.g. stopping work on a problematic guideline)
    - Changing the membership of a working group (in consultation with the convenor of the working group).
    - Completing only selected sub topics.
- Report to DNT on a quarterly basis;
- Take advice from DNT on guideline topics;
- Assist with the appointment of KHA-CARI Guidelines group convenors and members;
- Review materials, solve problems and make decisions in a time-sensitive manner to facilitate the development and implementation of the KHA-CARI Guidelines;
- Consider ways and means of promoting the work of KHA-CARI Guidelines and disseminating the guidelines to end-users;
- Assist the guideline groups for each guideline topic when possible and monitor progress;
- Check the quality of guidelines produced by guideline groups by reviewing revised peer-reviewed guidelines in a designated area (i.e. chronic kidney disease, dialysis or transplantation);
- Serve as volunteers without remuneration;
- Receive timely reports on activities and finances and review/approve the annual budget;
- Recommend new KHA-CARI Guidelines Steering Committee members and reviewers as needed;
- Arrange for appropriate management as needed;
- Act as advocates for the KHA-CARI Guidelines initiative;
- Oversee the preparation and completion of commentaries on international guidelines.

Role and Responsibilities of KHA-CARI Guidelines Office

The role of the KHA-CARI Guidelines Office is to:

- Support guideline writers through the guideline development, adaptation and revision processes;
- Organise peer and consumer review of new, adapted and revised guidelines;
- Identify relevant trials in the literature for each work group by developing search strategies relevant to the guideline topics and questions;
- Assist in the preparation of evidence profiles for new, revised and adapted guidelines;
- Obtain full text copies of papers as requested by guideline writers;
- Edit completed sets of guidelines and arrange for their publication on the KHA-CARI Guidelines website;
- Prepare summaries of completed guidelines for publication in the journal *Nephrology;*
- Maintain the KHA-CARI Guidelines website and produce material for guideline dissemination;
- Undertake activities such as the preparation of technical papers and dissemination materials as requested by the KHA-CARI Guidelines Steering Committee.

Conflict of Interest

KHA-CARI Guidelines is committed to minimising the potential for financial and other interests to influence any aspect of the KHA-CARI Guidelines process. The key elements underpinning this commitment are listed below.

- Potential conflicts of interest will be considered prior to selection of members of the Steering Committee or guideline working groups;
- All those involved in the KHA-CARI Guidelines process are required to complete a conflict of interest form annually. This form has been modelled on the NHMRC conflict of interest policy and form of disclosure of interests for guideline development;
    - See Appendix 1 for further information on conflict of interest & an example of the conflict of interest form
    - Click here for the **online conflict of interest form**
    - Click here for a Word version of this form.
- Conflict of interest statements will be included in all KHA-CARI Guidelines;
- Guideline group members should not have a conflict of interest. However, it is recognised that this requirement may not always be possible due to specific technical requirements of a guideline working group. As a consequence, conflict of interest is a mandatory agenda item for the first guideline group meeting. This is to ensure the issue is raised and discussed by the convenor before the group commences work on the guideline;
- External sponsors have no involvement in the KHA-CARI Guidelines development process;

Authorship Policy

The Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations) state that authorship credit should be based only on substantial contribution to:

- conception and design, acquisition of data, or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content, and
- final approval of the version to be published.

All of these conditions must be met by all authors. Acquisition of funding, collection of data, or general supervision of the research group alone does not constitute authorship[(1)]. In line with these requirements, the KHA-CARI Guidelines will ask all authors of guideline subtopics to meet the same criteria.

KHA-CARI Guidelines seeks assurance that all authors included on a guideline fulfil the criteria of authorship. In addition, assurance is also sought that all those who fulfil the criteria of authorship have been included. Although members of a guideline group may be assigned a subtopic/s to work on within a guideline, they will not be designated as the author/s of that subtopic/s. KHA-CARI Guidelines policy requires that the overall guideline lists group authorship. Individual authors of subtopics are included on the full guidelines posted on the KHA-CARI Guidelines website. Guideline group members must determine among themselves the precise nature of each person's contribution and the order in which names appear in the author by-line.

Contributorship Policy

The **International Committee of Medical Journal Editors (ICMJE)** states:

> *All contributors who do not meet the criteria for authorship should be listed in the acknowledgement section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support. Authors need to declare whether they had assistance with study design, data collection, data analysis, or manuscript preparation. If such assistance was available, the authors should disclose the identity of the individuals who provided this assistance and the entity that supported it in the published article. Financial and material support should also be acknowledged. These contributors should have their function or contribution described and because readers may infer their endorsement of the data and conclusions, these persons must give written permission to be acknowledged.*

In line with this statement, KHA-CARI Guidelines expects all contributors to its guidelines be acknowledged according to the same criteria. [(1)] Guideline group members need to supply the KHA-CARI Guidelines Office with the identity, role and contact details for all relevant contributors. Contributors also need to complete the KHA-CARI Guidelines Conflict of Interest form.

- See Appendix 1 for further information on conflict of interest & an example of the conflict of interest form
- Click here for the **online conflict of interest form**
- Click here for a Word version of this form.

1. **Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations)**

3. KHA-CARI GUIDELINES WORK PLAN

KHA-CARI Guidelines has limited resources for guideline development, updating, adaptation, dissemination and implementation. It is therefore important to develop a work plan with a primary aim of maximising impact on the practice of health care and clinical practice in kidney disease. The work plan should address specific health care needs with the expectation of a change being possible and desirable if a guideline is followed and there is potential to improve the quality of care and/or patient outcomes.

This section describes the process for development of a work plan that is cognisant of KHA-CARI Guidelines resources while delivering guidelines that meet the process requirements detailed in later sections of this manual.

Criteria for selection of new topics

1. Topic Selection Criteria

The basis for selection of topics for development of new guidelines is as follows:

- Is there a clear problem that will likely be resolved by developing a guideline detailing the most appropriate practice?
- Is the problem/objective related to clinical decision making or the organisation of health services?
- Is the problem associated with significant health burden?
- Is the problem associated with significant health cost?
- Is the problem associated with significant variation in practice or outcomes?
- Does the problem have issues related to risk management?
- Is there sufficient evidence available to review to justify developing a guideline?
- Is the scope of the guideline topic narrow enough to be thoroughly explored with the time and resources available?
- Is the topic a condition where effective treatment is proven and mortality or morbidity can be reduced?
- Is there a perceived need for the guideline, as indicated by a network of relevant stakeholders?
- Is there an international guideline(s) either published or in process that could be adapted rather than written from first principles?

2. Guideline application procedure

When a group or individual proposes a guideline topic to KHA-CARI Guidelines, the proposal is discussed at the next KHA-CARI Steering Committee meeting. If the proposed guideline topic has the potential to meet the selection criteria, a scoping search is carried out by the KHA-CARI Guidelines Office.

This involves a broad search of the literature regarding the condition proposed for the guideline topic. The intent is to establish the general extent of the literature in the clinical area to see if there is likely to be sufficient evidence to make an evidence-based guideline feasible.

Searches are restricted to systematic reviews produced by the Cochrane Collaboration and randomised controlled trials (RCTs) identified from either MEDLINE or EMBASE during the previous three years. Where RCT evidence is limited, the search may be extended to observational studies.

Existing international guidelines and whether adaptation of these guidelines may be feasible is also discussed.

Members of the KHA-CARI Steering Committee use their clinical judgement to decide if there is a need for this guideline topic and to determine the broad scope of the guideline. Once this has been established, the KHA-CARI Guidelines Office works with the original proposer on the preparation of a formal proposal for submission to the KHA-CARI Steering Committee. This requires the completion of a New Guideline Proposal form.

The New Guideline Proposal form seeks the following information:

1. A summary of the clinical problems and outcomes to be addressed;
2. Details of the group/s or institution/s supporting the proposal;
3. A brief background to the clinical topic to be addressed by the proposed guideline;
4. Evidence of variation in practice in the management of the condition;
5. An indication of the benefits likely to arise from the development and successful implementation of the guideline;
6. A definition of the patient group to which the guideline will apply;
7. A definition of the aspects of management of the clinical condition which the proposed guideline will address and an indication as to whether the guideline will apply to primary or secondary care, or both;
8. An indication of the health care professionals potentially involved in developing the guideline;
9. An indication of the size and strength of the evidence base which is available to support recommendations on effective practice, citing key supporting papers;
10. Details of any existing guidelines or systematic reviews in the field;

    - See Appendix 2 for an example of the New Guideline Proposal form;
    - Click here for the **online New Guideline proposal form**
    - Click here for a Word version of this form.

3. Topic selection process

The KHA-CARI Steering Committee makes recommendations to the DNT Committee for new guideline topics. This recommendation is based on suggestions for topics that may warrant a guideline from members of the Australian & New Zealand Society of Nephrology (ANZSN) and the Renal Society of Australasia (RSA) Committees.

Members of the public are also asked (via the KHA-CARI Guidelines website and by direct contact with consumer organisations) to suggest guideline topics for development. A short proposal needs to be provided for each suggested topic. These are assessed by the KHA-CARI Steering Committee using the selection criteria listed above.

Potential guideline topics are discussed and prioritised at the annual end-of-year KHA-CARI Steering Committee meeting. A **Suitability Screening Tool** is used to assist in the process of prioritisation. (See Appendix 3). This tool identifies the extent to which the proposal fulfils the selection criteria. It also probes whether the benefits that are likely to arise from a successful implementation of the guideline recommendations will outweigh the efforts required to develop it.

At the end-of-year meeting, the KHA-CARI Steering Committee is presented with completed guideline proposals. These are sorted into a ranked list from which new topics for the following calendar year are drawn. Topics ranked highest will be considered for inclusion in the KHA-CARI Guidelines proposed programme, subject to work plan scheduling (see below).

Proposals which are not ranked highly will be reconsidered at the next annual meeting. If a proposed guideline receives a low ranking on its second reading, it is rejected. The resulting topics for guideline development form the proposed KHA-CARI Guidelines programme and are forwarded to the DNT Committee for approval.

Updating published guidelines

Guidelines should be reviewed and updated to account for new evidence relating to the topic that may:

- Warrant inclusion of additional recommendations;
- Alter the strength of a recommendation, i.e. upgrade a suggestion to a recommendation or conversely downgrade a recommendation to a suggestion;
- Warrant removal or change to a recommendation or suggestion;

In line with NHMRC guidance, KHA-CARI Guidelines should be considered for review and update no later than 5 years after publication.

Adapting international guidelines

Adaptation of guidelines is a means of integrating one or more existing guidelines, updating them and adapting their recommendations and suggestions to the local environment. They are adapted to be consistent with local rules governing guidelines (i.e. terminology and levels of evidence) and the local environment (i.e. ethnic mix, health funding structure and availability of medicines and interventions). Adaptation is designed to generate guidelines relevant to local users without the need to create a completely new guideline.

The process used by KHA-CARI Guidelines is based on the formal methodology published for this purpose i.e. ADAPTE. The most common adaptation will usually be a *Kidney Disease: Improving Global Outcomes (KDIGO) Guideline*; however other international guidelines may be identified for adaptation.

Preparing commentaries

KHA-CARI Guidelines may prepare a commentary on an international guideline rather than an adaptation. A commentary is considered based on the priorities for allocation of KHA-CARI Guidelines resources within the overall work plan. It is not practical to adapt all international guidelines.

A commentary allow KHA-CARI Guidelines to comment on the overall content and applicability of a guideline for Australian and New Zealand practice; however, it does not involve detailed review and updating of evidence as required by the adaptation process. The commentary is prepared as an editorial according to the following general criteria:

- no more than 2 tables are included;
- key recommendations are in summary form;
- differences, if any, are outlined;
- a critique with justification is provided;
- narrative form is used;
- the length is approximately 1000 words

Preparation of commentaries is directed by the KHA-CARI Steering Committee. The Steering committee appoint authors and supervise completion of the commentaries to their satisfaction.

Scheduling of guideline development, updating and adaptation

The timely delivery of new, updated guidelines as well as adaptations and commentaries is critical in ensuring that the guidelines are up-to-date at the time of publication. However, timely preparation cannot occur at the expense of publishing reliable and trustworthy guidelines. It is therefore important that the scheduling of guideline preparation matches the available resources.

The KHA-CARI Guidelines work plan i.e. the scheduling of guideline development, is the responsibility of the KHA-CARI Steering Committee. The following factors are taken into account:

- **Initial scope of the guideline**
  - Guidelines with more than five sub-topics are likely to exceed the normal capacity of KHA-CARI Guidelines and should therefore not be undertaken without a strategy for further resources including specific funding;
  - Guidelines for which there are no systematic reviews (e.g. Cochrane reviews) are resource intensive. In general guideline topics should be limited to those requiring two or less systematic reviews per sub-topic to be completed by the KHA-CARI Guidelines Office;
  - Guidelines that require detailed evaluation and grading of more than 10 studies per sub-topic may be beyond the resources of KHA-CARI Guidelines;
  - Guidelines that include more than 20 key references per sub-topic may be beyond the resources of KHA-CARI Guidelines

- **The total number of guidelines that can be managed at one time**
  - This takes into account the mix of requirements for new guidelines i.e. updating, adaptation and commentaries as well as the size of guidelines. For example, a mix of two large

guidelines and two small guidelines, at any one time, would likely match the normal resources of KHA-CARI Guidelines.

- **The time taken to complete guideline preparation** (please refer to Timelines table).

In the event that the KHA-CARI Steering Committee determine that the completion of a guideline topic will exceed the capacity of KHA-CARI Guidelines, yet it is a high priority as determined by the guideline screening tool, then the following steps may be considered:

- Whether the guideline can be split into two or more parts with preparation and publication occurring sequentially;
- Review sub-topics and limit preparation and publication to those identified as being the most important;
- Seek additional funding to complete the guideline or look for collaborative opportunities with other Australian and New Zealand or international guideline groups.

4. THE KHA-CARI GUIDELINE DEVELOPMENT GROUP

Each guideline group usually consists of a convenor and 6-8 members. The members are chosen based on their areas of interest, expertise, and availability. Convenors are selected from Australia and New Zealand and are chosen by the KHA-CARI Steering Committee subject to approval of the DNT Subcommittee. Individual guideline members are chosen by convenors from:

- a list of nephrologists who have registered their interest in being a guideline writer;
- from other disciplines as needed.

Guideline Group Convenor

Qualifications

- The convenor should have a sound knowledge of the topic area and the skills to coordinate a group in the development of clinical practice guidelines;
- The convenor should be a recognised authority in the topic area that their respective group will develop clinical practice guidelines;
- The convenor should not have worked on any associated KDIGO guideline that has been/is being developed for the topic. The convenor needs to be seen to be independent of the influence of other guideline organisations and industry. Convenors will be required to sign a Conflict of Interest form as part of the transparency of the process of guideline development;
- The convenor needs to be willing and available to take on the responsibilities associated with the role;
- Convenors are invited to participate by the KHA-CARI Steering Committee Chair. The convenor should be willing to participate in 1-2 teleconferences and up to three face-to-face meetings with their guideline group. The KHA-CARI Guidelines Office organises these teleconferences and meetings.

Roles and responsibilities of the Convenor

- Prepare a short outline of the work plan, which includes:
    - Assessing the current need for the guideline and the importance of the clinical problem;
    - the background of the problem and specific issues expected to be helped by the guideline;
    - explicit clinical questions that should be addressed in the guideline;
    - a description of the population of interest (i.e. all CKD, dialysis only, transplant only, etc) and a list of clinically relevant outcomes;
    - indicate the sources and quality of evidence which may exist;
    - draft mock guideline statements that specify what should be done to whom and how.

- Select guideline group members:
    - A guideline group convenor is free to choose the members of their group from a list of individuals who have advised they are interested in joining the group. Each group usually has 6-8 members, in addition to the convenor.

- Define highest priority issues in the topic area:
    - Guideline group convenors will work with the group members to decide on the specific questions to focus on for their topic and the outcomes of interest. These questions will serve as the focus of the literature review. The KHA-CARI Guidelines Office will facilitate this by arranging a teleconference for the group members.

- Ensure that each guideline group member completes a PICOM (Population Intervention Comparator Outcome Method) table and sends these to the KHA-CARI Guidelines Office. Please refer to Appendix 4). According to the date shown in the timeline:

    - The KHA-CARI Guidelines Office will perform a comprehensive literature search. Members of the group are asked to develop explicit inclusion/exclusion criteria so that the search is specific.

- Help coordinate all guideline group activities:
    - The KHA-CARI Guidelines Office and KHA-CARI Steering Committee Chair or nominated Steering Committee member will work with guideline group convenors to coordinate all guideline group activities. The convenor will need to ensure that the KHA-CARI Guidelines process continues in an orderly fashion and meets timetable deadlines as determined in discussion with the KHA-CARI Guidelines Office.

- Structure and lead discussions at guideline group meetings:
    - The guideline group convenor will develop the agenda for guideline group meetings with assistance from the KHA-CARI Guidelines Office, and will lead discussions at these meetings. The convenor is expected to play a key role in achieving consensus regarding the practice guidelines developed by the group.

- Help guideline group members draft practice guidelines and the supporting rationale:
    - Guideline group convenors can delegate the writing of guidelines and the rationale for specific topics to designated group members but must retain responsibility for the coordination and completion of these tasks according to the set timeline. Convenors will also ensure that the supporting rationale for each recommendation is clear, accurate and in accordance with the evidence base.

- Guideline group convenors will serve as volunteers without compensation:
    - Economy class travel and accommodation (when necessary) to attend face-to-face meetings will be covered by KHA-CARI Guidelines.

- Attend a one day critical appraisal methods workshop, face- to-face meetings and teleconferences:
    - The guideline group convenor will lead these meetings. These meetings will be arranged by the KHA-CARI Guidelines Office (refer to guideline development process in Section 6 for the number and type of meetings)

- Service:
    - Guideline group convenors will serve formally until the publication of the final guideline recommendations. The group convenor and members may also be asked to help develop an implementation plan, but this will only occur for some guidelines. The guideline group convenor/s and members will however, effectively remain as 'spokespersons' for their particular guidelines indefinitely or until such time as a new member is appointed in their place.

- Guideline group convenors are required to declare any relevant affiliations and/or apparent conflicts of interest at the outset, and sign a Conflict of Interest form as part of the transparency of the process of guideline development.

Guideline Group Member

Qualifications

- KHA-CARI Guidelines group members are selected for their interest and expertise in the clinical area covered by the guideline group to which they are assigned or because of the perspective they bring to the guideline process (i.e. multidisciplinary input).
- Members must make a commitment to participate in the initial teleconference, at least two face-to-face meetings and attend a one day critical appraisal methods workshop.
- Guideline group members are required to declare any relevant affiliations and/or apparent conflicts of interest at the outset, and sign a Conflict of Interest form as part of the transparency of the process of guideline development.

Roles and responsibilities

- Liaise with guideline group convenor and other guideline group members and agree on assigned topic
    - A one-hour teleconference will be held to decide which questions of intervention, diagnosis, risk, prognosis and clinically relevant outcomes will be worked on.

- Write draft guideline recommendations
    - Guideline group members will be responsible for the section of the guidelines that have been assigned to them by the group's convenor and for submitting initial and subsequent guidelines to the KHA-CARI Guidelines Office for review.

- Refine questions and complete PICOM tables
    - Guideline group members need to determine the appropriate study designs and outcomes of interest for each question. Completed PICOM Tables are sent to the KHA-CARI Guidelines Office. Search strategies and literature searches will then be conducted by the KHA-CARI Guidelines Office. Guideline group members will need to screen the search results (abstracts only initially) supplied by the KHA-CARI Guidelines Office and identify studies relevant to their topic.

- Perform critical appraisal of the evidence
    - Guideline group members are responsible for performing a critical appraisal of key papers identified from the literature search with the assistance of the KHA-CARI Guidelines Office. This appraisal should address the details pertinent to an assessment of the:
        - quality of the studies;
        - the relative importance of the outcomes addressed by the studies;
        - the size of effect and the relevance of the study to the topic and Australian and New Zealand populations.
    - Each relevant study should be summarised in one paragraph (i.e. number of patients, interventions used, results of outcomes measured etc.). Evidence tables of the key studies will be generated by the KHA-CARI Guidelines Office and guideline group members need to review these tables and provide feedback.

- Grading the quality of the evidence:
    - Guideline group members will review the aggregate of studies for each clinically relevant outcome and, following the GRADE process, formulate a grade for the quality of the evidence for each outcome.
    - Members will review the evidence across all relevant clinical outcomes to determine the net medical benefit and harms to the patient and grade the overall quality of the evidence according to four grades namely: A (high quality), B (moderate quality), C (low quality), or D (very low quality) Please refer to guideline development process in Section 6.

- Write the clinical practice guidelines:
    - Drawing on the results of the critical appraisal of the evidence, guideline group members will develop clinical practice guidelines at a series of meetings. They will:
        - develop guideline recommendations (when possible) and grade the strength of recommendations following the GRADE process;
        - identify important issues relevant to a specific guideline statement;
        - write background and rationale text to support the guideline statements;
        - summarise the evidence from key studies;
        - make recommendations for implementation, audit and future research;
        - and outline recommendations published by other guideline groups relevant to the topic.

- Respond to peer and consumer review comments on their guidelines:
    - KHA-CARI Guidelines will make draft guidelines available via the KHA-CARI Guidelines web site website to the public and the Australian and New Zealand nephrology community. Guideline group members will work with their group's convenor and the KHA-CARI Guidelines Office to review comments and determine appropriate changes to their guideline recommendations and incorporate these changes into their guideline drafts.

- Complete guidelines according to the timeline provided by the KHA-CARI Guidelines Office:
    - Guideline groups are expected to adhere to the timeline to enable publication of new and revised guidelines in a timely fashion.

- Commit to update their guideline/s no more than every five years.

- Work group members will serve as volunteers without compensation:
    - Economy class travel and accommodation (when necessary) to attend face-to-face meetings will be covered by KHA-CARI Guidelines.

- Attend methods workshop, face to face meetings and teleconferences:
    - The guideline group convenor will lead these meetings which will be arranged by the KHA-CARI Guidelines Office. Please refer to the guideline development process – Section 6 - for the number and type of meetings

- Service:
    - Guideline group members serve formally until the publication of the final guideline recommendations. The group convenor and members may also be asked to help develop an implementation plan, but this will only occur for some guidelines. The guideline group convenor/s and members will however, effectively remain as 'spokespersons' for their particular guidelines indefinitely or until such time as a new member is appointed in their place.

5. CONSUMER AND PATIENT INVOLVEMENT

Consumer involvement in the development of clinical practice guidelines is advocated universally. Consumer involvement in KHA-CARI Guidelines has involved the inclusion of a consumer representative on the Steering Committee and guideline working groups. A consumer representative has been defined by the NHMRC as:

> *A member of a committee, steering group or similar, who voices the consumer perspective and takes part in the decision-making process on behalf of consumers. This person is usually nominated by an organisation of consumers and is accountable to them*.[(1)]

Ideally, the role of a consumer representative with KHA-CARI Guidelines is to:

- protect consumer interests;
- present consumer views on issues;
- contribute concerns and experiences on behalf of consumers;
- ensure that KHA-CARI Guidelines recognises the concerns of consumers;
- ensure accountability to consumers by KHA-CARI Guidelines;
- identify issues that may affect consumers;
- be responsive to consumer groups, and
- provide information about relevant issues that concern consumers.

KHA-CARI Guidelines also involves consumers in the guideline process through external reviewing of draft guidelines prior to finalisation. Draft guidelines are posted to the KHA-CARI website and members of consumer organisations are invited, using the resources of KHA, to provide comment before finalisation takes place.

Given the predominantly technical nature and medical language used in guideline development, KHA-CARI Guidelines recognise that meaningful interaction and participation by consumers can be difficult. As a consequence KHA-CARI Guidelines has worked towards developing an alternate approach to consumer involvement in guideline development.

In 2009 patients and carers were invited to participate in workshops to identify topics and outcomes for KHA-CARI Guidelines on early stage chronic kidney disease[(2)]. These groups were run in parallel with the guideline-writing group. As a result, a new guideline sub-topic was introduced, guidelines were consumer-endorsed, and guideline recommendations and suggestions for clinical care were augmented with consumer-focused issues. The development of consumer-resources based on these guidelines will also be developed.

Given the limited resources, this approach cannot be completed for all guideline topics. To this end, KHA-CARI Guidelines has developed a frame work to facilitate more effective involvement of consumers in guideline development a schematic of which is shown in Figure 2.

References

1. National Health & Medical Research Council / Consumers' Health Forum of Australia. Statement on consumer and community participation in health and medical research. Canberra (Australia): AusInfo; 2001

2. Tong A, Lopez-Vargas P, Howell M, Phoon R, Johnson D, Campbell D, Walker RG, Craig JC. Consumer involvement in topic and outcome selection in the development of clinical practice guidelines. Health Expectations 2012;15:410-23

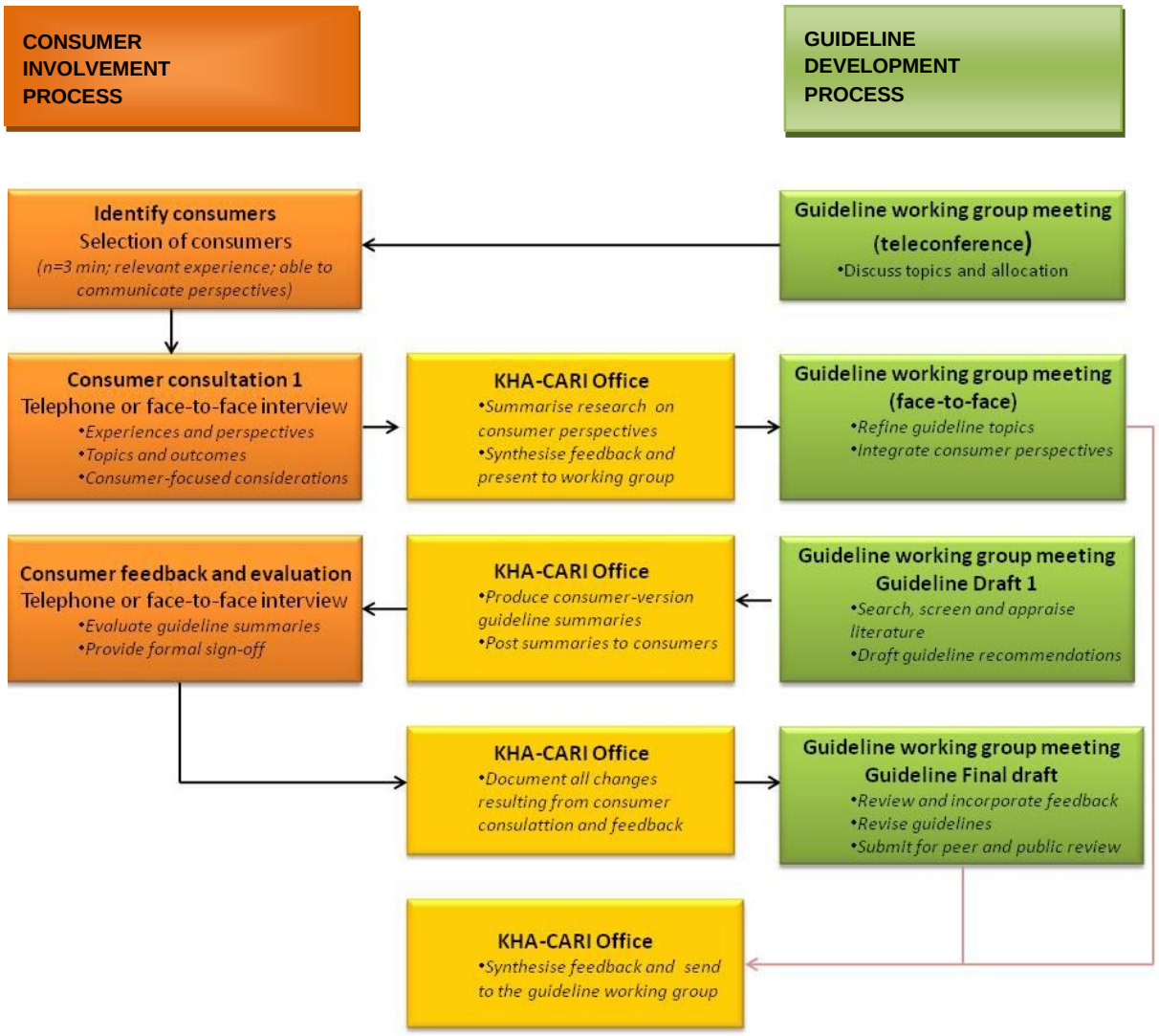

Figure 2: Proposed consumer involvement in KHA-CARI Guideline development

6. DEVELOPMENT OF NEW KHA-CARI GUIDELINES

Process overview

Development of a guideline by the guideline working group occurs in five stages:

Stage 1: Scoping and tasking: identification of sub topics and writing allocation
Stage 2: Literature searching and writing of draft guideline (with assistance from the KHA-CARI Guidelines Office)
Stage 3: External peer review, consumer review and nephrology community comment
Stage 4: KHA-CARI Steering Committee approval/request for changes to revised draft
Stage 5: Editing and publication of summary guideline in the journal *Nephrology* and publication of the guideline on the KHA-CARI Guidelines website

A general overview of the KHA-CARI Guidelines process is described below. It should be noted however, that the number of meetings and some elements of the process may be altered to reflect the requirements of individual guideline groups.

Stage 1. Scoping and tasking

1st Guideline Group Meeting

Once a guideline group is convened, a meeting by teleconference is arranged to decide which topics will be covered within the general topic identified by the DNT subcommittee. Responsibility for writing the first draft of each subtopic is also decided at this teleconference. A timeline for the guideline development process will have been sent to the convenor and group members by the KHA-CARI Guidelines Office. The Convenor of each guideline group needs to submit a work plan to the KHA-CARI Guidelines Office outling the subtopics the group plans to develop. The process allows 16 months from the time of this meeting until the draft document is expected to be ready for external peer review.

Draft Mock Clinical Practice Guideline

Based on current content knowledge, writers draft mock guideline statements that specify what should be done to whom and how. The population of interest (i.e. chronic kidney disease, dialysis, or transplantation) and clinically relevant, patient-centred outcomes also ned to be defined.

Attendance at Critical Appraisal Training Workshop

Convenor/s and members of new guideline groups are invited to attend a 1-day Critical Appraisal Workshop. At this workshop, key quality indicators for randomised controlled trials (RCT), systematic reviews and studies of diagnostic test accuracy are taught and discussed. The GRADE evidence rating system is also outlined and explained. Following the workshop, each guideline group has a face-to-face meeting to further refine the scope of their activity, the division of tasks, and the development of draft guideline recommendations.

Develop Literature Search Questions

Guideline writers are asked to develop specific, searchable questions that will enable the KHA-CARI Guidelines Office to design high-yield search strategies (see Appendix 4).

Stage 2. Literature searching and writing of draft

Conduct literature Search and screen of abstracts

The KHA-CARI Guidelines Office performs literature search/es for each guideline once the PICOM tables have been received (see Appendix 4). To ensure as much relevant material as possible is retrieved, the Cochrane Renal Group's Specialised Register of Randomised Controlled Trials, the Cochrane Library, MEDLINE and EMBASE will be searched. The results of these searches are sent to guideline groups for screening & selection of relevant articles (only the citation and abstracts are sent). Full text copies of articles of interest can then be ordered from the KHA-CARI Guidelines Office. Both reports of RCTs and other study types (e.g. cohort studies, case-control studies) can be ordered.

Select Articles per Criteria

Members review those articles that meet the criteria for systematic reviews.

Review Selected Articles

Guideline group members review the aggregate of studies for each clinically important outcome and formulate a grade for the quality of the evidence based on the quality of the studies, the consistency and the directness of the evidence. Members then review the evidence across all important clinical outcomes to determine the net medical benefit to the patient and grade the overall quality of the evidence. The KHA-CARI Guidelines Office assists the group in this process.

Create Selected Evidence Tables

Evidence tables (characteristics of included studies, quality of randomized trials, results for continuous outcomes, results for dichotomous outcomes) are drafted by the KHA-CARI Guidelines Office. These are included in the appendices of each guideline. Members are asked to provide feedback on the evidence tables and to approve the finalised versions.

Evidence Profile Summary Tables

Where necessary, evidence profile summary tables are developed in accordance with the GRADE framework. The KHA-CARI Guidelines Office assists guideline groups with this task.

Write Text and Recommendation/s for the Guidelines

At a series of meetings, guideline group members develop practice guidelines based on the results of the critical appraisal and grading of the evidence. A summary of the sections of a guideline is provided in Appendix 5.

2nd Guideline Group Meeting

This face-to-face meeting is an opportunity to present and discuss new draft guidelines to other group members before presentation at the DNT Meeting. This meeting also provides the opportunity to review suggestions from other group members. It is also the time to decide who will present at the DNT workshop; it is not necessary for every group member to present at this workshop.

Submit the Draft Guideline

The draft guideline should be emailed to the KHA-CARI Guidelines Office and the guideline group convenor. To minimise editorial work, please follow the format of the guideline writing template. It is strongly recommended that the software EndNote be used for collating references in the draft guideline. The KHA-CARI Guidelines Office will forward the draft to 2-3 members of the KHA-CARI Steering Committee for comment. Any comments will be forwarded to the guideline member for their action and revision.

DNT Workshop

Amended drafts should be sent to the KHA-CARI Guidelines Office **one month** prior to the DNT workshop for uploading to the KHA-CARI website. This allows sufficient time for members of the nephrology community to read the draft guidelines before the DNT workshop. Comments received at the workshop and via the KHA-CARI Guidelines website need to be reviewed and considered by each writer, and appropriate changes made.

3rd Guideline Group Meeting

The third face-to-face meeting is held approximately **two months after** the DNT workshop to finalise the content of the draft guidelines before submission to the KHA-CARI Guidelines Office. At this stage, external peer review occurs. The draft guidelines are posted to the KHA-CARI Guidelines website and the public invited to comment on them.

Stage 3. External peer review, consumer review and nephrology community comment

Peer Review

The draft guidelines submitted after the DNT workshop are reviewed by three peer reviewers chosen by the KHA-CARI Guidelines Office. Four weeks is allowed for this step. (Refer to Section 10)

Review Comments and Make Appropriate Changes

Guideline group members are asked to work with the group's convenor/s to determine appropriate changes to the guideline recommendations as a result of comments received from peer reviewers and the public. Group members need to incorporate these changes into their guideline drafts.

Stage 4. Steering Committee approval/request for changes to revised draft

The revised guidelines are sent to 2–3 designated members of the KHA-CARI Guidelines Steering Committee for final approval.

Stage 5. Editing and publication

Members are asked to review comments received from the relevant KHA-CARI Steering Committee members and to make appropriate changes to their guidelines. The approved revised guidelines are to be emailed to the KHA-CARI Guidelines Office where they will be edited and formatted. A summary guideline will prepare by the KHA-CARI Guidelines Office and sent to the journal *Nephrology* for publication. The full guideline will be published on the KHA-CARI Guidelines website. Writers will be sent a copy of the edited guideline and will see a copy of the first proof pages; writers need to proofread them for typesetting and/or copy editing.

Evidence review

The KHA-CARI Guidelines Office will assist writers in conducting literature searches to find relevant trials and studies for each subtopic. However, it is necessary to first develop specific, searchable questions as well-formulated questions result in high-yield search strategies. To arrive at well-formulated questions, the first step is to ask what the important clinical questions are. These can then be unpacked into a series of searchable questions. Appendix 4 provides an overview of the PICOM process.

Based on PICOM tables, the KHA-CARI Guidelines Office can develop a specific search strategy for a question that will retrieve reports of relevant trials.

Evidence evaluation and grading

Evidence quality is assessed on an outcome basis (e.g. mortality, graft failure, acute rejection, etc.) following a framework and set of rules as developed by the GRADE Working Group.

The final evidence grade relevant to a recommendation inevitably relies on an element of judgement. However, GRADE states that the final grade must be based on the most critical outcome for a given question. As critical outcomes such as mortality are often supported by poorer quality evidence than less critical outcomes e.g. surrogate measures of kidney function, then the evidence profile quality may be evaluated as being low even though there are many RCTs and systematic reviews. Further description of the evidence grading process is included in Appendix 6.

Formulating recommendations and grading the strength

The strength of a recommendation is indicated by a 1 or 2 thus giving 8 possible grades. Table 2 provides a description of the meaning of the strength of a recommendation while Table 3 describes the determinants of the strength of a recommendation. In addition, ***We recommend***... and ***We suggest***..., where appropriate, are used to denote strength (i.e. one and two respectively). GRADE also provides for "ungraded" statements (or consensus driven statements) that reflect clinically relevant advice that is not supported by the evidence base for the question.

The overall implication of the above grading process is that a strong recommendation may be made (i.e. ***We recommend…***) on the basis of a low quality evidence base (i.e. a 1D grade). Similarly a suggestion only may be made even though there is high quality evidence (i.e. 2A). This differs to the approach previously taken by KHA-CARI Guidelines whereby recommendations (i.e. ***Guidelines***) were only made where Level 1 or 2 evidence (i.e. systematic reviews or RCTs) was available.

Overall Evidence Grade	Description
A	*High quality of evidence* We are confident that the true effect lies close to that of the estimate of the effect
B	*Moderate quality of evidence* The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different
C	*Low quality of evidence* The true effect may be substantially different from the estimate of the effect
D	*Very low quality of evidence* The estimate of effect is very uncertain, and often will be far from the truth

Table 1: Final grade for overall quality of evidence

GRADE	IMPLICATIONS		
	Patients	**Clinicians**	**Policy**
Level 1 **"We recommend"**	Most people in your situation would want the recommended course of action and only a small proportion would not	Most patients should receive the recommended course of action	The recommendation can be adopted as a policy in most situations
Level 2 **"We suggest:**	The majority of people in your situation would want the recommended course of action, but many would not	Different choices will be appropriate for different patients. Each patient needs help to arrive at a management decision consistent with her or his values and preferences	The recommendation is likely to require debate and involvement of stakeholders before policy can be determined

Table 2: Nomenclature and description for grading recommendations

FACTOR	COMMENT
Balance between desirable and undesirable effects	The larger the difference between the desirable and undesirable effects, the more likely a strong recommendation is warranted. The narrower the gradient, the more likely a weak recommendation is warranted.
Quality of the evidence	The higher the quality of evidence, the more likely a strong recommendation is warranted.
Values and preferences.	The more variability in values and preferences, or more uncertainty in values and preferences, the more likely a weak recommendation is warranted.
Cost (resource allocation)	The higher the costs of an intervention i.e, the more resources consumed, the less likely a strong recommendation is warranted.

Table 3: Determinants of strength of recommendations

A detailed descriptive summary of the interpretation of evidence grades is provided in Appendix 6.

Implementability of recommendations

It is important that guideline recommendations and suggestions are statements that can be implemented and are not evidence statements or summaries. When formulating recommendations and suggestions the Who? What? Where? How? approach should be followed.

The WHO, WHEN, WHAT WHERE, HOW approach to implementation	
Who?	▪ Is it clear who is required to perform the action?
When?	▪ Is it clear, when the recommendation should be applied? o For what condition? o Is the condition clearly described? o Are there two conditions? o Are the ANDs/ORs clear?
What?	▪ Is there a clear action statement? ▪ Is there sufficient detail on what to do or is there links to further details? ▪ Is the guideline succinct? ▪ Is the action measurable? ▪ What are the markers or endpoints that in the recommendation? ▪ Is the justification for the recommendation stated clearly?
Where?	▪ Does the recommendation require details on the setting that the guideline is appropriate for?
How?	▪ Is it clear how the action is to be carried out? o Is there a sequence that the actions should be carried out? o Is this sequence made clear?

***Table 4**: KHA-CARI Guidelines approach to implementability*

A guideline implementability checklist is included in Appendix 7.

In addition guideline writers should be aware of potential barriers for guideline implementation.

For example:

- Is there any extra equipment or staff required in order to carry out the recommendation? What is this equipment? Are there any suggestions on how to access these requirements?
- Is there any new knowledge or skills required?
- Is the recommendation compatible with existing attitudes and beliefs of guideline users?
- Are the recommendations consistent with patient expectations?

If the answer is **yes** to any of the above, remedies and resolutions for the guideline user should be considered

Timeline for development of a New Guideline

Cumulative Timeline (months from start)	Task No.	Task Name	Convenor and Group Members	KHA-CARI Office	External Review
2	1	1st Guideline Group Meeting – Teleconference or Face to Face. Decide topics, allocate responsibility	✓	✓	
	2	Refine questions (PICOM Table) (2 weeks)	✓	✓	
	3	Literature search / screen abstracts (4 weeks)		✓	
	4	Writers to review searches and identify potentially relevant studies from abstracts (2 weeks)	✓		
7	5	Retrieve papers (2 weeks)		✓	
	6	Screen full text and identify relevant studies per criteria (2 weeks)		✓	
	7	Create evidence tables including GRADE level of evidence (16 weeks)		✓	
9	8	Generate draft recommendations based on evidence (2 weeks)	✓		
	9	2nd Guideline Group Meeting – Face to Face. Discuss recommendations and review, implementability, audit and feedback.	✓	✓	
	10	Draft guideline report (4weeks)	✓		
	11	Circulate draft to other Guideline Group members (2 weeks)	✓		✓
9.5	12	Consider group comments and amend draft guidelines (1 week)	✓	✓	
	13	Verify tables (1 week)		✓	
10.5	14	Send draft to KHA-CARI to upload to Website	✓	✓	
	15 †	Advertise for Public consultation – ANZSN, TSANZ, KHA, RSA. (4 weeks)		✓	✓
11.5	16	Summarise and circulate public comments (1 week)		✓	
	17	3rd Guideline Group Meeting – Teleconference Discuss responses to public comments	✓	✓	
	18	Amend and finalise draft for external review (send copy to KHA-CARI office) (3 weeks)	✓	✓	
12.5	19	Peer Review & send guideline to lay member (2 weeks / subtopic) (4 weeks)		✓	✓
13.5	20	Reviewer comments sent to Guideline Group / revision of draft (2 weeks)	✓	✓	
	21	Revised draft sent to 2-3 members of Steering Committee for approval (2 weeks)		✓	✓
14.5	22	Finalise document	✓	✓	
	23 ‡	Develop a Guideline Summary and send to Nephrology for publication (2 – 4 weeks)		✓	
	24	Complete guideline to be posted on KHA-CARI website once the Summary is published.		✓	

† Subject to DNT taking place, in which case separate consultation by nephrologists may be required prior to workshop.

‡ The time taken to do the summary will depend on the number of subtopics.

7. UPDATING PUBLISHED KHA-CARI GUIDELINES

The process for updating published guidelines is detailed below.

- KHA-CARI Guidelines Office prepares a list and schedule of guidelines for updating for Steering Committee approval;
- The writers of the published guidelines are responsible for completion of guideline updates;
- KHA-CARI Guidelines Office undertakes an updated literature review from the date of the last search for a guideline;
- The results of the update review are sent to the relevant guideline writers;
- Writers are asked to appraise additional studies and determine whether the additional evidence may:
    - Warrant inclusion of additional recommendations
    - Alter the strength of a recommendation, i.e. upgrade a suggestion to a recommendation or conversely downgrade a recommendation to a suggestion
    - Warrant removal or changing of a recommendation or suggestion.
- Group members need to discuss if all sub topics should be retained and the need for additional sub topics
- Guidelines are edited and published as updates. This may range from significant re-write to little or no change.

Process and timeline

Time	Task
4 weeks	Update literature search
7 weeks	Amend guidelines
1 day	Guideline Group Meeting – Face to Face – Discuss revised guidelines
4 weeks	Finalise draft for external review (send copy to KHA-CARI office)
4 weeks	Peer review
4 weeks	Advertise for public comment
1 day	Reviewer comments sent to Guideline Group / Revision of Draft
1 day	Public comments sent to Guideline Group / Revision of Draft
4 weeks	Incorporate comments
2 weeks	Revised guideline sent to 2-3 members of the Steering Committee for approval
2 weeks	Finalise document
1 day	Send summary guideline to Nephrology for publication
1 day	Post complete guideline on KHA-CARI Guidelines website

Table 6: Process and timeline for updating KHA-CARI Guidelines

8. GUIDELINE ADAPTATION

The adaptation process generally involves the adaptation of a single guideline only. In this case, the integration component described by ADAPTE is unlikely to be relevant. The following is a guide to completing the adaption of a single international guideline (e.g. KDIGO). A checklist developed by KHA-CARI Guidelines from the ADAPTE framework (www.ADAPTE.org) is included in Appendix 8.

Approach developed for adaptation of a KDIGO Guideline

Table 13 shows an overview of the adaptation process for a single international guideline.

Overview of the adaptation process for a single international guideline	
A.Review and update search	
i.	Was the strategy appropriate? (if not, change strategy and repeat search)
ii.	Update the search (performed by KHA-CARI Guidelines Office and distributed to group)
B. Review and grade the available evidence	
i.	Confirm KDIGO evidence review and evidence profiles are in accordance with the studies identified by the search strategy (note KHA-CARI Guidelines have adopted the GRADE framework for evidence assessment which is also used by KDIGO).
ii.	If required update evidence profile to include additional studies identified by the update search or changes made following review of KDIGO search strategy (KHA-CARI Guidelines Office as requested by group).
C. Review each KDIGO Recommendation (i.e. *"We recommend…."*)	
i.	Is the KDIGO recommendation justifiable given available evidence from point 2?
ii.	Is the KDIGO recommendation relevant in the context of practice in Australia and New Zealand?
iii.	Is the grade given to the recommendation consistent with the available evidence?
iv.	Withdraw or modify the KDIGO recommendations as appropriate
D. Review each KDIGO Suggestions (i.e. *"We suggest….."*)	
i.	Is the KDIGO suggestion justified given available evidence from point 2?
ii.	Is the KDIGO suggestion relevant in the context of practice in Australia and New Zealand?
iii.	Is the grade given to the Suggestion consistent with the available evidence?
iv.	Withdraw or modify the KDIGO suggestions as appropriate
E. Review each KDIGO ungraded statement	
Note: In the KHA-CARI guideline, an ungraded statement is separated from the graded recommendations and suggestions in a section titled "UNGRADED SUGGESTIONS FOR CLINICAL CARE". This ensures that there is a clear distinction between evidence-based and opinion based statements.	
i.	Is the KDIGO 'ungraded' justified given available evidence from point B For example is there sufficient evidence to enable grading? In the KHA-CARI
ii.	Is the KDIGO ungraded statement relevant in the context of practice in Australia and New Zealand?
iii.	Are there additional ungraded statements warranted in the context of practice in Australia and New Zealand?
iv.	Withdraw or modify the KDIGO ungraded statement as appropriate
F. Prepare Draft Adaptation for circulation and review by the guideline group	
I.	The draft should be prepared following the KHA-CARI guideline adaptation template and provide sufficient background and detail to justify the adapted recommendations, suggestions and ungraded statements.

Table 13: *Overview of the adaptation process for a single international guideline*

Timeline

Task	Description/Comments	Responsibility and Timing
Establish a working group and assign topics (teleconference)	The makeup of the group should include appropriate representation from AKI specialists etc.	KHA-CARI Steering Committee & group convenor
Update literature searches	Update searches using the KDIGO strategies. Distribute search results to Work Group	KHA-CARI office 4 weeks
Review updated searches and identify alternate or additional search strategies as required.	Identify additional subtopics or searches required to augment KDIGO searches. Identify key studies for which full text copies are required.	Work group members 4 weeks
Complete additional searches (if required) and obtain full text copies of key studies		KHA-CARI office 3 weeks
Review KDIGO recommendations and draft KHA-CARI recommendations and suggestions for clinical care.	Steps in assessment: ▪ Relevance to local setting ▪ Adequacy of evidence base ▪ Rationale for KHA-CARI recommendations/suggestions ▪ Grade recommendations (using GRADE system)	Work group members 8 weeks
Work group (face to face meeting)	Review and discuss draft adapted recommendations and suggestions for clinical care, including rationale. Identify any additional searches Discuss implementation plan	Work group 1 day
Draft adapted guideline report	Use template provided by KHA-CARI. Evidence profile table prepared by KHA-CARI office, if needed	Work group and KHA-CARI office 4 weeks
External Peer Review and Public Comment of adapted guideline report		External peer reviewers 4 weeks
Revise drafts on basis of peer review and public comments		Work Group 3 weeks
Final approval by KHA-CARI Steering Committee (2-3 members)		KHA-CARI Steering Committee 2 weeks
Posting of final guideline to KHA-CARI website		Work group and KHA-CARI office 4 weeks

Table 7: *Process and timeline for adaptation of guidelines*

9. PREPARATION OF KHA-CARI GUIDELINE COMMENTARIES

The process for the preparation of KHA-CARI Guideline commentaries is as follows:

- The commentary is completed and ready for publication within six months of publication of the guideline under consideration.
- A minimum of two writers are appointed by the KHA-CARI Guidelines Steering Committee to prepare the commentary.
- The format of the commentary allows for KHA-CARI Guidelines to comment on the overall content and applicability of a guideline for Australian and New Zealand practice. However, it does not include detailed review and updating of evidence as required by the adaptation process.
- The commentary is prepared as an editorial according to the following general criteria:
    - include no more than two tables;
    - have key recommendations in summary form;
    - outline what, if anything, is different;
    - provide a critique with justification;
    - have a narrative form;
    - Have a length of approximately 1000 words.
- The draft commentary is reviewed by KHA-CARI Steering Committee members prior to publication
- The commentary writers consider any comments made by the KHA-CARI Steering Committee members and revise the commentary accordingly
- Final version of commentary reviewed again by KHA-CARI Steering Committee members prior to publication in the journal *Nephrology*
- Commentary edited by KHA-CARI Guidelines Office prior to being sent to *Nephrology* and after sign-off by relevant writer/s

10. KHA-CARI GUIDELINE PUBLIC CONSULTATION & PEER REVIEW

Public consultation

KHA-CARI Guidelines is committed to public consultation of draft guidelines prior to finalisation. Draft guidelines are posted to the KHA-CARI website. Members of consumer organisations, nephrologists and renal nurses are invited to comment before finalisation. The public consultation period lasts for no less than four weeks to ensure adequate time for responses. All comments are summarised by the KHA-CARI Office and provided to the guideline group convenor to determine the appropriate course of action as part of finalising the guidelines. As part of the final approval process, the KHA-CARI Guidelines Steering Committee ensures that all comments have been appropriately addressed.

Peer review

Nephrologists and allied health individuals are invited to be peer reviewers of KHA-CARI Guidelines from time to time. The names of suitable peer reviewers are obtained from members of the Steering Committee and from guideline writers. Writers are asked to suggest a minimum of five potential reviewers. People who are interested in being peer reviewers can also send their contact details and nominated subject area/s to the KHA-CARI Office. This information will be kept on file and the individual will be contacted when a suitable guideline is ready for review. The KHA-CARI Office will approach a minimum of 6 reviewers in Australia, New Zealand and overseas with the aim of obtaining completed peer reviews in a timely manner.

People selected to peer review will be asked to complete a Peer Review Form (see Appendix 9) together with a copy of the draft guideline subtopic. The Peer Review must be completed within 2 weeks. If a peer reviewer is unable to complete their review within the two week timeframe, the KHA-CARI Guidelines Office should be informed as soon as possible. If a peer review form has not been received within the two week timeframe, the review will no longer be required and reviewers will be formally advised of this by the KHA-CARI Office.

11. PRESENTATION AND DISSEMINATION

KHA-CARI Guidelines aim to disseminate guidelines for the management of renal disease to the renal community in Australia and New Zealand and to support and encourage evidence-based clinical practice.

The overall approach is detailed below.

- Publication of summary guidelines in *Nephrology.*
- Posting of all summary and complete guidelines on the KHA-CARI Guidelines website.
- Nephrologists provided with links to electronic versions of all guidelines via ANZSN electronic newsletter.
- Electronic version of the complete guidelines sent to all Australian and New Zealand renal units using USB memory cards.
- Promotion of access to guidelines through the KHA-CARI Guidelines website and news and events (presentations, conferences, publications).
- *Guideline of the month* - *e*-mail a summary of a guideline through ANZSN.
- Disseminate summaries of guidelines through the RSA newsletter.
- Provide guidelines in a format suitable for PDAs. (re-write of executive summary into a flowchart or table for easier reading)
- Develop a KHA-CARI Guidelines App
- E-bulletins (email newsletter) about the guidelines for posting by a selection of organizations and groups (e.g. KHA, medical institutes).

12. IMPLEMENTATION

Guidelines are an important aspect of quality patient care. They provide clinicians with recommendations that help them to ensure that renal health care practice is evidence-based. The overall purpose of clinical guidelines is to improve health outcomes and to encourage the appropriate use of resources.

Guidelines are static entities if not put into practice. It takes a motivated team to change practice and incorporate a guideline into daily patient care. An essential part of the guideline development process is the formulation of a dissemination and implementation strategy.

Currently the KHA-CARI Guidelines Office is not funded to undertake full implementation of the guidelines. However, KHA-CARI Guidelines have been able to secure research funding to undertake research into the best methods for ensuring the use of guidelines in clinical practice. Implementation projects are undertaken to assess both the impact of KHA-CARI Guidelines on clinical practice as well as the barriers faced by renal units in the implementation of KHA-CARI Guidelines. As implementation projects progress, KHA-CARI Guidelines will revise the guideline development process and develop tools to assist in guideline implementation.

Criteria used to identify which recommendations should be actively implemented include:

- The presence of a strong evidence base supporting the recommendation
- Clinical importance
- Existence of a clear evidence/practice gap
- Patient burden of disease is high
- Ability to measure a change in practice
- Feasibility of development of an implementation strategy

Implementation projects are conducted according to three phases:

- Phase I. Establish current practices and protocols
- Phase II. Conduct implementation trial
- Phase III. Report findings

13. APPENDICES

Appendix 1: Conflict of Interest

The purpose of this form is to identify any potential conflict of interest for guideline group members and convenors as relates to the development or updating of KHA-CARI Guidelines.

Please note that this information will be kept on file at the KHA-CARI Guidelines Office and only used for the purpose of real or perceived conflict of interest as relates to the work of the guideline group member/convenor.

A conflict of interest arises in any situation in which a member or related person has an interest which influences, or may appear to influence, the proper performance of the member's responsibilities. The appearance of a conflict of interest may be as important as any actual conflict of interest. Such interests need to be identified, declared and managed.

Guideline developers seeking NHMRC approval are required to comply with the following principles:

- transparency in the disclosure of any interests
- managing interests in a manner consistent with the NHMRC policy (1 Aug 2012)
- balance and diversity of expertise and perspectives
- balancing the benefit of having people with expertise against the risks of their interests biasing a process
- the focus on technical knowledge should not override or dominate all other considerations
- the committee or working group is chaired by someone who has no conflicts of interest that could, or could be perceived to, erode the integrity of the recommendations, and
- ensure the integrity of the guidelines.

What constitutes a conflict of interest?

There are two general circumstances under which conflicts of interest may arise:

- **Financial interests**
  - an interest must be declared as a potential conflict when benefits or losses either in money or in-kind have occurred or may occur at a level that might reasonably be perceived to affect a person's judgement in relation to fair decisions about evidence and their participation in group decision-making.
- **Other relationships**
  - an interest must be declared as a potential conflict when a strong position or prejudice or familial connection or other relationship held by a person could reasonably, or be perceived to, affect a person's judgement in relation to fair decisions about evidence and their participation in group decision-making including making an effort to arrive at a consensus.

In addition, the following need to be identified:

- Affiliations or associations with any organisation or activities which could reasonably be perceived to be an influence due to a competing interest either for or against the issue for which a guideline is being developed
- Interests arising from an affiliation or association of an individual to an institution
- Any other influences which might reasonably be considered likely to affect the expert judgement of the individual, or lead to the perception by others that the judgement of the individual is compromised.

What process should be followed to decide whether or not there is a conflict of interest?

The following is a guide to the circumstances in which a prospective convenor or working group member may be appointed or precluded from appointment or may be appointed on the condition of a suitable conflict of interest strategy being put in place.

The final decision on appointment will be a matter of judgement by the KHA-CARI Guidelines Steering Committee. This judgement will take into account the information declared in a written disclosure of interests and will:

- consider whether or not there are factors that could, or could be perceived to, affect a person's expert judgement in relation to fair decisions about evidence and their participation in group decision-making;

- consider whether there could exist real, perceived or potential competing interests that could influence a person's expert judgement or erode the integrity of a group decision determine whether or not the disclosed interests will be managed by a range of measures (e.g. exclusion from certain discussions; divestment of certain financial interests; resignation from membership of entities whose interests could be affected by any recommendations; a peer review or public consultation process)

- ensure the working group is chaired by someone who has no conflicts of interest that could, or could be perceived to, erode the integrity of a group decision.

What time period should be covered by the conflict of interest declaration?

Disclosure is required in relation to disbursements over the three years preceding appointment to a working group and any anticipated disbursements in the 12 months following appointment to the working group.

KHA-CARI Guidelines Steering Committee decisions following declarations of interest

Based on the declared interests, the Steering Committee will decide whether:

- an appointment may proceed and participation can occur without any constraint
- an appointment may proceed and interests can be managed with constraints
- an appointment is precluded.

The conflict of interest disclosure and management plan

- Completion of the disclosure form is a prerequisite for consideration of an appointment to a working group developing or updating guidelines.

- Appointment to a guideline working group is subject to approval by the KHA-CARI Guidelines Steering Committee. Prospective members must be willing to accept the Steering Committee's decisions on ways to manage any conflict of interest. The information relating to interests will also be published in the final guideline.

- Prospective members will be advised by letter or email of their appointment status and the details of any conflict of interest management plan.

The Conflict of Interest Form is available on the KHA-CARI website in 2 formats:

1. online form
2. Word document form for email submission

See an example of the form below.

Example: KHA-CARI Guidelines Conflict of Interest Form					
Type of relationship	**None**	**Money paid to you**	**Money paid to immediate family**	**Money paid to your institution**	**Details of conflict**
Payment					
Gratuity					
Consultancy					
Honorarium					
Employment					
Grant					
Support for travel					
Support for accommodation					
Payment for meals and beverages					
Payment for entertainment					
Payment of educational event attendance					
Payment of registration fees					
Gift from an entity with a commercial interest in the guideline					

Board membership					
Stock ownership					
Research funding					
Any other direct or pecuniary interest considered relevant					

***** Immediate family members = partner, dependent children

CONTACT DETAILS						
Title		**Name:**				
Professional Qualifications						
Position/s						
Organisation/s						
Postal address						
Phone	**Work:**		**Mobile:**		**Fax:**	
Email	**Work:**		**Private:**			

Signature: _____ **Date:** _____

Appendix 2: New Guideline Proposal Form

The New Guideline Proposal Form is available on the KHA-CARI website in 2 formats:

1. online form
2. Word document form for email submission

Example: New Guideline Proposal Form

Is there a topic area not currently covered by a guideline that is deemed necessary? □**Yes** □ **No**

Please supply the following information

1. Clinical problems and outcomes	Please provide a summary of the clinical problems and outcomes to be addressed in the new guideline
2. Guideline proposal support groups	Indicate here the details of the group/s and/or institution/s that support this proposed guideline
3. Clinical topic background	Please provide a brief background to the clinical topic which will be addressed by the proposed guideline
4. Variation in practice	Comment here on the evidence of variation in practice in the management of this condition
5. Guideline development and implementation benefits	Comment here on the benefits likely to arise from the development and successful implementation of the proposed guideline
6. Patient group	Define the patient group to which this guideline will apply
7. Aspects of management of the clinical condition	Define the aspects of management of the clinical condition which the proposed guideline will address and indicate as to whether the guideline will apply to primary or secondary care, or both
8. Who will be involved in guideline development	Give an indication of the health care professionals potentially involved in developing the proposed guideline
9. Evidence base available	Please provide an indication of the size and strength of the evidence base which is available to support recommendations on effective practice, citing key supporting papers

10. Existing guidelines or systematic review	Give details of any existing guidelines or systematic reviews currently available in this field
Other information	

Contact details

Full name	
Title (e.g. A/Prof.)	
Address	
Phone number	
E-mail address	
Affiliations	
Hospital/Institute	

Appendix 3: Guideline Suitability Screening Tool

A suitability screening tool is a systematic process used to establish how successful the development of a guideline is likely to be. Efforts are best directed to guidelines that can demonstrate significant positive changes in outcomes. These are likely based on valid scientific studies. The KHA-CARI Steering Committee should consider the questions in the suitability screening tool and discuss these at the end of year meeting.

The following questions make up the **suitability screening tool:**

- Is there a suitable individual who can be the "owner" (Convenor) for the guideline?

- Can the proposed change be measured (health status, cost)?
    - Is there a gap between current and optimal practice?
    - Are there outcomes that can be measured?
    - Can the data be captured?

- Is there a suitable guideline already available that could be adapted?

- What does a brief literature search reveal?
    - Is there adequate literature to make an evidence-based decision about appropriate practice?
    - In some clinical circumstances (where interventions have known harms and unproven benefit) a lack of evidence may be used to make recommendations about appropriate practice.

- Will the proposed practice change result in sufficient change in outcomes (health status, provider and consumer satisfaction, cost) to justify the effort?
    - How big is the gap?
    - How much effort will it take to close the gap?

- Is there a reasonable likelihood that we could implement the change?

Appendix 4: Literature Search Questions and PICOM Tables

The KHA-CARI Guidelines Office will assist writers in conducting literature searches to find relevant trials and studies for each subtopic. However, it is necessary to first develop specific, searchable questions as well-formulated questions result in high-yield search strategies. To arrive at well-formulated questions, the first step is to ask what the important clinical questions are. These can then be unpacked into a series of searchable questions.

An easy way of doing this is to use the **PICOM** framework to highlight each component of a question:

- **P**opulation or clinical **P**roblem of interest
- **I**ntervention – an exposure, a diagnostic test, a treatment etc.
- **C**omparisons – alternative exposures or interventions
- **O**utcomes of interest
- **M**ethodology – the best study design to answer the question

Questions typically fall into one of 4 types as outlined in the PICOM table below:

QUESTION TYPE	POPULATION OR CLINICAL PROBELM	INTERVENTION	COMPARATOR	OUTCOME/S	METHODOLOGY BEST FEASIBLE STUDY DESIGN
AETIOLOGY	In men	does vasectomy		cause testicular cancer	Cohort study, population-based case control study
DIAGNOSIS	In patients with lung cancer	what is the test performance of CT scan	compared with chest X-ray	for detecting mediastinal metastatic disease	Cross-sectional analytic study
INTERVENTION	In patients with hypertension and type 2 diabetes mellitus	does a target DBP of 80mm Hg	compared with DBP of 90 mm Hg result in	lower risk of stroke, MI, cardiovascular death, and all-cause mortality	RCT or systematic review of RCTs
PROGNOSIS	Do young men with atypical chest pain	sent home from the emergency department, in the next 72 hours		suffer unstable angina, heart failure, arrhythmia, myocardial infarction or sudden death	Cohort study
From the table, it can be seen that the best study design is determined by the type of question					

Table 8: *PICOM table*

QUESTION TYPE	DESCRIPTION
Aetiology questions	ascertain the causal agent of a patient's condition/disease
Diagnostic questions	establish an instrument or intervention as the gold standard to differentiate those individuals with the condition/disease of interest from those without
Intervention questions	determine the effects (harmful and beneficial) of various interventions (preventative or treatment) on patient outcomes
Prognosis questions	estimate the future course of a patient's condition/disease

Table 9: *Description of study design question types*

Developing well-formulated, answerable questions

Example 1:

The major clinical question is: ***Should children with chronic renal failure be given recombinant human growth hormone?*** This may be written as:

What are the indications for growth hormone therapy in chronic renal failure in children?	This is a prognostic question, best answered by cohort studies that have followed children over time.

The PICOM table could be completed as follows:

QUESTION	POPULATION OR CLINICAL PROBLEM	INTERVENTION	COMPARISON	OUTCOME/S	METHODOLOGY BEST FEASIBLE STUDY DESIGN
Prognosis	Do children (0-18 yrs) with chronic renal failure		compared to normal children	experience growth failure and/or reach an abnormally lower final height?	Cohort study

Table 10: *Example of a PICOM table for a prognosis question*

Example 2: The major clinical question is: ***Does growth hormone therapy work?*** This may be written as:

In children aged 0-18 yrs with chronic renal failure, does human growth hormone result in increased growth compared to untreated children?	This is an intervention question best answered by RCTs, or a systematic review of RCTs, that compares growth hormone treatment with placebo/no treatment. If there is an increase in growth with therapy, you may want to know the effect of the treatment over a period of time. For example, if the growth increase is continuous over increasing years of treatment or if there is a waning effect. You may also want to know if the effect of treatment changes with different doses of growth hormone, and if there are any harms associated with it. These are all extra outcomes to be placed in the outcome column of the table.

The PICOM table could be completed as follows:

QUESTION	POPULATION OR CLINICAL PROBLEM	INTERVENTION	COMPARISON	OUTCOME/S	METHODOLOGY BEST FEASIBLE STUDY DESIGN
Intervention	In children (0-18 yrs) with chronic renal failure	does human recombinant growth hormone (hGH)	compared with placebo/no treatment	Improve growth outcomes such as final height, quality of life etc, and cause any adverse events?	RCT or systematic review of RCTs

Table 11: *Example of a PICOM table for an intervention question*

By completing the above table, you arrive at a well-formulated, searchable intervention question:

> ***In children aged 0-18 yrs with chronic renal failure, does human growth hormone result in increased growth compared to untreated children?***

By following the process described above, i.e. developing an answerable question based on the PICOM format, the KHA-CARI Guidelines Office can develop a specific search strategy for this question that will retrieve reports of relevant trials.

Appendix 5: Description of Guideline Content

Authorship and Group Membership

The names and a short affiliation address for all convenor/s and members of the guideline group are listed the summary and the full guideline when the guidelines are published. The names of the author/s of each subtopic are also listed. The rules for authorship are detailed in the KHA-CARI Guidelines authorship policy. In short authorship credit is based only on substantial contribution to:

- the critical appraisal and interpretation of published studies;
- drafting the guideline or revising it critically for important intellectual content;
- and final approval of the version to be published.

All of these conditions must be met.

The Guideline Graded Recommendations and Suggestions

The guideline/s should be clearly outlined with the grading of the evidence base identified. These should be enclosed by a textbox. Each graded recommendation and suggestion should address benefits and harms according to the level of risk in different patient subgroups. Further detail on grading and formulation of recommendations is provided below.

Ungraded Suggestions for Clinical Care

This section can be used to list information that you want readers of the document to see but which is not supported by sufficient evidence to be graded. Examples include the intervals at which certain groups of patients should be reviewed, suggestions for patient education and support, and surgical techniques. This is the appropriate place to include data when the evidence base is insufficient to support a graded recommendation or suggestion.

Implementation and Audit

This section should include clear methods of implementing the guideline and allowing for monitoring of compliance. In doing so, it should provide outcomes that can be measured and the provision for doing so. For example, in peritoneal dialysis, one could suggest that all instances of catheter blockage, catheter leakage, and tunnel infection be recorded on a form attached to each patient's notes and in a unit database, and that the unit be asked to produce quarterly statistics on these events.

Background

The background should describe the condition to be detected, treated or prevented. Management options available for the condition should be stated along with outcomes of interventions that are both beneficial and harmful to the patient.

Search Strategy

A description of the databases that have been searched, the search terms used and the date/s of the search/es are provided to writers by the KHA-CARI Guidelines Office.

What is the Evidence?

This section should list the summaries of relevant RCTs; it is not necessary to write a full systematic review. Each relevant study should be summarised as a separate paragraph that highlights key findings (i.e. number of patients, interventions used, results of outcomes measured etc).

Summary of the Evidence

This section should summarise the information presented in the *What is the Evidence* section. The four Evidence Table templates provided by the KHA-CARI Guidelines Office should be used to present the evidence.

What do the other Guidelines Say?

Other guidelines in circulation (e.g. K/DOQI, UK Renal Association, Canadian Society of Nephrology etc.) that pertain to the topic should be included here. If there is disagreement between these and the drafted KHA-CARI Guidelines, the conflict should be discussed, and reasons for the difference provided.

Suggestions for Future Research

If the recommendations have identified areas needing further research, this should be mentioned here together with suggestions of possible study designs for undertaking the research.

References

This section should contain a complete list of references for the studies included in the evidence and background section. Writers are advised to use the Vancouver reference style. See also the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations). (these recommendations were formerly called the Uniform Requirements for Manuscripts (URMs)).

Appendices

Include relevant tables here (including evidence tables and evidence profiles).

Appendix 6: Evidence Grading

Guideline grade. (1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D)	Benefit vs. harms	Overall evidence grade (A, B, C, D)	Interpretation	Implications
1A **– recommendation with a high quality of evidence.**	Benefits clearly outweigh harms or vice versa	**A.** RCTs without important limitations or overwhelming evidence from high quality observational studies. Confident that the true effect lies close to that of the estimate of the effect.	Applicable to most patients in most circumstances.	Patients: Most would want the recommended course of action and only a small proportion would not. Clinicians: Most patients should receive the course of action. Policy: The recommendation can be adopted as a policy in most situations.
1B **– recommendation with a moderate quality of evidence.**		**B.** RCTs with some limitations (methodological, imprecision, indirectness, etc.) or strong evidence from high quality observational studies. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.		
1C **– recommendation with a low quality of evidence**		**C.** RCTs with serious limitations (methodological, imprecision, indirectness, etc.) or observational studies with some limitations. The true effect may be substantially different from the estimate of the effect.	Applicable to most patients in most circumstances, that: • may warrant review when higher quality evidence becomes available or • is an obvious course of action irrespective of the evidence (no further research warranted).	
1D **– recommendation with a very low quality of evidence**		**D.** Observational studies with limitations or case series. The estimate of the effect is very uncertain, and often will be far from the truth.		
2A **– suggestion with a high quality of evidence**	Benefits closely balanced harms	**A.** RCTs without important limitations or overwhelming evidence from high quality observational studies. Confident that the true effect lies close to that of the estimate of the effect.	The best action may differ depending on circumstances or patients' or societal values and other alternatives may be equally reasonable.	Patients: Most would want the recommended course of action, but some would not depending on individual circumstances and values. Clinicians: Different choices will be appropriate for different patients, and a management decision consistent with patients' values, preferences and circumstances should be reached. Policy: would require substantial debate and involvement of many stakeholders.
2B **– suggestion with a moderate quality of evidence**		**B.** RCTs with some limitations (methodological, imprecision, indirectness, etc.) or strong evidence from high quality observational studies. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.		
2C **– suggestion with a low quality of evidence**		**C.** RCTs with serious limitations (methodological, imprecision, indirectness, etc.) or observational studies with some limitations. The true effect may be substantially different from the estimate of the effect.	The best action may differ depending on circumstances or patients' or societal values and: • other alternatives may be equally reasonable. • suggestion may change when higher quality evidence is obtained.	
2D **– suggestion with a very low quality of evidence**		**D.** Observational studies with limitations or case series. The estimate of the effect is very uncertain, and often will be far from the truth.		

Table 12: Interpretation of grading of guideline statements (recommendations and suggestions) Adapted from Institute of Medicine and KDIGO

Appendix 7: Guideline Implementability Checklist

Guideline Implementability Checklist		Y/N/?
Who?	▪ Is it clear who is required to perform the action?	
When?	▪ Is it clear, when the recommendation should be applied? ▪ For what condition? ▪ Is the condition clearly described? ▪ Are there two conditions? ▪ Are the ANDs/ORs clear?	
What?	▪ Is there a clear action statement? ▪ Is there sufficient detail on what to do or is there links to further details? ▪ Is the guideline succinct? ▪ Is the action measurable? ▪ What are the markers or endpoints that in the recommendation? ▪ Is the justification for the recommendation stated clearly?	
Where?	▪ Does the recommendation require details on the setting that the guideline is appropriate for?	
How?	▪ Is it clear how the action is to be carried out? ▪ Is there a sequence that the actions should be carried out? ▪ Is this sequence made clear?	

If the answer is **No or ?** to any of the above, re-configure the guideline recommendation in order to satisfy the checklist item

Potential Barriers for guideline implementation	Y/N/?

▪ Is there any extra equipment or staff required in order to carry out the recommendation?
  ○ What is this equipment or staff?
  ○ Can you suggestions how these extra requirements can be made available?
▪ Is there any new knowledge or skills required?
▪ Is the recommendation compatible with existing attitudes and beliefs of guideline users?
▪ Are the recommendations consistent with patient expectations?	

If the answer is **YES** to any of the above, suggest remedies and resolutions for the guideline user.

Appendix 8: Adaptation Checklist

This is a summary checklist for KHA-CARI Guidelines adaptation of KDIGO Guideline (modified from the ADAPTE checklist).

Name of Guideline being adapted:	
Sub-topic/Chapter	

STEP 1: Review of Update Search done by KHA-CARI		
KHA-CARI Guidelines Office will complete update searches to screen for studies published since preparation of the KDIGO Guideline.		
Guideline currency checklist. Please refer to the updated search results completed by KHA-CARI Guidelines		
1. Is there any new evidence relevant to the subtopic clinical practice guideline?	☐ Yes	☐ No
If **Yes,** list relevant studies		
2. Does the evidence invalidate any of the recommendations?	☐ Yes	☐ No
If **Yes** list which of the recommendations are invalidated?		
3. Do any of the recommendations require modification as a consequence of the evidence?	☐ Yes	☐ No
If **Yes** list which of the recommendations will require modification?		

STEP 2: Review of KDIGO Evidence			
1. Was the search for evidence comprehensive?			
The authors had a clearly focussed question (population, intervention, outcome). **Comments:**	☐ Yes	☐ No	☐ Unsure
Appropriate databases were searched **Comments:**	☐ Yes	☐ No	☐ Unsure
Appropriate years covered in search **Comments:**	☐ Yes	☐ No	☐ Unsure
Appropriate languages were covered **Comments:**	☐ Yes	☐ No	☐ Unsure
Appropriate keywords and combinations of keywords were used in the search **Comments:**	☐ Yes	☐ No	☐ Unsure
Detailed search strategies are provided **Comments**:	☐ Yes	☐ No	☐ Unsure
Comments on overall assessment of search (appropriate/limitations noted/unsure etc).			

STEP 2: Review of KDIGO Evidence (con't)			
2. Was bias in the selection of studies avoided?			
Inclusion and exclusion criteria are stated Comments:	☐ Yes	☐ No	☐ Unsure
The number of included and excluded references are stated Comments:	☐ Yes	☐ No	☐ Unsure
The criteria for inclusion and exclusion are clinically and methodologically valid Comments:	☐ Yes	☐ No	☐ Unsure
The process for selection of evidence is adequately described Comments:	☐ Yes	☐ No	☐ Unsure
Comments on overall assessment of bias in the selection of studies (appropriate/limitations noted/unsure etc).			

STEP 2: Review of KDIGO Evidence (con't)			
3. Overall was the evidence valid?			
Given the search strategy, the risk that relevant evidence has been missed is low Comments:	☐ Yes	☐ No	☐ Unsure
Settings and protocols of selected studies fit with the health question relevant to the sub topic Comments:	☐ Yes	☐ No	☐ Unsure
The criteria for assessing the quality and validity of the selected studies are adequately reported (e.g. types of studies, randomisation methods, patient retention etc.) Comments:	☐ Yes	☐ No	☐ Unsure
The risk that biased evidence has been reported is low Comments:	☐ Yes	☐ No	☐ Unsure
The outcomes selected are clinically sound (e.g. disease free survival might be considered too weak as evidence compared to overall survival) Comments:	☐ Yes	☐ No	☐ Unsure
Comments on overall assessment of validity of the evidence (appropriate/limitations noted/unsure etc).			

STEP 2: Review of KDIGO Evidence (con't)

4. Coherence between the evidence and recommendations

(Note: may require one table to be completed per recommendation. Alternatively the evidence base may be considered inadequate/inappropriate for all recommendations under this topic.)

The evidence is direct. Patients and interventions included in the studies were comparable to those targeted by the recommendation Comments:	☐ Yes	☐ No	☐ Unsure
Conclusions were supported by data and/or the analysis; results were consistent from study to study. When inconsistencies existed in data, considered judgement was applied and reported Comments:	☐ Yes	☐ No	☐ Unsure
The conclusions are clinically relevant and not just statistically significant Comments:	☐ Yes	☐ No	☐ Unsure
The conclusions derived from the data point to effectiveness/ineffectiveness/harm of the intervention and the recommendation is written accordingly Comments:	☐ Yes	☐ No	☐ Unsure
There is some justification top recommend/not recommend the intervention even though the evidence is weak Comments:	☐ Yes	☐ No	☐ Unsure
The hierarchy of strength of evidence is adequately described Comments:	☐ Yes	☐ No	☐ Unsure
The strength of evidence attributed to the recommendation is adequately described and justified Comments:	☐ Yes	☐ No	☐ Unsure
Risks and benefits have been weighed Comments:			
Comments on overall coherence between the evidence and recommendations (appropriate/limitations noted/unsure etc).			

Step 3: Assess acceptability and applicability of the recommendations with respect to Australia and New Zealand

ADAPTE indicates that this is done by considering the following questions:

1. Does the population described for eligibility match the population for which the adapted guideline would apply in the local setting?
2. Does the intervention meet patient views and preferences in the context of use (acceptable)?
3. Are the intervention and/or equipment available in the context of use (applicable)?
4. Is the necessary expertise (knowledge and skills) available in the context of use (applicable)?
5. Are there any constraints, organisational barriers, legislation, policies and/or resources in the health care setting of use that would impeded the implementation of the recommendation (applicable)?
6. Is the recommendation compatible with the culture and values in the setting where it is to be used (acceptable and applicable)?
7. Does the benefit to be gained from implementing this recommendation make it worth implementing (acceptable)?

Please complete checklist below.

Acceptability/Applicability of Recommendations Checklist

1. Acceptability of recommendation

(Note: may require one table to be completed per recommendation. Alternatively the evidence base may be considered inadequate/inappropriate for all recommendations under this topic.)

The strength of evidence and the magnitude of effect adequately support the grade of recommendation Comments:	☐ Yes	☐ No	☐ Unsure
There is sufficient benefit of the intervention, compared with other available management Comments:	☐ Yes	☐ No	☐ Unsure
The recommendation is compatible with the culture and values of Australian/New Zealand setting Comments:	☐ Yes	☐ No	☐ Unsure
Comments on overall acceptability of recommendations (appropriate/limitations noted/unsure etc).			

Acceptability/Applicability of Recommendations Checklist (con't)			
2. Applicability of recommendation **(Note: may require one table to be completed per recommendation. Alternatively the evidence base may be considered inadequate/inappropriate for all recommendations under this topic.)**			
The intervention is applicable to the patients in the context of use in Australia and New Zealand Comments:	☐ Yes	☐ No	☐ Unsure
The intervention is available in the context of use in Australia and New Zealand Comments:	☐ Yes	☐ No	☐ Unsure
The necessary expertise is available in the context of use in Australia and New Zealand Comments:	☐ Yes	☐ No	☐ Unsure
There are no known constraints, legislation, policies, or resources within the health care setting of Australia and New Zealand that would impede the implementation of the recommendation Comments:	☐ Yes	☐ No	☐ Unsure
Comments on overall applicability of recommendations (appropriate/limitations noted/unsure etc).			

Step 4: Review assessments to aid in decision making: justify proposed changes

The reasons for change should be discussed at the guideline adaptation group face-face meeting.

Step 5: Select between guidelines and recommendations to create an adapted guideline

Decision making and selection occurs around the five options listed below.

1. **Reject the whole guideline,** i.e. a completely new guideline would need to be written.
2. **Accept the whole guideline and all of its recommendations,** i.e. accept as is with a covering note or statement as to the direct applicability of the guideline.
3. **Accept the evidence summary of the guideline,** i.e. accept the description of the evidence (or parts of it) but reject the interpretation of the evidence and the recommendations. This would require drafting new recommendations, however an abbreviated summary of the evidence could be adopted with reference back to the source guideline.
4. **Accept specific recommendations** and identify additional recommendations where major modification is recommended. Alternatively some recommendations may be assessed as being not applicable or not supported by the evidence base and therefore rejected.
5. **Modify specific recommendations** – some recommendations may be acceptable however require modification.

Step 6: Prepare a draft adapted guideline for peer review and public comment

KHA-CARI Guidelines will provide a template which should be followed when preparing the draft adapted guideline.

Appendix 9: Peer Review Form

The Peer Review Form is available on the KHA-CARI website in 2 formats:

1. online form
2. Word document form for email submission

Example: Peer review form for reviewers of draft KHA-CARI guidelines subtopics

Thank you for agreeing to review a draft KHA-CARI guideline subtopic. Each guideline subtopic needs to be explicit and comprehensive. A copy of the draft guideline subtopic will be emailed to you.

Instructions

Please give comments on specific sections of the draft guideline subtopic. Please be as specific as possible and include the section heading and page number if needed. You can make general comments at the end of the form**.**

Please note:

Peer reviewers of KHA-CARI Guidelines have two weeks in which to submit their review. If you are unable to complete your review in this timeframe, please advise the KHA-CARI Office.

Name of subtopic for review	
Overall significance/value of the guideline subtopic (please tick):	□ Not very useful □ Moderately useful □ Useful □ Very useful
Do you agree with the guideline recommendations? **Comment**	□ Yes □ No
Do you agree with the suggestions for clinical care? **Comment**	□ Yes □ No
General comments	
Recommendation	□ Publish □ Publish after revision □ Ask writer/s to make significant changes □ Do not publish

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