



# Prevention is the Most Ethical Approach

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## Commentary

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## Summary

We live in an era where a reminder is warranted of what we know, and what we can do to further prevent chronic diseases. This article shall begin with the state of our knowledge and the science associated with interventions to prevent and control various chronic conditions. This compelling information will then segue into discussion regarding the state of public health resources to potentially expand and implement strategies to reach those most at risk and to have the greatest impact.

## What we Know

Today, six in ten adults in the United States have a chronic disease and four in ten have two or more diseases. These conditions are commonly known and include heart disease and stroke, cancer, diabetes, kidney disease, lung disease and Alzheimer's disease. Combined these diseases are the leading drivers of our national annual health care costs that are expected to exceed \$4.1 trillion this year (yes - that was a "t"). In many instances, these conditions can be prevented or controlled through several known measures so that individuals and families endure lesser impact - as would businesses and our economy as a whole [1].

## Diseases and Risk Factors

One of the key methods of impacting these conditions is by reducing the impact of risk factors -some of which are common to multiple conditions. We will outline the latest known data and strategies below.

### Heart Disease and Stroke

These conditions alone are involved in one in three deaths in the U.S. (over 859,000 annually), many of which

are premature. Nearly half of U.S. adults have high blood pressure and high cholesterol, and only a quarter of them have it controlled. This impacts seven of ten having their first heart attack and eight in ten having a stroke. We know that over 86 million people could benefit from taking cholesterol lowering drugs - but only about half do. The economic impact begins with \$216 billion in healthcare costs and \$147 billion in lost productivity [2].

### Cancer

1.7 million people are diagnosed with cancer annually. This is the second leading cause of death in the U.S., impacting over 600,000 each year. One in three of us will have cancer in our lifetime leading to current annual costs in excess of \$185 billion. Prevention of smoking, overweight and obesity, sun exposure, excessive alcohol use, vaccine preventable infectious disease, and screening for common cancers are appropriate intervals that can have a significant impact on the people impacted and the costs [3].

### Diabetes

Over 133 million Americans have pre-diabetes or diabetes, and one in four with diabetes don't know they have it. This disease is also a risk factor for several others, including heart disease and stroke mentioned above. The economic impact is in excess of \$327 billion annually. Modifiable risk factors include overweight and obesity and lack of physical activity, smoking, and lack of knowledge [4].

### Overweight and Obesity (including Physical Inactivity and Poor Nutrition)

Half of American adults don't get enough regular physical activity (77% of high school students in this category as well) leading to \$117 billion in costs related to this alone. This is

also a common risk factor for all the previously mentioned diseases. Over 90% of us consume too much sodium; one in six pregnant women have low iron levels and nearly \$173 billion annually is spent on healthcare for obesity [5,6]. Additionally, these risk factors apply to heart disease, stroke, diabetes, several types of cancer, Alzheimer's disease and many other chronic diseases [7].

### **Alzheimer's Disease**

This year, we know more than 5.8 million Americans are living with Alzheimer's disease, and that number is projected to jump to 14 million by 2060. Alzheimer's disease is one of the top ten causes of death, in fact it is currently sixth among U.S. adults. Age and family history are common risk factors, as are some behavioral risk factors [8].

## **Current Public Health Response**

### **Heart Disease and Stroke**

Prevention and management programs are funded in all 50 states, some large cities and tribal groups focus on improving prevention, detection, and control of heart disease and stroke risk factors, with a focus on high blood pressure and high cholesterol. They also work to improve recognition of the signs and symptoms of a heart attack or stroke, and the quality of care prior to and following these events. These prevention efforts have the potential to reach many more individuals and communities with additional resources.

### **Cancer**

Current efforts include public health education and screening programs (breast and cervical cancer) in every state. Additional programs exist in 20 states for colorectal cancer screening, and data collection through the National Cancer Registries to continue to inform learning. These programs have the potential to reach many more individuals and communities with additional resources.

### **Diabetes**

Current efforts in all states include education and implementation of the Diabetes Prevention Program, one proven strategy. The obstacle to reach more communities, and people at risk is available resources.

### **Overweight and Obesity (including Physical Inactivity and Poor Nutrition)**

The current primary public health program to address these risk factors that impact so many, and so many conditions. For example, the State Physical Activity and Nutrition (SPAN) Program is currently funded in only 16 states. For additional

information on this program and possible solutions, see reference 7 related to Nutrition, Physical Activity and obesity [7].

### **Reducing risk for Alzheimer's Disease (and other dementias)**

Modifiable risk factors include physical activity, diet and nutrition, tobacco use, excessive alcohol use, cardiovascular health, presence of diabetes, sensory impairment, and social engagement. Note that except for the last two factors, these are all held in common with several of the other conditions mentioned [8].

## **Chronic Disease Prevention and Ethics**

The field of Bioethics is known to be based on and focus on key principles. It is on these principles that the common thread rests. The four principles are Autonomy, Beneficence, Non-Maleficence, and Justice [9]. Here is how we make the connections.

### **Autonomy**

The respect for individuals exercising a right to informed decision making, requires that those decisions be informed by facts. The data above don't support that large portions of the population are informed of facts and opportunities for prevention before they already have serious conditions requiring treatment. This would call on us collectively to enhance those opportunities to be informed with the best current information available.

### **Beneficence**

The principle calling on all who participate in the health system to do so with the intention to "do good", to benefit all with their participation and knowledge. This goodness sometimes requires the investment of resources to evidenced-based interventions to achieve the good.

### **Non-Maleficence**

More commonly known as the principle to "do no harm," calls on all of us to avoid harm whenever possible. What easier way to avoid harm than to prevent risk for chronic disease by engaging in public health education and interventions that prevent harm before it happens – focusing rather on wellness.

### **Justice**

What we often call the "Fairness Principle," calling on us to focus on the "All" in "All are Created Equal", and to assure that when we have knowledge and known effective programs

they are available to all who can benefit from them [10].

These principles are complementary and aim to benefit all of us, to be healthier people, in healthier communities, with a healthier economy. We know much about the most effective ways to prevent and control chronic diseases thanks to the leadership of experts at CDC and the hard work of public health professionals in state health agencies working with local communities and key partners. We also recognize the obstacle to reaching more people, preventing more diagnoses, limiting costs of healthcare, the cost to families and costs to the economy in absenteeism and presenteeism is the need for more investment in public health programs that work. To those working hard in these and related areas we say - "Keep up the good work". What you do makes a difference, and your efforts are appreciated.

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