Evidence Based Practice: 
the three little words in 
Allied Health

Centre for Allied Health Evidence
University of South Australia
Adelaide

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The ‘three little words’

- Evidence Based Practice…
- Do you hear them with dread?
- Another lecture about how to treat your patients?
‘Evidence-based medicine is not "cook-book" medicine…External clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decision’

Sackett, 1996
‘The three pillars’

1. The best available evidence
2. Patient values
3. Clinician experience
Aims of workshop

1. To introduce CAHE
2. To understand the use of EBP as a framework for best practice
3. Steps involved in EBP
4. The role of clinical expertise in the EBP process
5. Understanding the challenges and barriers to the uptake of EBP
Centre for Allied Health Evidence (CAHE)

- Director – Prof. Karen Grimmer-Somers
- Staff – 12 (Two full-time and 10 part time research associates)
- One of the primary mandates of CAHE is to bridge the gap between research evidence and clinical practice
- Encourage and stimulate collaboration between all stakeholders in health care
Centre for Allied Health Evidence (CAHE)

- First known Allied Health (AH) evidence centre in the world
- Encompasses five different disciplines of AH
- Only AH collaborating centre of Joanna Briggs Institute
Centre for Allied Health Evidence

Visit the new CAHE initiatives:
- CAHE Allied Health News In Review
- DoHSA question and answer service for AH clinicians and managers

The University of South Australia is home to the new Centre for Allied Health Evidence (CAHE), a collaborating centre of the Joanna Briggs Institute, and the first of its kind in the world.

CAHE provides essential resources for allied health workers, researchers, educators, clinicians, policy makers, administrators and patients, by providing a repository for evidence-based research in a range of areas from physiotherapy through to medical radiations. The centre provides a unique opportunity to produce evidence-based solutions to allied health problems and ensure that treatment strategies are based on the best evidence and research available.

By focussing on physiotherapy, occupational therapy, podiatry, complementary and alternative therapies, and medical radiation, CAHE will increase community and clinical awareness of the importance of these therapies in the whole health picture. Evidence-based research will provide a significant impact on allied health care by taking relevant, high quality, evidence-based research and ensuring it is widely disseminated.

For further information, contact Professor Karen Grimmer-Somers, Director, Centre for Allied Health Evidence.
Quality in health care

• Increasing emphasis on quality in health care
  – Financial and resource constraints
  – An ageing population
  – Restructuring within health care
    • Funding shifts between federal and state governments
  – The increasing recognition of the role of the patient as a “consumer” of service
  – The movement towards patient-centred care
How Hazardous is Health Care? (Leape)

<table>
<thead>
<tr>
<th>Total lives lost per year</th>
<th>DANGEROUS (&gt;1/1000)</th>
<th>REGULATED</th>
<th>ULTRA-SAFE (&lt;1/100K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care</td>
<td>Driving</td>
<td>Scheduled airlines</td>
<td></td>
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<tr>
<td>100,000</td>
<td>Mountain climbing</td>
<td>European railroads</td>
<td></td>
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<tr>
<td>10,000</td>
<td>Chartered flights</td>
<td>Nuclear power</td>
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<td>1,000</td>
<td>Chemical manufacturing</td>
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</table>

Number of encounters for each fatality
Quality in Health Care

• Quality in health care is an unknown entity
• If it exists, it is:
  – Poorly defined
  – Poorly evaluated
  – Poorly reported
  – Poorly researched
• Literature evidence almost exclusively focussed on medical professions
• Very little to no evidence for Allied Health
Quality & EBP

• Parallel courses in history of development
• There must be “evidence” to what you, as a health care practitioner do
• In all other aspects of life we demand “evidence” (Justice, social welfare)
• In health care, this is seen to be implicit rather than explicit
Evidence Based Practice

- The philosophy of EBP underpins the quality movement
- Quality framework contains elements of
  - Safety
  - Effectiveness
  - Patient centredness
  - Timeliness
  - Efficiency
  - Equitable
- Provides justification for health care service delivery
History of EBP

Chinese emperor
Qianlong

1700 1800 1900 2000
History of EBP

1700

Chinese emperor
Qianlong

1800

Founding father of medical statistics
Pierre Louis

1900

2000
History of EBP

1700
Chinese emperor Qianlong

1800

1900
British Epidemiologist Archie Cochrane

1900

2000

Founding father of medical statistics Pierre Louis
History of EBP

1700

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2000

Development of modern terminology
Gordon Guyatt
David Sackett
EBP: Original ‘official’ definition

“The explicit, conscientious, and judicious use of the current best evidence in making decisions about the care of individual patients (and populations)”

Sackett et al (1996)
Wealth of information

- Trials: 55 per day
- MEDLINE: 1400 per day
- BioMedical: 5000 per day

Up to date consumers

BEFORE MY PHYSICAL, COULD YOU ASSURE ME THAT YOUR MEDICAL JOURNALS ARE MORE UP-TO-DATE THAN THE MAGAZINES IN THE WAITING AREA?
What is EBP?

“the integration of best research evidence with clinical experience and patient values”

Sackett et al 2000
Clinical state & circumstances

Diagnosis

Resources

Clinical expertise

Compliance

Patients’ preferences and actions

Research evidence

Evidence from:
- Journal articles
- Text books
- Internet
- Conferences
- Theses
- Clinical guideline
- Reports
- Clinical practice

Haynes et al 2002
We have two options. Either an evidence-based treatment or an exciting, risky alternative.
Key features of EBP

• Patient problem into an answerable question
• Search the literature specific to that question
• Appraise the literature which addresses the question
• Integrate the research findings with clinical expertise and patient preferences in clinical decision making
• Evaluate the outcome of such implementation
Assumption One

Research evidence is the holy grail

How do we find the evidence?
Knowing what to ask

• Use the PICO framework
  P participants
  I intervention
  C comparator
  O outcomes
Search strategy

• Specified framework of search parameters
  – Key terms
  – Types of publications
    • Published and/or unpublished
  – Databases to be searched
    • Access to databases
  – Limitations to searching
    • Years, language, subjects investigated
Search strategy

- Content experts
- Hand searching
- Pearling
- Potential issues to consider:
  - Time
  - Resources (human and cost)
  - Timelines for the project
    - Some reviews can take up to two years to complete
Critical appraisal

• Does published = good?
• No, various reasons why studies are published
• Critical appraisal is a vital cog in the wheel that is EBP
• Critical appraisal helps to “weed” out methodologically poor quality studies
• Numerous tools (the latest count was more than 110 e.g.: PEDro)
Critical appraisal: issues to consider

• Critically appraising the reporting of the methodological quality of the study

• Quality scoring
  – A numerical score for the publication indicating quality of the study
  – What does the score mean?

• Different critical appraisal may have different criteria potentially providing different scores
Hierarchy of evidence

- Numerous
- NH&MRC (1999) widely recognised

I  Systematic review or meta-analysis

II  Randomised controlled trial(s)

III-1  Pseudo-randomised controlled trial(s)

III-2  Cohort studies or case-control studies

III-3  Comparative studies (no control)

IV  Case series
Data extraction & analysis

• Quantitative review
  – Meta-analysis with homogenous data

• Qualitative review
  – Meta-synthesis

• Narrative review
  – Lack of homogenous data
Group work one...
Group work one

- In the handout provided, develop a search question
- Using the PICO table, consider key terms that you will use to search the literature
- You may also consider alternate terms that will use for searching
Assumption two

Evidence exists

What do you do if it doesn’t?
Clinical state & circumstances

- Diagnosis
- Resources

Clinical expertise

Patients’ preferences and actions

Research evidence

Evidence from:
- Journal articles
- Textbooks
- Internet
- Conferences
- Theses
- Clinical guideline
- Reports
- Clinical practice

Haynes et al 2002
Evidence in Allied Health

• Ever expanding but is limited
• Philosophically different to medicine
  – Mortality vs. Morbidity
• Do we follow the medical model?
  – Are RCTs the best?
  – Experimentation may be unnecessary, inappropriate, impossible or inadequate
  – What if the critical appraisal tools do not reflect Allied Health concerns?
  – How important is reliability/validity of measurement?
  – Type of intervention, condition
Research vs clinical evidence

• But this practice has always worked for my patients!!!
• So what if there is no scientific evidence!!!!!
  – What is that anyway?
• Why should I change what I do?
  – My patients are happy!!!!
  – What does the administration know about what I do anyway?
• I don’t believe the evidence anyway - the science is flawed!!!
Evidence at your fingertips

• ‘Clinical Evidence’
  – comes from a demonstration that what you did, and what it achieved, was of the highest quality

Grimmer 2004
What clinical evidence do you produce?

• Treatment notes
  – Do you have standard forms of assessment? (allows comparison over time of one patient, and groups of patients?)

• Discharge summaries

• Quality assurance activities
  – Clinical indicators (structure, process, outcome)
  – Record audits

Grimmer 2004
See handout on clinical audit
Assumption three

Research evidence is readily available and implemented in clinical practice
The widening gap

• Does production of evidence mean effective transfer to clinical practice?
• Does access to evidence mean effective translation to clinical practice?
Good intentions not always enough
Implementing evidence

- Behaviour change is difficult to achieve
- Increasing access to simplified, condensed, consumable evidence does not equate to improved clinical practice
- Uptake of evidence is slow and does not take place automatically
- It takes skill, determination, time, money and planning

NH&MRC 2000
Barriers to implementation

- Barriers can occur at various “levels”
  - System
  - Professional
  - Community
  - Individual stakeholders (patients, providers, funders, administrators)
- Need to recognise & address them prior to implementation
Barriers to implementation

- Characteristics of the practitioner
  - Research values, skills and awareness

- Characteristics of the setting
  - Barriers and limitations at the work setting

- Characteristics of the research
  - Methodological soundness and appropriate conclusions

- Characteristics of the presentation
  - Presentation of the research and accessibility

Funk et al. 1991
Group work two...
Within your groups, using the handouts provided discuss barriers to uptake of evidence from your perspective.

Also discuss what strategies you might use to overcome these potential barriers.
What works?

• Several Cochrane reviews have been undertaken (Grimshaw et al)
  – Consistently effective
    • Educational outreach visits, decision support systems, reminders, interactive educational meetings, multifaceted, mass media
  – Variably effective
    • Audit and feedback, local opinion leaders, local consensus approaches, patient-mediated
  – Little or no effect
    • Educational materials alone, didactic educational meetings
  – Unknown effectiveness
    • *Financial* incentives, administrative interventions
So what?

- So what did you achieve by implementing this?
  - Evaluate both process and outcomes of implementation

- Continue to update and seek ongoing support from in-house and external agencies

- What might have worked once, will not always work
EBP in health care

• Evidence based practice underpins the quality and efficiency movement in health care
• EBP will not automatically ensure optimal treatment and outcomes
• However, it ensures patients receive current, consistent, best available management
References


• http://web.hku.hk/~hkebp/content/intro_2.htm Accessed on 29th May 2006.


