



Testimony
Before the Subcommittee on Criminal Justice,
Drug Policy and Human Resources
Committee on Government Reform
United States House of Representatives

**National Cancer Institute Research and
Education Efforts on Gynecological
Cancers**

Statement of

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U.S. Department of Health and Human Services



For Release on Delivery
Expected at 10:00 a.m.
Wednesday, September 7, 2005

Chairman Souder and members of the Subcommittee, thank you for the opportunity to testify on the topic of gynecologic cancer on behalf of the National Cancer Institute (NCI). Ovarian, cervical, and endometrial (also known as uterine) cancers are grouped as the major gynecologic cancers. One hundred years ago, gynecologic cancer, specifically cervical cancer, was the leading cause of cancer deaths among women in the United States. Over the past century, we have made major progress toward the defeat of this dreaded disease in our Nation. Today, I would like to talk to you about some of the exciting work NCI is doing to eliminate the suffering and death due to gynecologic cancers in the United States and around the world.

The National Institutes of Health invested \$241 million on gynecological cancers research in FY 2004, including \$212,527,000 at NCI. This funding supports an ongoing multi-pronged, multi-disciplinary effort in molecular biology, epidemiology, prevention, treatment, and survivorship issues of gynecologic cancers, including cancers of the cervix, ovaries and uterus.

Cervical Cancer

Cervical cancer is the second most common of cancers among women worldwide. Over 400,000 new cases are diagnosed each year, resulting in about 200,000 deaths. With the continuing education and application of early detection through pelvic examinations and Pap smears, cervical cancer is preventable or effectively treated at precancerous and early stages. Consequently, the frequency of advanced or recurrent cervical cancer has diminished in the United States. However, advanced cervical cancer is still observed and

has a poor prognosis – especially in several geographic regions with high numbers of underserved populations. We recognized that a better preventive strategy against cervical cancer is needed, and NCI investigators have developed a new vaccine approach to prevent the transmission of the human papillomavirus, the virus responsible for most cases of cervical cancer. We have licensed this technology to two large pharmaceutical companies, Merck and GlaxoSmithKline, who have recently reported that results of clinical trials indicate that the vaccines were almost 100% effective in preventing the acquisition of the virus types 16 and 18, which together account for nearly 70% of cervical cancer worldwide.

We have also been working to make screening for cervical cancer less expensive, more reliable, and more available. Even with the arrival of potential vaccines, we will need to continue screening for many years to come. An effective vaccine in combination with cervical cancer screening is expected to reduce cervical cancer rates by 90% in the United States.

NCI is working to bring state-of-the-art cervical screening to geographic regions of excess mortality. In one of our most exciting projects, NCI is collaborating with the Centers for Disease Control and Prevention (CDC), the University of Alabama at Birmingham, and the Mississippi State Department of Health to improve screening for cervical cancer among poor, rural women in the Mississippi Delta, who have had some of the highest rates of cervical cancer in the U.S. for the last 50 years. We know that

cervical cancer disproportionately affects members of particular racial and ethnic minority subgroups and other underserved women.

If successful in Mississippi, we hope to promote region-specific novel screening and prevention programs with collaborators in other underserved regions such as the Mexican-U.S. border, the Pacific Rim, Native American populated regions, urban clinic populations, and centers serving migrant workers. This initiative also falls within the Health and Human Services Secretary Leavitt's 500-day plan to support community-based approaches to close the health care gap, particularly among racial and ethnic minority populations. The NCI Center to Reduce Cancer Health Disparities recently published a report titled, *Excess Cervical Cancer Mortality: A Marker for Low Access to Health Care in Poor Communities*. This report explores the components of the problem of excess cervical cancer mortality, identifies critical needs, and recommends specific actions to eliminate cervical cancer mortality disparities suffered by women in identified geographic regions of the nation and to improve health care for all underserved women.

Ovarian Cancer

Ovarian cancer remains the most deadly of the gynecologic cancers. Reasons for this continuing poor outcome include the nonspecific and late clinical presentation of ovarian cancer and the lack of reliable and cost efficient methods of early detection. Through the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial, the NCI is carrying out a major evaluation of blood tests for CA125 (a substance that suggests the presence of particular kinds of cancers, particularly ovarian cancer) and trans-vaginal

ultrasounds as screening procedures for early ovarian cancer detection. Currently, 70,000 women are receiving these screening methods through this trial. When we are able to validate a screening method for ovarian cancer, the early detection alone – even without changes in current standards of treatment - will have a substantial impact on public health.

Through the NCI Director's Challenge project, we have undertaken major studies into the molecular classification of ovarian cancer. This research, being conducted at the University of Pennsylvania, the University of Michigan, Memorial Sloan-Kettering Cancer Center, and the intramural Center for Cancer Research at NCI, has helped us begin to understand the biology of ovarian cancer. In addition, we have established five Specialized Programs of Research Excellence, also known as SPOREs, to foster translational research in ovarian cancer. One of the standard drugs used to treat ovarian cancer worldwide, Taxol®, was discovered and developed by NCI in collaboration with investigators across the United States and five other international partner countries.

NCI has also begun the Proteomics Ovarian Cancer Recurrence Monitoring Prospective Trial. Among the outcomes of this trial will be a repository of tissue samples for proteomic and other biomarker validation mechanisms for the determination of ovarian cancer recurrence. Accrual of patients for this project began in June. This is a multi-institutional partnership led by NCI's intramural Center for Cancer Research in collaboration with the SPOREs. This trial will explore the opportunities of the emerging field of proteomics, which is the systematic study of proteins in a particular cell, tissue, or

organism, as a way to detect early stages of ovarian cancer. Other collaborative ovarian cancer trials supported by NCI are studying the molecular characterization of newly diagnosed patients, prophylactic surgery for women at high risk for ovarian cancer, monitoring of breast cancer patients for mutations of the BRCA1 and/or BRCA2 gene (which make some women more susceptible to developing ovarian or breast cancer), as well as several trials that are looking for specific diagnostic signatures for malignancy versus benign or unaffected samples. In addition, NCI is currently sponsoring a national clinical trial aimed at evaluating a novel approach to ovarian cancer screening in women at increased genetic risk of ovarian cancer. While we recognize that more women diagnosed with this disease today are living longer, with a higher quality of life than they were twenty years ago, we also acknowledge that more work is needed to end the suffering and death that too many women still face. For women who have a high risk of ovarian cancer, which includes a family history of breast, ovarian, endometrial, or colon cancer and a known BRCA1 or BRCA2 mutation, we recommend that they receive two yearly exams plus CA125 monitoring as well as a yearly trans-vaginal ultrasound.

Endometrial Cancer

Endometrial cancer, also known as uterine cancer, is the most common gynecologic cancer in the United States, though not the most lethal. Around 90% of endometrial cancers are diagnosed in the early stages of cancer, with an overall 85% survival rate. Population studies indicate that endometrial cancer is one where incidence and mortality are greatly affected by being overweight or obese, as measured by having a high body mass index (BMI). These data suggest that maintaining a normal body weight could

prevent about one-half of endometrial cancers. However, the alarming trend of increasing BMI in the United States suggests that endometrial cancer may become more common.

NCI is able to utilize the latest technology to examine the genetic differences in endometrial cancers from women of normal and high BMI. The ability to monitor gene expression is at the heart of many research projects. This allows scientists to better understand the biology of risk, the knowledge of which will enable them to design and implement personalized preventive and therapeutic strategies. Through NCI's Clinical Trials Cooperative Groups, specifically the Gynecology Oncology Group (GOG), NCI has sponsored major anatomic and molecular staging studies of endometrial cancer. Additionally, the GOG has conducted landmark studies evaluating the roles of radiation, hormone therapy, and chemotherapy in women with endometrial cancer.

Education and Outreach Efforts to Address Gynecological Cancers

In addition to our research initiatives, NCI is also strongly committed to educational and outreach efforts in the area of gynecologic cancers and has fostered programs that reflect this commitment. NCI's Cancer Information Service (CIS) Partnership Program builds the capacity of partner organizations working in gynecologic cancer education to further the reach of their programs and services, with particular emphasis on medically underserved populations.

Our CIS Partnership Program, with more than 40 locations across the country, collaborates with local, State, and other Federal agencies. These collaborative cancer

control partnership efforts focus on organizational data sharing, program planning, implementation, and training through the use of evidenced-based or evidence-informed tools. CIS also collects data on projects that inform the design and development of NCI materials and services.

Cervical cancer is a priority emphasis for our CIS Program. Every office, from Maine to California, conducts outreach on cervical cancer topics. For example, to promote community services and resources available to urban American Indian women in Los Angeles, the CIS joined county and local officials to raise awareness and provide education about the importance of cervical cancer screening. The project marks the fifth year of a cooperative campaign to build a community-based, sustainable cancer control infrastructure.

NCI also lends program planning support to cancer control outreach and research initiatives. The Human Papillomavirus (HPV) Study at the University of Hawaii is designed to determine the co-factors that lead to persistent HPV infections, a cause of cervical cancer. Identification of these factors provides insight into the natural history of HPV infection, and may improve capacity to characterize women who are at greatest risk for cervical cancer. CIS provides support for this study in two critical areas: promotion and access. CIS is involved with development and implementation of a low-cost, culturally sensitive multimedia promotional campaign, and facilitates public access through use of NCI's 1-800-4-CANCER number to respond to questions from the public about cervical cancer. CIS then connects eligible callers to participating study centers.

For over a decade, our CIS Program and CDC's National Breast and Cervical Cancer Early Detection Program have been successfully collaborating to leverage the resources of both public health service agencies to better address the needs of underserved women. Each year, through NCI's 1-800-4-CANCER number, thousands of eligible women are referred to low-cost and no-cost CDC services.

CIS is also collaborating with the CDC, the Department of Agriculture, the American Cancer Society, and other NCI divisions to implement a national pilot program to increase cervical cancer screenings among never and/or rarely screened women in eight underserved Appalachian states. The initiative termed "TEAM-UP" has already effectively raised awareness in specific targeted areas and now the program is evaluating how much screening rates have improved. By uniting organizational resources toward a collective purpose, NCI and its partners design and implement programs with wider reach and greater impact on gynecologic cancer awareness, particularly cervical cancer education, outreach, and patient services.

NCI's Office of Education and Special Initiatives (OESI) aims to reduce the disparities related to cervical cancer with strategically planned educational programs. In addition to representing NCI on the Gynecologic Cancer Foundation's National Cervical Cancer Public Health Education Campaign, and participating in the TEAM UP initiative, OESI has an established cervical cancer education program. OESI works through intermediaries to reach rarely or never-screened women, works with Federal partners to facilitate women's access of care and participation in treatment decisions, and also

enhances provider education. As part of OESI's program strategies for FY 2006, NCI is updating and developing culturally appropriate materials that address screening, follow-up, and treatment for cervical cancer. We will also be conducting formative research, developing population profiles, and setting up advisory groups for target populations in states with higher rates of cervical cancer incidence and mortality. In collaboration with the Health Resources and Services Administration-funded Community Health Centers, the Association of Clinicians for the Underserved, Area Health Education Centers, and the Department of Agriculture Cooperative Extension Agents, NCI will continue to conduct needs assessments for educational outreach and will supplement existing gynecologic cancer educational efforts.

NCI has printed several educational publications on gynecologic cancers. Earlier this year we printed a new publication, *Understanding Cervical Changes: A Health Guide for Women*, which is intended to assist women and their clinicians to understand the treatment decisions involved with abnormal Pap tests. The same booklets in both Vietnamese and Spanish are currently under development. NCI, in conjunction with the Vietnamese Medical Association, will also be promoting and disseminating the educational brochure *Cervical Cancer Risk: What Vietnamese Women Should Know*. This brochure will be available in Vietnamese and English.

Our Physician Data Query (PDQ) cancer information database, available through the NCI website, is a public access vehicle for educational information on gynecologic cancers. Through PDQ, the general public can access expert-reviewed information about factors

that may influence the risk of developing cervical, ovarian, and uterine cancers and about the NCI research aimed at the prevention of these diseases.

Intramural and Collaborative Research Activities

Substantial advances have been made intramurally in the NCI Center for Cancer Research and the Division of Epidemiology and Genetics, and through collaborations with extramural colleagues who participate in the SPOREs network, the Cancer Genetic Network (CGN), and GOG clinical trials cooperative groups. Research advances made at NCI are also complemented by collaborations with private industry. In addition to the clinical trials done through the cooperative groups, NCI also sponsors Phase I and II clinical trials in gynecologic cancer through the NCI-designated Comprehensive Cancer Centers and a consortium of Canadian hospitals organized by the Princess Margaret Hospital in Toronto. NCI also co-sponsors the Gynecologic Cancer Intergroup (GCIG), which brings together investigators from all the clinical trials cooperative groups conducting trials for women with gynecologic cancers from around the world. The GCIG meets twice a year and under its umbrella, member groups have joined together to develop joint protocols and develop strategies for future research.

We are working to implement the recommendations of the Gynecological Cancer Progress Review Group, which will further strengthen our research in this area. We have also undertaken, in partnership with the American Cancer Society, the International Agency for Research on Cancer, the International Gynecologic Cancer Society, the International Union against Cancer, and the World Health Organization, a Global

Initiative on Women's Cancer (GLOW) so that we can lift the burden of gynecologic cancer from around the world. This international partnership will focus on reducing the global burden of gynecologic cancer, breast cancer, and tobacco use among women. GLOW will include public and professional education, the development of a needs-assessment database, and technical assistance to countries in the developed and developing world as they work to strengthen cancer control efforts, including prevention, screening, diagnosis, treatment, palliation, and end of life care.

Conclusion

Eliminating the suffering and death from gynecologic cancer is a priority for the NCI. There is no single approach, organization, or act that will bring about an end to each of these diseases. It will require a collaborative effort between Federal agencies, private industry, States, health professionals and patients. Efforts to increase healthy life potential through interdisciplinary and interagency collaboration are well underway. Public outreach efforts, comprehensive and novel prevention and early detection strategies, and scientific pursuits to improve the standard of practice will yield the end of suffering and death due to gynecologic cancers.

Thank you, Mr. Chairman, for giving me the opportunity to present this information to the Subcommittee. I will be happy to answer any questions you may have.