Systematic Reviews

knowledge to support evidence-informed health and social care
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. When carried out well, systematic reviews 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 £13.6 million, the NIHR Systematic Reviews (SR) Programme supports:

- The UK Cochrane Centre (UKCC)
- Cochrane Review Groups
- CRSU
- Health Technology Assessment Review (TAR) teams.

The SR Programme also 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.

Each part of the programme 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 Cochrane UK 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.

Cochrane Uk is one of 14 Cochrane Centres around the world. It plays key roles in providing training and support for the preparation and maintenance of Cochrane Reviews; in ensuring that the work of the Collaboration is informed by NHS needs and priorities; and in helping to bring the findings from reviews to the attention of those making healthcare decisions.

Worldwide, more than 28,000 people from over 100 countries contribute to the work of the 53 Cochrane Review Groups. Cochrane Reviews are regularly updated and are valuable sources of information for those receiving and providing care, as well as for other decision makers and researchers. There are now around 6,000 full Cochrane Reviews available in The Cochrane Library, covering tens of thousands of research studies, millions of patients and billions of pounds of investment in research.

There are twenty-one NIHR-supported Cochrane Review Groups are based in academic or health institutions in the UK. They cover a broad range of healthcare areas and produce almost half of all Cochrane Reviews, publishing around 250 new reviews each year, as well as bringing a similar number of existing reviews up to date. Many reviews make major contributions to the development of clinical guidelines by the National Institute of Health and Care Excellence (NICE) and other bodies. All reviews aim to make sure that reliable evidence is available to inform decision-making in the NHS.

As well as addressing important questions about the effects of healthcare treatments, groups are increasingly producing systematic reviews of studies of diagnostic test accuracy, and also complex reviews aimed at identifying the most effective and efficient ways that interventions can be delivered. Overviews of reviews, often evaluating multiple interventions that can be used in a specific clinical context and therefore providing decision makers with guidance on comparative effectiveness, are becoming more common.

Cochrane Review Groups employ a number of strategies to take account of the views of patients, carers and clinicians when prioritising topics for review, for example through the James Lind Alliance Priority Setting Partnerships. Many also work directly with NHS groups and those producing clinical guidelines to help transfer the findings from reviews into decisions or guidance.

“"The NIHR and UK have always been at the forefront of support for, and participation in, the work of The Cochrane Collaboration. Their support has been crucial to the Collaboration’s progress and success as a global organisation.”

Dr David Tovey, Editor in Chief of the Cochrane Library
“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 FRS FMedSci
Chief Medical Officer
Funding to support the production and updates of systematic reviews

The NIHR is a global leader in producing and promoting high-quality research evidence to support decision-making in 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 National Health Service (NHS) and social care providers.

The NIHR Systematic Reviews (SR) Programme will invest £16.2 million* from 2015 - 2020 into systematic reviews and infrastructure meaning that our health and care services have access to the best possible evidence to inform decisions and choices. The SR Programme also has two additional funding streams: the NIHR Cochrane Programme Grant Scheme and the Cochrane Incentive Awards.

Cochrane Programme Grant

The NIHR Cochrane Programme Grant Scheme was established to provide high quality systematic reviews that will be of direct benefit to users of the NHS. The scheme is run every three years. Awards range from £220,000 up to £420,000 spread over three years (i.e. up to £140,000 maximum per year), and cover a multitude of health and research areas, from dementia to cardiovascular disease, public health & prevention to organisation of care in the NHS. Twenty-one projects have been funded to date; totalling around £7.5 million with the production or update of over 650 titles.

Grants are awarded to support a substantial and coherent programme of work that includes both new Cochrane reviews, and updates to existing Cochrane reviews. All NHS organisations and Universities in England are eligible to apply, in collaboration with an appropriate Cochrane Co-ordinating Editor or Editor based in England.

The NIHR Cochrane Programme Grant Scheme is an open, researcher-led call covering a wide range of topics.

NIHR Cochrane Incentive Scheme

The NIHR funds an annual scheme whereby incentive payments are offered to UK-based Cochrane Review Groups (CRGs) for preparing key new or updated Cochrane reviews.

Co-ordinating Editors of all CRGs are eligible for the scheme, which has been running since 2004 and seen awards given to nearly 240 projects. Each project awarded is for £5,000, with completion usually within nine to 12 months.

NIHR Cochrane Incentive Scheme example topics

Below are a handful of example topics that have previously been funded by the NIHR Cochrane Incentive Scheme, some of which have fed through into NICE guidelines.

- Cranberries for preventing urinary tract infections
- Tranexamic acid for reducing mortality in emergency and urgent surgery
- Topical lidocaine for neuropathic pain and fibromyalgia
- Laser assisted versus standard phacoemulsification cataract surgery
- Rehabilitation for distal radial fractures in adults
- Interventions for managing asthma in pregnancy
**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 NHS decision-making bodies and policy customers. The majority of TAR reports are 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. However, other policy customers include the National Specialised Commissioning Team, the Policy Research Programme and the National Screening Committee.

There are nine TAR teams based in universities and academic centres across the country, contracted to write independent, high-quality assessments. A list of the TAR teams is available at [www.nets.nihr.ac.uk/programmes/hta/policy-customers](http://www.nets.nihr.ac.uk/programmes/hta/policy-customers)

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. Typically there are two types of report: a short report, e.g. a scoping paper or summary of a single technology, and a longer TAR, e.g. a systematic review with economic modelling.

The TAR is an integral part of the evidence supporting NICE’s Technology Assessment Programme along with the Diagnostic Assessment Programme. The reports are either part of the evaluation of one drug or device; or are a full assessment of the research evidence across a number of intervention options in a given healthcare area. All reports for NICE are strictly timetabled to be delivered to fit their appraisal schedules and the TAR teams attend appraisal committee meetings to present their reports and respond to questions from the committee.

The TAR teams are contracted to deliver an agreed number of reports each year. All TARs undergo rigorous peer review during their production. The larger Assessment Reports also receive an editorial review and are published in the NIHR HTA journal, *Health Technology Assessment*.

To date, the NIHR HTA Programme has published 404 TARs on behalf of NICE and over 174 for other policy-makers to support evidence-informed policy and practice.

‘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
The impact of systematic reviews

Every year, hundreds of new systematic reviews are published which provide front line professionals and national NHS decision-making bodies with important evidence from research.

The following are a few examples of recent reviews that are having an impact on policy and practice in the NHS.

Smoking cessation in pregnancy
A national policy ambition is to reduce smoking in pregnancy. CRD, with other colleagues at University of York, have undertaken a systematic review examining how the circumstances and experiences of pregnant women influence their smoking behaviour and attempts to quit.

A number of Cochrane Reviews covering nicotine replacement therapy, counselling, behavioural therapy and self-help interventions for smoking cessation have also informed public health guidance published by NICE.

Improving the management of patients with hip fractures
Hip fractures are an important cause of morbidity and mortality, particularly in very elderly patients. Cochrane Reviews, including a review of the effectiveness of mobilisation strategies following surgery, have provided important evidence for the NICE guideline on management of hip fractures in adults.
Drugs for the treatment of rheumatoid arthritis

It is estimated that around 580,000 people in England and Wales have rheumatoid arthritis, and of those around 87,000 people have a severe version, which can have a major impact on quality of life.

A Technology Assessment Review (TAR) supported recent NICE guidance recommending treatment options where conventional drugs and TNF (tumour necrosis factor) inhibitors have not worked or have proved ineffective for some patients, providing a wider choice of options to help people manage their condition.

Overviews of reviews

Often, the full information required for decisions will be found in multiple systematic reviews. Many of those involved in the NIHR Systematic Reviews Programme are beginning to produce overviews of systematic reviews.

For example, a large number of Cochrane Reviews of individual oral analgesics versus placebo in acute postoperative pain have been completed using identical methods. An overview of reviews has now been prepared which facilitates indirect comparisons to be made between individual analgesics, providing estimates of relative efficacy which can help inform treatment choices.
Painful symptoms of peripheral arterial disease

Peripheral arterial disease is a condition in which there is a blockage or narrowing of the arteries that carry blood to the legs and arms. Intermittent claudication is a result of muscles being starved of oxygen; it is a painful condition which can affect people's employment opportunities and social activities, and can also indicate an increased risk of heart attack and stroke.

A report written by the TAR team at the University of Sheffield, reviewed evidence on four drugs as part of a NICE appraisal of drug treatments to help treat this painful disease.

Diagnosing macular oedema in patients with diabetic retinopathy

There are currently many fewer systematic reviews that provide evidence about diagnostic tests compared to reviews of treatments. However, Cochrane Review Groups are now beginning to tackle a challenging agenda of reviews of diagnostic test accuracy.

One such review has assessed the accuracy of measuring central retinal thickness using optical coherence tomography (OCT) and, based on the studies reviewed, has cautioned against the use of this test alone to diagnose clinically significant macular oedema in patients with diabetic macular oedema.

Telehealth improves health outcomes

Innovation Health and Wealth, Accelerating Adoption and Diffusion in the NHS sets out a delivery agenda for spreading innovation throughout the NHS. The strategy identifies telehealth technologies as one area with the potential to make a real difference to the quality and experience of people's lives, as well as delivering productivity improvements.

A Cochrane Review has demonstrated that telehealth may improve clinical outcomes in patients with severe asthma, though further trials are needed to demonstrate its cost effectiveness in this condition.

Another Cochrane Review has demonstrated that telemonitoring of patients with chronic heart failure could reduce all cause mortality at one year from 15.4 to 10.4%, in comparison with usual care.
NIHR Systematic Reviews Programme contact details and web addresses

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The NIHR Evaluation, Trials and Studies Coordinating Centre (NETSCC) oversees and manages a range of work aimed at sustaining the UK infrastructure for preparing systematic reviews.

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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.

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