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Chronic Disease Prevention 2024 Update: Essential to our Health and Future

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Abstract

To the great frustration of public health practitioners and healthcare providers alike, preventable chronic conditions and risk factors continue to be present and, in some cases, grow in influencing our collective health and wellbeing. Despite some reduction in demand on health systems with a lessening of the Covid-19 pandemic, we continue to read of long waits for appointments for primary and specialty care, and our definitions of "Urgent" and "Emergency" bear scrutiny. Workforce shortages remain an issue across jurisdictions and other functional challenges remain including ambulance diversion and delays on entry to emergency rooms, closing floors while demand for beds increases, shortages of supplies and medications, and continued presence of risk factors (i.e. tobacco and related products, unhealthy foods, community challenges to regular physical activity). These are important, but an incomplete picture without addressing the proven opportunities for prevention of chronic conditions and risk factors that lead to these troubling phenomena. When we consider what could be gained by preventing many cases of overweight and obesity, reducing stress on our bodies through better diet and more activity, better outcomes through earlier screening for common cancers and other public health strategies, we see clearly that investing in these efforts on a national basis must be part of the solution. Further, these challenges must be addressed in a way the levels the playing field so people now subject to disparate conditions have equitable access comparable to all.

Keywords: Chronic Disease; Covid-19; Obesity; Heart Disease; Cancer

Abbreviations: CDC: National Center for Chronic Disease Prevention and Health Promotion; WHO: World Health Organization; USDA: United States Department of Agriculture; NTCP: National Tobacco Control Program; DPP: Diabetes Prevention Program; IARC: International Agency for Research on Cancer.

Introduction

We live in a time when our knowledge and our actions don't always match up. In this case, the knowledge of the value of preventing disease and disability far surpasses our investment in public education, provider incentives,

and public health infrastructure that could support putting that knowledge into practice. Today's disturbing news about our healthcare system includes waits of months for an initial appointment with a specialist for newly diagnosed heart disease, diabetes, potential cancers, dementias, mental health issues and other chronic conditions. They also terrifyingly include waits in hospital parking lots for emergency ambulance patients, sometimes for hours [1]. These are system issues that must be addressed, but we would be sorely misled if that was all we corrected. The analogy that comes to mind is wiping up around an overflowing sink while the faucet runs full force. This is absolutely the time to revisit the issue of improving our health generally through better lifestyle choices and enhancing efforts for prevention of chronic conditions that all too often turn critical. If we make these changes, we won't eliminate the issues we mentioned, but we can reduce the impact they have on our lives and health in both the short and long term. Having access to clear, accurate information consistently is part of the answer that we've addressed previously in these pages [2]. We will revisit and review some of these critical areas and how they impact our decision making and health systems.

We hear much discussion about healthcare coverage and costs associated with workforce shortages, insurance, pharmaceuticals, surgical interventions, and related issues [1]. All of these are important but leave out perhaps the most important topic - prevention. There is a growing desperate need to understand this comparison and public health chronic disease prevention programs are in place and ripe for expansion to be sure these messages are understood [3].

Facts Matter

The urgency of addressing chronic disease can't be stressed enough - these conditions account for over 86% of our healthcare costs, and much of this is preventable [4]. If we invest at levels that make a difference, we could spend $240 now on prevention instead of $1,000 in the future on reactive healthcare costs for chronic diseases. Healthcare costs are only the tip of the iceberg. Absenteeism (time taken off work due to illness or other reasons) and presenteeism (attending work despite an illness that prevents full functioning) in school and at work take a significant toll on family life, the ability to plan for the future, and our global economic competitiveness [5].

Almost every American family is adversely affected by chronic diseases in one way or another through the premature death of a loved one or due to family members with lifelong illness, disability, or compromised quality of life. These burdens affect society on both the personal and community level, not just in the physical disease, but also in the financial burden that comes with the cost of chronic disease [5].

At a time when our investments in housing, education, and medical care have outstripped inflation, our investment in prevention has lagged far behind. Today in the U.S., we fund prevention efforts at approximately the same amount we did in 2001, effectively a funding cut of 42% when inflation is considered. To summarize and focus:

- As of 2014, 1 in 4 has obesity and 60% of American adults had at least one chronic condition, and 42% had more than one chronic condition [6].
- Chronic diseases such as heart disease, cancer, and diabetes are the leading causes of death and disability in the United States. Seven in 10 leading causes of death in 2017 were due to chronic diseases, totaling about 1.75 million American deaths [7,8].

Chronic Disease Prevention

- More than 86% of the nation's healthcare costs relate to chronic diseases, and most of those costs are preventable [9,10].
- The projected prevalence of any cardiovascular disease in the United States will increase to over 45% by the year 2035 [11].
- Risk factors such as poor diet, lack of activity, alcohol and drug abuse, and ignoring medical advice all contribute disproportionately to this crisis [12].
- 27% of young adults are too overweight to serve in the military. Many others lack necessary fitness to meet requirements [13].
- According to the CDC, 90% of the nation's $3.8 trillion per year healthcare costs can be attributed to people with chronic diseases and mental health conditions [1].
- A recent Partnership to Fight Chronic Disease publication determined that treatment of the seven most common chronic diseases, coupled with productivity losses, will cost the U.S. economy $2 trillion dollars annually - $8,600 per person - by 2030. The same analysis estimates that reductions in unhealthy behaviors could save 1,100,000 lives per year.
- In terms of public insurance, treatment of chronic disease constitutes a significant proportion of spending and improving prevention would result in significant cost savings. Preventing child obesity is a critical step for the nation and there are cost-effective interventions in child care, schools and community. For example, improving physical activity in child care costs only $4.60 per child per year and would avert over 74,000 cases of childhood obesity including among children on Medicaid and CHIP. In addition, increasing the colorectal cancer screening rate to 70% could reduce Medicare spending by $14 billion in 2050 [3].

It is long past time for us to face reality - if we don't invest in prevention now many of us will die sooner, after

living lives with serious chronic conditions that dramatically alter lifestyle choices. We have created a culture where the healthy choice often is the hardest choice at every stage of our lives. We know we need to eat better, be more active, and avoid tobacco - but we're cutting back on recess and physical education, cutting back on the ability to be active in our everyday lives, and tobacco is still widely available, especially to children [14-32].

The CDC estimates that modifying three risk factors - poor diet, lack of physical activity, and smoking - can prevent 80% of heart disease and stroke, 80% of type-2 diabetes, and 40% of cancer. Good, healthy food options are more available today - but not everywhere - and not for everyone. If we are serious about improving the lives of Americans, having an impact on healthcare costs, reforming our system, and reducing disparities, we need to invest in a meaningful way in prevention [19-23].

Investing in Chronic Disease Prevention Today

In the current environment only a fraction of 1% of federal healthcare investment goes to prevention - this amounts to policy malpractice, we know better. Even with this limited funding, states are implementing diverse, cost-effective strategies that work for: early detection of some cancers, prevention and control of diabetes, reduction of heart disease and stroke, reduction of the disability associated with all these conditions, and arthritis as well (chronicdisease.org), and in recent years the Healthy Brain Initiative to reduce dementia risk and health risks of caregivers. To continue and expand this work, there needs to be a substantial investment in CDC's National Center for Chronic Disease Prevention and Health Promotion and through this vehicle state health agencies and then on to local organizations. State Chronic Disease Directors and the State Health Agencies where they work have a unique role in coordinating activity and steering resources to communities most in need and in creating linkages across systems with healthcare providers, insurers, educators, community organizations, and others.

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Safe places to get physical activity in our daily lives are more available, but not everywhere, and not for everyone. Knowledge of the dangers of tobacco and unhealthy food and beverages is more readily available - but not equally. This is a trend we can reverse!

Social Determinants of Health, Health Equity and Justice

The World Health Organization's (WHO) Commission on Social Determinants of Health cites a growing body of evidence that the conditions, circumstances, and situations in which people live have a greater influence on health than health care or lifestyle choices. The social determinants of health are key factors in understanding and addressing disparities in chronic disease outcomes. These determinants encompass a wide range of conditions and circumstances in which people are born, grow, live, work, and age, and they significantly impact health risks and outcomes. Examples include access to quality education, stable housing, employment opportunities, healthcare access, and exposure to environmental hazards. By recognizing and addressing these social determinants, we can work towards creating a more equitable society where all individuals can lead healthy lives and have access to health promoting resources. Initiatives that focus on improving these social determinants, such as affordable housing programs, educational reform, and employment opportunities, play a critical role in reducing health inequities. For instance, if individuals do not have convenient access to grocery stores offering nutritious food, lack a safe place to exercise, and/or have limited access to safe housing, they are more likely to experience poor dietary habits, which can increase the likelihood of developing health issues like heart disease, diabetes, and obesity. To effectively assist an individual with diabetes without stable housing or an obese child with limited access to healthy food, healthcare providers must expand their focus beyond traditional medical interventions and collaborate with social services organizations to address housing and nutritional needs which can promote or prevent positive health outcomes. Ultimately, facilitating connections with non-healthcare service providers is crucial to addressing the social factors that influence well-being. Enhanced partnerships between health systems, social service providers and historically non-traditional partners are crucial to improving health outcomes in the United States.

Justice and public health are closely intertwined. Racism and discrimination contribute to inequities in healthcare access, safe affordable housing, transportation barriers, educational outcomes, and access to fresh fruits and vegetables, leading to detrimental effects on communities experiencing the greatest need. The damage caused by systemic biases and discrimination has resulted in unequal health outcomes and limited access to resources, early mortality, and higher costs. Overcoming these burdens requires a multi-faceted approach, including policies that address social determinants of health, support for underserved and disinvested communities, and programs aimed at reducing disparities in health, wealth, and

opportunities. By promoting health equity and addressing the root causes of discrimination, we can work towards a more just and inclusive healthcare system for all [33,34].

Why Chronic Disease Prevention?

Many routinely miss or ignore their body's warnings about the onset of a serious chronic disease and or live in neighborhoods where they lack affordable healthy food options or safe places for physical activity and are unable to receive preventive care due to social or economic barriers. In addition, 12.8 percent (17.0 million households) were food insecure in 2022; food-insecure households (those with low and very low food security) as defined by USDA, had difficulty at some time during the year providing enough food for all their members because of a lack of resources or are unable to receive preventive care due to social or economic barriers [9]. The result is poor collective health quality in the country that spends much more on healthcare than anywhere else. We also know there are strategies and interventions that can make a difference.

The following are some key data points and examples:

Obesity

- Adults with obesity have higher risk for developing heart disease, type-2 diabetes, and some types of cancer.
- Children with obesity are more likely to have obesity as adults.
- Obesity costs the US healthcare system nearly $173 billion a year.
- Numerous evidence-based, cost-effective strategies are available to help prevent obesity [10].
- Hospitals can implement policies and activities that promote continuity of care for those who breastfeed.
- State licensing regulations can support healthy eating and physical activity in Early Care and Education programming.
- Communities can increase equitable and inclusive access to physical activity for everyone across sectors and settings.
- Food systems change can make healthy food available and affordable in food retail and food service settings to enable people to make healthier food choices.

Tobacco Health and Economic Burden

- Cigarette smoking is the leading cause of preventable disease, disability, and death in the United States.
- More than 16 million adults in the United States have a disease caused by smoking cigarettes, and smoking-related illnesses lead to half a million deaths each year.
- Smoking-related illness costs the United States more than $600 billion in 2018, including more than $240 billion in health care spending and nearly $372 billion in lost productivity.
- In 2021, 11.5% of U.S. adults (an estimated 28.3 million people) currently smoked cigarettes [24-32].

Youth Tobacco Use

- Youth use of tobacco products in any form is unsafe.
- In 2023, in 2023, more than 6 of every 100 middle school students (6.6%) and about 1 of every 8 high school students (12.6%) reported current use of a tobacco product.

National Tobacco Control Program

- CDC's National Tobacco Control Program (NTCP) is the only nationwide investment that supports all 50 states, the District of Columbia, 8 U.S. territories, and 26 tribal organizations for comprehensive tobacco control efforts and quitlines.
- States that have made larger investments in comprehensive tobacco control programs have seen larger and faster declines in cigarette smoking among adults and young people.
- For every $1 spent on strong tobacco control programs, states achieve a $55 return on investment, mostly in averted health care costs to treat smoking related illness.

Tips from Former Smokers®

- From 2012 - 2018, the Tips From Former Smokers Campaign®(Tips®) motivated more than 16 million US adults to make a quit attempt and 1 million US adults to quit smoking for good.
- For every $3,800 spent on the Tips campaign between 2012 - 2018, we prevented an early death. A cost-effectiveness study on the topic factored in smoking relapse, inflation, and advertising and evaluation costs [4].

Diabetes

- Healthcare costs for a person with diabetes are 2.3 times higher when compared to someone without the disease.
- Total costs of diagnosed diabetes in the United States equaled $327 billion in 2017. This includes $237 billion in direct medical costs and $90 billion in lost economic productivity.
- With a focus on pre-diabetes and risk factors, the Diabetes Prevention Program (DPP) provides education for improved diabetes management and has been proven to improve well-being and reduce costs. State Public Health Diabetes Prevention and Control Programs are

essential elements in implementing and disseminating these strategies [5,7,8].

Heart Disease and Stroke

- Almost half of all American adults have high blood pressure.
- Cardiovascular disease is responsible for one in three deaths - 859,000 people - in the United States.
- Heart disease and stroke are responsible for $216 billion in healthcare system costs and $147 billion in lost job productivity.
- State Public Health Heart Disease and Stroke Prevention Programs provide a critical link between population-based efforts to reduce risk, community prevention efforts, and clinical care [7-9].

Cancer

Colon cancer stage 4 treatment is three times more expensive than stage 1 treatment costs [7].

Public health early detection programs for breast and cervical cancer have been responsible for identifying thousands of cancers in the early stages when treatment is more effective and less expensive. State Public Health Breast and Cervical Cancer Screening and Education efforts have been proven to increase screening rates for at-risk populations and often the entire population. The program has increased breast and cervical cancer screening by serving more than five million women with a focus on the medically underserved especially Black, Hispanic, and American Indian communities [8].

New estimates from WHO and the International Agency for Research on Cancer (IARC) show there were an estimated 20 million new cancer cases and 9.7 million deaths in 2022. The estimated number of people who were alive within 5 years following a cancer diagnosis was 53.5 million. About 1 in 5 people develop cancer in their lifetime, approximately 1 in 9 men and 1 in 12 women die from the disease, according to the latest estimates [35].

Alzheimer's Disease

- Early detection, planning, and comprehensive caregiver support have been shown to delay institutional placement for people with Alzheimer's disease by 1.5 years - while maintaining dignity, safety, and caregiver well-being [9,11,19-21].
- The cost differential for families and home and community-based care systems vs. nursing home placement varies from state to state - but is substantial everywhere.
- The Lancet Commission, echoed by the U.S. National Plan, now points out that up to 40% of the risk for Alzheimer's and other dementias are preventable or can be delayed. We need to make this common knowledge [10].
- The National Action Plan to Address Alzheimer's Disease and accompanying recommendations call for a state-led agency to assure coordination of evidence-based high-quality services for people with dementia and their caregivers. This is consistent with the National Association of Chronic Disease Directors' Healthy Aging Council recommendations. There are clear examples of strategies that improve quality of life and reduce system costs. Resources should back up the proposal for state coordination of these efforts to implement and disseminate proven strategies.

Multiple Chronic Conditions [11,36]

Those with MCC have worse health, use more health services, and spend more on healthcare. These trends have been troublingly stable since 2008. Individuals with MCC have greater difficulties with activities of daily life and other functions that are important for maintaining independence.

Public Health Chronic Disease Prevention and Control Programs save Lives and Money

States effectively maximize federal investments and ensure the most efficient mobilization of local organizations, while at the same time avoiding duplication. The minimal investment in chronic disease prevention and control through CDC, CDC supported state and community-based programs and states, individually has resulted in developing an extensive portfolio of strategies that work. These programs are not scalable across the nation with current financial resources. This is the largest barrier we are facing with regard to preventing and controlling expensive chronic diseases. The federal investment needs to be at a meaningful level such that every state and territory has a cadre of evidence-based programs to fight chronic disease including:

- Healthy Nutrition, Increasing Physical Activity and Obesity Prevention
- Early Detection of Cancers and Cancer Survivorship Services
- Diabetes Prevention and Control (including prevention of related kidney disease)
- Heart Disease and Stroke Prevention
- Healthy Community Programs (REACH, others)
- Tobacco Prevention and Control
- Alzheimer's Disease Program (Healthy Brain Initiative -including dementia risk reduction)
- Arthritis Prevention and Control
- School Health and Oral Health Programs

America is on the precipice of great challenges and great opportunities; we need to invest in a meaningful way in prevention now, before it is too late, and we become too ill

to invest. The place to start is at CDC, with the state-based programs mentioned above. An additional investment is needed this year with an eye toward an additional $1.5 billion in the coming year that would allow the programs listed above to have a presence in every state and for states to support activity in many communities. Primary examples include fully funding the Healthy Nutrition, Increasing Physical Activity and Obesity Prevention Programs - currently partially funded in only 17 states. Given what we know about the impact of these risk factors, these programs should have initiatives in communities across the nation. Expansion of other key programs to reach the entire nation should follow closely behind. Trust for America's Health estimates that an investment of $10 per person per year in community-based programs tackling physical inactivity, poor nutrition, and smoking could yield more than $16 billion in medical cost savings annually within five years. These savings represent a remarkable return of $5.60 for every dollar spent, without considering the additional gains in worker productivity, reduced absenteeism at work and school, and enhanced quality of life [22,23]. Troublingly we see today that Appropriators in the House of Representatives are calling for elimination of funding for Tobacco Control initiatives. This would result in programs stopping at CDC and across the country. As you can see, the long-term health and financial cost of this poorly advised change isn't sustainable [37].

The Lens of Bioethics

When we look at this from the perspective of bioethics, focused on "doing the right thing", it is crystal clear that when we're addressing the multiple related crisis in healthcare, we must invest in the prevention of chronic conditions in every jurisdiction. This reflects all the principles of bioethics through respecting a person's right to be fully informed when exercising autonomy, furthering the intent to do good called for by beneficence, avoids untold harm, and increases fairness and just use of resources. This is required for all the practical reasons mentioned above, also, and maybe most importantly because it is the right thing to do.

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