

Activities Update Surveillance Research Team Cancer Surveillance Branch

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National Program of Cancer Registries
Program Director's Meeting
Atlanta, GA
May 15, 2007



Surveillance Research Team (SRT) Mission

To work within the goals of CSB to:

- Design, conduct, and facilitate cancer surveillance research
- Build capacity among NPCR registries for cancer registry data use for cancer surveillance, prevention, and control and for surveillance research activities
- Collaborate with state partners to monitor and describe cancer burden at the state, regional, and national levels, and for special populations



Surveillance Research Team Activity Areas

- Use of NPCR and other cancer surveillance data for research and reports
- Enhancement of the NPCR cancer surveillance data
- Use of cancer surveillance data for planning and evaluating cancer prevention and control programs
- Evaluation of NPCR program, including assessment of quality of surveillance data



Projects and Activities

- New projects
 - Interactive Cancer Atlas
 - Geocoding Server
- Existing projects
 - Patterns of Care Studies
 - POC-1 (Breast, Colon and Prostate Cancer)
 - POC- Ovarian Cancer
 - POC-BP (Breast and Prostate Cancer)
 - Cancer Mortality study
 - CanCORS-Medicare Linkage
- USCS reports and other publications



USCS Interactive Cancer Atlas

- Collaboration with Pennsylvania State University to develop interactive atlas software for mapping cancer data.
- Software, documentation, and training will be provided to NPCR partner programs for posting local data.



Geocoding Server

- Develop a centralized, standardized geocoding server for NPCR partners.
- The server will be developed utilizing input regarding best practices.
- Evaluate the performance and cost-effectiveness of this solution.



Patterns of Care Studies

- ◆ Institute of Medicine, 2000
 - Cancer data systems, such as NPCR, be used for assessing quality of care
- ◆ NPCR initiated patterns of care studies
 - Assess the quality and completeness of registry data on stage and treatment
 - Enhance capacity of NPCR registries to use registry data to improve cancer care



POC -1

- ◆ Initiated in 2003
- ◆ Data collection ended last year
- ◆ To date from the study group:
 - One publication
 - *Cancer Causes and Control*, 15:1057-66, 2004
 - Nine oral presentations
 - Four posters



POC 1 - Planned Manuscripts

Topic	Lead Author
Breast cancer treatment	Xiaocheng Wu, MD, MPH, CTR (Louisiana Tumor Registry)
Colon cancer treatment	Rosemary Cress, DrPH (California Cancer Registry)
Prostate cancer treatment	Maria J. Schymura, PhD (New York State Cancer Registry)
Data quality	Robert R. (Bob) German, DrPH, MPH (CDC-NPCR)
SES and treatment	Tim Byers, MD, MPH (University of Colorado)



POC 1 - Planned Manuscripts

Topic	Lead Author
Study overview	Linda Alley, PhD, RN (CDC-NPCR)
Lessons learned: General	Linda Alley, PhD, RN (CDC-NPCR)
Lessons learned: Capacity	Amy Kahn, MS, CTR (New York State Cancer Registry)
Lessons learned: Records access	John Fulton, PhD (Rhode Island Cancer Registry)



Ovarian Cancer Treatment Patterns and Outcomes

- Collaborative study
- Funded by CDC's NPCR
- Three Participating Registries
 - California Cancer Registry
 - New York State Cancer Registry
 - Maryland Cancer Registry



Ovarian PoC : Research Objectives

- ◆ Determine first course of treatment received
 - Specialty of treating physicians
- ◆ Treatment outcomes
 - 1- and 3- year survival
- ◆ Determine completeness and accuracy of staging procedures
- ◆ Determine what proportion of patients received standard of care (1994 NIH Consensus Statement, NCI PDQ)



Ovarian POC : Study Population and Design

- ◆ First primary invasive ovarian cancer diagnosed 1998-2000 (in some cases, 1997)
- ◆ Sample size of approx 1500 cases/registry
- ◆ Re-abstraction of charts
- ◆ Information collected
 - Patient
 - Tumor
 - Treatment
 - Physicians/Facilities



Ovarian POC: Preliminary Results

Time-Dependent Cox model Predicting 3-year All-Cause Survival

Characteristic	Wald χ^2	DF	P-value	Hazard Ratio (95% CI)
Histology Type	116.99	3	<.0001	
Mucinous vs. Serous				2.75 (2.24-3.38)
Mucinous vs. Other Epithelial				1.90 (1.55-2.32)
Mucinous vs. All Other				1.45 (1.14-1.85)
Race	43.25	3	<.0001	
Black NH vs. White NH				1.53 (1.31-1.79)
Other NH vs. White NH				0.75 (0.59-0.96)
Hispanic vs. White NH				0.77 (0.60-0.99)



Ovarian POC: Preliminary Results

Time-Dependent Cox model Predicting 3-year All-Cause Survival

Characteristic	Wald χ^2	DF	P-value	Hazard Ratio (95% CI)
Grade	47.92	4	<.0001	
II vs. I				1.47 (1.08-2.01)
III vs. I				1.69 (1.26-2.27)
IV vs. I				1.94 (1.37-2.74)
Unknown vs I				2.27 (1.68-3.07)
Stage	315.86	2	<.0001	
Regional vs. Local				3.13 (2.26-4.35)
Distant vs. Local				9.09 (6.96-11.8)
Surgery†	69.85	1	<.0001	0.56 (0.49-0.65)
Chemotherapy†	54.55	3	<.0001	

† Surgery and chemotherapy indicators were modeled as time-dependent covariates.



Ovarian POC - Planned Manuscripts

Topic	Lead Author
Demographic and clinical factors associated with mucinous adenocarcinoma of the ovary	Sherri Stewart (CDC-NPCR)
Surgical staging for ovarian cancer	Rosemary Cress (California Cancer Registry)
Survival following ovarian cancer	O'Malley (California Cancer Registry)
Patient and provider factors associated with treatment for ovarian cancer	Amy Kahn (New York State Cancer Registry)



POC- BP: Background

- ◆ Study of treatment patterns and quality of cancer data
- ◆ Third and most comprehensive POC study from CDC-NPCR
- ◆ Involves cancer registries in seven states
 - CA (two regional), GA, KY, LA, NC, MN, WI
- ◆ Approximately 28,000 patients





POC-BP: Accomplishments

- ◆ **Accomplishments**
 - Two group meetings in Atlanta, GA
 - Study protocol composed
 - Software for study developed
 - IRB approvals/reviews obtained
 - Pilot study (testing) has begun
- ◆ **Next Steps**
 - Conclude pilot study
 - Begin and monitor formal data collection





Cancer Mortality Study

- ◆ Purpose:
 - Characterize the accuracy of cancer mortality measured by death certificates under ICD-10
- ◆ Registries funded
 - California
 - Colorado
 - Idaho



Cancer Mortality Study - Objectives

- ◆ Primary Objective
 - Estimate the overall and site-specific agreement between the primary site of cancer in the cancer registry and the site indicated as the underlying cause of death (UCD) on the death certificate
- ◆ Secondary Objectives
 - Estimate the overall and site-specific agreement between the primary site of cancer in the cancer registry data and the site indicated as either an UCD or contributing cause of death



Cancer Mortality Study - Objective

- ◆ Secondary Objectives (cont.)
 - Estimate the overall agreement among individuals who have been diagnosed with multiple primary cancers
 - Estimate overall and site-specific agreement of information on tumor behavior of the tumor listed in the cancer registry compared to the tumor behavior listed on the death certificate



Cancer Mortality Study - Methods

- ◆ Retrospective
 - Death certificate data from 2002-2004 compared to cancer registry data from 1993-2004
 - Calculate a confirmation rate
- ◆ Prospective: Two-arms
 - Examine the effects ICD-10 revision by restricting deaths to 1999-2004
 - Deaths from 1993-2004
 - Calculate a detection rate



Cancer Mortality Study – Analysis Plan

- ◆ Primary Analysis:
 - Evaluate cancer as the underlying cause of death among individuals with a single primary and those with multiple primaries
- ◆ Supplemental Analysis:
 - Cause-specific cancer survival by census tract poverty level
 - Multivariate analyses for confirmation and detection rates
 - Completeness and Accuracy of text information on the death certificate

CanCORS-Medicare Linkage

- ◆ Year 2
 - Two NPCR registries involved (AL, NC)
 - Contractor was identified to perform linkage
 - IRB approvals were obtained
 - Linkage to begin summer 2007
 - First analytic file in 2008
 - Manuscripts to follow

CanCORS-Medicare Data

- ◆ Assessing the generalizability of the CanCORS study findings using CanCORS-Medicare linked data (CDC - CSB)
- ◆ Effect if physician recommendations on hospice utilization among Medicare beneficiaries diagnosed with metastatic lung and colorectal cancer (CDC - EARB)
- ◆ Validation of chemotherapy and radiation therapy dose information found in the Medicare claims data (Univ of Minnesota)
- ◆ The effects of local area provider supply and access on adjuvant treatment decisions for lung and colorectal cancers (Univ of Iowa)



CanCORS-Medicare Data

- ◆ Combining data on adjuvant therapy and comorbidities from medical records, patient surveys, cancer registries, and Medicare claims (Harvard Medical School)
- ◆ Examining the concordance between Medicare claims and medical record documentation of clinical outcomes (UCLA)
- ◆ Coordination of surveillance after care (Harvard Medical School)
- ◆ Medical care burden of lung, colon, and rectal cancers: system data issues (Kaiser Permanente)



NPCR Clinical Data Writing Group - Update

- ◆ Goals
 - To further disseminate NPCR data by publishing in peer-reviewed journals
 - To provide additional national data, not included in USCS, geared toward clinical audiences
 - To further investigate data quality in preparation for data release
- ◆ A session on "Promoting the use of Cancer Registry Data" is scheduled for Thursday morning – led by Sherri Stewart



NPCR Clinical Data Writing Group - Update

- ◆ Analytic file created containing 1998-2003 data
- ◆ Analyses vary by year (1998-2003, 1999-2003, 2001-2003)
 - 83.1% U.S. population coverage for 1998-2003
 - 86.4% population coverage for 1999-2003
 - 90.3% population coverage for 2001-2003
- ◆ Several analyses completed or in process
- ◆ On going opportunities for state staff to participate in additional analyses

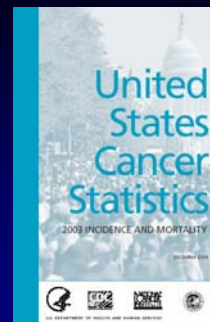


NPCR Clinical Data Writing Group - Update

Topic	Lead Author	Status
Breast cancer incidence rate decline	Sherri Stewart	In press
Childhood cancer incidence	Li	Submitted
Esophageal incidence by histology	Trevor	Submitted
Fallopian tube cancer incidence	Sherri Stewart	Submitted
Soft tissue sarcoma incidence	Stephanie Foster	In process
Uterine Cancer incidence	Susan Sabatino	In process
Ovarian Cancer incidence	Sherri Stewart	In process
Head and neck cancer incidence	Cheryll Cardinez	In process



USCS – 2003 Incidence and Mortality

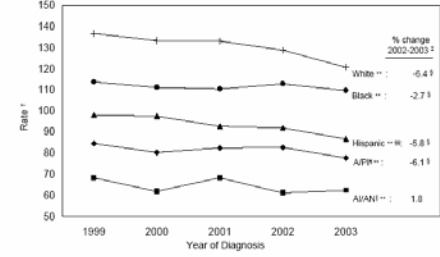


Breast cancer rate decline

- To be published in MMWR Weekly Report June 8
- Manuscript and podcast will be available on NPCR website
- Only report on this topic to include state-specific changes in incidence data
- Major findings:
 - Age-adjusted incidence rates decreased significantly for all women aged 50 years and older every year from 1999-2003, with the largest decrease occurring from 2002 to 2003
 - Rates of invasive breast cancer by stage at diagnosis declined overall from 1999 to 2003, with particularly large declines in rates from 2002 to 2003 in localized stage



Figure 1. Age-Adjusted Annual Invasive Breast Cancer Incidence Rates, by Race and Ethnicity, United States*, 1999-2003.



*Data are from the National Program of Cancer Registries and 13 surveillance, epidemiology and final results database registries that meet data quality criteria for all invasive breast sites combined according to United States Cancer Statistics (1) for all years (1999-2003). These sites cover 94.4% of the U.S. population. Incidence rates are per 100,000 persons and are age-adjusted to the 2000 U.S. standard population (1) by age group - Census P20-112C. †The percent change in the rate from 2002 to 2003 (NPCR†/SEER*1999-2003). Negative values indicate a decrease in rate and positive values indicate an increase in rate. ‡ Health status. † Statistically significant based on a p-value determined from testing the rate ratio for the incidence rate in 2003 compared with the incidence rate in 2002. ‡ Hispanic origin is not exclusive from race categories (white, black, A.R.I.).



Figure 2. Relative percent change of age-adjusted incidence rate* of invasive female breast cancer by state, United States*, 2002-2003.



*Incidence rates are per 100,000 persons and are age-adjusted to the 2000 U.S. standard population (1) by age group - Census P20-112C. † Data are from 13 National Program of Cancer Registries and 13 surveillance, epidemiology and final results database registries that meet data quality criteria for all invasive breast sites combined according to United States Cancer Statistics (1) for all years (1999-2003). These sites cover 94.4% of the U.S. population. ‡ The relative percent change in the rate from 2002 to 2003 (NPCR†/SEER*1999-2003). Negative values indicate a decrease in rate and positive values indicate an increase in rate. † Statistically significant based on a p-value determined from testing the rate ratio for the incidence rate in 2003 compared with the incidence rate in 2002. ‡ Relative percent change not statistically significant for the District of Columbia (not shown).



A Population-Based Study of Colorectal Cancer History in the United States, 1998-2001

Sherril L. Stewart, M.D.¹
Robert M. White, M.D.²
Robert M. White, M.D.²
Robert M. White, M.D.²

BACKGROUND: Changes in the incidence rates for the colorectal cancers and the proportion of colorectal cancer patients who have adenomatous polyps... **CONCLUSIONS:** The incidence rates for colorectal cancer... **KEY WORDS:** colorectal cancer, adenomatous polyps, surveillance, epidemiology, final results database registries

Colorectal Cancer in U.S. Adults Younger than 50 Years of Age, 1998-2001

Sherril L. Stewart, M.D.¹
Robert M. White, M.D.²
Robert M. White, M.D.²
Robert M. White, M.D.²

BACKGROUND: Colorectal cancer (CRC) incidence rates are increasing among... **CONCLUSIONS:** Young U.S. adults with colorectal cancer... **KEY WORDS:** colorectal cancer, surveillance, epidemiology, final results database registries

Obesity Is Negatively Associated with Prostate-Specific Antigen in U.S. Men, 2001-2004

David M. Werny,¹ Trevor Thompson,² Mona Saayya,³ David Freedman,⁴ George J. Kattilo,⁵ Robert E. Comstock,⁶ and Mark Wawer,⁷

OBJECTIVE: To examine the association between obesity and prostate-specific antigen (PSA) levels in U.S. men... **CONCLUSIONS:** Obesity is negatively associated with PSA levels... **KEY WORDS:** obesity, prostate-specific antigen, surveillance, epidemiology, final results database registries

Health Insurance Coverage and Cost Barriers to Needed Medical Care Among U.S. Adult Cancer Survivors Age <65 Years

Robert M. White, M.D.¹
Robert M. White, M.D.²
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BACKGROUND: Health insurance coverage and cost barriers to needed medical care... **CONCLUSIONS:** Health insurance coverage and cost barriers... **KEY WORDS:** health insurance, cost barriers, cancer survivors, surveillance, epidemiology, final results database registries

Descriptive Epidemiology of Colorectal Cancer in the United States, 1998-2001

Sherril L. Stewart, M.D.¹
Robert M. White, M.D.²
Robert M. White, M.D.²
Robert M. White, M.D.²

BACKGROUND: Colorectal cancer (CRC) is the third most common cancer... **CONCLUSIONS:** The incidence rates for colorectal cancer... **KEY WORDS:** colorectal cancer, surveillance, epidemiology, final results database registries

Case Completeness and Data Accuracy in the Centers for Disease Control and Prevention's National Program of Cancer Registries

Robert M. White, M.D.¹
Robert M. White, M.D.²
Robert M. White, M.D.²
Robert M. White, M.D.²

BACKGROUND: Data from cancer registries (CR) and data quality... **CONCLUSIONS:** The completeness and data accuracy... **KEY WORDS:** cancer registries, data quality, surveillance, epidemiology, final results database registries

Foreword: Promoting the Use of Registry-Based National Cancer Surveillance Data for Colorectal Cancer Prevention and Control

Sherril L. Stewart, M.D.¹
Robert M. White, M.D.²
Robert M. White, M.D.²
Robert M. White, M.D.²

CONCLUSIONS: The use of registry-based national cancer surveillance data... **KEY WORDS:** cancer registries, surveillance, epidemiology, final results database registries

Surveillance Research Team

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