

**Brief Overview of Research Findings on
Social Determinants of Health and Environmental Justice**

Dorothy Perry, PhD, MBA

Colorado Commission on Affordable Health Care

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‘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.

Problem

Social determinants of health are a significant factor in the health and wellness of individuals. Numerous research studies have found not only do these determinants affect health and well-being, but there are also many non-medical interventions that can be implemented that improve these outcomes.

The World Health Organization defines social determinants of health as the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources and are mostly responsible for health inequities.¹ Specific examples of social determinants include:²

- ▶ Availability of resources to meet daily needs (e.g., safe housing and local food markets)
- ▶ Access to educational, economic, and job opportunities
- ▶ Access to health care services
- ▶ Quality of education and job training
- ▶ Availability of community-based resources
- ▶ Opportunities for recreational and leisure-time activities
- ▶ Transportation options
- ▶ Public safety
- ▶ Social support
- ▶ Social norms and attitudes (e.g., discrimination, racism, and distrust of government)
- ▶ Exposure to crime and violence (e.g., presence of trash and lack of cooperation in a community)
- ▶ Socioeconomic conditions (e.g., concentrated poverty and the stressful conditions that accompany it)
- ▶ Residential segregation
- ▶ Language/Literacy
- ▶ Access to mass media and emerging technologies (e.g., cell phones, the Internet, and social media)
- ▶ Culture

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. The World Health Organization notes the poorest of the poor, around the world, have the worst health.³ Health outcomes are determined by more than biological factors or access to quality health care. Social determinants of health, which acknowledges that the environmental conditions present in a community can 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.⁴

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

¹ World Health Organization (2011). What rare social determinants of health? Retrieved from www.who.int/social_determinants/sdh_definition

² Healthy People 2020. Social determinants of health. Retrieved from www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health

³ World Health Organization (2014). Key concepts: What are health inequities or inequalities? Retrieved from http://www.who.int/social_determinants/final_report/key_concepts_en.pdf

⁴ Healthy moms, healthy kids (2011). Social determinants of health. Colorado Children's Campaign. Retrieved from <http://www.coloradokids.org/wp-content/uploads/2014/12/Healthy-Moms-Healthy-Kids-A-Series-on-Maternal-and-Child-Health-in-Colorado-April-2011.pdf>

people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies.⁵ Environmental justice seeks to address environmental discrimination.

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.⁶ 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.

Relevant data and role in cost

- ▶ America spends \$2.7 trillion annually on healthcare. Health expenditures tied to smoking total equal \$96 billion, costs associated with obesity include more than \$43 billion for hypertension and \$17 billion for diabetes.
- ▶ Low socioeconomic status is associated with higher mortality and morbidity.
- ▶ Racial and ethnic minorities currently represent one-third of the US population. The Pew Research Centers estimates by 2015 racial and ethnic minorities will become a majority in the United States, but research show that they tend to have worse health outcomes than whites.
- ▶ Infant mortality among African Americans in 2000 occurred at the rate of 14.1 deaths per 1,000 live births, more than twice the national average of 6.9 per 1,000.
- ▶ African American men are more likely to die from heart disease than white men. African American adults are more likely to have a stroke compared with white adults.⁷
- ▶ Native American and Mexican Americans have diabetes rates more than two times the white rate.
- ▶ One in every six Americans lives in poverty, for an individual that means \$11,670 per year.⁸
- ▶ Hispanic neighborhoods have only 32 percent as many chain supermarkets with compared to non-Hispanic neighborhoods and African American neighborhoods have 52 percent as many supermarkets as white neighborhoods.⁹

Often focus is on disparities in health for those with health insurance benefits and those without. Yet disparities in health and healthcare exist, even among employees with equal benefits. One author reports that, 'Even when they have the same health insurance benefits and socioeconomic status, and when comorbidities, state of presentation, and other confounding variables are controlled for, members of racial and ethnic minority groups in the United States often receive lower quality of healthcare than do their white counterparts.'¹⁰

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

⁵ Environmental justice. Environmental Protection Agency. Retrieved from www.eap.gov/environmentaljustice/

⁶ Brulle, RJ & Pellow, DN (2006). Environmental justice: Human health and environmental inequalities. *Annu. Rev. Pubic Health*, 27:103-24

⁷ US Department of Health and Human services Office of Minority Health. African American Profile. <http://minorityhealth/hhs.gov>

⁸ Khazan, OO. (2014). How being poor makes you sick. *The Atlantic*. [Internet]. Attained from www.theatlantic.com/health/archive/2014/05/poverty-makes-you-sick/371241

⁹ Powell, L.M., Slater S., Mirtcheva, D, et el. (2007). Food sotre availability and neighborhood characteristics in the United States. *Preventive Medicine*, 44: 189-195.

¹⁰ Smedley, B.D. (2003) *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: Board of Health Sciences Policy, Institute of Medicine.

- ▶ 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 overweight, and their accompanying illness 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. *Geographic areas with high levels of poverty have fewer full service grocery stores and higher numbers of fast food restaurants and convenience stores.*¹¹

- ▶ 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.

- ▶ Sense of personal efficacy – a person’s sense of control over their lives
 - Indicating the level of confidence in one’s general and healthcare decision making, ability to assess and access educational opportunities, and career advancement.
 - Those with a higher sense of efficacy and behaviors that reflect that value tend to live longer, maintain better health, maintain higher productivity in the workplace, have a high self-esteem and self-assurance, advocate or self and community issues, and participate more vigorously in life.^{12,13,14}

Influencing the above:

- ▶ Cultural factors – culture has influence on acceptability of smoking and alcohol abuse, gender roles, healthcare choices, education, and food preferences.
- ▶ Mass media – television and the web can send powerful messages about health. The media can help or hinder efforts to improve health.
- ▶ Living conditions – inadequate or run-down housing, dangerous streets, noise, and blighted neighborhoods contribute to the stress of living in a difficult situation and have an effect on health.
- ▶ Transportation – for those living in rural and urban areas, especially for those families with children and the elderly, the challenge is often finding reliable and affordable transportation resources. Poverty also affects one’s ability to own transportation or to have money for public transportation. Reliable transportation can mean the difference between keeping and losing your job, being able to take your kids to the doctor, and the ability to access a grocery store that sells healthier food.¹⁵

¹¹ Moyer, D.C. & Salucci, L. (2013). Denver food deserts and the impact on public health: Review of four policy options. University of Denver.

¹² Work group for community health and development (2014). The community tool box. University of Kansas. Retrieved from <http://ctb.ku.edu/en/table-of-contents/analyze/analyze-community-problems-and-solutions/social-determinants-of-health>

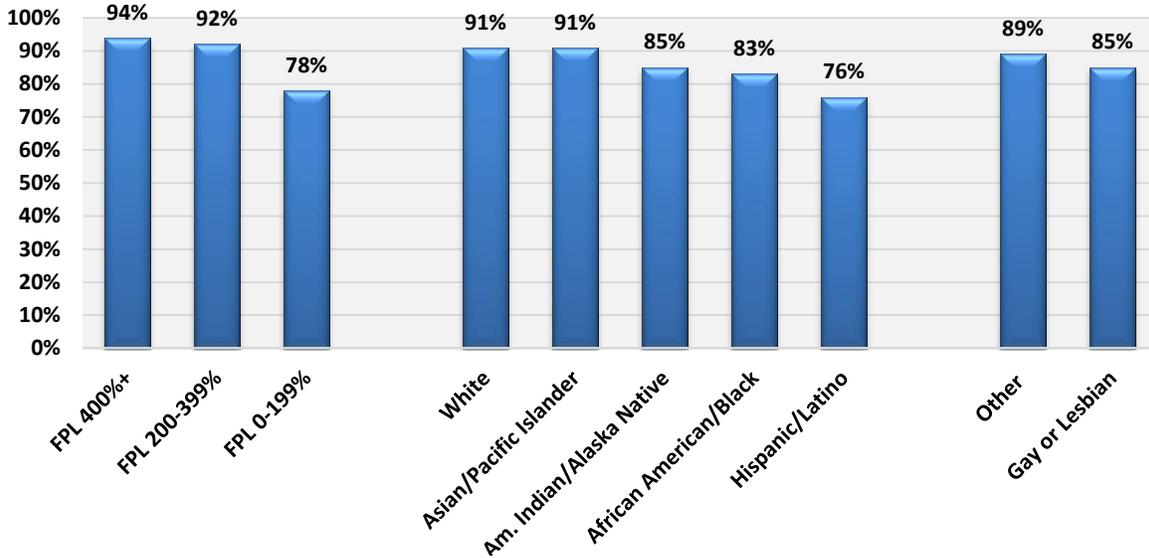
¹³ Marmet, M (2006). Health in an unequal world. The Lancet, vol. 368, Dec 9.

¹⁴ Healthy People 2020. Social determinants of health. Retrieved from www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health

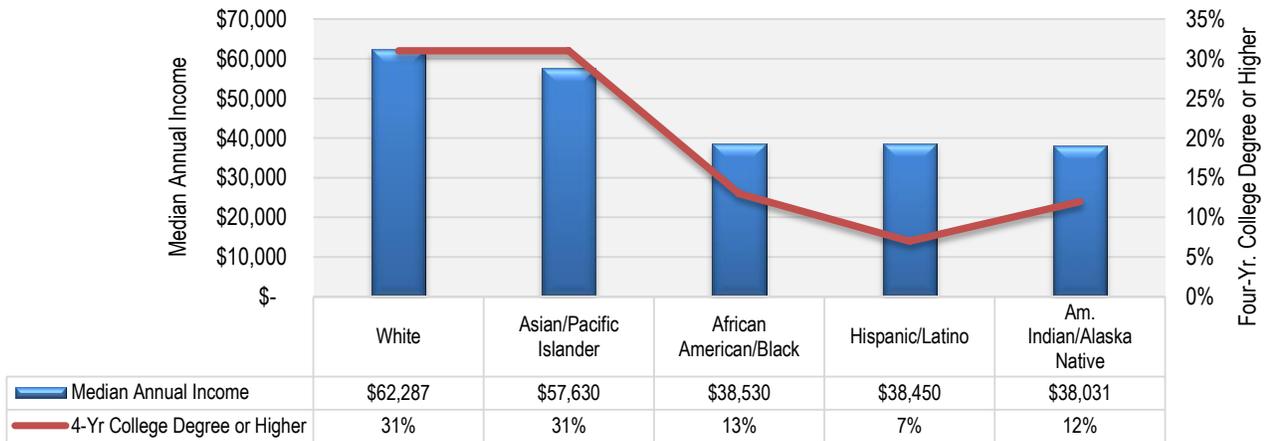
¹⁵ Marks, J.S. (2011). Why your zip code may be more important to your health than your genetic code. Huffington Post. [Internet] Attained at www.huffintonpost.com/james-s-marks/why-your-zip-code-may-be_b_190650.html

In the 'Health Disparities 2013 Colorado Report,' they note that Colorado has health disparities, with notable difference for individuals experiencing poverty, people of color, sexual minorities, among others.

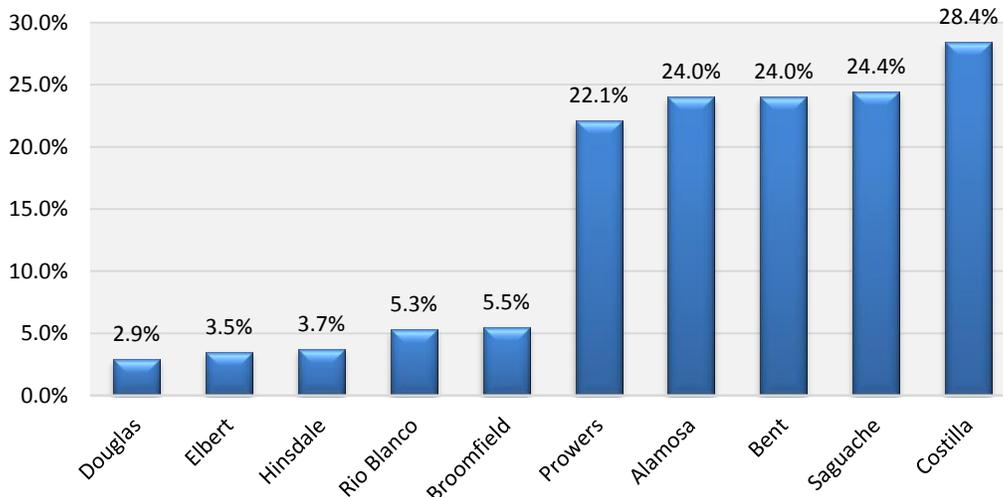
Colorado Adults who Report Good to Excellent Health by Household Income, Race/Ethnicity and Sexual Orientation



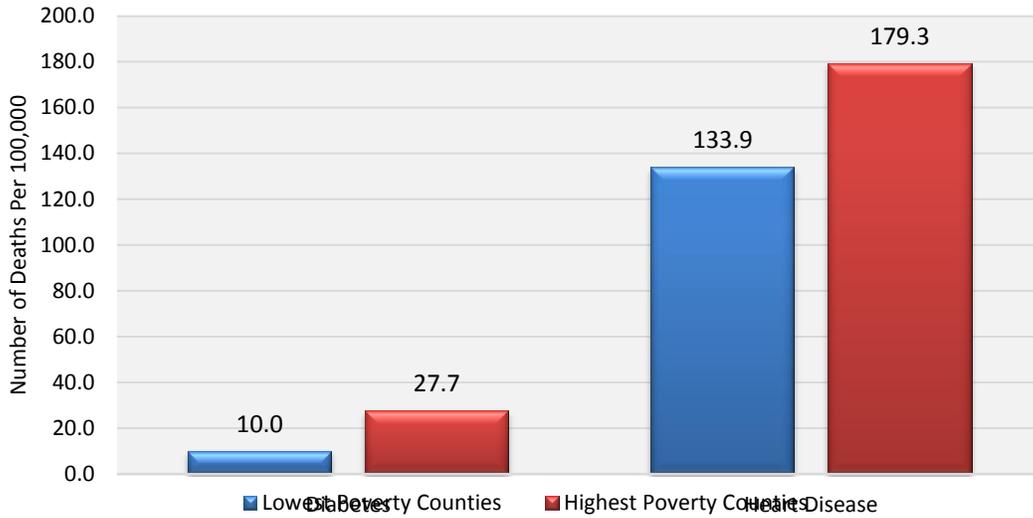
Colorado Household Income & Education by Race/Ethnicity



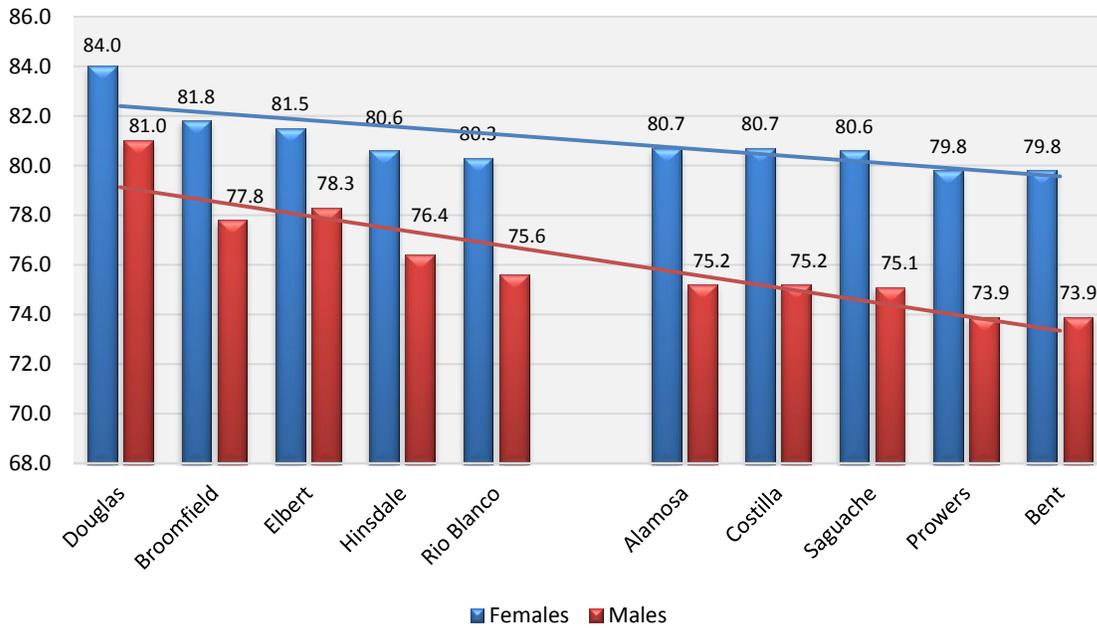
Percent of Poverty in the Five Lowest and Five Highest Counties in Colorado



**Average Death Rate Per 100,000
for Counties with the Highest and Lowest Poverty Rates**



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



Summarize evidence or promising practices to address cost in the topic area

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.¹⁶ Examples 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

Prevention and early intervention targeting disease groups or at-risk conditions or situations produced the most data regarding successful outcomes. One example is Milstein, et al. who recommended the need for a combination of solutions:¹⁷

- ▶ *Extending health insurance coverage to all people.* The cost benefit includes the cost of additional services and medical products used by the newly insured, minus cost savings from fewer hospitalization and visits to the emergency department and earlier disease intervention.
- ▶ *Delivering improved preventive and chronic care.* Focus is on provider consistency and adherence to guidelines for preventive and chronic care, increasing patient adherence from 70 percent on average to 83 percent. Examples include:

 - ▶ Patient reminder systems
 - ▶ Patient involvement in treatment planning and interventions
 - ▶ Greater use of aspirin for cardiovascular disease and stroke prevention
 - ▶ Simple and cost manageable dietary education and monitoring
 - ▶ Smoking cessation treatment
 - ▶ Exercise clubs
- ▶ *Enabling healthier behavior and safer environments.* Researchers have shown that population based interventions to enable healthier behavior and improve environmental safety can produce effects immediately and are likely to yield cost-effective, if not cost-saving returns, yet it generally takes several years before they have their full impact. Examples of these are:

 - ▶ Reducing tobacco use and secondhand smoke exposure
 - ▶ Consumption of saturated and trans fats
 - ▶ Physical inactivity
 - ▶ Exposure to air pollution
 - ▶ Alcohol and drug impaired driving

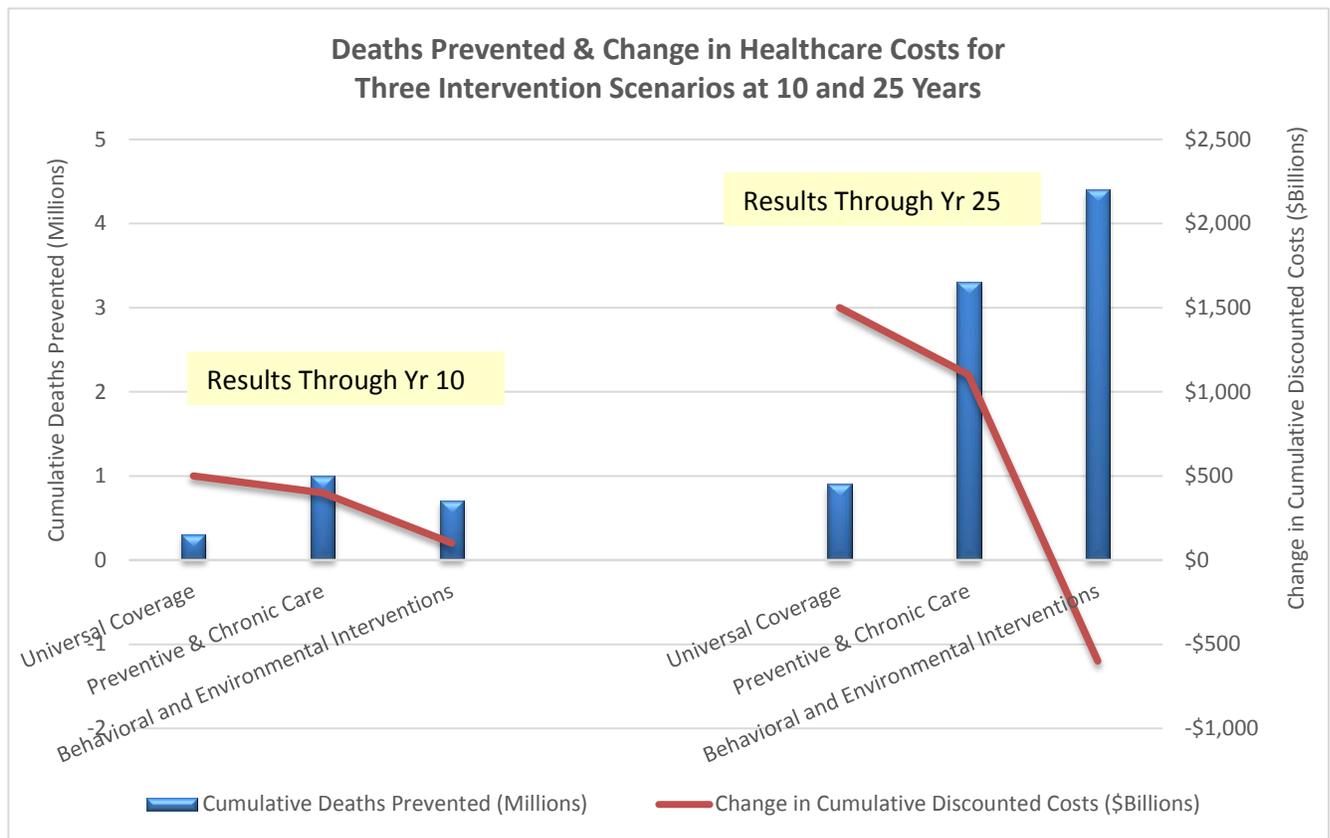
Smoking tobacco is still the largest cause of preventable death. The Centers for Disease Control and Prevention reports that if the United States were to fund comprehensive tobacco control programs annually at the levels the CDC recommends, after five years an estimated five million fewer people would smoke, and hundreds of thousands of tobacco-related deaths would be

¹⁶ Association of State and Territorial Health Officials (2011). The economic case ofr health equity. <http://www.astho.org/Search.aspx?s=Economic%20case%20for%20health%20equity>

¹⁷ Milstein, B., Homer, J., Briss, P., et al. (2011). Why behavioral and environmental interventions are needed to improve health at lower cost. *Health Affairs*, 30, 5: 823-832

prevented.¹⁸ The Robert Wood Johnson Foundation notes that 'Creating a culture of health in the united State requires a commitment to prevention.' Preventing disease and injury is the most cost-effective, common-sense way to improve health; despite this fact, for every dollar spent on healthcare in the United States today, only about four cents goes towards public health and prevention.¹⁹

The Milstein, et al. study and analysis regarding the implementation of the above three interventions shows both a 10 year and a 25 year potential outcome as shown in the chart below:



Blue bars indicate the cumulative number of deaths in the status quo scenario minus those in the intervention scenario (left axis). The red line indicates the change relative to the status quo scenario in cumulative discounted costs, which include both healthcare costs and intervention program costs (right axis).

¹⁸ Centers for Disease Control and Prevention. Best practices for comprehensive tobacco control programs. [Internet]. Atlanta, GA. Available from http://www.cdc.gov/tobacco/stateandcommunity/best_practices/pdfs/2007/bestpractices_complete.pdf

¹⁹ Robert Wood Johnson Foundation. (2013). Return of investments in public health: Saving lives and money. Policy Highlight Brief, Dec. 2013.

In 2013, The New York Academy of Medicine, in collaboration with Trust for America’s Health, published ‘A Compendium of Proven Community-Based Prevention Programs.’²⁰ They conducted an analysis of healthcare costs and prevention interventions and found that disease, environmental, and injury prevention interventions implemented outside of the clinical setting could generate dramatic healthcare savings if population-level interventions conducted by non-medical personnel were implemented. This study showed that an investment of \$10 per person per year in community-based programs to increase physical activity, improve nutrition, and prevent smoking could save the country more than \$16.5 billion annually within five years, a return of \$5.60 for every \$1 invested.

The Academy focused on six issues due to their significance to US health and costs:

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

Below are the recommendations for prevention interventions. *Only included in the ‘recommendations’ are those programs where a systematic review of available studies provides strong or sufficient evidence that the intervention is effective. Factors involved in the analysis included study design, number of studies, and consistency of the effect across studies.*

#	Recommendation
Goal: Reduce the Risk of Cardiovascular Disease, Stroke & Diabetes	
1	Use point-of-decision prompts to increase stair use rather than elevators/escalators ▶ Example: Small Step #67 (Dolan et al. 2006)
2	Implement community design and access that supports physical activity and active transportation including walking paths and school playgrounds ▶ Example: Partnership for an Active Community Environment (PACE) (Gustat et al. 2012)
3	Physical activity interventions in a school-based setting with a home component ▶ Example: Intervention centered on adolescents’ physical activity and sedentary behavior (Simon et al. 2008)
4	Diet and physical activity interventions in a school-based setting with home and community components ▶ Example: Be Active Eat Well (Sanigorski et al. 2008)
5	Community-wide campaigns to promote physical activity ▶ Example: West Virginia Walks (Reger-Nash et al. 2008) ▶ Example: The Rockford Coronary Health Improvement Project (CHIP) (Englert et al. 2007) ▶ Example: A community-oriented, coronary heart disease prevention program (Hoffmeister et al. 1996)
6	Worksite programs for obesity prevention and control ▶ Example: Eat Smart, Move More NC (Dunn et al. 2013) ▶ Example: Ohio State University (OSU) Walking Program (Haines et al. 2007) ▶ Example: Shape Up Somerville (Economos et al. 2007) ▶ Example: A physical activity intervention targeting low-income adults in Oslo, Norway (Jenum et al. 2006) ▶ Example: Well-Integrated Screening and Evaluation for Women Across the Nation Wisewoman (Finkelstein et al. 2006) ▶ Example: Diabetes Prevention Program (Hamman et al. 2006) ▶ Example: Epode (2004)

²⁰ New York Academy of Medicine. 2013. A compendium of proven community-based prevention programs. New Your, NY: New York Academy of Medicine.

#	Recommendation
Goal: Reduce Asthma	
7	Retrofit older vehicles to reduce emissions <ul style="list-style-type: none"> ▶ Example: School buses, diesel emissions, and respiratory health (Beatty and Shimshack 2011)
8	Smoking bans <ul style="list-style-type: none"> ▶ Example: Short-term impact of the smoke-free legislation in England on emergency hospital admissions for asthma among adults: a population-based study (Sims et al. 2013)
9	Home based multi-trigger, multilevel interventions for children and adolescents <ul style="list-style-type: none"> ▶ Example: A Community-Based Strategy for Improving Asthma Management and Outcomes for Preschoolers (Findley 2011) ▶ Example: Community Asthma Initiative: Evaluation of a Quality Improvement Program for Comprehensive Asthma Care (Woods 2012) ▶ Example: New York State Healthy Neighborhoods Program (Lin et al. 2004) ▶ Example: Environmental interventions in seven U.S. cities (Morgan et al. 2004)
Goal: Reduce Sexually Transmitted Infections and HIV/AIDS	
10	Community-level behavioral interventions <ul style="list-style-type: none"> ▶ Example: HIV Prevention Intervention for Women Living in 18 Low-Income Housing Developments (Sikkema et al. 2000) ▶ Example: Real AIDS Prevention Project (RAPP) (Lauby et al. 2000) ▶ Example: Condom distribution: a cost-utility analysis (Bedimo et al. 2002) ▶ Example: Community HIV Prevention Research Collaborative (Kelly et al. 1997)
11	Youth development interventions with community service <ul style="list-style-type: none"> ▶ Example: HoMBReS (Rhodes et al. 2009)
12	Comprehensive risk-reduction interventions for adolescents <ul style="list-style-type: none"> ▶ Example: Cuidate! (Villarruel et al. 2006) ▶ Example: HORIZONS (DiClemente et al. 2009)
Goal: Reduce Injury and Violence	
13	Early childhood home visitation to prevent childhood maltreatment <ul style="list-style-type: none"> ▶ Example: Long-term effects of home visitation on maternal life course and child abuse and neglect. Fifteen-year follow-up of a randomized trial (Olds et al. 1997)
14	School-based programs to prevent violence and bullying <ul style="list-style-type: none"> ▶ Example: Responding in Peaceful and Positive Ways (RIPP) among urban adolescents (Farrell et al. 2001) ▶ Example: Responding in Peaceful and Positive Ways (RIPP) in rural middle schools (Farrell et al. 2003)
15	Pedestrian safety education <ul style="list-style-type: none"> ▶ Example: Safe Routes to School (SRTS) in New York City (Dimaggio and Li 2013)
16	Enhanced enforcement programs for the use of safety belts <ul style="list-style-type: none"> ▶ Example: Multilevel intervention in Latino communities (Schaechter and Uhlhorn 2011)
17	Child safety seat distribution and education programs <ul style="list-style-type: none"> ▶ Example: Increasing car seat use for toddlers from inner-city families (Louis and Lewis 1997) ▶ Example: Child care centers: a community resource for injury prevention (Stuy 1993)
18	Support community and streetscape design that promotes safety and prevents injuries <ul style="list-style-type: none"> ▶ Example: Low-cost traffic engineering measures (LCTEMs) (Yannis et al. 2013)
19	Reduce alcohol-impaired driving <ul style="list-style-type: none"> ▶ Example: Checkpoint Tennessee (Lacey et al. 1999)
20	Exercise-based interventions <ul style="list-style-type: none"> ▶ Example: Central Sydney Tai Chi trial (Voukelatos et al. 2007)
21	Multilevel interventions <ul style="list-style-type: none"> ▶ Example: A community-based multilevel fall-prevention intervention in active and independent older Chinese adults (Xia et al. 2009) ▶ Example: Stepping On (Clemson et al. 2004) ▶ Example: The Stay On Your Feet program (Kempton et al. 2000)

#	Recommendation
Goal: Reduce Tobacco Use	
22	<p>Incentives and competitions to increase smoking cessation combined with additional interventions</p> <ul style="list-style-type: none"> ▶ Example: A randomized, controlled trial of financial incentives for smoking cessation: Worksite (Volpp et al. 2009) ▶ Example: Financial Incentives to Promote Smoking Cessation: Evidence from 11 Quit and Win Contests (O' Connor et al. 2006) ▶ Example: Multilevel worksite health promotion program for cardiovascular risk factors (Prior et al. 2005) ▶ Example: A multilevel intervention to prevent smoking (World Health Organization 1982)
23	<p>Mass media campaigns when combined with other interventions</p> <ul style="list-style-type: none"> ▶ Example: A randomized controlled trial of a community intervention to prevent adolescent tobacco use (Biglan et al. 2000) ▶ Example: A community health education program targeting both French- and German-speaking towns in Switzerland (Gutzwiller et al. 1985)
24	<p>Quitline interventions</p> <ul style="list-style-type: none"> ▶ Example: The effectiveness and cost effectiveness of telephone counseling and the nicotine patch in a state tobacco quitline (Hollis et al. 2007) ▶ Example: Using a quitline plus low-cost nicotine replacement therapy (NRT) to help disadvantaged smokers to quit (Miller and Sedivy 2009)
25	<p>Reducing out of pocket costs for evidence-based tobacco cessation</p> <ul style="list-style-type: none"> ▶ Example: The Return on Investment of a Medicaid Tobacco Cessation Program in Massachusetts (Richard et al. 2012)
26	<p>Smoking bans and restrictions</p> <ul style="list-style-type: none"> ▶ Example: Myocardial Infarction and Sudden Cardiac Death in Olmsted County, Minnesota, Before and After Smoke-Free Workplace Laws (Hurt et al. 2012)
27	<p>Mobile phone based interventions</p> <ul style="list-style-type: none"> ▶ Example: Smoking cessation support delivered via mobile phone text messaging (txt2stop) in the UK (Free et al. 2011)
28	<p>Comprehensive tobacco control policies</p> <ul style="list-style-type: none"> ▶ Example: Adult tobacco use levels after intensive tobacco control measures: New York City, 2002-2003 (Frieden et al. 2005) ▶ Example: California Tobacco Control Program (Fichtenberg and Glantz 2000)
29	<p>Increase unit price of tobacco through excise tax</p> <ul style="list-style-type: none"> ▶ Example: The recent and projected public health and economic benefits of cigarette taxation in Greece (Alpert et al. 2013) ▶ Example: Economic and public health impact of 2007–2010 tobacco tax increases in Ukraine (Ross et al. 2011)
Goal: Reduce Alcohol Use	
30	<p>Server liability</p> <ul style="list-style-type: none"> ▶ Example: Effects of Alcoholic Beverage Server Liability on Traffic Crash Injuries (Wagenaar 1991)
31	<p>Increasing alcohol taxes</p> <ul style="list-style-type: none"> ▶ Example: Effects of Alcohol Tax Increases on Alcohol-Related Disease Mortality in Alaska: Time-Series Analyses From 1976 to 2004 (Wagenaar 2009)
32	<p>Blood alcohol concentration laws</p> <ul style="list-style-type: none"> ▶ Example: Impact of lowering the legal blood alcohol concentration limit to 0.03 on male, female, and teenage drivers involved alcohol-related crashes in Japan (Desapriya et al. 2007) ▶ Example: "Effects of Lowering the Legal BAC to 0.08 on Single-Vehicle Nighttime Fatal Traffic Crashes in 19 Jurisdictions" (Bernat et al. 2004) ▶ Example: "Does Setting Limits Save Lives? The Case of 0.08 BAC Laws" (Dee 2001)
33	<p>Breath testing checkpoints</p> <ul style="list-style-type: none"> ▶ Example: Cost savings from a sustained compulsory breath testing and media campaign in New Zealand (Miller et al. 2004)

#	Recommendation
34	Ignition interlock devices <ul style="list-style-type: none"> ▶ Example: Washington State’s alcohol ignition interlock law: effects on recidivism among first-time DUI offenders (McCartt et al. 2013) ▶ Example: Breath alcohol ignition interlock devices: controlling the recidivist (Raub et al. 2003)
35	Mass media campaigns to reduce alcohol-impaired driving <ul style="list-style-type: none"> ▶ Example: Effectiveness of the anti-drunk driving advertising campaign in New Zealand (Tay 1999)
36	Limits of days and hours of sales <ul style="list-style-type: none"> ▶ Example: Saturday opening of alcohol retail shops in Sweden: an experiment in two phases (Norström and Skog 2005)

Opposing Views

Outright opposing views to social determinants of health were not located; however there were a small number articles on social capital, social theory, socialized medicine, social cohesion, and neo-liberalism^{21,22}

Future directions for this work related to filters; recommendations and steps to achieve; opportunities for cost savings; what it would take to implement

Among health insurers and providers there is growing discussion regarding population health. There is no definitive definition for population health, yet the following is one definition:

*'Population health is concerned with both the definition and measurement of health outcomes and the roles of determinants. The concept and measurement of health and health outcomes focuses attention and research efforts on the impact of each determinant and their interactions on some appropriate outcome. It also allows one to consider health inequality and inequity and the distribution of health across subpopulations, as well as the ethical and value considerations underpinning these issues.'*²³

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.

These interventions must come from various streams, not solely by the healthcare provider. Legislators can be instrumental in passing legislation that encourages new business development in low income neighborhoods for jobs and grocery stores; raising taxes on tobacco, alcohol, and marijuana; environmental legislation that remove toxins from our water, air, and food; further expanding healthcare coverage to the uninsured and underinsured, and enhancing state programs for the medically underserved or those who cannot pay down high deductibles on insurance plans. State departments can sponsor long term mass media campaigns for health, wellness, safety, and resource acquisition. Employers can implement best practices for workplace wellness, and schools can further enhance nutrition and activity programing for children.

²¹ Coburn, C. (2000) Income inequality, social cohesion and the health status of populations: the role of neo-liberalism *Social Science & Medicine* 51:135±146

²² Szreter, S & Woolcock, M (2003). Health by association? Social capital, social theory and the political economy of public health. *International Journal of Epidemiology* 2003;33:1–18

²³ Kindig, D. & Stoddart, G. (2003). What is population health? *Am J Public Health*. 2003 March; 93(3): 380–383.

