

Implementing the Findings of Effective Care in Pregnancy and Childbirth in the United Kingdom

BARBARA STOCKING

Chief Executive, Oxford Regional Health Authority, United Kingdom

EFFECTIVE CARE IN PREGNANCY AND CHILDBIRTH (the database, the two volumes and the short guide) is a set of research findings. Its authors rightly point out that these findings should not be translated automatically into action, but rather should be considered by practitioners and users in the individual care setting. Nevertheless, the authors describe areas where evidence is clear and areas where it is not. It then becomes incumbent on practitioners or others to argue why, in practice, they are not following the findings, rather than the other way around.

The findings of ECPC are only just beginning to influence practice in the United Kingdom. My purpose in this article is to develop a strategy for implementing them. Currently, ECPC is our best set of evidence in any area of medicine; learning about and applying the knowledge in maternity services should provide a model for the rest of medical care.

After providing an overview of maternity care in the United Kingdom, I will examine the impact of ECPC to date and will discuss a small survey of the use of ECPC by relevant national organizations, the various actors' state of readiness in the use of such evidence, and, finally, a strategy for both implementing ECPC and persuading the various groups to use research-based evidence more generally in policy and in practice.

Maternity Services in the United Kingdom

In the United Kingdom, all members of the population are entitled to health care, which is free with some caveats at the point of delivery.

A woman who thinks she is pregnant will usually first make contact with her general practitioner (GP), although some women contact midwives directly. Because most births in the United Kingdom take place in a hospital, the GP usually will refer the woman to a hospital, the choice of which depends on the woman, the GP, and any restrictions placed by hospitals or district health authorities. A few babies are born in GP units, and a small number of planned births take place at home. After a booking visit at the hospital, the woman and her doctor—or midwife—agree upon the care plan for the pregnancy. Care for high-risk women will continue at the hospital, but for many care will be shared with the GP. In a GP unit the process is somewhat different.

Most deliveries are carried out by midwives, but obstetric units are covered by doctors, in practice mainly junior doctors, under overall consultant supervision. Once discharged, women are visited at home daily by a midwife for ten days, or until the midwife is satisfied that mother and baby are both healthy. At six weeks they will have a postnatal check, either with the GP or at the hospital clinic. By this time a health visitor, who will remain involved throughout preschool child health surveillance, should have seen the baby.

There is pediatric medical coverage of obstetric units, but not all centers will have facilities for special or neonatal intensive care. Such care is organized on a regional basis.

Almost all the financing of the National Health Service (NHS) is from general taxation, with a small amount advanced by contributions from national insurance. The funds are allocated through regions to district health authorities. The NHS has undergone major reforms since April 1991 (Department of Health 1989) and, in due course, the funds will be allocated to districts on a population capitation basis. The districts then become the “purchasers” of all health care, apart from primary care. Arrangements are slightly different in the four U.K. countries. The new purchaser/provider split is a very important development for all services, including maternity. Because purchasers are able to specify not only the volume of services they wish to provide, but also the type and quality, they are potentially major users of information like ECPC. The purchasers can move contracts to different public or private providers if they are

not satisfied with the services, although this is more likely to be possible in the larger cities where a variety of providers are reasonably accessible.

Although it may appear otherwise to people within the NHS, compared with the United States and Canada, the NHS provides an organized system both of care generally and of maternity services particularly. It seems more feasible to intervene systematically in the United Kingdom than in those two countries, which may only be able to work on the behavior of individual practitioners operating in widely different circumstances.

Evidence-based Policy and Practice

The Current Situation

ECPC is a comprehensive analysis of evidence. The extent to which it is likely to be used in policy and practice is therefore strongly influenced by whether the various interest groups are prepared to use evidence. This section describes how policy and practice are determined in the United Kingdom and the "state of readiness" for ECPC. Major changes are occurring in the United Kingdom, many of which are facilitating a more evidence-based approach.

National Policy. Government, specifically ministers and the Department of Health, have, over time, issued policy frameworks and guidance for maternity services. The current policy is to allow purchasers to determine the services they need for their local population. However, maternity services have been a controversial public issue, not least because of the interest of the Parliamentary Select Committee on Health Services (previously Social Services). Its most recent report (House of Commons 1992) has led to renewed government action in setting up both a task force on maternity services and an expert committee in order to advise on good practice and to improve inadequate practice. In carrying out these initiatives, the government agencies appear to be examining evidence closely.

Other examples of government intervention include an ongoing "Confidential Enquiry into Maternal Deaths," and a new project, entitled "Confidential Enquiry into Perinatal Deaths," which is intended to improve practice through analysis of the causes of deaths. Another potentially influential body is the Clinical Standards Advisory Group, which

the Secretary of State established in response to concern by the professions that standards of care might decline following the NHS reforms, and which is now expanding its role with respect to clinical standards.

In recent reforms, the government has required all doctors to take part in a medical audit in the future, whether they are hospital based or in general practice. There is guidance, but few requirements are issued for carrying out this audit; the reform emphasizes peer review while minimizing reports to local managers. For most groups beginning peer review, establishing the processes has been difficult and they are only now beginning to move to a criterion-based audit. The number of criteria based on good research evidence is difficult to assess. However, at least a mechanism is in place by which doctors could be encouraged to assess their practice against research evidence and make changes. The NHS Management Executive, the body that manages the NHS on behalf of the government, has been working to promote this medical audit.

The NHS Management Executive currently also has a number of initiatives to promote the use of research-based information. These include Effectiveness Bulletins, which are particularly aimed at helping NHS purchasers; an Outcomes Clearing House; and a project that involves working with several districts to develop information, including research-based data, to support purchasing.

The Research and Development (R&D) Directorate has begun a drive to fund and disseminate research for the better management of health care, with a strong emphasis on technology assessment in its broadest sense. An R&D information systems strategy is also being developed for the NHS in order to build on existing work and to promote further the use of research-based evidence in the service. The R&D director has expressed interest in using ECPC as a model for the dissemination and implementation of research findings.

The Medical Profession. Historically it has been assumed that each individual professional is responsible for determining his or her practice, while the professional bodies set the standards.

The profession, of course, emphasizes the scientific basis of practice and is heavily involved in research, especially in teaching hospitals. However, when it comes to randomized clinical trials and to implementation of research findings, support for research-based evidence becomes less clear. For example, the National Perinatal Epidemiology Unit (NPEU) has been under attack throughout its existence, often because it has raised questions about particular practices or because it has been skepti-

cal about outcomes. Persuading obstetricians to take part in multicenter trials has not been easy, although, after going through the process once, many obstetricians become much more enthusiastic (Iain Chalmers, National Perinatal Epidemiology Unit, 1991: personal communication).

The influences on doctors clearly include medical schools, but also the Royal Colleges and professional organizations, in this case the Royal College of Obstetricians and Gynaecologists (RCOG), the Royal College of Anaesthetists, the Royal College of General Practitioners (RCGP), and the British Paediatric Association (BPA). The RCOG is responsible for accrediting postgraduate medical posts in obstetrics training and for the higher qualification examinations for consultant standing. Training for general practice is handled through the Joint Committee on Postgraduate Training for General Practice, although the Royal College is involved. The colleges also exert general pressures on practice through reports, conferences, and so on. There are also discussions, for example in the RCOG, about recertification. The extent to which reports and other procedures influence practice is unknown, but it is likely that if particular findings are denounced by the relevant college or influential members, practitioners will be encouraged to ignore that research. Probably the most significant influence on practice by the Royal Colleges is their control over examination content.

Midwives. In midwifery there are two relevant bodies: the statutory body, the United Kingdom Central Council (UKCC), and its national boards, which are responsible for training midwives (along with nurses and health visitors); and the Royal College of Midwives (RCM), which is the relevant professional body. As in other countries, there has been debate between the midwifery and medical bodies about the role of midwives in pregnancy and delivery, and concerns about the medicalization of childbirth. It is not clear how much control midwives have over the policies and practices operating in maternity units, although their 24-hour presence could give them considerable influence. Nor, when they are active in determining policies, is it clear how far they base those on evidence. Midwives now have an information service, MIDIRS, which produces regular bulletins, including summaries of research.

Managers. Early NHS tradition gave doctors the responsibility for clinical care, while managers handled the budgets and the environment in which care took place. This is changing as doctors are becoming involved in management—for example, by using clinical directorates as a way of organizing services. Also, managers have become less wary of

questioning clinical practice. A recent series of seminars called "Medicine for Managers," run by the Institute of Health Services Management (IHSM) with the Royal Colleges, has been very popular.

Maternity services may have been questioned rather more than most services, in part because of local consumer groups (usually linked to national organizations), and in part because of maternity services liaison committees. These committees were set up in districts on the recommendation of the Maternity Services Advisory Committee, a national independent body itself established to address concerns of the Parliamentary Social Services Committee about maternity and neonatal care. The national committee produced a series of reports on good practice, "Maternity Care in Action" (Great Britain Maternity Advisory Committee 1985), with the aim of having the local committees carry out their recommendations. The good practice was based only in part on research-based evidence.

The recent NHS reforms are changing this situation fundamentally. Purchasers (district health authorities) will be asking what they should be purchasing and what is effective. It is early days yet in the development of the purchasing function, and it will be some time before authorities commonly use research-based information in contracts and service specifications. However, there is now a greater incentive to do so. Managers in the provider units may also be forced by pressure from the purchasers to become more aware of evidence in order to demonstrate that they are running a high-quality hospital or unit in a more competitive market.

Users. User (consumer) input into maternity services is occurring against a national picture of increasing emphasis on consulting service users and meeting users' needs. Traditionally, consumer input in the NHS has been weak, with the NHS often described as a paternalistic and supply-driven service. There is, however, a strong tradition of self-help and pressure group activity in the United Kingdom and community health councils (CHCs) have also attempted to represent consumer interests at the health authority level.

The government has been promoting a new philosophy. It is encouraging purchasers to consult their local communities, publishing, for example, "Local Voices" (NHS Management Executive 1992) to encourage good practice on this issue. Provider units are being encouraged to solicit consumer feedback in their services. The most important initiative, however, has been the development of the "Patient's Charter" (Department of Health 1991), part of a wider move by the government to make pub-

lic services more accountable and to clarify what standards are to be expected. The charter sets out a number of rights, with perhaps the most significant in the ECPC context being the patient's right to be informed about and to choose treatment and care. The individual doctor-patient interaction in the United Kingdom lacks the degree of patient knowledge and empowerment found in the United States, but the gamut of changes in the NHS reforms, including the charter, is affecting the environment, and there is evidence of a shift in doctors' attitudes and behavior.

The NHS has a long way to go in taking users' views into account, individually and collectively. Although the current initiatives are very positive, some worry that the new authorities in the NHS are less democratically accountable, and also that the role of CHCs has been weakened.

As in other countries, user groups in maternity have been more active than in other areas of health care. The U.K. groups vary in purpose and origin (Durwood and Evans 1991). Some originated as advocacy groups for particular philosophies (e.g., natural childbirth in the early days of the National Childbirth Trust [NCT]), some as self-help groups (Miscarriage Association), and some as promoters of research for specific problems (Foundation for the Study of Infant Deaths), and many have more than one objective. A few such organizations are involved in direct research themselves. However, recently a number of these bodies have become involved with clinical trials—for example, as advisers to NPEU. This consumer involvement was initiated and actively facilitated by the Association for Improvements in the Maternity Services (AIMS). During the chorionic villus sampling (CVS) amniocentesis trial, for example, user groups became involved in ensuring that women received good information about it. Some individuals have taken seriously the need for research-based evidence to influence practice and are more aware of areas where research is needed.

The media are, of course, very influential, but have issued little call for practice based on research evidence. However, the more responsible broadcasters and newspapers are currently expressing more skepticism about current practice modes.

In summary, then, at the time ECPC was published there was no audience ready and waiting to accept it. However, because major change has occurred in the culture of the NHS, there is now a sense that the NHS is ready for this evidence. Many people are unfamiliar with the

structures of the NHS and have had little experience in translating evidence into practice. However, this is a time of great opportunity for developing a knowledge-based NHS.

Current Use of ECPC

If evidence-based practice is moving onto everyone's agenda, we might have expected ECPC to be more widely welcomed and used than is the case. This is partly a matter of timing and partly a result of the novelty of the audit and the research strategy; it now seems that ECPC is becoming better known and more influential. To know what strategy will encourage implementation of the findings requires that we understand how ECPC has been used so far.

As part of this study, nine organizations were contacted to find out if they (a) had any of the various forms of ECPC and (b) acted to ensure that their members/constituents were aware of ECPC or encouraged them to use it.

They were also asked about how they or other organizations might encourage the use of clinically relevant research information in the care of pregnant women.

The nine organizations are by no means the only ones potentially concerned with effective care in pregnancy and childbirth. Nevertheless, they illustrate the current state of thinking and use of ECPC (see table 1).

Consumer Groups

Maternity Alliance, NCT, and AIMS were contacted. None had the trials database, but each had the two-volume edition and copies of the guide. AIMS said the guide was "like a bible" to them. All three had reviewed it in their literature and NCT sells it to members. Both AIMS and NCT use it regularly in training sessions and talks. For example, it is required reading for all NCT antenatal teachers and breast-feeding counselors, and is used in training all members of the national council and local committees. Both Maternity Alliance and NCT were nervous about giving too much clinical information when responding to personal inquiries, but NCT was willing to consult the two-volume summary and then refer the inquirer to his or her local health professionals. Maternity Alliance tends now to operate more in the fields of maternity benefits and social issues.

Both NCT and AIMS felt they could step up their promotion of ECPC, perhaps by increasing the number of flyers (preferably more “gripping” ones than currently exist) inserted into periodicals. NCT would like to become more involved with training its antenatal teachers and hopes to produce more leaflets on specific issues, but does not have the resources, nor can it afford to buy the trials database.

Both organizations had ideas about how ECPC use could be promoted. First, it needs to be advertised much more widely; many people do not know it exists, others have only heard about it by word of mouth. Second, funding is needed for charities to obtain at least the two-volume edition; smaller charities may not even know about it yet. AIMS suggested tailoring midwifery refresher courses to the evidence. These courses currently do not “grasp the nettle” about changing practice, but then workshops are needed to help people learn new practices. They also suggested that someone, perhaps the Department of Health, should contact all health authorities about some of the specific issues in order to recommend some practices and to discourage others.

Professional Bodies

At the public health and managerial end of the spectrum, neither the IHSM nor the Faculty of Public Health Medicine had any of the forms of ECPC, nor had they done anything to promote its use among members. The Faculty does not have a library, nor does it have the resources for disseminating ECPC knowledge, although it promotes the use of evidence generally. The IHSM has begun feeding technology assessment information into its programs for managers and feels it should be doing much more of this. The institute’s representatives commented that work like ECPC needs to be made more accessible to managers; at present it is still seen as academic.

The RCM and the RCOG might have been expected to know and promote ECPC with their constituencies, and this was in fact the case. The RCM has the two volumes and the guide and promotes the sale of the book at courses and conferences. The RCM also encourages members to use the information in evaluating and changing midwifery practice at the local level. Its industrial relations staff uses ECPC as a research base in challenging evidence in cases of litigation or misconduct. This is in interesting contrast to the Medical Defence Union, one of the main medical legal bodies, which stated that its duties were not about either

TABLE 1
Organizational Use of ECPC

	Has perinatal trials database	Has two-volume summary	Has shorter guide	Publicizes it to members/constituencies	Comments
National Childbirth Trust	—	Yes	Yes	Sells shorter guide. Uses in training for antenatal teachers, breast feeding counselors, etc.	Would like database, but cannot afford it
Maternity Alliance	—	Yes	Yes	Reviewed in bulletin	Focus is now on maternity benefits, not on clinical advice to individuals
Association for Improvements in the Maternity Services	—	Yes	Yes (several)	Reviewed; uses for advice, promotes in talks	Uses it as a "bible"
Royal College of Obstetricians and Gynaecologists	Yes	Yes	Yes	Circulates both volumes of book in each maternity unit	Recently began to include it in audit advice

Royal College of Midwives	—	Yes (2 copies)	Yes (several)	Promotes sales of book at conferences, building it into training program	—
Faculty of Public Health Medicine	—	—	—	Nothing specific; promotes the use of evidence in various ways	Does not have the resources to be more active
Institute of Health Services Management	—	—	—	—	Beginning to program technology assessment into conferences, training
Medical Defence Union	—	—	—	—	Not part of their duties
Department of Health	Yes	Yes (several)	Yes	Sent copies to all district health authorities with executive letter	Discussion/encouragement by DH seems fairly limited

encouraging the use of evidence in practice or drawing the attention of its members to what might be good practice.

The RCM mentioned that it was continuing to promote ECPC in educational programs, in dialogue with heads of midwifery education, and in other ways as well.

The RCOG's response to ECPC has changed over time. Originally, there was great skepticism, as evidenced by editorials and reviews from some leading obstetricians (Hawkins 1990a,b). For example, one book review said, "The price of 225 pounds should prevent aspiring registrars from acquiring too many confused ideas from its pages." More recently, particularly through the college's audit committee, there has been more support. For example, one of the functions of the audit committee is "to identify effective procedures which can be audited early" — it immediately recommended ECPC (Royal College of Obstetricians and Gynaecologists 1991a). In the college's subsequent bulletin (Royal College of Obstetricians and Gynaecologists 1991b), which listed various recommended areas for audit, a number of the items were findings from ECPC. The college said it has circulated both volumes through each maternity unit, but made no suggestion for promoting the book further except through audit.

Department of Health and Other Central Bodies

Because the Department of Health (DH) has been the main funding body for the NPEU, and also because it is at the center of the NHS, we might expect that it would have invested heavily in insuring that its findings were used in practice. The DH may have brought it to people's attention in meetings with other organizations, when acting as an observer in advisory groups, and through policy channels. However, in the early days after publication in 1989, the DH seems to have done little either to disseminate the findings widely to the field or to encourage adoption. With the NHS reforms a variety of changes have taken place, including attempts to use ECPC to prepare useful material for purchasers in the new system. Recently, however, the DH purchased 195 copies of the two-volume edition and 350 copies of the guide to distribute to health authorities, with a covering executive letter recommending its use (Department of Health 1992).

Other events have also taken place recently. The Clinical Standards Advisory Group, established up by the Secretary of State, has identified

the management of natural labor and the use of corticosteroids for pre-term babies among the first items in its work on standards (Hansard 1992). It seems, then, that the importance of ECPC is beginning to be recognized. The House of Commons Select Committee on Health has used ECPC findings (House of Commons 1992), as has the Welsh Health Planning Forum in its protocol for investment in maternal and early child health gain. Earlier drafts of the Welsh document reveal that this was not achieved without skirmishes. The earlier drafts actually recommended practices that ECPC has shown to be less effective.

Use in Policy and Practice

The picture emerging from our survey of the policy and professional bodies is that there was considerable skepticism about ECPC immediately following its publication. Some obstetricians were concerned about the scientific basis for meta-analysis, and the policy bodies seemed not to want to challenge practitioners. ECPC now is accepted and used, however.

What none of this shows is whether practice increasingly is being influenced. This is difficult to determine because the required data are not routinely recorded. Change is known to be occurring, for example, in the North West Thames Region, through the obstetric audit process, but it is not known how widespread that change is (North West Thames Regional Health Authority 1989).

Bringing about Change in Clinical Practice

Before devising a strategy for implementing the findings of ECPC, it is important to be aware of the literature on the diffusion of innovations and how change can be fostered, especially in clinical care (Rogers 1983; Stocking 1985, 1992).

The Change Issue

Each change has to be considered in its own right. Each has characteristics, such as perceived advantage, compatibility with beliefs, and complexity, that will make adoption more or less difficult. For example, the use of corticosteroids for women threatening preterm delivery should not

be difficult to increase and in fact this change is now beginning to come about in the United Kingdom. A dissemination exercise, plus encouragement to look at this issue in medical audit, may be enough. Compare this to changing instrument delivery from forceps to Ventouse, which requires learning a new technique and providing new equipment, or, in what would be an even more fundamental shift, changing the proportion of planned home deliveries. In these examples, firmly held beliefs must be changed through proper training, which requires the adoption of much more complex change strategy. The lesson here is that each issue needs to be assessed individually rather than pushing ECPC as one whole package.

The Environment

Sometimes the environment is not right for a particular change. There has to be first a shift in the national agenda or in a set of beliefs. Champions of new ideas are often surprised that, after years of going nowhere, a particular innovation suddenly is accepted. This is often the result of a change in the climate of opinion. The effects can be two way. Approaches to implementing ECPC findings may influence attitudes about the use of evidence in practice, causing a shift in the climate. Also, however, if work were done to turn medical practice toward more acceptance of basing it on evidence, then implementing ECPC findings would be far easier.

The Change Process

We know quite a lot about change processes and they appear to be common, in principle at least, across different sectors of society. Specific experiments for changing clinical practice have also been tried. What we know, in summary, is as follows:

INFORMATION

- Passively presenting people with information either about evidence or about their own practices has very little effect (Mugford, Banfield, and O'Hanlon 1991). Sometimes the evidence may be ambiguous, but even when it is quite clear people do not change just

receiving that information. Change has taken place when information is linked to other influences like peer review, but practice tends to slip back if the pressure stops. However, reported studies (Fowkes 1985) using internal peer review have been experiments rather than situations where peer review has been built into the system as a continuing process.

In theory, then, the United Kingdom's systematic approach to the medical audit should work better to effect change than has been reported in individual experiments. However, evidence that the audit is producing different practice is as yet very limited. In the United Kingdom we will need to watch this carefully and will probably have to work with clinicians on carrying out change when the audit shows that such support is needed.

- People who receive information from a variety of different sources (literature, person-to-person contact, media, etc.) over a short period of time are more likely to change. Because a variety of groups in the United Kingdom are sending out the message, this would seem to hold promise.
- Other people, particularly respected peers, constitute the most effective source of information and pressure for change, but in health care there is some evidence that patients may have influence. For example, hysterectomy rates dropped dramatically in Swiss cantons where the women themselves were targeted with information about unnecessary hysterectomies (Domenighetti et al. 1988).

The lesson for ECPC here is just how much more the user groups could do if they had adequate resources, but it may also be that the media should increase its coverage of ECPC findings.

Dissemination of information is a necessary, but not sufficient, condition for change.

PEOPLE

- Change follows predictable patterns. Early adopters have particular characteristics, such as more attendance at national and international meetings. They act as point sources; colleagues who come into contact with them locally may then start to change. Early adopters are more likely to obtain their information from journals,

media, and meetings than the majority, whose person-to-person contact is more important. A change is more likely to happen if the group's opinion leaders adopt or encourage it.

- Change is more apt to persist when the people concerned have been involved in shaping it, which has implications for clinical protocol development, for example. There is as yet not a great deal of evidence about whether doctors do or do not adhere to clinical protocols, but some reports suggest that this is more likely if they have been involved in developing the protocol (or adapting a national one). The process itself may have quite a dramatic effect in awakening people to the questionable basis of much practice.

INCENTIVES

- Financial incentives usually work to a certain extent, particularly in countries that operate reimbursement mechanisms of health care payment, but they also apply in the United Kingdom. For example, it is possible to persuade doctors to do things about which they are highly skeptical and for which there may be no, or conflicting, evidence (e.g., health checks for persons over the age of 75). However, the drawback to this coercive method is that, although it achieves a specific change, it does not encourage doctors to base their practice on evidence. Thus, fee-for-service incentives do not seem to be the way forward in the United Kingdom for both philosophical and practical reasons.

The lessons for the implementation of ECPC findings are that each change must be addressed in its own right, that multiple approaches are needed, and that person-to-person contact is the key.

A Strategy for Promoting the Use of ECPC

To convert ECPC findings into practice requires two strategies operating simultaneously. The fundamental one is the development of a more skeptical approach to existing practices and a recognition by all the key actors of the need for research-based evidence. This long-term strategy will be described later; while it is going on, a more immediate change

strategy could be adopted for ECPC. Both levels of activity need to include a range of key actors, not only because this increases the likelihood of change, but also because it may be positively dangerous not to do so. For example, consumers could learn much more about ECPC findings, but they may do more damage than good if they then question unprepared obstetricians.

Dissemination

Although new information is not sufficient to induce change, it is necessary. ECPC is not widely disseminated in the United Kingdom; even the more popular book version is not likely to be read by many women, for example. Undertaking a proper dissemination activity should be the first step in a strategy for change. For example, the following activities could be tried when considering information to users:

- Produce summary information around particular topics in a way that pressure and self-help groups could use in their literature.
- Ensure that commonly read books, like the Health Education Authority book on pregnancy given to all pregnant women, contain statements that are based on evidence from ECPC.
- Use women's magazines and radio and TV programs to ensure that the information they provide is based on good evidence.
- Infiltrate soap opera stories with good evidence (for example, this was done very successfully with the CVS/amniocentesis, trial in a radio story called "The Archers"). Such soap operas could also be used to promote the idea that it is acceptable for users to question doctors, and midwives too.

Some of these channels will also reach doctors, midwives, and managers directly, but other channels that are geared more specifically to their information sources could be used for these groups. If a central dissemination unit for technology assessment, now under discussion, were to be established, ECPC could be its first task.

Specific Approaches to Change

The most successful strategy is likely to be one where the various stakeholders are targeted concurrently. To achieve this, some organization must take the lead, and, in the United Kingdom, the Department of

Health would be the agency most suited to do this. It also requires a designated individual to assume leadership in managing the strategy, which would involve negotiating with the relevant professional and consumer bodies, managing the practical work, and ensuring that appropriate experimentation on methods of change is undertaken.

Ideally, a strategy would be developed that would promote use of ECPC as a whole. This seems unlikely to happen. Health authority purchasers could ask in their quality standards for assurance that ECPC findings were being adopted in practice in the provider unit, but that would be a complex requirement and difficult to assess at present. Of course, as noted earlier, each specific change has advantages and disadvantages that help or hinder change, so global strategies may not be very successful. A more feasible approach would be to take a number (say 10 to 12) of key points where practice must change in order to conform to the scientific evidence, and reach an agreement that providers should attempt to implement these findings first.

The first step, then, is to assess what in each key point is blocking implementation: Is it lack of knowledge or is it a question of beliefs in a current practice? Would practical training be required, for example, to change from forceps to Ventouse for instrument deliveries? Who is in control of this particular practice? Is it midwives or obstetricians, or would both groups need targeting? Is the issue one of individual practice or unit policy? Each of the separate groups may then require targeting in different ways, perhaps using different approaches for each key point.

Users

Users are likely to get their information from three or four sources: the media; friends and relations; pressure groups; and the professionals who care for them. The dissemination strategy described earlier should help, but the media and pressure groups could be asked to focus on the specific points, especially if they are ones over which users can exert some control. Of course, this raises the general issue of how much women can argue their case, especially in labor, but alerting mothers to the evidence and making them aware of the guide should help. Mothers can then at least point to evidence about a procedure. It is strengthening for women (although probably disconcerting for professionals!) if they can actually wave the guide. This issue, of course, is part of a wider, gradually occur-

ring change whereby it is becoming accepted that health care users should have a greater say in their clinical care.

The pressure groups might be convened to persuade them to agree on promoting the 10 or 12 acceptable initial key points, particularly in their training classes and their counseling of women.

Health Care Professionals: Obstetricians, GPs, Midwives

It is here that the full weight of the diffusion theory might be applied. The key practices would need to be thoroughly analyzed to understand the actual and perceived barriers to them as well as their advantages and disadvantages.

Plans must be made to remove any barriers that exist at the national level. If the blocks affect issues that are more local, then at least suggestions can be offered about how to remove them.

First the Chief Medical Officer or the Chief Nursing Officer (also responsible for midwifery) might contact the professional bodies to see if they would conduct meetings on ECPC (especially the selected key points). The professional bodies could be commissioned to run retraining/skills sessions, if appropriate. The leaders could be asked to highlight this strategy in their speeches and other communications.

It may be possible, then, to identify opinion leaders from these professional groups (often not the current figureheads), bring them together, give them information, materials, training in how to work with their colleagues, and some time to do this work. They could be asked to use any means open to them locally to bring out change in practice. For example, they could pressure for these practices to be reviewed in the hospital or at GP audit meetings, if these are working well. (The RCOG and RCGP could reinforce these particular issues through their audit committees – as RCOG has begun to do.) Where the audit is not well established, other formal and informal approaches can be used. It is important that the people selected for this championing role are in the opinion leader group rather than appearing to be maverick innovators. The heads of midwifery services might also be a good resource because hospital midwives are used to working in a managerial hierarchy.

Although I am not recommending financial incentives, other inducements may be needed. For example, if GPs were lobbying for a different shared care scheme, negotiators might agree to give it to them, provid-

ing that they change their practices. Incentives may have to be developed when a change in practice produces inconvenience. For example, stopping routine cesarean section after previous cesarean section may influence who is on call when. The change would have to be worked through to see if anyone who stands to lose by the new policy could benefit in some other way.

Managers

Local champions will often need the support of their managers, whether these are the clinical directors or general managers. Information about the chosen strategy must be conveyed to these managers, perhaps through meetings of provider managers to identify local barriers and assess how they can be circumvented. Also, these managers should be encouraged to ask if the relevant points are being covered in local audit work. For areas under their direct control, such as the supply of catgut, managers could be asked to negotiate for only the appropriate supply.

Purchasing authorities could be educated about evidence and then provided with specific information on perinatal care through the use of the "effectiveness bulletins," which the NHS Management Executive is now supporting, or something similar that emerges from the Research Directorate. Groups of managers might be convened to work through whether and how these 10 or 12 agreed-upon points could be incorporated into contracts or service specifications.

Education

In addition to specific actions by existing professionals, the agreed-upon initial items, and perhaps ECPC more generally, must be built into training requirements. The RCOG could incorporate the requirement for ECPC practice into its accreditation standards for higher training, as could the National Boards for Nursing, Midwifery and Health Visiting into their midwifery training.

The key steps in implementing ECPC would then be as follows:

1. The DH would designate a leader for the work.
2. The leader would get the commitment of the leaders of professional and consumer bodies to implement a limited number of key points.

3. Meetings could take place to confirm the appropriate strategies for each of the stakeholder groups for every specific change, and for any central direct action required for any of the key change issues.
4. A central group needs to monitor change, using whatever data systems are available (e.g., Korner maternity options, data from drug use, and local audit information).

Probably the most difficult part of the strategy will be this monitoring phase because so few data are routinely available. Specific surveys might be required or other bodies, like the Clinical Standards Advisory Group or the Audit Commission, could be recruited into this monitoring.

Evidence-based Practice: A General Strategy

We must reach the point where the people concerned in health care—policy makers, managers, professionals, and consumers—are all asking fundamental questions: Is this particular intervention effective? For whom? What are the benefits and the risks? This is a long-term aim, but a number of steps can be taken.

Policy Makers

It would be helpful if all the work emanating from the Department of Health had this philosophy within it. The research and development strategy should have these questions at the heart of its work. The medical audit strategy, the information strategy, the government's targets for improving both the health of the nation and performance management should all be operating against these basic principles. The research and health care directorates must lead their other colleagues in promoting these underlying concepts, explaining what they mean and what these questions imply for particular managerial approaches.

Other bodies at the national level could be important. The Clinical Standards Advisory Group must base all its standard setting on evidence (and identify where it is lacking); the Audit Commission and select committees in House of Commons should do the same.

Professionals

Major change is due in professional education and subsequent training. A consensus in the United Kingdom is that undergraduate medical education is far too information packed, with little attempt to help students prepare for a lifetime of learning (Towle 1991). Medical students and junior doctors must be trained to read evidence, to understand uncertainty, and to know how and when to turn to experts who have reviewed evidence thoroughly. The purpose is not to turn medical students into statisticians, but to give them enough grounding to allow them to assess evidence. Among other things, this will require changes in examinations. These approaches should not be seen as separate or additional to the curriculum, but should be thoroughly integrated into all levels of teaching. For example, critical appraisal, rather than "Do it because I tell you," should be built into the teaching of all clinical procedures.

At the postgraduate level, the Royal Colleges could do much more to ensure that these approaches are built into training through their accreditation of hospitals for postgraduate training.

It is more difficult to see how to bring about this fundamental shift in current practitioners. Again, the colleges can help, both through training events and in the way they discuss audit. Of course, a system of re-accreditation for practice in a particular specialty would provide a lever. Although the RCOG is discussing such re-accreditation, it is basing the requirement now on attendance at meetings rather than on effective practice.

Although GPs have a good record of vocational training and also of postgraduate continuing education, more on research-based evidence could be built in than is currently the case. However, even in groups, GPs may be fairly isolated and may or may not read journals, making them probably the group of doctors most difficult to reach, once in practice. The free magazines they are sent are a source of influence, but getting these ideas into the "freebies" may be difficult.

Similar appreciation of evidence must be built into basic nursing education and then into midwifery education and training. The RCM could use its leadership position to promote evidence-based practice, and the UKCC could play a role as well through its approval of nurse and midwifery training. Encouragement by the professional bodies to take part in clinical trials would help existing practitioners to appreciate evidence.

Not everyone would develop his or her own research protocols, but many clinicians could participate in collaborative trials.

Managers

Managers come from a range of academic and vocational backgrounds and they too require much more understanding of research-based evidence. This could be built into the training programs and examination requirements of the IHSM. Meanwhile, there is a big job ahead in transmitting such knowledge to practicing managers. In order to lead from the top, senior managers and policy makers themselves need more understanding. The Research and Development Directorate has a key role to play in explaining why research evidence is important for NHS service delivery. Some research appreciation may be required for Management Executive members and regional general managers.

Consumers and the General Public

Abstract notions about the importance of research-based practice are difficult to convey to the public. They do not provide television producers with dramatic headlines. It may be easier to build up this awareness gradually through examples of particular practices. The media must be encouraged to question the evidence about particular practices and to allow medical uncertainty to be seen openly. In the early days of the U.K. consensus conferences, some doctors were concerned that the public would lose confidence in the profession if it saw debate between professionals. Although difficult to prove, patients and the public may indeed have more confidence if they are told honestly about uncertainties.

Conclusion

A successful change strategy implies significant management of the whole. Particular bodies may lead the way with one group and academic units might be engaged to undertake particular experiments about changing clinical practice. However, the range of approaches must be coordinated. In my view, this coordination requires the Department of

Health to lead the overall strategy and to ensure that all relevant parties are included in any serious attempt to implement the findings of ECPC.

Postscript

Since writing this article, a number of meetings have been held in the United Kingdom, and the Director of Research and Development for the NHS is promoting ECPC as a test case of how to implement research findings in practice. Each regional health authority has its own research director and these individuals have been asked to take it forward in their own regions.

In the United Kingdom, action is currently underway at the national level and is in the planning stage through the regions. Present focus is on local work, and some of the national activities I have discussed here, such as dissemination to women and negotiations with the Royal Colleges, are not yet being pursued explicitly.

It will be important to follow events that result from the national lead to see if various regions adopt different approaches. If so, there may be scope for assessing their effectiveness because they will form something of a natural experiment.

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Address correspondence to: Barbara Stocking, Regional Chief Executive, Oxford Regional Health Authority, Old Road, Headington, Oxford, OX3 7LF, United Kingdom.