Recording systematic search strategies: a real-world application of an evidence-based process

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Overview

- Who are we?
- What is an Interventional Procedure?
- Why record a search strategy?
- How do we record search strategies?
- How do we answer queries?
- What lessons have we learnt?
What is NICE?

The National Institute for Health and Clinical Excellence (NICE) is an independent organisation responsible for providing national guidance in these areas:

• **Public health** – the promotion of good health and the prevention of ill health.

• **Health technologies** – the use of new and existing medicines, treatments, procedures and medical technologies and diagnostics.

• **Clinical practice** – the treatment and care of people with specific diseases and conditions

• **NICE quality standards** – concise statements that act as markers of high-quality, cost-effective patient care for different diseases and conditions.
Information Services

The Information Services team provides services to NICE staff in London and Manchester, including:

• Information gathering and literature searching
• Quality assuring searches
• Document supply services
• Current awareness bulletins
• Information skills training courses
• Maintaining the NICE taxonomy
Interventional Procedures

• Provides guidance on whether procedures used for diagnosis or treatment are safe enough and work well enough for routine use in the National Health Service.

• Procedures used for diagnosis or for treatment that involve:
  – Making a cut or hole to gain access to the inside of a patient’s body, or
  – Gaining access to a body cavity without cutting into the body, or
  – Using electromagnetic radiation (which includes X-rays, lasers, gamma-rays and ultraviolet light).
Interventional Procedures process

All IPs follow a series of structured steps:

- Procedure notified to NICE
- Stakeholder interests registered
- Overview of the procedure prepared
- IP Advisory Committee meets
- Consultation document produced
- Final recommendations made
- Guidance issued
Interventional Procedures searches

All IP searches follow a structured process:

- The analyst submits a literature search request form
- A broad internet search is conducted to identify background information and keywords
- A search strategy is developed in Medline
- The search is run in a set of core databases
- The search is written up for the Overview Appendix
- The search is re-run at the consultation stage to check if there is any new evidence
Recording search strategies

“there is no clear consensus regarding optimum reporting of systematic review search methods”
  Sampson et al., 2008

“published systematic reviews and meta-analysis often provide a limited explanation of the search methods used to capture the literature”
  De Luca et al. 2008

“no generally accepted standard of reporting of information retrieval in health technology assessment exists”
  Niederstadt and Droste, 2010
Tools for recording searches

Despite the lack of consensus, there are several tools for recording searches:

- **AGREE**  Appraisal of Guidelines for Research and Evaluation
- **PRISMA**  Preferred Reporting Items for Systematic Reviews and Meta-Analyses
- **STARLITE**  Sampling Type Approach Range Limits Inclusion Terms Electronic sources
- **PRESS**  Peer Review of Electronic Search Strategies
How do we record search strategies?

A checklist is used to record IP search strategies:

- Information is recorded consistently
- Records are easily accessible
- Searches have to be systematic
- Facilitates quality assurance
- Searches can be reproduced
- Searches can be updated
Queries: some real examples

• A Committee member has questioned why relevant papers have not been retrieved by the search

• An analyst has asked why certain search terms were not included in the search

• A Committee member has asked why an update search strategy is different to the original search
Details of a real example

A Committee member has questioned why these relevant papers have not been retrieved by the search

IPG306 Prosthetic intervertebral disc replacement in the lumbar spine


Steps taken to answer the query

We can reproduce the search and identify the issue from the checklist records:

- Are the articles indexed in Ovid Medline?
- Were the articles published at the time of searching?
- Was there a mistake in the search strategy?
- Were the appropriate keywords used in the search?
- Were the articles eliminated by a search filter?
- Was a date limit applied to the search?
- Have the search functions or search language changed?
Result of the investigations

Plev D, Sutcliffe JC (2005)
• Not indexed in Medline so will not be retrieved

Kanayama M, et al. (2005)
• Not added to Medline until April 2006, so would not have been retrieved in the original March 2006 search

• Indexed in Medline, so could be retrieved, BUT:
• Terms indexed in Medline were not included in the search strategy
• Do we need to revise the search strategy?
Importance of context

• Why were the terms required to retrieve Grevitt (1995) not included in the search?
  – The analyst identified an issue at a later stage, which resulted in terms being excluded
  – Some terms suggested by the analyst resulted in the retrieval of a large number of irrelevant hits

• Recording any correspondence about the inclusion or exclusion of terms and limits will:
  – Put the search into context
  – Explain the above decisions
  – Avoid confusion when running updates
Recommendations

Responding to these queries has taught us that:

• Checklists are useful for capturing a search

• Checklists facilitate consistency, accuracy and transparency

• A narrative explaining the search can be helpful

• It is useful to capture contextual information showing the decision making process

• Standard checklists should be adapted to the needs of the organisation
Any questions?

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