

Systematic Reviews

knowledge to support evidence-informed
health and social care





By removing uncertainties in science and research, systematic reviews ensure that only the most effective and best-value interventions are adopted by the NHS and social care providers. NIHR investment in systematic reviews means our health and care services have access to the best possible evidence to inform decisions and choices. ●

Professor Dame Sally C. Davies
Director General of Research and Development,
Department of Health

The National Institute for Health Research: home of Systematic Reviews

The National Institute for Health Research (NIHR) is a global leader in producing and promoting high-quality research evidence to support decision-making in health and social care.

A major challenge facing the NHS is to adopt the most effective, best-value healthcare interventions and avoid wasting finite resources on those that have been shown to be ineffective. NIHR investment in systematic reviews helps to meet this challenge.

It is widely accepted that the findings of individual research studies are rarely sufficient to justify new treatments. Systematic reviews identify, evaluate, combine and summarise the findings of all relevant individual studies and, when carried out well, provide decision-makers with the best possible information about the effects of tests, treatments and other interventions used in health and social care.

The NIHR is making sure that our health service has access to the best possible evidence to inform decisions and choices by commissioning systematic reviews and by building capacity for their conduct and supporting the development of methods.

With an annual budget of around £13 million, the NIHR Systematic Review Infrastructure (NSRI) comprises:

- the UK Cochrane Centre (UKCC) and Cochrane Review Groups
- the Centre for Reviews and Dissemination (CRD)
- Technology Assessment Review (TAR) teams.

The NSRI supports and commissions reviews that explicitly address key questions faced by front-line professionals and by national NHS decision-making bodies and other policy customers in the NHS. These include the National Institute for Health and Clinical Excellence (NICE), the National Screening Committee, the Chief Medical Officer and the National Clinical Directors for Cancer, Diabetes, Mental Health, Heart Disease and Stroke.

Each part of the NSRI works to ensure that the knowledge they produce is rigorous, accessible, and can be used by professionals and policy-makers to make informed decisions about the treatment and care the NHS provides.

● Everybody needs good-quality information, so that patients can make the best decisions about their treatments: Cochrane, CRD and the TAR teams are at the heart of this. ●

Dr Ben Goldacre, author of *Bad Science*

The UK Cochrane Centre and Cochrane Review Groups

The Cochrane Collaboration is the world's largest organisation dedicated to producing and maintaining systematic reviews of the effects of healthcare interventions.

Worldwide more than 20,000 people are involved in 52 Cochrane Review Groups in over 100 countries. Cochrane reviews are regularly updated and are valuable sources of information for those receiving care, as well as for decision-makers and researchers. There are now around 4,000 full Cochrane reviews available in The Cochrane Library, covering tens of thousands of research studies, millions of patients and billions of pounds of investment.

Twenty NIHR-funded Cochrane Review Groups, all based in academic or health institutions in the UK, cover a wide range of areas of healthcare including dementia, depression, heart disease, oral health, palliative care, pregnancy and childbirth and schizophrenia.

They produce almost half of all Cochrane reviews and each year publish around 200 new reviews, as well as bringing a similar number of existing reviews up to date. Many make major contributions to the development of clinical guidelines and all work to make sure that reliable evidence is used to inform decision-making in the NHS.

Cochrane Review Groups take account of the views of patients and clinicians when prioritising topics for review. For example, the Cochrane Review Group covering incontinence recently shortlisted two reviews following publication of a list of topics prioritised by patients and clinicians through a James Lind Alliance Priority Setting Partnership. The two reviews were in the areas of: *Management of stress urinary incontinence* and *Effective treatments of daytime urinary incontinence in children*.

The UK Cochrane Centre (UKCC), one of 13 Cochrane Centres around the world, has a key role in providing training and support for the preparation and maintenance of Cochrane reviews. The training programme provides a variety of events and workshops, training over 300 people per year with the number of person hours of training received running into the thousands.

The UKCC works with NICE to identify interventions that have been shown to be ineffective by Cochrane reviews. More than 300 relevant reviews have been highlighted to NICE to date.

Impacting NHS practice

The review *Human albumin solution for resuscitation and volume expansion in critically ill patients* led to significant cost savings for the NHS, and to the (SAFE) Saline versus Albumin Evaluation trial, by highlighting the potential harm of human albumin.

The Cochrane Injuries Group

The Centre for Reviews and Dissemination

The Centre for Reviews and Dissemination (CRD), a department of the University of York, is a centre of excellence in health research synthesis and a national resource for those who need to know about systematic reviews.

CRD undertakes systematic reviews across a broad range of topic areas for national and international funders and policy customers, carries out methods research and produces internationally accepted guidance for undertaking systematic reviews. The 2009 edition of this guidance can be accessed free of charge via CRD's website.

Published research evidence evaluating the effectiveness and cost-effectiveness of healthcare interventions is growing year on year. It is not possible for policy-makers and practitioners to identify and keep up to date with this literature.

To solve this problem, CRD builds and disseminates the evidence base through production of its databases, making sure that those who need to know about the results of a systematic review get to know about them and can make sense of the findings.

CRD is part of an NIHR Collaboration for Leadership in Applied Health Research and Care, and is translating existing evidence from CRD databases into actionable messages to inform local decision-making and practice.

CRD is one of 10 UK institutions collaborating in the Public Health Research Consortium funded by the Department of Health's Policy Research Programme. The aim is to strengthen the evidence base for public health interventions, with a strong emphasis on tackling socioeconomic inequalities in health.

CRD databases

Operating on a global platform DARE (Database of Abstracts of Reviews of Effects), NHS EED (the NHS Economic Evaluation Database) and the HTA (Health Technology Assessment) database provide access to:

- over 15,000 systematic reviews
- over 8,000 health economic evaluations
- over 8,000 records of health technology assessments.

DARE and NHS EED assist decision-makers by systematically searching the world literature to identify and describe systematic reviews and economic evaluations, appraise their quality, and highlight their strengths and weaknesses. The HTA database provides a comprehensive listing of in-progress and published health technology assessments, many of which are not easily found elsewhere.

The databases are widely available and freely accessible via CRD's website. They are also an important component of The Cochrane Library, and a key resource within NHS Evidence.

Each year more than 400,000 identifiable users from around 200 countries view over 4 million records free of charge via the CRD website. By far the biggest identifiable user of the databases is the NHS.

Health Technology Assessment Reviews

Health Technology Assessment Reviews (TARs) provide a reliable and rigorous evidence assessment of the benefits, harms and costs of particular healthcare treatments and tests for those who plan, provide or receive care in the NHS.

TAR reports are commissioned to meet the urgent needs of national NHS decision-making bodies and policy customers. TARs are most commonly produced to inform NICE Appraisal

Committee guidance on the use of new and existing medicines, treatments and procedures within the NHS in England and Wales. Two types are produced:

- **Evidence Review Group Reports** assess the strength and quality of the research evidence submitted by manufacturers to NICE as part of the evaluation of single new drugs or devices close to when they are first licensed. Assessment is rapid, with reports produced within 8 weeks.
- **Assessment Reports** identify, assess and synthesise the research evidence across a number of intervention options in a given healthcare area, typically providing estimates of the relative effectiveness and cost-effectiveness of a range of intervention options. These large research projects are also delivered rapidly, in 28 weeks.

Each TAR is tailored to meet the individual policy customer's needs in terms of independent evidence review, individual patient meta-data analysis, cost-effectiveness and economic modelling.

NIHR-funded systematic reviews provide robust and independent evidence assessments that are a key input to our Health Technology Evaluation processes. These assessments are fundamental to support our Appraisal Committee decision-makers in producing NICE evidence-based guidance on new health technologies. Our guidance directly impacts NHS clinical practice and the NIHR-funded systematic reviews are invaluable in helping NICE ensure that it develops recommendations for the benefit of the NHS and the patients who use it. 🍀

Dr Carole Longson, Director of NICE's, Centre of Health Technology Evaluation

TARs are currently prepared by seven specialist independent academic groups based at universities in the UK. By April 2011, the contract will extend to include 10 centres, including academic and commercial evidence review centres. The 10 TAR teams are:

- North East Scotland HTA Group, University of Aberdeen
- West Midlands HTA Collaboration, University of Birmingham
- Peninsula Technology Assessment Group, University of Exeter
- Liverpool Reviews and Implementation Group, University of Liverpool
- School of Health and Related Research, University of Sheffield
- Southampton HTA Centre, University of Southampton
- CRD and Centre for Health Economics, University of York
- Warwick Evidence Group, University of Warwick (April 2011)
- BMJ Evidence Centre, London (April 2011)
- Kleijnen Systematic Reviews Ltd, York (April 2011)

Each TAR team is contracted to deliver an agreed number of high-quality assessment reports to strict timetables in order to meet policy customer needs. All TARs undergo a rigorous process of peer and editorial review and are published in the HTA journal, *Health Technology Assessment*.

To date, the NIHR HTA programme has commissioned over 200 TARs on behalf of NICE and over 100 for other policy-makers to support evidence-informed policy and practise.



The effectiveness and cost-effectiveness of cochlear implants for severe to profound deafness in children and adults.

This systematic review supported the production of NICE guidance TA166, January 2009. It defined the cost-effectiveness of patient care pathways in the NHS on the use of one or more cochlear implants for hearing impairment and led to a range of benefits for patients with significant hearing impairment.

*Health Technology Assessment,
October 2009*

“ We welcome the NICE guidance, which will ensure that eligible patients have access to cochlear implants. Cochlear implants open up a new world of sound to people who otherwise would not hear. Recipients are able to increase their employment opportunities, enjoy a richer social life, children are more likely to attain age-appropriate speech and language and attend mainstream schools. Society also benefits through significant reductions in costs relating to the welfare and support that hearing-impaired adults without a cochlear implant might require. ”

Richard Brook, President of Cochlear Europe in
Medical News Today, January 2009



NSRI contact details and web addresses

UK Cochrane Centre

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Middle Way
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www.cochrane.ac.uk

All Cochrane reviews are available in full in The Cochrane Library **www.thecochranelibrary.com**, along with the protocols for Cochrane reviews that are at earlier stages of development. The reviews are included in MEDLINE, EMBASE, CINAHL, the ISI Science Citation Index and DARE.

Centre for Reviews and Dissemination

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Full details about all of CRD's completed and ongoing systematic reviews and projects are available via the CRD website. The CRD databases are also free to access via the CRD website and their content can also be accessed via The Cochrane Library and NHS Evidence.

Technology Assessment Reviews

NETSCC, Health Technology Assessment
Alpha House
University of Southampton Science Park
Southampton
SO16 7NS

www.hta.ac.uk/about/customers/NICE/index.shtml

All published Technology Assessment reports are available in full, with unrestricted access, on: **www.hta.ac.uk/project/htapubs.asp** and are indexed on MEDLINE, EMBASE, CINAHL and the ISI Science Citation Index, and assessed for inclusion in DARE.

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