

Getting evidence into practice

Evidence based practice in NSW
intensive care: a workshop for
nurses who develop guidelines

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The Systematic Review (SR)

Session outline:

- Brief background of EBP
- construct a structured research question
- develop a search strategy (e.g. keywords, databases, search filters) to identify relevant research
- use relevant critiquing criteria to review the identified literature

Evidence based practice

Dr Archie Cochrane's essay set the background for today's evidence-based practice.

- Cochrane, A.L. (1972). *Effectiveness and efficiency : random reflections on health services*. Nuffield Provincial Hospitals Trust, London.

Evidence Based Medicine

Integrates:

- Individual clinical expertise
- Best available external evidence for systematic research (Sackett et al. 1996)
- In consultation with patient on treatment options (Muir-Gray 1997)

Evidence-Based Nursing

“The process by which nurses make clinical decisions using the best available research evidence, their clinical expertise and patient preferences, in the context of available resources.”

(York Centre for Evidence-Based Nursing, 1998)

The 4 A's of Research

Awareness

Application

Appreciation

Ability (to do)

NOT ALL nurses need to DO research,
but ALL nurses must USE research in
their practice

Systematic Reviews - Why?

- too many studies to read
- lack of access to studies
- conflicting results
- individual studies inconclusive

(low study power; type II error)

Systematic Reviews - How?

Explicit protocol to minimise bias at all stages of the review process:

- finding the studies
- assessing studies for quality
- extracting the data
- synthesising the evidence

Structuring a researchable question

Format of Question for a SR

- specific population and setting
- condition of interest
- exposure to an intervention
- specific outcomes to be measured

(Cook et al. 1997)

PICO acronym

- Problem
- Intervention
- Comparison (intervention or control)
- Outcome (measurable)

(Leslie & Finn 2003)

Examples of a SR Question

What is the effectiveness of ... *[intervention]* ... for ... *[patient]* ... measured by ... *[outcome]* ...?

“How frequently and what type of central line dressing in hospital inpatients prevent complications?”

“What is the health status of emergency admission patients discharged from a general ICU”

Search strategy

- Keywords - check thesaurus (MeSH)
- Databases
- Search filters
 - publication years
 - English-language
 - paper / study types

Review strategy

Undertake a systematic assessment / review:

- Identify key issues / study components
- Develop a review 'template'
- Use critiquing guidelines
- Summarise using summary tables

Critiquing criteria

- Enables examination of biases or weaknesses in the study (approach) that may influence findings and applicability / generalisability to clinical practice
- See 'examples' of critiquing criteria ...

Reviewing qualitative studies

- Description
- Methodological rigour: documentation, procedure, confirmability
- Analytical preciseness
- Theoretical connectedness

(Cesario et al 2002)

Rigour in qualitative research

When the following concepts are evident:

- **Credibility** – truth:

findings are judged credible by participants and others in the discipline

- **Auditability** – consistency:

adequate detail to enable judge analysis and interpretation steps

- **Fittingness** – applicability:

findings linked to everyday reality

- **Confirmability** – neutrality

... then rigour is ‘confirmed’

Small group work

- Practise critique of articles

Synthesis and Analysis

Session outline:

- utilise summary tables to compare and contrast study methods and findings
- use levels of evidence criteria to identify the strength of findings

Summary tables

- Initial review of papers
- Select column headers and develop table (sections or themes)
- Critique articles in sections or themes
- Questions / gaps identified in reading

Column Headers

Author	Sample	Method	Outcome Variable	Results

Levels of evidence

Types of information

- Empirical research
- exploratory research
- evaluation / CQI process
- expert panel / consensus
- narrative / anecdotal
- review - narrative or systematic

A proposed comprehensive classification of levels of evidence

- Empirical
 - Intervention / cause & effect
- Interpretive
 - Experiences; exploration of relationships
- Consensus
 - Summarise opinions of experts

See handout

Levels of evidence: the beginning (Sackett, 1989)

- I. Large randomised controlled trials
- II. Small randomised controlled trials
- III. Non-randomised contemporary comparison group trials
- IV. Non-randomised historical comparison group trials
- V. Case series without controls, uncontrolled studies, expert opinion

Grades for policy recommendations

- A. Randomised controlled trials with no heterogeneity in results
- B. Randomised controlled trials with heterogeneity in results
- C. Observational studies with serious potential for biased results

(Sibbald, 1989)

Levels of evidence: a previous framework (QCHOC 1995)

- Level I** a systematic review of all relevant randomised controlled trials (RCTs)
- Level II** at least one properly designed randomised controlled trial
- Level III.1** controlled trials without randomisation
- Level III.2** cohort / case-control studies
- Level III.3** times series studies \pm intervention or uncontrolled experiments
- Level IV** opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

Levels of evidence: current framework for cause & effect studies (NHMRC 1999)

- Level I** a systematic review of all relevant randomised controlled trials (RCTs)
- Level II** at least one properly designed randomised controlled trial
- Level III.1** controlled trials without randomisation
- Level III.2** Comparative studies with concurrent controls (eg cohort, case-control)
- Level III.3** Comparison studies with historical control; time series
- Level IV** Case-series (post-test, pre-test/posttest)

RCTs

- Best evidence for effectiveness of health care interventions ...

But, consider:

- Inclusion / exclusion criteria
- Environmental context
- ... relationship to clinical reality
- Appropriateness in complex, human situations?
(Goding & Edwards, 2002)

EBP – devalued types of research?

- Interpretative (qualitative)
- CQI projects
- Non-RCTs

Need to use qualitative criteria: credibility, confirmability, auditability, fittingness (Goding & Edwards, 2002)

EBP – focus on process?

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- Definitions focus on “thinking and doing of care” ...
 - No consideration of outcomes:
 - appropriateness accessibility
 - acceptability effectiveness
 - efficiency equity

(McKenna et al. 2000)

Small group work

- Development of summary tables