Mapping the Colorectal Cancer Burden to Maximize Lives Saved

William McCarthy, PhD
Raquel Arias, MPH
Overview

- Background:
  - Colorectal cancer as a population health problem
  - Communities of Focus Team
- Methods for mapping colorectal cancer burden
- Results
- Implications
Colorectal Cancer

- 3rd most common cancer and the 2nd deadliest in the U.S.
- California:
  - 14,114 cases diagnosed in 2012
  - 5,189 deaths from colorectal cancer in 2012
- Screening tests offer the potential for prevention (removal of pre-cancerous polyps) and early detection
The Good News

- Colorectal cancer (CRC) incidence and mortality rates have declined dramatically in California since 1988.
- Incidence rates dropped by 27%.
- Mortality (death) rates dropped by 34%.
The Bad News...

- Decline in mortality has not been equal:
  - Non-Hispanic whites: 39% decline
  - African Americans: 34% decline
  - Asian/Pacific Islanders: 27% decline
  - Hispanics: 11% decline

- Low screening uptake: Over 50% of colorectal cancer cases in California are diagnosed late (regional or distant)
Colorectal Cancer Screening

- In 2012, 65.1% of US adults were up to date with screening
- 69.2% of Californians were up to date
- Screening rates in FQHCs/Community Health Centers are much lower
Colorectal Cancer Screening Rates in Health Centers

Data Source: UDS data 2012.
Adults 50-75 years of age who have received any of the following: colonoscopy during reporting year or previous 9 years, flexible sigmoidoscopy conducted during reporting year or previous 4 years, or FOBT or FIT during reporting year.
80% by 2018

- Initiative to reach 80% nationwide screening among those 50+
- Achieving this goal may produce a reduction of 22% in colorectal cancer incidence, and 33% in mortality by 2030
- → 280,000 averted new cases and 200,000 averted deaths from 2013-2030*

*Meester et. al. (2015)
The unscreened

- More likely to be younger (2/3 are 50-59 years)
- More likely to be uninsured
- Slightly lower income
- More likely to be Hispanic
- More likely to have less than a college degree
Summary

- Colorectal cancer is a priority
- Screening intervention identified as the most promising avenue on which to focus (80% by 2018)
- Health centers have particularly low screening rates. They serve a high volume of the unscreened.
Communities of Focus Team

- January 2014-June 2015
- Team of American Cancer Society volunteers, including cancer surveillance experts/cancer registry staff
- *Communities of Focus* = communities where the Society could maximize lives saved from colorectal cancer, primarily by interventions designed to increase screening.
Communities of Focus Team

- **Project Objective:** Recommend specific geographic communities and criteria for prioritizing communities for colorectal cancer interventions.

- **Purpose:**
  - ACS staff utilize to prioritize interventions/inspire action
  - Share information with communities for local action
Advanced stage colorectal cancer in California communities among men and women 50+ years, 2007-2011

- Project initiated by CCR
- Identified Medical Study Service Areas (MSSA) throughout the state with higher than average (52%) advanced stage colorectal cancer
- Goal: help to inform and assist more targeted colorectal screening interventions.
Methodology

In each MSSA we analyzed:

- Out of all the colorectal cancer cases diagnosed during the 5-year period (2007-2011), how many were diagnosed at late-stage (regional or distant stage)?

- How do those percentages and numbers of late-stage colorectal cancer cases compare to the benchmark group (non-Hispanic white persons in affluent neighborhoods)?
Community definition: Medical Service Study Area (MSSA)

- MSSA: geographic unit defined by Office of Statewide Health Planning and Development (OSHPD) for determining medical shortage areas
- MSSAs are “rational service areas for healthcare” or “healthcare communities”
- 542 MSSAs in California
Results

- 16 communities with a significantly *higher proportion* of late-stage colorectal cases
- 28 communities with an *excess number* of late-stage colorectal cases
- Decided that communities with *both* high percentages and excess numbers of late-stage colorectal cancer should be further evaluated

➢ **Result:** 14 “priority” MSSAs throughout the state
Why choose both high % and excess case counts?

- Original CCR methodology (% of late stage only) may be over-representing rural areas
  - E.g. MSSA in Mendocino County with 74% of colorectal cancers diagnosed at late stage, but this equals only 14 late stage cases due mostly to lower population size.
- Identified 14 MSSAs where 65% or more of colorectal cancer were late-stage, AND where there were at least 10 excess late-stage cases (at least 10 more late-stage cases than would be expected given the baseline group)
Where are the 14 Priority MSSAs?

- Butte County - 2 MSSAs
- Placer County - 1
- Tehama County - 1
- Yolo County - 2
- Sonoma County - 2
- Sacramento County - 1
- Los Angeles County - 3
- Riverside County - 1
- San Diego County - 1
We dove deeper into each MSSA:

- Demographic information: income characteristics, ethnic makeup, # of Primary Care Physicians, PCP to patient ratio, the colorectal cancer screening compliance (for the county)

- Identified the FQHCs/ community clinics within each MSSA, since they present a great opportunity for colorectal cancer screening intervention
Northern California

Medical Service Study Areas in Northern California with an Elevated Colorectal Cancer Burden
Butte County:
MSSA 10:
Oroville/Palmero/Thermalito
100 total cases
67 late-stage
2 FQHC/Community Clinics

MSSA 8:
Magalia/Paradise/Stirling City
124 total cases
89 late-stage
No FQHC/community health centers in this MSSA
Southern California

Medical Service Study Areas in Southern California with an Elevated Colorectal Cancer Burden

Created by Brendan Darsie, MPH; December, 2014; brendan.darsie@cdph.ca.gov
Riverside County:
MSSA 135c: Casablanca/Riverside Central
112 total cases
74 late-stage cases
1 FQHC/Community Clinic

Los Angeles County:
MSSA 78.2ccc
Huntington Park/South Gate West/Walnut Park
108 total cases
70 late-stage cases
1 FQHC/Community Clinic
Limitations of Findings:

- MSSAs as geographic units of analysis
- Does not focus on mortality rates
- Did not utilize information on screening rates when selecting the priority areas
How to put these data into action?

- American Cancer Society:
  - Engaging health systems in the communities with high burden of late-stage disease
    - FQHCs/CHCs
    - Health plans
    - Hospitals
  - Rallying communities in the fight against colorectal cancer
- Community organizations and local health departments
Welcome to California Cancer Registry (CCR)

CCR is a program of the California Department of Public Health’s Chronic Disease Surveillance and Research Branch (CDSRB). The CCR is California’s statewide population-based cancer surveillance system. We collect information about almost all cancers diagnosed in California. This information furthers our understanding of cancer and is used to develop strategies and policies for its prevention, treatment, and control. The availability of data on cancer in the state allows health researchers to analyze demographic and geographic factors that affect cancer risk, early detection, and effective treatment of cancer patients. The data also help determine where early detection, educational, and other cancer-related programs should be directed.

The CCR is recognized as one of the leading cancer registries in the world, and has been the cornerstone of a substantial amount of research on cancer in the California population. To date the CCR has collected detailed information on over 3.4 million cases of cancer among Californians diagnosed from 1988 forward, and more than 162,000 new cases are added annually.

PRESS RELEASE

- California Department of Public Health (CDPH) Partners for Breakthrough for Sharing Cancer Data

NEWS & UPDATES

- California Cancer Facts and Figures - 2015 —Now Available!—
- California Division 2014 Communities of Focus Team Final Report, Abbreviated for External Use —Now Available!—
- New Statistical Tables by Cancer Site Released! —New Data 1988-2012!—
- CCR Innovations Bulletin March, 2015 Volume 3 Issue 1
- Cancer in California 1988-2010
- Human Papillomavirus (HPV) - Associated Cancers and HPV Vaccination Coverage in California
- New California Cancer Registry Fact Sheets
Thanks to all group members

- **ACS Volunteer Group:**
  - Dr. William McCarthy, Ph.D.
  - Dr. Roshan Bastani, Ph.D.
  - Dr. Willie Goffney, MD
  - Dr. Dee West, Ph.D.
  - Brendan Darsie, MPH
  - Sandy Kwong, MPH
  - Jennifer Rico, MA
  - Raquel Arias, MPH (staff)
For more information

- Contact information:  
  wmcarth@ucla.edu  
  rarias@cancer.org

- California Cancer Registry:  ccrcal.org

Thank you!