The essential need for a new oral health care system

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For preventive medicine to include oral health care, the dental profession, licensing agencies, payers, and the public must effect change.

Abstract
Dentistry is represented to the US public in large part by the various professional associations, which speak for the interests of general and specialized dentists, mostly in private proprietary practice. Unfortunately, the interests of dental professional associations may often be in conflict with those of the public. To resolve this continued disparity, it behooves the dental leadership to become more involved with the overall health care system than continuing to enhance the economic interests of the profession without sufficient regard for the world-wide burden of unmet dental needs. An assessment of policy failures is provided with some recommendations for greater involvement of organized dentistry in the integration of oral and general health care. Dentistry must recommit itself to being a health profession rather focusing on the business aspects of health care. Another aspect to be considered is a reorganization of the American Dental Association to better represent the oral health care workforce.
  • What is oral health?
  • What is the status of oral health in America?
  • What is the relationship between oral health and general health and well being?
  • How is oral health promoted and maintained and how are oral diseases prevented?
  • What are the needs and opportunities to improve oral health?
What is oral health?

• Oral health is the optimal contribution of the structure and function of the oral cavity to the well being of the patient
What is the status of oral health in America?
David Satcher MD

• a “silent epidemic” of dental and oral diseases is affecting some population groups. This burden of disease restricts activities in school, work, and home, and often significantly diminishes the quality of life. Those who suffer the worst oral health are found among the poor of all ages, with poor children and poor older Americans particularly vulnerable. Members of racial and ethnic minority groups also experience a disproportionate level of oral health problems. Individuals who are medically compromised or who have disabilities are at greater risk for oral diseases, and, in turn, oral diseases further jeopardize their health.
The real status of oral health today

• The hidden epidemic is no longer hidden
• Societal changes in body image and ability to tolerate destructive disease
• Health disparities heightening
• The oral systemic link is real
• Persistent disease and declining demand for oral health services
• The now visible burden of untreated oral diseases
Dental Health: The most frequent unmet health need in children

Caries: An infectious disease

• 70-90% of children by the second grade
• Over 1 million lost school days each year due to odontalgia
• Developing pain behavior/subsequent drug use?
• The MOST common unmet health need
Changing face of caries

• Findings of a systematic review of 9 studies on root caries in older adults:

  • Overall root caries incidence = 23.7% per year
  • Overall root caries increment = 0.47 surfaces/year
  • Root + coronal increment = 1.31 surfaces/year
  • Caries rates in dentate elderly now exceed that in commercially insured children

(Source: Griffin et. al., JDR 2004;83:634-38)
Catherine Saint Louis, New York Times

•, author of “In Nursing Homes, an Epidemic of Poor Dental Hygiene,” cites studies in several states that show the enormity of the problem.

• In Wisconsin, 31 percent of residents of 24 facilities had teeth broken down to the gums, with visible roots
Caries and head and neck infection

• Catastrophic potential
  • Airway obstruction
  • Sepsis
  • Necrotizing fasciitis
  • Cavernous sinus thrombosis
Oral health matters

- Premature low birth weight babies
- Myocardial Infarction
- Senile dementia
- Stroke
- Nutrition
- GERD
Findings:

Dentate nuns with dental restorations (including amalgam fillings/silver/mercury) had the highest cognition.
Functional aspects of the oral cavity

• Gastrointestinal
  • Mastication, deglutition, digestion, swallowing

• Speech

• Airway/ventilation
  • Sleep, athletic performance

• Psychosocial/sexual/gender
  • Facial expression, appearance, visual communication

• Neurologic
  • Taste, somatosensory
Sleep Apnea

- CNS mediated
- Airway Obstructive

Dental facial analysis
Some Famous deaths complicated by oral diseases

- Pharaoh Ramses 1: jaw abcess
- Sigmund Freud: Oral Cancer
- Jean Harlow: wisdom tooth infection
- US Grant: infected tumor
Figure 1: Percentage of the Population with a Dental Visit in the Year, 2000-2012

Source: Medical Expenditure Panel Survey, AHRQ. Notes: For children ages 2-18, changes were statistically significant at the 1% level (2000-2012) and at the 10% level (2011-2012). Among adults ages 19-64, changes were statistically significant at the 1% level (2003-2011). For adults 65 and older, changes were significant at the 5% level (2000-2012). Changes from 2011 to 2012 among adults 19-64 and the elderly 65 and above were not statistically significant.
Figure 2: Reasons for Not Obtaining Needed Dental Care

- Could not afford the cost: 11.5% (12.7%)
- Insurance did not cover procedures: 2.7% (3.4%)
- Afraid or do not like dentists: 1.0% (1.8%)
- Did not want to spend the money: 1.0% (2.2%)
- Too busy: 0.7% (1.6%)
- Unable to take time off: 0.7% (1.1%)
- Office not open at convenient time: 0.4% (0.9%)
- Expected problem to go away: 0.3% (0.6%)
- Dental office is too far away: 0.3% (0.9%)
- Another dentist recommended not doing: 0.0% (0.1%)
- Other: 1.0% (2.0%)
Dental spending is an outlier on the down side
Figure 3

Percentage of Nonelderly Adults with a Dental Visit in the Past Year, by Income and Insurance Status, 2013

<table>
<thead>
<tr>
<th>Income</th>
<th>Insurance Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;100% FPL</td>
<td>19%</td>
</tr>
<tr>
<td>100-199% FPL</td>
<td>21%</td>
</tr>
<tr>
<td>200-399% FPL</td>
<td>32%</td>
</tr>
<tr>
<td>≥400% FPL</td>
<td>50%</td>
</tr>
<tr>
<td>Private</td>
<td>49%</td>
</tr>
<tr>
<td>Medicaid/CHIP</td>
<td>20%</td>
</tr>
<tr>
<td>Uninsured</td>
<td>17%</td>
</tr>
</tbody>
</table>

NOTES: Adults age 19-64. “Private” includes those with private dental benefits. Some state Medicaid programs provide limited or no dental benefits for adults. “Uninsured” includes those without private dental benefits or Medicaid coverage. Uninsured also includes people who have only Medicare, which provides no dental benefits.

SOURCE: ADA Health Policy Institute analysis of Medical Expenditure Panel Survey. Nasreeh and Vujcic, Dental Care Utilization Rate Continues to increase among Children, Holds Steady among Working-Age Adults and the Elderly, HPI, October 2015.
Where Do They Go From Here?

Intended professional activities and practice options, 2016 dental school graduating class

<table>
<thead>
<tr>
<th>Intended Professional Activity for New Dental School Graduates</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Practice Dentist</td>
<td>50.5%</td>
</tr>
<tr>
<td>Dental Graduate Student/Resident/Intern</td>
<td>33.8%</td>
</tr>
<tr>
<td>Uniformed Services Dentist</td>
<td>4.8%</td>
</tr>
<tr>
<td>Federally Qualified Health Center</td>
<td>3.6%</td>
</tr>
<tr>
<td>Unsure</td>
<td>1.9%</td>
</tr>
<tr>
<td>Other Position Related to Dentistry</td>
<td>1.3%</td>
</tr>
<tr>
<td>Other Nonprofit Clinic</td>
<td>0.9%</td>
</tr>
<tr>
<td>State or Local Government Employee</td>
<td>0.7%</td>
</tr>
<tr>
<td>Other Federal Service (e.g., VA)</td>
<td>0.7%</td>
</tr>
<tr>
<td>Other Type of Student</td>
<td>0.7%</td>
</tr>
<tr>
<td>USPHS Commissioned Corps</td>
<td>0.6%</td>
</tr>
<tr>
<td>Faculty/Staff Member at a Dental School</td>
<td>0.5%</td>
</tr>
<tr>
<td>Other Position Not Related to Dentistry</td>
<td>&lt;0.01%</td>
</tr>
</tbody>
</table>

Intended Private Practice Type for New Dental School Graduates

<table>
<thead>
<tr>
<th>Employment Type</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed as an associate dentist in an existing private practice with a sole proprietor</td>
<td>42%</td>
</tr>
<tr>
<td>Employed in a group practice that has multiple locations</td>
<td>16.5%</td>
</tr>
<tr>
<td>Employed in a corporate-owned group practice</td>
<td>14.5%</td>
</tr>
<tr>
<td>Employed in a group practice that has a single location</td>
<td>6.6%</td>
</tr>
<tr>
<td>Purchase an existing private practice as a partner</td>
<td>5.6%</td>
</tr>
<tr>
<td>Purchase an existing private practice as the sole proprietor</td>
<td>5.0%</td>
</tr>
<tr>
<td>Employed as an independent contractor in a private practice</td>
<td>4.5%</td>
</tr>
<tr>
<td>Establish a new private practice</td>
<td>4.5%</td>
</tr>
<tr>
<td>Other</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

Note: Percentages may not add up to 100% due to rounding.
Source: American Dental Education Association, Survey of Dental School Seniors, 2016 Graduating Class

*In 2015, the question structure regarding employment in a corporate-owned group practice changed from “Select All That Apply” to “Select Only One.” As such, results prior to 2015 cannot be compared with results in 2015 and later.
Dental Hygiene Graduates, 1990-2012

Source: American Dental Association, Health Policy Resources Center, Surveys of Dental Hygiene Education Programs.
Professionally Active Dentists per 100,000 U.S. Population, 1976–2030

Source: American Dental Association, Survey Center, Dental Workforce Model 2008–2030

Note: Numbers from 2010 to 2030 are projected.
Dental Therapy

• A new more robust dental team member
• A cost effective means to treat dental diseases
• Addresses needs of children, elderly, special needs, and economically disadvantaged
Dental Therapist

An oral health professional who works under the supervision of a licensed dentist. A member of the oral health care team who is educated to provide evaluative, preventive, restorative, and minor surgical dental care within their scope of practice.
Early Impacts of Dental Therapists in Minnesota

Minnesota Department of Health
Minnesota Board of Dentistry
Report to the Minnesota Legislature 2014

February 2014
Dental Therapists in Action

• Current employer types* include:
  • Non-Profit Community Clinics (12)
  • Private Practices (10)
  • Federally Qualified Healthcare Centers (8)
  • Others (Large Groups/Educational) (5)
  • Hospital Owned Clinics (2)

*Est as of July 2014
Dental Therapy Employment Sites by County

19 different counties!

(July 2014)
Hennepin County Medical Center

• Metro area; Level one adult and pediatric hospital
• DT primarily sees kids and pregnant women. (2 DTs)

• “At [HCMC], the dental therapist has a chair in the Obstetrics department and treats pregnant women who would have been sent to the emergency room for care.”
Children’s Dental Services

• Non-profit; Employs 7 DT/ADTs
• Fixed & school-based services

• “The best aspect of working with dental therapists is that we have an additional, highly skilled provider to care for patients at a reduced overall expense.” – Sarah Wovcha, ED
This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health (HHS) Grant no. D85HP28496
Factors and Issues that Led to Formation of Taskforce

- Many new grads/new dentists end up practicing in different state/region than their dental school
Figure 4: Historical and Projected U.S. Dentists per 100,000 Population, by Age Group, Baseline Scenario

Source: ADA Health Policy Institute analysis of ADA masterfile; U.S. Census Bureau, Inter-censal Estimates and National Population Projections. Notes: Data for 2003, 2008, and 2013 are based on the ADA masterfile. Results after 2013 are projected. Assumes (a.) U.S. total annual dental school graduates will increase linearly to 2018 and then remain flat (b.) future outflow rates are same as 2008-2013 historical percentages.
The U.S. Centers for Medicare and Medicaid Services predicts insurance as a source of dental expenditures will remain relatively stable at 51.0% up to 2023. They also estimate out-of-pocket expenditures will decline to 35.1% and government sources will increase to 13.9% of all dental expenditures by 2023. This projection estimates government expenditures for dental services more than doubling by 2023 to $26.7 billion. Historically, government expenditures for dental services have not increased at this rate.
What are the needs and opportunities to improve oral health?

- Access to care
  - Geographic and financial
- Integrated medical, dental health care delivery.
- Common education of health professionals
- Consumer directed health care
- Basic skill in primary medical/nursing/pharmacy care
  - Exam
  - Fluoride therapy
  - Nutrition and hygiene instruction
Community Based Education at UCSF
Asian Health Services among 14 sites
Racial and Ethnic Composition of the Resident Population of the United States, 2010-50

Source: Population Division, U.S. Census Bureau, Table 4. Projections of the Population by Sex, Race, and Hispanic Origin for the United States: 2010 to 2050 (NP2008-T4)
Changes in Hospitals and Health Systems

• Move towards outpatient care continues to accelerate
• Volume credentialling
• OUTCOMES based payment systems
• The electronic health record e.g. Epic-Wisdom
• Loss of disproportionate share “DiSh” payments
• Fundamental changes in GME
Why change our relationship with health systems?
Why Change how oral health care is paid for?
• There is a sharp continuous decline in the demand for dental services while untreated disease is increasing, ravaging an essential human organ system

• Our current oral health system model is not able to reach the quadruple aim: highest quality at lowest cost and with the best patient experience/outcomes, ... and with the greatest satisfaction of the oral health care team
share of Pretax US National Income
Bottom Half vs. To 1%

1980

2014
The Commonwealth Fund Survey


Skipped a dental checkup or dental care because of cost in the past year

<table>
<thead>
<tr>
<th>Location</th>
<th>Percent of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>20%</td>
</tr>
<tr>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td></td>
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<tr>
<td>Germany</td>
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<td>Netherlands</td>
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<td>New Zealand</td>
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<td>Norway</td>
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<td>Sweden</td>
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<tr>
<td>Switzerland</td>
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<tr>
<td>U.K.</td>
<td></td>
</tr>
<tr>
<td>U.S.</td>
<td>32%</td>
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</tbody>
</table>
ACGME guidelines for graduate medical education

- *Systems-Based Practice* requires residents/fellows to demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.
Residents/fellows are expected to:

• Work effectively in various health care delivery settings and systems relevant to their clinical specialty
• Coordinate patient care within the health care system relevant to their clinical specialty;
• Incorporate considerations of cost awareness and risk benefit analysis in patient care;
• Advocate for quality patient care and optimal patient care systems;
• Work in inter-professional teams to enhance patient safety and improve patient care quality; and
• Participate in identifying system errors and in implementing potential systems solutions.
Is value based oral health care definable?

- Capitated payment
- Non fee based care
- Per diem rates
- Prevention models
- Variable value based copays
- Outcome based payments
- Population health models
Emphasis on Value

“Providers should be required to measure...improvements in quality of life, functioning and longevity.

After a patient has a knee replaced, can she walk normally? When a child has asthma can he play school sports? Unfortunately, the measurements we use today leaves us unable to make many of these vital judgments about the quality of doctors, hospitals or health care organizations.”

David Lansky, CEO, Pacific Business Group on Health, speaking on behalf of Boeing, Target, Disney, Wal-Mart, Intel, GE, Wells Fargo and the California Public Employees Retirement System.
POLICY PARTNERS
Guidelines for e.g. dental recall nursing home dental care
indications for 3rd molar removal

• CARE PATHWAYS
Increased Care Coordination
Elements of an oral health care delivery system that is value based

- Linked to a health system
- Common electronic health record
- Common billing and payment system
- Oral Preventive care, primary care without co-pays and paid at capitated rate
- A hybrid system of fee for service procedural reimbursement for dental specialty care
- Outcomes based assessment models that use measures of overall health
How will dental education respond? What are the curriculum needs for system based practice?

- Core biomedical science for DDS consistent with health team leaders
- More robust dental team members in DH, DT and DA educated in intraprofessional health system environment
- Dental team integrated into interprofessional team through IPE and collaborative practice models
- All clinical practicum carried out in operating health systems
A model DDS day in a value based oral health care system

• **Dental Medicine**: Lead a team focused on improving health outcomes
  
  • Intake, diagnosis, collaborative care with other health professionals, integration of oral health care into overall care

• **Dental Surgery**: advanced performance of cognitively complex procedures, leading the intraprofessional surgical team in performance of repetitive less cognitively complex procedures
A model dental hygienist’s day in a value based system

• One hour visit under DDS general supervision: DH Direct patient contact of 20 minutes per patient with 1-2 other team members, dental hygiene assistant, case worker/motivational interviewer. Evidence based assessment of need with personalized medicine approach e.g. caries risk assessment, assessment of home care efficacy, diet, smoking, DM, pregnancy etc.

• Team approach to administration of procedures including periodontal, caries treatment, patient instruction
Dental caries management in a value based system
Comprehensive Caries Staging

• **Stage 1 Enamel caries**
  • 1A Surface demineralization
  • 1B Radiographic evidence, pit or catch

• **Stage 2: Dentine infection**
  • Single surface < 50% of dentinal span
  • Multiple surface or >50% dentinal span

• **Stage 3 Pulpal infection**

• **Stage 4: Infection beyond the tooth structure**
  • Osteolysis
  • Deep space infection
  • Systemic infection
    • Acute
    • Chronic
The key elements of change

- Collaborative interprofessional practices
- Integrated payment system
- Value based payment system
- Reduce the unit cost of dental care with
  - Workforce development: team care intraprofessional education
  - Practice models
  - Technology
Key elements of change II

• Oral health integrated into primary care
• Evidence based integration into key health focus areas e.g.
  • Diabetes
  • Obesity
  • Atherosclerotic diseases
  • Oncology
  • Child development
  • Pregnancy
Key elements of change III

• Holistic admissions to dental school
• True commitment to diversity in dental education environment
• Community based education
• Clinical education of dental workforce entirely in health systems
• Collaboration with schools of health sciences and health systems
• Adoption of ACGME core competencies
• Presence of oral health in every AAAHC member
• Advance degrees in Health Systems
A dental policy plan for the world of 2030

• Maintain a stable dental Medicaid benefit
• Adjusting the role of initial licensure and continued competency
• Outcomes (not procedure) based payment system for dentistry
• Include dentistry in workforce projects in a meaningful way in the ACA
• Add dentistry to Medicare
• Support inter-professional education and collaborative practice initiatives with a single EHR
• Address oral health workforce issues to include building the oral health team with care that can achieve THE quadruple AIM
• The dentist must lead the MOST ROBUST oral health care delivery team
• Policies that encourage highest use of technology to improve care