Improving the Use of Research-based Evidence in Policy Making: Effective Care in Pregnancy and Childbirth in the United States

JANE E. SISK

Columbia University School of Public Health

THE POLICY-MAKING COMMUNITY IN THE UNITED States is focusing much attention on using syntheses of scientific research to guide clinical practice. Driven by the desire to improve the quality of medical care and to contain its costs, policy makers in many areas—clinical, managerial, regulatory, and payment—are undertaking these activities. The federal Agency for Health Care Policy and Research (AHCPR) is organizing the broadest research, including within its scope the full range of health care.

The work of Enkin, Keirse, and Chalmers on Effective Care in Pregnancy and Childbirth (ECPC) has thus occurred at an opportune time for U.S. health care policy. Capping a decade of work, their findings illustrate what can result from the rigorous research syntheses now being conducted on a wide scale. Moreover, these researchers are addressing an entire field of medicine and continue to update their findings. The very existence of this body of work raises the question of how such research syntheses can be used to influence health policy decisions and, ultimately, to improve the care that we receive.

This article addresses the issue as it applies to the United States. To provide a background, the next sections outline current obstetric practice in the United States and the use of research-based evidence. The following section then analyzes potential strategies that might be undertaken

The Milbank Quarterly, Vol. 71, No. 3, 1993

to promote the use of ECPC's recommendations. The conclusion delineates a specific strategy to foster the use of ECPC in U.S. policy making.

U.S. Obstetric Practice and the Use of Research-based Evidence

Provision of Care

Hospitals clearly dominate the provision of perinatal care in the United States: of the four million annual births, about 99 percent take place in hospitals, with small numbers occurring in residences and birthing centers (National Center for Health Statistics 1991). The medical practitioners are somewhat more diverse. Obstetricians attend the vast majority of deliveries, almost 80 percent, but family physicians and general practitioners attend about 18 percent, and nurse-midwives about 3 percent (Institute of Medicine 1985, 157–8; National Center for Health Statistics 1991). Family physicians and nurse-midwives are more likely to practice in rural areas and inner cities (Klein and Zander 1989).

A salient feature of the United States, compared with other developed countries, is its lack of universal financial access to care, including care during pregnancy. As recently as 1985, 15 percent of new mothers had no insurance coverage at the time of delivery, and 17 percent had Medicaid coverage (Gold, Kenney, and Singh 1987). Subsequent federal legislation required that states by 1990 extend Medicaid eligibility to pregnant women with incomes up to 100 percent of the federal poverty level, and permitted states to expand Medicaid eligibility for pregnant women with incomes up to 185 percent of the federal poverty level (Institute of Medicine 1988). Medicaid coverage does not ensure financial access to physician care, however. A survey of private physicians providing obstetric care in 1983 reported that 44 percent did not accept Medicaid payment (Orr and Forrest 1985). Not surprisingly, 60 percent of the women whose maternity care was at least partially paid by Medicaid obtained prenatal care at clinics (Orr and Forest 1985).

Although mortality rates for mothers and babies continued to decline during the 1980s, there is substantial room for improvement in patient outcomes. U.S. infant mortality rates have stood consistently higher than those in many other developed countries (Orr and Forrest 1985).

Moreover, infant mortality for blacks persists at a rate about double that for whites; this discrepancy, whose underlying causes are unclear, is associated primarily with higher rates of low birth weight for black babies. (The category for blacks includes African Americans and those Hispanics who categorize themselves as black.) Nonexperimental studies have found that better outcomes are associated with earlier prenatal care, but the appropriate and effective content of prenatal care has not been identified (Lumley 1991).

Use of Research-based Evidence

It is often stated that, since the late 1940s, the randomized controlled trial (RCT) has increasingly become the gold standard for assessing the efficacy and safety of medical practices, in obstetrics and in other fields of medicine. Yet despite intellectual adherence to this view, patients and their families, clinicians, administrators, insurers, and regulatory bodies often diverge from this supposed ideal in their attitudes and behavior.

The Institute of Medicine concluded that more rigorous assessments, exemplified by RCTs, had not proved more influential than less rigorous ones in shaping clinical practice (Institute of Medicine 1985). For example, six controlled trials, one randomized between 1946 and 1955, found that stilbestrol had no benefit in preventing abortion, whereas uncontrolled studies reported positive results. Chalmers reported that ten years after the controlled trials, recommendations in six of seven obstetrics textbooks agreed with the controlled studies. Nevertheless, in the late 1960s 50,000 women per year were still receiving stilbestrol (Chalmers 1974).

During the past 25 years, the content of U.S. prenatal care has often diverged from certain standards of the American College of Obstetricians and Gynecologists (ACOG), the American Academy of Pediatrics, and the textbook *Williams Obstetrics* (Hemminki 1988). For example, clinicians continued routinely to recommend diuretics long after experts had condemned their use. But practitioners' nonconformity has not necessarily harmed mothers and babies. In some cases, later research found recommended interventions harmful, leading to changes in expert advice. For example, ACOG's 1959 and 1965 standards recommended

chest X rays for all pregnant women, but only about 13 percent apparently received them (Hemminki 1988). These recommendations have since been changed.

The sonogram is another procedure whose practice patterns have not conformed to scientific evidence. From 1980 to 1987, the rate of diagnostic sonograms for pregnancy more than doubled, rising from 34 percent to 79 percent of all pregnancies in the United States (Moore et al. 1990). This increase occurred despite the conclusions of both ACOG and a consensus conference sponsored by the National Institutes of Health (NIH) in 1984, which determined that scientific evidence did not support routine screening (Moore et al. 1990). The consensus conference and other groups, including some insurers, endorsed the selective use of ultrasound for specific conditions.

Much of the general literature on adoption and diffusion of medical practices may help to explain the discrepancies between scientific evidence and routine behavior in pregnancy and childbirth (Willems 1979). For example, Greer described the use of medical information by practicing physicians, including obstetricians and neonatologists, in local community hospitals in a Midwestern area (Greer 1988). The physicians' general distrust of the scientific literature was based on what they viewed as the biases and vested interests of the researchers and sponsors and the inconsistency in the findings. These physicians also faulted the practical content of journal articles. They agreed that the scientific literature usually omitted details essential to application, such as specific procedures and facilities, indications, clinical outcomes, risks, and complications. Because the articles lacked sufficient detail, practitioners often concluded that the patients studied differed from their own.

By contrast, physicians valued national meetings of specialty societies as sources of preliminary information about developments in their fields. Most physicians claimed to reserve judgment until a consensus developed in their communities. Like other analysts, Greer found that opinion leaders have a key role in shaping local consensus (Greer 1988). Although some scholars thought that opinion leaders might be more innovative than their peers (Rogers 1971), Greer concluded that her work and the research of others pointed to a different view of opinion leaders—namely, that opinion leaders are not necessarily innovators or early adopters, but instead are evaluators trusted by the group to judge how the new information or technology fits with the local situation.

Potential Strategies for Implementing ECPC

The purpose behind devising an effective approach to disseminate ECPC is to improve outcomes for mothers, babies, and their families and to deliver care more efficiently and equitably. Two sets of changes are implied by ECPC's conclusions: first, changes related to the use of specific health practices or management of specific problems; and, second, changes related to the attitudes of policy makers and their decision-making processes. Undergirding ECPC is the philosophy that to achieve desired patient outcomes, behavior should conform to scientific evidence and should change as knowledge evolves. Implementing ECPC thus entails not only changing behavior to conform to current findings, but also, and more fundamentally, changing policy-making processes so that they routinely weigh and incorporate evolving knowledge.

The analysis of potential strategies in this section attempts to address both sets of changes. An underlying question to bear in mind, however, is whether effective strategies to accomplish the one goal complement or conflict with the other. For example, the federal government through regulation or payment policy could prohibit routine screening with ultrasound. But would that strategy encourage providers to evaluate critically the use of ultrasound and to use it in accordance with scientific evidence? Or would that approach have the negative effect of encouraging providers merely to conform to governmental restrictions without critical evaluation? It is also possible that a restrictive government policy would lead some clinicians to find creative methods to circumvent the government's edicts without changing their clinical practice.

Another, and logically prior, issue relates to the marketing of ECPC products. By April 1991, only 32 organizations in the United States had purchased the electronic database on ECPC. In addition, about 1,000 copies of the ECPC digest, priced at about $25, and 450 copies of the longer, more detailed two-volume set, priced at $400, had been sold. With such a small number of electronic databases and two-volume sets sold in the United States, few clinicians, even in academic medical centers, have ready access to them. The current prices may well be inhibiting diffusion of the information; at $400, the price of the two-volume set far exceeds that of a traditional obstetrics textbook such as *Williams Obstetrics*, which retails for about $90.

Oxford University Press is also publishing a companion volume to

ECPC on newborn care. The price for this one-volume book is much lower, about $160, and, since mid 1992, Oxford University Press has marketed it through professional pediatrics meetings. One would expect that the lower price and more active marketing would result in greater sales. The volume on newborn care has been prepared by U.S. and Canadian authors, whose nationality may alleviate concerns about the appropriateness for the United States of recommendations formulated for the United Kingdom and Canada. In fact, most of the clinical trials reviewed in ECPC were based in the United States, and the conclusions relate to efficacy and safety, not to factors such as cost or institutional structures that may apply only to a given locale.

Care during pregnancy and childbirth pertains to a wide range of specific health care practices that lie within the purview of a wide range of individuals and organizations. The behavior of individual patients and health professionals ultimately determines the content of care, and their behavior may be influenced by education, regulation, and payment policies. Potential strategies for disseminating ECPC are thus categorized by policies intended to affect individual behavior: education of patients and the public; education and training of health care professionals, including physicians and administrators; accreditation and licensing of health care providers, both individuals and organizations; governmental regulation of medical technologies; and policies of third-party payers.

Education of Patients and the Public

The nature of maternity care plus growing consumerism combine to make education of patients and the public a promising strategy. More than for most other medical conditions, care during pregnancy depends heavily on women's behavior. Women who are pregnant or contemplating pregnancy decide whether to seek medical care, when to receive such care, and whether to adhere to the recommendations of clinicians. For example, ECPC recommends blood-pressure measurement and urinalysis before 28 weeks' gestation to screen for hypertension and proteinuria and ultimately to prevent preeclampsia. Clinicians, however, did not have the opportunity to perform these procedures for the 13 percent of unmarried pregnant women in 1985 who did not present for care before the third trimester (Institute of Medicine 1988, 37). Similarly, control of hypertension, once detected, requires that women follow the recommen-

dations of clinicians. Although financial access to pharmaceuticals affects whether women adhere to prescribed therapy, patient education may also increase adherence and improve both hypertension control and patients' outcomes.

In health care, as in other fields, the U.S. public wishes to play a greater role in decisions that have historically been made by traditional authority figures, including physicians. Surveys have repeatedly found that people desire more information from health professionals (U.S. Congress 1988).

The influence of consumer groups is a striking feature in the United States. Consumer groups periodically prepare documents based on scientific literature and make them available to their members, the general public, and the press. Although the strength of their analyses varies greatly, some groups follow rigorous research methods in synthesizing available information. The March of Dimes Birth Defects Foundation, the Children's Defense Fund, and women's health groups have been especially active in this arena. The Public Citizen Health Research Group has also played a leading role in questioning the rising rates of cesarean deliveries.

The literature on health-related behavior has indicated that merely providing information and improving knowledge are not sufficient to change behavior (Green et al. 1980; Janz and Becker 1984; Sisk, Hewitt, and Metcalf 1988). The mass media may raise people's awareness and set the stage for action, but actual behavior change seems to require that people be given skills and social support to carry out the new behavior. Although research has not yet documented the precise elements that make an educational program effective, community-based programs using multiple approaches seem to have reduced cardiovascular risks and, perhaps, teen pregnancy. The potential thus exists to apply these concepts to public and patient education on maternity care.

Educational programs for lay people can target behaviors now thought to improve outcomes for mothers and babies. As knowledge evolves, however, some current recommendations will inevitably change. For example, pregnant women have been counseled for decades to avoid medications, including aspirin, but recent studies point to the efficacy of low-dose aspirin to prevent preeclampsia. Education programs thus face the challenge of conveying new knowledge, without undermining the credibility of current or future recommendations.

Education and Training of Health Care Professionals

Implementing ECPC's recommendations requires eventual changes in the education of health care professionals—both clinicians and administrators. These changes can come directly, through policies of the respective professional groups, or indirectly, through pressure from the regulatory and payment policies of others. For example, medical students and residents learn from their textbooks and mentors the clinical policies that guide patient care (Dixon 1990). During this training period, a framework of attitudes and beliefs and methods to evaluate new information is conveyed along with factual knowledge.

Attempts to change physicians' behavior have found that the mere provision of information has little effect (Chassin and McCue 1986; Eisenberg 1985; Lomas et al. 1989; Soumerai 1989; Soumerai and Avorn 1986; Kosecoff et al. 1987). Behavior change seems to require more personalized approaches, such as working through respected leaders and involving physicians as participants.

Potential targets of educational strategies run the gamut of the settings and stages in which health professionals learn and work: medical and other schools, residency programs, graduate medical and administrative programs, clinical practice, and administration. The requirements for certification and recertification offer the most leverage in spurring educational changes.

For example, the American Board of Obstetrics and Gynecology, which conducts examinations and certifies physicians as specialists in obstetrics and gynecology, could incorporate ECPC's recommendations into its written examination and its review of the applicant's submitted cases. (Certification, which is limited to ten years, requires successful completion of a written examination and passing an oral examination based on the physician's recent patients [American Board of Obstetrics and Gynecology 1992]. Recertification also combines evaluation of a physician's practice and a written examination.) In this case, encouraging physicians to adopt ECPC's specific recommendations need not conflict with encouraging their critical analysis; the oral examination seems particularly well suited to critical thinking. Another vehicle for incorporating research-based evidence is the background material and annual examinations that the Council on Resident Education in Obstetrics and Gynecology produces for residents to evaluate their own progress.

ACOG, a society of physician specialists, prepares materials that residents study to prepare for the board's examinations. ACOG uses several other vehicles to synthesize scientific information and to disseminate it to clinicians and the public. ACOG's *Technical Bulletins* synthesize the scientific literature on managing specific conditions, such as ectopic pregnancy, and on using certain technologies, such as ultrasound (H. Kaminetsky, ACOG, 1991: personal communication). ACOG's *Opinions*, which digests information on new technologies and conditions, must usually be based on sparser literature and data. The *Technical Bulletins* and *Opinions* go through a process of internal and external peer review and revision. The final documents are then sent to approximately 30,700 fellows and 7,500 junior fellows, who are either residents or physicians who are not board certified.

ACOG updates *Technical Bulletins* every three years and *Opinions* every 18 months. The College strives to produce accurate, comprehensible documents and expects that clinicians will adapt the information to their own practice settings (H. Kaminetsky, ACOG, 1991: personal communication). Anecdotal information reaching ACOG staff indicates that clinicians utilize and value this material (H. Kaminetsky, ACOG, 1991: personal communication), but its exact use has not been documented. ACOG also prepares materials for self-study by residents and fellows, offers courses throughout the year, and periodically issues a reference book, *Standards for Obstetric-Gynecologic Services*. ACOG additionally prepares patient education materials, which are designed to present information in more simple terms.

The American Association of Medical Colleges, other specialty societies, and management associations could also undertake educational programs, but they are likely to have less influence than the certification bodies.

Several AHCPR activities fall into the category of educational interventions. One is the development and dissemination of practice guidelines. AHCPR funds panels of physicians, allied health professionals, consumers, and methodologists, sometimes through medical specialty societies, to formulate guidelines for managing specific medical conditions. Working with a methodologist and staff, the panel synthesizes the literature and prepares guidelines, which are circulated for review. The first completed guidelines, which covered the management of pain, were released in March 1992. Recognizing the importance of effectively disseminating such guidelines, AHCPR has solicited proposals for research

in this area. AHCPR staff intend to use voluntary approaches, based on previous experience in the field, to influence clinicians to practice in accordance with the guidelines. Some prior efforts to change clinical behavior through practice guidelines have had disappointing results, in the United States and in Sweden. By evaluating the effectiveness of different dissemination strategies, AHCPR's activities promise to increase knowledge in this area.

As part of its initiative to improve the effectiveness and cost-effectiveness of medical care, AHCPR is funding two major projects on obstetric care. One project focuses on care during childbirth, especially cesarean deliveries, and the other on low birth weight among the newborns of minority and high-risk women. For each project, a multidisciplinary team over a five-year period will synthesize existing literature, analyze primary and secondary data, develop clinical recommendations, and evaluate alternative strategies for disseminating them to appropriate groups, which may include clinicians, patients, and the public (Raskin and Maklan 1991). The team on childbirth care is incorporating ECPC into its literature review (E. Keeler, RAND 1991: personal communication).

AHCPR's Office of Health Technology Assessment advises the Health Care Financing Administration as to whether the Medicare program should cover specific medical technologies. Private third-party payers have also followed the Office's recommendations for coverage. The Office synthesizes the scientific literature on the topics that it studies, but, reflecting the age distribution of Medicare beneficiaries, few recommendations have concerned obstetric or pediatric care. As the Office performs more studies for the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), the insurance program for military dependents, it may become more involved in reviewing care for pregnancy and childbirth. Its role could also grow under universal health insurance.

Through their colleagues, researchers working on the Oxford Database of Perinatal Trials have indirectly affected U.S. activities. For example, after returning from a sabbatical at Oxford, a U.S. pediatrician organized a network of 85 U.S. neonatal centers (J. Lucey, March 1992: personal communication). Data gathered from these centers have revealed that there is great variation in outcomes, such as neonatal mortality, and in medical interventions that ECPC concluded were effective, such as the use of corticosteroids when preterm delivery is expected. The

collaborators plan to work through the network to improve the effectiveness of care. They also convey information through an annual meeting, which, in December 1991 drew 100 neonatologists from the network and 500 additional colleagues.

Accreditation and Licensing of Health Care Providers

State requirements for licensing the individuals and organizations who provide health care offer substantial, but historically untapped, leverage over medical practice. State licensing boards have not actively ensured the continuing competence of physicians and allied health professionals (U.S Congress 1988).

Greater potential for implementing ECPC lies in the activities of the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO). JCAHO surveys about 70 percent of U.S. hospitals for accreditation. Its accreditation assumes particular importance because it is woven into the licensure requirements of most states and fulfills a condition of participation for the Medicare and Medicaid programs (U.S. Congress 1988).

Until recently, JCAHO relied on structure and process standards to evaluate the capability of an organization to provide quality care. In 1986, however, JCAHO began to develop indicators of clinical performance that are associated with high-volume, high-risk, or potentially problematic care (U.S. Congress 1988). Obstetrics was one of the first areas addressed. JCAHO also intends to replace on-site surveys with periodic assessments throughout the year of indicators of a hospital's clinical and organizational performance.

JCAHO is currently testing the feasibility of certain indicators for obstetric care (Joint Commission n.d.). Some of these relate to cesarean sections and vaginal birth after caesarean section. JCAHO could incorporate ECPC recommendations into its selection of clinical performance indicators and assessment of organizational performance.

Through administrative rules, hospital management may limit the availability of certain services and encourage others. Hospitals may use formularies to restrict use of certain drugs, and departments may set policies for the use of certain procedures. Although individuals within different hospitals could seek to implement ECPC recommendations,

JCAHO and other accrediting bodies have broader and probably stronger leverage.

Government Regulation of Medical Technologies

Federal and state governments could use their regulatory powers to promote clinical conformity with ECPC recommendations. This approach has some, though limited, promise.

The U.S. Food and Drug Administration (FDA) wields great influence over the availability of medical products through the requirement that it must approve pharmaceuticals and medical devices before they are marketed in the United States. The FDA synthesizes the results of controlled trials to assess the efficacy and safety of pharmaceuticals and to determine the content of the labeling for the products that it approves. The FDA could incorporate ECPC's findings into their analyses. Unlike ECPC, the FDA has not typically considered the relative efficacy and safety of alternative strategies for managing a medical condition. The FDA also generally relies on the pharmaceuticals' sponsors to raise new evidence that affects appropriate use and labeling.

The FDA's authority clearly applies to the sponsors of medical products, but it has considered clinical use to be outside its purview. Once the FDA has approved a product for marketing, it leaves decisions about its use to practitioners. It is unlikely that the FDA will reverse this policy in the near future. In fact, the trend is to ease restrictions on the availability of pharmaceuticals, at least for life-threatening conditions.

During the 1970s, federal and state certificate-of-need laws seemed to have little effect on the use or cost of medical technologies. Because their scope was usually limited to certain providers and certain settings, chiefly hospitals, these laws contained incentives for providers to establish facilities in other settings, mainly physicians' offices and other ambulatory centers. The federal and many state governments dismantled certificate-of-need laws as they implemented prospective payment policies in the 1980s. Although the availability of medical equipment and facilities, such as imaging centers, increases rates of use, it is unlikely that federal or state governments will reinstitute legal limits.

Policies of Third-Party Payers

Payment policies clearly influence patterns of medical practice and offer an effective means of implementing ECPC recommendations. Such a

strategy would use the financial incentives of third-party payment to encourage providers and patients to behave in desired ways. If applied to private and public insurance programs, payment policies tailored to ECPC findings could exert leverage over care delivered to the more than 80 percent of the population who are insured. Both public and private payers would be more likely to adopt ECPC's recommendations if they were documented to be cost effective. The cost effectiveness of an intervention relates to whether the net costs are worth the net health benefits derived from the procedure. A medical practice need not, of course, be cost saving to be cost effective, and, in fact, few interventions reduce net costs.

Although patients and providers can choose not to conform to financial incentives, they may well see the consequences of denied coverage as coercive. Tension may thus arise between implementing ECPC's specific recommendations and fostering critical thinking on the part of those affected by them.

Payment policies may operate through three mechanisms: coverage of medical services, relative payment rates, and review of claims. Insurers could exclude from coverage the care that ECPC recommended be abandoned, such as X-ray pelvimetry in cephalic presentations. Interventions with unknown effects, such as routine iron supplements, might also be excluded. Insurers could also expand their coverage to include care recommended by ECPC to improve patient outcomes; although insurance coverage often excludes preventive services and pharmaceuticals, policy makers might decide to pay for rubella vaccination before or after pregnancy.

The Blue Cross–Blue Shield Association, for example, has been active in assessing the efficacy and safety of medical technologies and conveying the information to its member plans. Based on literature reviews and expert advice, the association in the late 1970s recommended that its member plans not cover the use of specific outmoded practices. Although subsequent federal employee claims for these procedures declined substantially (Institute of Medicine 1985), it is not clear what part the recommendations played in their reduction. The association continues to be active in this arena. In 1991, in cooperation with the American College of Physicians, the association used syntheses of the literature and decision analysis to formulate recommendations for coverage of preventive services. Such an approach is certainly applicable in assessing pregnancy and childbirth care.

Restricting coverage is not a guaranteed method of changing behavior; physicians could substitute a covered for an uncovered diagnosis to

justify payment for the desired service, such as specifying anemia to justify routine iron supplements. Nevertheless, coverage restrictions are likely to change use in the desired direction. Coverage of preventive services for adults by itself, however, is unlikely to increase their use (Sisk and Riegelman 1986).

One would expect providers to respond to differences in payment rates for services by favoring the substitute service with the higher profit margin. Through coinsurance requirements, patients are also affected by the financial incentives inherent in payment rates. The reform of Medicare payment for physician services is based on this concept (U.S. Congress 1992). In January 1992, Medicare began to pay physicians according to a published schedule of fees. It is likely that other third-party payers will adopt this fee schedule, as they did payment for diagnosis-related groups (DRGs). The Medicare fee schedule could also become widespread under a national health insurance plan.

Medicare has designed this fee schedule to increase payments for primary care, chiefly visits, and to decrease payments for procedures, such as surgery and imaging. In setting the payment rates, Medicare combined the estimated cost of providing certain services with adjustments based on comments of medical societies and other experts. Although there is little empirical confirmation that physicians respond to changes in relative payment rates, the results of Medicare payment reform should address this question.

More directly relevant to care during pregnancy and childbirth is Medicaid payment. This federal–state program covers poor women who are pregnant and have children. The federal government sets minimum services and population groups that must be covered, and each state may expand coverage and sets payment rates for covered services. The federal Physician Payment Review Commission, established to advise Congress about reform of payments to Medicare physicians, is now examining Medicaid payment.

The potential clearly exists for the Medicaid program, as well as private insurers, to set payment rates to promote ECPC's recommendations. For example, insurers that now pay more for a cesarean section than for vaginal birth could pay the same amount, regardless of how the baby was delivered. Insurers could also vary coinsurance requirements to encourage the patient behavior desired.

Insurers could use their review of claims to spur providers to follow ECPC's recommendations. To contain their expenditures and to monitor

the quality of care provided, both public and private insurers review the services that their beneficiaries receive. With little additional effort, insurers could target aspects of care emphasized in ECPC's recommendations, according to positive or negative effects on patient outcomes. For discrepancies between ECPC recommendations and actual practice, reviewers could request providers to justify their decisions, coach them on the rationale behind the recommendations, and deny payment in extreme cases.

Incorporation of ECPC recommendations into insurers' claims review would be very likely to channel provider practice in the desired directions. This process would capture providers' attention and offer a vehicle for communicating information on the scientific basis of the recommendations. Providers, especially physicians, however, feel increasingly besieged by insurers. Immediate effects on behavior might thus come at the expense of increased bitterness. This result might be avoided by undertaking outreach activities before payment restrictions were applied. Using those personalized and participatory approaches found to be more effective, insurers might first try voluntary measures before resorting to payment denials.

Although federal government officials disclaim any intention of using AHCPR guidelines for coverage and payment policy, public and private insurers may nevertheless decide to use the guidelines in this way. Insurers confronted with soaring medical expenditures are searching for methods to contain use and cost. Although practice guidelines may identify ineffective practices, they may also pinpoint effective ones that have been underused. It is not clear on balance whether conformity to the guidelines, as to ECPC recommendations, would raise or lower medical expenditures.

Standards for Medical Malpractice

The disposition of medical malpractice claims is a capricious process. There is wide agreement that the eventual results bear little relation to the medical circumstances of the cases (U.S. Congress 1988; Sisk et al. 1990). Adoption of ECPC conclusions by the judicial system could make the process more rational and would exert strong leverage over providers to conform to them.

Congress or individual state legislatures could mandate that the courts use certain guidelines, such as those developed under AHCPR's aus-

pices, as standards in medical malpractice cases. Legal societies and insurance companies could take similar measures. Although individual attorneys and patients might be losers, this course of action would reduce uncertainty and hence be likely to benefit the general public, the medical community, insurers, and the judicial system.

Developing an Implementation Strategy

The fragmentation characteristic of U.S. health care delivery and policy is especially striking for maternal and child health. Whereas care for almost all elderly people, regardless of income level or geographic region, is covered under the federal Medicare program, children's health care has no comparable locus for concerted action to influence clinical and consumer behavior.

The U.S. situation does offer certain opportunities for implementing ECPC, however. Fundamental changes in attitudes toward technology appear to be under way, both in the overall society and in medical care. Although we continue to be fascinated with technology, we have also become more wary of its potential disadvantages, in human, environmental, and financial terms. In the medical arena, concerns about technology's effects on patients and their families and about rising medical expenditures have spurred public and private policies to incorporate technology assessments. These developments provide fertile ground for ECPC's approach to synthesizing scientific evidence and for using it to influence behavior. Moreover, the primacy that ECPC has long placed on the well-being of mothers and babies (see the article by Chalmers, Enkin, and Keirse in this issue) accords with the growing trend in U.S. health policy and research to emphasize the effects of medical practices on people's outcomes.

Although the U.S. context does not contain a single focal point or an obvious champion for ECPC, several ongoing activities and organizations could be vehicles for implementing scientific evidence on pregnancy care. Some are already independently promoting recommendations drawn from ECPC or consistent with ECPC's findings, such as the role of cesarean sections and the use of corticosteroids.

An alternative to current independent activities is the organization of a network to spur greater implementation efforts. The network could bring together people from key organizations who are committed to im-

proving maternal and child health care through increasing the use of scientific evidence in policy making. The network could draw members from organizations that are now engaged in improving pregnancy and childbirth care or that have substantial influence over some realm of policy making—for example, professional associations, such as ACOG; consumer advocates; clinicians, such as those in the existing network of perinatal centers; regulatory bodies, such as JCAHO; and third-party payers, such as Blue Cross-Blue Shield and Medicaid. People in the United States who have worked on components of ECPC could be brought into the network, both as experts on ECPC and as likely advocates of the process and its findings.

The intention of the network would be to enable members through interaction to strengthen their interest in implementing ECPC and to improve their effectiveness. Network members might decide to undertake some joint activities. For example, they might evaluate alternative methods of implementing recommendations about a particular aspect of pregnancy care. The network might also address strategies for pricing and marketing ECPC. Given the diversity of perspectives among policy makers, one should not expect a single strategy to fit the circumstances of all network members and their organizations. Each network member, however, could profit from the group's ideas and tailor them to his or her own organization.

The specific strategy would call for convening a small group of potential network members to consider the feasibility and likely effectiveness of such an undertaking. If their reactions were favorable, they could serve as the nucleus for assembling a larger group. The initial meeting of the network might be built around a particular medical intervention, such as corticosteroids for expected preterm delivery or routine ultrasound screening for all pregnancies, that exemplifies the shortfall between scientific evidence and current practice and that is relevant to a broad range of prospective network members. If the participants in the initial meeting were sufficiently enthusiastic, meetings might be held periodically, perhaps two times a year, with other joint activities at the members' discretion. The Milbank Memorial Fund could continue its role as a catalyst for implementation of ECPC in the United States by sponsoring these meetings.

It is difficult to find a successful historical precedent for this strategy. Scientific networks developed to conduct clinical trials in certain areas of medicine, such as breast cancer and cardiovascular disease, have some of

the same components. The lack of a successful model may reflect the paucity of past efforts actively to promote behavior change in medicine, as Jonathan Lomas outlines in his article appearing in this issue.

Lack of an obvious model may also reflect the inherent difficulty of technology assessment, which seeks to link scientific evidence with policy making (Battista 1992). The purpose of an ECPC network would be to speed the diffusion of scientific evidence into policy making at all levels. The exact approach that such a network adopted would depend on the interaction of the group, in itself a policy-making process. Observing and evaluating this process could provide insights useful in improving future efforts to implement scientific findings in this and other fields.

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Acknowledgment: I am grateful for the assistance of Mary Linn Morris in amassing much of the information reviewed here.

Address correspondence to: Jane E. Sisk, PhD, Division of Health Policy and Management, Columbia University School of Public Health, 600 West 168th Street, New York, NY 10032.