INVITED PAPER

Oral health literacy: a pathway to reducing oral health disparities in Maryland

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Abstract

Oral health literacy is a relatively new but critical concept in our efforts to decrease disparities and increase oral health for all Marylanders. Oral health literacy is important because low health literacy contributes to disease which results in increased costs for all of us. Those with low health literacy are usually at highest risk for oral diseases and problems. These individuals include the poor, those with low levels of education, minorities, and the elderly. Prompted by the untimely demise of Deamonte Driver, Maryland has taken the lead in developing a statewide approach to improving oral health literacy with the ultimate objective of reducing disparities.

> Oral health literacy is "the degree to which individuals can obtain, process and understand basic oral health information and services needed to make appropriate oral health decisions." (1)

Background

To achieve optimum oral health requires more than professional care. It requires self-care, care of others, community programs, policies, laws and regulations, and reimbursement structures that support evidence-based interventions and practices. Obtaining, understanding, and using information to prevent oral diseases and promote oral health are essential parts of personal health maintenance and are the foundation of the skills and effectiveness of caregivers. Oral health literacy is an intricate process of acquiring and trusting information, skill development, grasping concepts, and technique-intensive protocols, and applying them appropriately. While these concepts are not new to those in dental public health, we learned once again in 2007 with the tragic death of Deamonte Drive how difficult acquiring these skills can be.

In the aftermath of Deamonte Driver's tragic death, it was clear to those in Maryland that something more needed to be done beyond the usual efforts to provide dental care services. A central theme of the recommendations emanating from the 2007 Maryland Dental Action Committee report was that of educating the parents and caregivers of young children and training health professionals to provide such education. Specifically, there was a call for development of "unified, culturally and linguistically appropriate oral health messages." These education-focused recommendations gave rise to the oral health literacy strategy now being implemented for the state.

The timing of the events in 2007 coincided with the evolving science-base for health literacy. The second National Assessment of Adult Literacy included a sample of health items which revealed that over 36 percent of Americans aged 16 years and older have very limited health literacy (2). Health literacy, including oral health literacy, had begun to take root in how we think about health promotion and disease prevention. It began to penetrate our research, education, community programs, and our policies (3,4). More recently, further impetus has been provided by the 2010 Department of Health and Human Services National Action Plan to Improve Health Literacy, a framework for the work of health care professionals, health care system managers, community program directors, researchers, educators,

and policy makers (5). This work includes addressing multifaceted issues and involving multiple stakeholders. The intent of Maryland's oral health literacy strategy is twofold: a) reduce oral health disparities by maximizing the capability and role of the many stakeholders who contribute to the health of a population; and b) reduce barriers – real or perceived – patients encounter when interacting with the dental care systems. This approach is consistent with the IOM 2004 report that health literacy is the "interaction of the skills of individuals and demands of the health care system" (4,5).

Our strategy includes recognizing that low health literacy has a substantial impact on the use of preventive measures and health outcomes. Specifically, individuals with low health literacy are less likely to use preventive regimens and screenings than individuals with high health literacy and have increased use of emergency care. Education, socioeconomic status, race/ethnicity, cultural backgrounds, and other factors come into play as does the interaction with health care providers and health care settings (5). Emerging work in dental research provides additional insights to issues of measurement of oral health literacy and effects on care-seeking behaviors (6-8). We explored the implications of oral health literacy for improving oral health through dental practices (8) and include them as stakeholders in our statewide approach of improving oral health literacy.

The Maryland approach

Given Maryland's experience with the demise of Deamonte Driver, we focused our strategy on improving oral health for young children, especially those who are most vulnerable. The strategy includes three stages: an extensive needs assessment; the development and implementation of interventions; and measurement of outcomes. Our approach is based on the Maryland Model of Prevention and Early Detection of Oral Cancers initiated in the 1990s (9). We also have taken advantage of emerging opportunities that have expanded our approach. For example, when the state received a grant from the Centers for Disease Control and Prevention, we were asked to expand our needs assessment to include Head Start and Women, Infants, and Children (WIC) personnel because of their potential to impact favorably on children's oral health.

To date, we are establishing the state's needs by assessing the dental caries prevention and early diagnosis knowledge/understanding, opinions and practices, and communication techniques and skills of a variety of groups. These groups or stakeholders include the public (parents and caregivers of young children), an array of health care providers (general and pediatric dentists, dental hygienists, pediatricians, family medicine practitioners, nurse practitioners), and, most recently, Head Start and WIC program directors and staff.

Table 1 Summary of Preliminary Findings from 2011 Survey of Maryland Adults

Maryland Adults' Knowledge and Perceptions of caries prevention and early detection
• 23% could identify an early sign of tooth decay. • 98% said they had heard of fluoride; of those 58% knew the purpose of fluoride. • 65% said they had heard of dental sealants; of those 46% knew the purpose of dental sealants. • Adults with high school education or less were *significantly less likely* than those with higher education to drink tap water, give it to their child, and know if their tap water was fluoridated. • Medicaid recipients were less likely to drink tap water than non-Medicaid recipients.
Maryland Adults' Perceptions of dental provider communication practices
• African Americans were significantly more likely to express lower satisfaction with the amount of time the dentist spent with them than Caucasians. • African Americans were more than twice as likely to report they were treated unfairly due to race, ethnicity, or education. • Individuals with private dental insurance were significantly more likely than those with Medicaid to report favorably about providers listening practices. • 60% of respondents stated that they receive their oral health information from their dentist.

The mixed methods approach includes telephone surveys and focus groups of the parents and caregivers, and self-administered surveys and focus groups of health care providers and of Head Start and WIC staff. Focus groups of the public have been conducted in English and in Spanish.

Preliminary findings of the parents and caregivers are shown in Table 1. Respondents' understanding of the purpose of fluoride is quite low (58%) despite the fact that it has been shown to be effective for decades. Furthermore, while 98 percent of the Maryland population has access to community water fluoridation, those who are in most need of drinking it report that they do not. At the same time, 60 percent of respondents stated that they receive their oral health information from their dentist, an opportunity for evidence-based messaging and communication. Yet, Medicaid recipients who responded do not hold a high opinion of the listening skills of dental providers. These latter findings provide the patients' counterpart to results from a recent national survey of US dentists that found a general low use of recommended communication techniques among dental providers (10).

These findings and others are contributing to the agenda for the Maryland Dental Action Coalition (11), our statewide coalition, and providing input and follow-up for the Maryland State Oral Health Plan (12). In addition, they are contributing to the design of a statewide oral health literacy campaign.

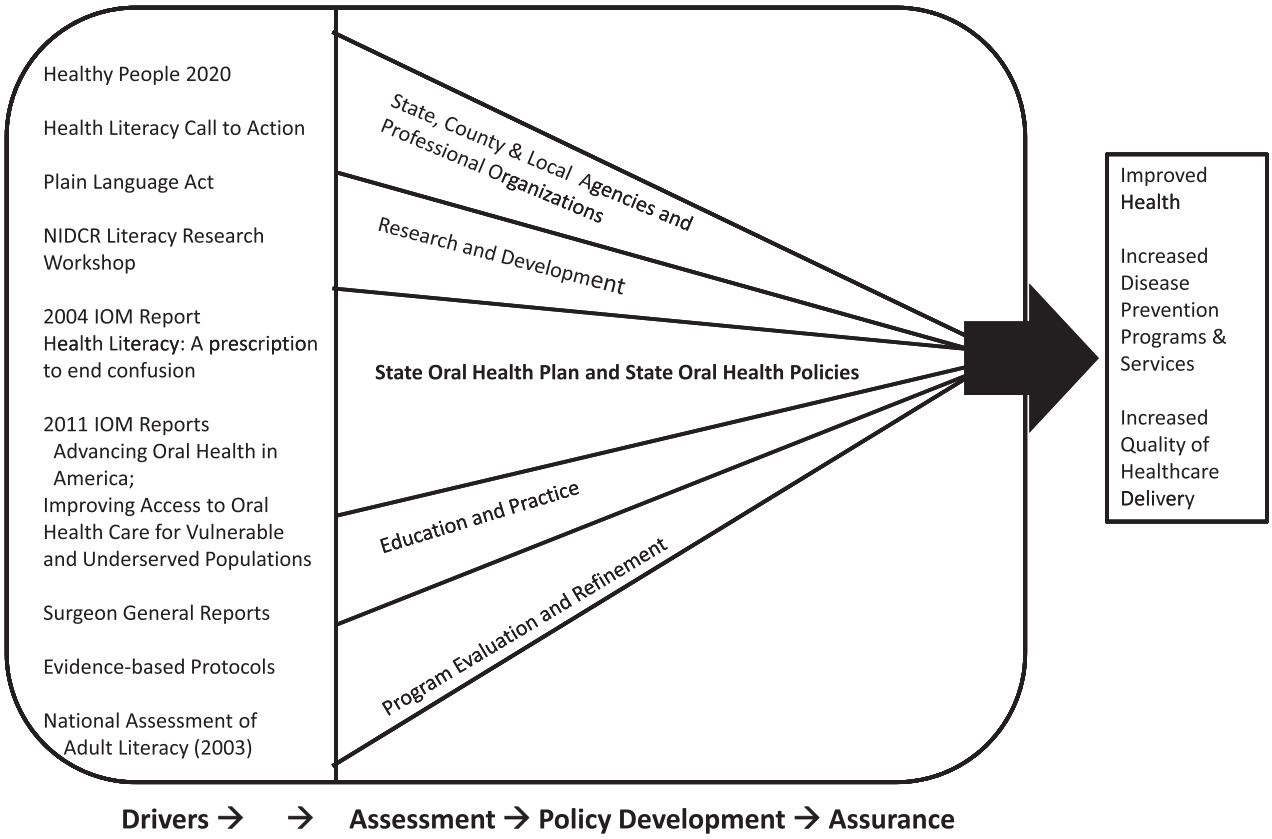

Figure 1 Maryland oral health literacy model: moving science into action.

We are in the early stages of using these and other findings to guide the development of messages for the public and provider groups and the design of training programs for providers. From these interventions, we hope to see increased knowledge/understanding, opinions, and practices of parents and caregivers, and of providers and policy makers about dental caries prevention and early diagnosis. The provision of increased evidence-based oral health educational services provided by all health care providers to parents and caregivers of children of low-income populations should improve the oral health of all Maryland children, and thus decrease disparities in oral health.

Implications and next steps

Our strategy strives to improve health, increase disease prevention programs, and improve quality of health care delivery. It is dynamic and continues to evolve. It is based on science-based reports and initiatives that "drive" assessment, policy development and assurance and use the state oral health plan and related policies as a guide (Figure 1). This strategy is expanding to address the many aspects of the systems that affect health. For example, we have added a new component, extending the work to assess the health literacy and user-friendliness of community health center-based dental clinics. We are adapting the Agency for Healthcare Research and Quality, Universal Precautions Toolkit (13) for this assessment. This places our strategy into the context of the health care system and the facilities, processes, and operations that individuals have to navigate to receive the care and the information they need (14). In addition, a pilot program of the use of case managers to support individuals and families navigate the Medicaid system, and related care services are underway on the eastern part of our state.

At this stage, we continue to learn from the systematic reviews of the scientific literature. The 2011 AHRQ report on the systematic review of health literacy and outcomes has concluded that more work is needed to advance the design features of interventions, such as determining the effect of policy and practice interventions and determining the cost-effectiveness of programs (15,16). We plan to incorporate these features in the next phase of our efforts. We recognize that we need to be even more inclusive in our efforts to garner additional stakeholders. For example, we must seek out and include the many adult education programs and

Table 2 Healthy People 2020: Topic Area Health Communication (HC) and Health IT (HIT) Selected Objectives

HC/HIT-1: (Developmental) Improve the health literacy of the population.	
HC/HIT-1.1	Increase the proportion of persons who report their health care provider always gave them easy-to-understand instructions about what to do to take care of their illness or health condition.
HC/HIT-1.2	Increase the proportion of persons who report their health care provider always asked them to describe how they will follow the instructions.
HC/HIT-1.3	Increase the proportion of persons who report their health care providers' office always offered help in filling out a form.
HC/HIT-2: Increase the proportion of persons who report that their health care providers have satisfactory communication skills.	
HC/HIT-2.1	Increase the proportion of persons who report that their health care provider always listened carefully to them.
HC/HIT-2.2	Increase the proportion of persons who report that their health care provider always explained things so they could understand them.
HC/HIT-2.3	Increase the proportion of persons who report that their health care provider always showed respect for what they had to say.
HC/HIT-2.4	Increase the proportion of persons who report that their health care provider always spent enough time with them
HC/HIT-3: Increase the proportion of persons who report that their health care providers always involved them in decisions about their health care as much as they wanted.	
HC/HIT-4: (Developmental) Increase the proportion of patients whose doctor recommends personalized health information resources to help them manage their health.	

U.S. Department of Health and Human Services (17).

literacy councils in our efforts to increase oral health literacy. We also are learning from the broad health literacy efforts being undertaken in other states where the health literacy movement has taken root. Examples include Missouri, Wisconsin, Kentucky, and, now, Maryland. While efforts in Maryland to create a state Health Literacy initiative have just begun, we believe that the efforts undertaken for oral health will contribute to the early stage of this movement. It is gratifying to see that the new Maryland State Health Improvement Process has used Health Literacy as its first monthly topic.

The Healthy People 2020 health communication and health IT objectives (Table 2) (17) provide a foundation for our work, and we are incorporating relevant recommendations made in the 2011 IOM report, Advancing Oral Health in America as we develop the interventions (Table 3) (18). Although these latter recommendations are intended for the Department of Health and Human Services, they are applicable to state and local agencies as well.

Table 3 IOM Report: Advancing Oral Health in America – Highlighted Recommendations

Recommendation 2: All relevant HHS agencies should promote and monitor the use of evidence-based preventive services in oral health (clinical and community based) by:
• US Preventive Services Task Force & Task Force on Community Preventive Services • Ensure HHS health care systems provide preventive services and counseling.
Recommendation 3: All relevant HHS agencies undertake oral health literacy and education efforts aimed at individuals, communities, and health care professional.
• Community-wide public education on causes, implications of oral diseases, and effectiveness of preventive interventions • Community-wide guidance on how to access oral health care • Professional education on best practices in patient–provider communication skills

Conclusions

In conclusion, our belief and operating principle is simple: efforts to increase primary prevention, improve quality of care, reduce costs, and reduce oral health disparities cannot succeed without simultaneous improvements in oral health literacy of the public, health care providers, and policy makers; and ensuring the user-friendliness of our dental facilities. Improving oral health literacy of all groups can be a pathway to reducing these disparities.

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Conflict of interest

Data presented in this paper was obtained through a grant from the DentaQuest Foundation. The authors declare no other conflict of interest.

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