Evidence-based practice—imperfect but necessary

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Evidence-based practice implies the systematic use of best evidence, usually in the form of high quality clinical research, to solve clinical problems. This article considers a series of objections to evidence-based physiotherapy including that (1), it is too time-consuming, (2), there is not enough evidence, (3), the evidence is not good enough, (4), readers of clinical research cannot distinguish between high and low quality studies, (5), clinical research does not provide certainty when it is most needed, (6), findings of clinical research cannot be applied to individual patients, (7), clinical research does not tell us about patients’ true experiences, and (8), evidence-based practice removes responsibility for decision making from individual physiotherapists. We argue that, while there is some truth in each of these objections, they need to be weighed against the potential benefits of evidence-based practice. The overwhelming strength of the evidence-based approach to clinical practice is that it takes full advantage of the only potentially unbiased estimates of effects of therapy—those which are derived from carefully conducted clinical research. The evidence-based practice model may be imperfect, but it may be the best model of clinical practice that is currently available.

INTRODUCTION

This article addresses some theoretical and practical issues with the implementation of evidence-based practice. It begins with a brief overview of what is implied by evidence-based practice and discusses how this differs from traditional clinical practice. It then considers some frequently raised objections to the evidence-based practice model.

WHAT IS EVIDENCE-BASED PRACTICE?

The term “evidence-based practice” is used in a variety of ways. We use the term as it is used by Sackett and colleagues in their influential book on evidence-based medicine (Sackett et al., 2000). These authors conceive of evidence-based practice as consisting of a five step process that is carried out routinely in clinical encounters. The five-step process involves (1) asking...
answerable clinical questions, (2) finding the best evidence with which to answer these questions, (3) critically appraising the evidence (this involves deciding if the evidence is believable and, if so, what it means), (4) applying the evidence to clinical problems, and (5) evaluating the effects of the intervention on individuals (Sackett et al, 2000).

These five steps allude to some of the most important distinctions between evidence-based practice and clinical practice as it is traditionally conducted. First, the process of evidence-based practice begins with an acknowledgment of uncertainty. That is, the evidence-based practitioner strives to explicitly identify knowledge gaps. This contrasts with some traditional models of clinical practice in which uncertainty is seen as a failing and good clinicians are thought to be those who always know what to do, not those who question what they do. In many clinical environments there is an attitude that physiotherapists learn what to do in clinical practice during their formal physiotherapy training (Turner and Whitfield, 1997, 1999). An attitude of uncertainty is likely to better equip health professionals to deal with rapidly changing evidence.

A second distinction is that the process of gathering and synthesising evidence is systematic and critical (Sackett et al, 2000). It involves recording clinical questions that arise in clinical practice, ranking them in order of importance, and then tackling them in an optimal way. Evidence is chosen on the basis of its probable validity. There is an emphasis on deciding if the intervention will produce the desired outcomes without unreasonable risks and at a reasonable cost. This differs from traditional models of practice in which there may be priority given to clinical experience as a form of evidence (Carr et al, 1994; Nilsson and Nordholm, 1992), where clinical research evidence is often happened upon rather than strategically sought out, and where appraisal of the quality of clinical research is superficial or does not occur at all. A systematic approach to the use of evidence from clinical trials helps avoid the temptation to attend only to that evidence which supports preconceived ideas of which therapies are effective.

An implicit assumption in this model of evidence-based practice is that well-conducted clinical research often provides the best information about what interventions are effective and ineffective, how useful a diagnostic test is, or a patient’s likely prognosis. That is, where good quality, relevant clinical research is available, it usually takes precedence over theory or personal experience, even the theories or experiences of experts (National Health and Medical Research Council, 2000; but see Greenhalgh, 1999). The role of clinical experience, clinical wisdom, and intuition is primarily in making best use of good evidence to meet individual patients’ needs and preferences.

The requirement of good evidence necessarily restricts the focus in evidence-based practice to optimally designed studies. The optimal study design will depend on the type of clinical question. For example, the best evidence about the effects of therapies is provided by randomised trials or systematic reviews of randomised trials (National Health and Medical Research Council, 2000). On theoretical grounds these sorts of evidence are expected to provide relatively unbiased estimates of the effects of therapy. There is some empirical evidence that other sorts of studies, particularly uncontrolled studies or studies with historical controls, tend to produce inflated estimates of the size of treatment effects (Chalmers et al, 1983; Colditz, Miller, and Mosteller, 1989; Linde et al, 1999; Miller, Colditz, and Mosteller, 1989; Sacks, Chalmers, and Smith, 1982; but see also Benson and Hartz, 2000; Concato, Shah, and Horwitz, 2000 and the ensuing letters). Questions about diagnostic tests are usually best answered by studies in which there is independent (blind) comparison of the test with a gold standard test (see Sackett et al, 2000 and paper by Stratford in this issue). There is some empirical evidence that studies that include nonrepresentative patients, lack blinding, or do not use a single gold standard for all subjects tend to overestimate the diagnostic accuracy of a test (Lijmer et al, 1999). Questions about prognosis
are best answered by studies that prospectively monitor well-defined cohorts from an early and uniform point in the course of their condition (see Sackett et al, 2000 and paper by de Bie in this issue). The most difficult questions, those about patients’ beliefs and the meanings they attach to their experiences, may be best explored with carefully conducted qualitative research (see Ritchie, 1999 and paper by Ritchie in this issue).

Evidence-based practice does not imply that clinical decisions should be made on the basis of clinical research alone. Key proponents of evidence-based healthcare have emphasised that the evidence provided by clinical research must complement other sorts of information, such as information about individual patients’ specific needs and preferences (Sackett et al, 2000; Greenhalgh, 1999). Good clinicians are able to discern these needs and preferences. In the best models of evidence-based practice, evidence about the effects of therapy (or accuracy of diagnostic tests or prognoses) informs, but does not dominate clinical decision-making. The physiotherapist draws on past clinical experience to apply the results of research to the care of individual patients. The best decisions are made with the patient, not found in journals and books.

**Evidence-based practice is too time-consuming to be practical**

Even with practice and optimal resources, the process of finding and critically appraising the best evidence pertaining to a single clinical question usually takes considerable time. As a consequence, it is not practical to use the best evidence to deal with every uncertainty that arises in every clinical encounter, and even if there was good quality evidence to answer all clinical questions, not all practice could be evidence-based. Any realistic model of evidence-based practice must involve deciding what are the most important clinical questions and finding answers to those questions first. Given this reality, evidence must be used strategically. Time should be devoted to answering questions that are commonly seen in practice, have important consequences, have potential for either beneficial or harmful treatment, or incur considerable cost (Evidence-Based Care Resource Group, 1994). In this issue, Walker-Dilks discusses the issue of secondary sources of information (such as the ACP Journal Club, Evidence-Based Medicine and the Australian Journal of Physiotherapy Critically Appraised Papers). These sources distill the key findings of high-quality papers, usually in one page or less, so they potentially provide a significant time-saving mechanism for busy practitioners.

How much time is and should be spent seeking out and appraising the evidence? Most physiotherapists spend little time reading clinical research (Turner and Whitfield, 1997) and, because few physiotherapists have training in clinical appraisal, reading time may be
spent suboptimally. Rational determination of the amount of time that should be spent seeking out and appraising evidence requires information about both the effectiveness of current clinical practices and about how much of an improvement in effectiveness could be accrued in a given amount of time by searching for and appraising papers. Unfortunately, data on these issues are elusive. Our view is that much of clinical practice is far from optimally effective and that potentially even modest amounts of time spent in the judicious application of evidence to clinical decision making could substantially improve clinical outcomes. As just one example, exercise is prescribed with equal frequency for acute and chronic low back pain (van der Valk, Dekker, and van Baar, 1995), but systematic reviews indicate there is strong evidence that exercise therapy is effective for chronic, but not acute, low back pain (van Tulder, Koets, and Bouter, 1997; Maher, Latimer, and Rofshauge, 1999). This suggests that changes in exercise prescription practices could significantly improve outcomes in patients with low back pain. We expect that many practices would converge rapidly on this outcome if scarce time was used to answer key clinical questions.

Most clinicians are busy. Where can they find time to seek and critically appraise the evidence from clinical research? There are numerous possibilities. Time spent in formal continuing education activities (staff seminars, for example) may be better spent by individuals or small groups of physiotherapists answering their own clinical questions. Depending on the clinical setting, case conferences could also be restructured so that they create learning experiences for staff as well as deal with patient’s problems. These and other suggestions have been made by Sackett et al., (2000). Time spent busily applying ineffective or harmful therapies would be better spent seeking out and critically appraising best evidence.

There is not enough evidence

Ideally, at least from a purely professional point of view, there would be good clinical research answering all important clinical questions. Of course, that is not the case. It has been claimed that there is not enough evidence to practice evidence-based physiotherapy (Bithell, 2000). How much clinical research exists and how much can it assist clinical decision making?

It is difficult to quantify the volume of clinical research in physiotherapy. However it is possible to estimate, at least roughly, the number of relevant randomised trials and systematic reviews. The Centre for Evidence-Based Physiotherapy, with assistance from, among others, the Rehabilitation and Related Therapies Field of the Cochrane Collaboration, has attempted to identify all randomised controlled trials and systematic reviews in physiotherapy and collate these on the Physiotherapy Evidence Database (PEDro; http://ptwww.cch.s.usyd.edu.au/pedro). At the time of writing 2,229 randomised or quasi-randomised trials and 297 systematic reviews had been identified (Moseley AM et al., in press; see also Sherrington et al, 2000; Moseley et al, 2001).

There are more than 200 randomised trials and systematic reviews on PEDro pertaining to each of the following subdisciplines of physiotherapy: cardiothoracics, continence and women’s health, gerontology, musculoskeletal, neurology, orthopaedics, and sports (Moseley AM et al., in press). This is enough to tackle many fundamental clinical questions, though there are not yet enough trials in most areas of physiotherapy to provide convincing replication on every permutation of therapy in every setting for every patient group. In some areas of physiotherapy, the volume of trials and reviews is not sufficient to have any real impact on clinical practice. However, given the exponential rate of publication of clinical trials and systematic reviews in physiotherapy (Moseley AM, et al., in press) this will almost certainly change in the near future.

It is likely that most clinicians have not read all of the high quality evidence that pertains to their own clinical questions. In this sense at least, there is an abundance of evidence. It
is probably reasonable to expect all practising therapists to be aware of key trials and reviews in their area of practice.

The evidence is not good enough

Certain features of clinical trials (such as concealment of randomisation, blinding of subjects and assessors, and adequacy of follow-up) tend to be associated with smaller effect sizes, suggesting that trials that have these features tend to be less biased (Moher et al, 1999). Other trials lack these features, and so we should expect that, on average, they will be biased. In physiotherapy, the typical randomised trial lacks concealment of allocation and has unblinded patients, assessors, and therapists, but does have adequate follow-up (Moseley AM et al., in press). There must be real concern about the capacity of the typical trial to provide an unbiased picture of the effects of therapy. Fortunately, the quality of clinical trials appears to be improving slowly. The median PEDro score for randomised trials in physiotherapy has crept up from 3 in the 1960s to its current value of 5. (If this rate was to continue, most trials would return perfect scores by the turn of the next century.)

Systematic reviews (such as those conducted by the Cochrane Collaboration) synthesise the findings of clinical trials. Ideally, systematic reviews would objectively assess trial quality and then pool the findings of high quality studies to provide less biased and more precise estimates of the effects of therapy. There are some real difficulties that arise, however, when an attempt is made to systematically review clinical trials in all areas of health care. Three such problems are discussed below. The first two issues also are relevant to readers of individual clinical trials.

1. **Publication bias.** This is the bias that arises because trials with positive findings are more likely to be published than trials with negative findings. Consequently positive studies are more likely to be reviewed, and reviews are likely to contain inflated estimates of treatment effects (Stern and Simes, 1997). Although it is often assumed that exhaustive searching reduces the potential for publication bias, it is possible that this actually increases the potential for publication bias. There are currently no completely satisfactory solutions to the problem of publication bias (Thornton and Lee, 2000).

2. **Scoring of study quality.** Systematic reviews must take into account the quality of the study if they are to produce unbiased estimates of the effects of treatment. However, the methods for assessing trial quality have not yet been fully validated (Moher et al, 1999), so we cannot yet be sure that mechanisms for rating study quality are truly able to discriminate between trials that are and are not likely to be biased. To further complicate this issue there are a wide variety of quality scales currently available. The number of items in each scale ranges from as few as 3 to as many as 34, with no consensus on the weighting applied to central items such as randomisation, blinding, and withdrawals (Juni et al, 1999). The choice of quality scale may influence the conclusions of a systematic review by influencing the eligibility of particular trials for inclusion in the review or weighting of the trial’s findings in the review synthesis.

A practical question for readers of clinical trials is how potentially biased does a study have to be before it should no longer be used for clinical decision-making? The answer should depend on the degree of confidence that is held in other information that pertains to the clinical question at hand. As a working principle, the threshold of quality should be that the study must be able to provide more certainty than the reader already has. Our opinion is that, in practice, there will usually be little point in reading clinical trials that do not meet basic criteria (true randomisation, acceptable follow-up, and blinding where possible).

3. **Synthesis of findings.** Ideally, systematic reviews are accompanied by meta-analyses
that provide pooled estimates of treatment effects. However, this is only advisable when the individual studies are of sufficient quality and when there is sufficient homogeneity of interventions, outcomes, and findings across studies. When heterogeneity precludes meta-analysis, some authors conduct best-evidence syntheses in which the quality of evidence supporting a conclusion is rated according to a predetermined scale of study quality and consistency of findings. Unfortunately, the findings of best-evidence syntheses may depend heavily on the rating system used, and may be unduly sensitive to the findings of individual studies.

The sensitivity of conclusions in systematic reviews to methods of best evidence synthesis is illustrated clearly with a recent review of ultrasound (van der Windt et al., 1999). The review concluded, on the basis of seven randomised trials, that “ultrasound is not effective in the treatment of shoulder disorders” (pg. 263).” When the more recent trial by Ebenbichler and colleagues (1999) is added to the review, the review’s best evidence synthesis methods support the conclusion that there is weak evidence for ultrasound therapy for shoulder disorders. In contrast, use of van Tulder et al.’s (1999) method of synthesis would lead to the conclusion that there is no evidence of effectiveness, and van Poppel et al.’s (1997) method would lead to the decision that there is strong evidence that ultrasound is ineffective.

The problem with these methods of qualitative synthesis is that while they use similar descriptors such as “strong,” “moderate,” or “limited” to describe the level of evidence, the definitions for each descriptor vary. With each method the addition of a single trial of similar quality and precision to the existing trials can change the review conclusion to an extent that seems unjustified. For example, with the van Poppel et al., (1997) system the findings of one trial can change the conclusion from “no evidence” to “strong evidence.” We recommend that great caution be used by readers of systematic reviews that employ “best evidence” methods of synthesis.

Many readers are unable to discriminate between studies that are probably valid and those that are probably not invalid.

Almost all methodological surveys and most systematic reviews in physiotherapy have decried the quality of published research (e.g., Green et al., 2000). Many physiotherapists do not have sufficient training in research methodology to confidently distinguish between studies of high and low quality. Consequently, there is a risk of many readers being mislead by potentially biased studies or excluding well-conducted trials.

The eventual solution must be that physiotherapists will develop the skills to critically appraise clinical research. Most undergraduate curricula now teach research methods and increasingly more explicitly teach critical appraisal of clinical research. In the near future we may be able to expect new graduates to have basic critical appraisal skills. Graduate physiotherapists will have to seek out training in skills of critical appraisal. It is to be hoped that they do so with the same enthusiasm that most physiotherapists apply to the development of new clinical skills.

Some simple strategies may enhance physiotherapists’ abilities to identify high quality trials. These include using methodological filters (Guyatt, Sackett, and Cook, 1993; Sackett et al., 2000) or methodological ratings from the PEDro database to screen out low quality research. Secondary sources of publication, such as those referred to earlier, can perform much of the work of critical appraisal for clinicians who lack critical appraisal skills. Some of these (such as Cochrane Systematic Reviews) are quite uniformly of high quality, and can generally be considered to provide an unbiased synthesis of the literature.
When there is clinical uncertainty, randomised controlled trials and systematic reviews often cannot provide certainty

Some therapies appear so unlikely to have useful therapeutic effects that they are of little interest to most therapists. Other therapies have such positive effects that their efficacy is obvious to all (for example, strapping to prevent pain and further injury in acute skier’s thumb). There is relatively little benefit in subjecting these therapies to rigorous clinical experimentation. The role of clinical trials and systematic reviews is to provide information about the size of treatment effects where there is reasonable doubt that the treatment has an effect that is large enough to be worthwhile. The value of clinical trials and systematic reviews is that they provide estimates of the size of treatment effects that can be compared to the smallest clinically worthwhile effect (Herbert, 2000a, 2000b). If the effect observed in the trial is clearly larger than the smallest clinically worthwhile effect, the therapy may be clinically useful.

Unfortunately, because trials always involve a finite sample of patients, they cannot tell us with absolute certainty the size of the treatment effect. Instead, they provide us with an estimate of the average treatment effect. The uncertainty associated with this estimate can be described with confidence intervals (commonly the 95% confidence interval). The width of the confidence interval defines the range of values within which the true average effect of treatment probably lies. If all of the confidence intervals fall to one side or other of the smallest clinically worthwhile effect, it is possible to be confident that, on average, the therapy has (or does not have) a clinically worthwhile effect (Herbert, 2000a, 2000b). Studies with large numbers of subjects tend, all else being equal, to provide more precise estimates of the size of treatment effects (estimates with narrower confidence intervals) than small studies with few subjects.

The problem is that we most need clinical trials when there is most uncertainty. We are likely to be most uncertain when the true size of the treatment effect is close to the smallest clinically worthwhile effect. Yet when the true effect of treatment is close to the smallest clinically worthwhile effect the confidence intervals are likely to span the smallest clinically worthwhile effect, regardless of whether the treatment is clinically worthwhile (Herbert, 2000a). In these circumstances, we cannot know if the treatment effect is large enough to be clinically worthwhile.

Meta-analysis is one solution to this problem. The advantage of meta-analysis is that it can provide estimates of effect size based on large numbers of subjects from several or many trials. Potentially, then, meta-analysis can provide the precision needed to decide if a treatment produces clinically worthwhile effects even if the true value is quite close to the smallest clinically worthwhile effect.

It is not possible to use the findings of a clinical trial performed on a particular sample to make inferences about the effects of treatment on an individual patient who is not from that sample

There are three subproblems here. These are dealt with in more detail in two recent papers (Herbert, 2000a, 2000b):

First, trials usually only give us reliable information about the average response to therapy, yet obviously some patients will do much better than average and some will do much worse. Thus, some argue, clinical trials cannot tell us about the responses of individuals.

It is true that clinical trials cannot predict how each individual will respond to treatment, but then neither can any other sort of information. Nonetheless, the information provided by trials about the average (or most likely) outcome of therapy is valuable for clinical decision-making because the average response is the response that we should expect in the absence of any other information. It
makes sense to make decisions on the basis of expected outcomes, even though we know that the expected outcome will probably not occur.

Second, the average subject in a trial might differ in important ways from the people we are contemplating treating. In that case it may no longer be true that the average response of the subjects in the trial is the expected response when the therapy is applied. Many clinicians feel uncomfortable about the fact that trials never contain quite the sorts of patients they are interested in, and the unease may be fuelled by a feeling that they can pick, at least roughly, who is and who is not likely to respond well to therapy on the basis of their clinical experience.

Clearly there are two important sources of information about the likely size of the treatment effect that can be brought to bear on clinical decisions. On the one hand, clinical trials and systematic reviews can provide relatively unbiased information about the effects of therapy on the average patient in the trial or review. On the other hand, clinical experience and intuition may be capable of discriminating between patients who are and are not likely to respond to therapy. This suggests a sensible compromise. We can use clinical trials to provide unbiased estimates of the average effect of therapy on the average patient in the trial. Then, when applying the trial findings to a particular patient, the estimate of the effect of therapy can be adjusted up or down based on what clinical intuition says about how more or less likely the particular patient is to respond to therapy (Herbert, 2000a; see also Glasziou and Irwig, 1995).

Third, there is a (similar) problem with the diversity of ways in which a therapy can be applied. Differences in patient characteristics, equipment availability, staffing levels, staff training and philosophies, and health care settings mean that the therapy is often not applied in trials exactly as we could or would choose to apply it. Therefore, trials might provide estimates of treatment effects that are unduly pessimistic (if we feel the therapy was applied suboptimally in the trial) or optimistic (if we feel the therapy was applied better than we would be able to apply it). Again, the unbiased estimate of treatment effects provided by clinical trials can be combined with clinical intuition. Estimates of the sizes of treatment effects provided by trials can be adjusted upwards or downwards on the basis of how much more or less effectively we feel we could apply the therapy.

The alternative approach is more nihilistic. Some clinicians have fixed ideas about how a therapy should be administered, and consider that unless a trial is conducted in which the therapy is administered exactly as they would choose to administer it, the trial is not useful. There is an irony here: Diversity of practice arises when there is uncertainty among clinicians about how therapies should be applied. Yet, when there is diversity of practice, some practitioners are less likely to be satisfied with the findings of clinical trials because they believe the therapy should be administered as they administer it in their clinical practices. When there is diversity of clinical practice, a more rational way to use clinical trials is to be tolerant about exactly how therapies are delivered in clinical trials. If diversity of clinical practice reflects uncertainty about how a therapy should be administered, we should be satisfied when a therapy is tested as other clinicians feel it would best be administered.

Only patient-centred research can really tell us about peoples’ experiences

We want clinical trials to tell us how a therapy affects a patient in terms that matter to patients. A problem with clinical trials is that they only measure outcomes that the experimenter perceives as important, and they do not permit complete expression of what patients feel when given a particular therapy (Greenhalgh, 1999; Higgs and Titchen, 1998; Ritchie, 1999).

At one level many trials do measure the effects of therapy in terms that patients themselves deem important. Many trials now measure outcomes such as “global perceived effect” or “preference for treatment” because it is thought that measurement of these outcomes gives patients the opportunity to
assign appropriate weighting to their feelings of their responses to therapy. Nonetheless, these single-dimensional outcomes provide little opportunity for patients to express the breadth of their feelings about the effects of therapies. The need for patient-centred outcomes in clinical trials suggests one important way (but not the only way) in which qualitative and quantitative research can complement each other in evidence-based practice. Qualitative research can inform the designers of clinical trials about what consumers see as the important issues when choosing therapies (see paper by Ritchie, this issue). Such considerations probably should be, but rarely are, paramount.

Evidence-based practice removes the clinical decision-making role from clinicians and gives it to managers

There is a view that evidence-based practice takes clinical decision-making out of clinicians’ hands. In our view, this is not intrinsically wrong: There is no intrinsic right of therapists to be solely responsible for clinical decision-making. Instead, the justification for clinician-as-decision-maker lies in the reasonable expectation that this provides the best possible care and outcomes.

Nonetheless, Sackett et al. (1996) have argued that evidence-based practice does not subjugate responsibility for clinical decision-making. It is true that, in evidence-based practice, good clinical research provides an external measure of effectiveness, and this sort of evidence should take priority over clinical experience alone. That is, good clinical research acts as an external arbiter of effective clinical practice that constrains clinicians’ choices. In a more important sense, however, evidence-based practice does not constrain decision-making. Instead, it emphasises the role of clinicians in using evidence to answer their own clinical problems, and removes the constraint of tradition from clinical practice. In evidence-based practice the responsibility for clinical decisions is taken away from how-to textbooks and devolved to individual practitioners and their patients.

**SUMMARY AND CONCLUSIONS**

We conclude that there are, indeed, some reasonable objections to the practice of evidence-based physiotherapy, although in our opinions, this model of clinical practice has tremendous advantages as well. Evidence-based practice is time-consuming, and the time involved in answering clinical questions does not fit easily into conventional models of clinical practice. Nonetheless, the time spent answering important clinical questions may prove worthwhile in the medium term. There is, unfortunately, not enough evidence to answer all clinical questions well, but there is much that is worthwhile and underutilised. The available evidence is often not of sufficient quality to guide clinical decision-making, and many therapists may have difficulty distinguishing between valid and potentially invalid research. Thus it is important for clinicians to develop skills or strategies that enable discrimination between potentially valid and probably invalid studies. A particularly difficult aspect of evidence-based practice is using trials to make inferences about individual patients. We argue that this is best done by combining unbiased estimates of the effects of treatment provided by clinical trials and systematic reviews with clinical intuition about how well a particular patient will respond to therapy. Unfortunately clinical trials usually measure outcomes of interest to investigators, but currently we do not usually know if these outcomes are of interest to the consumers themselves. Evidence-based practice devolves responsibility for clinical-decision-making to therapists and their patients.

In choosing between models of clinical practice we must discern which is best in some sense. Here “best” should mean something like “the model that produces the outcomes most desired by recipients of physiotherapy services.” We have argued that there are real problems with current models of evidence-based practice, but we point out that many
of the problems of evidence-based practice are common to other ways of doing therapy as well. For example, clinical practice that is based on clinical experiences suffers from the problem that therapists must use their clinical experience to make predictions about individual future patients, just as they must using good clinical research in evidence-based practice. The overwhelming strength of the evidence-based approach to clinical practice is that it takes full advantage of the only potentially unbiased estimates of effects of therapy—those which are derived from carefully conducted clinical research. There is a theoretical and professional imperative to use this “best evidence.” The evidence is combined with, but does not dominate, other information that practitioners glean by communicating well with their patients. Evidence-based practice is, in our view, the best of a number of imperfect models of clinical practice in the sense that it is likely to produce the best outcomes for patients with available resources. Evidence-based practice is imperfect, but necessary.

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