

QUALITY IN HEALTH CARE

Editorials

Inhabiting different worlds: how can research relate to practice?

An accepted approach to seeking to change clinical practice assumes a fairly straightforward relation between clinical evidence, the development and publication of national guidelines, the acknowledgement of national guidelines in local protocols, and the day to day behaviour of clinicians. The notion that we can understand these relations in terms of a single input-output linear model is considerably challenged by any work which examines any part of this assumed process. Relating research to practice involves effective communication, and therefore mutual understanding, between the inhabitants of four very different worlds—each of which has its own characteristic institutions, organisations, language, and systems for training, accreditation, and socialisation as well as typical sets of activities and mind sets.

In short we are dealing with four different cultures or ways of seeing and working within different worlds. This means that at first sight there is a case for thinking that effective multicultural communication will be very difficult to achieve and certainly will not occur of its own accord without concerted and appropriate action, even if there is a great deal of goodwill between each of the parties. Let us look briefly into these four worlds.

The first world is that of the research laboratories, post-graduate research centres, and clinical research groups, wherein what becomes known as the “evidence”, is generated. This is a world in which scientific ideas are formulated, hypotheses are generated, clinical trials are designed, data collected, results deduced, and publications made. The natural scientific ethos prevails; work is subject to peer review, paradigms are built up, and debates are conducted within given paradigms on aspects of scientific method relating to issues of rigour, validity, and reproducibility within closely defined studies. Issues of wider application of basic research findings are less often discussed. Issues are raised about the extent to which randomised control trials can be generalised and subsequently applied to identified populations, and even the best designed studies show findings in probabilities rather than absolutes. Although the frailties of science are the subject of great internal debate within the scientific communities, they are often lost when the evidence is moved over the boundary between scientist practitioners and the non-scientist disseminator, interpreter, or clinical practitioner.

The second world has been relatively recently created. It is the world where evidence is abstracted and sifted and where national guidelines for clinical practice are developed and published. This can be within specific professional groups and can rely on consensus based on evidence—as with the generation of the asthma guidelines

from the British Thoracic Society. Alternatively, guidelines can come out of specialist units that commission and evaluate reviews of evidence and seek to disseminate them—for instance, the National Centre for Reviews and Dissemination at York or the Cochrane Collaboration. Here the inhabitants are epidemiologists, health economists, statisticians, and social scientists, as well as clinicians. They collect and commission the evidence, consider its strength and coverage, and seek to identify what should be translated into practice. In this world, debates are about the value and balance between consensus and evidence, and the rigour with which epidemiological data are created and evaluated and statistical analysis applied. Some areas of clinical work cannot be the subject of such review processes, as there is insufficient work on which to generalise. Other areas are characterised by conflicting, or at least contested, evidence, and in yet other areas the process of amassing and sifting the evidence has hardly begun.

The third world is where local protocols or guidelines are developed. These are often, but not necessarily, informed by national guidelines. They may result from a local consensus building exercise; they may arise through the charismatic leadership of a particular local specialist; or may be identified as areas for action by local commissioners of health care. We know that the adoption of guidelines is most likely to be successful if they are seen to result from, or at least be filtered by, local development and adoption rather than being imposed from a distant source. The inhabitants of this third world are often clinical specialists, who are particularly interested in a condition and who seek to develop ways of influencing their peers who have less specialist knowledge or interest in the subject. Their involvement in development of guidelines is often part time and personal.

The fourth world is inhabited by the clinical practitioners themselves. Even more than the three previous worlds, which in themselves are far from homogenous, this world is home to great diversity of experience, interest, and capacity. It includes single handed general practitioners and teams of specialists in secondary or tertiary care. What they share, however, is that they are directly involved with patients. They regularly make judgements about treatment and diagnosis and in doing so, draw on a whole panoply of experience—much of which may have little to do with the activities, actions, and outputs of the inhabitants of the three other worlds. Debates in this world are much more pragmatically based. Clinicians discuss what they have found works for them and their patients, and

most importantly, what in their experience has created problems and has not been found to be effective.

Each world represents distinctive and often discrete sets of knowledge, actions, and taken for granted assumptions. They each have their own separate debates and points of contest. Each is categorised by separate systems of codified formal knowledge which may be written down and made generally available, and at the same time each is party to an array of tacit knowledge and assumptions which have considerable influence on their patterns of thought and work. Distinctive sets of codified and tacit knowledge are found in all four worlds. They are as much a feature of the worlds of science, evaluation, and dissemination, as they are of the world of practice.

The inhabitants of each world have different educational backgrounds and different evaluations of what, within their spheres of activity, constitute their own best practice, and what constitutes the best practice in other worlds. Ignorance of what goes on in other worlds, defensiveness of what goes on in one's own world, and arrogance about one's superiority can characterise the relations between any of the participating worlds. Ignorance, defensiveness, and arrogance are not the prerogative of any one party; but when found in any party, are barriers to achieving a constructive relation between the worlds of clinical research, national and local dissemination, and clinical practice.

It is against this background of diversity of mind sets and activities that a study such as that of Berrow *et al* is so valuable.¹ They show that even in an area such as childbirth, in which there are developed national guidelines and articulate, well informed patients, local practitioners do not necessarily develop formal policies which reflect the national guidelines and this is to say nothing about the relation between local policy and practice. There is little ambiguity about what the nationally recommended policy is, and yet even with this degree of endorsement we find justified non-compliance. The justifications concern the adequacy or completeness of the evidence, the applicability of the evidence in the local scene, the view that clinical trials did not reflect the population that clinicians were seeing or were not sufficiently well structured to show long term outcomes, and concerns about the local capacity to act on the evidence.

Their study therefore considers the relation between my second and third worlds; between the national and local guidelines. Arguably these two, of all four worlds, are likely to be the most compatible in outlook and orientation, as both are concerned with the distillation of evidence into practical guidelines. The inhabitants of these second and third worlds are aware of their position as communicators, integrators, or gatekeepers between research and practice. They seek to evaluate the applicability and strength of evidence and to make it accessible to the audiences with whom they wish to engage. But this does not give them quadruple, triple, or even dual citizenship between the

worlds, unless they can really appreciate the pressures, priorities, languages, and preoccupation of the other worlds.

Few clinicians will be surprised by the findings of Berrow *et al*¹ that in circumstances in which there is considerable knowledge about evidence based on research, as in the case of the effectiveness in childbirth recommendations, none the less, formal local policy does not always or mostly follow research based national guidelines. In a comparative study of three units in one district they investigate 12 aspects of unit policy. In seven cases the policies were congruent with research evidence; in five cases there was either no policy or the policies were at odds with the recommendations from the research evidence.

The conclusion is that information alone, or even shared knowledge, does not secure formal changes in local policy. Furthermore we can speculate that even if policy is in line with evidence, local practice may not be in line with local policy.

The subjective reports of clinicians illustrate common problems with the use of evidence. To take our understanding of the relation of research and practice further, we need to consider a whole continuum from raw experimental or trial data, to include the way in which these data are interpreted and the implications of that interpretation for policy and for practice. As the authors show us we cannot assume a necessary relation between any steps in this cognitive and cultural process. A sociology of knowledge can provide us with some useful guidance on how we might approach this matter. We need to understand the ways in which meaning is given to different pieces of evidence wherever that evidence comes from. An acknowledgement of contested information, of tacit knowledge, and of the organisation and cultural context in which evidence generated is received, used, and interpreted is vitally important.

So, given these complexities and diversities within and between the four worlds, can research relate to practice? My response to this is only if we can develop a great deal of mutual understanding about and between these different worlds. The complexities of the system in which the four worlds coexist needs to be understood better and changes sought in the ways each conducts its own business as well as the ways it relates to the others.

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¹ Berrow D, Humphrey C, Hayward J. Understanding the relation between research and clinical policy: a study of clinicians' views. *Quality in Health Care* 1997;6:181-6.