A NICE Perspective*

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* The views expressed in this presentation are those of the speaker and not necessarily those of the Institute
Let’s begin with some background.

- Pre-NICE – medical technology appraisals were carried out by a variety of professional and academic bodies, both at the national and local levels. Work was duplicated, standards varied, and the meaning of the findings was unclear.

- In 1986, the government introduced the Selected List Scheme as a way of publicly listing obsolete or ineffective treatments. But technology quickly outpaced what could be assessed by the Selected List. Clinicians had different opinions and different trusts had different policies about which products were most effective. Because where you live determines the trust in which you are treated, this led to a situation where your address determined which treatments were available to you – ‘postcode prescribing’

- In 1997, the new Labour government proposed an institution intended to provide a central, coherent and authoritative appraisal system. NICE began work in April 1999.

- Controversial opening – NICE reversed some decisions based on pharmaceutical and patient protest. Public perception was suspicious. And the NHS was unclear about what their obligation as far as following NICE’s recommendations. In 2002, the NHS was put under a duty to provide funding to cover NICE recommendations.

- They were also reviewed by the House of Commons’ Health Select committee and warned that they were not fully accepted by stakeholders and that they needed to win the trust of NHS bodies and the public in order to survive. Urged to improve transparency of their methods – and they did. Opened up about methods – including the threshold that was used in decision making. By being public about their process, they were also forced to take a fresh look at it. This is ongoing and a key strength of the institution – they are very self-aware and self-reflective, always reviewing, re-writing and improving processes as they learn from past mistakes.

- As testament to the long way they have come – in 2012 the newly elected Conservative government expanded their remit to cover social care.

- And in 2013, NICE will become an executive non-departmental public body. These are also known as quasi-autonomous non-governmental organisations. QUANGOs are not directly part of any government department – they report to Parliament rather than Her Majesty’s Government. They are self determining and don’t carry out ministerial orders or policy. Established under statute and the government is obliged to provide funding to meet statutory obligations.

They have come a very long way in 13 years – but it didn’t happen easily or quickly! Their process is being continually refined. I hope that by explaining some of their processes and methods you will be able to learn and build upon their experience in order to apply these principles to your own context.

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<th>THEN</th>
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<tr>
<td>1986 - Selected List Scheme</td>
<td>2012 – Newly elected Conservative government proposed an expanded role for NICE</td>
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<td>1997 – Newly elected Labour government promised to abolish ‘postcode lottery’</td>
<td>- Remit will to include the provision of social care</td>
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<td>- Establishment of a central, coherent, authoritative appraisal system</td>
<td>- To be known as the National Institute for Health and Care Excellence</td>
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<td>1999 – NICE was established</td>
<td>- DoH has agreed an initial list of joint NHS &amp; social care topics for NICE to begin working on from 2013.</td>
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<td>2002 – NHS given a duty to provide funding for NICE recommendations</td>
<td>2013 – NICE will become an executive non-departmental public body</td>
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<td>2002 – House of Commons Select Committee warning</td>
<td>- Value based pricing?</td>
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<td>2005 – Remit expanded to cover public health guidance</td>
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<td>1997 to present – Controversy and questions of credibility</td>
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NICE has 4 programmes that produce guidance. Over the past 10 years or so, the scale of their output is enormous and continues to grow.

Even more impressive is that there is a continual effort to keep it current. Every three years, the need for an update is evaluated and in many cases – where there have been developments in the literature – these go ahead. However, don’t update the whole guideline, just key parts.

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<th>NICE Programme</th>
<th>Provides guidance on:</th>
<th>Statistics to 2010:</th>
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| Technology Appraisals | The use of health technologies, including: pharmaceuticals, drugs, diagnostics, procedures, health promotion tools. | 110 single TAs  
155 multiple TAs  
= 265 total appraisals |
| Clinical Guidelines (standard & short) | The appropriate treatment and care of patients with specific diseases & conditions. | 161 published  
276 in development |
| Interventional Procedures | The safety of any test or treatment that involves entering the body through skin, muscle, vein or artery, or body cavity. | 370 published |
| Public Health         | Activities to promote a healthy lifestyle and prevent ill health                      | 40 published  
30 in development |
NICE Clinical guidelines

Assess the clinical and cost effectiveness of the diagnosis, treatment and management of particular conditions.

Target audience is healthcare professionals, patients, public and healthcare commissioners – different publications for each.

Do not override the responsibility of healthcare professionals to make decisions which are appropriate to the circumstances of individual patients.

Healthcare professionals must take NICE clinical guidelines into account when exercising their clinical judgement.

Recommended treatments/interventions must be provided by all NHS trusts.
The remit given to NICE by the DoH and identifies the broad areas to be covered by the guideline.
Once NICE is provided with a guideline topic by the DoH it refers it to one of its four National Coordinating Centres. These centres are funded by NICE, but are housed and run in partnership with one of the relevant professional colleges.

This is clever. It allows NICE to act as a buffer between the policy pressures coming from government and the needs of the researchers at the NCCs. By integrating themselves within the professional colleges, the NCCs gain the trust, support and participation of clinicians in those fields. As a researcher, this means you are free to pay attention to the science of the work without political interference. And you have the benefit of ready access to clinical input and professional credibility.
This remit is the starting point for the evolution of the scope.
The key point of the scope is to outline the key clinical issues to be included.

There is an initial scoping search of both clinical and economic literature. The aim of the clinical literature scope search is to gain an understanding of the key issues by picking up other guidance, TAs, systematic reviews, etc. The approach to reviewing economic evaluations is systematic but focused. You’re not looking for every costing study that’s ever been done -you are looking for studies which help you to answer the question. You want them to be high quality and applicable to NHS current practice.

The scope determines the shape of the review. It is conducted in 4 main stages.
1) Identifying the key clinical issues
2) Checking these issues with stakeholders – who include patient and carer organisations, healthcare organisations, NHS trusts, research organisations, companies with an interest in the guidance.
3) Public consultation on the first draft
4) Finalising the scope after consultation.

The primary purpose is to provide a framework and set boundaries for the work.
Factors which are considered when deciding which clinical issues should and should not be covered. These considerations are generally useful to anyone who is trying to come up with an idea for a systematic review or cost-effectiveness analysis or trying to prioritize given a long list of possible topics.
Like so many things that NICE does, the structure of the NICE scope is standardised and includes the following:
Convening an effective GDG is the most important factor in producing a NICE guideline. The GDG agrees the review questions, considers the evidence and develops the recommendations. It is multidisciplinary and the exact composition is tailored to the topic covered by the clinical guideline. Group dynamics matter in such a collaborative process. From the outset, try to do away with ego and encourage participation from all members.
Once the scope is set, the group sets about to nailing down specific questions that will be addressed by systematic review. Getting the question right ensures that you are able to produce a meaningful answer.
How do you set an effective question?

Everyone probably thinks they know what is meant by this question. But how would you search the literature for this? Use ‘bare below the elbows’ as the search term and limit to RCTs or cohort studies? How would you start to sift through the studies that come up? Exactly what sort of information are you looking for? How are you going to measure effectiveness? What do you even mean by bare below the elbows?
Well..

We know that the people baring their elbows are healthcare workers. For this guideline, our remit included only those in primary or community care.

Then you need to define what exactly you mean by bare below the elbows. Notice we didn’t say ‘no jewellery’. Careful consideration was given to the type of jewellery that would be allowed. It was decided that based on GDG experience it would be impractical to ask everyone to remove wedding bands. And also that wedding bands were unlikely to harbour significant amounts of bacteria. But stoned rings are known to be difficult to disinfect.

Because every evidence review is a comparison for which you want to know the effectiveness of one thing relative to another, we must also define our comparator.

Then we define the outcomes that we are interested in. Again, these were carefully chosen by the GDG on the basis of which clinical outcomes were important for decision making and which had economic implications. They were allowed to choose up to seven, but settled on only 5 for this question.
The PICO becomes the question – all the information needed to address the question is contained within it.

**NICE Questions**

What is the clinical and cost effectiveness of healthcare workers following bare below the elbow policy (short sleeves or rolled up sleeves) vs. no bare below the elbow policy (long sleeves, not rolled up or no specific restrictions) on MRSA and *C. diff* reduction or cross infection, colony forming units and removal of physical contamination and transient organisms?
This is easily transformed into a review protocol, which is a formal agreement of what the review will and will not cover. The protocols also consider the types of studies which will be searched – whether to only consider RCTs, or drop to observational in the case of no RCT, only consider cohorts, etc. This decision is based on the GDG members’ knowledge of the existing literature base. Explicitly state

Protocols come in handy when there is any disagreement about what the question is or is not to include. If the scope acts as a contract between NICE and the NCC as to what the guideline will cover, the question protocol is like a contract between the technical team and clinical members of the GDG as to what each question is designed to answer.

Protocols are also useful if you think you might like to publish a review at a later stage (of if the primary purpose of the study is for publication). Most journals consider it good practice to register your protocol before you start working on it. NICE doesn’t do this. (But it may be a useful idea for individual researchers at NICE to consider if they are interested in publication).
Guidelines are made up of approximately 20 key questions related to the diagnosis and management of patients with specific diseases or conditions. Each question represents a full systematic review of both the clinical and economic literature (i.e. ‘EBA’). This is completed within 12 months. Or approximately 2 EBAs a month. All are quantitative EXCEPT the patient information question, which is a qualitative review to identify themes – usually regarding patient attitudes and beliefs about their condition.
Prioritization of CEA

- Overall ‘importance’ of the question
  - Number of patients affected
  - Potential impact on costs and outcomes

- Extent of current uncertainty of cost-effectiveness & likelihood that economic analysis will reduce this uncertainty

Obviously, it would be impossible to develop de novo economic analyses for each question. During the scoping process, the HE begins to think about which questions should be prioritised for original modelling. This process proceeds along with developing the review questions during the first GDG.

Of all the questions, the GGD is asked to prioritise 2 or 3 subjects for economic modelling. An economic analysis will be useful if it is likely to influence a recommendation and if the health and financial consequences are large.

Prioritisation depends on:
Overall importance of the recommendation – which is a function of the number of patients affected and the potential impact on costs and outcomes of a change in practice
Current uncertainty.

If the clinical evidence is so uncertain that it is not possible to give even a rough estimate of cost-effectiveness, then modeling is not warranted. Or if the evidence is so reliable that further research would be redundant. Or if it is obvious that resources implications are modest in relation to the expected health gains.

This information informs the economic plan. This is an outline all of the existing economic literature for each question and identifies the questions which are of high priority for original modelling, as well as the proposed methods for addressing these questions. It is prepared by the health economist in consultation with the technical team and GDG and signed off within 3 months of the first GDG meeting. Likely to be modified as development progresses.

Notice that it’s not based on whether or not a particular intervention shows a clinically significant effect for a particular outcome. It’s based on the perceived importance of the clinical question.
For each of these two guidelines, the following were identified as priorities for original modelling. In both cases, it turned out that in the latter questions there wasn’t enough clinical data to develop a useful economic model.
Once the questions are set and the economic plan is submitted, the guideline development process begins.
Reviewing the evidence

- Sift based on title and abstract against protocol
- Assess quality (GRADE and HE checklists)
- Summarise in standardised evidence tables
- Present to GDG (~ 2 reviews/month)
- Make recommendations based on interpretation of the evidence
Requests for additional information

Call for evidence
• Sent to all stakeholders
• Includes protocol – very specific
• Given 4 weeks to respond
• Must have permission to publish

Requesting additional data from authors
• If you contact one, contact all.
• Be clear about permission to publish

The GDG and NCC staff may have good reason to believe that information exists that has not been found using standard searches. Examples include ongoing research in a field, if a technology is relatively new, studies that have been published only as abstracts, data on adverse effects, economic models, and studies of the experiences of patients, carers or healthcare professionals.

Process is designed to be consistent, transparent and fair. You want to avoid inadvertently introducing bias into the review.
Decision making criteria are outlined in NICE’s Social Values Judgement document.

These are two which we’re probably all familiar with.
But there are many others.

NICE Decision Criteria

Principle 5
- Although NICE accepts that individual NHS users will expect to receive treatments to which their condition will respond, this should not impose a requirement on NICE’s advisory bodies to recommend interventions that are not effective, or are not cost effective enough to provide the best value to users of the NHS as a whole.
NICE Decision Criteria

Principle 3
• Decisions about whether to recommend interventions should not be based on evidence of their relative costs and benefits alone. NICE must consider other factors when developing its guidance, including the need to distribute health resources in the fairest way within society as a whole.

Principle 1
• NICE should not recommend an intervention (that is, a treatment, procedure, action or programme) if there is no evidence, or not enough evidence, on which to make a clear decision. But NICE’s advisory bodies may recommend the use of the intervention within a research programme if this will provide more information about its effectiveness, safety or cost.
NICE recognises that the evidence base doesn’t hold an answer to everything. When making recommendations, GDGs are required to make judgements – scientific judgements about interpreting the quality and significance of the available evidence as well as social value judgements relating to society rather than science.

After studying the literature, consulting with the NICE Citizen’s council and the public, NICE has developed specific guidance for the principles that should be followed when making recommendations. These are outlined in the 2008 Social Value Judgements.

Covers ethical principles concerning decisions on healthcare and how decisions are made
- General principles including respect for autonomy, non-maleficence, beneficence, distributive justice;
- Procedural justice including publicity, relevance, challenge and revision and regulation.

2010 – Equality Act – when considering legally protected groups, NICE’s approach to applying social value principles must be governed by the act.

It is up to the GDG to make sure that these principles are upheld in the first instance. And ultimately, because NICE has final sign off on guidelines, they are to check that these principles have been reflected in each recommendation.
An example of where multiple criteria are used to make decisions.

The case of intermittent urinary catheters.

A bit of background – There are 3 types of urinary catheters. Hydrophilic, gel reservoir, noncoated. Non-coated can be used once and discarded ‘sterile’ or washed and reused ‘clean’. [All coated (hydro and gel reservoir) are used once only].

But all are marked single use. What to do? Should clean non-coated ISC be included as a comparator? Given that there is no significant difference in infection rates between the different methods, and a huge difference in resources, we know that they are likely to be cost effective. Big disinvestment opportunity. Big opportunity cost.
Even accounting for all downstream complications of UTI (multidrug resistance, bacteraemia, death, etc), gel reservoir were not cost effective. Clean non-coated were.
The original recommendation respected the cost-effectiveness evidence, but was not single minded in its application. The GDG also made a consensus recommendation based on:

- the risk of severe renal impairment as a result of UTI in young people.
- The social impact upon children and young people of non-coated catheters for multiple-use - the difficulties in ensuring privacy and dignity where shared toilet facilities are used, such as in schools and colleges - peer pressure and embarrassment in schools could have an adverse impact on the child or young person’s self-esteem, and potentially reduce compliance with intermittent catheterisation and appropriate hygiene
- Privacy and dignity issues in adults - shared toilets in work places or other public spaces.
- Was intended to allow the patient to discuss the choice of catheter that would appropriately maintain their patient’s independence and not restrict their everyday activities during their assessment with a healthcare worker.
- Patient’s physical ability, including problems with manual dexterity or mobility, including wheelchair user
- Other equality issues such as cognitive and visual impairment would be taken into consideration prior to selecting an intermittent catheter, when assessing the patient for type of catheterisation.

The GDG also considered that patients should be able to choose a less effective, less expensive option if it is their preference. The GDG have therefore recommended that healthcare workers ‘offer a choice of single-use hydrophilic or gel reservoir catheters’.

We thought this was a reasonable recommendation. But because it would represent a huge change in practice, we were prepared for resistance.
But not this much resistance! The comments received from stakeholders brought up concerns that we couldn’t ignore. Particularly with respect to the uncertainty and generalisability of the evidence base (few studies, mostly in men with spinal cord injury).
So we changed it. We took all of these other factors into account and deemed them to be of more importance than the cost-effectiveness evidence – at least until we have more evidence on which to base this sort of ‘off label’ recommendation.

Other examples:

For the Infection guideline, we checked with the British Muslim council about the use of alcohol-based skin decontamination products (they said it was OK because these alcohols are synthetic); we also asked the Buddhists their thoughts about killing bacteria (they said it was OK if it was for the purpose of saving a human life). If they had said otherwise, we would have had to consider our recommendations and how they would affect these specific groups.
A few lessons that I hope are applicable to lots of different researchers and organisations.
Everything you ever wanted to know about NICE and its processes and guidance can be found on-line. There are no NICE secrets!

NICE information

• Guidelines Manual:  
  http://www.nice.org.uk/guidelinesmanual

• Social Value Judgements:
  http://www.nice.org.uk/aboutnice/howwework/socialvaluejudgements/socialvaluejudgements.jsp

• Guide to the Method of Technology Appraisal:
  (esp. Chapter 5 = NICE reference case for HE)
  http://www.nice.org.uk/aboutnice/howwework/devnetech/guidetothemethodsoftechnologyappraisal.jsp
Thank you!
UK Jobs

- National Coordinating Centres
  - National Clinical Guideline Centre (London)
  - NCC for Women and Children’s Health (London)
  - NCC for Mental Health (London)
  - NCC for Cancer (Cardiff)
- Universities – Sheffield, York, Glasgow, Oxford, Brunel, UCL, King’s, Imperial, LSHTM...
- NHS/Government - Health Protection Agency, NHS Trusts, hospital research departments (e.g. St. Thomas)
- Consultancies - Matrix, Adelphi, Symmetron, Office of Health Economics, i3 Innovus, Oxford Outcomes
- Pharma – Novartis, Amgen, GSK, etc.

Key Issue: Visas
Job search resources

Websites
• Guardian Jobs - http://jobs.guardian.co.uk/
• International Health Economics Association - https://www.healtheconomics.org/

Recruiting agencies
• Hays Pharma
• Barrington James
• Paramount Recruitment
• SecPharma
• Morgan Hunt
• etc.