Implementability

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NHMRC Standards
The following Standards apply to the Implementability module:

1. To be relevant and useful for decision making guidelines will:
   1.1 Address a health issue of importance.
   1.2 Clearly state the purpose of the guideline and the context in which it will be applied.
   1.3 Be informed by public consultation.
   1.4 Be feasible to implement.

7. To make actionable recommendations guidelines will:
   7.1 Discuss the options for action
   7.2 Clearly articulate what the recommended course of action is, and when it should be taken
   7.3 Clearly articulate what the intervention is so it can be implemented
   7.4 Clearly link each recommendation to the evidence that supports it
   7.5 Grade the strength of each recommendation

9. To be accessible guidelines will:
   9.1 Be easy to find
9.2 Ideally will be free of charge to the end user
9.3 Be clearly structured, easy to navigate and in plain English
9.4 Be available online.

Overview
There is little point in developing a high quality guideline if its recommendations cannot be implemented.

The lack of adherence to guidelines is a worldwide phenomenon. Despite investments internationally to improve the quality of guidelines, their implementation in practice and policy remains a significant challenge (Gagliardi, Brouwers et al. 2014; Gagliardi, Alhabib et al. 2015). This can result in under-use of beneficial therapies, over-use of those with little value, compromised patient outcomes or experiences, suboptimal use of resources, and avoidable harm (Gagliardi, Alhabib et al. 2015).

‘Implementation’ is the process of putting guideline recommendations into practice (NICE 2014). The features of the development, content and presentation of a guideline that enable it to be implemented are referred to together as ‘implementability’, which is well recognised as an important quality for a guideline, though it is described in many different ways in the literature and by guideline developers, governments and NGOs.

An implementable guideline is one which develops and presents content in a format that will assist uptake, therefore implementability is associated with both the content of a guideline and the communication of that content (Kastner, Bhattacharyya et al. 2015). There is mounting evidence that a guideline’s implementability can predict its uptake, and that this may also be supported by including implementation advice and tools when a guideline is disseminated (Gagliardi and Brouwers 2012).

Steps can be taken to improve the implementability of a guideline’s content throughout its development, including when involving stakeholders, synthesising evidence, formulating recommendations, and assessing feasibility and applicability (e.g. the extent to which an intervention could be implemented) (Wang, Moss et al. 2006; Kastner, Bhattacharyya et al. 2015).

Communication of the content can be enhanced by fine-tuning the message and formatting of the guideline, such as placing common recommendations together, including diagrams, and using plain language (Kastner, Bhattacharyya et al. 2015).

Efforts to improve adherence to guidelines have been extrinsic (e.g. changing the practice setting to enable guideline implementation) and intrinsic (e.g. changing the guideline to improve implementability) (Shiffman, Dixon et al. 2005; Kastner, Bhattacharyya et al. 2015). This module focuses on changes that can be made to the guideline during its development to improve implementability. It provides advice on how to develop guidelines that are easy to find, easy to understand and easy to use. Further information about implementing a completed guideline is provided in the Implementation module.
The following six principles of implementability should underpin guideline development (adapted from Gagliardi and Brouwers 2012; Kastner, Bhattacharyya et al. 2015):

1. **Ensure stakeholder engagement**
   Involve a range of stakeholders in development representing key audiences for the guideline, including clinicians, policymakers, patients and the public. See also the Engaging stakeholders module.

2. **Use robust methods to ensure trustworthiness**
   Follow transparent methods for the inclusion and synthesis of the best available and most up to date evidence. See also modules in the Develop stage of development.

3. **Exercise judgement to enhance applicability**
   Be transparent about judgements used to balance available evidence, benefits and harms, patient variability, and values and preferences. See also modules in the Develop stage of development.

4. **Consider feasibility**
   Assess the local applicability of the recommendations, including resource considerations, divergence from current practice, workforce issues and community values.

5. **Ensure clarity of message**
   Use simple, clear messages with enough information to facilitate adherence to the recommendations. See also the Evidence to decision module.

6. **Present appropriate formats**
   Develop multiple formats and ensure appropriate visual presentation to meet the needs of expected users. See also the Structuring the guideline module.

Table 1 summarises each step in the module, providing an Implementability actions checklist that developers can use to enhance the implementability of their guideline.
<table>
<thead>
<tr>
<th>Steps</th>
<th>Actions (<em>best practice</em>)</th>
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<tbody>
<tr>
<td>1. Plan for implementation</td>
<td>• Understand the needs of the target audience, including subpopulations*</td>
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<td></td>
<td>• Identify stakeholders or stakeholder groups that represent a range of perspectives*</td>
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<tr>
<td>2. Scope the guideline</td>
<td>• Identify existing (or create new) mechanisms for engaging stakeholders and document their views and preferences</td>
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<td></td>
<td>• Ensure the guideline development group is multidisciplinary and representative of consumers and stakeholders*</td>
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<td></td>
<td>• Include a clear statement of purpose using PICO*</td>
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<td></td>
<td>• Establish an implementation working group that will meet regularly as the guideline is developed and provide feedback to the development group</td>
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<td>• Conduct an audit of current practice</td>
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<td>3. Ensure trustworthiness</td>
<td>• Report the type and quality of evidence*</td>
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<td></td>
<td>• Report methods used to synthesise evidence*</td>
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<td></td>
<td>• Ensure the evidence is current</td>
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<td>• Build trust with stakeholders and consider developing a communications strategy</td>
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<td>• Refer to the standards of potential endorsers</td>
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<td></td>
<td>• Identify and manage conflicts of interest*</td>
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<td>4. Form actionable</td>
<td>• State the populations to which the recommendations apply</td>
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<td>recommendations</td>
<td>• Formulate recommendations in terms of measurable criteria (e.g. what, who, when, where and how)</td>
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<td>• Consider employing a science writer</td>
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<td>• Limit the total number of recommendations*</td>
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<td>5. Consult the community</td>
<td>• Tailor the guideline to expected users</td>
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<td></td>
<td>• Highlight the key recommendations</td>
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<td></td>
<td>• Seek feedback on the messaging and format of the guideline</td>
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<td>6. Format the guideline</td>
<td>• Ensure ways of navigating the guideline and recommendations are appropriate and clear*</td>
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<td>• Clearly delineate recommendations and keep related information together</td>
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<td>• Identify appropriate platforms for publication (e.g. journal, website)*</td>
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<td>• Amend messaging based on stakeholder feedback*</td>
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<td>• Provide multiple formats</td>
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<td>• Choose the most appropriate graphics (e.g. infographics)</td>
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<td>• Work with the guideline implementation working group or experts</td>
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<td>7. Assess implementability</td>
<td>• Consider formal assessment of implementability</td>
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<td>• Consider potential facilitators and barriers to implementation in the intended settings</td>
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What to do

1. Plan for implementation
Writing an implementable guideline requires planning for its implementation early and often throughout development.

Begin by considering the needs and preferences of the target population, which is particularly important when determining how and by whom a guideline will be used and when identifying barriers and facilitators to its uptake (Shekelle, Woolf et al. 2012; Kastner, Bhattacharyya et al. 2015). For example, developers of a guideline related to diabetes should consider the specific needs of Aboriginal and Torres Strait Islander peoples given its high incidence and prevalence in these populations. Issues related to access to service delivery for people living in rural and remote areas should also be considered.

Related advice is provided in the Engaging consumers and Engaging stakeholders modules, and it may help to look at examples of guidelines that have approached this aspect of development well. The Australian Government’s Clinical practice guidelines for antenatal care demonstrate how these considerations might shape the final guideline, as they include sections for Indigenous women and other populations (e.g. adolescent women and women in rural and remote areas) based on their specific needs.

There are numerous other aspects of a guideline’s development that will affect its implementation and it is important that these are considered early in the development process.

Consider asking the following questions (adapted from Canadian Task Force on Preventive Health Care 2014) at each stage of development to enhance implementability:

- Who are the expected users of the guideline and who will be interested in its recommendations and outcomes?
- What are the key messages for the expected users?
- Who are the principal target audiences, organisations, and groups for each of these messages?
- What are the barriers and facilitators to uptake of the guideline by the different groups of expected users?
- What knowledge translation strategy will be useful to facilitate uptake of the guideline?
- What other impacts will be made by uptake of the guideline?
- Will uptake of the guideline have a sustained effect? How can we optimise sustainability?

The Guideline Implementation Planning Checklist developed by Gagliardi, Marshall and colleagues (2015) provides a more detailed list of considerations based on a systematic review of guideline development and implementation advice. Another approach is outlined in the Guideline Implementability for Decision Excellence Model (GUIDE-M).
Any planning or decisions made regarding implementation of the published guideline should be documented in the guideline or accompanying resources (Wang, Norris et al. 2016). Constructing an implementation plan is discussed in further detail in the Implementation module.

See Step 1 of Table 1. Implementability actions checklist for a summary of actions to undertake when planning for implementation.

2. Scope the guideline
The implementability of a guideline will be affected by the relevance of the questions it seeks to address, as well as factors related to the need for the guideline, such as the amount of existing variation in practice and the availability of research evidence.

Role of the guideline development group
The guideline development group should be multidisciplinary and represent a range of perspectives, and guideline implementability should be an ongoing consideration throughout development. Consumer and stakeholder representation is crucial in this respect so that the group can assess the difference between the recommendations and current practice while the guideline is being developed. In addition, it may be helpful to identify opportunities for development group members to act as champions for implementation across the health system or within organisations. Related advice is provided in the Guideline development group module.

Consider supplementing the development group with a knowledge translation or implementation working group that includes representatives of those likely to be using and implementing the guideline (Canadian Task Force on Preventive Health Care 2014). This group might then be consulted while recommendations are being developed to comment on their wording, style and format, and to identify any other potential issues with contextualising recommendations for a local setting. In the case that resource constraints make it difficult to support such a group, instead ensure two or three members of the development group are explicitly selected to provide advice on implementation.

This is the aim for example of the Translation Research in a Dental Setting (TRiADS) Programme, which provides a framework for planning knowledge translation by integrating it with guideline development (Clarkson, Ramsay et al. 2010).

Forming the right questions
An implementable guideline should have a specific purpose and the components of the intervention or advice should be clearly described to enable replication in practice. This will only be possible if guideline questions are carefully written to outline the populations, interventions, comparisons (if relevant) and outcomes of interest (i.e. use the PICO structure). Related advice is also provided in the Forming the question module.

If a guideline has a broad scope, undertaking a formal priority setting exercise with the involvement of consumers and other stakeholders can help to refine questions and ensure they are relevant to the needs of expected users. If feasible, it may also be useful to conduct or access an audit of
practice or a clinical registry to identify current approaches to treatment or health care (Gagliardi, Marshall et al. 2015).

The HANDI project, led by the Royal Australian College of General Practitioners (RACGP), has developed a useful approach to describing interventions (developed for non-drug interventions but suitable for broader application) that encourages delineation between intervention, indication, adverse effects, and availability, which can help to ensure that guideline questions are relevant and specific. For example, consider the HANDI description of exercise as an intervention for type 2 diabetes.

Comorbidities
Consider the potential for comorbidities in the relevant patient or community population (Shekelle, Woolf et al. 2012). For example, developers of a clinical practice guideline on diabetes should consider whether additional or modified advice should be included for people with cardiovascular disease, since the two are frequently related. While planning the guideline, refer to other high quality guidance on conditions and health topics that frequently overlap in scope to ensure usability and consistency with existing advice. Consider also whether explicit links should be included in the completed guideline to other relevant advice. For more information on the management of multiple morbidities in clinical practice, see the NICE guidance on this topic.

See Step 2 of Table 1. Implementability actions checklist for a summary of actions to undertake when scoping an implementable guideline.

In addition, consider the advice provided in the Guideline development group, Engaging consumers, and Engaging stakeholders modules.

3. Ensure trustworthiness
An implementable guideline should be underpinned by a transparent development process to ensure its recommendations are trustworthy.

Trustworthiness in this context refers to the degree to which an audience finds a resource reliable, which is likely to affect its acceptability and therefore its implementability. This is related to the way key decisions are made and documented during guideline development, including during the evidence review process, the involvement of stakeholders, and the identification, management and reporting of conflicts of interest. If the process undertaken to develop a guideline is not transparent and does not follow a robust process, expected users may question its credibility, relevance and applicability. Further advice on this area is provided in the Transparency module.

Trustworthiness is also related to reputation, which can be affected by both the organisation developing the guideline and how their guideline development methods compare to best practice standards (e.g. NHMRC approval of clinical practice guidelines).

Organisations should also consider their profile and relationship with stakeholders, since building trust with them might enhance the prominence of the guideline and improve its uptake. For
example, consider opportunities to collaborate with reputable bodies or otherwise seek their endorsement of the guideline (e.g. the Guidelines for the management of absolute cardiovascular disease risk were developed by four condition groups collaborating as the National Vascular Disease Prevention Alliance, and were also endorsed by a large medical college).

See Step 3 of Table 1. Implementability actions checklist for a summary of actions to undertake in order to develop a trustworthy guideline.

4. Form actionable recommendations
Implementable guidelines and recommendations should be specific. There is evidence to support the use of specific, concrete statements to modify behaviour and increase recall however many guidelines fail to word recommendations in precise terms by considering the ‘what’, ‘who’, ‘when’, ‘where’, and ‘how’ components of behaviour (Michie and Johnston 2004).

It is important that recommendations are clearly written, behaviourally focussed, and where possible avoid giving multiple instructions in a single statement. For example, consider the following recommendation (adapted from Michie and Johnston 2004):

‘Acute day hospitals should be considered as a clinical and cost-effective option for the provision of acute care, both as an alternative to acute admission to inpatient care and to facilitate early discharge from inpatient care.’

This statement could be made clearer by using the active voice instead of the passive voice:

‘Offer acute day hospital care to inpatients or those facing acute admission to inpatient care.’

and even clearer still by specifying to whom the advice applies:

‘Service managers responsible for making treatment decisions should offer acute day hospital care to inpatients or those facing acute admission to inpatient care.’

For clinical guidelines, the TIDieR checklist may be useful in helping to describe interventions fully to ensure they can be reproduced in practice (see also training on how to use TIDieR). For example, it is important to provide relevant details about the timing and setting for interventions in relation to specific events (Hoffmann, Glasziou et al. 2014). Consider the following example recommendation (adapted from Morrell, Slade et al. 2009):

‘Trained health professionals should deliver psychologically-informed sessions to postnatal women in the woman’s home.’

This statement could be made clearer with added details on the timing of the intervention:
‘Trained health professionals should deliver psychologically-informed weekly one hour sessions to postnatal women in the woman’s home for up to eight weeks, starting at eight weeks postnatally’

Consider inviting science or technical writers to assist with the wording of recommendations and messaging elsewhere in the guideline.

See Step 4 of Table 1. Implementability actions checklist for a summary of actions to undertake when forming actionable recommendations. For more detailed information, see the Evidence to decision module and chapter 6 of the GRADE Handbook (GRADE 2013).

5. Consult the community
One of the benefits of public consultation prior to publishing a guideline is that it can be used to gather further information about its implementation. For example, comments may relate to the technology needed, how the recommendations align with industry standards or policies, human resource implications, workforce capacity, workflow considerations, and costs (Gagliardi and Brouwers 2012). For this reason it is important to reach a wide range of stakeholders at various levels during public consultation (e.g. senior managers, multi-disciplinary clinicians, consumer groups).

Public consultation may also reveal barriers and facilitators to implementing a guideline and even if developers have a limited role in this, comments may point to changes required to enhance the guideline’s implementability. For example, it may lead to changes in the messaging of recommendations for different local contexts to tailor guidelines to specific settings. This information may also assist in prioritising some recommendations over others depending on the context, particularly if the guideline includes a large number of recommendations.

See Step 5 of Table 1. Implementability actions checklist for a summary of actions to undertake when consulting the community.

6. Format the guideline
The presentation of a guideline is an important feature that can enhance implementability. Planning for this may be generic across audiences or may lead to the development of additional or modified resources to target specific populations and expected users. In finalising the format of their guideline, developers should again consider who will use the guideline, how they will access it, whether more than one format should be developed, and whether they could make use of existing platforms to reach users (e.g. consumer support websites, journals, clinical tools) (Gagliardi and Brouwers 2012).

Plan for how the content should be navigated (e.g. via a table of contents, section headings, online tabs) and whether the information should be layered (e.g. differentiate content that must be read from content that should be read). Include a list or summary of recommendations and consider using tables and graphics to display information clearly. For example, the Australian Government
provides a useful overview at the beginning of its Clinical practice guidelines for antenatal care to summarise each recommendation, its level of evidence and its page number in the main document.

Ideally, guidelines should be developed in multiple formats to support wide dissemination, such as downloadable files, web-based platforms, and in peer reviewed journals (Gagliardi, Marshall et al. 2015; Kastner, Bhattacharyya et al. 2015). Guidelines should also be paired with supporting resources, such as plain language summaries, policy briefs, podcasts and blogshots. For example, the Australian Commission for Safety and Quality in Healthcare has developed clinician and consumer fact sheets, infographics, supporting evidence sources and videos to accompany their Acute Stroke Clinical Care Standard.

More innovative approaches might include interactive functionality or the use of living recommendations that are regularly updated when new evidence becomes available. For example, Elliott and colleagues (2014) have described a process for creating living systematic reviews which could be applied to guideline development.

See Step 6 of Table 1. Implementability actions checklist for a summary of actions to undertake when formatting the guideline.

7. Assess implementability
It may be useful to assess the overall implementability of a guideline when forming recommendations or finalising the guideline thereafter. Consider potential barriers or facilitators to implementing the recommendations in their intended setting (Shiffman, Dixon et al. 2005) and identify opportunities to enhance implementability further at this point prior to publication and dissemination.

There are tools available to undertake such an assessment, such as the GuideLine Implementability Appraisal (GLIA) tool (and its recent update), however these have not been formally evaluated and their use may be resource intensive, particularly if each recommendation must be assessed separately (Shiffman, Dixon et al. 2005).

See Step 7 of Table 1. Implementability actions checklist for a summary of actions to undertake when assessing implementability.
**NHMRC requirements**

Developers seeking NHMRC approval of their guideline must meet all *procedures and requirements*. Many of these are related to aspects of guideline development that, when undertaken according to the advice in this module, can enhance the guideline’s implementability. For example, they cover aspects of the guideline’s governance and stakeholder involvement (including public consultation), scope and purpose, evidence review process, recommendations and structure and style.

**Useful resources**

**Tools**

GUIDE-M  
GRADE working group  
GuideLine Implementability Appraisal (GLIA) and update  
Guideline Implementation Planning Checklist  
AGREE II  
TIDieR checklist and training tool  
NICE - Multimorbidity: clinical assessment and management

**Examples of implementation planning in guidelines**

Clinical practice guidelines for antenatal care (DoHA 2012)  
Remote Primary Care Manuals  
HANDI project  
Acute Stroke Clinical Care Standard  
Translation Research in a Dental Setting (TRiADS) Programme

**References**


