TRENDS AND DIFFERENCES IN HEART DISEASE AND CANCER MORTALITY IN RIVERSIDE COUNTY, CA 2006-2015

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Overview

• Learning Objectives
• Background
• Introduction
• Results
• Application of Research
• Future Opportunities
Learning Objectives

• Describe the importance of age-adjustment in mortality rate calculation

• List the leading causes of mortality in Riverside County, CA

• Discuss the disparities in heart disease and cancer mortality
Background

• The 2013 Community Health Profile provides natality, mortality, and health behavior data

• Comprehensive data report used across disciplines to increase knowledge of local health concerns and trends
Introduction

• The 2013 CHP is due for an update
• Partnered with RUHS-PH to begin looking at data and important areas to explore
• Initial focus on mortality data
Method

- Descriptive analysis of mortality data using data from:
  - California Department of Public Health’s Vital Statistics Query System
  - California Department of Finance Population Estimates
  - Riverside University Health System - Public Health’s Death Statistical Masterfile
Method

- Develop age adjusting templates
- Stratifying population by age, sex, race/ethnicity, and year
- Apply direct adjustment method

### WHITE FEMALES

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<th>Riv County Population</th>
<th>Total Deaths</th>
<th>Age-Speci Death Rate</th>
<th>2000 U.S. Standard Population</th>
<th>Expected Deaths</th>
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Crude rate 487.2325 Age-adjust 400.5143
Results – The Mortality Profile

- In 2015, there were 14,689 deaths in Riverside County; nearly half were caused by heart disease and cancer
- Riverside is ranked 39 out of 58 for all-cause mortality; a risk of 1 death for every 150 residents
- Two-thirds of mortality result from a chronic illness
Results – Overall Mortality

- Mortality among males is 33% higher than that of females
- Mortality rates for cancer, diabetes and stroke have remained relatively stable, while heart disease mortality rates have declined 44% since 2001
- Prevention and treatment are equipotent
<table>
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<td>Cancer</td>
<td>Alzheimer’s Disease</td>
<td>Lung Disease</td>
<td>Stroke</td>
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<td>Cancer</td>
<td>Heart Disease</td>
<td>Stroke</td>
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<td>Accidents</td>
<td>Lung Disease</td>
<td>Stroke</td>
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<td>White</td>
<td>Heart Disease</td>
<td>Cancer</td>
<td>Lung Disease</td>
<td>Alzheimer’s Disease</td>
<td>Stroke</td>
</tr>
</tbody>
</table>
Results – *Heart Disease*

- Twenty-five percent of deaths were attributed to heart disease; a decline from 34% in 1999
- Mortality among males is 44% higher than females
- American Indians and Blacks maintain the highest heart disease rates
- Among all groups, Blacks experienced the greatest decline in mortality, 44%
Results – *Heart Disease*

*Age-Adjusted Heart Disease Mortality by Race/Ethnicity and Sex, Riverside County, 2015*

- **All Races**
  - Male: 174.3
  - Female: 120.4

- **American Indian**
  - Male: 241.5
  - Female: 231.8

- **Asian/PI**
  - Male: 112.8
  - Female: 91.5

- **Black**
  - Male: 202.0
  - Female: 153.1

- **Hispanic**
  - Male: 126.2
  - Female: 96.7

- **White**
  - Male: 190.8
  - Female: 126.6

Rate per 100,000 Population
Results – Cancer

- Cancer mortality was 21% lower among females compared to males, with one exception.
- Most racial and ethnic groups experienced stable cancer mortality rates over the past decade.
- Rates for American Indians doubled between 2006 and 2015.
Results – Cancer

Age-Adjusted Cancer Mortality by Race/Ethnicity and Sex, Riverside County, 2015

Rate per 100,000 Population

- All Races
  - Male: 159.3
  - Female: 125.1
- American Indian
  - Male: 141.3
  - Female: 221.4
- Asian/PI
  - Male: 116
  - Female: 105
- Black
  - Male: 171.2
  - Female: 136.2
- Hispanic
  - Male: 136.9
  - Female: 99.7
- White
  - Male: 171.2
  - Female: 136.2
Applications of Research

- Improve and enhance current chronic disease knowledge in Riverside County
- A guide for chronic disease prevention efforts
- Facilitate important dialogue about persistent disparities…address social determinants!
Applications of Research

• Practical training for students
  • Data analysis knowledge and understanding
  • Facilitated discussion of health inequities and disparities
  • Skills in data interpretation
  • Opportunities for networking and exposure to public health practice
Trends in Heart Disease and Cancer Mortality in Riverside County, CA 2006-2015

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California Baptist University, Riverside, CA; Riverside University Health System-Public Health, Riverside, CA

BACKGROUND

Mortality is one of the most reliable measurements of a population's health status. Reduction in mortality, which is measured in death rates, is used as an indicator of the effectiveness of various public health strategies to improve health. When studying subpopulations by ethnicity, age, sex, or other classifications, mortality data reveals a great deal about unequal health outcomes. When comparing all-cause mortality for Riverside County to other California Counties, Riverside is ranked 29 out of the 58 counties in California. The two leading causes of death are coronary heart disease and cancer, where Riverside County ranked 48th and 34th, respectively.

Heart disease includes diseases and conditions of the heart and arteries such as coronary heart disease, heart failure, heart attack, arrhythmias, angina, and many others. According to the American Heart Association, more than one in three American adults have one or more types of cardiovascular disease (illness of the heart and vessels). They further estimate that 80% of heart disease and stroke can be prevented.

Cancer is the uncontrolled growth of abnormal cells. It is the second leading cause of death in the US, California, and Riverside County. As a chronic disease, many cancers are associated with lifestyle factors such as poor dietary choices, sedentary behaviors, and smoking. Cancer surveillance is key in monitoring trends in cancer incidence, prevalence, cancer-related health behaviors, and screening practices.

OBJECTIVE

The objective of this research is to investigate heart disease and cancer mortality trends from 2006 to 2015 in Riverside County in order to provide an update to the Community Health Profile for the Riverside University Health System's Public Health Department (RUHSPH).

METHODS

Using data from the California Vital Statistics Query System, California Cancer Registry, California Department of Finance, and data from the Death Statistical Masterfile, provided by Riverside University Health System's Public Health Department, age-adjusted rates were calculated by year and stratified across gender as well as racial and ethnic subgroups.

RESULTS

In 2015, heart disease mortality reached a low of 145 deaths for every 100,000 residents. This is a decline from its peak of 261.3 deaths for every 100,000 residents in 2001. In 2015, nearly one in four (n=3,460) deaths in Riverside County was attributed to cancer.

Heart disease mortality rates among whites mirror that of the overall County, with a 40% drop since 2006. Most racial and ethnic subgroups experienced declines in heart disease mortality, with the exception of American Indians.

In 2015, the highest rates of heart disease were among American Indians (238.4 per 100,000) and Blacks (177.1 per 100,000). These rates were much higher than the overall County rate of 145.1 per 100,000 population.

Between 2006 and 2015, cancer mortality remained relatively stable. Most racial and ethnic groups experienced stable cancer mortality rates over the past decade; however, the mortality rate for American Indians doubled from a low of 79.7 per 100,000 in 2006 to a high of 189.9 per 100,000 in 2015. This large increase may be a reflection of the small population size where numerically small changes may reflect large rate changes. Future data will aid in determining if this increase is a valid trend or artifact of population size.

CONCLUSIONS

In Riverside County, CA, heart disease mortality has decreased over the past decade. Gender as well as racial and ethnic disparities are pronounced. Over the past decade cancer mortality has remained stable. Similar to heart disease, gender and racial and ethnic disparities exist in cancer mortality.

Further research is needed to explore the impact of these causes of mortality on American Indians. In addition, identify the most effective ways for county programs to help reduce heart disease and cancer mortality rates within Riverside County, CA.

REFERENCES


ACKNOWLEDGEMENTS

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Applications of Research - Accreditation
Future Opportunities

• Use health behavior data to better correlate behaviors with outcomes

• Measure and correlate differences in social determinants with disparate outcomes

• Continue expanding health department capacity
Thank you!

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