



Testimony

Before the Subcommittee on Human Resources and Intergovernmental Affairs, Committee on Government Operations, House of Representatives

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BREAST  
CANCER

Progress to Date and  
Directions for the Future

Statement of  
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MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

In March of this year, you asked us to "conduct a study to review any progress in the prevention and treatment of breast cancer in recent years." In addition, you asked that we "determine what kinds of research are needed to help prevent breast cancer and improve survival rates." I am pleased to appear before you this morning to present the results of our study. My presentation is drawn largely from the report that we have prepared in response to your request and that is being made available this morning. As in that report, most of my comments will focus on two issues, progress in controlling breast cancer and directions for the future. Our findings are drawn from many sources, including the relevant clinical and epidemiologic literature on the detection, diagnosis, and treatment of breast cancer, previous GAO reports on cancer patient survival, reviews of breast cancer patients' hospital records, and data from the National Cancer Institute's Surveillance, Epidemiology, and End Results program.

The report that accompanies this testimony addresses five specific questions:

- Has progress been made in the prevention of breast cancer?
- What changes have occurred in medical interventions for breast cancer?
- What can be done to improve breast cancer survival rates?
- What research is needed to help prevent breast cancer?
- How does National Institutes of Health (NIH) financial support for research on breast cancer compare with support for research on other conditions?

Let me now summarize the major findings with respect to each of the questions above and then discuss the conclusions that can be drawn from those findings.

#### PROGRESS IN PREVENTING BREAST CANCER

It is estimated that in 1973, 73,000 American women were diagnosed with breast cancer. The comparable figure for 1991 is 175,000. Much of this increase stems from changes in the size and composition of the U.S. population, but even after all the statistical adjustments are made, the rise in the incidence of breast cancer is striking. Whereas 82 cases of breast cancer were diagnosed for every 100,000 women in 1973, by 1988 this figure had risen to 110 cases.

Some of this increase can be explained by increased efforts at detecting breast cancer. To the extent that detection has

improved, the rise in incidence should be taken as a positive sign of progress. However, some of the reported increase also reflects a "true" increase in the amount of breast cancer present in the population. Exactly how much of the rise in incidence can be explained by each of the factors is not clear. The picture becomes even more complicated when changes in incidence are examined for segments of the population. (For example, there has been only a slight increase in breast cancer among young women and a much steeper rise for women over the age of 50.)

Despite the complexities involved in interpreting changes in incidence, the numbers reflect two important findings:

- every year sees more and more women being diagnosed with breast cancer, and
- the likelihood is increasing that any woman will be diagnosed with breast cancer at some point in her lifetime.

In light of these facts, we must conclude that there has been no progress in preventing the disease. This conclusion should come as no surprise, given the still uncertain state of scientific knowledge in this area. Currently,

- all the known risk factors can explain only between 20 and 30 percent of the cases of breast cancer,
- most of these factors are either relatively rare (for example, exposure to large doses of radiation) or not amenable to change (a familial history of the disease or the onset of menstruation at an early age), and
- many of the suspected risk factors (high-fat diet and estrogen) are only poorly understood.

#### ADVANCES IN DETECTION AND TREATMENT

The rise in incidence, fortunately, has not been mirrored to date by changes in deaths from breast cancer. The mortality rate (that is, the number of deaths from breast cancer per 100,000 women), has remained stable since the early 1970s. The divergent trends in the number of new cases of breast cancer and in the number of deaths from the disease can be explained in a number of ways. At one extreme is an explanation that deaths have not increased because much of the increase in incidence comes from the detection of slow-growing, easily curable forms of breast cancer that in earlier times were rarely detected. At the other extreme is an explanation that the types of breast cancer being detected have not changed, but mortality has not increased because of better treatment.

Truth probably lies somewhere between these two extremes. The

experience of 1974, when incidence peaked in response to the publicity surrounding the announcements of Mrs. Ford's and Mrs. Rockefeller's breast cancers, shows how incidence can diverge from mortality when there is no change in treatments. From our review, we conclude that the management of breast cancer (that is, the detection, diagnosis, and treatment of the disease) has improved. It is to improvements in medical interventions that I will now turn my attention.

Perhaps the most important development in the last two decades is the advent of mammography. The widespread availability of this technology, which was largely unavailable in the early 1970s, now offers the ability to detect breast cancer while the disease is still early in its development. Although there remain many obstacles to ensuring optimal use of mammography (for example, access remains a problem for the poor, and there is a need for greater adherence to quality standards by providers), the technology is having a decided effect. This can be seen from the trend in the average size of breast tumors at the time of diagnosis. Because the size of a tumor is related to how long the cancer has been present, improved methods of detection should result in a decrease in the average size of tumors over time. This is what has occurred with breast cancer: size steadily decreased from 1977 to 1987. This decrease is clinically significant because treatment when cancers are in the early stages of development greatly increases the patients' chances for survival.

Increasing patient survival is, arguably, the primary objective of all therapies. However, to assess advances in treatments for breast cancer, it is important to recognize that even in the 1970s, many patients were cured and most patients lived for long periods of time. For example, in the mid-1970s, three of every four patients survived for at least 5 years. The likely survival of most breast cancer patients means that minimizing pain and suffering are also important goals of therapy. It is in this dimension, largely relating to the quality of survival, that we believe the major advances in treatment have occurred. Perhaps most importantly, whereas almost all breast cancer patients were earlier subjected to a disfiguring form of surgery (known as the Halsted procedure or radical mastectomy), this procedure is rarely performed today. Replacing it are a range of operations that provide equivalent chances for survival while reducing the degree of disfigurement.

In addition to changes in surgery, a concern for the quality of life of breast cancer patients is more evident today than 20 years ago in such changes as the involvement of patients in decisions regarding therapy and the incorporation of counseling and supportive services into the treatment that is offered to patients.

## DIRECTIONS FOR THE FUTURE: IMPROVING SURVIVAL

In a report prepared for this Subcommittee in 1987, we concluded that there had been only slight improvement in breast cancer patients' survival in preceding decades.<sup>1</sup> Little has changed since then in either the reported survival rates or the treatments that are generally available to breast cancer patients, and extending survival continues to be a difficult goal. Some argue that this goal could be achieved through more widespread dissemination and adoption of currently available therapies. Others contend that treatments currently in development or testing hold great promise. However, our own research has shown the first assumption not to hold true in the case of chemotherapy, in that we found no survival improvement among a select group of breast cancer patients despite more widespread use of the treatment.<sup>2</sup> Further, it is clear that any suggestion that survival will be improved once untested treatments are implemented can be, at best, speculative. Therefore, we have no recommendations to offer for how to improve breast cancer patients' survival. The singular exception is with respect to mammography, where the evidence is compelling that survival would be improved by greater use of the technology.

## PREVENTION: A NEED FOR A BETTER UNDERSTANDING OF BREAST CANCER

The absence of a clear strategy for improving survival argues for the importance of prevention. However, from our review of the literature, we conclude that much remains to be learned about the factors responsible for variations in breast cancer incidence. As a consequence, we see little near-term likelihood that prevention efforts will reduce the incidence of breast cancer. One reason is that most of the important risk factors that have been definitively identified are not amenable to modification. Examples of such factors include age (the older the woman, the greater the risk), place of birth (developed countries posing a greater risk), and having a mother and sister who developed breast cancer. Each of these factors increases a woman's risk more than fourfold, yet it is clear that there is little that can be done to modify that risk. Until we have a better understanding of the factors that cause breast cancer, efforts to prevent the disease have little chance of success.

This conclusion does not mean that nothing should be done to diminish the risks of breast cancer. Opportunities exist to diminish risk by engaging in behaviors that have clear benefit

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<sup>1</sup>U.S. General Accounting Office, Cancer Patient Survival: What Progress Has Been Made? GAO/PEMD-87-13 (Washington, D.C.: March 1987).

<sup>2</sup>See U.S. General Accounting Office, Breast Cancer: Patients' Survival, GAO/PEMD-89-9 (Washington, D.C.: February 1989).

independent of whether they actually prevent breast cancer. The example I have in mind is diet. Although the exact relationship between fat content in the diet and the likelihood of developing breast cancer is not well understood, it is assumed from epidemiological data that there is some relationship. When this assumption is combined with certainty that high-fat diets increase the risks of other diseases, it may be reasonable to make recommendations that the fat content of American women's diets should be reduced.

#### RESEARCH SUPPORT

In order to provide you with some sense of the magnitude of support for breast cancer research, we compared research funding by NIH for five clinical conditions (acquired immune deficiency syndrome (AIDS), breast cancer, lung cancer, prostate cancer, and stroke). We constructed a simple measure of research investment. The data for the most recent year, when adjusted for mortality, show that research expenditures for breast cancer are equivalent to or greater than expenditures for the other conditions. The singular exception is AIDS, for which research expenditures are considerably greater than for breast cancer. Of course, a comparative assessment of one measure of research investment is not a comprehensive assessment of funding levels. Additionally, this comparison should not be construed as an appraisal of the adequacy of funding.

#### CONCLUSIONS

On December 23, 1971, President Richard M. Nixon signed into law the National Cancer Act, launching what has been called the "war against cancer." As we approach the 20th anniversary of this event, stories are already appearing that describe accomplishments in the last two decades and promises for the future. Some of these accounts will speak of the great advances that have been made and offer hopes that we are on the verge of curing the "dread disease." The testimony I have given today suggests that such optimistic views can be supported by a number of changes in the management of breast cancer. Most notably, earlier detection and more appropriate surgery have increased both the likelihood and quality of survival.

At the same time, optimism must be tempered by the increases in the incidence of breast cancer and, perhaps most importantly, by the failure to make any inroads into reducing the mortality from the disease.

If a theme for the future underlies our findings, it is that the gaps in fundamental knowledge about the etiology of breast cancer (that is, its causes and their mode of operation) are the critical obstacles. Research in this area is a crucial priority. Clearly, efforts to detect, diagnose, and treat the disease would

be much more effective if they were linked to knowledge of the disease's etiology. Further, identifying chains of events leading to the onset of breast cancer and learning how to interrupt those sequences are the primary prerequisites for preventive measures.

This concludes my remarks and I will be happy to answer any questions regarding either this statement or the contents of our report.







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