The Journey Upstream: Chronic Disease Prevention and Control Over the Years

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Over the last several decades, the field of public health has moved upstream to better address the roots of chronic disease. From addressing individual risk factors of disease, to addressing social determinants of health, to addressing social and institutional factors that drive inequity, public health's role in addressing chronic disease prevention has required collaboration across many community sectors.

Introduction

Public health has been defined as what we as a society do to assure the conditions in which people can be healthy [1]. Despite the tremendous progress made by the United States in the past century to improve health outcomes of the population and increase life expectancy, there have been substantial disparities that have inhibited health equity among Americans. An individual's zip code remains a more accurate predictor of health than their genetic code. Therefore, it has been crucial for public health to focus greater attention on community needs.

In 2016, the US Department of Health and Human Services introduced the concept of Public Health 3.0. Public Health 3.0 is focused on addressing social determinants of health, which are the conditions in which people are born, live, work, and age that strongly influence an individual's overall health. This includes access to safe housing, transportation, employment, and healthy food. At the core of Public Health 3.0 is cross-sector collaboration where public health leaders serve as the "chief health strategists" for their communities, advancing interventions that promote health and healthy equity including addressing these social determinants of health [2].

This focus has developed over time as an extension of public health's focus and experience in policy, systems, and environmental change. Public health departments have been successful in addressing individual risk factors for chronic disease, such as tobacco use or poor nutrition, through policy changes like smoke-free air laws and organizational food procurement policies [3]. Some of the most expansive work in this area in North Carolina occurred under the Communities Putting Prevention to Work and Community Transformation Grants, which the Centers for Disease Control and Prevention (CDC) established to focus on tobacco, active living, and healthy eating. Through this funding, the North Carolina Division of Public Health and local health departments across the state supported the implementation of an estimated 200 policy and environmental changes to reinforce healthy living, including smoke-free air policies, joint-use agreements for school playgrounds, and healthy food retail changes [4]. This work continues today through the Healthy Communities program. Through this support, local health departments select from a menu of policy, systems, and environmental change options to address chronic disease and injury, including implementing tobacco-free air policies at colleges and universities, establishing community design that supports active transportation like walking or biking, and supporting organizational food procurement policies.

For the past several years, the North Carolina Department of Health and Human Services (NCDHHS) has increased its focus on addressing social determinants with the aim of delivering health, not just health care. With this priority, NC Medicaid submitted and received approval for a waiver to implement an innovative new program, the Healthy Opportunities pilots. The Healthy Opportunities pilots were designed to provide up to $650 million in Medicaid funding to test the impact of providing selected evidence-based interventions related to housing, food, transportation, and interpersonal safety. The pilots will allow for the "implementation and evaluation of a systematic approach to integrating and financing evidence-based, non-medical services into the delivery of health care" [5]. While these interventions will be implemented at the individual level, the impact of financing these services can further incentivize community-level infrastructure and policy change addressing determinants of health [5].

Opioid Use: A Chronic Disease

In North Carolina, there has also been a shift to focus on social determinants of health in areas like opioid use. About one in 14 people in the state reported a substance use dis-

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order in the last year [6]. Opioid use disorder is a chronic disease, like diabetes or hypertension, that is influenced by multiple factors including genetics and environmental conditions. Research in neurobiology has shown that repeated exposure to opioids causes structural changes in the brain that affect executive functioning, increase stress reactivity, and desensitize reward circuits, which may persist even long after use stops. The risk of relapse is a critical component of opioid use disorder, as it is with many other chronic diseases. Relapsing is not indicative of moral or treatment failure, but rather demonstrates a need for ongoing tailored treatment, as there is no "one size fits all" approach to treatment. Opioid use disorder can be effectively managed with evidence-based treatment including medications, behavioral interventions, and other social support services.

In addition to the recognition of opioid use disorder as a chronic, relapsing condition requiring tailored and ongoing treatment, there is recognition of the need for community and environmental supports that assist individuals in their treatment and recovery process. In 2017, North Carolina introduced the Opioid Action Plan, which was updated in 2019 to the Opioid Action Plan 2.0 (OAP 2.0) [7, 8]. The OAP 2.0 lays out a three-pronged approach to addressing the opioid crisis in our state: prevention, connection to care, and harm reduction. Within each of these focus areas are several strategies including expanding access to treatment and recovery supports, increasing access to naloxone, and promoting judicious prescribing of opioids. Additionally, with public health 3.0 at the forefront, addressing the nonmedical drivers of health is a priority strategy of the OAP 2.0, focusing on housing, transportation, and employment. These foundational factors impact an individual's ability to access treatment or harm reduction services and adhere to a care regimen. An example of a policy addressing these factors is Executive Order 158, issued by Governor Cooper in 2020. This executive order establishes Fair Chance Hiring, which gives those with previous criminal history, including substance use, a fair chance at employment [9]. The order removes criminal history questions from applications for state employment and prohibits inquiries into an individual's criminal history during the initial stages of the hiring process [9]. This policy will give individuals in recovery a chance at gaining employment and help decrease recidivism. Employment and health are connected—employment and income are directly linked to life expectancy and quality of life [10].

Chronic Disease, COVID-19, and Health Equity

As we have seen through the emergence of the COVID-19 pandemic, public health's role in chronic disease prevention is foundational for ensuring a healthy and resilient population. People with three or more chronic conditions are five times as likely to be hospitalized from COVID-19 [11]. Preventing chronic disease not only protects the population from adverse outcomes due to the chronic disease itself, but also means a healthier population that is less prone to adverse impacts of disrupted care from other public health threats like hurricanes.

In addition to the increased risk of hospitalization for people with chronic disease, COVID-19 has also further amplified existing health disparities. Black and Latinx populations are much more likely to be hospitalized or die from COVID-19 [12]. This outcome is the result of decades and layers of social and environmental inequities that have resulted in decreased health and increased risk of exposure. Lack of healthy food and spaces for active living, greater chronic disease, increased representation in essential workers, and decreased access to health care are just a few of the underlying factors.

Although the field of public health continues to move upstream in evaluating and addressing the factors that impact disparities, there is a need to go even further. In addition to addressing living conditions that include housing, transportation, and employment, the field of public health can move further upstream by addressing social and institutional factors that drive inequities [13]. For example, differences in health outcomes by race are a clear imperative for public health to go further upstream and to evaluate policies, programs, and structures through an intentional race equity framework [14]. The American Public Health Association and the National Association of Chronic Disease Directors have tools that enable public health programs to evaluate their programs using a race equity framework [15, 16].

Conclusion

Over the last 50 years, the field of public health and health care has moved progressively upstream in addressing chronic disease, from first focusing on individual risk factors of disease; to policy, systems, and environmental changes that address those risk factors; to moving to policy, systems, and environmental changes that address community and social supports; to now focusing on pervasive social and institutional inequities that impact health. The continued move upstream gives public health an ever-expansive focus and opportunity to impact health. As we continue to think in this way and address the root drivers of health, we will need to focus especially on the drivers of racial and ethnic health disparities in our country. Robert Wood Johnson's take on health equity sums it up well: "Health equity means increasing opportunities for everyone to live the healthiest life possible, no matter who we are, where we live, or how much money we make" [17]. Continuing to move upstream to address chronic disease will help us get there. NCMJ

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