The Clinical Guideline Programme

of the
National Institute for Health and Clinical Excellence (NI CE)

A review by the World Health Organization
May 2006

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ABSTRACT

The National Institute of Clinical Excellence (NICE) is responsible for providing guidance to the National Health Service in England and Wales on the clinical- and cost-effectiveness of medicines and medical technologies. NICE requested WHO to carry out an external review of their Clinical Guidelines programme as part of a broader effort to further develop and strengthen the programme.

The WHO team of experts based their report on the review of a number of guidelines and extensive discussions with NICE staff, members of the national collaborating centres, the guideline development groups and other stakeholders during the course of two visits during the spring of 2006.

The report contains a series of recommendations on how NICE could further develop the guideline development process.

As NICE is internationally a leading institution in guideline development, the recommendations and observations contained in this report will be useful to other countries that are involved in similar efforts.

KEYWORDS

COST-BENEFIT ANALYSIS
PHARMACEUTICAL PREPARATIONS – standards
TECHNOLOGY ASSESSMENT, BIOMEDICAL
ECONOMICS, PHARMACEUTICAL
EVALUATION STUDIES
EVIDENCE-BASED MEDICINE
UNITED KINGDOM
EUROPE

EUR/05/5063284

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<tr>
<td>Guidance</td>
<td>Recommendations from a NICE guidance programme</td>
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<td>Clinical guideline</td>
<td>NICE document describing the appropriate treatment and care of people with specific diseases and conditions within the National Health Service in England and Wales</td>
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<td>GRADE</td>
<td>Grading of Recommendations Assessment, Development and Evaluation Working Group</td>
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<td>Guideline review panel</td>
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<td>GDG</td>
<td>Guideline development group</td>
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<td>HTA</td>
<td>Health technology assessment</td>
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<td>NCC</td>
<td>NICE national collaborating centre</td>
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<td>NHS</td>
<td>National Health Service</td>
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<td>NICE</td>
<td>National Institute for Health and Clinical Excellence</td>
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<td>QALY</td>
<td>Quality-adjusted life year</td>
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<td>Scope</td>
<td>Initial document describing the clinical problem that a guideline will cover</td>
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<td>SIGN</td>
<td>Scottish Intercollegiate Guidelines Network</td>
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<tr>
<td>Technology appraisal</td>
<td>A form of guidance, produced by NICE, that is based on a formal health technology assessment and other evidence</td>
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<td>World Health Organization</td>
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Acknowledgements

Undertaking this review was a great privilege for all the members of the Review Team who hope to have provided recommendations that will assist the continuing development of the Clinical Guideline Programme of the National Institute for Health and Clinical Excellence (NICE).

The Review Team would like to acknowledge the generous assistance and cooperation provided by the staff involved at NICE, the National Collaborating Centres, the Department of Health and the associated guideline development groups (GDGs), as well as the stakeholders who very kindly agreed to be interviewed and who were enormously helpful during the review.

In particular, for their enthusiasm and hospitality during the review, the Team would like to thank:

- Professor Sir Michael Rawlins, Chairman of the Board of NICE
- Mr Andrew Dillon, Chief Executive, NICE
- Dr Mercia Page, Director, Centre for Clinical Practice, NICE
- Dr Françoise Cluzeau, Technical Advisor, Centre for Clinical Practice, NICE

The review would not have been possible without the tireless assistance of and organization by Ms Heather Stegenga, who handled all the logistics, ensured that the Team had all the relevant documents and coordinated over 80 interviews that were completed in ten days in London in May 2006.

Competing interest

Two members of the Review Team are also active members of the Grading of Recommendations Assessment, Development and Evaluation Working Group (GRADE). One member of the Review Team was Chair of the Guidelines International Network during the preparation of the report. WHO has been recommending the use of GRADE methodology in the preparation of WHO guidelines since 2001.
Executive summary

Background

In 1999, the National Institute for Clinical Excellence (NICE) was established as a Special Health Authority to provide guidance to the National Health Service (NHS) on the clinical and cost effectiveness of new and existing health technologies, as a mechanism to address problems related to variation in the quality of care. In 2005, the functions of the Health Development Agency were transferred to NICE, which then became the National Institute for Health and Clinical Excellence, and the Institute is now responsible for producing both public health and clinical guidance.

In 2003, at the request of NICE, the World Health Organization Regional Office for Europe (WHO) carried out a review of the Technology Appraisal Programme. In 2005, NICE requested the Regional Office to carry out a similar independent review of the Clinical Guideline Programme. The aim of the review was to evaluate the clinical guidelines at several levels based on a sample of those published to see whether:

- NICE methodology, in use at the time of development, had been consistently applied;
- the results are reproducible;
- the relationship between recommendation and evidence was transparent;
- collaboration with stakeholders had been effective.

Methods

The Review Team visited the Institute twice, on 8-12 May and 29-31 May 2006. As outlined in the terms of reference, a sample of six guidelines (the most recently published from each national collaborating centre (NCC)) was used as the basis for the review. More than eighty interviews were conducted among staff from NICE and the NCC, with members of the GDGs and the guideline review panels (GRP), with stakeholders’ representatives (from patient groups, the pharmaceutical industry, primary care trusts, Royal Colleges, the Department of Health), and with end users (managers, clinicians and patients). The draft report was discussed with the NICE executive management during the second visit for feedback and correction of factual errors. The report represents the consensus view and recommendations of the Review Team.

Findings

NICE is one of the largest, most productive and best organized developers of clinical guidelines in the world and commissioning this review indicates the Institute's continuing commitment to the development and improvement of its processes and methods. The specific terms of reference of the review relate only to the process of guideline development and the Review Team recognizes that this process is complex and in constant development. The Review Team believed that in order to contextualize the findings against the terms of reference, it was important to consider other aspects of guideline development, including the definition of scope, dissemination/implementation and international standards and experiences. Brief comments on these aspects are therefore included in this review.

The Team noted that the methodology in use at the time the guidelines sampled were published, had not been consistently applied by all the NCCs. Thus, the results of the guideline development process were generally not reproducible. As the guidelines sampled had been published at different
times, some of the inconsistency was due to the fact that each guideline was developed using a different version of the NICE guideline methodology. The relationship between recommendations and evidence in the guidelines evaluated was generally not transparent. Collaboration with stakeholders in the development of the guidelines through the consultation and feedback mechanisms available was in general very effective. However, collaboration on the implementation of the guidelines was found to be less effective.

**Strengths**

NICE has a large number of highly motivated and enthusiastic staff and contributors with a wealth of diverse competencies. It is a well resourced, well managed and, justifiably, proud organization without arrogance. It is also highly innovative, continually evolving and, in many areas, ahead of comparable organizations around the world. The fact that the NCCs are located in professional Colleges at an arm’s length from NICE is one of the strengths of the current structure of the Clinical Guidelines Programme.

NICE is continually developing the methods used in the Clinical Guidelines Programme rendering them moving targets that can be difficult to evaluate. The Programme has excelled particularly with respect to patient and stakeholder involvement, an area to which it is strongly committed and in which it invests heavily. It is continually developing these processes and can be said to be leading the way internationally in this area. There are many other admirable elements of NICE methodology, including its technical manual.

It would appear that the methods used in the NICE Clinical Guidelines Programme are widely respected and are increasingly being taken into consideration. Perceptions of their usefulness vary, however, as does the extent to which their recommendations are being implemented.

**Opportunities for development**

To assure further development of the core competencies needed for guideline development, consistency across NCCs, and quality assurance for each competency, NICE should rethink the optimal size of a NCC. Given the importance of clinical leadership and the necessity to assure continuity, academic growth and the capacity to manage a sufficient number of GDGs at a time, minimal staffing of a NCC would seem to be the equivalent of 20 full-time staff. There are several options for achieving this target, such as merging NCCs, enlarging them or merging them with centres that are not located in Colleges but that maintain strong links with them.

Enhanced collaboration with international and national organizations, would enable NICE to capitalize more on what is happening elsewhere and to reduce unnecessary duplication of effort (especially in undertaking systematic reviews). While it is clear that the primary responsibility of NICE (and therefore its resources) is to provide advice within England and Wales, the Institute is also in the unique position of being able to share its experiences and knowledge with others, particularly those working with fewer resources. While recognizing that time is a limiting factor, the Review Team felt that – given the experience of NICE – the Institute should look for ways to further enhance national and international collaboration.

Guidelines are developed within an 18-month time line using a standard template of approximately 30 questions (NICE Guidelines Development Methods Manual 2004, 2005, 2006). Nonetheless, there was a significant variation between the scopes of the guidelines reviewed. As a result, the
NCCs and the GDGs are under significant pressure to deliver within clearly stated time frames, and with fixed resources, since work plans are finalized before the clinical questions for a guideline have been agreed.

The current approach to the development of guidelines is both expensive and slow. These factors, and the resulting pressure on the NCCs and the GDGs, could render the guidelines unsustainable. Other guideline development models, including methods of scoping and budgeting work plans, should be considered. Alternative types of guidelines should be also considered, such as shorter, more focused guidelines, umbrella guidelines, rapid response guidelines and adapted guidelines from other institutions.

Conflict of interest declarations of the GDG members are collected but not published. Although the Manual describes how conflicts of interests should be handled by GDGs, there is at present no consistent and documented application of the policy across NCCs. The ways in which systematic reviews are conducted also vary. For example, these are sometimes carried out by a single reviewer; in other cases, there is little or no involvement of clinicians who are familiar with the topic.

In the guidelines reviewed, integration of the economical and clinical approaches to making recommendations was lacking. This was reported to be a general problem, which may be partly due to the emphasis placed on the formal evaluation of cost-effectiveness, using the (decision-analytic) modelling techniques stated in the Manual. The resulting evaluations may or may not be informative for the GDG for the following reasons. Firstly, in the process of guideline development described, it was not clear if the GDGs had been sufficiently involved in the development of the economic questions. Secondly, in the current process of guideline development, very little emphasis is put on checking these models for technical accuracy, in contrast to the rigorous scrutiny given to the economic evaluations prepared for the health technology assessment (HTA) programme. When developing guidelines, it may be useful to include an assessment of costs and impact of implementation at an early stage in the process. According to the Manual, this assessment is not integrated into the development phase but conducted by NICE during the validation period of the guidelines as a separate cost-impact analysis.

Since health inequalities are not included in the terms of reference of the Institute, there is no consistency in how GDGs evaluate them. There is generally a lack of transparency in how recommendations are reached; for example, summaries of findings do not accompany each recommendation. The approaches used for grading the quality of the evidence were originally based on the 'hierarchy of evidence' methods used by the Scottish Intercollegiate Guidelines Network (SIGN) and others but they have gradually been modified. The grades of recommendation were based on the direct relationship between the study design and the strength of the recommendation, an approach which has generally been recognized as having many limitations. Indeed, in reviews of guideline implementation carried out by the Institute, the letter grades used were found to have potential adverse effects on implementation. For example, some users suggested that only 'grade A' recommendations should be implemented, which was definitely not the intent. For grading evidence, NICE is continuing to recommend in its Manual the use of a modified version of the SIGN grading approach. At the same time, it is piloting the use of the GRADE approach to assessing evidence at some NCCs. NICE has decided to eliminate the grading of recommendations altogether but the Review Team believes that this solution will cause problems. One alternative would be to consider systems of grading recommendations that provide the target audience with appropriate guidance based on the judgment of all factors, not only of study design and/or level of evidence.
NICE has restructured its GRPs whereby the second round of stakeholder consultations on draft guidelines has been dropped and peer reviews by statisticians and health economists included. While these changes are generally supported, there is also a need for further reflection on the composition of GRPs and peer reviews by methodologists and clinical experts.

Over the past 18 months, NICE has increased the number of staff involved in the implementation of the clinical guidelines from 0 to 34. This is commendable especially in the light of the widely-held perception that their implementation needs further development. However, this investment should be better integrated with the development phase of the guidelines.

The NICE Clinical Guideline Programme has undergone rapid development and continues to evolve. Although this is admirable, there is a need for a more rigorous evaluation of the methods used and the resulting products to ensure that the decisions taken on methods of developing the guidelines are well-informed. This is particularly important as, to a large extent, NICE has a monopoly on guideline development in England and Wales.

**Key recommendations**

1. NICE should develop several types of clinical guidelines, rather than continue to use the current 'one size fits all' approach. These could include:
   - shorter, more focused guidelines;
   - compilations of these as "umbrella guidelines";
   - rapid response guidelines; and
   - guidelines produced by other organizations and endorsed by NICE.

2. The NCCs responsible for developing guidelines should have strong clinical leaders and a minimum staff of approximately 20 people. The NICE technical team should be expanded to include systematic reviewers that could both carry out the methodological work and support the NCCs in making the reviews, with slots for exchanges between the NCCs and the technical team.

3. GDGs should decide on the clinical questions to be included in a guideline prior to finalization of the work plan and the budget.

4. NICE should set up a standing committee to review all disclosure statements prior to the commencement of GDG meetings.

5. Minimum standards should be set for the reviews including:
   - the critical and systematic evaluation of the necessity of the review;
   - protocols that have undergone a peer review and are publicly available;
   - the involvement, throughout the preparation of the review, of clinicians familiar with the topic.

6. It is recognized that the Institute is currently required, by Parliament, to consider the clinical- and cost-effectiveness of recommended treatments. However, the types of economic evaluation provided should be determined by the needs of the decision-makers and the guideline development process should include the evaluation not only of cost-effectiveness but also of cost consequences.
7. The Clinical Guidelines Programme should work closely with the Public Health Guidelines Programme to ensure that health inequalities are systematically considered when developing clinical guidelines.

8. To improve transparency in going from evidence to recommendations, the findings relating to each recommendation should be summarized in a table and both the quality of the evidence and the strength of recommendations should be graded using a fully validated and internationally accepted approach. Currently, the best option is the approach proposed by the GRADE working group, of which NICE is an active member.

9. GRPs should have the resources required and the responsibility for commissioning peer reviews by methodologists (experts in systematic reviews and guidelines development), clinical experts on the topic and, when relevant, health economists.

10. Implementation consultants should be involved at the beginning of the guideline development process, stakeholders should be invited to comment on implementation and a tool kit should be used to ensure that implementation issues are considered systematically for each recommendation.

11. Evaluation should be an integral part of NICE’s guideline development processes to allow for informed decisions on methods for developing the guidelines and to establish minimum standards. This should include an evaluation of the methods used to develop the guidelines and of their quality and impact.

12. NICE should strengthen collaboration with national and international groups.

**Complete list of recommendations**

**Opportunities for development: Structure**

1. Strong clinical leadership of the NCCs should be ensured.

2. NCCs should have methodological competency in:
   - carrying out systematic reviews
   - making economic evaluations
   - managing group dynamics and consensus development
   - editing recommendations and guideline texts
   - implementing and implementability of the guidelines.

3. The current NCC model with links to Colleges should be maintained but minimal staffing for the development of guidelines (approximately 20 people) needs to be ensured in each NCC. This can be done, for example, either by merging NCCs, expanding the size of smaller NCCs, or through the establishment of base units outside the Colleges but in centres with strong links to the Colleges.

4. Adequate networking between NICE and the NCCs should be assured to support the five competency areas listed above. This could include, for example, expansion of the NICE methodology group to include systematic reviewers both to carry out the methodological
work and to support the NCCs in reviews, with slots for exchanges between NCCs and the methodology group.

5. The competencies of the various programmes within NICE (for example, those of the economic evaluation teams working on the technology appraisals and guidelines) should be linked.

6. Competency standards should be formalized to include: (1) quality standards for each NCC in their contracts with NICE; and (2) the agreed expectations of Colleges with respect to stakeholder involvement and implementation.

7. Links with external groups in the relevant fields, both within the United Kingdom and internationally should be strengthened.

Opportunities for development: process and outcome

8. NICE should develop alternative models for producing guidelines rather than use a 'one size fits all' approach. The Review Team suggests four types of products:
   - shorter, more focused guidelines
   - compilations of these as "umbrella guidelines"
   - rapid response guidelines, and
   - guidelines produced by other organizations and endorsed by NICE.

9. NICE should consider two additional criteria for selecting topics:
   - Implementability – recognizing that the inclusion of discussions on implementation at the start of guideline development may improve the quality of the guideline;
   - Inequality in health – to enable consideration of the possible impact of the guideline on reducing health inequalities.

10. A systematic approach to the collection of relevant baseline data on existing epidemiology and service delivery, as proposed in the consultation paper, should be used as part of the topic selection process, and to prioritize clinical questions.

11. In defining the scope and formulating questions, NICE should involve the GDG Chair and at least some of the GDG members at an early stage. The GDG should be responsible for deciding the final set of clinical questions prior to finalization of the work plan and budget.

12. Key target audiences should be identified during the scoping stage at the start of the guidelines development process and reviewed at the end of the process, when different versions of the guidelines are being prepared.

Opportunities for development: Forming and running a GDG

13. As regards the selection of GDG Chairs, NICE and the NCCs should agree on standard criteria, selection processes (particularly as regards the question of whether to advertise or use informal networks), expectations and training (minimum standards and options when flexibility is desirable).
14. The core training of the GDG Chairs should be carried out by NICE and include a meeting of the Chairs. NCCs should supplement this.

15. NICE should organize regular meetings of and communication among GDG Chairs (e.g. a discussion list) to support shared learning and identify common needs for improvement in the training of and the processes used by GDGs.

16. At least one external methodologist should be included as a full member of each GDG and the roles of the NCC technical staff should be clarified. The NCC technical staff need not necessarily be full members of GDGs but the approach to this question should be consistent.

17. A brief disclosure of competing interests should be published with the guidelines and the complete text should appear on the NICE web site.

18. NICE should convene a standing committee to review all disclosure statements prior to the commencement of GDG meetings, and whenever there are relevant changes in the conflicting interests reported by GDG members.

**Opportunities for development: Identifying and reviewing evidence**

19. Minimum standards should be set for systematic reviews including:
   - a critical and systematic evaluation of the necessity for a new review;
   - the involvement, throughout the review process, of clinicians familiar with the topic;
   - an evaluation of the protocol by clinicians familiar with the topic, methodologists and, when relevant, patients and other decision-makers;
   - the availability of the protocol on the NICE web site;
   - routine training of clinicians (for example, registrars or fellows, who would generally have more time than senior clinicians, be more likely to benefit from the training experience and be less costly to use in the reviews).

20. It should be made clear that, as well as using randomized clinical trials, the NCCs and GDGs should be encouraged to use observational studies, where appropriate, in developing recommendations, as described in the Manual.

**Opportunities for development: Using economic data in recommendations and guidelines**

21. It is recognized that currently the Institute’s requirement, laid down by Parliament, is to consider the clinical- and cost-effectiveness of recommended treatments. However, the types of economic evaluation provided should be determined by the needs of the decision-makers, that is, those implementing the guidelines and funding the interventions. There should be greater focus on the assessment and disaggregated reporting of the most important impacts of resource utilization, and on the question of which actors in the health care system will bear the costs and impacts.

22. Formal systematic reviews of cost-effectiveness studies should not be made, although a systematic search for relevant cost-effectiveness studies should be carried out. Those found should be reviewed with a view to deciding on modelling exercises, when these are deemed necessary, and to possibly identifying a study that addresses the use of appropriate methods and data.
23. Selected cost-effectiveness analyses should continue to be carried out with decision analytic models when there is reason to believe that these might influence a recommendation. The analyses required should be agreed during the scoping stage of the review process or shortly thereafter so that they can be started at the beginning of the guidelines development process and completed within a reasonable time frame relative to the work of the GDG. Clinicians should be involved in planning the model and receive sufficient training to do so.

24. When cost-effectiveness models are used, the full model description and spreadsheets (or other format) should be made available on the NICE web site.

25. In making recommendations, consideration of important costs (resource utilization and consequences) should be integrated with consideration of other important consequences (benefits and harms).

Opportunities for development: Consideration of equity

26. The Clinical Guidelines Programme should work closely with the Public Health Guidelines Programme to ensure that health inequalities are routinely considered when developing clinical guidelines.

27. Throughout the stakeholder consultation process, the involvement of the disadvantaged and consideration of equity should be assured. This could be achieved by:
   • including in the GDGs, practitioners with experience in disadvantaged areas, patients from or with an interest in disadvantaged populations, or people with practical experience in implementing guidelines in disadvantaged areas;
   • ensuring that organizations representing the perspective of disadvantaged populations are registered as stakeholders and have the opportunity to comment on the guidelines;
   • considering whether there are plausible reasons for anticipating different effects in disadvantaged populations and, if so, by collecting and analysing additional relevant information thereon.

28. The GDGs and the NCCs should consider the need for additional information on disadvantaged populations, including their utilization of and access to care and the availability of resources to address inequities.

29. Instead of the GDGs attempting to weight quality-adjusted life years (QALYs) to take account of inequalities, the results of the studies should be made available to them or the decision-makers to help them make judgments on equity. When considering disadvantaged populations, it is particularly important to pay attention to costs to individuals as well as costs to the NHS.

30. When making recommendations, GDGs should consider:
   • possible differences in values among disadvantaged populations;
   • inequalities relating to access to care and language barriers;
   • possible needs for local allocation of resources (e.g. in primary care trusts) and incentives (e.g. linking pay for performance to equality targets);
   • possible differences in comprehension among disadvantaged populations and the need for tailored patient information; and
• the need for data on disadvantaged populations and for appropriate indicators for monitoring implementation of the guidelines in disadvantaged populations.

Opportunities for development: Grading the quality of evidence and strength of the recommendations, and going from evidence to recommendations

31. In the NICE Manual and during training of NICE and NCC staff and GDGs, the following should be clearly acknowledged:
   • Evidence of the effect of an intervention is essential but not sufficient for making recommendations. Judgments and a consensus are always required.
   • The roles of the different types of evidence (information) and judgments that are used in making a recommendation.
   • The quality of the evidence is not the same as the strength of a recommendation. Both should be graded explicitly rather than implicitly to protect against errors, resolve disagreements, facilitate critical appraisal and communicate these judgments to others.

32. A framework should be designed to clarify the different types of evidence (information) and judgments required for different recommendations with an explanation of how the different types of information are used.

33. All the different types of evidence used, not only evidence of effects, and the judgments made by GDGs, should be explicitly reported.

34. The findings for each recommendation should be summarized in a table.

35. NICE should consider the approach suggested by the GRADE Working Group in relation to assessing both the quality of the evidence and the strength of the recommendations and should continue to work closely with the GRADE Working Group to develop the approach and systematically evaluate it.

36. “Use only in the context of research” should be an explicit option for inclusion in recommendations and there should be clear guidelines on when it is appropriate to consider and recommend the inclusion of this sentence.

37. The NICE Manual should include options for GDGs on how to reach a consensus or take decisions, including formal consensus and voting methods. GDGs should agree and report on the methods they use and NICE should undertake comparative evaluations of alternative methods.

Writing the guidelines

38. For patient and consumer information, the current approach to content, development and dissemination needs to be modified. It is possible that this is adequately addressed in the proposed changes to the Manual, but NICE should ensure that its approaches to providing patient information are consistent with the available research on doing so most effectively. This could be done, for example, by involving consumers in developing the information (including the quantitative information), making it available for decision-making, when appropriate (e.g. for summaries of findings tailored to patients), and starting with questions raised by patients and consumers rather than the evidence.
39. Target audiences for key recommendations should be systematically identified, their information needs investigated and information tailored to address their needs.

40. Although current IT systems may not fully support electronic dissemination, the development of an electronic method of guideline delivery, integrated with other NHS developments in this area, should be a priority.

**Consultation with and response to stakeholders**

41. NICE should make comparative evaluations of how consumers and other stakeholders are involved.

42. An evaluation of how to manage submissions from stakeholders, apart from cutting out steps, such as the second round of comments on draft guidelines, should be made, including more structured submission processes.

43. The extent of involving individuals within stakeholder organizations should be assessed and consideration should be given to supporting strategies to improve such involvement. This should include the gradual introduction of explicit expectations and some monitoring of how stakeholders involve individuals within their organizations.

**Guideline Review Panels (GRPs)**

44. The composition of GRPs should include primary and secondary care clinicians, managers, consumers, methodologists, and possibly others; the pharmaceutical industry should not be represented in the panels.

45. The elimination of the second round of stakeholder comments on draft guidelines is acceptable; however, the impact of this change should be evaluated by, for example, commissioning peer reviews and building in routine process checks by NICE and the NCCs throughout the guideline development process. Ideally, this change should be introduced in a controlled way that would facilitate a more in-depth evaluation.

46. In addition to the proposed peer review by statisticians and health economists, peer reviews by methodologists (people with expertise in systematic reviews and guidelines development) and clinical experts on the topic should be carried out. The GRPs should be involved in commissioning the peer reviews.
**Dissemination and implementation**

47. Implementation consultants should be involved at beginning of the guideline development process and include explicit and systematic consideration of the implementation issues related to each recommendation.

48. An implementation template or tool kit for use by the GDGs should be developed.

49. Guideline development should be integrated with service delivery through, for example, the service delivery framework and the quality and outcomes framework.

50. Expectations regarding dissemination and implementation should be explicitly stated in contracts with the Colleges, including agreements about conferences organized by the Colleges and the incorporation of the NICE guidelines in training materials and activities.

51. Implementation issues should be discussed with stakeholders at the beginning of the guideline development process in order to identify likely barriers and facilitators related to implementing changes. A discussion on implementation issues should also take place at the end of the guidelines development process.

52. Implementation research should be viewed as integral to NICE’s mission rather than optional and investment in this area should be increased substantially. There should be collaboration and exchange of experiences with other implementation researchers in the United Kingdom and internationally.

**Research and development**

53. NICE needs to strike an appropriate balance between evolution and the demands this puts on the staff and contributors.

54. Evaluation should be an integral part of the guideline development processes and involve:
   - more routine evaluations of methods used, including the ongoing development of minimum standards of methods;
   - well-designed evaluations of the quality and impact of NICE guidelines to allow for informed decisions about methods.
Introduction

Background to the review

In 1999, NICE was established as a Special Health Authority to provide guidance to the NHS in England and Wales on the clinical- and cost-effectiveness of new and existing health technologies, as a mechanism to address problems related to variation in the quality of care. As described by the founding and current Chair of the Board, the initial functions of the Institute were broadly:

- to appraise new and existing health technologies;
- to develop clinical guidelines; and
- to promote clinical audit and confidential enquiries.

It was evident that the availability of technologies, as well as quality of care, varied according to post-code. 'Post code prescribing' describes the situation where patients' access to treatment is determined by decisions made by the local health authorities that have budgetary control over the purchase of new technologies for a given geographic area. Concerns were raised that there should be faster access to new medicines and that the NHS needed to achieve greater value for money. NICE was designed as an independent and national authority to address all of these needs.

The functions of NICE have changed from its initial remit. NICE’s role in relation to public health was set out in the 2004 White Paper, ‘Choosing health: making healthier choices easier’. In it, the Government set out key principles for helping people to make healthier and more informed choices about their health. The Government commissioned NICE to gather existing knowledge and guidance on ways of promoting good health and treating ill health. In 2005, the functions of the Health Development Agency were transferred to NICE (now National Institute for Health and Clinical Excellence) thus extending the Institute’s mandate into the public health area.

In 2003, at the request of NICE, the WHO Regional Office for Europe carried out a review of the Technology Appraisal Programme. At that time, the clinical Guideline Programme was still in the early developmental phase, and only a few guidelines had been completed. In 2005, NICE decided that a similar independent review of the Clinical Guideline Programme should be carried out and requested the WHO Regional Office for Europe to organize it.

The agreed terms of reference for the review and a list of the reviewers are shown in Tables 1 and 2, respectively.
Table 1. Terms of reference

A minimum of five and a maximum of eight health clinical guidelines, published by the NICE between December 2002 and March 2006, should be selected for review. The guidelines selected should have been developed by a variety of National Collaborating Centres (NCCs) and reflect the diversity of topics commissioned by the Department of Health.

The review process should identify criteria to evaluate the clinical guidelines at several levels:
- Has NICE methodology, in use at the time of development, been consistently applied?
- Are the results reproducible?
- Is the relationship between recommendation and evidence transparent?
- Has engagement with stakeholders been effective?

A report should be prepared for publication by WHO and for consideration by the Board of the NICE, setting out the results of the review, the conclusions reached by the reviewers and their recommendations to the Institute for any changes to the current guideline development process and methodology.
Table 2. Members of the external review team

Kees de Joncheere
Kees de Joncheere has been Regional Adviser for Health Technology and Pharmaceuticals, WHO Regional Office for Europe, since 1996. In this function he has been working with governments and health authorities in the WHO European Member States to improve access to and the prescription and use of medicines. With the EU Commission and the 25 EU countries, he has been working specifically on public policies on reimbursement, pricing and the rational use of medicines. He was co-editor of Drugs and Money, 7th edition, and has been involved in a series of EU-funded projects in this area. He was also involved in the WHO review of the NICE Technology Appraisal Programme in 2003.

Suzanne Hill
Suzanne Hill is a clinical pharmacologist and public health physician who has worked with the World Health Organization in Geneva since late 2005. Prior to that, she was Associate Professor of Clinical Pharmacology at the University of Newcastle, Australia, where she worked on pharmacoeconomics and the use of evidence-based medicine in decision-making, including the provision of technical and methodological advice to the Department of Health in Australia. She has also worked with several WHO guideline development groups and is a member of the GRADE Working Group. She led the WHO review of the NICE Technology Appraisal Programme in 2003.

Niek Klazinga
Niek Klazinga is at present Professor of Social Medicine at the Academic Medical Centre, University of Amsterdam, and Advisor on Policy and Research of the Municipal Public Health Services of the city of Amsterdam. Between 1985 and 1999, he worked for the Dutch National Institute for Quality Improvement in Health Care (CBO) and was closely involved in the development and running of its guideline development programme. Among his many health services research activities, Niek Klazinga participated in the AGREE project and has over the past years conducted research on guidelines implementation, indicator development and health system performance. For a period of six years, he has been a member of the Scientific Council of ANDEM, Paris, during the development phase of its guideline programme.

Marjukka Mäkelä
Marjukka Mäkelä is a specialist in general practice and currently works as Director of the Finnish Office for Health Technology Assessment at Stakes (the national research and development centre for welfare and health) in Finland and as part-time Professor of General Practice at the University of Copenhagen. She was responsible for starting and managing the national clinical guidelines programme in Finland in 1994-2002, and has participated in national and international research groups studying guideline methodology, implementation and effectiveness. Marjukka Mäkelä is a founder member of the Guidelines International Network (GIN), of which she was the Chair in 2005-2006.

Andy Oxman
Andy Oxman is a health services researcher in Oslo, Norway. His research focuses on developing and evaluating methods of helping patients, healthcare professionals and policy makers to make informed choices about health care. He has conducted research on and published systematic reviews, guidelines development and implementation since 1988. He was Chair of the Cochrane Collaboration Steering Group from 1998 to 2000 and Editor of the Cochrane Reviewers’ Handbook from 1993 to 2003. He chairs the GRADE Working Group and the Subcommittee on the Use of Research Evidence of the WHO Advisory Committee on Health Research.
The health policy context

Before considering the clinical guidelines in detail, it is important to define the context in which NICE is operating and developing guidance, as this context is particular to England and Wales.

The United Kingdom National Health Service (NHS) has provided universal access to health care for British citizens since 1948. Features of the NHS that are pertinent to this review are that policies and standards of care are set centrally (by the Department of Health), and the implementation and delivery of the health services are managed locally and funded by NHS Trusts (hospital and primary care) that employ the staff involved in health care delivery and provide the services. Further details on the NHS can be found at http://www.nhs.uk.

The current management approach to resource allocation decisions is decentralization. Allocative responsibility for budgets lies with the primary care trusts, that commission services from general practitioners, and hospital trusts. Health services and technologies are selected, provided and paid for by trusts. Each trust is free to allocate its funds at its own discretion to best provide for the health care needs of its population within a geographical area.

In the late 1990s in the United Kingdom, there were several policy concerns about the quality of health care provided in the NHS. Firstly, that the United Kingdom did not spend as much on health care as comparable countries (see OECD Health Data 2003 for recent comparisons, http://www.oecd.org) and that the services varied from one trust to the next. Secondly, there were concerns about the slow uptake of new technologies and the uncertainty about the extent to which medical practice was evidence-based. The third concern was that health service delivery did not meet the growing expectations of patients and the general public.

In response to these policy challenges, the Government increased expenditure on health care and put in place a series of measures for promoting good health and the prevention and treatment of ill health. The establishment of NICE was part of a range of measures adopted to provide guidance on the most appropriate care and promote the adoption and uptake of health technology that is established as cost-effective.

The guidance produced by NICE has several functions and implications. It applies to England and Wales. None of the guidance is mandatory, in the sense that it has to be applied in every case. However, health professionals are expected to take it into account and NHS organizations are required to make the resources available, within three months, to enable technology appraisal guidance to be used, where an individual health professional decides it is appropriate to do so. Thus, in the NHS Standards scheme technology appraisals are regarded as 'core' standards and other guidance as ‘developmental’. Some NICE guidance is increasingly linked to national health policy priorities and the implementing strategies, such as the National Service framework, the general practitioner contracts, and the health quality and outcomes framework.

From an international perspective, it is important that other organizations that may be considering emulating some of the functions of NICE, recognize this specific policy environment.
What is NICE?

The National Institute for Health and Clinical Excellence (NICE) is an independent organization responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health. It has been in operation for seven years.

NICE has established a national and international reputation for innovation and developments in health technology assessment (HTA) and (public) health strategies. The Institute is continuing to evolve. In 2005, the functions of the Health Development Agency were transferred to NICE so that it is now also responsible for producing public health guidance.

NICE produces guidance in three areas of health:

- public health – guidance on the promotion of good health and the prevention of ill health for those working in the NHS, local authorities and the wider public and voluntary sector
- health technologies – guidance on the use of new and existing medicines, treatments and procedures within the NHS
- clinical practice – guidance within on the appropriate treatment and care, within the NHS, of people with specific diseases and conditions.

NICE guidance on public health covers England. NICE guidance on health technologies and on clinical practice is targeted at the NHS in England and Wales. NICE guidance on interventional procedures, which states whether interventional procedures are safe and work well enough for use in the NHS, covers England, Wales and Scotland.

Currently, NICE has a range of programmes and departments covering:

- health technology evaluation
- clinical practice
- public health excellence
- implementation systems
- planning and resources
- clinical and public health.

NICE has approximately 200 staff based in London. It has established a second office based in Manchester with around 40 staff. As in other NHS Special Health Authorities, a Board of Executive and Non-Executive Directors manage the Institute. It has a number of committees that are required for administrative functions (the Audit Committee, the Risk Management Committee, the Research and Development Committee, the Remuneration Committee, and the Terms of Service Committee).

The Directions that established NICE also include the requirement for a 'Partners Council', membership of which is drawn from organizations (patient, professional and health care industries) that have a special interest in the work of NICE. The Institute has also established a Citizens Council that may inform NICE on societal issues and social value judgments. Details about NICE can be found at [http://www.nice.org.uk](http://www.nice.org.uk), along with additional documents and references.
**Methods of the review**

The Review Team visited the Institute twice, on 8-12 May and 29-31 May 2006.

As outlined in the terms of reference, the Review Team used a sample of six guidelines as the starting point of its review. The most recently published guideline produced by each of the National Collaborating Centres (NCCs) was selected; guidelines reviewed in detail are listed in Table 3. The NCC for Cancer was not included because, at the time of the review, it had published guidance relating to health service delivery rather than clinical practice. For each guideline, all four versions (the full guideline, the NICE guideline, the quick reference guide and the patient version) were reviewed. The AGREE instrument ([http://www.agreetrust.org/](http://www.agreetrust.org/)) was used as a framework for assessing the guidelines. Additional documents related to the Clinical Guidelines Programme and considered by the Review Team are listed in Annex 1.

**Table 3. Guidelines reviewed**

<table>
<thead>
<tr>
<th>Guideline</th>
<th>National Collaborating Centre</th>
<th>Reference</th>
<th>Date published</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nutrition support in adults:</strong> Oral nutrition support, enteral tube feeding and parenteral nutrition</td>
<td>Acute care</td>
<td>NICE clinical guideline No. 32 <a href="http://www.nice.org.uk/page.aspx?o=CG032">http://www.nice.org.uk/page.aspx?o=CG032</a></td>
<td>February 2006</td>
</tr>
<tr>
<td><strong>Tuberculosis:</strong> Clinical diagnosis and management of tuberculosis, and measures for its prevention and control</td>
<td>Chronic conditions</td>
<td>NICE clinical guideline No. 33 <a href="http://www.nice.org.uk/page.aspx?o=CG033">http://www.nice.org.uk/page.aspx?o=CG033</a></td>
<td>March 2006</td>
</tr>
<tr>
<td><strong>Anxiety:</strong> Management of anxiety (panic disorder, with or without agoraphobia, and generalized anxiety disorder) in adults in primary, secondary and community care</td>
<td>Primary care</td>
<td>NICE clinical guideline No. 22 <a href="http://www.nice.org.uk/page.aspx?o=CG022">http://www.nice.org.uk/page.aspx?o=CG022</a></td>
<td>December 2004</td>
</tr>
<tr>
<td><strong>Obsessive compulsive disorder:</strong> Core interventions in the treatment of obsessive compulsive disorder and body dysmorphic disorder.</td>
<td>Mental health</td>
<td>NICE clinical guideline No. 31 <a href="http://www.nice.org.uk/page.aspx?o=CG031">http://www.nice.org.uk/page.aspx?o=CG031</a></td>
<td>November 2005</td>
</tr>
<tr>
<td><strong>Long acting reversible contraception:</strong> The effective and appropriate use of long acting reversible contraception</td>
<td>Women's and children's Health</td>
<td>NICE clinical guideline No. 30 <a href="http://www.nice.org.uk/page.aspx?o=CG030">http://www.nice.org.uk/page.aspx?o=CG030</a></td>
<td>October 2005</td>
</tr>
<tr>
<td><strong>Pressure ulcers:</strong> The management of pressure ulcers in primary and secondary care</td>
<td>Nursing and supportive care</td>
<td>NICE clinical guideline No. 29 <a href="http://www.nice.org.uk/page.aspx?o=CG029">http://www.nice.org.uk/page.aspx?o=CG029</a></td>
<td>September 2005</td>
</tr>
</tbody>
</table>
During the two visits, the Review Team interviewed the NICE staff involved in the Guideline Programme, staff from each NCC, the GDGs (for each of the guidelines), the GRPs, the stakeholders’ representatives (from patient groups, as well as representatives of the pharmaceutical industry, primary care trusts, royal Colleges and the Department of Health), and end users (managers, clinicians and patients). A full list of the persons interviewed is in Annex 2. As all the interviews were confidential, no quotes are attributed to individuals or organizations.

After the first visit, a report was drafted and discussed with the NICE Executive Management during the second visit for feedback and correction of factual errors. The final version of the report was prepared during the second visit and represents the consensus view of the Review Team.

The terms of reference (TOR) for the review were considered as follows. The questions cover three important aspects of clinical guideline development: (1) the consistency and reproducibility of the methods and processes used (TOR 1 and 2); (2) the transparency of the processes that lead to the development of recommendations (TOR 3); and (3) the process and impact of interaction with those likely to be affected by a clinical guideline (TOR 4). The specific terms of reference of the review relate only to the process of guideline development and the Team recognizes that this process, as run by NICE, is complex and in constant development. The Team believed that in order to contextualize the findings against these TOR, it was important to consider other aspects of guideline development, including the definition of scope, dissemination/implementation and international standards and experiences. Therefore, the additional questions considered by the Team were the following:

- What are the strengths of the NICE Clinical Guideline Programme?
- How can the programme be improved:
  - in terms of its structure and organization, including relationships with other NICE programmes and external relationships?
  - in terms of the processes of guideline development, from identification and selection of topics through completion and updating of guidelines?
  - in terms of outcomes, including the quality and usefulness of the guidelines, and implementation, in so far as it relates to the way in which guidelines are developed and to the end products of the programme?

In the analysis and report, the Team has tried, without breaching confidentiality, to identify where the findings are based on the majority opinion of those interviewed plus the review of documents, rather than on separate, strongly-voiced accounts. Where a finding is based solely on a review of the documents, it is also described as such. Inevitably, given the experience and background of the members of the Review Team, international comparisons and relevant methodological literature have also influenced the analysis and recommendations. In particular, two of the Review Team members are active members of the GRADE Working Group and one is past President of the Guidelines International Network. Where possible, these international comparisons have been made explicit.
Description of current guideline development structures and processes

The Centre for Clinical Practice at NICE develops clinical guidelines. As described by NICE:

"Clinical guidelines are recommendations by NICE on the appropriate treatment and care of people with specific diseases and conditions within the NHS. They are based on the best available evidence. Guidelines help health professionals in their work, but they do not replace their knowledge and skills."

Clinical guidelines produced by NICE aim to improve the quality of health care by providing advice on the clinical-effectiveness and cost-effectiveness of health care interventions. They can change the process of healthcare and improve people’s chances of being as healthy as possible. For example, well constructed and up-to-date clinical guidelines:

• provide recommendations for the treatment and care of people by health professionals;
• can be used to develop standards to assess the clinical practice of individual health professionals;
• can be used in the education and training of health professionals; and
• can help patients to make informed decisions, and improve communication between patients and health professionals.

NICE has identified eight essential features of its guidance (Social Values document, December 2005; http://www.nice.org.uk/page.aspx?o=svjguidance):

• Methodological robustness
• Inclusiveness
• Transparency
• Independence
• Appeals
• Review
• Implementation
• Legitimacy.

Structure

The Clinical Guideline Programme is overseen by a team of 15 staff based in NICE (see Organizational chart, Annex 3).

Currently, seven NCCs help to develop the clinical guidelines. The NCCs are professionally-led groups working in the areas of:

• acute care
• cancer
• chronic conditions
• mental health
• nursing and supportive care
• primary care
• women’s and children’s health.
The appointment of the NCCs came about as a result of historical arrangements between the NHS and the royal Colleges for developing guidelines, prior to the establishment of NICE. There have been some changes in the process of renewing contracts with the NCCs; this is now done through open tender.

Each NCC is allocated a certain number of guideline slots per year. The structure of the staffing and funding required to develop these are based on a standard model of NCC staff per guideline. There is a total of 33 simultaneous guideline 'slots' available. The number of staff in each centre varies from approximately 10 (nursing) to 24 (women’s and children's health). The NCC staff provide project management and various forms of methodological support to the guideline development process: systematic reviewing, economic evaluation, editing and managing the consensus development processes.

In general, the guidelines seem to be allocated by area of expertise, or on the basis of where care is most likely to be delivered (for example, the guideline on anxiety was developed by the NCC for primary care rather than that for mental health). The process of deciding the allocation of the guidelines is based on both the expertise and the capacity of the NCCs (in terms of available slots). Allocation is done as quickly as possible but work on a guideline may be delayed due to the unavailability of slots and staff.

The production of each guideline is overseen by a Guidelines Commissioning Manager (NICE staff member) of whom there are currently four. Occasionally, these managers are involved in several guidelines that are being dealt with by different NCCs, although normally they are allocated to a single NCC to oversee all their work. They are responsible for quality assurance, budget and project management and liaison with the responsible NCC to ensure delivery of the guideline on schedule.

The NCC sets up an independent GDG to develop each guideline. The GDG members have relevant experience and expertise. They include health professionals and patient/carer representatives. Stakeholder groups that have registered an interest are invited to nominate people to join the GDG.

Each guideline results in four guideline products. The full guideline is written collaboratively by the GDG and the NCC and includes a complete description of the methods used, the references and the evidence tables (often only published on the web site). NICE is responsible for the other three products – the NICE guideline, the quick reference guide and the information for the public, all edited versions of the full guideline. These are produced by the NICE editorial staff with input from the relevant GDG. In addition, implementation products are developed for each guideline: a costing template, a costing report, a set of Power Point slides, and implementation advice.

Originally NICE had seven GRPs, each consisting of seven members, including a Chair and a Deputy Chair. Each GRP was linked to one of the NCCs managing clinical guidelines’ development for NICE.

The job of the GRPs is to validate the final guideline, paying particular attention to the GDG’s responses to comments received during consultation. The structure of the GRPs changed with effect from July 2006. There are now four, each consisting of a Chair and four members representing public health, primary and secondary care, the industry, plus a lay person. They are not attached to one particular NCC but allocated to specific guidelines and they focus primarily on
the responses to stakeholders’ comments, both at the scoping stage and in connection with the final draft guideline and the implementability of its recommendations.

**Process**

The process used by NICE to develop clinical guidelines is outlined in Figure 1. It is taken from the most recent edition of the Guidelines Manual 2006 ([http://www.nice.org.uk/page.aspx?o=308639](http://www.nice.org.uk/page.aspx?o=308639)), which is used as the standard for guideline development. Since the manual is updated each year, changes to it can and do occur during the development process of an individual guideline.
Figure 1. A summary of the key stages of NICE guideline development (for developers)

<table>
<thead>
<tr>
<th>Key stages</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope the guideline</td>
<td>• Consider guideline remit</td>
</tr>
<tr>
<td></td>
<td>• Undertake preliminary literature search</td>
</tr>
<tr>
<td></td>
<td>• Identify key aspects of care to be included</td>
</tr>
<tr>
<td></td>
<td>• Review scope after consultation</td>
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<tr>
<td>Prepare the workplan</td>
<td>• Specify Guideline Development Group (GDG) members</td>
</tr>
<tr>
<td></td>
<td>• Describe key aspects of methods to be used</td>
</tr>
<tr>
<td></td>
<td>• Define key timelines</td>
</tr>
<tr>
<td></td>
<td>• Provide costings</td>
</tr>
<tr>
<td>Form the GDG</td>
<td>• Identify GDG leader</td>
</tr>
<tr>
<td>Prepare for GDG meetings</td>
<td>• Set rules for GDG functioning</td>
</tr>
<tr>
<td></td>
<td>• Organise meeting dates</td>
</tr>
<tr>
<td>Formulate the clinical questions</td>
<td>• Identify clinical issues from the scope</td>
</tr>
<tr>
<td></td>
<td>• Identify economic issues</td>
</tr>
<tr>
<td></td>
<td>• Structure questions</td>
</tr>
<tr>
<td>Identify the evidence</td>
<td>• Develop search strategy for each question</td>
</tr>
<tr>
<td></td>
<td>• Search relevant databases</td>
</tr>
<tr>
<td></td>
<td>• Ensure sensitivity and specificity</td>
</tr>
<tr>
<td></td>
<td>• Consider stakeholders’ submissions</td>
</tr>
<tr>
<td>Review and grade the evidence</td>
<td>• Select relevant studies</td>
</tr>
<tr>
<td></td>
<td>• Assess quality of studies selected</td>
</tr>
<tr>
<td></td>
<td>• Summarise evidence and assign level</td>
</tr>
<tr>
<td>Create guideline recommendations</td>
<td>• Develop recommendations based on clinical and cost effectiveness</td>
</tr>
<tr>
<td></td>
<td>• Prioritise recommendations for implementation</td>
</tr>
<tr>
<td></td>
<td>• Develop audit criteria</td>
</tr>
<tr>
<td>Write the consultation draft of the</td>
<td>• Consult and respond to stakeholders’ comments</td>
</tr>
<tr>
<td>guideline</td>
<td></td>
</tr>
<tr>
<td>Review in light of stakeholders’</td>
<td></td>
</tr>
<tr>
<td>comments</td>
<td></td>
</tr>
<tr>
<td>Prepare final guideline</td>
<td></td>
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<tr>
<td>Review and update within an agreed</td>
<td></td>
</tr>
<tr>
<td>timeframe</td>
<td></td>
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</tbody>
</table>

Additional comments follow.
Referral of guideline topic to NICE

This process has been reviewed - see following section on findings and recommendations.

Registration of stakeholders' interest

NICE has established a formal and comprehensive process for obtaining stakeholder input to the guidelines. As described on the website, clinical guideline stakeholders are:

- national patient/carer organizations that represent people whose care is described in the guideline (patient/carer stakeholders);
- national organizations that represent the health care professionals, directly providing the services described in the guideline (professional stakeholders);
- companies that manufacture the medicines or devices used in the clinical area covered by the guideline and whose interests may be significantly affected by the guideline (commercial stakeholders);
- health service providers and commissioners in England and Wales (NICE selects an appropriate geographical spread and range of organizations);
- statutory organizations, including the Department of Health, the Welsh Assembly Government, NHS Quality Improvement Scotland, the Modernization Agency and the National Patient Safety Agency;
- research organizations with a specific interest in the topic.

Local organizations and individuals cannot register as stakeholders but can participate through other registered groups. A new registration list is generated for each new guideline and stakeholders can register at any stage during guideline development.

Preparation of the scope

The work plan, including the budget, is submitted to NICE by the NCC for approval once the scope is finalized. The scope, although more specific than the topic remit, is still fairly general and does not define the clinical questions to be covered by the guideline. There is a broad standard that each guideline should encompass approximately 30 clinical questions.

Establishment of the Guideline Development Group (GDG)

A new GDG is formed for every guideline. The first appointment is the Chair. Currently, the NCCs have different ways of doing this. Some appoint the Chair early in the process, making it possible for him/her to contribute to the development of the scope.

The Manual recommends that GDGs consist of 10-12 members plus the technical team from the NCC. Members can be persons nominated by organizations (including registered stakeholders) as well as individuals selected for their skills. They participate in the GDG in their individual capacities with no formal responsibility to represent any organization. Methodological skills are currently expected to be provided by the NCC staff.

The GDG is expected to meet between 10 and 15 times to develop the guideline. The first meeting is usually to establish group processes. The next task is to formulate the clinical questions. This may take several meetings or may have been done in advance by the Chair with the staff from the NCC.
Reviews of evidence and economic analyses usually commence in parallel with the meetings of the GDG and are mainly carried out by the NCC staff. The GDG members contribute to the reviews to a variable extent - some not at all, some as co-reviewers.

**Creation of guideline recommendations**

Limited advice is provided in the Manual about how GDGs should create recommendations based on the evidence. There are detailed suggestions on the wording to be used, but much less information on how to form judgments and what factors should be explicitly considered in such judgments.

**Production of the draft guideline**

The GDG produces the draft full guideline that is then sent out for consultation and comments. The NCCs handle the writing process in different ways. It could be that sections are drafted by GDG members and/or the guidelines are drafted by the Chair and/or drafts for review are prepared by NCC staff.

**Consultation on the draft guideline**

Recent changes to the consultation process have reduced the formal consultation time from two periods of four weeks each, to one of eight weeks. The main reasons for this change were: (i) to respond to complaints from stakeholders that a four-week period was too short for the review of such large documents; and (ii) to reduce the overall time line for guideline production.

Comments received during the consultation period are tabulated and can be extensive (up to 400 pages in one example). It is expected that every comment is reviewed and responded to, regardless of whether the guideline has to be changed as a result. The workload for the NCCs and the GDGs in undertaking this task is substantial.

**Production of the final guideline**

The draft full guideline is produced collaboratively by the GDG and the NCC. The NICE guideline, prepared by the editorial team in consultation with the NCC, includes all the recommendations contained in the full guideline as well information about the scope and the GDG. It does not include references. The quick reference guide is produced by NICE and summarizes the guidance. The information for patients document is also produced by NICE. Following a review of the current format of the quick reference guide, major changes to the format are now being proposed.

**Findings and recommendations**

NICE is one of the largest, most productive and best organized developers of clinical guidelines in the world. The findings of the Review Team are reported under two main headings below: first a summary of the strengths of the NICE Clinical Guideline Programme and then a more detailed description of the opportunities available to NICE to build on these strengths.
**Strengths of the NICE Clinical Guidelines Programme**

**Structure**

NICE has a large number of highly motivated, enthusiastic staff and contributors with a wealth of diverse competencies. It is well resourced and well managed. It is highly innovative, continuously evolving and, in many areas, ahead of comparable organizations around the world.

The strengths of the current structure of the Clinical Guidelines Programme include:

- the locations of the NCCs (apart from that on Cancer) in professional Colleges in close proximity to NICE;
- the relevant clinical expertise represented in the GDG’s, which is tailored to specific topics and backed up by methodological expertise;
- the well organized training available to consumers and Chairs of the GDGs.

One the whole, the relationship between NICE, the NCCs and the GDGs was described in positive terms by those interviewed, although problems and tensions were occasionally mentioned.

Having the NCCs located in the Colleges is perceived to engage the Colleges and the professionals belonging to the Colleges, give credibility to the NICE guidelines in the eyes of clinicians, stop the Colleges from developing their own guidelines and shifting their resources from development to implementation, improve the quality of the guidelines, and allow opportunities to experiment. The current structure is moving towards having a good balance between consistency and quality control, on the one hand, and maintaining flexibility and the opportunity for innovation on the other.

Communication between the NCCs and NICE appears to be evolving in a natural way. This is good but it is difficult to obtain an overview of the various fora and meetings held, and to judge whether these are being organized optimally. Little concern was raised about the satellite structure of the programme, outlined in Figure 2 below, but as NICE continues to evolve, inefficiency and communication challenges arise.
The way in which GDGs are organized is generally seen as a strength. However the fact that, for the development of each new guideline, a new group is set up comprising people often unfamiliar with guideline development methods or NICE, and with their own agenda, presents challenges for producing guidelines in a consistent manner.

**Process**

NICE is continuously developing the methods used in the Clinical Guidelines Programme, to the extent that they become moving targets that are difficult to evaluate.

The Programme has excelled particularly in the areas of patient and stakeholder involvement to which NICE is strongly committed and in which it invests heavily. The Programme continues to develop these processes and is leading the way internationally in this respect. There are also many other admirable elements of the methods used by NICE, including the technical manual, which describes these in detail.

There is discord among those involved in producing guidelines regarding the desire to produce them as efficiently as possible (expressed particularly by the leadership) and the desire to produce guidelines of the highest quality possible (expressed by all concerned) without undue stress and pressure (expressed by NCC staff, stakeholders and some NICE staff). This is recognized and can be viewed as a strength, although finding the right balance requires continual reassessment of the processes used.

NICE prides itself on the transparency of the processes used, which are valued by the contributors to and users of the clinical guidelines. The Institute aims to use firm methods to synthesize and appraise the evidence underlying its recommendations but at the time of the review there was some
variation in the thoroughness of the methods used. Opportunities for improvement with respect to both transparency and the use of firm methods are discussed below.

**Outcomes**

NICE has produced a substantial number of clinical guidelines since the Programme commenced. The quality of these products is generally perceived as high by NHS clinicians and managers, patients and international groups alike. However, it is also recognized that they vary in quality and size and thus in how fit they are for use. The methods that are used in developing NICE clinical guidelines appear to be widely respected. The Review Team found that, in general, people are taking increasing notice of the NICE clinical guidelines although perceptions of their usefulness vary, as does the extent to which the recommendations in the guidelines are being implemented. The extent to which the Colleges that host the NCCs are investing in the dissemination of NICE guidelines through their conferences and training activities, for example, varies. Implementation also varies widely across local trusts, which to a large extent are responsible for implementing the guidelines locally within the NHS.

Over the past 18 months, NICE has substantially increased the number of staff invested in implementation (from 0 to 34 people). Strategies, plans and activities for supporting the implementation of NICE guidelines are developing rapidly. A small investment is currently being made in implementation research.

There are several implementation activities currently planned or under development. These include the development of more effective communication strategies, such as tailoring guidelines to different target audiences; engaging key partners; developing practical implementation tools for specific guidelines; sharing experience across trusts; and using implementation consultants. These activities are organized in a separate programme in NICE.

**Detailed findings and recommendations - opportunities for development**

**Structure**

In its present form, the guideline development process is uniformly executed through NICE and seven NCCs in accordance with the NICE guidelines manual. Around 16 guidelines are developed per year, each with a two-year development time frame. Later in this report, there are some remarks about the compliance to the development methodology described in the manual. In addition, the structure of the present guideline production process and, more specifically, issues relating to consistency and organization, are addressed through the following questions:

- Is the actual process of topic selection in line with that designed for guideline development and do the present products meet the requirements of both the sponsors and the end users?
- Is leadership adequately assured?
- Are the necessary methodological competencies adequately assured?
- Are the resources and capacity used effectively and efficiently?
- Is the necessary collaboration within NICE adequately assured?
- Is the necessary collaboration with partners outside NICE adequately assured?
Consistency between input, process and output

The first question relates to the type and scope of the guidelines produced by NICE so far.

Rather than focusing only on further standardizing the production process as such, thought should be given to the type of guidelines NICE wishes to develop (product differentiation) and to the question of whether the production of a guideline on the topic selected is the most adequate response to the underlying problems as perceived by the sponsor (see 'Internal and external co-operation' below). The pressure put on product differentiation is partly fuelled by the present length of the development process (reducing this period to an average of 24 months is under discussion) and the scope of the guideline (where the norm is to tackle around 30 questions per guideline). These issues are being addressed in plans for other types of guidelines (i.e. rapid response, topics with a more specific scope) and the redesign of the topic selection process (National Institute for Health and Clinical Excellence selection of topics. a consultation paper. Department of Health, March 2006. Gateway reference: 6255).

With respect to the process of topic selection, the Review Team considers that the changes currently proposed will enhance the role of NICE and thus bring this process closer to the development process. This would have its merits and the proposed consideration panels could serve as a good alternative to the present less transparent process. At present, NICE can control the scope of a particular guideline to a certain degree. However, the diversity of the topics received vis-à-vis the resources available to NICE and the NCCs inevitably means that, to some extent, the guidelines produced will vary in quality and size. If NICE assumes more control over the process of topic selection, it should be possible to guarantee proper assessment. This assessment should cover not only the appropriateness of a topic and its scope for the type of guideline NICE could offer, but also the relevance of developing the guideline in the light of the problems surrounding the specific topic. Recommendations on the topic selection process are made elsewhere in this report. The point raised here is that NICE should continuously be aware that alongside pressures around production time, production volume, the scope and size of the guidelines and the consistency within the Programme, the overall relationship between input and output as related to the expectations of both sponsors and end-users needs to be safeguarded. This means that improving the consistency within the process is part and parcel to strengthening the links with processes around input (topic selection) and output (implementation). Further redesign and improvement of the Programme needs to be driven by input and output/outcome concerns, as well as by addressing concerns about consistency and productivity.

Clinical leadership

As noted above, one of the strengths of the present programme is its links with professional groups through the royal Colleges. These links do justice to the history of guideline development in the United Kingdom. It is important that professionals, as end-users of the guidelines, have a sense of ownership and it is especially important that the development processes are fed with the relevant clinical expertise. In this respect, the role of the leaders of the NCCs is of critical importance. With the increase of specific methodological expertise on guideline development over the years, guideline development risks becoming a more technocratic exercise with decreased clinical input. Further strengthening of methodological competencies is warranted; however, this should be balanced with stronger clinical involvement in the process at the same time. Clinical leadership through the heads of the NCCs is key to this involvement and should be safeguarded through human resource management measures.
**Competencies**

Throughout the early years of development of the NICE Guidelines Development Programme methodological competencies seem to have matured as regards:

- systematic reviews;
- economic evaluations;
- management of group dynamics and consensus development;
- editing recommendations and guideline texts; and
- implementation and implementability of the guidelines.

These five competencies are a direct consequence of the requirements formulated for guidelines, such as, being evidence-based, appropriate and actionable as the ultimate goal is to assure the quality of clinical practice.

Each of the five competencies needs to be safeguarded and further developed. To assure an adequate standard and continuity over the coming years, they should be addressed as part of the human resource management policy. Given the size of the overall programme, links between NICE and the NCCs should be strengthened in each of the five areas. An effort should be made to ensure that the work carried out by methodologists at NICE and the NCCs gains academic recognition and complements similar activities and research in universities. Each of the areas of competency should be further expanded through research and development activities within the NICE Guidelines Development Programme.

**Effective and efficient organization**

As noted above, several strengths are connected with the current structure of the NICE Clinical Guidelines Programme and its links with the NCCs. However, a number of concerns were raised about the size, structure and number of NCCs involved. In contrast, very little concern was shown about the size or number of the GDGs, although the variation in the processes of selecting and training Chairs and in the methods used by both NCCs and GDGs was brought up (see `Forming and running and GDG`, below).

Currently, very different models are used in directing and managing the NCCs. Smaller NCCs struggle more to recruit and maintain staff, are under more stress and are more vulnerable when they lose a staff member. The staffing model of how many systematic reviewers and additional staff are allowed per guideline slot also poses significant problems for the smaller NCCs. These are related, for example, to career paths and the lack of academic credit for guideline work. Some, but not all, of the NCCs could identify clear benefits from their links to the Colleges.

An additional issue is the question of adequate expertise in guideline topics that are outside the current grouping with the Colleges. Although topics are not allocated strictly according to area of expertise, mostly the allocations relate to the primary Colleges hosting the NCCs. The current system does not seem to allow for methodologists to continue to work in one domain of clinical knowledge and thus develop expertise.

The problem could be solved in part by expanding the NICE methodology group. This would add some flexibility to the system and allow back-up for staff changes during the development of a guideline. An exchange or linkage arrangement, allowing reviewers from NCCs to carry out methodological work, could help them publish systematic reviews of the guidelines as scientific articles. This could strengthen links between the NICE methodology group and the NCCs as well
as their credibility. It could also improve the quality and consistency of the reviews across the NCCs.

However, systematic reviews are only one of the five competencies identified earlier. To assure the further development and quality assurance of each of these, it is necessary to rethink the optimal size of a NCC. Given the importance of clinical leadership and the assurance of the five competency fields (through groups of staff large enough to assure continuity, (academic) growth and a sufficient number of GDGs per centre at the same time), the equivalent of 20 full-time staff minimum would seem to be required. Although it is not possible or necessary to be completely prescriptive, this size would potentially allow for 2-3 staff to cover each of the core competencies, and limit potential problems, which could impair the guidelines production process, such as staff turnover, leave and burn-out. Therefore the Review Team recommends that NICE reassess the present number and size of the NCCs with a view to having centres of the minimum size mentioned above. There are several options for achieving this target, for example, through merging NCCs, enlarging them or merging them with centres that are not located at Colleges but that maintain strong links with them.

**Internal and external cooperation**

In addition to strengthening cooperation between staff at NICE and staff at the NCCs in the five areas of competency, opportunities to increase collaboration among staff within NICE should be taken. The team was aware of NICE’s involvement in the GIN collaboration and in the development of the AGREE methodology. However, the existence of a health technology appraisal programme and a public health programme offers more opportunity for collaboration in the field of methodology than it would appear. It should be recognized, however, that the various programmes have different aims and thus the specific methodological requirements also differ; for example, the use and type of economic assessments. Nevertheless, knowledge in areas such as systematic reviews, economic evaluations, technical editing of the guidelines and implementation, can be shared.

In addition to cooperation within NICE on the various programmes (HTA, guidelines and public health guidance), ways should be sought to strengthen links with academic groups carrying out research in the five competency areas. By ensuring academic links, methodologists at NICE and the NCCs can continue to be part of the academic community, which would help to assure both the quality of the work and career opportunities.

**International and other collaboration**

Current collaboration between NICE and international organizations includes involvement with GIN, the AGREE group and the GRADE Working Group. Within the United Kingdom, there has been some collaboration with SIGN and the Cochrane Collaboration, as well as with academic centres (particularly through the NCCs). While it is clear that the primary responsibility of NICE (and therefore its resources) is to provide advice for England and Wales, the Institute is also in a unique position to share what it is doing with others, which would be particularly beneficial to those working in settings with fewer resources. Given its experience, NICE could do more to contribute to national and international collaboration, although the team recognized that time is a limiting factor.

There is much unnecessary duplication of effort (by NICE and other CPG and HTA producers) in carrying out systematic reviews. Nearly all of the NCCs reported using Cochrane or other published systematic reviews to reduce unnecessary duplication of effort, including commissioning Cochrane reviews or updates. However, most of them reported having problems
with this process because the Cochrane reviews were out of date or the Cochrane reviewers and review groups were unable to respond within the time frames set by NICE. In some instances, NICE guideline reviews were seen to be feeding back into the Cochrane process though not in a systematic way.

It would seem timely, appropriate and efficient for NICE to examine the relationship between the Institute and the Cochrane Collaboration, amongst others. An agreement with the Cochrane Collaboration (through the United Kingdom Cochrane Centre) could include their collaboration with the NCCs and GDGs at the start of guideline development to identify possibilities of updating or commissioning Cochrane reviews, collaboration on methodological work, and publishing NICE reviews in a separate database at the Cochrane Library. The last-mentioned possibility could help to address the problems relating to career paths, academic credit, and the recruitment and retention of systematic reviewers. It could also help to ensure the quality of NICE reviews and make them more widely accessible.

It is clear that NICE is recognized internationally as one of the leading innovative agencies in guideline development, if not the leading agency. Many other countries, both developed and developing, are interested in learning from the NICE experience. The Team recognizes that NICE’s primary responsibility is clearly to the government that funds it. However, collaboration at international levels is likely to benefit NICE in a number of ways, for example, by enriching the work carried out by NICE and the NCCs, by more systematically harnessing international perspectives and experience to inform both how NICE develops guidelines, and by helping to avoid unnecessary duplication of effort.

Recommendations (relating to structure)

1. Strong clinical leadership of the NCCs should be ensured.

2. NCCs should have methodological competency in:
   - carrying out systematic reviews
   - making economic evaluations
   - managing group dynamics and consensus development
   - editing recommendations and guideline texts
   - implementing and implementability of the guidelines.

3. The current NCC model with links to Colleges should be maintained but minimal staffing for the development of guidelines (approximately 20 people) needs to be ensured in each NCC. This can be done, for example, either by merging NCCs, expanding the size of smaller NCCs, or through the establishment of base units outside the Colleges but in centres with strong links to the Colleges.

4. Adequate networking between NICE and the NCCs should be assured to support the five competency areas listed above. This could include, for example, expansion of the NICE methodology group to include systematic reviewers both to carry out the methodological work and to support the NCCs in reviews, with slots for exchanges between NCCs and the methodology group.
5. The competencies of the various programmes within NICE (for example, those of the economic evaluation teams working on the technology appraisals and guidelines) should be linked.

6. Competency standards should be formalized to include: (1) quality standards for each NCC in their contracts with NICE; and (2) the agreed expectations of Colleges with respect to stakeholder involvement and implementation.

7. Links with external groups in the relevant fields, both within the United Kingdom and internationally should be strengthened.

**Process and outcome**

*Topic selection, scoping, work plan preparation and formulation of clinical questions*

Topic selection, scoping and formulation of clinical questions were repeatedly identified as key problem areas in the Guideline Development Programme. Topic selection, which at the time of the review was the responsibility of the Department of Health, was described in particular as not being fully transparent and not obviously consistent with health care priorities. There were also concerns that some types of topics were not being considered for guideline development. Almost all guidelines are disease-focused rather than symptom-focused or including co-morbidities.

The process used for topic selection is partly responsible for the significant variation in the resulting remit of the guidelines and thus the scope prepared by NICE. An example of this variation was found when comparing the Tuberculosis (TB) guidelines (which were considered equivalent to two slots) with the guidelines for pressure ulcers. Both were reviewed in detail by the Team. A variation in scope inevitably leads to a significant variation in the size of the guidelines, despite efforts to keep them roughly to the '30 clinical questions standard'. In turn, NCCs, GDGs and reviewers can have significant problems in delivering on large guidelines within tight time frames and with fixed resources, particularly as the work plan for each guideline is finalized after the scope is set but before the clinical questions are defined.

Given the pressures on the NCCs and the variation in guideline scope, it is not surprising that the ways of formulating the clinical questions vary significantly. In some NCCs, the staff draft initial clinical questions to be confirmed by the GDG. The Chair of the GDG may or may not be involved, depending on the timing of the appointment of the Chair. Other NCCs allow the GDG to develop the questions but may then have to face the problem that the number and scope of questions are too large for the agreed work plan and budget. The new process of topic selection (announced 19 September 2006) is supported by the Review Team and may help to resolve this problem. It maybe useful to evaluate the experience of using more than one GRP for topic selection instead of one large panel, as has been the case until now.

However, although changing the scoping process is important, the current approach to guideline development is expensive and slow and may not be sustainable as a result of the costs and the pressure put on the NCCs and the GDGs. Alternative models for guideline development should be considered, as well as a change in the approach to structuring and budgeting work plans.

Options include producing smaller, more focused guidelines and umbrella guidelines. Smaller guidelines are easier to manage and could potentially be completed in a shorter time span. This could reduce the demands on the GDG by eliminating the need for them to work in their free time and it might facilitate the recruitment of members, particularly busy clinicians. Focusing the
guidelines on key questions and tailoring and optimizing the processes involved could possibly also help to reduce guideline development costs. It would make it possible for some Chairs and members to continue working on other GDGs thus promoting continuity in the GDGs and the possibility for them to acquire the necessary skills.

Umbrella guidelines, that group and link several smaller guidelines, have a broader scope without being unmanageable. This makes it easier to accommodate stakeholders within the current constraints. Updating is also easier.

Currently, NICE does not endorse clinical guidelines developed by other organizations and, indeed, was initially not allowed to do so. There are several reasons for reconsidering this. If appropriately and rigorously developed, such guidelines could reduce unnecessary redundancy, especially if they consider cost-effectiveness. They could reduce the pressure on NICE by filling gaps where NICE guidelines are not available and they could help to ensure that organizations developing guidelines in England and Wales adhere to NICE standards, so that their guidelines can be endorsed by NICE.

The target audience for NICE clinical guidelines is sometimes unclear. It is important to clarify this when selecting topics, scoping a guideline and formulating questions, as well as when reporting and preparing different versions of the guidelines.

Recommendations (relating to topic selection, preparation of work plans and formulation of clinical questions)

8. NICE should develop alternative models for producing guidelines rather than use a 'one size fits all' approach. The Review Team suggests four types of products:
   • shorter, more focused guidelines
   • compilations of these as "umbrella guidelines"
   • rapid response guidelines, and
   • guidelines produced by other organizations and endorsed by NICE.

9. NICE should consider two additional criteria for selecting topics:
   • Implementability – recognizing that the inclusion of discussion on implementation at the start of guideline development may improve the quality of the guideline;
   • Inequality in health – to enable consideration of the possible impact of the guideline on reducing health inequalities.

10. A systematic approach to the collection of relevant baseline data on existing epidemiology and service delivery, as proposed in the consultation paper, should be used as part of the topic selection process, and to prioritize clinical questions.

11. In defining the scope and formulating questions, NICE should involve the GDG Chair and at least some of the GDG members at an early stage. The GDG should be responsible for deciding the final set of clinical questions prior to finalization of the work plan and budget.

12. Key target audiences should be identified during the scoping stage at the start of the guidelines development process and reviewed at the end of the process, when different versions of the guidelines are being prepared.
Forming and running a GDG

Methods currently used by NCCs in recruiting GDG Chairs vary greatly; those used in recruiting GDG members also vary though to a lesser degree (see NICE document, Recruiting and training Guideline Development Group Chairs, June 2005). The methods range from informal networking, to formal advertising and recruitment.

Different criteria are used for selecting the Chairs. Some NCCs do so on the basis of their chairing skills, others on the basis of clinical expertise. Some NCCs have two Chairs, one as the group facilitator and the other as the clinical lead. The approaches used to ensure the inclusion of GDG members with methodological expertise also differ. For the most part, this expertise is contributed by staff of the NCCs. It was not clear to the Review Team whether these staff had voting rights although, according to the new Manual, up to three NCC staff may vote on any one issue. While having NCC staff as full members of a GDG may improve consistency, it is also important that they do not dominate. The GDGs also need to ensure that they are able to critically review the technical material provided by the NCCs. Currently, the GDGs do not include members from the pharmaceutical industry and the Review Team supports this position.

The way in which GDGs are organized is generally seen as a strength. However, having to set up a new GDG for each new guideline development exercise presents challenges as the new GDG often comprises people who are unfamiliar with NICE and/or guideline development methods, and who have their own agenda. The workload and time commitment required of a GDG member can be substantial. There have been several examples of members whose participation in a GDG had a significant impact on their work or personal commitments. Thus, it seems wasteful not to continue to use their expertise in an ongoing role, for example, in updating the guidelines. This could improve both the consistency and the efficiency of guideline development.

The wide variation in methods of recruiting Chairs and in defining their roles can be criticized. The Review Team cannot see that flexibility in this aspect of the process has any advantage.

Declarations of conflict of interest from GDG members are collected but not published. While the people interviewed did not perceive conflict of interest as a problem, it is not clear to what extent this area is being managed appropriately.

Recommendations (relating to forming and running a GDG)

13. As regards the selection of GDG Chairs, NICE and the NCCs should agree on standard criteria, selection processes (particularly as regards the question of whether to advertise or use informal networks), expectations and training (minimum standards and options when flexibility is desirable).

14. The core training of the GDG Chairs should be carried out by NICE and include a meeting of the Chairs. NCCs should supplement this.

15. NICE should organize regular meetings of and communication among GDG Chairs (e.g. a discussion list) to support shared learning and identify common needs for improvement in the training of and the processes used by GDGs.
16. At least one external methodologist should be included as a full member of each GDG and the roles of the NCC technical staff should be clarified. The NCC technical staff need not necessarily be full members of GDGs but the approach to this question should be consistent.

17. A brief disclosure of competing interests should be published with the guidelines and the complete text should appear on the NICE web site.

18. NICE should convene a standing committee to review all disclosure statements prior to the commencement of GDG meetings, and whenever there are relevant changes in the conflicting interests reported by GDG members.

**Identifying and reviewing evidence**

*Clinical evidence reviews*

From the sample of guidelines reviewed in detail and in the light of the interviews, it is clear that the systematic review methods used by the NCCs and GDG are variable. A number of issues were identified.

Firstly, it is not clear that protocols are developed for each systematic review; some are described as mini-systematic reviews, some as Cochrane style reviews and some as overviews or updates of existing systematic reviews. Sometimes a review is carried out by only one person (without any measure of the reliability of judgments about which studies to include or data to extract) and there is little or no involvement of clinicians who are familiar with the topic.

There is clearly a wide variation in statistical expertise across the NCCs. For example, some do not have the internal capacity to conduct basic meta-analysis of data, if required, whereas others are highly skilled.

Although an effort has been made to coordinate systematic reviews with the HTA programme, this does not always work and results in unnecessary duplication. NCCs and GDGs report some confusion about the types of evidence to include in guideline development. For example, the Review Team was repeatedly informed that NICE only considers randomized clinical trials and that data on experience and quality of life could not be included. This is in direct conflict with the advice provided in the Manual. As a result, inappropriate types of evidence are sometimes being used for recommendations and decisions. It is common, for example, to rely on randomized clinical trials alone for evidence of adverse effects or safety rather than consistently to consider data on the safety of pharmaceuticals from observational studies.
Recommendations (relating to clinical evidence reviews)

19. Minimum standards should be set for systematic reviews including:
   - a critical and systematic evaluation of the necessity for a new review;
   - the involvement, throughout the review process, of clinicians familiar with the topic;
   - an evaluation of the protocol by clinicians familiar with the topic, methodologists and, when relevant, patients and other decision-makers;
   - the availability of the protocol on the NICE website;
   - routine training of clinicians (for example, registrars or fellows, who would generally have more time than senior clinicians, be more likely to benefit from the training experience and be less costly to use in the reviews).

20. It should be made clear that, as well as using randomized clinical trials, the NCCs and GDGs should be encouraged to use observational studies, where appropriate, in developing recommendations, as described in the Manual.

The use of economic data in recommendations and guidelines

NICE is required to provide advice on the clinical- and cost-effectiveness of interventions. In the Guidelines Programme, tension between an economic approach and a clinical approach to making recommendations was identified by several people and it was felt that these two approaches were not adequately integrated. The team identified several possible reasons for this problem.

Firstly, the Manual emphasizes two aspects of health economics information: (1) a review of the published literature on health economics, and (2) a formal evaluation of cost-effectiveness using (decision analytic) modelling techniques. In response to the first aspect, resources are being invested in systematic reviews of cost-effectiveness studies. The team believes this to be a waste, given the very low probability of this information being useful. Published cost-effectiveness analyses have a high probability of being flawed or biased, and are setting-specific. Therefore, systematically searching for, retrieving and critically appraising these studies is not likely to inform guideline group decisions. Rarely, there may be a study carried out in a relevant setting that may be useful as a basis for further modelling exercises.

Secondly, there appears to be a problem with the way in which the more formal modelling exercises are being carried out, resulting in evaluations that may or may not be informative for the GDG. In the guideline development process described it was not clear whether there was sufficient input from the GDGs into the development of the economic-related questions. Also, in the current process of guideline development, there is very little emphasis on the appropriate scrutinization of these models for technical accuracy, which is in contrast to the rigorous scrutiny to which economic evaluations prepared for the HTA programme are subjected.

According to the Manual, assessment of the resource and cost impact of a guideline is to be carried out during the validation phase, rather than the developmental phase, although the GDG is asked to identify the key resource and cost issues. For guideline development, it may be informative to include this assessment at an early stage and, indeed, some GDGs have reported doing so.

The ways in which the GDGs handle economic-related information currently varies. Some consider both cost impact information and systematic reviews and models provided by health economists at the NCCs. The contribution of the health economists to the GDGs varies more than
would be expected given the differences in topics. There were several accounts of economists providing models to GDGs that were not useful because of insufficient clinical input. There were also concerns about the technical capacity of the GDGs to consider the available economic data when formulating guideline recommendations. In addition, based on the information gathered from the sample of guidelines reviewed and the interviews, there did not appear to be any systematic process of checking and validating economic analyses produced for the GDGs. This is in complete contrast to validation process of the HTA programme, which is very thorough.

The use of health economic data from the HTA programme seemed to be particularly problematic. Comments were made that the GDGs are not allowed to access the economic models used in the technology appraisal reports, even though the HTA recommendations should be incorporated in the guidelines, and that the GDGs were expected to update technology appraisals that were out of date.

Notwithstanding the Department of Health brief to NICE to provide advice on cost-effectiveness rather than affordability, the Review Team believes that some consideration of the likely cost impact of a guideline is, and should be, inevitable in the guideline development process, especially if evidence of effectiveness is weak and the cost implication high. Although NICE has developed an acceptable range of cost-effectiveness thresholds for use in its guidance programmes, this has been most systematically considered within the context of the HTA programme. It is less clear how these thresholds can be considered in guideline recommendations, which may (and usually do) cover a range of technologies and interventions. For the effective implementation of a guideline, it is important to carry out a cost impact analysis (from the NHS perspective), during the validation phase of the guideline, as recommended in the Manual. However, such analyses may also be useful during the process of developing the recommendations by providing information to supplement the estimates of incremental cost-effectiveness ratios based on economic models. The inclusion of cost impact analyses earlier in the guideline development should therefore be encouraged and a process for the validation of economic models should be developed.

Recommendations (relating to the use of economic data in recommendations and guidelines)

21. It is recognized that currently the Institute’s requirement, laid down by Parliament, is to consider the clinical- and cost-effectiveness of recommended treatments. However, the types of economic evaluation provided should be determined by the needs of the decision-makers, that is, those implementing the guidelines and funding the interventions. There should be greater focus on the assessment and disaggregated reporting of the most important impacts of resource utilization, and on the question of which actors in the health care system will bear the costs and impacts.

22. Formal systematic reviews of cost-effectiveness studies should not be made, although a systematic search for relevant cost-effectiveness studies should be carried out. Those found should be reviewed with a view to deciding on modelling exercises, when these are deemed necessary, and to possibly identifying a study that addresses the use of appropriate methods and data.

23. Selected cost-effectiveness analyses should continue to be carried out with decision analytic models when there is reason to believe that these might influence a recommendation. The analyses required should be agreed during the scoping stage of the review process or shortly thereafter so that they can be started at the beginning of the guidelines development process.
and completed within a reasonable time frame relative to the work of the GDG. Clinicians should be involved in planning the model and receive sufficient training to do so.

24. When cost-effectiveness models are used, the full model description and spreadsheets (or other format) should be made available on the NICE web site.

25. In making recommendations, consideration of important costs (resource utilization and consequences) should be integrated with consideration of other important consequences (benefits and harms).

**Consideration of equity**

The Public Health Programme, which became part of NICE in 2005, has a major focus on reducing inequalities in health⁷, or inequities. These can be defined as differences in health, which are not only unnecessary and avoidable but also considered unfair and unjust⁸. The Clinical Guidelines Programme has not yet capitalized on the strengths brought to NICE by the Public Health Programme, and there has been relatively little focus on considering and addressing health inequalities when reviewing evidence and developing recommendations. As a consequence, the circumstances of disadvantaged populations may be overlooked and opportunities to address and reduce inequalities missed. Moreover, if equity is not considered, recommendations may sometimes inadvertently exacerbate inequalities.

**Recommendations (in relation to consideration of equity)**

26. The Clinical Guidelines Programme should work closely with the Public Health Guidelines Programme to ensure that health inequalities are routinely considered when developing clinical guidelines.

27. Throughout the stakeholder consultation process, the involvement of the disadvantaged and consideration of equity should be assured. This could be achieved by:
   - including in the GDGs, practitioners with experience in disadvantaged areas, patients from or with an interest in disadvantaged populations, or people with practical experience in implementing guidelines in disadvantaged areas;
   - ensuring that organizations representing the perspective of disadvantaged populations are registered as stakeholders and have the opportunity to comment on the guidelines;
   - considering whether there are plausible reasons for anticipating different effects in disadvantaged populations and, if so, by collecting and analysing additional relevant information thereon.

28. The GDGs and the NCCs should consider the need for additional information on disadvantaged populations, including their utilization of and access to care and the availability of resources to address inequities.

29. Instead of the GDGs attempting to weight quality-adjusted life years (QALYs) to take account of inequalities, the results of the studies should be made available to them or the decision-makers to help them make judgments on equity⁹. When considering disadvantaged populations, it is particularly important to pay attention to costs to individuals as well as costs to the NHS.
30. When making recommendations, GDGs should consider:

- possible differences in values among disadvantaged populations;
- inequalities relating to access to care and language barriers;
- possible needs for local allocation of resources (e.g., in primary care trusts) and incentives (e.g., linking pay for performance to equality targets);
- possible differences in comprehension among disadvantaged populations and the need for tailored patient information; and
- the need for data on disadvantaged populations and for appropriate indicators for monitoring implementation of the guidelines in disadvantaged populations.

Grading the quality of the evidence and strength of the recommendations, and going from evidence to recommendations

NICE originally adopted methods for grading evidence and recommendations used by other guideline groups, such as SIGN, at the time the programme commenced. These were grades of evidence based on the hierarchy of levels of evidence, with resulting grades of recommendation assigned on the basis of level of evidence.

As the GDGs gained experience in using the grading systems, the limitations of the systems became apparent. The quality of the evidence was assessed mainly by systematic reviewers at the NCCs and, as far as can be seen, the assessments were not consistently used by GDGs. The grading system for recommendations was an oversimplified hierarchy that did not include explicit judgments about many important factors that can increase or decrease confidence in the evidence. It confused the design of the study with the quality of the evidence and the strength of the recommendations; meta-analyses or systematic reviews were classified as a level in the hierarchy rather than as the basis for making judgments about the quality of evidence; expert opinions were considered in the hierarchy, rather than the evidence on which these opinions were based. The system did not explicitly consider the balance between desirable and undesirable effects of an intervention or other factors that increase or decrease confidence in a recommendation. Grade 'A' recommendations were in the minority, and there were reports that these gradings were also misinterpreted by health authorities in connection with implementation. A review undertaken by NICE appears to have confirmed this problem (Cluzeau, personal communication).

None of the guidelines examined included summaries of the findings tables (balance sheets) that formed the basis for judgments on the balance between desirable and undesirable effects. All of them included evidence tables, but these listed individual studies (by outcome) and included information about each trial. It is difficult, if not impossible, for decision-makers to synthesize this detailed information effectively for use in making judgments. Neither is it possible for users of the guidelines to know on which information recommendations are based. To summarize the information based on the published evidence tables would potentially take end users many hours, and it is unlikely that GDGs did this routinely, although one person interviewed did report presenting a summary of findings table in discussing the evidence with a GDG. One NCC reported testing the use of GRADE evidence profiles.

Currently, systematic reviewers or project managers at NCCs frequently draft recommendations with variable input from GDG members. The recommendations are then discussed by GDGs, sometimes under time pressure, which is perceived by some to affect the quality of the judgments made. Some NCCs have started to use formal or informal consensus methods to determine recommendations. Some GDGs vote on the recommendations, but this does not seem to be done in a systematic way.
Recognizing the difficulties of the current system, NICE recently took the decision to discontinue the use of letter grading of recommendations and to link them to study design. The Institute continues to assess the quality of the evidence and the April 2006 version of the Guideline Manual recognizes the need to use an appropriate grading system. It advises NCCs to use the adapted SIGN Grading system (i.e. hierarchy of evidence) for intervention studies and a system adapted from the Oxford Centre and the Centre for Reviews and Dissemination for diagnostic studies. However, this does not resolve the difficulty of linking grades of recommendation to evidence.

It is unclear to the Review Team why this interim step has been proposed. NICE has been involved over the last five years in the international collaboration of the GRADE group that has been working on systems of assessing the quality of the evidence and the strength of the recommendations, an approach that may well prove to be the way forward.

Grading the evidence and the recommendations in guideline development is a complex area and in constant development. Although NICE prides itself on its transparency, and rightly so, almost all of those interviewed acknowledged that judgments about recommendations are not being made systematically and are not transparent. The decision to eliminate grading of recommendations, although viewed positively by many, is unlikely to improve the process of linking evidence to recommendations in a transparent way. Therefore, the Review Team recommends the use of a validated, internationally accepted grading methodology that addresses this problem. Currently, the best option available is that proposed by the GRADE working Group\textsuperscript{10,11}.

NICE could consider extending collaboration with the GRADE Working Group. Recently, it has further developed an approach to making judgments about recommendations\textsuperscript{11} (Annex 4), which is currently being tested by some GDGs. The precise administrative or policy implications of a ‘strong’ versus a ‘weak’ recommendation may vary from health system to health system and this would clearly be a major issue for NICE to resolve. However, the GRADE system is simple and makes transparent the judgment on whether the desirable effects of adherence to a recommendation outweigh the undesirable effects, thus providing an essential basis for prioritizing recommendations for implementation. Ungraded recommendations imply that the GRP is equally confident about all of its recommendations, which may be misinterpreted as suggesting that all of them should be implemented with equal vigour. This is frequently not reasonable or practical. Although GDGs can clarify this in the phrasing of the recommendations and accompanying text, it is unlikely to be done systematically and transparently without an appropriate system. In addition, where there is significant uncertainty or insufficient evidence about the value of an intervention, there should be an option to recommend “use only in the context of research” with clear guidelines on when it is appropriate to consider and recommend this.

Recommendations (relating to grading the quality of the evidence and the strength of the recommendations)

31. In the NICE Manual and during training of NICE and NCC staff and GDGs, the following should be clearly acknowledged:

- Evidence of the effect of an intervention is essential but not sufficient for making recommendations. Judgments and a consensus are always required.
- The roles of the different types of evidence (information) and judgments that are used in making a recommendation.
• The quality of the evidence is not the same as the strength of a recommendation. Both should be graded explicitly rather than implicitly to protect against errors, resolve disagreements, facilitate critical appraisal and communicate these judgments to others.

32. A framework should be designed to clarify the different types of evidence (information) and judgments required for different recommendations with an explanation of how the different types of information are used.

33. All the different types of evidence used, not only evidence of effects, and the judgments made by GDGs, should be explicitly reported.

34. The findings for each recommendation should be summarized in a table.

35. NICE should consider the approach suggested by the GRADE Working Group in relation to assessing both the quality of the evidence and the strength of the recommendations and should continue to work closely with the GRADE Working Group to develop the approach and systematically evaluate it.

36. “Use only in the context of research” should be an explicit option for inclusion in recommendations and there should be clear guidelines on when it is appropriate to consider and recommend the inclusion of this sentence.

37. The NICE Manual should include options for GDGs on how to reach a consensus or take decisions, including formal consensus and voting methods. GDGs should agree and report on the methods they use and NICE should undertake comparative evaluations of alternative methods.

Writing the guideline

The current Guideline Development Programme has resulted in four documents: the complete guideline, the NICE guideline, the quick reference guide and the information for the patient version. The GDGs and NCCs are responsible for the first and NICE produces the remaining three. The first document is sent to stakeholders for consultation and the GRPs review the GDGs' responses to stakeholders, as well as any changes made.

There was some disagreement between the GDG/NCCs and the NICE editors in relation to the formulation of the products. The way the primary guideline is written by the NCCs differs. For example, some NCCs expect the GDG Chair to do much of the writing; one has an editor specifically for the role. The quality and clarity of the wording of the primary guideline documents are variable as a result.

There is also variation in the pace of implementation. Several suggestions were made to improve this by incorporating the guidelines into the computer software used by clinicians since the hard copies (of even the quick reference guide) were considered to be too long and not user-friendly. Development of an appropriate electronic format (i.e. not just downloaded pdf files) is urgently required to improve the dissemination and use of the guidelines.

The patient version is viewed as a simplified version of the main NICE document, rather than information for patients. The interviewees expressed reservations about its usefulness. There was
no patient involvement in developing it, it does not include information to support decisions and it contains little or no quantitative information. A review of the information for patients version was commissioned by NICE and several proposals for change are being developed as a result.

Few of the professionals or stakeholders from patient organizations that were interviewed reported disseminating NICE guidelines to patients. Several suggestions were made about tailoring the guidelines to different target audiences.

**Recommendations (relating to writing the guideline)**

38. For patient and consumer information, the current approach to content, development and dissemination needs to be modified. It is possible that this is adequately addressed in the proposed changes to the Manual, but NICE should ensure that its approaches to providing patient information are consistent with the available research on doing so most effectively. This could be done, for example, by involving consumers in developing the information (including the quantitative information), making it available for decision-making, when appropriate (e.g. for summaries of findings tailored to patients), and starting with questions raised by patients and consumers rather than the evidence.

39. Target audiences for key recommendations should be systematically identified, their information needs investigated and information tailored to address their needs.

40. Although current IT systems may not fully support electronic dissemination, the development of an electronic method of guideline delivery, integrated with other NHS developments in this area, should be a priority.

**Consultation with and response to stakeholders**

Although NICE’s investment in patient and stakeholder involvement is widely valued, and NICE, the NCCs, the GDGs and the stakeholders are genuinely interested in continuing to improve these processes, it is uncertain whether the right stakeholders are involved and whether their input is as efficient as it could be. There are also concerns about the growing burden of managing stakeholder input. There have occasionally been problems with and concerns about patient involvement in the GDGs, although this seems to be the exception rather than the rule. Although the number of submissions from stakeholders has been increasing, the involvement at individual level within stakeholder organizations may be far less than desired.

An evaluation of methods of involving stakeholders should be viewed as essential rather than optional. A Cochrane review of methods of involving consumers in collective decisions, including guidelines development, found no comparative evaluations on doing so, despite considerable uncertainty about how best to recruit consumers, provide them with training and support, and involve them in decision making\(^\text{12}\).
Recommendations (relating to consultation with and response to stakeholders)

41. NICE should make comparative evaluations of how consumers and other stakeholders are involved.

42. An evaluation of how to manage submissions from stakeholders, apart from cutting out steps, such as the second round of comments on draft guidelines, should be made, including more structured submission processes.

43. The extent of involving individuals within stakeholder organizations should be assessed and consideration should be given to supporting strategies to improve such involvement. This should include the gradual introduction of explicit expectations and some monitoring of how stakeholders involve individuals within their organizations.

Guideline Review Panels (GRPs)

The GRPs have been restructured whereby a process of peer reviews by statisticians and health economists has been included and the second round of stakeholder comments has been dropped. While most people supported this decision on the basis of efficiency, many expressed concern about possible negative effects on the quality of the guidelines and stakeholder involvement. The reason for including representatives of industry in the GRPs is not clear. Although the GRP Chairs interviewed expressed little dissatisfaction with this, no explanation was offered. Representatives of industry need to abstain frequently from participating because of conflicts of interest. There are many other constituencies, such as primary care, that are not adequately represented on the GRPs.

Recommendations (relating to GRPs)

44. The composition of GRPs should include primary and secondary care clinicians, managers, consumers, methodologists, and possibly others; the pharmaceutical industry should not be represented in the panels.

45. The elimination of the second round of stakeholder comments on draft guidelines is acceptable; however, the impact of this change should be evaluated by, for example, commissioning peer reviews and building in routine process checks by NICE and the NCCs throughout the guideline development process. Ideally, this change should be introduced in a controlled way that would facilitate a more in-depth evaluation.

46. In addition to the proposed peer review by statisticians and health economists, peer reviews by methodologists (people with expertise in systematic reviews and guidelines development) and clinical experts on the topic should be carried out. The GRPs should be involved in commissioning the peer reviews.
Other considerations

Dissemination and implementation

Implementation plans should be an integral part of the process of guideline development in order to ensure an end product that is fit for the purpose. Therefore the Review Team considered implementation as an integral part of assessing guideline quality, although a full review of the implementation programme or the implementation of NICE guidelines was outside the remit of this review.

The Review Team noted the perception that clinicians are increasingly taking notice of the NICE guidelines, find them useful and respect their methods. To some extent, the Colleges are investing in the dissemination and implementation of the NICE guidelines, for example through their conferences and training activities.

However, it was also reported that general practitioners and primary care professionals do not appear to find NICE guidelines particularly useful because they are overwhelmed with guidelines and other information, much of which does not seem relevant to them. In addition, it was suggested that many consultants and other secondary care professionals feel that they already know what is in the NICE guidelines and do not need them. There is little documentation on the extent of implementation of or adherence to the NICE guidelines. At present, the use of the clinical guidelines is perceived as optional for the most part, although quality standards for adherence to the NICE guidelines have been set. This is in contrast to the mandatory guidance of the HTA programme. The establishment of an implementation department within NICE and investment in this is an acknowledgement of the need to address these problems and is commendable.

Recommendations (relating to dissemination and implementation)

47. Implementation consultants should be involved at beginning of the guideline development process and include explicit and systematic consideration of the implementation issues related to each recommendation.

48. An implementation template or tool kit for use by the GDGs should be developed.

49. Guideline development should be integrated with service delivery through, for example, the service delivery framework and the quality and outcomes framework.

50. Expectations regarding dissemination and implementation should be explicitly stated in contracts with the Colleges, including agreements about conferences organized by the Colleges and the incorporation of the NICE guidelines in training materials and activities.

51. Implementation issues should be discussed with stakeholders at the beginning of the guideline development process in order to identify likely barriers and facilitators related to implementing changes. A discussion on implementation issues should also take place at the end of the guidelines development process.

52. Implementation research should be viewed as integral to NICE’s mission rather than optional and investment in this area should be increased substantially. There should be collaboration
and exchange of experiences with other implementation researchers in the United Kingdom and internationally.

**Research and development**

Questions were raised as to whether NICE is making the best use of available resources in its Guidelines Programme. While the overall impression of the Review Team was that the Programme is highly efficient and effectively meets its targets, there are ways in which the use of resources could be improved. Some of the recommendations made by the Review Team could improve the use of resources, either directly or indirectly. Perhaps the single most important recommendation in response to this question is to make evaluation an integral component of NICE’s activities rather than an add-on, and, specifically, to consider alternative ways of organizing the work that could have a positive impact on how resources are used. Not only could more systematic and rigorous evaluation provide a better basis for making decisions on methods of work, but it could also help to protect NICE against arbitrary threats to its budget and sustainability, to the extent that it is able to document the effectiveness and efficiency of the Institute.

Evaluations of NICE guidelines and their implementation are being made on what appears to be an *ad hoc* basis. Up to the present, the Guidelines Programme has undergone rapid development and change. This was both appropriate and desirable during the developmental phase of the Programme. However, as the Programme matures, it will be important to find a balance so that it can continue to develop steadily, without undue demands on the staff and the contributors.

**Recommendations (relating to research and development)**

53. NICE needs to strike an appropriate balance between evolution and the demands this puts on the staff and contributors.

54. Evaluation should be an integral part of the guideline development processes and involve:
   - more routine evaluations of methods used, including the ongoing development of minimum standards of methods;
   - well-designed evaluations of the quality and impact of NICE guidelines to allow for informed decisions about methods.
References


Annex 1

Documents reviewed

Guidelines and associated documents

I  NCC Acute care - Nutrition in Adults

- Nutrition – first consultation – comments and responses
- Nutrition – first draft of guideline
- Nutrition – second consultation – stakeholder comments and response
- Nutrition – draft scope
- Nutrition – final full guideline
- Nutrition – final scope
- Nutrition – full guideline appendices
- Nutrition – scope consultation – comments and responses
- Nutrition quick Reference Guide

II  NCC Chronic Conditions – Tuberculosis (TB)

- TB – first consultation – comments and responses
- TB – first draft of guideline
- TB – second consultation – comments and responses
- TB – second draft guideline
- TB – draft scope
- TB – final scope
- TB – full guideline – unconfirmed
- TB – full guideline appendices
- TB – NICE guideline
- TB – quick reference guide
- TB – scope consultation – table

III  NCC Mental Health – Obsessive compulsive disorder (OCD)

- OCD – first consultation table – comments and responses
- OCD – first draft of guideline
- OCD – second consultation table – comments and responses
- OCD – second draft of guideline
- OCD – final full guideline
- OCD – final scope
- OCD – NICE guideline
- OCD – quick reference guide
IV  NCC Nursing and Supportive Care Pressure Ulcer Management

Pressure Ulcers – first consultation – comments and responses
Pressure Ulcers – first draft consultation A
Pressure Ulcers – first draft consultation B
Pressure Ulcers – second consultation – comments and responses
Pressure Ulcers – second draft consultation A
Pressure Ulcers – second draft consultation B
Pressure Ulcers – appendices to guideline
Pressure Ulcers – draft scope
Pressure Ulcers – final full guideline
Pressure Ulcers – final scope
Pressure Ulcers – NICE guideline
Pressure Ulcers – quick reference guide
Pressure Ulcers – scope consultation – table

V  NCC Primary Care – Anxiety

Anxiety – first consultation – comments and responses
Anxiety – second consultation – comments and responses
Anxiety – second draft guideline
Anxiety – appendices 1–4
Anxiety – appendices 5–11
Anxiety – appendices 12–22
Anxiety – draft scope
Anxiety – final full guideline
Anxiety – final scope
Anxiety – first draft guideline
Anxiety – NICE version
Anxiety – quick reference guide
Anxiety – scope consultation – comments and responses

VI  NCC Women and Children – Long Acting Reversible Contraception (LARC)

LARC – first consultation – comments and responses
LARC – first draft guideline
LARC – second draft guideline
LARC – second consultation – comments and responses
LARC – draft scope
LARC – final full guideline
LARC – final scope
LARC – NICE guideline
LARC – quick reference guide
LARC – scope – consultation table
Technical Documents

(a) Consensus and group decisions

Consensus methods in published guidelines’ summary
Final NCC report – C group support – 26 January 2006
NCC/Collaborating Centre consensus model
NCC Womens’ and Children’s Health – consensus draft protocol

(b) Process manual, 2004

GDP – An overview for stakeholders – the public and the NHS

(c) Technical business plans

2005-2006 – Technical business plan

(d) Technical manual 2004

Update 2005
- Implementing changes to the Guidelines Technical Manual, March 2005
Update 2006
- Health economics proposals – paper for NCCs
- Technical Manual, internal consultation document , 6 February 2006
  - Technical manual, minor revisions – procedure – October 2004
  - Proposals for making the guideline development process more efficient. Consultation
document, 24 November 2005

NICE Business Plan 2005-2006

NICE Corporate Plan 2005-2006
## Supplementary material

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<td>Guideline Development Group job and person specification for the Chair</td>
<td>NICE</td>
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<td>How to put NICE guidance into practice – a guide to implementation for organizations</td>
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<td>Response to the Department of Health's consultation paper on the selection of topics for the NICE’s work programmes (Draft version 6)</td>
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<td>Linda Jarett and the Patient Involvement Unit, June 2004</td>
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<td>Long acting reversible contraception final workplan</td>
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<td>Associate Director, Centre for Clinical Practice</td>
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<td>Technical Adviser on Health Economics in Guidelines</td>
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Annex 2

Persons interviewed

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Annex 4

Definitions of strength of recommendations

Desirable effects can include beneficial health outcomes, less burden, and savings. Undesirable effects can include harms, more burden, and costs. Burdens are the demands of adhering to a recommendation that patients or caregivers (e.g., family) may dislike, such as having to take medication or the inconvenience of going to the doctor’s office. Although the degree of confidence is a continuum, the GRADE approach classifies recommendations for or against treatments into two grades, strong and weak.

If guideline developers are confident that the desirable effects of adherence to a recommendation outweigh the undesirable effects, they will make a **strong recommendation** within the context of a described intervention.

A **weak recommendation** is one for which a guideline panel concludes that the desirable effects of adherence to a recommendation probably outweigh the undesirable effects, but the panel is not confident. Thus, if guideline developers believe that benefits and downsides are finely balanced, or appreciable uncertainty exists about the magnitude of benefits and/or downsides, they offer a weak recommendation.

**Strong recommendations:**

- **For patients:** Most individuals in this situation would want the recommended course of action and only a small proportion would not. Formal decision aids are not likely to be needed to help individuals make decisions consistent with their values and preferences.
- **For clinicians:** Most individuals should receive the intervention. Adherence to this recommendation according to the guideline could be used as a quality criterion or performance indicator.
- **For policy makers:** The recommendation can be adapted as policy in most situations.

Example: Early anticoagulation in patients with deep venous thrombosis for the prevention of pulmonary embolism; antibiotics for the treatment of community acquired pneumonia.

**Weak recommendations:**

- **For patients:** The majority of individuals in this situation would want the suggested course of action, but many would not.
- **For clinicians:** Decision aids may be useful in helping individuals make decisions consistent with their values and preferences. Examine the evidence or a summary of the evidence yourself.
- **For policy makers:** Policy making will require substantial debates and involvement of many stakeholders. Examples: Lung volume reduction surgery in patients with severe (upper lobe predominant) emphysema and low exercise capacity; indefinite anticoagulation in patients with idiopathic venous thromboembolism (VTE).