Invited Editorial

Chronic disease prevention as an adaptive leadership problem

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https://doi.org/10.21633/jgpha.6.401

In my role, I frequently travel around the state. In one particularly memorable trip, I traveled first from Atlanta to Augusta to Valdosta and then to Jessup, through Dublin and Macon, and back to Atlanta. In those nearly 900 miles, largely in rural Georgia, I worked with health districts concerning diabetes and school districts regarding prevention of childhood obesity. A few minutes of that trip had a profound impact on my understanding about opportunities for prevention of chronic diseases. About two hours into the drive on the last day, with beautiful sunshine along a rural road, we came to a school bus that was stopped. Three smiling girls, who looked to be sisters about 10, 8, and 6 years of age, exited from the crowded bus. At the side of the road, two adults greeted and hugged them. This family could have been in any county; they could have been people that any of us might know.

One of my colleagues from the Department of Public Health (DPH) was with me. We had been talking about the work we had just performed with a nearby school district. Then we saw the house the students entered. It was a manufactured home in poor repair, with plastic over the windows. The yard was overgrown. There were no working vehicles in sight, and it struck me that two adults were home in the middle of the afternoon. It would be several more miles before we saw a sign for a grocery store or a local county health department where someone might find services related to family planning, education programs for self-management of chronic diseases, or preventive screenings. It was an hour before we saw a sign for a hospital. As we drove on toward Atlanta, we were quiet, thinking about the challenges that family was likely facing.

Role of Public Health

Poverty and chronic disease interconnect in what the World Health Organization calls a "vicious cycle" (WHO, 2017). Low-income individuals are more vulnerable to chronic conditions due to lack of access to health services and resources, such as healthy foods and housing, which can help prevent or slow the advance of such conditions. Chronic diseases, once acquired, restrict educational and economic opportunities for individuals or families, and even communities (DeVol, 2007). Given this, I had to wonder if we were doing enough of the right things at the right time to help that family avoid a lifetime of poor health outcomes.

Public health programs across our state contribute to community health. For families that meet certain income tests, the Women, Infants and Children (WIC) program provides supplemental nutrition for healthy pregnancies and babies (Georgia Department of Public Health, WIC Program, 2017). The programs, Talk with Me Baby; Growing Fit; and Eat, Move, Talk!, promote early acquisition of language and early care environments (Georgia Department of Public Health, Talk with Me Baby, 2017; McDavid, 2016; O'Connor, 2016). In schools, the Shape Initiative for Childhood Obesity Prevention has a goal of improving the nutrition and physical activity environment, and the Tobacco Use Prevention Program ensures that schools are tobacco-free (Georgia Shape, 2017; Georgia Department of Public Health, Tobacco Use Prevention Program, 2017).

Concerning the students, their mother may have received family planning services or have been screened for breast and cervical cancer through programs operated by the Department of Public Health (DPH, Georgia Department of Public Health, BCCP Program, 2017). The parents might work in a place where the DPH supports worksite health initiatives or may participate in programs for management of chronic disease promoted by the DPH (Georgia Department of Public Health, Working on Health, 2017). If one of the children has asthma, they might have been seen in an innovative pilot project that DPH has developed with the health districts and Medicaid to identify and reduce asthma triggers in the home and provide the child with self-management education (Georgia Department of Public

Health, Asthma Control Program, 2017). There is no doubt, however, that more needs to be accomplished in Georgia to protect families like these from chronic disease and its risk factors, and to create environments and programs that provide the opportunity for people to lead healthy and productive lives.

Burden of Non-Communicable Disease in Georgia

In Georgia, chronic diseases, such as cardiovascular disease, diabetes, cancer, and asthma, are the leading causes of premature deaths and cost about $40 billion per year (Georgia Department of Public Health, Chronic Disease Prevention Section, 2017). For these deaths, which are preventable, much of the cost could be saved, or reinvested, into communities, education, parks, transportation, or economic development.

Cardiovascular disease, usually occurring after years of high risk behaviors, is the leading cause of premature death in Georgia, with about 145,000 years of premature life lost each year (Georgia Department of Public Health, Office of Health Indicators for Planning OASIS, 2017). About one in 12 Georgia adults has cardiovascular disease, and one in three has hypertension. Cancer is the second leading cause of premature death, with about 133,000 years of premature life lost (Georgia Department of Public Health, Cancer Plan, 2014). Diabetes, which also makes the top 10 leading causes, claims about 30,000 years of life lost prematurely. More than one in 10 adults in Georgia, or more than a million people, have diagnosed diabetes, and, with thousands undiagnosed, that number will continue to rise (Smith, 2015). Tobacco use, poor diet, and lack of physical activity are responsible for about 7 of 10 of these early deaths (Georgia Department of Public Health, State Health Assessment, 2017). Although not exclusively a problem associated with income, these conditions and risk factors are burdens for the approximately 1.7 million people in Georgia who live in poverty.

The effects of other chronic but often less noticed conditions, like asthma, are high as well. Although asthma cannot be prevented, it can be controlled. In Georgia, 10.8 percent of children and 8.4 percent in adults have ever been told they have asthma. Among children in Georgia, the rate is higher than the national average. As with other chronic conditions, low-income children and children on Medicaid are disproportionately burdened by asthma. In 2014, 11 children in Georgia died from asthma, almost all of whom were low-income (Georgia Department of Public Health, State Health Assessment, 2017).

Frameworks for Prevention of Chronic Disease and Modifying Health Behaviors

In academia and in science, there are numerous models to explain these health outcomes. Among those familiar to many of us in the practice of public health, there is the Transtheoretical Model, the Social Cognitive Model, the Health Belief Model, the Theory of Reasoned Action, the Social-Ecological Model, and various health economics theories (Glantz, 2008). Other theories indicate that there are times in a person's life, such as the first 1000 days, when there is the greatest likelihood of changing the trajectory of diseases (Thurow, 2016). Further, social determinants such as income, education, housing, transportation, race, access to care, employment, age, gender, and language shape opportunities for health (WHO, 2017 (2)). Science also tells us that place, not simply who you are, matters; the environment influences factors such as exposure to lead and secondhand smoke; the availability of safe drinking water, fresh fruits and vegetables, and preventive services; and opportunities to exercise (Graham, 2016).

These theories and concepts offer useful ways of explaining and understanding the problem of chronic diseases and the behaviors that contribute to them. What they do not provide, however, is a clear path to reducing the burden of chronic disease in Georgia. The CDC's Health Impact Pyramid tells us that, to have the greatest reach and improvements in health, we should implement interventions that create the greatest change in socio-economic factors (Frieden, 2010). However, it does not tell us *how* to achieve that change, especially in a world of limited resources.

Need for Adaptive Leaders

Although science helps us understand the burden of chronic disease, the question of how and what to do about it presents a problem for leadership, specifically for adaptive leadership, because the prevention and control of chronic disease in Georgia requires the creation of new systems and ways of doing things. Adaptive leadership is the process of mobilizing people, organizations, and communities to tackle difficult problems and to thrive through that process (Heifetz, 2009). Implementation of adaptive leadership requires three major actions: 1) innovation to test new approaches; 2) reliance on informal authority rather than formal authority; and 3) connection of people to purpose (Heifetz, 2009). To reduce the burden of chronic disease in Georgia, we need to rethink the systems that contribute to the underlying causes and poor control of diseases. These include systems that influence the social determinants of health, such as housing, transportation, and industry. We need leaders from all sectors, as well as our traditional partners, health care and education, to use creativity, innovation, and informal networks to achieve these changes.

Across Georgia, there are many examples of communities working together to do this. Work that brings people together from across sectors to build the layers of systems and approaches to enhance health is being accomplished in rural and urban communities, including Baldwin, Carroll, Cobb, Coffee, Colquitt, DeKalb, and Hall. Formal and informal leaders from business, schools, pharmacies, health care, and agriculture are uniting to accomplish such goals. Health systems such as Grady, Wellstar, Piedmont, Albany Area Primary Care, and payors such as Georgia's large private employers, Kaiser and Amerigroup, are also supporting these efforts to improve systems and outcomes across the state. We need leaders like these to address the burden of chronic and non-communicable diseases.

Considering that family in rural Georgia, it is obvious that no single approach will be effective. Layers of people, ideas, and systems must join to create the circumstances in which

residents like these can lead healthy and productive lives. Just as, when I saw that family, I asked myself what needed to be done, I hope that, as you read this issue of the Journal of the Georgia Public Health Association, you will also ask yourself in what ways you can be an adaptive leader to improve health and prevent chronic diseases in your community.

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