

SLIDE 1 (INTRO)

I could spend this time extolling the many virtues of nurses and nursing, patting ourselves on the back. While I will take the opportunity to do some of this, I also want to challenge nursing with some home truths. By the way, throughout the presentation I will use the word nurses as shorthand for nurses, midwives and health visitors:

SLIDE 2 (Talmud)

“The child in the womb of his mother looks from one end of the world to the other and knows all the teaching, but the instant he comes in contact with the air of earth, an angel strikes him on the mouth and he forgets everything”.

This extract from the Jewish Talmud seems to indicate that at one stage we had all the evidence we needed to solve all our human problems but on being born, we lost it. We still have the mark of the angel above our top lip! My presentation will attempt to explore how we reclaim and use some of what the Angel took from us. In so doing I will try to answer the following questions.

SLIDE 3 (Questions)

1. What stimulated the Evidence Based Practice movement?
2. Why should we want it and what is and is not evidence?
3. What are certainty and agreement in Evidence Based Practice?
4. What legitimate and illegitimate reasons are there for ignoring the best Evidence?

I will begin by relating a scenario:

Scenario 1: A nurse goes out to lunch with some friends who are not nurses. They ask her what is new in the field of nursing. She mentions that evidence based practice is currently a popular phenomenon. When they ask her what this means she says that it involves providing people with care and treatment that is informed by the most up to date knowledge. They look surprised and ask her if this is not something that nurses have always done!

Why should they be surprised – well today, in the UK someone somewhere is receiving care or treatment that is out of date or that is not underpinned by sound evidence. Nurses

should be very concerned about this. People who need health care have clear legal and moral rights. One such right is to be cared for and treated in the best possible way within available resources. In many cases and for reasons I will explore later, nurses are always respecting these rights – the very foundations of our profession.

Some Background

It is generally agreed that as a movement, evidence-based practice was 'kick started' by a lecture given by Archie [Cochrane in 1972](#). He was a doctor and epidemiologist and he aroused a lot of interest by pointing out that many decisions about health care are made without up-to-date evidence about the care and treatments used.

However, his 1972 lecture was a culmination of concerns he had expressed over many years. It was stimulated originally by his POW experiences during World War Two where he noted that people were dying because of the medical attention they received, rather than the lack of it. Reflecting back, Cochrane stated:

SLIDE 4 (Archie)

“I would gladly have sacrificed my freedom for a little knowledge. I had never heard then of 'Randomised Controlled Trials', but I knew there was no real evidence that anything we had to offer had any effect ... and I was afraid that I shortened the lives of some of my friends by unnecessary intervention.”

Several of you may have noted that in 1972 as Cochrane was complaining of how medical research results were not being used, UK nursing was being chastised by the Briggs' Report for not having enough research in the first place. Briggs recommended that nursing become a research-based profession. Since then the situation has improved beyond recognition but the profusion of nursing research in the interim has the potential to confuse rather than enlighten.

There is also confusion over terminology. In 1992, twenty years after Cochrane's lecture, David Sackett coined the term Evidence Based Medicine. Two years later the expression Evidence Based Practice reared its head and in 1996 the phrase Evidence Based Nursing was first used in print. At this juncture, I should add that I am troubled by these terms.

Evidence Based Practice and Evidence Based Nursing give the impression that clinical nurses are non-thinking automatons who follow unquestionably the directives of nurse researchers. Nursing Research results should be used to inform practice not to dictate it. This is why I prefer the terms Evidence Based Decision Making or Evidence Informed Practice. I also acknowledge the presence of Practice Based Evidence. But, regardless of what terminology we use, it is a good idea to explore why we want it!

Beverly Malone in the April 2004 editorial in Quality and Safety in Health Care stated that there was a need to invest in evidence based methods that can determine and monitor safe nurse staffing levels, taking into account skill mix, case mix and good working practice. Here she was emphasising the use of evidence for SAFE care.

Borrowing from Dante's Inferno, Florence Nightingale asserted that due to the Hazardous nature of care and treatment in the Barrack Hospital in Scutari, the words '*Abandon Hope All ye who enter here*' should be written over the entrance. Today, Health Care is still Hazardous.

SLIDE 5 (Berwick)

In London in 2003 Don Berwick used Leape's research to compare the lives lost each year with the number of encounters needed for each lost life. You can see that compared to ultra safe activities like schedule airline trips or train trips the number of deaths from health related interventions puts it in the dangerous category of 1 death per 1000 encounters. This makes health care related deaths much higher than road traffic deaths. This is a disaster and to help reduce this death toll there has been the promotion of Evidence Based Practice within government policy in the UK, Europe, USA and Australia.

But what is and is not evidence?

SLIDE 6 (Cartoon)

There are many definitions of evidence-based practice, but I wish to highlight two:

SLIDE 7 (Definitions)

Appleby stated that evidence based practice was

“A shift in the culture of health care provision away from basing decisions on opinion, past practice and precedent toward making more use of research evidence to guide clinical decision making” .

DiCenso et al (1998) put forward a less rigid and almost contradictory definition.

“A 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” .

Look at these definitions carefully; I am not going to ask you which one you prefer; rather I want you to note that neither of them refers specifically to patient outcomes – a familiar pattern in definitions of evidence-based practice. Rather, each concentrates on the ‘thinking and doing’ aspects of care, suggesting that the term evidence based practice relates specifically to the processes of care and treatment. The fact that these processes should be linked with outcomes is not a matter for explicit consideration by any of these authors. Therefore, each of you could be basing your clinical and managerial decisions on the best evidence available and you would be employing evidence-based practice. But this evidence could be having no impact or even a negative impact on patient outcomes. So to use evidence to underpin practice and not evaluate its effectiveness is short sighted **(1st key message)**.

Another thing to notice about these definitions is that what DiCenso would identify as evidence, would not be perceived as such by Appleby. From Appleby et al’s perspective, evidence is reliant on the existence of research findings. In contrast, DiCenso states that clinical expertise and patient preferences are also sources of evidence. This apparent contradiction may be explained by what Muir Gray (1997) called the Hierarchy of Evidence. This is really a hierarchy of cause and effect rather than one for general evidence, but it has been propagated as the latter.

SLIDE 8 (Hierarchy)

Level I	Meta analysis of a series of randomised controlled trials
Level II	At least one well designed randomised controlled trial
Level III	At least one controlled study without randomisation
Level IV	Well-designed non-experimental studies
Level V	Case reports, clinical examples, opinion of experts.

Figure 1. The Hierarchy of Evidence

Regardless of this, you will notice that the top four levels are really about counting and this predilection has its roots as far back as in the middle ages. For instance, Galileo wrote -

Count what is countable, measure what is measurable and what is not measurable –make measurable.

But many of the issues of importance to nursing defy quantification: how do you calibrate compassion, how do you quantify a presence, how do you measure empathy?

It is not unusual to hear the mantra that RCTs are the Gold standard, the most highly prized source of evidence. This is a false assumption as it depends on what the research question is. If I wanted to study possible causes of diabetes, then yes the RCT may well be the Gold Standard. However, if I wanted to study people's fears of the effect of diabetes on them and their families, then the gold standard may be to listen to and record their experiences.

But according to this hierarchy, word of mouth is not regarded as good evidence. This is not the case in all professions. In the legal profession such evidence is highly valued and word of mouth is sufficient to put a person in jail for a long time, or in some countries be executed. In contrast, such sources are denigrated in most textbooks and articles about evidence in nursing. Perhaps it might be more useful for a new hierarchy to be proposed.

SLIDE 9 (new hierarchy)

Level I	Opinion and views of experts
Level II	Patient preferences and narrative accounts
Level III	Nurses' experiences
Level IV	Results of qualitative studies and quality Improvement/audit activities.
Level V	The results of quantitative research.

As with the previous hierarchy, this one also has inherent problems. How can you decide whether a patient's preference comes above or below the experience of nurses? It depends on circumstances; hierarchies belong to the world of quantification and the quality of evidence should not be tied to a research design!

To return to Archie Cochrane for a moment; he was to a large extent the instigator of the Gold Standard RCT. But, in an almost in a Road to Damascus conversion, he too realised that other approaches were needed for human problems:

SLIDE 10 (Archie -Damascus)

"... The Germans dumped a young Soviet prisoner in my ward late one night. The ward was full, so I put him in my room as he was moribund and screaming and I did not want to wake the ward ... He had obvious gross bilateral cavitation and a severe pleural rub. I thought the latter was the cause of the pain and the screaming. I had no morphia, just aspirin, which had no effect ... I felt desperate ... I finally instinctively sat down on the bed and took him in my arms, and the screaming stopped almost at once. He died peacefully in my arms a few hours later. It was not the pleurisy that caused the screaming but loneliness. It was a wonderful education about the care of the dying. I was ashamed of my misdiagnosis and kept the story secret."

Cochrane, A. (1989). One Man's Medicine. London: BMJ (Memoir Club). p. 82

So over time Archie Cochrane had other views about what may or may not be an effective intervention. Therefore, evidence is a victim of time (**2nd key Message**). What was evidence last year may not be evidence this year. Perhaps at one time there was evidence that boring holes in people's skulls or using leeches were perceived as good ways of controlling some symptoms or that extracting teeth was the best way to deal with dental caries. Today, such interventions are perceived as barbaric. I have no doubt that in

fifty years time, interventions currently used as best evidence will be denigrated by society. No crystal ball gazing but I doubt if ECT, some major surgery and many types of cancer chemotherapy (all currently underpinned by sound research) will exist.

What is certainty and agreement in Evidence Based Practice?

In health care we reach out continually for the holy grail of certainty. However, the world of health care, as with life in general, is full of uncertainties.

SLIDE 11 (photo entry sign)

SLIDE 12 (photo School)

Uncertainty brings anxiety and confusion and this means that during times of uncertainty nurses fall back on familiar practices.

SLIDE 13 (agreement-certainty)

	Far from Certainty	Close To Certainty
Close to Agreement	1	2
Far from Agreement	3	4

In Area 1 are those interventions that have high levels of agreement but their effectiveness is far from certain. Knowing the vintage of some of my colleagues here this evening, I know they will remember Savlon baths, Salt Baths, 4-hour back round, unnecessary 4 hourly observations. However, today in many wards in the province nurses still weigh all patients on a weekly basis regardless of their health problem and patients still starve for longer than the recommended 4 hours prior to operation. **Most of these interventions do no real harm but they also do no real good.**

(Example)

Ignoring evidence and basing practice on tradition has immense benefits for some nurses: they feel comfortable with routines, which are often a mechanism for keeping control in a busy clinical area where there are unpredictable and ever changing conditions and where staff are forever altering in numbers and qualifications. Also, routines are sometimes legitimised because they were learned from the actions of an authority figure or a trusted colleague. But it is not always wise to place too much trust in the actions of a colleague!

SLIDE 14 (Polar Bear)

In Area 2 are those interventions that nurses undertake that have high levels of agreement and certainty. They are mostly informed by good research evidence. Examples include pre op visits to reduce post op complications, nurse-led smoking cessation clinics and cognitive behavioural therapy to improve functioning in inpatients with acute psychosis. **Here, undoubtedly, the interventions do more good than harm.**

In Area 3 are those interventions that nurses undertake that have low levels of agreement among the profession and their effectiveness is far from certain. For example, there have been a plethora of literature concerning theories and models of nursing, most of which are not research based – yet they have been used in practice to provide a systematic approach to nursing care. **These interventions do no real harm but it is uncertain whether or not they do any good.**

Finally, in Area 4 are those interventions that have low levels of agreement but their effectiveness has been shown to be certain. Examples include prophylactic aspirin to avoid blood clotting and eating five pieces of fruit per day. Here we know that these interventions do more good than harm but yet they are not universally incorporated into our practice or lifestyle.

I suspect you are wondering how much of health care activity is in Area 2. From Baker's estimates (1996) this would be about 15%. It is a truism, therefore, that if nurses were told that they could only use research evidence, practice would come to a standstill.

Baker argued that an increase to about 50% is the best that can be hoped for. So, the idea of practice being 100% evidence based is unrealistic and indeed undesired. The situation we should be aiming for is to increase the number of interventions in area 2 and continue to bring the interventions in Area 4 into mainstream practice.

What reasons are there for ignoring best Evidence?

If I asked you whether nurses should use the best available evidence to underpin practise you would probably say yes. Who could possibly be opposed to this? But I would argue that there are many reasons why best evidence should be ignored. I have divided these into legitimate and illegitimate reasons.

Firstly, best evidence may on occasions be ignored legitimately and the explanation for this goes back to how nurses know what they know.

SLIDE 15 (Carper)

In 1978 in the first article in the first issue of the US journal, *Advances in Nursing Science*, Barbara Carper identified four types of knowing in nursing. The first she called '*empiric knowing*', and represents knowledge that is **verifiable, objective, factual, and research based**. This is the type of quantifiable and objective evidence seen in area 2 above or in Levels 1 to 4 of Muir Grey's Hierarchy. I would argue that **sometimes** we can ignore this type of knowledge because it is superseded by one or more of the other types of knowing.

For instance '*ethical knowing*' provides us with knowledge that is about what is right and wrong and what are good and bad, desirable and undesirable. For Ethical reasons, some nurses may decide not to participate in a particular treatment even though the results from clinical trails or other studies note that it is effective for some conditions. For example I know nurses who will not participate in ECT or therapeutic abortions. Ethical Evidence may also be used to make decisions about the costs of treatment (QuALYs) and rationaing of health care or whether terminally ill people should be actively resuscitated.

Carper's third type of knowing is '*aesthetic knowing*'. It gives us the knowledge that focuses on the art of nursing – tacit knowledge, skill and intuition. Armed with this type of knowledge we may also ignore research evidence. For instance, there are many research-based scales that are used to assess and predict patients' risk of pressure damage. Nonetheless, clinical judgement, based on experience and intuition is also used. Similarly, research evidence may provide guidance on when patients can mobilise post operatively but the intuitive expertise of the nurse may justifiably override this. Rather than evidence based practice this is best referred to as practice based evidence.

Finally, there is '*personal knowing*' and this represents knowledge that focus on self-consciousness, personal awareness and empathy. It is possible that a nurse may reject textbook based evidence because of her own personal history. For example, consider the situation where a nurse is working with a patient or a family member who is going through a grief reaction. Despite empirical evidence that suggests a liner movement through a number of grieving stages, the nurse's personal experience may indicate that not everyone has to go through all these phases.

What do I mean by Illegitimate Barriers to using best evidence

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I have been fortunate to lead a research team on a number of studies dealing with Barriers to Evidence Based Practice. One focused on community nurses and GPs the other on mental health nurses and their managers. Based on some of the findings from this work, I will deal briefly with what I see as the illegitimate barriers erected by practising nurses, nurse managers, nurse researchers and nurse educators.

Practising Nurses

Finding from one of these studies identified the entrenched attitudes of practising nurses as being the single most significant barrier to their use of evidence. Why should this be so? Well, lets face it, nurses are no different than anyone else and research evidence is not sufficient enough reason to change practice. (How many of you smoke; eat Ulster

fries; do not take enough exercise)

Nurse Managers

Modern nurse managers are concerned about evidence-based practice because they are concerned about clinical governance. But research from Sandy Funk in the US, Caroline Hicks in the UK and Cecil Deans in Australia identified lack of management commitment as one of the greatest barriers to using research evidence. Our own research here in UU has verified this (I would include Kader Parahoo's work in this field). Our findings showed that senior health managers had other commitments and did not perceive research as a core element in the provision of nursing services. It is not surprising that in a setting with competing demands no one is really going to believe that EBP is truly important unless the boss makes it important.

SLIDE 17 (Focus-Energy Matrix)

At this juncture I am going to refer to recent work by Ghoshal and Bruch from the London Business School. It was published this year in the Harvard Business Review. (Harv Bus Rev. 2004 Mar; 82(3):41-5, 125 Reclaim your job). In essence, they state that managers' claims of lack of time and competing commitments are little more than excuses and mask their lack of purposeful engagement in supporting improved effectiveness.

From research undertaken over a period of several years the researchers noted that all managers fitted into one of these four quadrants. It can be seen that 30% of managers had low focus and low energy causing them to procrastinate on making decisions. 40% had high energy but low focus, distracting them from the task in hand. 20% had low energy but high focus causing them to be disengaged. The best managers had high energy and high focus and as a result were purposeful in ensuring continuous improvement. They knew what mattered about their business. This research has obvious implications for managers' support of evidence-based practice. Look at the disengaged quadrant and note particularly the denial behaviour and defensiveness – from his Phd thesis Peter Nolan provided a nice illustration of a disengaged nurse manager:

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The manager said:

"He was all for new ideas but they had to be good ones. Anyone is free to innovate at any time; all they have to do is inform me of what they intend to do and if it is good then they will have my support. Keep in mind that I am sick to death of ... nurses who think they have wonderful ideas that will change the world." (Nolan, 1989)

Interestingly, in one study I compared clinical nurses' perceptions of barriers to evidence based practice with those of managers and noted some key differences. Practising nurses tended to see lack of management commitment as a major barrier. In contrast, nurse managers identified the unwillingness of clinical nurses to change and try out new ideas as a major barrier. Here, clinical nurses were blaming nurse managers for lack of support and nurse managers were blaming clinical nurses for being unwilling to change.

SLIDE 19 (Japanese)

This tendency to pass the parcel of blame to others is endemic in health care.

SLIDE 21 (BLAME)

Nurse Educators

Results from our research showed that nurse educators did not always keep up to date with the latest evidence based practice or practice based evidence and this affected student's view of using evidence. Many of you would agree that some of us are products of a nurse training system that wanted obedience, not enquiry. Traditionally, students who asked too many questions were often perceived as troublemakers and ended up being sent to the so-called 'back wards' I met some of you there.

Today student nurses are encouraged to ask questions and are likely to be part of a culture of critical enquiry. It is my belief that nurses are best able to appreciate and use evidence when they have been learning from the beginning in an environment where knowledge is generated, challenged and tested as well as being taught.

Nurse Researchers

Our research shows that several of the obstacles to the use of evidence had to do with research and researchers. In one of our studies, nurses and GPs identified barriers such as their inability to understand statistical findings, the confusion that arises through conflicting research results, use of too much research jargon. Perhaps, unsurprisingly they complained of the overwhelming amounts of published research papers (500 nursing journals). This latter issue is not new and is illustrated wonderfully by a building metaphor used almost 40 years ago by Raulin (1963). Lets suppose that the ‘builders’, (practicing nurses) depend upon ‘brickmakers’ (nurse researchers) to produce usable bricks (research papers) so that they can make edifices (evidence based interventions).

Raulin describes this as follows:

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And so it happened that the land became flooded with bricks. It became necessary to organise more and more storage places, called journals... in all of this the brick makers retained their pride and skill and the bricks were of the very best quality. But production was ahead of demand and...it became difficult for builders to find the proper bricks for a task because one had to hunt among so many.... It became difficult to complete a useful edifice because, as soon as the foundations were discernible, they were buried under an avalanche of random bricks. And, saddest of all, sometimes no effort was made to maintain the distinction between a pile of bricks and a true edifice.

Therefore, if we are not careful, practice can be choked with evidence-based guidelines, protocols and research reports. This has the potential to alienate practising nurses from nurse researchers.

Research is a skill and like all skills it must be learned through study and practice. Just as you would not approve a nurse caring for a patient if she were not competent so too we should not countenance nurses undertaking research if they are not competent to do so. In any profession worthy of the name, only a small number of the members are researchers; the vast majority are the critical consumers of the research.

Conclusion

No nurse would deny that sound evidence should be an integral part of clinical decision-

making. Practising in this way means that many nurses are reclaiming more and more of the knowledge that the Angel took from us.

I will summarise the 10 key messages emanating from this presentation:

1. There are many instances where nurses are using evidence based practice and practice based evidence.
2. People in need of health care have a legal and moral right to be cared for and treated in the best possible way within available resources
3. Quality of evidence should not be dependent on a particular research design
4. Ethical, Aesthetic and Personal evidence can on occasions supercede empirical evidence
5. Existence of evidence is not enough – it has to be used and its impact evaluated
6. Having 100% research based practice is naïve and unrealistic
7. Practitioners, researchers, managers and educators must work together to ensure that nurses work in an environment where evidence is generated, challenged, tested and taught
8. Passing the parcel of blame is comfortable – we must occasionally endure discomfort and accept ownership of the problem
9. As Beverly Malone and Don Berwick showed, modern health care is hazardous and evidence based practice is synonymous with safe care
10. Archie Cochrane changed his views on what was an effective intervention; so too we must reinvent our knowledge, attitudes and practice regularly. Alvin Toffler wrote,

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"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn".¹⁴