Rural Cancer: Data, Disparities, and Determination - Insights from the CDC MMWR Rural Health Series

• Q & A to follow – Submit questions using Q&A area

• Slides are available at https://www.ruralhealthinfo.org/webinars/cancer-incidence-and-death

• Technical difficulties please call 866-229-3239
Cancer Incidence and Mortality in Nonmetropolitan and Metropolitan Counties

S. Jane Henley, MSPH
Epidemiologist, Cancer Surveillance Branch, Division of Cancer Prevention and Control

Rural Health Information Hub Webinar
August 30, 2017
Methods

Cancer incidence and death data
• CDC’s National Program of Cancer Registries and NCI’s SEER Program.
• CDC’s NCHS National Vital Statistics System.

Current rates and trends
• Described trends using average annual percentage change (AAPC).
• Compared differences by sex; age; race/ethnicity; U.S. Census region; and cancer site (most common types).
County Classification

USDA Economic Research Service Rural-Urban Continuum

- nonmetropolitan (including rural and urban)
- metropolitan (including <1 million population and ≥1 million population)

Source: MMWR Surveillance Summary 2017; 66(14).

Overall incidence rates were slightly lower and decreased at about the same rate

Source: MMWR Surveillance Summary 2017; 66(14).
Overall death rates were **higher** and **decreased at a slower rate**

Rates for cancers related to tobacco (such as **lung**) were **higher** and **decreased slower**

Source: MMWR Surveillance Summary 2017; 66(14).
Rates for colorectal cancer (which can be prevented by screening) were higher and decreased slower.

Breast cancer incidence rates were lower and stable; death rates were similar but decreased slower.
Lower prostate cancer incidence rates but slightly higher death rates; differences persisted over time.

Higher incidence and death rates for cervical cancer.
Why are there differences?

• Differences in risk factors
  • More people smoke cigarettes and use smokeless tobacco products
  • More people are exposed to secondhand smoke
  • Higher prevalence of obesity
  • Lower proportion get enough physical activity

• Differences in vaccination and cancer screening
  • Lower use of colorectal cancer screening
  • Lower use of cervical cancer screening
  • Fewer youth get HPV vaccination

• Differences in diagnostic testing and treatment
  • Have to travel longer distances to get care
  • Fewer available resources (staff and equipment)

Geography should not be a risk factor

• Geography alone can't predict cancer risk, but it can impact prevention, diagnosis, and treatment opportunities.

• Targeted public health efforts and interventions can close the growing gap between rural and urban Americans.
What can be done?

Healthcare providers in rural areas can:

- Improve healthy behaviors that reduce cancer risk
- Increase use of vaccinations and cancer screening tests that prevent cancer or detect it early
- Participate in state-level comprehensive cancer control coalitions

Improve healthy behaviors that reduce cancer risk

- Prevent tobacco initiation and promote tobacco cessation.
- Eliminate secondhand smoke exposure.
- Limit excessive exposure to ultraviolet rays from the sun and tanning beds.
- Encourage physical activity and healthy eating to prevent and reduce obesity.
- Encourage adherence to alcohol use guidelines.
Increase use of vaccinations and cancer screening tests that prevent cancer or detect it early

- Recommend patients receive vaccination against cancer-related infectious diseases such as human papillomavirus (HPV) and hepatitis B virus.

- Recommend appropriate cancer screening tests such as Pap tests, mammograms, and colonoscopy or FIT tests.

Participate in state-level comprehensive cancer control coalitions

Support comprehensive cancer control programs to implement evidence-based activities that:
- Encourage people to make healthy choices.
- Educate people about cancer screening tests.
- Increase access to good cancer care and reduce health disparities.
- Make sure people who survive cancer live well.
Everyone, regardless of where they live, should be able to benefit from activities proven to promote healthy behaviors, increase screening and vaccination rates, and receive timely and appropriate cancer care.

Go to the official federal source of cancer prevention information: www.cdc.gov/cancer

Follow DCPC Online!
@CDC_Cancer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Background and Outline

• Development of NCI’s Rural Cancer Control Research Initiative
  – Kick Off: May 18, 2016 NCI blog

• Co-sponsored meetings to date:
  – Cancer in AI/AN Populations, Nov. 10, 2016, OKC
  – Rural Cancer Control, May 4-5, 2017, Memphis

• Scientific Challenges
• Portfolio Examples
• NCI Communication Services
• Next Steps
Scientific Challenges

Heterogeneity of “Rural”
• Example: rural Alaska vs. rural Mississippi
• “Grain size” of counties (and, therefore, data sources):
  – 3,142 total; Iowa has 99; Arizona has 15

Structural Factors that Affect both Research and Practice
• Access to care
• Limited access to clinical trials
• Lower physician density
• Distance to facilities – transportation
• Poor telecommunication infrastructure for telemedicine/telehealth
• SES and other area-level correlates and confounders

Cultural Factors
• Trust in institutions, medical providers, and government-sponsored programs
• Non-traditional comorbidities such as opiate drug use
• Cancer-related fatalism

One of Many Analytic Challenges: “Small Data”

• When the size, dispersion, or accessibility of the population may make it difficult to obtain adequate sample sizes for specific research questions in cancer control and prevention

• Examples include racial or ethnic groups (e.g., Honduran Latin Americans), refugees, LGBT, and low income subpopulations

• The “Small Data” problem is a barrier to addressing persistent unsolved research and public health challenges
Save the date - Small Data/Population NASEM Workshop

Steering Committee: Graham Colditz (University of Washington St Louis - Chair); Graham Kalton (Westat); Lance Waller (Emory); Jan Probst (University of South Carolina); Jim Allen (University of Minnesota)

NCI Contact: Shobha Srinivasan (ss688k@nih.gov)

Date: November 30 – December 1, 2017
Location: National Academies of Sciences
500 Fifth Street NW, Washington, DC 20001

NCI’s Role as a Research Agency

• Leverage extensive research infrastructure, grant portfolio and scientific community
• Encourage more grant applications focused on rural populations
• Extend reach of clinical trials programs
• Engage NCI-funded cancer centers (n=69) in rural cancer control research (community outreach and engagement requirement)
• Support partnerships and training of new investigators
Examples of funded NCI R01 Grants

Implementing Cancer Prevention Using Patient-Provider Clinical Decision Support.
P1: Thomas Edward Elliott, Health Partners Institute

Comparative effectiveness in interventions to improve screening among rural women.
P1: Electra Paskett, Ohio State University

Enhancing prevention pathways towards tribal colorectal health.
P1: Shiraz Mishra, University of New Mexico Health Sciences Center

Community intervention to reduce tobacco use among pregnant Alaska Native women.
P1: Christi Patten, Mayo Clinic Rochester

NCI Center for Reducing Cancer Health Disparities: U54 & P20 Grants with a Rural Component

<table>
<thead>
<tr>
<th>Grant #</th>
<th>Institution</th>
<th>Principal Investigator (PI)</th>
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<tr>
<td>U54CA202995</td>
<td>Northeastern Illinois University</td>
<td>Christina Ciecierski</td>
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<td>Northwestern University at Chicago</td>
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<td>Graham Colditz Laurent Brard</td>
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<tr>
<td>P20CA202907/08</td>
<td>University of Illinois at Chicago Governors State University</td>
<td>Catherine Balthazar Robert Winn</td>
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<tr>
<td>P20CA202921/23</td>
<td>University of Oklahoma Norman Cherokee Nation</td>
<td>Paul Spicer Sohail Khan</td>
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National Community Oncology Research Program (NCORP) Overview

- A national NCI-supported network that brings cancer prevention clinical trials and cancer care delivery research (CCDR) studies to local communities
  - designs and conducts cancer prevention, control, screening, and post-treatment surveillance clinical trials;
  - designs and conducts cancer care delivery research (CCDR) studies;
  - participates in treatment and imaging clinical trials conducted by the NCI National Clinical Trials Network (NCTN); and
  - integrates health disparity questions into its research priorities.

NCORP Community Site, MU Community Site and Research Bases Geographic and Organizational Diversity

- Investigators (3,919)
- Components/Subcomponents (965)
Population Health Assessment in NCI Cancer Center Catchment Areas

- Administrative supplement program to NCI-designated (P30) Cancer Centers
- To enhance cancer centers’ capacities to acquire, aggregate, and integrate population data from multiple sources in order to facilitate community-focused, comprehensive cancer control activities
- 15 awards in FY16
  - Ohio State University Comprehensive Cancer Center (Electra Paskett)
  - Abramson Cancer Center - University of Pennsylvania (Karen Slone)
  - University of Pittsburgh Cancer Institute (Jian-Min Yuan)
  - Albert Einstein Cancer Center (Bruce Flapkin)
  - Duke Cancer Institute (Nadine Barrett)
  - University of Hawaii Cancer Center [Kevin Cassel/Bye-Ryoon Lee]
  - Simon Cancer Center - Indiana University (David Haggstrom)
  - Fox Chase Cancer Center (Nestor Fornola)
  - Roswell Park Cancer (Elisabeth Rouxhard)
  - Norris Cotton Cancer Center - Dartmouth College (Tracy Onega)
  - Markey Cancer Center - University of Kentucky (Robin Vanderpool/Hin Huang)
  - Helen Diller Family Comprehensive Cancer Center - UCSF (Robert Hiatt)
  - Memorial-Sloan Kettering Cancer Center (Joseph Osborne)
  - Dana-Farber Cancer Institute - Harvard University (K. V. Viswanath)
  - MD Anderson Cancer Center - The University of Texas (Sanjay Shete)

Includes a Rural Health Working Group
Enabling Access to High-Quality Cancer Information:
The Cancer Information Service

- 1-800-4CANCER (1-800-422-6237)
- M-F 9am-9pm ET
- https://livehelp.cancer.gov
- E-mail form: https://www.cancer.gov/contact/email-us
- More info: https://www.cancer.gov/contact/contact-center

Increasing the Reach of Cessation Support:
Smokefree.gov and Quitlines

800-QUIT-NOW (800-784-8669)
Save the Date!

Accelerating Research in Rural Cancer Control
Conference

Natcher Conference Center
National Institutes of Health
Bethesda, MD

May 30-31, 2018
Program Committee Chair: Robin Vanderpool, University of Kentucky
https://cancercontrol.cancer.gov/research-emphasis/rural.html

A Prevention Program to Improve Access to
Colorectal, Breast and Cervical Cancer Screenings for
Low-income and Underserved Persons in Texas

Dr. Jane N. Bolin, PhD, JD, BSN
Professor & Director
Southwest Rural Health Research Center
Texas A&M School of Public Health
August 30, 2017
**Funding Credits**

- **Cancer Prevention & Research Institute of Texas**
  - Grant PP110176: $2.78M over 3.5 years for Colorectal Screening, Training, Education and Prevention (09/2011 - 02/2015).
  - Grant PP150025: $1.5M over 3 years for Continuation/Expansion of the Colorectal Cancer Screening Program (12/2014 – 11/2017).
  - Grant PP160048: $300,000 over 2 years for Dissemination of Tools to Support Community Health Workers working in Cancer Screening (12/2015 – 11/2017).

**Investigators & Collaborators**

**Principal Investigator:** David McClellan, MD, A&M College of Medicine  
**Co-PI:** Jane N. Bolin, RN, JD, PhD, A&M School of Public Health  
**Co-Investigators:**

- (Women's Health Grant) Anna Lichorad, MD, TAMHSC College of Medicine  
- (Colorectal Screening Grants) Robert Pope, MD, TAMHSC College of Medicine  
- (Women's Health Grant) Cynthia Weston, FNP, DNP, TAMHSC College of Nursing
What is Texas C-STEP?

• The Texas Cancer Screening, Training, Education and Prevention Program (Texas C-STEP):

• Provides critical colorectal, breast and cervical cancer safety-net services, such as cancer screenings and related diagnostics and prevention education to uninsured, underserved and low-income residents of Texas

• Provides training for:
  • Family Medicine Residents (FMRs)
  • Bachelor of Science Nurses (BSNs)
  • Family Nurse Practitioners (FNPs)
  • Graduate Students in Public Health (PhD & MPH)
  • Community Health Workers (CHWs)

Goals of Texas C-STEP?

• Increase access to evidence-based preventative cancer screenings for underserved, safety-net patients

• Increase the number of providers trained to perform cancer screening and diagnostic procedures

• Utilize community health workers, (CHW), to provide culturally-sensitive education, referrals, and clinical services

• Train the next generation of physicians, nurses, CHWs and public health professionals in colorectal, breast and cervical cancer prevention, screening and education
17-county region in Central Texas.

12 of these counties are considered rural.


Texas Breast Cancer Incidence & Mortality by County

4 of 17 C-STEP target counties have incidence rates that are higher than the state average

12 of 17 C-STEP target counties have mortality rates that are higher than the state average

Age-Adjusted Invasive Cancer Incidence Rates in Texas, Breast, 2010-2014, By County
Texas Colorectal Cancer **Incidence & Mortality** by County

11 of 17 C-STEP target counties have incidence rates that are higher than the state average.

9 of 17 C-STEP target counties have mortality rates that are higher than the state average.

**Results: C-STEP Colonoscopy Services**

(12/2011 – 05/2017)

- 1,941 total colonoscopy screenings provided to 1,870 people, with 1,455 CPRIT-funded procedures
- 33% of colonoscopies had abnormal pathology
- 24.7% of all colonoscopies revealed cancer precursors
- 17 people were diagnosed with colorectal cancers
Results: Demographics of CPRIT Funded Screened Individuals

Individuals funded by race/ethnicity

- Caucasian/White: 34%
- Hispanic/Latino: 42%
- African American/Black: 20%
- Other: 4%

n=1870

A&M Family Residency Endoscopy Training
First 1100 colonoscopies

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<tr>
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<th>C-STEP Result</th>
<th>ASGE recommends</th>
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<tr>
<td>Cecum attained (%)</td>
<td>96%</td>
<td>≥95</td>
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<tr>
<td>Overall adenoma detection rate (%)</td>
<td>27%</td>
<td>≥20</td>
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<tr>
<td>Adenoma detection rate among females &gt;50 years (%)</td>
<td>26%</td>
<td>≥15</td>
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<tr>
<td>Adenoma detection rate among males &gt;50 years (%)</td>
<td>38%</td>
<td>≥25</td>
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<tr>
<td>Mean total withdrawal time (minutes)</td>
<td>18</td>
<td>≥6</td>
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<tr>
<td>Perforation rate</td>
<td>1 in 1100</td>
<td>1:1000</td>
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Breast & Cervical Cancer Screening Grant

**Breast Cancer Screenings:**
• Mammograms
• Clinical breast exams
• Advanced diagnostics, when warranted, including ultrasounds, and breast biopsies

**Cervical Cancer Screenings**
• HPV vaccinations
• Pap tests
• Advanced diagnostics, when warranted, including colposcopies, and Loop Electrosurgical Excision Procedures (LEEPs)
C-STEP Women’s Health Clinical Services  
(Years 1 & 2: 3/1/14 – 5/31/17)

Total Women’s Health Services first 41 months: N= 2,308  
(Serving poor, uninsured women in Central Texas)

• Clinical Breast Exams: 373
• Mammograms: 977
• Breast Ultrasounds: 203
• Breast Biopsies: 40
• Pap Tests: 455
• Colposcopies: 211
• LEEPS: 49

Education & Outreach  
(2014 – 2017)

908 health professionals received direct training …

…. family medicine residents, nurse practitioners, public health, and community health workers all training collaboratively
Sources of Referrals for Screenings

- Community Events
- Self Referral
- Family Medicine Residency Clinic
- Physician Referrals

Community Health Worker (CHW) Integration

- Community Health Workers (CHWs) also known as *promotoras* provide culturally appropriate, bilingual education and navigation
- Studies show that integration of CHWs into cancer screening programs can increase:
  - Cancer knowledge
  - Screening rates
  - Screening guidelines adherence
  - Referrals
  - Volume of services performed
CHWs Provide Tracking, Assessment and Patient Navigation

• Ideally same cultural background and language
• Receive referrals and meet 1:1 with patients
• Work planned community outreach events (health fairs, church events, food pantries etc.) to register individuals for cancer screenings
• Collect relevant clinical data for reporting
• Serve as a “bridge” or patient advocate between clinical staff and patient services
• Help patients navigate the complex health care system
Barriers to Receiving a Colonoscopy

Barriers to Receiving a Pap test
The Texas C-STEP program is a vital resource for cancer screening in the Brazos Valley region. During one of the food pantry visits, where we register people for services, a client had this to say:

“I had colon cancer that was found and removed at an early stage about 15 years ago. I am overdue for a repeat colonoscopy but I lost my job and insurance, and so I have not been able to go for the repeat colonoscopy. Thank God I came here today.”

C-STEP CHWs and volunteers are visible at health fairs and other events around the 17-county Brazos Valley region served by C-STEP. A participant at a Washington County event had this to say about the importance of C-STEP’s program:

“It is a great job you all do. My wife died of colon cancer; she was gone within a month. (wishing it was caught earlier)...You all do not know how much what you do means.”
Closing---Texas C-STEP Success!

• Texas A&M’s C-STEP has provided a combined 3,300 patient visits for preventive clinical services since it started 4.5 years ago for uninsured or underinsured residents of Central Texas who could not pursue these services due to cost.

• Our findings indicate the need to continue to tailor strategies to reach poor and underserved, and the most vulnerable among us.

• Texas C-STEP has successfully trained 80 family medicine physicians in performing colonoscopies, guided ultrasounds, and colposcopies.

• Policy strategies to ensure that trained FMPs or FNPs are able to offer their services (i.e., costs or state scope of practice (turf protection), and misguided reluctance to credential for these procedures) are critical.

Questions & Contact Information

Texas A&M School of Public Health
Professor & Director
Southwest Rural Health Research Center
Jane N. Bolin, RN, JD, PhD
979-436-9468
jbolin@sph.tamhsc.edu
Questions?

Rural Cancer: Data, Disparities and Determination

Cancer is always...

**Personal**

**Challenging**

But we are *Determined* to make it less challenging in rural areas!
Thank you!

- Contact us at ruralhealthinfo.org with any questions
- Please complete webinar survey
- Recording and transcript will be available on RHIhub website
Your First STOP for Rural Health INFORMATION

Rural Cancer: Data, Disparities, and Determination - Insights from the CDC MMWR Rural Health Series