

## EDITORIAL

# Moving the Public's Oral Health Forward through Research

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In December 2006, the NIDCR sponsored a symposium to honor the lifetime contributions of Lois K. Cohen, PhD. Dr. Cohen's areas of leadership and mentorship are many, but largely fall under the umbrella of research in global behavioral and social sciences and public health. The symposium was a composite of critical scientific areas presented by experts from around the world (<http://www.nidcr.nih.gov/NewsAndReports/ReportsPresentation/LoisCohenSymposium.htm>). Following the symposium, speakers and NIDCR staff<sup>1</sup> met to deliberate research opportunities and issues for behavioral and social sciences research.

The charge to the group was to be creative by identifying emerging areas that have not yet been applied to oral health issues, that have not yet been integrated into oral health research, or that are in the early stages of investigation but may require new approaches for their development. The participants identified many research opportunities and grouped them under four main topics: Developmental Approaches; Information Dissemination and Health Literacy; Social Policies and Systems; and Behavioral and Social Aspects of Oral Health and Diseases. In addition, the participants addressed workforce needs as well as policy and system issues.

Within these deliberations, there appears to be a charge to public health professionals to continue to work with behavioral and social scientists to sustain progress within these research opportunities so that the oral health of the public can continue to improve. In the interest of

focus and space, I am briefly summarizing those areas of most pertinence to the dental public health audience.

### Developmental Approaches

Research investigations across the life span are needed a) to understand the developmental trajectories derived from oral health and disease experience and behaviors that affect future health outcomes and b) to develop interventions that enhance an individual's capacity and competence for oral health throughout life. Early health behavior, either positive or negative, has implications for subsequent health behaviors over a lifetime. The pathways set in place in early childhood reflect individual experiences, and the interactions among genetic and environmental (social, cultural, economic) conditions need examination through longitudinal studies.

We need to enhance the capacity and competence of individuals and groups to maintain and improve their oral health. For example, by understanding the intersections and interactions among patients and families, consumers and communities, and oral health care providers, and by developing interventions to foster normative oral health behaviors interacting with general health behaviors, we should be able to foster improved oral health for a lifetime.

Specifically, research and demonstration would be improved with a foundation in developmental theory. What are the events that affect future oral health and general health outcomes? Can individuals develop capacity and competence for oral health throughout life with proactive

skill building, emphasis on self-care, and a focus on the interaction and engagement between oral health consumers and providers?

### Information Dissemination and Health Literacy

Health literacy is a newly developing field of research. As yet, there are no fully accepted instruments or measures for assessing health literacy among health consumers, health care providers, and/or policymakers. The specific meaning of oral health literacy, the measurement of literacy, and the potential use of research findings are not clear. It is not yet known, for example, whether health literacy can be changed or is only a label or variable in understanding patient interactions with the health system. That is, if health literacy is determined to be important, who intervenes to change it? Research is needed to clarify and focus the usefulness of oral health literacy as a concept in public health.

Basic research is needed to clarify the meaning and measurement of key concepts, notably oral health literacy in health care, so that research findings can have more potential use. Interdisciplinary/multifaceted approaches are critically needed in all areas of behavioral and social sciences, specifically, in this case, to improve health literacy among individuals (particularly children) and families, providers, communities, organizations, and policymakers.

### Social Policies and Systems

Behavioral and social scientists need to learn more about social structures and systems and health and social policies that affect a

<sup>1</sup> This editorial is largely drawn from a summary report of the group deliberations with liberties taken based on personal perspective and interpretation. The ideas are not exclusive to me but represent the exchange and consensus of the group convened by NIDCR in December 2006, to discuss behavioral and social science research issues for the 21st century. Acknowledgments are extended to David B. Abrams, Judith E. N. Albino, Ronald M. Andersen, Norman S. Braveman, Maria Teresa Canto, Lois K. Cohen, Peter Davis, Samuel F. Dworkin, Helen C. Gift, Alice M. Horowitz, H. Asuman Kiyak, Dushanka V. Kleinman, Ruth E. Nowjack-Raymer, Jeffrey M. Ortiz, Debra L. Roter, and Richard G. Watt.

population's oral health as well as determine the most efficient, macro-level ways of effecting behavioral changes to improve the oral health of populations. Evidence demonstrates the value of population-wide interventions e.g., antismoking campaigns, water fluoridation, but more research is needed to demonstrate new and valuable approaches. Examination of macrolevel (e.g., social structures, systems, policies) and organizational level (e.g., schools, community health clinics, provision of medical/dental services) that affect oral health, as well as identification of cost-efficient ways for promoting oral health across populations, are needed to test and evaluate interventions using appropriate methodologies.

The delivery and organization of oral health care in relation to access issues remain as enigmas. Despite many studies over decades, a lack of understanding persists. As recently as the 2007 report from NHANES, we see challenges represented by the dental visit variable. The agenda for health services research is scattered, making the examination of the complexity of this multidimensional topic a continuing challenge.

Behavioral and social science and health services research is specifically needed to study health care delivery systems to better understand and improve a) the translation of research findings into clinical and community applications and b) the consistencies in oral health care between poor and nonpoor populations. Focus is needed on basic research to understand the functional processes and mechanisms that impede or facilitate dissemination of research findings as well as on demonstration research to show the potential for research outcomes that would initiate or change health care policies. We need to apply detailed methodologies to elucidate the direct and indirect pathways by which community and society link with oral health in order to use this understanding to foster policies and interventions to enhance the health of communities and populations. Further, exploration is needed of the potential role of the health care providers as change agents to monitor

individuals' health behaviors, prevent health risks (e.g., tobacco use, obesity), and detect the oral manifestations of systemic diseases.

### **Behavioral and Social Aspects of Oral Health and Diseases**

The group also addressed the importance of expanding our knowledge to understand the behavioral, psychological, social, and cultural aspects of "oral-systemic" connections to diseases. This discussion was extensive, but cannot be done justice in this editorial. At the bottom line, there are two relatively simple questions: If there is a behavioral bridge to a specified disease, what is it? How can scientists understand this contribution and use this understanding to influence the disease process? Directions require integration across disciplines in planning, implementing, and evaluating research. Understanding the oral-systemic interface is supportive of the earlier opportunities discussed. For example, research involving Native Americans strongly suggests that their medical conditions reflect involvement of macrolevel determinants (e.g., socioeconomic status, access to health care) as well as individual determinants (e.g., physical activity, health behaviors, provider skills), both of which relate to behaviors in families, neighborhoods, and communities, and all of which affect oral health outcomes. Similarly, behavioral and social sciences research is critical to research on obesity and nutrition and to studies of quality of life.

Overall, a prevailing focus of the discussion was the breadth of studies needed. A systems approach is necessary to improve the research agenda for the public's oral health. For example, we need to elaborate the behavioral, psychological, social, and cultural dimensions of diseases characterized by oral-systemic connections and study the layering of these associations to identify and describe the cause(s) of disease. The dimensions to consider include macrolevel and individual determinants of disease, behaviors and risk of disease, and comorbidities. Also, we need to pursue systems

approaches focusing at common risk factors between oral and medical conditions. Areas of obvious overlap for behavioral and social sciences research include, for example, commonalities in understanding and monitoring self-care, the social context of nutrition and obesity, assurance of quality of life (*vis-à-vis* activities of daily living), and assessment of burden of disease (e.g., disability-adjusted life years).

Interdisciplinary research, in and of itself, is not the answer. It would be more productive to adopt a systems approach which would serve to frame research and, at the same time, remain open to new opportunities and directions. Research needs to move away from descriptive, repetitive studies and embrace systems theory, develop hypotheses and indicators, and apply comprehensive, theoretical designs to studies. Scientists should use statistical models/approaches and comparative methods appropriately to examine theories and apply them in intervention research to identify factors that contribute the most risk for diseases. Positive and negative, as well as unexpected research, outcomes need to be critically reviewed in order to return to examine the originating theories and systems approaches more thoroughly.

Development of the workforce in oral health to address these research and implementation needs is a major concern. Two possibilities are a) to develop this workforce within dentistry and oral health researchers and b) to piggyback onto other areas of research by introducing/enticing investigators into oral health. These manpower issues are similar to those discussed within AAPHD regarding teachers and practitioners of public health dentistry. The challenge of growing the next generation of researchers, teachers and practitioners of public health, behavioral and social scientists, and health service researchers is mammoth. We, in these professions, need to encourage funding and action by supporting the organizations positioned strategically to achieve the public's oral health in the 21st century.