EVIDENCE-BASED PRACTICE for NURSES & HEALTHCARE PROFESSIONALS
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EVIDENCE-BASED PRACTICE
for NURSES &
HEALTHCARE PROFESSIONALS

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Introduction: What is Evidence-based Practice?
Janet Barker and Paul Linsley

Learning Outcomes

By the end of the chapter you will be able to:

• define evidence-based practice;
• understand how evidence-based practice came into being;
• discuss the pros and cons of evidence-based practice;
• identify the components of evidence-based practice and the skills associated with it;
• consider why your practice needs to be evidence-based.

INTRODUCTION

Evidence-based practice (EBP) is now a well-established but not necessarily understood concept in health and social care. Many terms are used in relation to EBP – evidence-based nursing, evidence-based nursing practice, evidence-based medicine, evidence-based decision making and evidence-based healthcare. Essentially, they are the same thing, just different terminology being applied to different professions and settings. Whilst the term continues to be developed and refined there are a number of definitions of EBP to help guide the clinician (Porter and O’Halloran, 2012). Perhaps the best known and accepted of these is that by Sackett et al. (1996) who defined EBP as:

The conscientious, explicit, and judicious use of current best practice in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical experience with best available external clinical evidence from systematic research. (Sackett et al., 1996: 71)
This definition, whilst proving popular, has been criticised, as it seemingly ignores the contribution that patients play in the decision-making process. Muir Gray (1997) sought to address this short fall in thinking by building on the work of Sackett and his team and put forward this definition of EBP in response:

Evidence based practice is an approach to decision making in which the clinician uses the best evidence available, in consultation with the patient, to decide upon the option which suits the patient best (Muir Gray, 1997: 3)

The above definition highlights the need to consult with the patient and involve them in decisions about their own health and wellbeing. It also takes into account patients’ preferences, including their wish to avoid risks associated with interventions. Indeed Sackett and his team (2000: 1) reviewed and developed a simpler but more telling definition of EBP in response to Gray’s work, and defined EBP as:

The integration of the best research evidence with clinical expertise and patient values.

This notion of patient involvement is echoed in more contemporary definitions of EBP, for instance:

Evidence based practice entails making decisions about how to promote health or provide care by integrating the best available evidence with practitioner expertise and other resources, and with the characteristics, state, needs, values and preferences of those who will be affected. (Peile, 2004: 103)

EBP is more than using findings from research. It is the integration of this evidence and knowledge to current clinical practice, for use at a local level, ensuring that patients receive the best quality care available. Implicit in such discussions is the message that healthcare, wherever it is delivered, must be based on good, sound, evidence. In days gone by, when asked why something was done in a particular way, a nurse’s mantra was ‘Sister says so’ or ‘We’ve always done it this way’. It has been suggested that historically clinical issues have been based on a form of craft-based knowledge or ‘habit, intuition and sometimes plain old guessing’ (Gawande, 2003: 7). This is no longer sufficient and there is an expectation that strong evidence must underpin nurses’ practice. Conceptually, EBP promotes the value of utilising knowledge from many sources and, through critical evaluation of the data from these sources, making an informed decision (in conjunction with the patient) on the most effective course of treatment/intervention (Gambrill, 2007).

**Activity 1.1**

Reflect on the evidence that underpins your clinical practice. Where does this come from? How do you keep up-to-date with current developments and changes in practice? How easy is it to make changes to your practice using new evidence?
Whilst the importance of research in the delivery of nursing care has always been emphasised, the idea of evidence-based practice is seen as focusing the minds of those involved in care delivery on the use of appropriate evidence. Nurses need to be certain that their practice is current and up-to-date and that they are doing the best for those that they look after. EBP provides healthcare professionals with the means by which to explore practice and address any shortfall in the care that they give. The question then becomes one of how can the evidence be located? With the advent of the internet, busy healthcare professionals can no longer hope to keep up-to-date with all the possible sources of evidence, nor can they read and critically appraise all of the articles relevant to their practice. This is why an evidence-based approach to practice is needed. EBP provides a systematic framework for reviewing the evidence to underpin practice. There is a range of such evidence that can inform practice – personal experience and reflection literature, research, policy, guidelines, clinical expertise and audit (Dale, 2005) – all of which have their place within EBP and will be explored further in the various chapters of this book.

WHERE DID THE IDEA OF EBP COME FROM?

Professor Archie Cochrane, a British epidemiologist, is most frequently credited with starting the EBP movement. In his book *Effectiveness and Efficiency: Random Reflections on the Health Service* (Cochrane, 1972) he criticised the medical profession for not using appropriate evidence to guide and direct medical practice and challenged medicine to produce an evidence base. He argued there was a need to ensure treatment was delivered in the most effective manner and to ensure that available evidence was used in a consistent way.

When Cochrane talked of evidence, he meant randomised control trials (RCTs), which he viewed as providing the most reliable evidence on which to base medical care. RCTs are a form of research which uses experimental designs to identify the effectiveness of interventions. The use of systematic reviews, which summarise the findings of a number of RCTs looking at similar areas of interest, was suggested as the ‘gold standard’ of the scientific evidence on which to base medical interventions.

The medical profession responded to Cochrane’s challenge by creating the Cochrane Centre for systematic reviews, which opened in 1992 in Oxford. The Cochrane Collaboration was founded in 1993, consisting of international review groups (currently encompassing more than 28,000 people in over 100 countries) covering a range of clinical areas and producing systematic reviews. These reviews are published electronically, updated regularly and there are now over 4600 available.

Visit the Cochrane Collaboration website (www.cochrane.org). How easy is the site to navigate? What sort of evidence does the site provide? How useful is the evidence? Could you readily relate/make use of this evidence as part of your clinical practice?
Whilst the underpinning principles of evidence-based medicine (EBM) were hotly debated, the medical profession in general began to accept the idea, and 1995 saw the first issue of the journal *Evidence-Based Medicine for Primary Care and Internal Medicine*, published by the British Medical Journal Group. In 2007 EBM was identified as one of 15 major milestones in the development of medical practice since 1840 (BMJ, 2007). Nursing, emulating its medical counterpart, began to explore the notion of basing its practice on reliable sources of evidence, which resulted in the journal *Evidence-Based Nursing* first published in 1998.

**SOCIAL AND POLITICAL DRIVERS OF EBP**

Scott and McSherry (2008) suggested a number of social and political factors facilitated the emergence of the emphasis on evidence at this time. The availability of ‘knowledge’ via the internet and other sources brought into being ‘expert patients’ – well-educated and informed individuals who accessed information relating to health and illness. Expectations of these expert patients were that healthcare professions would be aware of and use up-to-date information/research in their delivery of care and treatment. There was no longer a willingness simply to accept treatment or care purely on the advice of a doctor or nurse.

The concept of EBP was also seen as attractive by governments and health service administrators because of its potential to provide cost-effective and clinically effective care (McSherry et al., 2006). In the mid-1990s the UK government of the day identified that quality assurance was to be placed at the forefront of the NHS modernisation agenda. Two White Papers – *The New NHS: Modern and Dependable* (Department of Health [DH], 1997) and *A First Class Service: Quality in the New NHS* (DH, 1998) – outlined the plans for promoting clinical effectiveness and introducing clinical governance. These promoted systems to ensure quality improvement mechanisms were adopted at all levels of healthcare provision. Central to clinical governance were concepts of risk management and promoting clinical excellence. (See Figure 1.1 for an outline of the clinical governance framework.)

Clinical effectiveness was defined by the NHS Executive (1996) as ‘the extent to which specific clinical interventions when deployed in the field for a particular patient or population, do what they are intended to do, that is maintain and improve health and secure the greatest possible health gain’. This definition continues to underpin the current Department of Health approach to clinical effectiveness (DH, 2007a), with the various stages of the process being identified as:

- the development of best practice guidelines;
- the transfer of knowledge into practice through education, audit and practice development;
- the evaluation of the impact of guidelines through audit and patient feedback.

Put simply, clinical effectiveness can be seen as identifying appropriate evidence in the form of research, clinical guidelines, systematic reviews and national standards; changing
practice to include this evidence; and evaluating the impact of any change and making the necessary adjustments through the use of clinical audit and patient feedback/service evaluation. Reading and understanding research, being aware of current policies and procedures, and knowing about the recommendations and standards in practice are all part of the nurse’s role (Royal College of Nursing, 2007). Table 1.1 provides an overview of the key aspects of research, clinical audit and service evaluation.

Two organisations were created aimed at promoting an evidence-based approach to healthcare, which are known today as the National Institute for Health and Care Excellence (NICE) and the Care Quality Commission (CQC). These bodies provided guidance for healthcare managers and practitioners and were charged with ensuring this guidance was followed in England and Wales. In Scotland the Health Technology Board fulfilled a similar purpose. Clinical governance was introduced to ensure healthcare was both efficient and effective; healthcare professionals were expected to show EBP supported all aspects of care delivery and service developments. It was hoped that the introduction of these measures would result in a shift in organisational culture from one that was reactive, responding as issues arise, to one with a proactive ethos, where the healthcare offered was known to be effective and therefore avoided unforeseen outcomes.

NICE and the now CQC have continued to develop strategies to promote clinical effectiveness; the former through initiatives such as ‘How to...’ guides, quality standards and supporting a resource known as ‘NHS Evidence’. The NHS Evidence site provides access to various forms of evidence which may be of use in clinical practice and provides examples of best practice. The CQC was charged with ensuring the safety and quality of care through inspection and assessment of all healthcare provision. The NHS Institute for Innovation and Improvement was set up in 2006 with a remit to support the implementation of service improvement initiatives within the NHS (although this was subsequently dissolved).
### Table 1.1  Research, audit and service evaluation

<table>
<thead>
<tr>
<th>Research</th>
<th>Service evaluations*</th>
<th>Clinical audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>The attempt to derive generalisable new knowledge including studies that aim to generate hypotheses as well as studies that aim to test them</td>
<td>Designed and conducted solely to define or judge current care</td>
<td>Designed and conducted to produce information to inform delivery of best care</td>
</tr>
<tr>
<td>Quantitative research – designed to test a hypothesis. Qualitative research – identifies/explores themes following established methodologies</td>
<td>Designed to answer: ‘What standard does this service achieve?’</td>
<td>Designed to answer: ‘Does this service reach a predetermined standard?’</td>
</tr>
<tr>
<td>Addresses clearly defined questions, aims and objectives</td>
<td>Measures a current service without reference to a standard</td>
<td>Measures against a standard</td>
</tr>
<tr>
<td>Quantitative research – may involve evaluating or comparing interventions, particularly new ones</td>
<td>Involves an intervention in use only. The choice of treatment is that of the clinician and patient according to guidance, professional standards and/or patient preferences</td>
<td>Involves an intervention in use only. The choice of treatment is that of the clinician and patient according to guidance, professional standards and/or patient preferences</td>
</tr>
<tr>
<td>Qualitative research – usually involves studying how intervention and relationships are experienced</td>
<td>Usually involves analysis of existing data but may include administration of interview or questionnaire</td>
<td>Usually involves analysis of existing data but may include administration of interview or questionnaire</td>
</tr>
<tr>
<td>Usually involves collecting data that are additional to those for routine care but may include data collected routinely. May involve treatments, samples or investigations additional to routine care</td>
<td>No allocation to intervention: the health professional and patient have chosen intervention before service evaluation</td>
<td>No allocation to intervention: the health professional and patient have chosen intervention before audit</td>
</tr>
<tr>
<td>Quantitative research – study design may involve allocating patients to intervention groups</td>
<td>No randomisation</td>
<td>No randomisation</td>
</tr>
<tr>
<td>Qualitative research – uses a clearly defined sampling framework underpinned by conceptual or theoretical justifications</td>
<td>Does not require REC review</td>
<td>Does not require REC review</td>
</tr>
<tr>
<td>May involve randomisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normally requires Research Ethics Committees (REC) review</td>
<td></td>
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</tr>
</tbody>
</table>

*Service development and quality improvement may fall into this category

Source: Defining Research (Health Research Authority, 2009).
INTRODUCTION

Identify one condition/disease you have come across recently in clinical practice. Visit the NICE website (www.nice.org.uk) and locate the NICE guidance and NHS evidence available in relation to your chosen condition/disease. Now ask the same questions you did of the Cochrane database: How easy is the site to navigate? What sort of evidence does the site provide? How useful is the evidence? Could you readily relate/make use of this evidence as part of your clinical practice?

WHY DOES YOUR PRACTICE NEED TO BE EVIDENCE BASED?

The need for frontline staff to be empowered to deliver a quality service is a major aspect of contemporary healthcare policy. As Craig and Pearson (2007) have already identified, few would disagree with the ideas underpinning EBP – namely, that care should be of the highest standard and delivered in the most effective way. Indeed practising without any ‘evidence’ to guide actions amounts to little more than providing care that is based on trial and error, which would not be advocated. However, as identified above, care is not always based on the best evidence, with Greenhalgh (2006) suggesting that many of the decisions made in healthcare are based on four main sources of information:

1. **Anecdotal information.** Here it is considered that ‘it worked in situation X so it must be appropriate to (the similar) situation Y’. However, as Greenhalgh points out, while situations may seem very similar, patient responses are often very different.
2. **Press cuttings information.** Here changes are made to practice in response to reading one article or editorial, without critically appraising and considering the applicability of those results to the specific setting.
3. **Consensus statements.** Here a group of ‘experts’ will identify the best approaches based on their experiences/beliefs. Whilst clinical expertise does have a place in EBP, it does not operate without some problems. For example, clinical wisdom once held (and to a certain extent still does hold) that bed rest was the most appropriate form of treatment for acute lower back pain. However, research in 1986 demonstrated that this is potentially harmful.
4. **Cost minimisation.** Here the limited resources available within a healthcare setting will often result in choosing the cheapest option in an effort to spread resources as widely as possible. However, EBP can ensure the most effective use of limited and pressurised resources. Whilst certain types of care may appear more expensive on the surface, if these prove more effective, they may turn out to be cheaper in the long run.

Despite widespread recognition of the need for nursing practice to be based on sound evidence, frontline staff experience considerable challenges to implementing evidence-based care at an individual and organisational level. In particular, frontline nurses have difficulty interpreting research findings and although willing to use research they often lack the skills
to do so. Perhaps part of the problem related to nursing developing an EBP ethos is that nursing is often considered as more of an art than a science and as such certain types of evidence are valued above others, such as expert opinion and practice experience. However, Polit and Beck (2008: 4) identified that any nursing action must be ‘clinically appropriate, cost effective and result in a positive outcome for clients’. The complexities of healthcare, and the uncertainty of people’s responses to and experiences of different types of interventions, require that full consideration is given to all available evidence.

Patients are likely to know a great deal about their own health needs and to expect health professionals to base care decisions on the most up-to-date and clinically relevant information. There is also an expectation that professionals will be able to comment in an informed way on any research reported in the media and identify its relevance to an individual’s health needs. Miller and Forrest (2001) proposed that the ability to ensure that a professional’s knowledge and skills remain current increases their professional credibility; allows them to be an important source of information to those in their care as well as colleagues; and enables all professionals involved in care delivery to make well-informed decisions. It has also been suggested that EBP can foster a lifelong learning approach – an essential requirement in the health professions if staff are to remain effective in rapidly changing healthcare environments (see Figure 1.2 below).

![Figure 1.2](image-url)  
**Figure 1.2   The integrated elements of EBP**  

**CONCERNS ABOUT EBP**

Evidence-based approaches are not without their problems. As Davies et al. (2007: 26) identified, it has both ‘enthusiastic supporters and vociferous detractors’. Melnyk and
Fineout-Overholt (2005) suggested that EBP is viewed by many as simply another term for research utilisation. It has also been argued elsewhere that the value of research has been over-emphasised to the detriment of clinical judgement and person-centred approaches, while others point to a lack of evidence to support the notion that EBP improves health outcomes. Kitson (2002) has pointed to an inherent tension between EBP and person-centred approaches. She has argued that clinical expertise is vital in ensuring that patients’ experiences and needs are not sidelined in the pursuit of ‘best evidence’ in the form of research findings and the development of generalised clinical guidelines. Some individuals have suggested that such broad general principles are not applicable to certain aspects of care. Davies et al. (2007) suggested that practitioners often feel that an over-emphasis on EBP inhibits their ability to provide individualised care. Melnyk and Fineout-Overholt (2005) have identified this as a ‘cookbook’ approach, where a general recipe is followed with no consideration for the specific needs or preferences of individuals. There are concerns also around the ability to have a consensus in relation to the various interpretations available when translating evidence into guidelines and the relevance of these for individual areas of practice. There are also issues related to the updating of evidence and the ability to ensure that the information gathered is current. However, DiCenso et al. (2008) argue that as clinical expertise and decision-making processes are central to EBP, in considering the use of general guidelines both of these processes must be used in the same way with any form of evidence including guidance.

Brady and Lewin (2007) argue that whilst the idea of clinical expertise is readily accepted by most experienced nurses, the majority of those same nurses are often unaware of the latest research in their area of practice. Nurses are generally presented as relying on intuition, tradition and local policies/procedures to guide their practice. There is also a perceived lack of enthusiasm in relation to the implementation of nursing research. Stevens (2004) proposed that healthcare providers frequently do not use current knowledge for a number of reasons, not least of these being the rapidly growing and changing body of research, some of which is difficult to apply to practice directly. As the aim of EBP is to deliver high quality care, nurses need to have an understanding of what the exact elements of EBP are and to then develop the necessary skills and knowledge to enable them to carry this out. Glasziou and Haynes (2005) proposed that some research, essential to the delivery of quality care, will go unrecognised for years and suggested the major barriers to using evidence are time, effort and the skills involved in accessing information from the myriad of data available.

Ingersoll (2000) also argued that focusing EBP on care delivery reflects the differences between it and research. Research concentrates on knowledge discovery whereas in EBP the application of knowledge is central. In addition she has suggested that whilst this emphasis on EBP is a welcome initiative, the wholesale ‘lifting’ of approaches and methodologies from another discipline such as medicine is not. Nurses need to make sure that the evidence used is relevant to the practice of nursing. There is a traditional view that evidence-based practice should be informed solely through quantitative research. However, Ellis (2010) advocates that it is more about using various forms of information, not just research, to guide and develop practice. Ellis (2010) goes on to note that there is little agreement between professionals as to what constitutes ‘good evidence’. While nurses may be motivated to approach practice from an evidence-based perspective, the literature actually suggests that evidence-based practice is rigid and prescriptive, and diminishes any professional autonomy. French (1999) went further to suggest that as EBP is so closely linked with evidence-based medicine (EBM) and
its preference for certain types of evidence, there is a danger that this promotes the use of medical knowledge over other forms and therefore leads to a medicalisation of healthcare environments to the detriment of other disciplines. Best evidence in the medical context is often taken to mean quantitative research findings in the form of RCTs. Some have questioned its compatibility with nursing and the other health professions, suggesting instead the use of a more open approach. Dale (2005) proposed that this issue has the potential to create interprofessional conflict, as that which nursing may count as appropriate evidence on which to base practice may be somewhat different from that of the medical profession.

Perhaps the biggest concern with EBP is that healthcare professionals may not have the necessary level of skill to interpret and make use of the evidence that they find. Advances in technology and scientific research possibilities and approaches further compound this. In addition, it is anticipated that there is little time allocated for learning these skills due to the busy and stressful nature of the profession. Healthcare professionals need both the knowledge and skills to make use of the available evidence that is both timely and worthwhile.

**WHAT SKILLS ARE NEEDED?**

Whilst the idea for evidence-based medicine (EBM) grew out of Cochrane’s work, McMaster Medical School in Canada is credited with coining the term in 1980 to describe a particular learning approach used in the school. This approach had four steps (Peile, 2004) and these are as follows:

1. Ask an answerable question.
2. Find the appropriate evidence.
3. Critically appraise that evidence.
4. Apply the evidence to the patient, giving consideration to the individual needs, presentation and context.

In addition to this, Aas and Alexanderson (2011) suggested a ‘Five A’ step process (see Figure 1.3). For the purposes of this book the authors have added an additional sixth stage, that of assess; this sits at the start of the cycle whereby the clinician identifies a problem and the need for further information and action. EBP should be all about doing – tackling real problems in clinical practice.

The most important element of the cycle is the asking of the question. The question should focus on the problem, the intervention and the outcome. Herbert et al. (2005: 12) expanded the notion of the clinical question to include:

- effects of the intervention;
- patients’ experiences;
- the course of the condition, or life-course (prognosis);
- the accuracy of diagnostic test or assessments.

Evidence-based questions are usually articulated in terms of: What is the evidence for the effectiveness of x (the intervention) for y (the outcome) in a patient with z (the problem or diagnosis)?
Taking the above together, there is a need to develop particular skills and knowledge related to:

- the ability to identify what counts as appropriate evidence;
- forming a question to enable you to find evidence for consideration;
- developing a search strategy;
- finding the evidence;
- critically appraising the evidence;
- drawing on clinical expertise;
- issues concerned with patient preference;
- application to the context of care delivery;
- putting the evidence into practice.

Consider the list of skills identified above as associated with EBP. Choose three areas that you feel you have most difficulty with and undertake a SWOT analysis in relation to each one using the grid in Appendix 1.
Summary

- EBP is a global phenomenon which promotes the idea of best practice, clinical effectiveness and quality care and involves an integration of evidence, clinical expertise, patient preferences and the clinical context of care delivery to inform clinical decision making.
- EBP focuses on critically appraising evidence to support care delivery rather than on research to discover new knowledge.
- The emergence of the expert patient has given rise to the need for health professionals to ensure they are up to date and their care is based on best evidence available.
- Government initiatives have promoted EBP as a way of providing both clinically effective and cost-effective healthcare.
- Various steps are associated with the EBP process – forming a question; finding evidence; critically appraising the evidence; integration of evidence into practice.
- The knowledge and skills associated with EBP are an essential component of nursing practice.

FURTHER READING

Cranston, M. (2002) ‘Clinical effectiveness and evidence-based practice’, Nursing Standard, 16(24): 39–43. This article provides a concise account of the meaning of clinical governance, the place of clinical effectiveness within this concept and the drive towards EBP.

E-RESOURCES

Cochrane Collaboration: promotes, supports and prepares systematic reviews, mainly in relation to effectiveness. www.cochrane.org/
Joanna Briggs Institute: promotes evidence-based healthcare through systematic reviews and a range of resources aimed at promoting evidence synthesis, transfer and utilisation. www.joanna briggs.org
National Institute for Health and Care Excellence: provides guidance and other products to enable and support health professionals deliver evidence-based care. www.nice.org.uk