Ovarian Cancer Initiatives Facts

FROM THE DIVISION OF CANCER PREVENTION AND CONTROL 2008 / 2009

The Centers for Disease Control and Prevention (CDC) enhances the growing knowledge about ovarian cancer by initiating and conducting research projects with partners, colleagues, and national organizations to help identify factors related to early detection of the disease, treatment, and survivorship.

The Burden of Ovarian Cancer

Among women in the United States, ovarian cancer is the eighth most common cancer and the fifth leading cause of cancer death, after lung and bronchus, breast, colorectal, and pancreatic cancers.[*1]

In 2004, 20,095 women were diagnosed with ovarian cancer and 14,716 women died from the disease.[1] Ovarian cancer causes more deaths than any other cancer of the female reproductive system.[1] Additionally, mortality and incidence rates are higher for white women than for any other racial or ethnic group.[1] In the United States, about $2.2 billion (in 2004 dollars) is spent each year on the treatment of ovarian cancer.[2]

* *Incidence counts cover approximately 98% of the U.S. population. Death counts cover 100% of the U.S. population. Use caution in comparing incidence and death counts.*

Risk Reduction

Researchers have identified several factors that may decrease a woman's risk of developing ovarian cancer, including childbearing, using oral contraceptives, having a tubal ligation, removing both ovaries, and having a hysterectomy.[4,5] Although reproductive, demographic, and lifestyle factors affect risk of developing ovarian cancer, the single greatest risk factor for ovarian cancer is having a family history of the disease.[4,5]

Risk Factors

Although most cases of ovarian cancer occur in women aged 55 years or older, the disease can occur in younger women.[3] The most common form of ovarian cancer—epithelial—usually is diagnosed in women aged 40 years or older.[3] Risk for all forms of ovarian cancer increases with age.[4] A woman's risk also increases if one or more of the following is true for her:

- She has never given birth.
- She had trouble conceiving.[5]
- She has one or more close relatives (i.e., mother, daughter, or sister) who have had the disease.[4]

Some women may inherit genes that substantially increase their risk of developing ovarian cancer.[4] Women with a history of endometriosis, as well as breast, endometrial, or colorectal cancer, also have a greater chance of developing ovarian cancer.[5] Women with an Eastern European (Ashkenazi) Jewish background also may be at increased risk for ovarian cancer.[6]

Screening

CDC and other federal agencies follow the ovarian cancer screening recommendations set forth by the U.S. Preventive Services Task Force (USPSTF), which is supported by the Agency for Healthcare Research and Quality. USPSTF recommends against routine screening for ovarian cancer. There is no evidence that any screening test—the CA-125 blood test, ultrasound, or pelvic examination—reduces deaths from ovarian cancer.[7]

Accomplishments

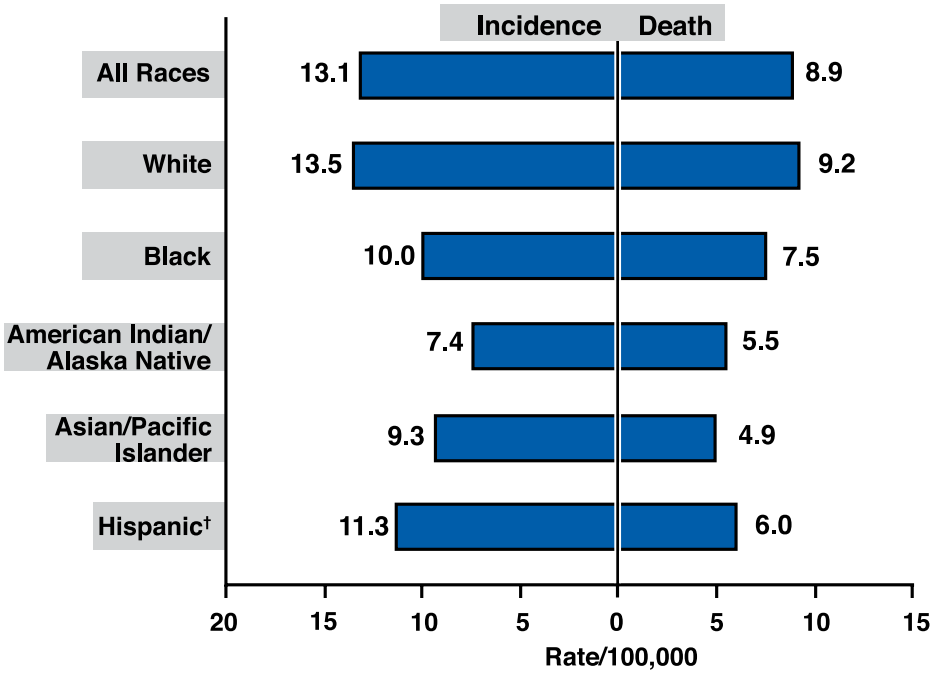
Based on workshops in 2001 and 2002, CDC developed research and public health initiatives for ovarian cancer. Outcomes of the workshop are available at www.cdc.gov/cancer/ovarian/pdf/CDC_Public_Health_Workshop_Nov2001.pdf.

Examples of completed projects include the following studies and publications:

- To investigate end-of-life care, CDC completed a study of women who died of ovarian cancer within three managed care organizations. The objective of this study was to describe end-of-life care and factors that may be associated with care for these women. The study consisted of a retrospective medical record review for the 6 months before death from ovarian cancer between 1995 and 2000. Research goals included assessment of:
  - Clinical signs and symptoms during the last 6 months of life and management of these symptoms.
  - Where the women lived during this time period.
  - What type of medical care was used.

Results from this study have contributed to the understanding of end-of-life care for women dying of ovarian cancer, including pain management, health care utilization, social support, and hospice use.

Cancer of the Ovary
Cancer Incidence and Death Rates* by Race and Ethnicity, United States, 2002–2004



*Rates are age-adjusted to the 2000 U.S. standard population (19 age groups - Census P25-1130). Incidence rates cover 93% of the U.S. population. Death rates cover 100% of the U.S. population.
†Hispanic is not mutually exclusive from white, black, Asian/Pacific Islander, and American Indian/Alaska Native.
Source: *United States Cancer Statistics: 2004 Incidence and Mortality.*

- To enhance knowledge about ovarian cancer incidence, staging, and treatment patterns and to assess the status of cancer care for ovarian cancer patients, the Ovarian Cancer Treatment Patterns and Outcomes study was funded. It was conducted with data collected through the National Program of Cancer Registries (NPCR), a cancer surveillance program administered by CDC's Division of Cancer Prevention and Control. Three population-based NPCR registries (in Maryland, New York, and California) collected demographic, tumor, treatment, and survival information on ovarian cancer patients diagnosed between 1997 and 2000. The study attempted to determine:
  - What surgical staging and debulking (removal of tumor) was conducted.
  - The specialty of the surgeon performing the procedure.
  - The success of the debulking process.

In addition, types of chemotherapy and radiation treatments were evaluated, and survival at 1 and 3 years post-diagnosis was assessed. The study collected information on more than 4,000 ovarian cancer patients and provided valuable information for the public health, scientific, and clinical communities on the status of ovarian cancer care.

CDC has published articles disseminated for the public, health professionals, and researchers:

- Eheman C, Peipins L, Wynn M, Ryerson B, Stewart SL, Coughlin SS, Hawkins N, Saraiya M. Development of a public health research program for ovarian cancer. *Journal of Women's Health* 2006;15(4):339–345.
- Goff BA, Matthews BJ, Wynn M, Muntz HG, Lishner DM, Baldwin LM. Ovarian cancer: Patterns of surgical care across the United States. *Gynecologic Oncology* 2006;103(2):383–390.
- Herrinton LJ, Neslund-Dudas C, Rolnick SJ, Hornbrook MC, Bachman DJ, Darbinian JA, Jackson JM, Coughlin SS. Complications at the end of life in ovarian cancer. *Journal of Pain and Symptom Management* 2007;34(3):237–243.
- Jackson JM, Rolnick SJ, Coughlin SS, Neslund-Dudas C, Hornbrook MC, Darbinian J, Bachman DJ, Herrinton LJ. Social support among women who died of ovarian cancer. *Supportive Care in Cancer* 2007;15(5):547–556.
- Rolnick SJ, Jackson J, Nelson WW, Butani A, Herrinton LJ, Hornbrook M, Neslund-Dudas C, Bachman DJ,

Coughlin SS. Pain management in the last six months of life among women who died of ovarian cancer. *Journal of Pain and Symptom Management* 2007;33(1):24–31.

- Ryerson AB, Eheman C, Burton J, McCall N, Blackman D, Subramanian S, Richardson LC. Symptoms, diagnoses, and time to key diagnostic procedures among older U.S. women with ovarian cancer. *Obstetrics and Gynecology* 2007;109(5):1053–1061.
- Stewart SL, Wike JM, Cress R, O'Malley C, Neloms S, Kahn AR, Schymura MJ. Ovarian cancer treatment patterns and outcomes in the United States: A National Program of Cancer Registries study. *Journal of Clinical Oncology* 2006;24(18S):15031.
- Wynn ML, Chang S, Peipins L. Temporal patterns of conditions and symptoms potentially associated with ovarian cancer. *Journal of Women's Health* 2007;16(7):971–986.

Ongoing Work

CDC's ongoing studies and projects related to ovarian cancer include:

- **Risk perception, worry, and use of ovarian cancer screening among women at average, elevated, and high risk of ovarian cancer.** To examine the determinants of perceived risk and their influence on screening behaviors, CDC is conducting a study of approximately 2,000 women at average, elevated, and high risk, who will be selected randomly from enrollees in a managed care organization with a racially diverse population.
- **Clinical practice in the follow-up of ovarian masses.** This study will search for findings that will help differentiate more effectively between women with potentially malignant masses who require immediate surgery, and women with benign abnormalities. Set in a managed care organization, the study will investigate 1) the symptoms or other conditions that lead to a diagnosis of an ovarian mass, 2) the radiologic characteristics of masses most likely to be malignant, and 3) the diagnostic pathways commonly followed.
- ***Inside Knowledge: Get the Facts About Gynecologic Cancer.*** In collaboration with the Department of Health and Human Services' Office on Women's Health, CDC established the *Inside Knowledge: Get the Facts About Gynecologic Cancer* campaign (www.cdc.gov/cancer/knowledge) to increase awareness and knowledge among women and health care providers about the five major gynecologic cancers: cervical, ovarian, uterine, vaginal, and vulvar. This national campaign is supported by the Gynecologic Cancer Education and Awareness Act of 2005, or Johanna's Law, which was unanimously passed by the U.S. House and Senate (109th Congress) in December of 2006, and signed into law by President George W. Bush on January 12, 2007.

- **General practitioners' awareness and adherence to ovarian cancer screening guidelines.** This study aims to evaluate physicians' self-reported ovarian cancer screening and testing practices and determine physician awareness of the published guidelines regarding the lack of evidence for routine ovarian cancer screening. The study also assesses physicians' adherence to published guidelines on ovarian cancer screening among a nationally representative sample of practicing primary care physicians and gynecologists.
- **Volume of ovarian cancer surgery cases by physician and hospital using state hospital discharge data.** This study is one of two efforts focused on investigating the patterns of primary surgical care for ovarian cancer.
- **Frequency of symptoms in women 65 years and older with ovarian cancer as compared to a matched cohort of cancer-free women.** Symptoms which have been identified previously among ovarian cancer patients have been considered non-specific; however, this analysis will allow a comparison of the frequencies of such symptoms in ovarian cancer cases when compared to the general population of women in the same age group.
- **Diagnostic care referral patterns for women with ovarian cancer.** Because the impact of specialty training on the earlier evaluation or diagnosis of ovarian cancer symptoms is unclear, CDC is assessing whether women are diagnosed earlier because they have certain symptoms, or because they are more likely to see a gynecologist or other specialist who may be more likely to consider ovarian cancer in the differential diagnosis.
- **Relationship between recorded symptoms, time to diagnosis, and ovarian cancer histology: Surveillance, Epidemiology, and End Results (SEER) Medicare, 1995–2002.** The purpose of this analysis is to explore whether previous findings regarding the

prevalence, type, and duration of symptoms among women with early-stage disease hold true for all histological types. Since 5-year relative survival and stage of diagnosis vary by histological type of ovarian cancer, investigating the relationship between specific ovarian cancer histology, reported symptoms, and time to diagnosis will provide information about the potential benefits of earlier detection through better recognition and follow-up of symptoms.

- **Patterns of diagnostic care among women being surgically evaluated for ovarian cancer.** This study uses data from the SEER program and Medicare claims. Linking these two data sources results in a unique population-based source of information that can be used for an array of epidemiologic and health-services research. This study includes data from 1995 to 2000 for women aged 65 or older who were diagnosed with ovarian cancer.

Additionally, through its National Comprehensive Cancer Control Program (NCCCP), CDC funds ovarian cancer-related projects in California, Florida, Michigan, New York, Pennsylvania, Texas, and West Virginia. These projects are working to develop ovarian cancer health messages for the general public and for health care providers.

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