Addressing Health Disparities Through Dental-Medical Collaborations, Part II. Cross-Cutting Themes in the Care of Special Populations

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Abstract: This article introduces the second group in a series of articles in this journal on dental-medical collaborations to reduce oral health disparities. This group targets the needs of the elderly and individuals with mental retardation, developmental disabilities, and other special health problems. Five themes are common to these populations: the importance of oral-systemic interactions and need for interprofessional collaboration in care and training; the possibility of diminished mental and motor capacities and ability to provide self-care; difficulty accessing appropriate dental care; complex social and cultural factors; and the lack of a sufficient evidence base on basic mechanisms and clinical interventions. Gaps in training of dental, medical, and other health professionals contribute to disparities. Few programs provide integrated, interdisciplinary approaches, despite the growing numbers of elderly and the increasing life span of individuals with developmental disabilities. The inability of many such individuals to advocate for themselves, limitations in financial mechanisms, and societal biases fuel health disparities. These articles propose recommendations for key changes in dental and other health professional training, advocate increased commitment to special populations in research agendas, and encourage collaboration across health professions and with community and advocacy groups. A strong emphasis on prevention must be a part of these changes.

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This is the first of three articles to appear in this issue of the Journal of Dental Education addressing oral health disparities through dental-medical collaborations. These articles are the second installment in a series on dental-medical collaborations related to oral health disparities. Part I appeared in the August 2003 issue.1

Addressing oral health disparities among the elderly and individuals with mental retardation and other developmental disabilities through dental-medical partnerships is part of the larger public health dialogue calling for collaboration across health professions to address oral health disparities, as articulated in the Surgeon General’s report Oral Health in America2 and the National Call to Action to Promote Oral Health.3 This article summarizes cross-cutting themes relevant to the care of these groups and proposes key training steps that are essential to move toward the goal of eliminating oral health disparities in these populations.

The second article in this section, by Pyle and Stoller, considers the needs of the elderly and calls for interdisciplinary education and collaboration to address oral health disparities in this growing segment of the population. The third article, by Fenton et al., describes a new professional organization, the American Academy of Developmental Medicine and Dentistry, and its collaborative efforts to address training, service, and research efforts to meet the needs of individuals with mental retardation and other developmental disabilities and special health care needs.
Oral Health Needs of Special Populations

As Pyle and Stoller (see pages 1327-36 in this issue) indicate, there is ample evidence of unmet oral health needs in the elderly. The burden of disease in older populations has been summarized by the Surgeon General and is outlined in Table 1. The population of U.S. adults over age sixty-five years has grown to 35 million, with about 4.6 million above age eighty-five. An estimated 1.65 million live in long-term care facilities. Americans are living longer and keeping their teeth longer, which adds to the projected dental workforce needs.

There are far less data documenting the oral health status of individuals with mental retardation, developmental disabilities (MR/DD), or other special health needs. The Surgeon General’s report on oral health noted this lack of data, and a year later another Surgeon General’s conference and summary, Closing the Gap: A National Blueprint to Improve the Health of Persons with Mental Retardation, addressed issues important to the health of persons with mental retardation and made key recommendations (Table 2).

A developmental disability is a chronic disabling condition present before age twenty-two due to physical and/or mental impairments such as mental retardation (MR), cerebral palsy, epilepsy, autism, or Down syndrome, among others. The most prevalent developmental disability is MR, which is defined as deficits in intellectual functioning and adaptive behaviors present before age eighteen. Population estimates of MR vary widely. According to one review of the literature, the prevalence of MR is about 1.0 percent of the population (two to three million people), while another estimate from the 1990 census indicated that there were between 6.2 and 7.5 million people living in the United States with mental retardation. Life expectancy for youth with MR has increased and is expected to be close to that of the general population. Assuming the incidence of MR is stable, the size of the population with MR will likely increase.

A broader definition of disability, including acquired disabilities, is provided by the Americans with Disabilities Act. Under this definition the number of Americans with disabilities is estimated to be 54 million, or close to one in five Americans. Data for the period 1970 to 1994 suggest that the proportion of individuals with disabilities is increasing. The proportion of children under age eighteen with MR/DD and other special health care needs (usually considered together as “children with special health care needs”) is estimated to be 18 percent, also close to one in five.

In the population of individuals with developmental disabilities, most estimates of oral disease prevalence are for persons with MR. Although reports are inconsistent, oral disease rates in individuals with MR appear higher than in the general population. For the larger population of adults with all disabilities and special needs, estimates are more difficult to obtain. A large number of individuals from this broader group were recently screened for oral problems by Special Olympics, Inc. The data from this convenience sample of 34,000 individuals aged eight to eighteen point to significant oral disease and unmet oral health needs in this population. In Newacheck et al.’s study of children with special health care needs, dental care was identified as the most prevalent unmet health care need.

There is considerable overlap between the elderly and those with MR/DD and other special health needs. As the population of elderly increases due to improvements in medical care, a certain number of these individuals will acquire disabilities and other...
chronic health conditions. At the same time, those with developmental disabilities are also living much longer and joining the ranks of the elderly. Both of these special populations are at increased risk for oral disease and inadequate access to dental care, and both of these groups are large and increasing in size; hence, a critical part of a dental education agenda must be to anticipate the health needs of these groups.

Cross-Cutting Themes in the Care of Special Populations

As the following articles by Pyle and Stoller and by Fenton et al. discuss, there are a number of themes relevant for both geriatric patients and individuals with MR/DD and other special health care needs that must be considered by academicians, researchers, and policymakers addressing oral health disparities. They are as follows.

1. Oral-systemic health interactions are important for these populations. Systemic conditions can directly affect oral health as seen in diabetes, HIV-AIDS, and other immune disorders. Required medical therapies can create oral disorders and disease. Medications can induce xerostomia and increase the risk for caries; immune suppression can predispose to oral candidiasis; and cancer chemotherapies can produce acute mucosal damage. Oral conditions also impact overall health and well-being: declining oral health function can substantially affect nutrition and quality of life in adults. Oral pathogens may be aspirated in individuals with compromised neurological function of all ages and lead to pneumonia. Chronic periodontal disease is in-

Table 1. The burden of oral diseases and disorders: older adults

- Twenty-three percent of 65- to 74-year-olds have severe periodontal disease (measured as 6 millimeters of periodontal attachment loss). (Also, at all ages men are more likely than women to have more severe diseases, and at all ages people at the lowest socioeconomic levels have more severe periodontal disease.)
- About 30 percent of adults 65 years and older are edentulous, compared to 46 percent 20 years ago. These figures are higher for those living in poverty.
- Oral and pharyngeal cancers are diagnosed in about 30,000 Americans annually; 8,000 die from these diseases each year. These cancers are primarily diagnosed in the elderly. Prognosis is poor. The five-year survival rate for white patients is 56 percent; for blacks, it is only 34 percent.
- Most older Americans take both prescription and over-the-counter drugs. In all probability, at least one of the medications used will have an oral side effect—usually dry mouth. The inhibition of salivary flow increases the risk for oral disease because saliva contains antimicrobial components as well as minerals that can help rebuild tooth enamel after attack by acid-producing, decay-causing bacteria. Individuals in long-term care facilities are prescribed an average of eight drugs.
- At any given time, 5 percent of Americans aged 65 and older (currently some 1.65 million people) are living in a long-term care facility where dental care is problematic.
- Most elderly individuals lose their dental insurance when they retire. The situation may be worse for older women who generally have lower incomes and may never have had dental insurance. Medicaid funds dental care for the low-income and disabled elderly in some states, but reimbursements are low. Medicare is not designed to reimburse for routine dental care.


Table 2. Closing the gap: a national blueprint to improve the health of persons with mental retardation

- Increase knowledge and understanding of health and mental retardation (MR).
- Improve access to health care services for adults, adolescents, and children with MR, ensuring access.
- Improve the quality of health care for people with MR.
- Train health care providers in the care of adults and children with MR.
- Ensure that health care financing produces good health outcomes for adults and children with MR.

increased in individuals with Down syndrome. Periodontal disease has been associated with increased risk for cardiovascular disease and stroke.15,16

This interplay between oral and systemic health points to the necessity of interdisciplinary care for these patients. Relatively few models of comprehensive care address patient needs in an interdisciplinary, interprofessional setting that includes dental professionals, and even fewer such models are geared to training. Interdisciplinary geriatrics training has been funded by the Health Resources and Services Administration (HRSA), but the number of such programs is small. The innovative fellowship programs proposed by the American Academy of Developmental Medicine and Dentistry could increase the number of interdisciplinary training programs for patients with MR/DD. Craniofacial interdisciplinary teams represent a robust model for interdisciplinary care in which dental and medical and other health professionals fully participate.17 Within the craniofacial field there is also a precedent for interdisciplinary standards of care set by a professional organization, the American Cleft Palate-Craniofacial Association.18

While the model of interdisciplinary team care may not be feasible or even appropriate for all geriatric and special needs patients, the frequent visits made by members of these populations to medical and other practitioners do present opportunities for promoting oral health. If medical practitioners were properly trained, these visits could include oral health promotion, disease screening, and collaboration with dentists. For example, medical providers could identify periodontal disease using an easy clinical screening exam as described by Fenton et al. (see pages 1337-44). Speech and occupational therapists often work with both populations and could also be part of the extended oral health team if they received proper training. The capacity of nondental providers to promote oral health in these populations is largely untapped due to gaps in their training.

2. Diminished capacities present in many individuals can impact their oral health. Diminished mental capacities can interfere with comprehension and judgment. Even with the assistance of dedicated caretakers, diminished competency and motor skills may interfere with patients’ ability to provide self-care and follow through on health recommendations. Approaches to health promotion that rely only on personal health behaviors such as oral hygiene and personal dietary choices may disproportionately disadvantage these vulnerable groups. For these populations, community-based health promotion efforts must be emphasized: water fluoridation, provision of healthy food choices whatever the residential setting, and access to routine dental prophylaxis and treatment as indicated. The greater use of allied dental professionals should be considered in residential facilities; such settings do offer opportunities for promoting oral health if services can be provided regularly.

Individuals with diminished competency share an important characteristic with children: an inability to advocate for themselves. This vulnerability places a responsibility on others—not just family members and guardians, but also professionals—to engage in advocacy efforts to ensure adequate health care is available to meet their needs.

Table 3. Oral health status and unmet needs of Special Olympics athletes, 2000-02

<table>
<thead>
<tr>
<th>Unmet Needs of Special Olympics Athletes (n = 34,505)</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>31 percent had carious lesions</td>
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<tr>
<td>42 percent had gingival inflammation</td>
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<tr>
<td>12 percent had oral/dental trauma</td>
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<tr>
<td>33 percent were missing at least one tooth</td>
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<tr>
<td>11 percent had urgent treatment needs</td>
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<tr>
<td>28 percent had imminent treatment needs</td>
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<tr>
<td>61 percent had need for routine preventive maintenance</td>
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workforce will further disadvantage these groups. How will they compete for limited dental resources with an insured or self-pay clientele seeking cosmetic dentistry and other costly services?

Misperceptions and societal biases may create additional and different kinds of barriers for these populations. The elderly may experience ageism, while individuals with MR/DD can face life-long prejudices and misperceptions. In a 2003 survey supported by Special Olympics, nearly two-thirds of those surveyed believed that children with MR belong in segregated educational settings.20 This attitude is in contrast to legal precedents in this country that guarantee access to an appropriate education in the least restrictive educational environment.21,22 Nearly three-quarters of those surveyed believed that persons with MR receive equal or better care than the general population. Such misperceptions may hinder development of adequate policy to support this population.

4. Culturally sensitive, patient- and family-centered care is important for these patients. Attitudes and biases of individual providers and the health care system can directly impact the quality of care received by individuals. Lack of sensitivity to cultural issues can contribute to health disparities, as discussed by a recent Institute of Medicine report, and applied to dentistry by Formicola et al.23,24 Cultural differences extend beyond race and ethnic origin in special populations. Individuals living within the disability community may experience a different “culture” and a different concept of “normalcy” (for example, the deaf community has a distinct culture). The elderly may have perceptions of health and disease that differ from those of younger health care consumers. Oral health care must be tailored to meet the circumstances and preferences of the individual patient, rather than an arbitrary standard of care. Sensitivity in oral health care includes attention to the social circumstances, personal beliefs/preferences, and other medical or behavioral/emotional concerns of patients. The Surgeon General’s Report: Children with Special Health Care Needs has led the way in calling for comprehensive coordinated, family-centered, culturally competent approaches to care.25

5. Care must be backed by a solid evidence base from which to make clinical decisions. Unfortunately, such an evidence base is lacking in the area of oral health of individuals with MR/DD and other special health needs. Similarly, many clinical issues and oral-systemic health interactions remain unexamined for geriatric patients. The complexity increases as more and newer medications and technologies become available every day. Thus, the fifth theme is the need for adequate data on these populations, including basic, epidemiological, and clinical data on optimal mechanisms for promoting oral health. Patient heterogeneity in groups with MR/DD and other special health care needs complicates research efforts. The Healthy People 2010 chapter on oral health highlights the lack of data for monitoring the health of this segment of the population.26

In view of the current disparities in oral health and access to care for the elderly and those with other special needs, the increasing numbers of individuals in these groups, and their heightened risk of oral disease, one of the strongest mandates for special populations must be for health promotion and disease prevention.

Summary and Conclusions

The elderly and those with developmental disabilities suffer disproportionately from oral disease and problems accessing care. The reasons behind these disparities are many and complex and include gaps in the education of dental professionals in the care of special populations and overall dental workforce shortages; gaps in the training of medical and other health professionals to recognize oral disease and oral-systemic health interactions; inadequate financial mechanisms to ensure access to dental care; insufficient data on the oral health of special populations; and a shortage of evidence behind clinical interventions. The presence of societal biases may further disadvantage these individuals.

In addition to these system-level issues, solutions aimed at eliminating health disparities in these populations must also take account of individual factors such as cultural and social differences, decreased competency, and ability to provide self-care. Health promotion and disease prevention efforts must receive the highest priority, given the increased risks of disease in these populations and the difficulty individuals may experience accessing dental care or performing oral hygiene measures.

As individuals with MR/DD move out of institutions and many elderly move into nursing homes, strategies should build on our past experience of providing institutional versus community-based care. Specific arrangements are needed to help patients through transitions to new systems of care, whether the transition is from institutional to community setting (or the reverse) or from pediatric to adult health care systems.27
National attention to these issues has been fostered by the Surgeon General’s Conference on Health Disparities and Mental Retardation, congressional hearings, and other conferences on the oral health of children and adults with developmental disabilities. Recommendations from these forums provide many specific ideas and strategies. In October 2003, the National Institute of Dental and Craniofacial Research released a concept clearance statement indicating their interest in research on special populations; it is hoped that this will be followed by a specific grant mechanism.

The American Academy of Developmental Medicine and Dentistry’s work is a powerful model of collaborative dental and medical action aimed at eliminating health disparities in these populations. Their model for community-based fellowships in developmental dentistry and medicine has the potential to address a number of important training, service, and research needs concurrently. Special Olympics has taken a strong leadership role by commissioning a review of overall health issues for individuals with MR/DD and starting its Healthy Athlete program, which includes training of volunteer health professionals and oral health screenings at Special Olympics events. These steps provide a strong precedent and a starting point for partnerships and collaborative action.

When the Surgeon General’s Conference on Children and Oral Health was held in 2000, it was the vision of the organizers that this would be the first of several conferences addressing the oral health needs of individuals across the life span. A conference focused on the oral health needs of the elderly and other special populations could be a galvanizing force, just as the children’s oral health conference was, to build new constituencies, spark creative energy, and motivate participants to work for change. It is hoped that the discussions in this series of articles will initiate more public and academic dialogue and lead to a similar national review.

**Recommendations**

Given the numbers of Americans who are elderly and/or have a disability, the need is urgent for substantial changes in the education of dental professionals and other health professionals to address the needs of these groups. Central to these changes will be the need for more cross-disciplinary training and greater collaboration between dentistry and medicine and other health professions. Overall professional education goals to accomplish these changes include the following:

1. Provide undergraduate dental education in the care of the elderly and individuals with MR/DD.
2. Include interdisciplinary, interprofessional team experiences in undergraduate dental education, particularly in the care of special populations.
3. Model and teach family/patient-centered, culturally competent care in dental and other health professional training.
4. Ensure adequate oral health training for nondental health professionals (e.g., physicians, nurses, occupational/physical therapists, dieticians).
5. Emphasize oral health promotion and disease prevention in health professional training, especially for special populations.
6. Make the best use of the oral health workforce, including allied dental professionals.
7. Increase the number of postgraduate specialty training programs for geriatrics and individuals with MR/DD and other special needs.
8. Develop community-based training settings through university partnerships with residential facilities and community and advocacy groups.
9. Fully develop competencies for dental, medical, and other health professionals in the care of special populations.
10. Utilize accreditation mechanisms to ensure the incorporation of such standards in dental, medical, and health professional education and training.

**REFERENCES**


