

Women's Health Research Blossoms

Sparked by activism, an explosion of new research is focusing on gender differences in disease and treatment—while women in developing countries struggle with much more pressing needs



In 1957, journalist Barbara Seaman, in the hospital after the birth of her first child, asked her doctors and nurses what was in the pills they were feeding her. Medical personnel dismissed her questions. Only after her baby became very sick did she discover that the pills were laxatives, which she was inadvertently passing on to the child through her breast milk. The laxatives, she says, had been administered in the blithe assumption that no modern mother would choose breast feeding over formula.

Seaman's outrage over the laxatives led her to a crusade as medical muckraker that would eventually put her in the forefront of the women's health movement. By the early 1960s—soon after the drug company G. D. Searle began marketing Enovid, the first oral contraceptive—she was a health columnist for magazines such as *Brides* and *Ladies' Home Journal*. When readers deluged Seaman with questions about birth-control pills, she began an investigation that culminated in *The Doctors' Case Against the Pill*, a 1969 exposé claiming that the pill caused fatal strokes, heart disease, diabetes, depression, and a host of other ailments. As the book's cover put it, "Love with the pill can cripple and kill."

The ensuing controversy cost Seaman her magazine jobs. But it also led then-Senator Gaylord Nelson (D-WI) to hold hearings on pill safety in 1970. Interrupting the hearings from the audience, Alice Wolfson, a civil-rights activist and member of the first "women's group" in New York City, demanded to know why no women—even Seaman—were being allowed to testify. TV cameras recorded the disruption as Seaman and other women joined the protest.

Even as the hearings bared the pill's safety defects, the dissent helped to launch a political movement focusing on women's health. "By 1975, nearly 2000 [women's self-help medical] projects were scattered across the United States, many of them groups of volunteers without an institution," says Cynthia Pearson, program direc-

tor of the National Women's Health Network, an advocacy clearing-house founded by Seaman, Wolfson, and three other women activists that year. The projects bargained women with health information, showing them how to examine their own breasts, cervixes, and vaginas for problems. Controversially, some promoted the Del-Em, a homemade device that let women perform abortions on themselves.

Although the movement centered on women, Pearson says, its targets—overuse of medical technology, insufficiently rigorous drug testing, and the refusal to listen to patients—affected both sexes. "Because women went to doctors for prenatal care, childbirth, birth control, and menopause, all of which are not disease states, young and middle-aged healthy women interacted far more with doctors than men, who only saw them when they were sick. So women were exposed to a disproportionate share of what was wrong with the medical establishment as a whole." Still, she says, "the medical profession was 95% male," which meant there was "a little extra paternalistic treatment that doctors inflicted on women in those days."

As today's clinicians and researchers readily concede, this nascent movement helped change medicine and medical research profoundly. A quarter-century after *The Doctors' Case*, almost half of all U.S. medical

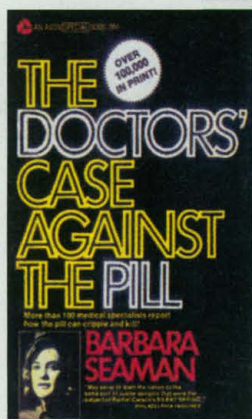
students are female, universities have established programs in women's diseases, and governments across the world have created offices of women's health. In 1994 and 1995 alone, women's health issues have been or will be a focus of the International Year of the Family; the International Conference on Population and Development in Cairo, Egypt; the World Summit on Social Development in Copenhagen, Denmark; and, most important, the United Nations Fourth World Conference on Women, to be held in Beijing next month.

But as the women's health movement has expanded, it has divided into two diverse strains. In the industrialized world, women have changed their focus; they are less likely to criticize the attitudes of clinicians and more likely to argue that the male medical-research hierarchy has historically mistreated them. Activists charge that scientists have neglected to include women in epidemiological studies and clinical trials, arguing that researchers mistakenly assumed that data from middle-aged white males apply equally well to women, minorities, and the elderly. And, feminists complain, while researchers have failed to fund research on women's diseases—breast cancer being the most notorious example—they have worked overtime on female contraception, neglecting comparable research on men. Partly because of these accusations, the new field of gender-based medicine has come into existence, concentrating on the fundamental differences in male and female responses to disease and treatment. (See stories on pp. 771, 773, and 777.)

In the developing world, though, the concerns are different. Women in poor nations die at high rates from reproductive problems and diseases that can easily be cured or prevented, often at little additional cost. In some areas, rates of maternal mortality and morbidity are increased by cultural attitudes that block women's access to health services, especially if those services include abortion; in others, the problem has been exacerbated by the organizational failures of centralized economies. And, in the view of health professionals, some health-care promotion programs by industrialized nations have focused so intently on Third World children that they have ignored—or even added to—the problems of their mothers. (See story on p. 780.)



HENRY GROSSMAN



Bitter pill. Barbara Seaman's 1969 exposé of the dangers of oral contraceptive use helped to trigger the women's health movement.

Has medical research neglected women?

At first glance, the notion that women in wealthy nations have been short-changed by the medical establishment seems astonishing. For most of human history, men lived longer than women. That situation began to change a century ago, as modern medical practices came into use. By 1920, the average U.S. female life expectancy of 54.6 years had outstripped the male life expectancy of 53.6. The gap has continued to widen; today, the average woman's life expectancy is more than 7 years longer than that of the average man (79.9 years and 72.8 years, respectively, according to World Resources Institute projections). And the United States is not the only developed nation to show this pattern; women live longer than men in wealthy countries ranging from Japan (81.7 and 75.9 years, respectively) to Sweden (80.7 and 75.0 years).

Perhaps the disparity in life-spans should not be surprising, because two of every three U.S. health-care dollars are spent by women, according to Department of Health and Human Services estimates, a pattern replicated in other industrialized nations. Even excluding pregnancy-related care, women have more appointments with doctors, experience more hospital care, and have more operations. According to a survey of 46,868 U.S. office visits in 1981, the biggest such study ever conducted, women received more laboratory tests, blood-pressure tests, and drug prescriptions than men with comparable problems.

"God knows male doctors have been rude and patronizing to women, but the idea that they have ignored them is ridiculous," scoffs one breast-cancer specialist who requests anonymity. "If anything, the men are far too ready to hunt for some way to give women expensive pills for the least little thing." Although she points out that poor women, like poor men, often lack access to medical care, according to this oncologist, "to say that the problems of middle-class women have been ignored by the medical establishment is almost like saying that my colleagues aren't greedy enough to exploit their best customers."

Nonetheless, advocates for women's health, many in high positions, often claim exactly that—with their greatest ire being reserved for inequalities in medical research. "When it comes to women's health, we are still playing catch-up," First Lady Hillary Rodham Clinton said on 27 June at the Women's Health Achievement Awards ceremony in Washington, D.C. "Illnesses that traditionally affect women have been ig-

nored and still are ignored. Research has largely focused on men, and it still does." Indeed, the National Institutes of Health (NIH) admitted in a 1987 report that it had spent only 13.5% of its total research budget that year on diseases unique to women. And General Accounting Office reports in 1990 and 1992 attacked federal agencies for not including women in their evaluations of medical treatments.

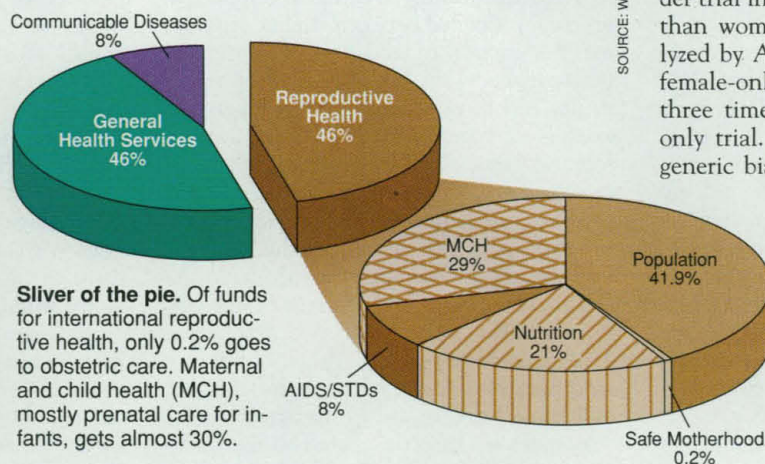
Clinical trials are a primary example of the neglect of women in medical research, according to Phyllis Greenberger, executive director of the Washington-based Society for the Advancement of Women's Health Research. "All too often," she says, "no women have been included—look at MR FIT [the Multiple Risk Factor Intervention Trial] and the Physicians' Health Study." MR FIT examined the impact of losing weight, giving

guage medical experiments published between 1980 and 1993, Charlene Levine, Adele Kaplan Gilpin, and Curtis L. Meinert of the Johns Hopkins School of Hygiene and Public Health determined that the number of studies looking at women alone and the number looking at men alone were almost identical, although most looked at both sexes. (See Policy Forum by Meinert on p. 795.) In 1993, for example, 13% of all journal articles treated women alone, whereas men-only research accounted for 12%—a difference that Gilpin called "meaningless from a societal perspective."

Nor is there consistent evidence of sexism in clinical trials of new drugs. In a second survey that examined clinical trials published between 1983 and 1993, Gilpin and Meinert found that the percentage of male- or female-only trials was approximately equal. Although the median large two-gender trial included about 1.5 times more men than women (the heart-disease trials analyzed by Avorn are examples), the median female-only trial of any size was more than three times larger than the median male-only trial. "The evidence that there's this generic bias doesn't seem to exist," Gilpin says, "at least in the data set we examined with the methods we used."

More men have been included in heart-disease trials than women, "but the criticisms are taken really out of context," says Maureen Henderson, head of cancer prevention research at the Fred Hutchinson Cancer Research Center in Seattle and one of the original principal investigators of MR FIT. In the 1960s and 1970s, she says, "heart disease was a national problem in middle-aged men, and MR FIT was an attempt to modify their risk factors to change the rate of heart attack in them. There's nothing to apologize for." In addition, according to Meinert, heart attacks in middle-aged women are so rare that a female-only study with the same statistical power as MR FIT would have cost more than a billion dollars—almost 10 times the original trial's \$115 million budget.

Similar logic applies to the Physicians' Health Study, in the view of its co-principal investigator, Julie Buring of Brigham and Women's Hospital in Boston. "We knew it would take 20,000 people to answer the question" of whether daily aspirin intake prevents heart attack, she says. Because the researchers wanted to conduct the trial by mail rather than through hospital visits—a far cheaper, although then-untested method—they decided to enlist doctors, an easily reached group of people who should be able to take pills every day without supervision. Unfortunately, Buring says, there were not



up cigarettes, and lowering cholesterol levels on the risk of heart attack in 12,866 men, whereas the Physicians' Health Study examined the effects of daily aspirin intake on the same risk in 22,071 men; neither experiment included a single woman. The two studies were not exceptions: In a 1992 analysis of all clinical trials of drugs for acute heart attack published in English-language journals between 1960 and 1991, Jerry Avorn of Harvard Medical School and two colleagues discovered that fewer than 20% of the subjects were women.

But some experts in clinical research have vigorously disputed the charge that clinical research neglects women overall. They point out that the same NIH inventory that established that 13.5% of its research budget was spent on female diseases found that only 6.5% of that budget went to diseases unique to men. On a per-fatality basis, more than four times as much research money is spent on the leading female-only cancer, breast cancer, as the leading male-only cancer, prostate cancer, according to data from the National Cancer Institute. And, in an as-yet-unpublished survey of all English-lan-

enough middle-aged U.S. female physicians in 1982, when the trial began, to make their inclusion feasible. "We decided it would be unethical to design a study that we knew didn't have enough statistical power to answer the question in women. Suppose it showed that aspirin had no benefit in women. Would that be because actually it had no benefit, or because we didn't have enough power to see that benefit?"

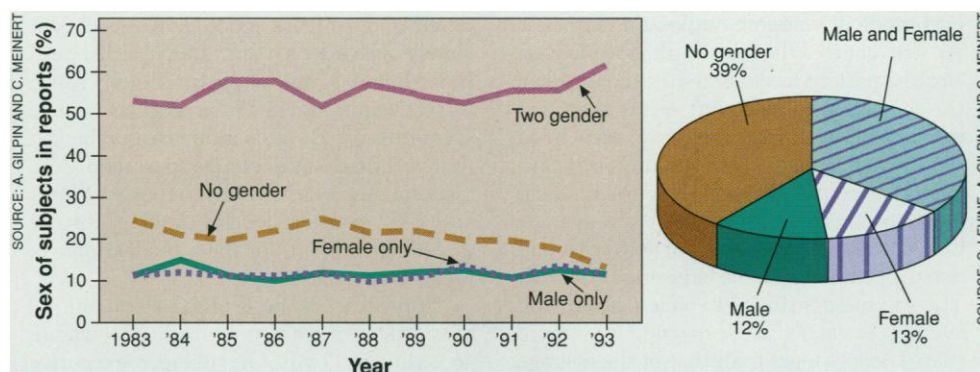
After running the doctors' study long enough to be convinced that their methodology was reliable, the scientists applied for money to fund a study of similar power in women, but were told to wait for the results from the male trial. Meanwhile, Buring says, financial support for the Physicians' Health Study was threatened—because it didn't include women. In 1992, the Women's Health Study began, with Buring as principal investigator. Like the Physician's Health Study, it will examine the effects of aspirin on heart attack; it has now enrolled 38,000 female health-care professionals, doctors, nurses, dentists, and veterinarians among them. Preliminary results will not be available for a number of years; the exact length of time, according to Buring, depends on funding.

"It is correct [to say] that we can't document that women were excluded systematically," concedes pathologist Vivian Pinn, director of the NIH Office of Women's Health, "but that is partly because NIH didn't keep data in that form. And I don't think that from this incomplete data you can conclude that women were not excluded." (See Policy Forum by Sherman *et al.* on p. 793.)

She adds, "Although it is true we can't document [bias], it is also true that as we focus more on gender issues we learn that there are a lot of conditions that affect men and women differently and that we should learn more about." From Pinn's point of view, it makes little difference whether sexism caused the lack of knowledge about the medical differences between men and women. "Whatever the cause," she says, "we don't know enough."

Gender-based research

Pinn's claim that "we don't know enough" about gender differences in disease and response to treatment is echoed by the medical establishment. Spurred partly by criticisms of past research practices, medical researchers are now aggressively examining medical differences between the sexes. Much research has focused on female hormones, which have wide-ranging effects that scientists are just beginning to unravel (see story on p. 773). Indeed, many researchers focusing on women's health find it difficult to believe that scientists have so long failed to appreciate the enormous medical implications of the sexes' diverse hormonal environments. "In some ways it is astonishing," says Roberta Ness,



Cut on the bias? For clinical trials (graph at left) and for all research involving human subjects (chart at right shows 1993 data), the fraction of studies that include only male subjects is about the same as the fraction that includes only female subjects.

director of the Epidemiology of Women's Health Program at the University of Pittsburgh School of Public Health. Now, though, she says, the research is "really exploding."

Roughly speaking, that explosion of new research is divided between studies examining the impact of endogenous hormones (those made by the body) on medical treatments and those examining the impact of exogenous hormones (those from outside sources, especially birth-control pills and menopause treatments) on diseases. Concerning endogenous hormones, psychiatrist Margaret Jensvold, director of the Institute for Research in Women's Health in Washington, D.C., says, "for a long time there was the mistaken belief that sex differences didn't exist in responses to drugs. But in fact we are learning that there are significant sex differences with regard to medication, and that these are directly related to the menstrual cycle." In 1992, Jensvold published one of the first studies of the cycle's impact on psychoactive drugs like anti-depressants. For many women, she discovered, a constant blood level of these drugs can only be achieved by varying the drug dose through the monthly estrogen-progesterone cycle. Unfortunately, she says, "many studies in the past didn't report data in a way that allowed us to make female-male comparisons."

Jensvold, Uriel Halbreich of the State University of New York, Buffalo, and Jean Hamilton of the Institute of Women's Health at the Medical College of Pennsylvania have tried to make up for that shortfall in a forthcoming book-length review entitled *Psychopharmacology of Women: Sex, Gender, and Hormonal Considerations*. Although they discovered that gender-based differences affect how treatments should be administered, Hamilton says the real impact of such studies may come in the future, when scientists learn whether the differences in male and female pharmacokinetics (variations in the way male and female bodies transport drugs through the bloodstream) are matched by differences in male and female pharmacodynamics (variations in the drugs' effects

once they reach their receptor sites).

Equally important—but more controversial—are exogenous hormones, especially estrogen replacement therapy, the widespread practice of administering estrogen supplements to relieve the symptoms of menopause. This treatment was popularized by gynecologist Robert A. Wilson's best-selling 1966 book, *Forever Feminine*, which extolled postmenopausal estrogen as the key to "prolonged well-being and extended youth." Feminists have long been scornful of such claims, arguing that estrogen advocates like Wilson treat the natural process of menopause as something that, in Pearson's words, "turns women into a vapid cowlike state."

But even while as many as a quarter of all postmenopausal women in industrialized nations take estrogen supplements, researchers are scrambling to understand their effects on those women. By means that are still poorly understood, menopausal estrogen loss apparently increases the risk of colon cancer, decreases the collagen that keeps skin moist and pliable, and worsens the ratio of high- to low-density lipoproteins ("good" and "bad" cholesterol). All these effects are apparently controlled by estrogen therapy. Yet it may also be that—as Seaman and her then-husband, Gideon Seaman, argued long ago in their book, *Women and the Crisis in Sex Hormones* (1975)—"the estrogenizing of American women is a major factor in our rising rates of female cancers," especially endometrial cancer, breast cancer, and, possibly, ovarian and uterine cancer. The conflicting possibilities, Pearson says, mean that women confront "an exceedingly complicated and unclear choice."

A good illustration of the complex scientific and social issues surrounding exogenous hormones is osteoporosis, the progressive loss of protein from bone, which causes bones to weaken and fracture easily. The disease is caused by an imbalance between osteoblasts (bone cells that encourage deposition of calcium phosphate on the bone's protein framework) and osteoclasts (cells that remove calcium phosphate). With aging, osteoclasts re-



sorb more bone than osteoblasts lay down, making bones fragile. The problem arises much faster in women than in men—for reasons that remain unclear but that seem related to hormones.

Nearly half of all women eventually develop osteoporosis; compared to men of the same ages, postmenopausal women are twice as likely to fracture their hips. In 10% to 20% of hip injuries, death follows within a year. According to a 1994 estimate by five researchers at the Mayo Clinic, about 9.4 million postmenopausal white women in the United States have osteoporosis, making it a major public health problem.

Nonetheless, osteoporosis was not a hot research topic until recently, according to Joan M. Lappe of the Creighton University Osteoporosis Research Center in Omaha, Nebraska. In her view, the neglect did not so much reflect bias against women as the assumption that diseases like osteoporosis “had to happen when you got old,” and these inevitable consequences of aging were not a priority. The field began to open up in the 1980s as researchers gathered what Lappe calls “solid data” that estrogen-replacement therapy forestalls bone loss.

When these data came in, many women rushed to estrogen-replacement therapy. Others, though, held back, as evidence gathered that the treatment apparently promotes breast cancer. In June, the estrogen–breast cancer link was supported by a major trial published in the *New England Journal of Medicine*. But the connection is not entirely clear; last month another big trial found no link.

Meanwhile, other studies indicate that the risk of osteoporosis can be reduced by frequent exercise, proper diet, and the cessation of smoking. And pharmaceutical companies have been busily developing new treatments: Eli Lilly’s raloxifene hydrochloride, a chemical relative of the breast-cancer drug tamoxifen, apparently inhibits bone loss while not increasing the risk of uterine cancer; Merck’s alendronate, which inhibits the bone-weakening actions of osteoclasts, was endorsed by a Food and Drug Administration advisory panel on 14 July.

Because of the multiplicity of choices, whether to endorse estrogen therapy, Lappe says, is a “puzzle.” Some answers may be provided by the 15-year, \$650 million Women’s Health Initiative, the largest clinical trial ever attempted. The trial will include 63,000 postmenopausal women and will test the impact of low-fat diets, estrogen, calcium, and vitamin D on the incidence of breast cancer, osteoporosis-induced hip fractures, and cardiovascular disease. In the estrogen wing of the trial, 27,500 women

will be randomly assigned to hormone replacement therapy or placebo and followed for 8 years; initial results are expected in 2005.

Poverty presents different problems

Unlike the hormonal questions that vex women’s health researchers in wealthy societies, what might be called “risks of motherhood” are the primary concerns of women in poor countries. Whereas the leading cause of death for First World women in their prime is breast cancer, the leading cause of death for their compatriots in the Third World is complications from pregnancy. Indeed, according to World Health Organization (WHO) figures, 99% of the women who die annually from the complications of pregnancy or childbirth live in the developing world.

Humankind owes special attention to diseases of motherhood, according to Mahmoud Fathalla, a senior reproductive health adviser to the Rockefeller Foundation in Assiut, Egypt. “We should not be equating suffering from maternity with suffering from other diseases,” he argues. “Maternity is a physiological duty that is critical for the survival of our species—a critical social duty. People can stop the causes of other diseases—stopping smoking for lung cancer, killing mosquitoes for malaria—but if women stopped reproducing to eliminate the

diseases of maternity, that would be terrible. Women are suffering to fulfill a social duty, and they deserve more protection and care than the victims of other diseases which people contract.”

Unfortunately, the WHO Safe Motherhood Initiative—a campaign launched in 1987 at an international conference in Nairobi, Kenya, to halve maternal mortality by the year 2000—has not reached its goal. Indeed, according to Carla Abou-Zahr of the maternal and child health division at WHO headquarters in Geneva, maternal mortality is actually rising in some parts of the world, like Francophone West Africa and the states carved from the former Soviet Union.

The reasons for the failure include a focus on prenatal rather than obstetric care, opposing cultural and political norms, and contrary government policies. But above all, the failure may stem from a lack of funding. According to an internal WHO study, the Safe Motherhood program received less than 0.1% of all health and population aid in 1990. That year, population-control and prenatal-care programs received 19% and 13% of that aid, respectively. Little has changed in the interim. “Frankly, the international community hasn’t given [the Safe Motherhood Initiative] the resources it needs,” Abou-Zahr says. “A lot more resources have gone into child survival than maternal health.”

In addition, health-care advisers from wealthy countries have treated maternal mortality as an adjunct of prenatal care, usually by trying to identify women with a high likelihood of experiencing birth complications. But such risk-factor screening is perversely ineffective, according to Deborah Maine, director of the Prevention of Maternal Mortality Program at the Columbia University School of Public Health’s Center for Population and Family Health. Very young and very old women are at greatest risk for difficult deliveries, so they are watched over with special care by prenatal-health clinics. Yet the proportion of births to women in the prime child-bearing years is so large that the vast majority of maternal deaths occur in the population least at risk, relatively speaking. “Anybody who’s been through first-year epidemiology should know that with rare conditions, you can have an almost perfect test for that condition, and your results will still be garbage,” Maine says.

Even if better funded, better targeted programs existed, mothers would still face significant economic and political barriers. For

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Now hear this. Women’s health activists interrupt 1970 Senate hearings on the pill to protest the fact that no women had been called to testify.

example, many African governments had medical systems that provided free care. But the resulting quality of service, in Abou-Zahr's estimation, was "abysmal." Hospitals and clinics were frequently understaffed, without adequate supplies of drugs, or closed for much of the day. In recent years, African nations have begun to charge fees, the money from which helps to ensure funding for health-care facilities. The result, according to Patricio Rojas, a WHO representative in Maseru, Lesotho, has been improved health care for many. But it has also led to "a 10 to 20% decrease in consultations" for the very poorest. "And those are the ones who need most care," he says, "because they are most likely to eat less and live in poor conditions."

More important than economic barriers are social ones, many Third World health-care specialists say. According to Ann Way of Demographic and Health Surveys, a private research agency in Calverton, Maryland, "Women need to get permission from men in certain societies to seek health care. Generally, if a woman does not have free access to household funds, she will not have free access to health care." In Lesotho, for example, the majority of employed men work outside the country, in South Africa. Living alone, their wives face social barriers to leaving the house. "Women are effectively like minors in this country," Rojas says. "The constitution grants them equal rights, but comparing that to what they can do in real terms is night and day."

After interviewing more than 360,000 women in 42 developing nations, Demographic and Health Surveys teams found striking sociocultural differences in women's access to health care during childbirth. In Sudan, for instance, the survey discovered that 77.4% of births were attended by a health professional; by contrast, the figure was only 34.6% in neighboring Egypt, a more secular nation with double Sudan's per-capita income.

At the same time, other researchers say, it is important not to overemphasize economic and social barriers to providing women with greater access to health care. "There are lots of things that can be done," says Angela Kamara, deputy director of Maine's maternal mortality program. Based in Accra, Ghana, Kamara manages teams of advisers in Ghana, Sierra Leone, and Nigeria. They have discovered, she says, that social factors are less of a deterrent to maternal health care than commonly believed. "Yes, communities have various cultural quirks," Kamara concedes. "But the major deterrent was that



Front and center. Women's health was the focus of the International Conference on Population and Development in Cairo in 1994, where Vice President Al Gore and Prime Minister Gro Brundtland of Norway spoke.

even people in the most remote villages knew that even if they got to the facilities, drugs might not be available or they would have to search for the doctor because the hospital closed at three in the afternoon. Knowing this, they made no effort to go." She adds, "We're seeing that when services are improved, women manage to get there."

"Lowering the rate of maternal mortality is not something that is beyond the ability of developing countries and the international community to provide," Fathalla argues. "The needed resources are modest. It's a matter of 'how much do you consider mothers are worth? Are they worth the investment to keep them alive?'" Dismayingly, he says, the world seems not to be giving a positive response. The ambitious goal of halving maternal mortality by the year 2000 has been pushed back to 2010, perhaps even later. And there is every chance the Beijing world conference on women will sidestep the subject. International conferences typically try to produce consensus documents; at present, the section of the Beijing document that affirms a global commitment to women's health has not been agreed upon.

Continuing role for activism

Although the existence of national offices of women's health and international women's-health meetings might seem to indicate that the activists have accomplished their goals, the activists themselves don't think so. Seaman, for instance, has just produced a new, updated version of *The Doctors' Case Against the Pill*, which details her reservations about

the lower dose birth-control pills that her previous work helped to put on the market.

Meanwhile, she has lost none of her skepticism about doctors. In December 1991, Seaman, Pearson, and three other activists protested the Women's Health Initiative's plan to test estrogen-replacement therapy on women with intact uteruses, because it has been linked to endometrial cancer. Bernadine Healy, then director of NIH, rejected their concerns, arguing that plans to monitor the test subjects with yearly biopsies would protect female subjects. Last January, though, when another trial revealed higher than expected rates of uterine cellular abnormalities in women on hormone therapy, the original plans were quietly dropped.

Just as important as their continuing skepticism about the medical establishment is the fact that activists such as Pearson have discovered that some health concerns of women in the developed world are more similar to those of women in poor nations

than they had thought. Accustomed to complaining about clinicians' rush to treat women with hormones that may be dangerous, the National Women's Health Network has increasingly turned its attention to women who are not getting health-care services at all.

The reasons include the controversy over abortion, which has effectively denied the procedure to many women, according to Stanley Henshaw, a researcher at the Alan Guttmacher Institute in New York City; a survey by the institute shows that 30% of U.S. women of reproductive age live in counties with no abortion provider. Women are also denied care because of the soaring costs of insurance, which has left greater numbers of the poor uninsured. Because women are disproportionately likely to be poor, Pearson says, they are disproportionately likely to be unprotected. "We have a lot to do," she says.

"Ultimately," Fathalla says, "what is important is power—for women to gain power over their own bodies and their own lives." In his view, the only way the international community will address women's health issues completely in Beijing will be if women themselves demand it. Women in developed countries demanded attention to their concerns in the past, he says. "When people push, the world moves," he says. "That is what makes progress."

—Charles Mann

Charles Mann received a Sloan Foundation grant to write on the history of reproductive technology.

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