



***Social Determinants of Health and  
Environmental Justice***

**March 2016**

**The Colorado Commission on Affordable Health Care**



*Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.*

*Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.*

# What Are Social Determinants?

- Social determinants of health are the economic and social conditions, and their distribution among the population, that influence individual and group differences in health status. Social determinants of health are a significant factor in the health and wellness of individuals.
- Related to social determinants of health is the concept of environmental justice, which the Environmental Protection Agency defines as, ‘. . . the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies.’

## Five Key Areas for Social Determinants



# What is the Problem?

America spends more money per capita on healthcare than any other nation, yet the overall health of the population lags behind that of most industrialized countries due to continuing and growing disparities in mortality, morbidity, and disability between Caucasians of high socioeconomic status and people of color who are less advantaged.

People with low incomes and inadequate access to healthcare are often disproportionately exposed to environmental contamination, such as landfills, toxic chemical disposal, pollutions, and more. The consequences of ignoring health inequities include increased direct and indirect healthcare costs, decreased productivity, and an overall disparate use of federal, state and corporate healthcare dollars.

Studies indicate that 70-80 percent of health outcomes are attributed to environment and behavior.

2013 University of Maryland report; University of Wisconsin Population Health Institute



# How Does This Problem Contribute to Cost?

Social determinants of health acknowledges that the environmental conditions present in a community have a significant impact on the health of individuals. Poverty, in particular, touches nearly all aspects of a family's life. Living in an impoverished community can impact the quality of a family's housing, the availability of nutritious foods, transportation to healthcare providers, and access to safe, open areas where children can play.

Social and economic factors are the largest single driver of health outcomes, and also strongly influence behaviors. An example of this:

A study by a University of California, S.F., research team found that for low-income patients with diabetes, the risk of hospital admission for hypoglycemia increased 27 percent in the last week of the month versus the first week. The spike in admissions was linked to paychecks and Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) running out before month's end.



# What Does the Research Say?

In a review of the literature, the common factors associated with social determinants of health and environment justice include:



## **Income inequality – the relationship of wealth and health**

- Indicating unemployment, under employment, poverty, and single parent households.
- Which in turn affects stress levels, exposure to crime, contact with toxins, fewer educational prospects, difficulty in finding safe and affordable housing, access to healthcare services, affordability of nutritious meals, access to full service grocery stores, high-risk behavior and mortality rates. Obesity and its accompanying illnesses disproportionately affect individuals and families living in poverty. The highest rates of obesity, diabetes, and cardiovascular illness often occurs among population groups with the highest poverty rates and least education.



# Research Cont.

## **Social and community inequity – not belonging to an extended network of support**

- Indicating racial, gender and sexual discrimination and bias, isolation, incarceration, institutionalization, and those who do not speak English as their primary language.
- Affects cohesion with the community, civic participation, access to educational opportunities, access to timely and comprehensive healthcare, involvement in recreational and leisure time activities, having personal emotional support, and participating in information sharing.





## Foundations Built in Early Childhood

- Observational research and intervention studies show that foundations of adult health are laid in early childhood and before birth. Poor early experience increases the risk of poor physical and behavioral health.
- Early adverse childhood experiences dramatically increase the risk of health problems during adulthood. This study also revealed that childhood socioeconomic status and abuse are associated with the onset of new health problems, even after adjusting for a wide array of potential mediators.

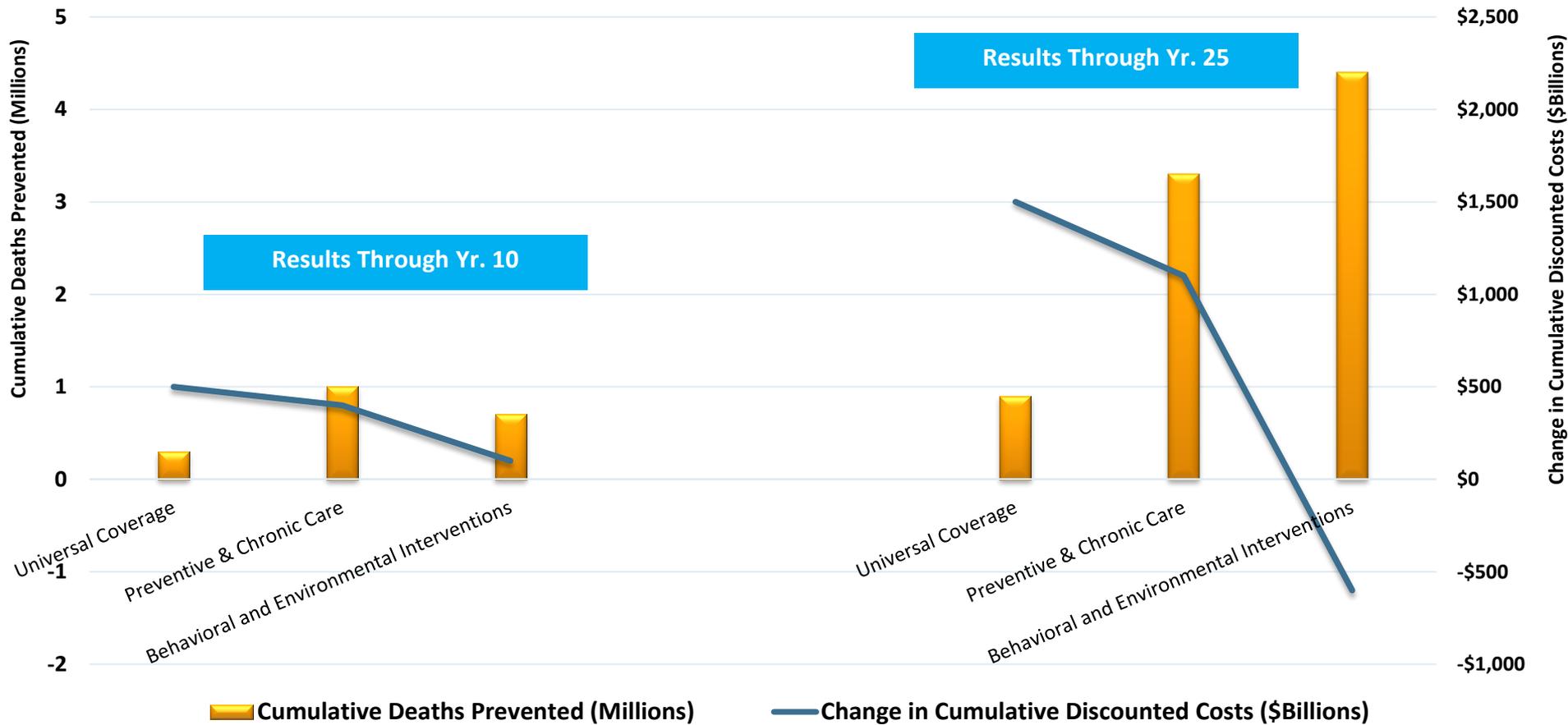
World Health Organization

Kenneth F. Ferraro, Childhood Disadvantage and Health Problems in Middle and Later Life: Early Imprints on Physical Health? *American Sociological Review*



# Research Cont.

## Deaths Prevented & Change in Healthcare Costs for Three Intervention Scenarios at 10 and 25 Years



Milstein, B et al. (2011) Why behavioral and environmental intervention are needed to improve health and lower cost; Health Affairs



# Promising Practices from the Literature

In a report published by the Association of State and Territorial Health Offices, they note that investing in prevention and public health not only saves lives, but also yields a significant return on investment. Examples they note of successful outcomes include:

For every \$1 spent on:	We save:
Water fluoridation	\$38 in dental treatment costs
Preconception care program for women with diabetes	\$5.19 by preventing costly complications in both mothers and babies
School-based HIV/STD and pregnancy prevention programs	\$2.65 in medical and social costs



# Promising Practices Cont.

- **Nurse Family Partnership**

- Partners highly-trained nurses with vulnerable first time mothers and their babies.
- Over 18,000 families served in Colorado since 1999
- During pregnancy a 21% ↓ in smoking; 29% ↓ in alcohol use
- ROI: Every \$1 spent savings of \$5.70 for high-risk mothers; \$1.26 for low-risk mothers
- Savings achieved through lower use of government programs such as food stamps and TANF

Early Childhood Interventions: Proven Results, Future Promise. RAND Corporation. 2005.

- **Early Childhood Investments**

- Research shows that early life exposures affect cognitive and non-cognitive development, which, in turn, affects time preferences and self-control skills, which are major determinants of risky health behaviors.
- Findings from the Federal Reserve Bank of Minneapolis that for every \$1 invested in early childhood yields \$8 in return.

The Relative Contribution of Multiple Determinants to Health Outcomes, Health Affairs, August 2014



# Prevention Practices

The New Academy of Medicine & Trust for America's Health; 2013  
'A Compendium of Proven Community Based Prevention Programs'

- Asthma
- Injuries and violence
- Cardiovascular disease, stroke & diabetes
- Alcohol use
- Tobacco use
- Sexually transmitted infections and AIDS

The study estimated that an investment of \$10 per person per year in community-based programs to increase physical activity, improve nutrition, and prevent smoking would save the US more than \$16.5 billion annually within five years

For every \$1 invested ROI = \$5.60



**Prevention**



# What Are Other U.S. States Doing?



**There are many efforts and pilots going on across the country – these are a few highlights:**

## • **Housing**

- UPMC *for You* serves a large Medicaid population in Pennsylvania - UPMC developed a “shelter plus care” program through a multi-party partnership (a primary care practice, the local HUD authority, and Community Human Services). UPMC pays for the health care services provided, plus a care coordination fee. HUD provides a rental subsidy. UPMC also pays for case management provided by CHS.
  - A 23% reduction in overall per-member-per-month (PMPM) claims costs. Before entering the program, enrollees averaged PMPM costs of roughly \$4,100 versus PMPM costs of roughly \$3,200 while in the program;
  - PMPM cost reductions occurred in all medical service categories except prescription drugs, where a slight increase occurred; and
  - The vast majority of enrollees remained stably housed.
- Several states including New York are using the Delivery System Reform Incentive Program to revisit the role Medicaid can play regarding housing.
  - Arising out of extensive negotiations with CMS, the New York DSRIP is an \$8 billion 1115 waiver approved in April of 2014 that will run from 2015 through 2019. Of this amount, \$6.42 billion will be used for payments to provider networks that implement delivery system reform projects and meet accountability metrics.
  - Required to include a broad array of providers, reflecting the strong interest in New York in moving care into community-based organizations.
  - New York has been able to tackle some social determinants of health, such as housing and transportation. Medicaid Redesign initiatives have reduced costs, bringing Medicaid spending per beneficiary back to 2003 levels.





- **Hotspotting:**

- Camden County, N.J., is one example where understanding the social determinants and creating care coordination made a large difference in the "high-flyers" -- people who frequent emergency departments more than five times a year. Providers identified a small group of very high-cost patients by using medical claims data. By creating care coordination teams with a dedicated person to understand and support the total needs of these patients, the use of services came down and there were improved clinical measures along with reduced total costs of the patients.
- Massachusetts General Hospital in Boston had 2,600 chronically high-cost patients, who together accounted for \$60 million dollars in annual Medicare spending. The doctors, in 19 private practices, saw the patients as usual. In between, the nurses saw them for longer visits, made surveillance phone calls and, in consultation with the doctors, tried to recognize and address problems before they resulted in a hospital visit. Three years later, hospital stays and trips to the ED have dropped by more than 15%.



- **Investments in Early Childhood**

- Programs such as the Incredible Years, Triple P (Positive Parenting Program) and Multi-Systemic Therapy are among those that promote healthy families and reduce violence through parental support and skill-building. At least 22 states have adopted legislation related to early childhood home visiting

NCSL

- **Asthma:**

- Urban, low-income patients with asthma from four zip codes were identified through logs of Emergency Department (ED) visits or hospitalizations, and offered enhanced care including nurse case management and home visits. The program provided services to 283 children with 39.6 percent Black, 52.3 percent Latino, 72.7 percent using Medicaid, and 70.8 percent with a household income of less than \$25,000. Twelve-month data show a significant decrease in any asthma ED visits and hospitalizations, and any days of limitation of physical activity, fewer missed school days, and a reduction parent missed work. There was a significant reduction in hospital costs compared with the comparison community, and a return on investment of \$1.46.

*A Compendium of Proven Community-Based Prevention Programs, The Trust for America's Health (TFAH) and New York Academy of Medicine*

- **Injury Prevention**

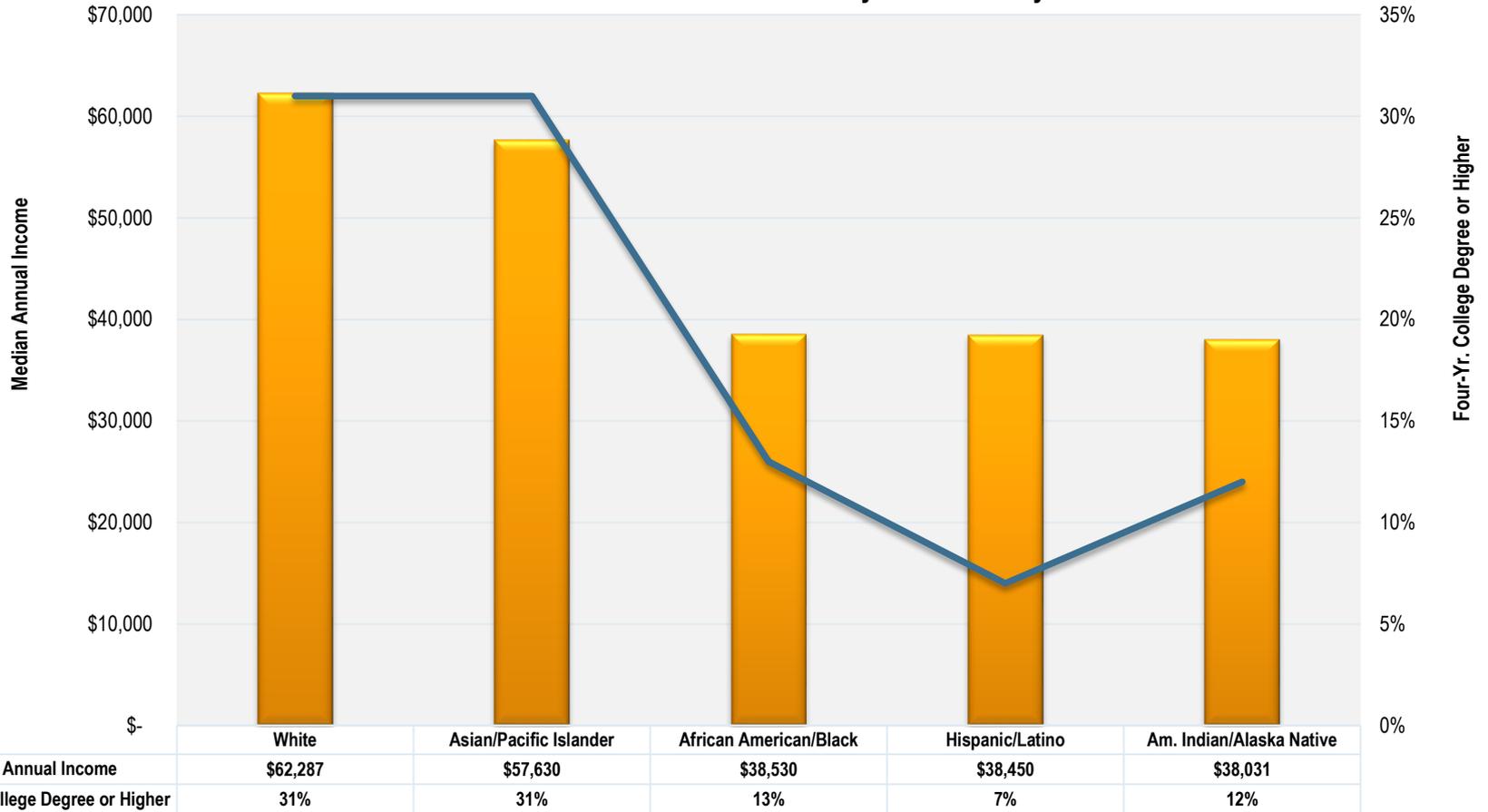
- The federal Safe Routes to School (SRTS) program allocated funds for state departments of transportation to build sidewalks, bicycle lanes, and safe crossings, improve signage, and make other improvements that allow children to travel more safely to school. In New York City, from 2001-2010, annual pedestrian injury rates per 10,000 population were calculated for different age groups and for census tracts with and without SRTS interventions during school-travel hours. The annual rate of school-aged pedestrian injury during school-travel hours decreased 44 percent in census tracts with SRTS interventions.

*A Compendium of Proven Community-Based Prevention Programs, The Trust for America's Health and New York Academy of Medicine*



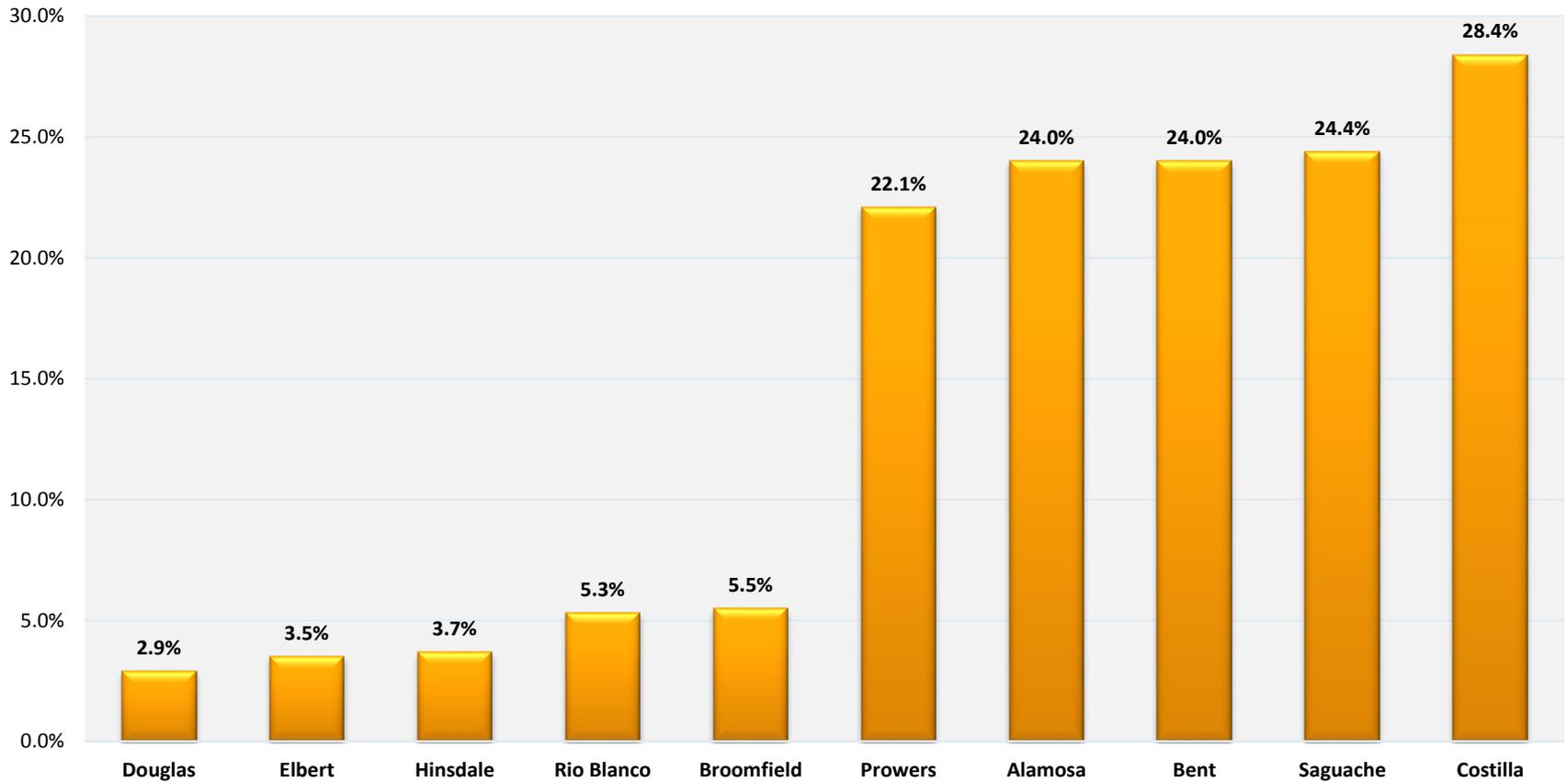
# Colorado Data

Colorado Income & Education by Race/Ethnicity



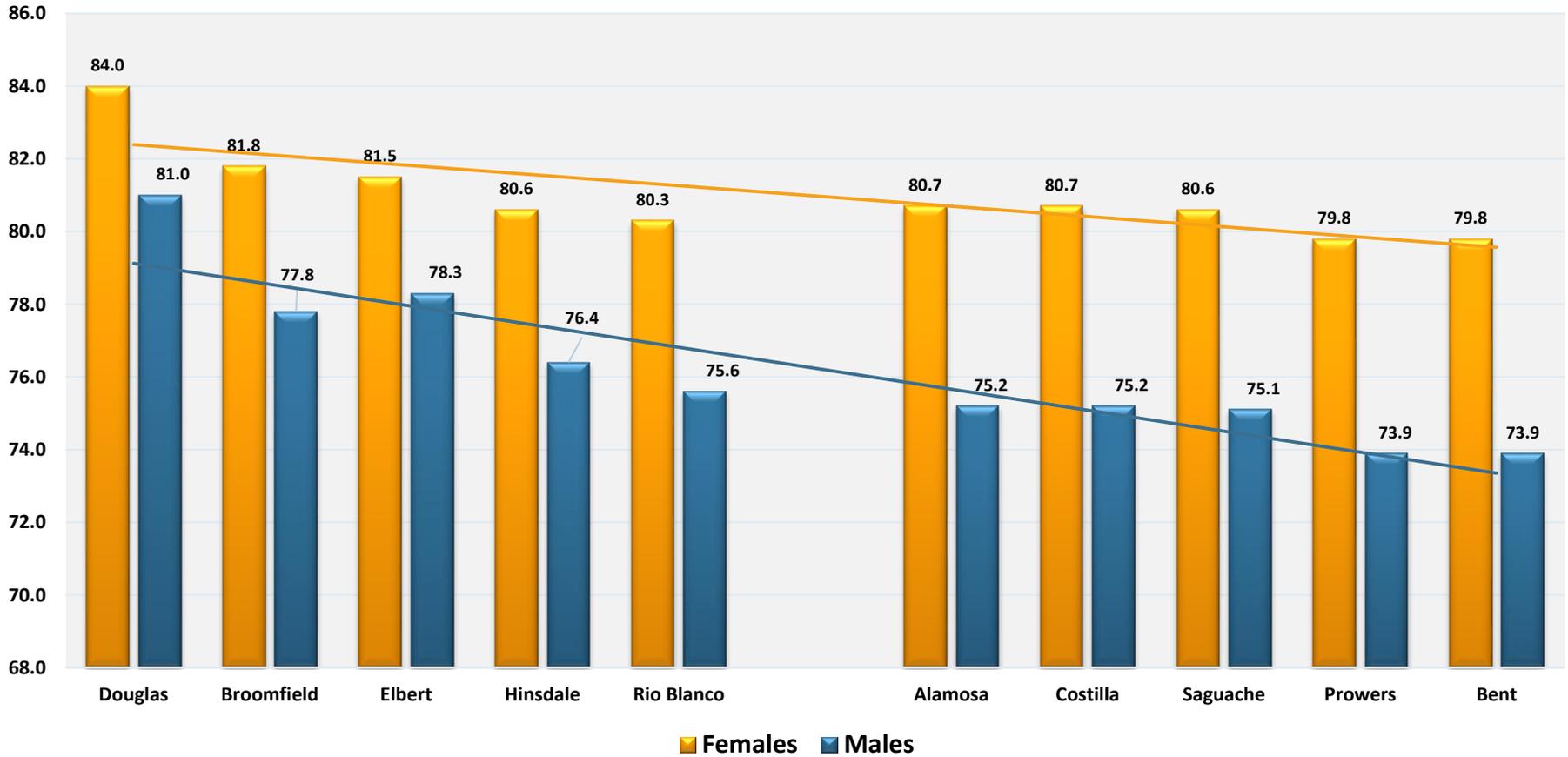
# Colorado Data Cont.

Percent of Poverty in the Five Lowest and Five Highest Counties in Colorado



# Colorado Data Cont.

**Life Expectancy in the Five Counties with the Highest and Lowest Poverty Rates for Females and Males**



# What is Colorado Doing?

- **Hotspotting**

- The federal Centers for Medicare and Medicaid Innovation awarded Rutgers a \$14.3 million grant to pilot the Camden model in four communities: Aurora; San Diego; Allentown, Pa.; and Kansas City, Mo. The goal is to find the costliest patients; save \$70 million on their care in the four communities; and reinvest the savings to provide better health care.

- Metro Community Provider Network:

- Identified patients in two Aurora ZIP codes with more than three hospital visits in a six-month period
- Provided intensive care coordination, education and mental health services for eight weeks after a hospital admission or emergency room discharge.
- Results: All users reduced the number of emergency department and hospital admissions. Mid- to high-utilizers saw the greatest decline.
- Savings: \$1.1 million over a six-month period

- **Early Childhood Investments**

- LAUNCH Together

- Privately funded through a collaboration of eight Colorado foundations.
- Modeled after SAMHSA's Project LAUNCH initiative.
- Supports and promotes the social and emotional health and well-being of children and families through integration, mental health consultation, home visiting services, parent education and screening and assessment.
- Seven counties awarded planning grants, four will be chosen.



# Colorado Cont.

- **Colorado Opportunity Project**
  - Aligned project of HCPF, CDPHE and CDHS
  - Implementation of high-quality, evidence-based programs already available in CO to move citizens out of poverty.
- **Office of Health Equity**
  - Coordinates and implements strategies related to the department's health equity efforts.
  - Publishes data reports documenting health disparities.
- **Accountable Care Organizations**
  - Health Care Policy and Financing department's Medicaid program to promote integrated and coordinated care in an effort to improve clinical outcomes and reduce costs.
- **SIM Grant**
  - The Colorado State Innovation Model (SIM) touches nearly every aspect of our health system, setting the stage for a sweeping transformation that is aimed towards the Triple Aim of lower costs, better care and improved population health. Colorado's plan, entitled "The Colorado Framework," creates a system of clinic-based and public health supports to spur innovation. The state plans to improve the health of Coloradans by: (1) providing access to integrated primary care and behavioral health services in coordinated community systems; (2) applying value-based payment structures; (3) expanding information technology efforts, including telehealth; and (4) finalizing a statewide plan to improve population health.



# Information Gaps? Opposing Viewpoints?

- **Information Gaps**

- There is a need for more precise measures and comparability between studies of health determinants to bolster the evidence regarding the relative contribution and importance of various determinants in the production of health.
- Lack of timely outcome data.
- Lack of credible expectations regarding the degree of change interventions can foster among various populations (i.e., how quickly; how much; with whom).

- **Opposing Views**

- Program implementation costs and timing of return on investment.
- Evidence of cost savings due to many interventions requiring long term investment and monitoring.
- Personal responsibility vs. public responsibility.



# Opportunities for Colorado

- The research on social determinates of health seem to indicate that income, race, ethnicity, age, education, among other determinates affect health outcomes. Further, there is no indication of a single remedy, but instead a combination of interventions that involve medical, behavioral health and behavioral change, plus prevention and early intervention methodologies.
- Successful interventions regarding social and environmental determinants of health may take between 10 to 25 years to measure its level of success. Expecting significant changes or improvements in short periods of time may be impractical for some types of interventions.
- Opportunities for Discussion
  - Housing programs
    - Delivery System Reform Incentive Program waivers
  - Childhood prevention and early interventions
  - Improved interventions regarding injury prevention and behavioral change
  - Expanded hotspotting programming
  - Economic development projects targeting education, job preparation, and employment
  - Cultural and ethnic focus groups addressing solutions to healthcare issues
  - Access to food including new business development opportunities for low income regions with few or no full service groceries or School Nutrition Assistance Program (SNAP) funding
  - Problem solving for those with medical insurance who cannot pay down the high deductibles to access coverage

