

When policy, demographics, and disease collide: the penalty of poor diabetes care in immigrant children

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Diabetes mellitus is among the most costly individual and economic burdens on children, families, and healthcare systems (1). With a prevalence of about 1 per 1,000 children for type I and 1 per 500 children for type II diabetes mellitus, it is estimated that acute care for diabetes in the pediatric population tops \$25 billion per year in the United States, and \$250 billion for the entire US population (1). The long-term costs of childhood diabetes are orders of magnitude greater than this amount, as the complications of diabetes become manifest in adulthood as an increased burden of cardiovascular and metabolic disease, compounded in those individuals with poor compliance (2).

In the United States and worldwide, the incidence of type I and type II diabetes mellitus is increasing. For type I diabetes, we are seeing a shift to earlier onset of disease (3). For type II diabetes, the rise in incidence more than outpaces the rise in rates of obesity (4). The changing incidence of diabetes has been linked to ethnic, social, economic, and cultural factors, which need to be considered in developing programs for the care of children with diabetes mellitus. The report by Gandhi and coauthors in the current issue of *Pediatric Research* (5), highlights the challenges of diabetes care for immigrant populations in the United States, where these factors intersect to influence disease course and management.

The demographics of the United States have changed markedly over the past few decades. In 2004, 12.5% of the US population was Hispanic or Latino (6). At present, this percentage is 17% (7). In 2004, the Asian American population was 4.7% (6), is now 5.4% (7), and is beginning to rise more rapidly. The prevalence of diabetes in the Latino/Hispanic population differs from that of Asians and Caucasians, with 12.8% having diabetes, vs. 9.0% and 7.6% in Asian and Caucasian populations, respectively (8). It is also frightening to consider that the number of Americans with diabetes is expected to double or triple by 2050 (ref. (9)) and will likely disproportionately affect Latino/Hispanic and Asian populations.

With an increased incidence of diabetes in the Latino/Hispanic population comes other serious factors that impact diabetes care, as Gandhi and coauthors point out (5). Access to health care is more challenging in immigrant populations with lower socioeconomic status than in native populations (5). Language barriers adversely impact care for this condition

that requires extraordinary levels of parent and patient education (5). Rates of depression are higher in immigrant populations which, in turn, adversely affect the outcome of most chronic medical conditions (5). The increased prevalence of obesity among the Latino/Hispanic population, coupled with nutritional habits that do not always mesh with current recommended dietary guidelines for diabetes, complicate care effectiveness, as well (5).

When considering the above factors, it is important to reflect on the current labor intensive nature of diabetes mellitus care in the United States. Care teams involve physicians, diabetes educators, nursing staff, psychologists, social workers, dietitians, and administrative support. More than 50% of children in the United States are now on insulin pumps and a subset of children use continuous glucose monitoring devices, each of which is complex and expensive. Children are seen in office visits every 3 to 4 mo; these visits involve teams of healthcare providers and not just a sole practitioner. When one estimates the cost of care per year for programs, it is in excess of \$5,000 per year per patient, exclusive of medication and technology costs (10). However, reimbursement rates are such that less than 30% of these care costs are covered by insurance. Thus, physicians, departments of pediatrics, and hospitals are left to deficit-fund these programs.

Considering the current financial challenges of diabetes programs, in a setting where resources are already limited, the ability to provide extra support to help disadvantaged immigrant children and their families is quite problematic. The virtues of the needed services highlighted by Gandhi and coauthors are unquestionable (5). However, the ability to provide these basic and deserved medical services is not currently possible at most care settings due to reimbursement shortfalls. What this means is that diabetes care will not be optimal for this group of children. The penalty for perpetually elevated glucose levels will be increased lifelong morbidity, increased mortality, and higher diabetes mellitus-related costs to our healthcare system.

It has been suggested that new reimbursement models and strategies for providing diabetes mellitus care be considered, including bundled payment models that cover the full costs of services (11). Yet, although proposed for more than a decade, such models have yet to be implemented in most areas. Furthermore, whereas a standard reimbursement rate

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may cover costs for many children with diabetes who do not come from disadvantaged backgrounds, such reimbursement models may not be sufficient for disadvantaged children given the challenges they face. Thus, outlier exemptions to trigger enhanced reimbursement for children requiring extra attention should be considered. Considering that local healthcare policy and determination of reimbursement rates is generally influenced at the state level, it thus becomes imperative for pediatric healthcare providers and endocrinologists to become involved with their state health departments to advocate for additional resources, enhanced reimbursement rates, and additional funding streams for pediatric diabetes care.

Healthcare in America is evolving with more of an emphasis on preventive and primary care in the hopes of decreasing disease burden and associated economic costs in the future. The care of children with diabetes, like that for many chronic conditions, is manifestly preventive but nested in the realm of the subspecialist, and it is possible to develop reimbursement methodologies to support comprehensive subspecialty care. The long-term penalty of uncontrolled diabetes includes blindness, cardiac and vascular disease, and adverse effects on pregnancy (2). Providing proper support now for diabetes care for the full scope of children with diabetes, including the growing number of disadvantaged children, is an excellent investment. Diabetes mellitus—the epidemic of the 21st century—is one of the most obvious examples in healthcare where we must avoid the cliché “pay me now or pay me later,” as “later” comes with true harm to the patient and vastly higher costs to society.

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