

## Impact case study (REF3b)

<b>Institution:</b> Newcastle University
<b>Unit of Assessment:</b> UoA2
<b>Title of case study:</b> NICE work: improving evidence-based clinical guideline development and implementation
<p><b>1. Summary of the impact</b></p> <p>Clinical practice guidelines published in the UK by the <i>National Institute for Health and Care Excellence</i> (NICE) are constructed using an approach based on methodological research led by Professor Martin Eccles of Newcastle University. This systematic approach includes the incorporation of health economics considerations and review after three years (and if found necessary, an update of the guidelines); both important outcomes of Newcastle research. The implementation of guidelines has long been an area of concern. Professor Eccles established and chaired (2008–12) the NICE Implementation Strategy Group, which sought to improve the assistance that NICE gives organisations in order to aid the implementation of guideline recommendations. Valid clinical practice guidelines, when implemented, lead to health gains and predictable care costs, thus helping both patients and the NHS.</p>
<p><b>2. Underpinning research</b></p> <p><u>Key Researcher</u></p> <p>Professor Martin Eccles conceived and led the research in Newcastle and contributed significantly to collaborative work, detailed where appropriate.</p> <p><u>Background / context</u></p> <p>Clinical practice guidelines, defined as “<i>systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances</i>”, represent one of the foundations for efforts to improve healthcare (Field &amp; Lohr, National Academy Press 1990). The development of clinical practice guidelines (hereafter referred to as guidelines) began in the USA in the early 1990s. However, legal challenges (a result of the largely private nature of US healthcare) stopped progress soon afterwards leaving significant methodological issues to be addressed, particularly validation. Guidelines are considered valid only if: “<i>when followed, they lead to the health gains and costs predicted for them</i>” (Field &amp; Lohr, National Academy Press 1992). When appropriately disseminated and implemented, valid guidelines can lead to changes in clinical practice and improvements in patient outcome. Conversely, the dissemination and implementation of invalid guidelines may lead to wasteful use of resources on ineffective interventions or, worse still, deterioration in patients' health. Research at Newcastle University sought to fill this gap in the development of valid guidelines.</p> <p><u>Research</u></p> <p>The research undertaken at Newcastle first addressed the question of how best to develop valid guidelines that help to improve the quality of patient care. Building on the general method developed by the Agency for Health Care Policy and Research in the USA, and refining it for application to the NHS, in 1996 Professor Eccles led the development of the first evidence-based guideline in the UK (R1). The following year, further guidelines were published, along with a practical methodology for the production of evidence-based guidelines (R2).</p> <p>There had been little theoretical exploration, and a lack of a widely accepted means, of incorporating economic considerations into guidelines. The NHS Research and Development Health Technology Assessment Programme document <i>How to develop cost conscious guidelines</i> (R3), authored jointly by Eccles and Mason (York University) in 2001, was the first published practical approach in which cost and cost-effectiveness concepts were successfully incorporated into guideline development processes.</p> <p>Between 2001 and 2005, Newcastle researchers played a leading role in an international research effort that studied guidelines in use. This showed that guidelines have an average lifespan of about six years and stated “<i>As a general rule, guidelines should be reassessed for validity every 3 years.</i>” (R4, p1461) Further research led to a publication that described approaches for updating</p>

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clinical guidelines (R5).

In addition to this focus on guideline development, Newcastle researchers developed an understanding of how new knowledge described in academic medical literature was taken up by practising clinicians. This research had implications for improving the implementation of guidelines in the clinical setting (R6).

### 3. References to the research

(Newcastle author in bold type, citation counts from Scopus, July 2013)

**R1. Eccles MP** and members of the guideline development and technical advisory groups. North of England evidence based guidelines development project: summary version of evidence based guideline for the primary care management of asthma in adults. *British Medical Journal* 1996;312:762–6. doi: <http://dx.doi.org/10.1136/bmj.312.7033.762> **Cited by 43.**

**R2. Eccles MP**, Clapp Z, Grimshaw JM, Adams PC, Higgins B, Purves I, Russell IT. North of England evidence based guideline development project: methods of guideline development. *British Medical Journal* 1996;312:760–2. doi: <http://dx.doi.org/10.1136/bmj.312.7033.760> **Cited by 140.**

**R3. Eccles M**, Mason J. How to develop cost-conscious guidelines. *Health Technology Assessment* 2001;5(16). doi:10.3310/hta5160 **Cited by 96.**

**R4. Shekelle P**, Ortiz E, Rhodes S, Morton S, **Eccles M**, Grimshaw J, Woolf S. Validity of the agency for healthcare research and quality clinical practice guidelines: how quickly do guidelines become outdated? *Journal of the American Medical Association* 2001;286:1461–7. doi: 10.1001/jama.286.12.1461 **Cited by 238.** (Eccles contributed to the study concept and design, the analysis of data, and the critical revision of the manuscript for important intellectual content.)

**R5. Eccles M**, Rousseau N, Freemantle N. Updating evidence-based clinical guidelines. *Journal of Health Services Research and Policy* 2002;7:98–103. doi:10.1258/1355819021927746 **Cited by 15.**

**R6. Eccles M**, Grimshaw J, Walker A, Johnson M, Pitts N. Changing the behavior of healthcare professionals: the use of theory in promoting the uptake of research findings. *Journal of Clinical Epidemiology* 2005;58:107–12. doi: 10.1016/j.jclinepi.2004.09.002 **Cited by 213.**

#### Relevant funding awards, by funder

Northern Regional Health Authority: *Guidelines for management of ischemic heart disease and asthma*. 1993 for 18 months; £51,000.

NHS R&D Programme: *Evaluating methods to promote the implementation of research findings*. 1997 for 42 months; £798,682.

### 4. Details of the impact

As a result of research led by Newcastle University, the UK *National Institute for Health and Care Excellence* (NICE) has adopted: (i) methods by which the world's leading valid clinical practice guidelines are produced; and (ii) processes that offer the best opportunity for implementation by those responsible. This maximises the opportunities for health gains for patients and predictable costs for the NHS.

#### The National Institute for Health and Care Excellence

NICE was established in 1999, and over time it has expanded its remit to provide guidance and advice to improve health and social care. NICE guidance supports healthcare professionals and others in England to ensure that the care they provide is of the highest quality, and that it offers the best value for money. NICE is internationally recognised for the way in which recommendations are developed, using the best available evidence (Ev a).

#### NICE guidelines: the ongoing impact of Newcastle research

The first guideline adopted by NICE was one developed by Eccles' research group concerning secondary prophylaxis following myocardial infarction (Ev b). NICE also adopted the approach by

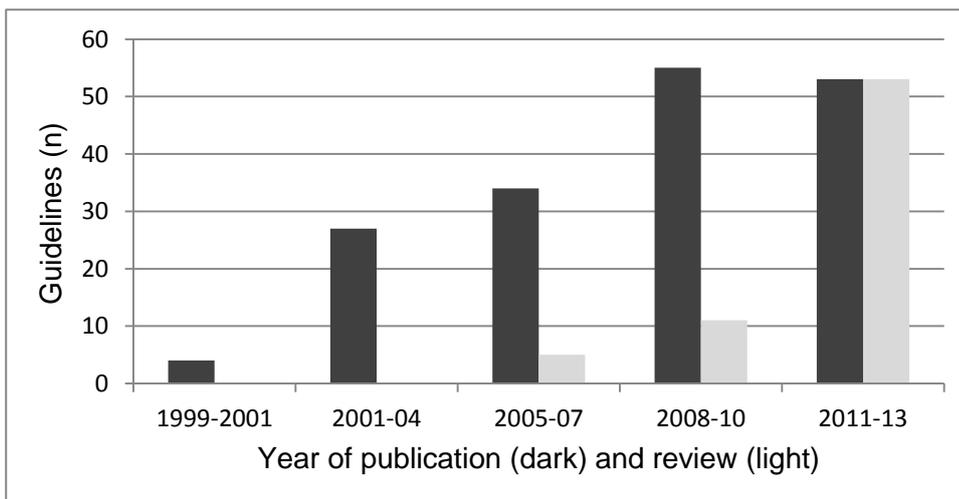
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which the guideline (and those on asthma (R1) and another on angina) was produced. Six research publications (led by the Newcastle group) on guideline development (including R3, R5 and R6 above) were later cited in the first edition of the *NICE Guideline Development Manual* (2004). These publications continue to underpin the method for preparing guidelines, as can be observed most recently in the November 2012 edition of the *NICE Guideline Development Manual* (Ev c).

A total of 174 NICE guidelines had been produced using the approved methods as of July 2013, the majority of which were after 2007. In the seven years 2001–7, a total of 65 guidelines were published. In the following five years 109 guidelines were published (Ev d). Of all guidelines produced, 169 remain in force: 142 of which are in their original form and 27 have been updated.

A significant development has been the introduction of the requirement to review guidelines and, if necessary, update them. This process has largely taken place since 2008 (see Figure 1). NICE policy, which is based on Newcastle-led work on the lifespan of guidelines, is: “A formal review of the need to update a guideline is usually undertaken by NICE 3 years after its publication” (Ev c, p189). This three-year recommendation is based on advice presented in the 2001 *Journal of the American Medical Association* paper (R4). Since 2008, 22 guidelines have been re-written, and 67 other guidelines have been subjected to the review process. Five guidelines have been withdrawn as a result of the review process.

Figure 1. The number of NICE guidelines (n) published and reviewed, by three-year periods. (Data obtained from [www.nice.org.uk/guidance](http://www.nice.org.uk/guidance), Ev d)



Advising on development and implementation

The Deputy Chief Executive of NICE has said of Professor Eccles and his research that:

“...your work on the effectiveness of strategies to implement evidence based guidelines [... has] informed NICE’s understanding of the evidence base for implementation and led to the decision to form NICE’s Implementation Strategy Group.” (Ev e)

Eccles chaired the Implementation Strategy Group from 2008 until retiring from it in 2012 (Ev f). Consequently, Newcastle-led research on strategies for promoting the uptake of research findings was incorporated into the processes and activities of NICE.

Examples:

(i) *Encouraging engagement in promoting implementation.* Guidelines are, and have always been, written and reviewed by external committees convened for that purpose, rather than NICE staff. The Implementation Strategy Group scrutinised the processes by which guideline development committee members were recruited. As a result of Newcastle-led research on behaviour change amongst professionals (R6), a recommendation was made regarding the importance of appointing

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the appropriate people to promote guideline implementation. As a result, since Autumn 2009, the NICE Implementation Team has advised management on potential gaps in guideline development committee membership in order to encourage the recruitment of individuals who could be expected to champion the implementation of a guideline.

(ii) *Web-based practical advice on implementation.* In 2009, the Implementation Strategy Group gave advice (based on research such as that described in R6) on promoting engagement with primary care services and supported the production of web pages designed to aid general practitioners with the implementation of guidelines. The Implementation Programme Director of NICE has said:

*“This is still a well used part of the site. ... A cross Institute group on general practice was formed and still active in 2013. [The number of page] views within the first weeks of its launch were equivalent to that of our most viewed guideline which is unusually high for a support product, rather than a guidance product.” (Ev g)*

**5. Sources to corroborate the impact**

**Ev a.** NICE website [http://www.nice.org.uk/aboutnice/howwework/how\\_we\\_work.jsp](http://www.nice.org.uk/aboutnice/howwework/how_we_work.jsp)

**Ev b.** The first NICE guideline can be found at: <http://guidance.nice.org.uk/A>

**Ev c.** NICE, ‘*The guidelines manual*’ Published on 30 November 2012. The web version is available at <http://publications.nice.org.uk/pmg6> and a searchable pdf version (downloaded 17/06/13) is available on request.

**Ev d.** The individual guidelines are available, beginning at <http://www.nice.org.uk/guidance/index.jsp?action=byType&type=2&status=3> and continuing for several pages. Dates were gathered from webpages and tabulated. This data can be made available on request.

**Ev e.** A letter from the Deputy Chief Executive of NICE (who has agreed to be contacted to corroborate these claims if required) is available on request.

**Ev f.** Notification of the vacancy, with a description of the role of the Implementation Strategy Group is available at <http://www.nice.org.uk/getinvolved/joinnwc/ChairAndMemberImplementationStrategyGroup.jsp>

**Ev g.** A copy of e-mail communication with the Implementation Programme Director of NICE (who has agreed to be contacted if required to corroborate the claimed impacts) is available.