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Masters Paper

Structural Inequality and Its Impact on Health:
An evaluation of the structural and systemic forces that lead to unequal health outcomes in pediatric type II diabetes.

"The future health of the nation will be determined to a large extent by how effectively we work with communities to reduce and eliminate health disparities between non-minority and minority populations experiencing disproportionate burdens of disease, disability, and premature death."

~ Guiding Principle for Improving Health - CDC

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Abstract

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In our country, the richest in the world, a significant share of our population does not have access to the resources they need to maintain healthy lives. Health researchers have focused on addressing the ***impact*** of the social processes that determine an individual's health status. It is now time to look at the ***causes*** of the inequality.

The escalating prevalence of diabetes in school-aged children and its consequences is a serious and unresolved challenge. When I began my examination of the issue, I focused on individual risk factors and was convinced that if we teach prevention, the pediatric diabetes rate would come down. As I have learned, prevention and treatment have had limited success to date, in part because interventions have focused on isolated factors and adopted a "one size fits all" approach.

My examination took a turn and I became convinced that risk factors must be addressed within a complex, individualized (not generalized) system of biological, social and environmental factors. The answer was to address not only individual risk factors but social determinants of health.

However, my study of health disparities has challenged me to think even larger. Beyond the basic conceptual model of how diabetes and other preventable diseases show up with more prevalence in some racial/ethnic groups, I have been forced to look at "why". And if we know how to intervene conceptually, why is it not working? Why are rates continuing to escalate upward? And finally how have inequalities in health, specifically childhood diabetes, come to be and how might we more comprehensively address them?

My belief is that we cannot have any real or lasting change in devastating health inequality without addressing the system as a whole with all its components. Health disparities are rooted in the historical, social, economic, and political infrastructure of our daily lives. I have presented a framework, grounded in theory, to address health inequality at its core.

Introduction

In our country, the richest in the world, a significant share of our population does not have access to the resources they need to maintain healthy lives. Despite leading the world in health expenditures, the United States is not fully meeting its potential in health status and lags behind all other developed nations (IOM, 2002). In fact, the US is ranked 24th in healthy life expectancy by the World Health Organization (WHO, 2004). As a result, our children are suffering from high rates of disease. The incidence rate of type II diabetes among children in the United States has increased by 33% in the past decade. And perhaps the most startling fact – the vast majority of these cases, 70-75% in some regions of the country, occur mainly in African American, Mexican American, Native American, and Asian American children (Kaufman, 2009). As our health leaders have attempted to reduce health inequality, they have focused on addressing the ***impact*** of the social processes that determine an individual's health status. It is now time to look at the ***causes*** of the inequality. It is my assessment, as stated below, that we can only achieve our goal by addressing the systemic and structural causes of inequality that define our political, social and economic lives and puts the power in the hands of some at the expense of others.

Health Inequality and Disparity

The term 'health disparity' is thought to be a globally recognized reference to "population-specific differences in the presence of disease, health outcomes, or access to health care" (HHS, 2000). 'Health disparity', however, has come to mean different things to different people. Considerable disagreements and differences in thought exist regarding the meaning and the use of the term 'health disparity.' But most, I believe, can agree that a health disparity, or a health difference, acts as a "signpost" indicating that something is wrong. At that point, the health community, policymakers and the public can become more aware of a potential inequality in order to make decisions about whether the inequality is avoidable and unjust, and therefore warrants intervention. (Carter-Pokras & Baquet, 2002) I will refer to health disparity here as a documented difference in incidence rates and outcome rates of disease among distinct population groups.

In the United States, significant health disparities are well-documented in most minority, non-white populations including African American, Latino American, Native American, and Asian American. Racial and ethnic minorities experience considerable disparities in incidence and outcome in every significant chronic disease, including cancer, cardiovascular disease, asthma, diabetes, and HIV. There is compelling evidence indicating that race and ethnicity correlate with persistent, and often increasing, health disparities among U.S. populations in all of these categories.

For example:

- Access to care disparity: research studies have shown that having a usual source of care raises the chance that individuals are receiving adequate

preventive care and health care services. African Americans are less likely to have a usual source of care and more likely to rely on hospitals or clinics for their health care.

- Quality of care disparity: the length of time between an abnormal mammogram and a follow-up diagnostic test to determine whether a patient has breast cancer is more than twice as long in Asian American, African American and Hispanic American women as in white women.
- Outcome disparity: American Indian women are twice as likely to die from cervical cancer compared to white women and African Americans are 1.5 times as likely as non-Hispanic whites to have high blood pressure (AHRQ, 2008).

Living in an unequal society impacts all members of a society, not just those who are directly affected. Social inequality exists when individuals in a society or community do not have equal social status. Inequality is created in societies by matching social roles with 'reward packages' of unequal value. Individual members of society are then allocated to the positions so defined and rewarded. Social inequality is different from economic inequality but they are related -- social inequality exists because the lack of wealth prohibits some members from obtaining the same housing, health care, etc. as other members in societies where access to these social goods depends on wealth (Grusky, 2001). Social Inequality is also linked directly to racial inequality. The way people behave socially, including discrimination and racism,

significantly impacts the opportunities and wealth individuals and families can generate for themselves.

Research tells us that inequality affects a society on many levels, corresponding to, if not causing, more crime, less happiness, poorer mental and physical health, less racial harmony, and less community participation (Gudrais, 2008). Researchers look at absolute and relative inequalities to help explain health disparities. Investigating whether and how relative deprivation and the negative emotions it engenders contributes to poor health in most societies began with epidemiologist Michael Marmot's study of British civil servants in the 1960s and 1970s. Marmot found that lower-ranking bureaucrats had elevated levels of stress hormones compared to their high-status coworkers, even though the low-ranking workers still had job security, a living wage, decent hours, and benefits (Gudrais, 2008). Ichiro Kawachi (1996), professor of social epidemiology and medicine at Harvard University, believes that what matters for functioning in society is what the average person is able to do in relation to others. One hypothesis, he says, is that rising income inequality results in increased levels of frustration, which may have deleterious behavioral and health consequences. Kawachi grew up in Japan and believes a predominant consumption culture in the United States further exacerbates relative deprivation (Kawachi, et al, 1996).

United States policymakers are beginning to recognize that the future of America as a whole will be determined in part by our success in improving the health in all population groups, but also by ensuring equality among groups. In 2000, the US Department of Health and Human Services released *Healthy People 2010*, a

comprehensive set of disease prevention and health promotion objectives for the nation to achieve. The framework was created by scientists both inside and outside of government and identifies a wide range of public health priorities with specific, measurable objectives. Healthy People 2010 is designed to achieve two overarching goals: 1) Increase quality and years of healthy life; 2) Eliminate health disparities (HHS, 2000). This underscores two facts – first, because 'eliminating health disparities' was chosen as one of two overarching health goals for our nation, it is clear that there is collective understanding of the enormity of the problem. Secondly, it underscores a commitment from our nation's leaders to the complete elimination of unequal health status among population groups.

The causes are numerous, as you will read, but are based on a complex combination of factors. To begin with, eliminating disparities in health will require enhanced efforts at preventing disease, promoting health and delivering appropriate care. This will only occur with a significant increase in health disparity monitoring and research including improved collection and use of standardized data; the identification of high risk populations and corresponding risk factors; evaluation of the effectiveness of health interventions targeting these groups; and innovative research promoting creative strategies that target and then deliver improved health outcomes (CDC, 2009).

The elimination of health disparities will also require new knowledge about the precise determinants of disease, causes of health disparities, and effective interventions for prevention and treatment. We will need to prioritize and then provide

access to the benefits of society, including quality preventive and treatment services, as well as innovative ways of working in partnership with health care systems, state and local governments, tribal governments, academia, national and community-based organizations, and communities themselves.

Social Determinants of Health

In current international discussions of social determinants of health, it is generally accepted that health disparities are caused by differential access to health care; differential quality of health care; and personal, environmental, and socioeconomic conditions of different groups. According to the World Health Organization (WHO, 2009), social determinants of health are the conditions in which people are born, grow, live, work and age, including the health system. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels, which are themselves influenced by policy choices (WHO, 2009).

In response to increasing concern about these persisting and widening inequities, WHO established the Commission on Social Determinants of Health (CSDH) in 2005. The Commission's final report was released in August 2008, and contained three recommendations: 1) Improve daily living conditions; 2) Tackle the inequitable distribution of power, money and resources; and 3) Measure and understand the problem and assess the impact of action (WHO, 2009).

Although the World Health Organization is addressing the issue globally, the same points can be made as we refer to the issue in the United States. The Centers for Disease Control and Prevention (CDC) has made social determinants of health a major priority. They define social determinants of health as factors in the social environment that contribute to or detract from the health of individuals and communities. These factors include, but are not limited to the following: socioeconomic status, transportation, housing, access to services, discrimination by social grouping (race, gender, class, etc), social or environmental stressors (CDC, 2009). For purposes of this paper, I will refer to these factors as social contributors of health using the CDC definition. It is my estimation that this best captures the essence in our discussion of health disparities.

As I mentioned above, the research community has primarily focused on the ***impact*** of inequality and the social determinants of health. It is certainly important to address specific issues of access, affordability, and education. But it is also time to shift our focus to look critically at the ***cause(s)*** of inequality. Looking at the causes is a much more cumbersome task that requires us to challenge some of our American assumptions and work together in a multidisciplinary spirit, but one that cannot wait any longer. Dr. Satcher, the 16th Surgeon General of the United States under President Clinton and known for his support of reforming health policy and his commitment to the elimination of health disparities for minorities, the poor and other disadvantaged groups, has said, "to the extent that we respond to the health needs of the most vulnerable among us, we do the most to promote the health of the nation" (Satcher,

2001). If we are truly interested in substantially influencing the health outcomes of our nation, we need a variety of broad-based tools. As I continued my research I found that critical social theory offers a promising model to set the tone for a framework of action.

Critical Social Theory

Critical social theory is an explanation that helps us look at broader contextual perspectives. Critical social theory examines relationships of power and the underlying structures in society that produce population inequalities. These societal structures determine, for example, the types of employment and wages that are made available to certain groups of people, distribution of wealth, access to education, and availability of healthcare services. Through the internalization of ideologies such as racism, sexism, and classism, these (mis)representations of social processes are made to appear inevitable, natural, and constant, yet serve to reinforce the interests of the dominant group (Mohammed, 2006).

An assumption of critical social theory is that cultural, political, and economic circumstances in society are not natural and fixed, but are rather historically created and alterable. This theoretical framework advocates for a type of consciousness-raising that looks at how these social structures operate to oppress some members of society while systematically privileging others. Therefore, it seeks to challenge

conventional assumptions and social arrangements to move beyond the "what is" to the "what could be" (Mohammed, 2006).

Critical social theory provides the basis for evaluating the impact of historical, cultural, political, and economic circumstances on health outcomes. I believe that in order to adequately address health outcomes with any long-term significance, we must use critical social theory to explore how social contributors of health contribute to differences in health outcomes among groups. If we can agree that historical, cultural, political and economic factors significantly contribute to unequal health outcomes, then we can gather ourselves to intervene at this level.

Social Ecological Framework and Eco-social Theory

While researchers usually examine either ecological/biological systems or social systems independently, the need exists for an interdisciplinary look at problems related to public health and health disparities. The social ecological framework is a systems theory approach that helps us understand the interactions and relationships between all contributors to health. This model considers the complex interplay between individual, interpersonal, organizational, community, and societal factors. It allows us to address most of the factors that put people at risk for disease.

- Individual: genetic, physiological/biomedical, cognitive, attitudinal, behavioral.
- Interpersonal: formal and informal social network and support systems (family, peers, neighbors, friends).
- Organizational: social institution, plus formal and informal rules of operation (norms, culture, structures, rules, regulations).

- Community: relationships among institutions and organizations, and informal networks within defined boundaries (economics, media, community services, neighborhood organizations).
- Society: municipal, state, and national laws and policies (legislation, policy, taxes).
- Physical environment: built and natural aspects of the environment (facilities, playgrounds, parks, trails; safety factors; and geographical aspects such as climate and terrain) (Plotnikoff, 2008).

Social Ecological Framework, CDC, 2009

Nancy Krieger, professor of health and social behavior at Harvard School of Public Health, refers to the social ecological framework and associated eco-social theory as 'embodiment' – how humans literally incorporate biologically, from conception to death, our social experiences and then express this process in population patterns of health and disease (1999). She contends that researchers have significant data demonstrating that health disparities are divided along racial, ethnic and economic lines and this 'explains' the country's racial/ethnic/economic inequalities in health. Societal arrangements of power and property and then related patterns of production and consumption combine with the constraints and possibilities of biology. This process works to structure inequalities in exposure and susceptibility to

processes that contribute to or detract from a healthy life. In support of the social ecological framework, social epidemiology is the study of society and disease – it gives us a scientific medium to simultaneously discuss society and biology (Krieger, 2001).

As we in public health wrestle with ideas and theories of causation, we must be able to answer the question of who and what (collectively) is responsible for population patterns of health and distribution of disease and how that manifests in inequality. I will illustrate this by applying the social ecological framework to the disease rates of type II diabetes in children.

Case Study -- Pediatric Type II Diabetes: Background

Diabetes is one of the most common diseases in children. It is defined as a group of diseases marked by high levels of blood glucose resulting from defects in insulin production, insulin action, or both. Type II Diabetes begins as insulin resistance, a disorder in which the cells do not use insulin properly. As the need for more insulin rises, the pancreas gradually loses its ability to produce it. Type II Diabetes is generally associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, poor diet, and race/ethnicity. Diabetes is the sixth leading cause of death in the country. It can lead to serious complications and premature death, particularly for pediatric patients.

Type II Diabetes accounts for about 90-95% of all diagnosed cases of diabetes. It is being diagnosed more and more frequently in children and adolescents, and at a significantly higher rate among African American, Native American, Hispanic/Latino American, and Asian/Pacific Islander American children. According to the 2007 National Diabetes Fact Sheet, 23.6 million adults and children in the US (about 8%) had diabetes. About 186,300 people in the US under age 20 had diabetes in 2007. This represents 0.22% of all people in this age group. After 10 years of age, type II diabetes becomes increasingly common, especially in minority populations. African American and Hispanic Americans are more than twice as likely as white Americans to have diabetes. American Indians and Alaska Natives are 2.6 times more likely to have the disease. Of all groups, African American females have the highest prevalence rate (ADA, 2009) In fact, type II diabetes has become an example used by researchers and policymakers to illustrate the significant disparity in health outcomes in our country.

By far the largest risk factor for pediatric type II diabetes is being overweight (a BMI greater than or equal to 95th percentile of the age and sex-specific BMI). Prevalence rates of obesity in the 5-17 age group in the United States have more than doubled since 1960 (Plotnikoff et al, 2008). Additional risk factors include being a member of a high risk racial or ethnic group, having signs of insulin resistance, having a family member who is diabetic, being older than 10 years old, and experiencing puberty. The increased incidence of type II diabetes in youth is a consequence of the obesity epidemic spurred by poor nutrition combined with lack of physical activity

among young people, and is a significant and growing public health problem (Horowitz et al, 2008).

Adequate prevention, detection, and treatment is imperative to delay the onset of diabetes complications later in life. The current cornerstone of diabetes management for children with type II diabetes is healthy eating, with portion control, and increased physical activity. To control their diabetes, some children with type II diabetes take glucose-lowering medications. However, few of the available medications have been approved for use in children (Goldhagen, 2007). Racial and ethnic minorities bear a disproportionate burden of the diabetes epidemic with higher prevalence rates, worse diabetes treatment and control, and higher rates of complications (Peek et al, 2007).

Case Study -- Pediatric Type II Diabetes: Analysis of Systemic Forces

The escalating prevalence of diabetes in school-aged children and its consequences is a serious and unresolved challenge. When I began my examination of the issue, I focused on individual risk factors and was convinced that if we teach prevention, the pediatric diabetes rate would come down. As I have learned, prevention and treatment have had limited success to date, in part because interventions have focused on isolated factors and adopted a "one size fits all" approach.

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However, my study of health disparities has challenged me to think even larger. Beyond the basic conceptual model of how diabetes and other preventable diseases show up with more prevalence in some racial/ethnic groups, I have been forced to look at "why". And if we know how to intervene conceptually, why is it not working? Why are rates continuing to escalate upward? And finally, how have inequalities in health, specifically childhood diabetes, come to be and how might we more comprehensively address them?

I will begin my evaluation with a critical review of the institutional forces in play as it relates to the issue of pediatric type II diabetes and its impact on non-white, minority children in the United States. As I mentioned previously, obesity and poor nutrition combined with a lack of physical activity among children in America has led many minority, nonwhite children to an early diagnosis of type II diabetes. This is the result of inadequate public policies that have led to an unequal system with wide and growing disparities in health, wealth and education.

To begin, because of institutional forces, a significant number of minority, nonwhite children do not have access to adequate health care. More than 9 million children in America, the vast majority of whom are minorities, lack adequate health insurance. Many of these children do not have access to qualified physicians and

specialists, because of geographical constraints or financial limitations (specialists don't accept Medicaid) (Anderson et al, 2002). This has led to widespread inequality in access to health care. The children are forced to receive care in emergency rooms or urgent care centers. Additionally, minority, nonwhite children are significantly less likely to have a usual source of health care – someone who has monitored their health over a period of time (AHQR, 2000). In addition, race and ethnicity, regardless of insurance status, impact a patient's likelihood of receiving specialty care and procedures, according to an AHQR-supported study. They are also less likely to receive adequate screening and early treatment for their disease. There is a considerable lack of nutritional guidance and education in low-income communities and many lack the cultural understanding to address the needs of non-white patients (Horwitz, 2008). In addition, there have been a limited number of formalized diabetes education programs targeted at minority children and their families (Pate et al, 2000), although that number has been steadily increasing as the need has become clearer. Although it is difficult to tease apart income and ethnicity because of the widespread association, research has also shown us that when income is equal and insurance status is equal, minority nonwhite children continue to suffer disparate treatment. This is a direct form of racism (Smedley et al, 2003). Minority, nonwhite patients are less likely to be referred to specialists and there are significant cultural and communication barriers that impede both quality and continuity of care (AHQR, 2000). Another barrier related to medical care is medication and treatment adherence within the pediatric minority population. We need to understand and then address the

institutional disconnect between the documented clinical evidence that lifestyle modifications, including medication adherence, improve health and slow the rate of obesity and diabetes and the evidence that these rates continue to climb (Horwitz, 2008).

Institutionalized legal economic segregation is another significant cause of the type II diabetes epidemic among nonwhite, minority children. Class and racial segregation because of housing discrimination leaves people disadvantaged and excluded. This segregation affects health outcomes in a variety of ways. It impacts the availability of sustainable employment, the quality of schools, and the built environment. Segregation also impacts access to health care, transportation, child care, neighborhood safety, and civic engagement. Black and Latino children consistently live in more disadvantaged neighborhoods than white children, even poor white children (Acevedo-Garcia, 2008). Living in a segregated neighborhood leads to a decrease in social capital and power which explains decreasing community involvement among its members. Social Capital includes features of social organization, such as civic participation, norms of reciprocity, and trust in others, that facilitate cooperation for mutual benefit. Social capital is a community-level variable whose counterpart at the individual level is measured by an individual's social networks (Kawachi et al, 1997). Research has shown us that there is a corresponding association between individual and community social capital and health (Gudrais, 2008). And as mentioned above, poverty rates among minorities are more than twice as high as non-Hispanic whites (Gradin, 2008). When a community or region is divided

along racial lines, the affluent are less likely to take care of the poor (Gudrais, 2008). When there is less community involvement in civic life, there is less voter participation, and less power with policymakers because they don't have meaningful access nor can they afford to make campaign contributions, which is inherent to political power. Segregation also leads to poorly performing schools in minority nonwhite neighborhoods. Children who receive a poor education or have a bad experience with school suffer from depression, lack of self-efficacy, and loss of choice (Acevedo-Garcia, 2008). This can ultimately lead to behaviors that temporarily alleviate stress such as poor eating or sedentary activity which then can lead to obesity, a major risk factor for type II diabetes (Peek, 2007).

Another institutional barrier that impacts the incidence of type II diabetes directly and is integral to our discussion of segregation is the built environment. The built environment refers to manmade physical structures and infrastructure for communities. Because low-income, and minority non-white communities are more likely to be near hazardous sites and less likely to be conducive to physical activity and healthy eating, interventions in these communities will certainly contribute to reducing health disparities in the United States (Gordon-Larsen, 2006). In minority nonwhite neighborhoods, healthy foods are difficult to obtain. Because of a lack of supermarkets, families are often forced to shop at high-priced convenience centers and liquor stores because it is the only thing available to them in their neighborhoods. There is also a disproportionately large number of fast food restaurants in low-income neighborhoods. Americans report that cost is more important than nutritional value

when purchasing food. There is rarely access to fresh fruit and vegetables in minority, nonwhite neighborhoods and the price is so high that residents purchase high-fructose and high-fat items for sustenance (ADA, 2009). Children do not play outside or exercise regularly because of a perception that the neighborhoods are unsafe, or because they lack adequate facilities (Gorden-Larsen, 2006). Research has shown us that a family's surroundings affect the choices they make about food and physical activity – important components to our discussion of type II diabetes. Individuals are more likely to exercise when free public spaces are available to them, just as they are more likely to consume fresh fruits and vegetables and less fat if they live near a supermarket (Horowitz, 2008). There is considerable evidence that food marketing advertisements targeted at minority viewers are more likely to include items such as fast food, candy, and soda. Nutrition, food choices and exercise all *directly* impact the incidence rates of type II diabetes (Wing et al. 2001).

Another significant systemic barrier is workplace policies. Even though this does not directly affect children, it affects their parents in a very real way leading to modeling behaviors that contribute to ill health and potentially the early onset of type II diabetes. When parents work in low-wage, high demand jobs where they are constantly worried about being replaced or not being able to pay the bills or provide adequate child care, there exists a profound sense of loss of control that leads to stress. Research has shown us repeatedly that stress leads to unhealthy behaviors, including living sedentary lives and making poor nutrition choices (Horowitz, 2008).

Institutional racism and discrimination also affect health directly and have contributed to the rise of type II diabetes among minority children. Many researchers believe that the psychosocial environment – which determines an individual's perception of place in the social hierarchy or a sense of relative deprivation – influences feelings of internalized racism, shame, trust, social cohesion and social capital. Although these factors are critical in understanding the health effects of inequity, we should not disregard the structural causes of the inequities (Lynch, 2008). It all comes back to who has access to society's resources. Racism and discrimination are part of the system. They are woven historically into our institutions, our policies and procedures, and our investments and practices. In the words of Arline Geronimus, a Princeton and Harvard-educated professor of Health Behavior and Health Education at the University of Michigan, minorities have been marginalized "not for individual, conscious racist reasons, but because we have a highly segregated society and such entrenched inequality that dates back to when racism was in neon lights" (Geronimus, 2006).

Many minorities also experience internalized racism defined as the process in which and individual believes racist stereotypes. This ultimately determines an individual's feelings of self-worth and self-efficacy, and can significantly determine diet and exercise behaviors which then impacts health outcomes. Internalized racism is also associated with hypertension (Tull et al, 2001). Dr. Geronimus argues that stressors ranging from pollution to racism-induced anger to lack of choices can weather the systems of the human body leading to premature aging and disease progression. She

refers to this process as 'weathering', a conversion of the stressors of our social world into physiological disease (Geronimus, 2006).

As I have discussed health disparities in predominantly low-income communities, it is important to note that the issue does not lie mainly with economic deprivation. There is research that suggests that an overall increase in prosperity will not improve overall health. The prospects for health and well-being in human societies are embedded in the environments where people grow up, live and learn, and then die. Underlying socioeconomic conditions are impacted but not caused by access to medical services. In fact, advances in medicine and programs to improve access to care often fail to improve the overall health of a population. In such cases—in prosperous as well as poor societies—the effects of social and economic disparities can overwhelm the best efforts to improve health (Hertzman, 2001).

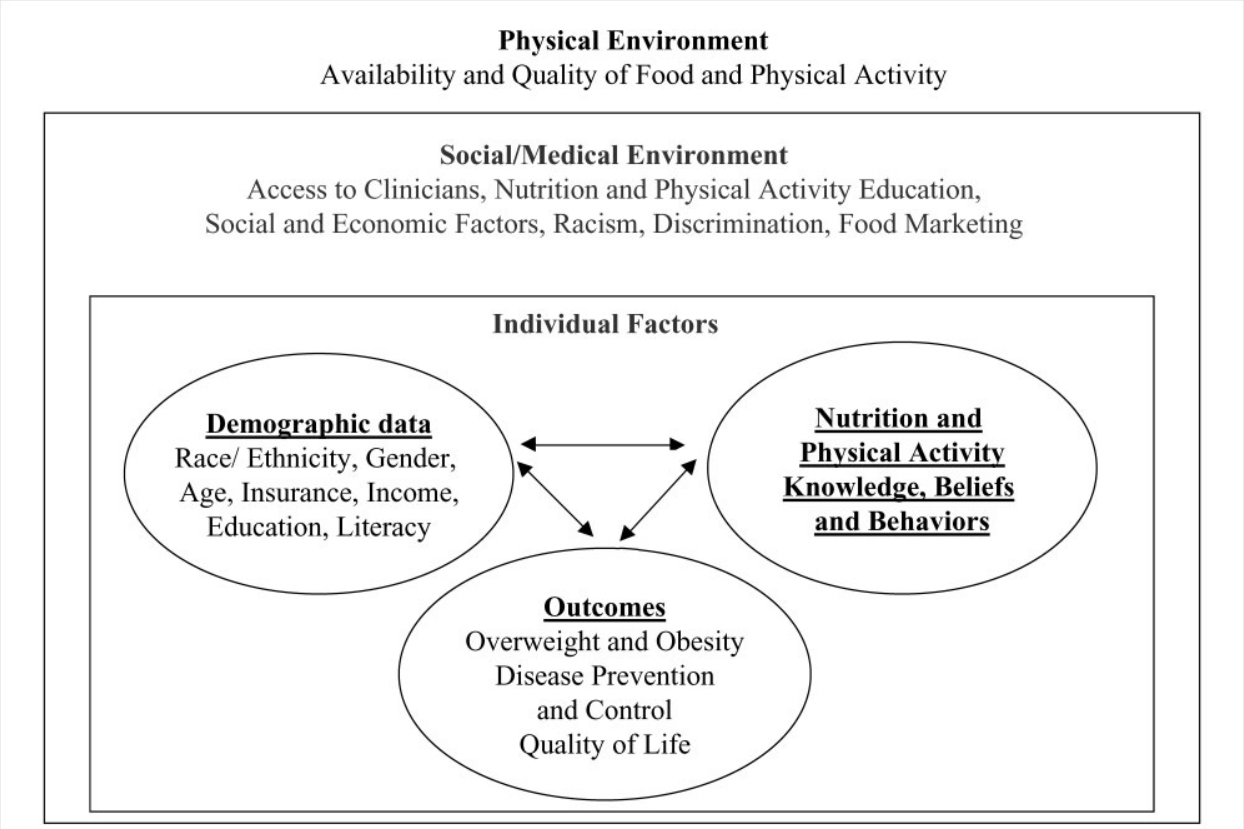
Case Study -- Pediatric Type II Diabetes: Recommendations

From my research and evaluations of the health disparity that exists in pediatric type II diabetes, I believe there are numerous levels of intervention, but only one level of prevention – the answer for prevention is to look at the root causes – the social, economic, and political conditions and policies that shape our country's housing, labor, education, and infrastructure system – the core causes of social and environmental contributors of health. We know that obesity and lack of physical activity have caused a significant increase in type II diabetes for minority nonwhite

children. Obesity itself has a complex etiology and with its exponential increase in prevalence rates, there needs to be a broadening of traditional interventions. Current prevention and treatment methods for childhood obesity focus on nutrition and physical activity. Studies reveal limited impact on the overall problem (Plotnikoff et al, 2008). In this case, system interventions through formalized health care have not done an adequate job of delivering care (intervention) to the individual client. The health system is set up to handle treatment in areas that need high levels of control (such as emergency situations). On the other hand, community interventions have not worked either. Individuals are slow to change their behaviors and need more structure in their efforts. A unique combination of community-directed health care and prevention within a system is ideal (Eng, 2009). Our approach to address the disparity in pediatric type II diabetes going forward needs to be multi-dimensional – addressing at the same time individual communities and the systems that support them.

I believe that the most effective long-term approach for an individual community is community-based participatory research (CBPR), such as is reflected in the East Harlem Diabetes Center of Excellence, a community-based coalition. CBPR is a participatory method used to engage and empower communities in issues that matter to them – it helps them identify and address the issues (individual and institutional) that keep members from better health outcomes. CBPR serves also to enhance collaborative relationships within the community – among churches, health care providers, patients, families, workplaces, neighborhood groups, etc.

The East Harlem Diabetes Center for Excellence is an example of a CBPR project initiated in 1998 by a predominantly African American and Latino American neighborhood coalition in New York City. After considerable research, the coalition developed a conceptual model that guides their health interventions today. The model describes the relationships between the physical environment, the social/medical environment and individual factors including demographics, food and exercise beliefs and behaviors, and health outcomes. The value of a process like this is 1) It strengthens relationships that are needed to put together a meaningful intervention plan and 2.) It identifies and addresses the factors that are needed to decrease the prevalence rate of type II diabetes in minority, nonwhite communities.



Conceptual Model of factors that affect nutrition, physical activity, and health outcomes. (Horowitz, 2008)

Of course, there are many areas where public health practitioners can intervene now. Communities can improve access to healthy food, safe and free recreational areas, and health care providers in low-income areas. Communities can also provide better nutrition support that is culturally appropriate. Nutrition knowledge affects food purchasing behavior and increasing access to nutritionists can potentially impact obesity. Communities must also address the need for family and community support in these areas (Horowitz, 2008). Public health advocates can support the reduction of the disproportionate number of fast food establishments in minority, nonwhite neighborhoods, and also support a reduction in portion sizes in these establishments. Advocates can also support restrictions on advertising and marketing to young children by the fast food sector. Children are vulnerable. They need support around them to make good choices about food and physical activity (Lancet 2006).

Public health advocates can support local changes in school lunch menus and policy related to physical activity in schools, including curricula supporting a healthy lifestyle. Communities can support changes in their neighborhoods to support outdoor, safe parks and recreation areas, organized athletics, and community clubs. In addition, public health advocates should work with municipalities to come up with a local strategy to attract supermarkets with fresh fruits and vegetables to their communities. And lastly, community-designed peer education programs should be supported for nonwhite, minority neighborhoods.

Although, we need to continue to 'manage' the disease using these strategies as the East Harlem coalition has done, we also need to squarely face issues such as race

and racism, culture, economic exploitation and inequality, capitalism, globalization, and taxation to mediate the social and physical (environmental) determinants of health.

Recently, there has been a national emphasis on translational research. Our system has derived enormous benefit from scientific advances. We know what the causes and conditions of childhood diabetes are. We know how to intervene and treat the disease. What has not been achieved is how to translate these scientific advances into real world practice – the goal of translational, interdisciplinary research (Woolf, 2008). Again, we must search out partners in nontraditional areas to assist in the thorough development of intervention programs that bring our scientific advances to real world practice – such as organizations that support individuals in areas related to quality of education, reduction in violence and incarceration, and access to quality jobs. We have to continue to think big.

Real and lasting change will only come if we look at the structural causes. I advocate for the development of a new conceptual model that incorporates critical social theory and calls for intervention in the more distal mediators – social and economic policies that go beyond health policies and can greatly impact health. This includes civil rights legislation and enforcement, housing, taxation, welfare, education, and labor laws. This would be carried out by an interagency task force to coordinate policies. Using an iterative, interdisciplinary approach, researchers from such fields as health behavior, education, urban planning, policy and law, health economics, anthropology, health policy, political science, American studies, and

psychology would come together to develop a common language, identify needs, and design and plan specific interventions, including significant policy change. The knowledge gained from this type of interdisciplinary research will lead us to the development of "out-of-the-box" treatment and prevention interventions for the root causes of childhood diabetes and other preventable diseases.

For example, as I mentioned above, poverty – particularly concentrated poverty – and segregation impact health. Public and private-sector policies that alleviate concentrated poverty in urban and rural areas will relieve the health burden. Both place-based policies (such as financial incentives for businesses to locate within cities) and people-based policies (such as resources for job training, child care, and education) need to be put in place to attract prosperity and create a labor force and community that will sustain prosperity. Communities also need to address current housing policies to ensure that they enhance mobility, provide access, and enforce housing antidiscrimination laws. We also need to provide strategic policy support and investment in enhanced living conditions (Lynch, 2008) for all communities. Every community in the United States should have access to free and safe outdoor recreational spaces, affordable healthy food, accessible and affordable health care facilities, adequate jobs, transportation and child care, and quality education. Education is perhaps the largest indicator of health and one that should be incorporated into the model.

The demographic changes that are anticipated over the next decade magnify the importance of addressing disparities in health outcomes. Groups currently

experiencing poorer health status are expected to grow as a proportion of the total U.S. population; therefore, the future health of America as a whole will be influenced substantially by our success in improving the health of these groups. A national focus on disparities in health status is particularly important as major changes are currently unfolding in the way in which health care is delivered and financed. A national task force focused on translational research, grounded in theory, and supported with action is the only way to achieve our goal.

There are, of course, significant barriers to this ecological model at every level. I will review some of them here. First, there are issues related to children's taste preferences, convenience, cost, cooking skills and nutrition knowledge (Fitzgerald, 2009). There are also barriers related to literacy (label and recipe reading). Regarding physical activity, research documents a lack of interest in athletics, lack of financial resources, and safety concerns. There is evidence of a lack of peer support regarding improved nutrition and physical activity. Acculturation and socioeconomic constraints also influence behavior. Many families have parents who work multiple jobs resulting in lack of time for shopping and meal preparation. Increased 'screen' time is a considerable barrier as more and more children use the computer and watch television.

There are also significant organizational and societal barriers including the increased financial burden that comes with sweeping change. This may mean higher taxes, or increased service costs – something many families would not be able to manage. There are philosophical differences in opinion regarding the role of

individuals in their disease management and resistance to government intervention. But these barriers should not serve as reasons to lay dormant. We must continue to address the issues which will ensure a stronger America.

Conclusion

In the United States, our poorest social groups have restricted access to society's health related resources – those that the rest of society enjoys. American minorities face a plethora of obstacles that other groups face far less often including environmental pollution, high crime, concentrated poverty, and overt racism. Many of them don't have adequate health care, work for a low minimum wage, go to underfunded schools with inexperienced teachers, don't have transportation from where they live to where they work, live in unsafe neighborhoods with no resources including health care providers, and live in substandard housing. These facts have been shaped by a wide range of factors in the social, economic, natural, built and political environments. Approaching health from a broad perspective helps us understand the effects of things like social-connectedness, economic inequality, social norms, and public policies on health behaviors and ultimately on health status.

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