Trends in Emergency Department Utilization for Dental and Oral Health Related Conditions

DentaQuest Institute Office of Analytics and Publication

Our mission is to improve the oral health of all.

@ChalmersDDSPhD

Natalia I. Chalmers DDS, PhD - UCSF DPH175 seminar, June 6th 2017
Opportunity for Improvement in Dentistry

What we know

- Desired
  - Focused prevention
  - Assess and manage risk
  - Support behavior change
  - Repair defects

The gap

- Apply evidence
- Changing processes
- Training workforce
- Educating parents
- Using information technology
- Aligning payment

What we do

- Actual
  - Prevention essentially the same for everyone
  - Little focus on self-management
  - 6-month recall visits
  - Restore teeth
Improving Quality in Dentistry: An Imperative for the Profession

Dental caries is a reversible disease and the most common chronic disease affecting U.S. children, five times more common than asthma and seven times more common than hay fever. Caries prevalence increases with age, affecting nearly one in four U.S. children aged two to five years or nine out of 10 adults aged 20-64. 

Dental caries is a marker of overall health, as young children with untreated caries are at increased risk for subsequent systemic infections, such as pneumonia, fever, and respiratory illness. 

Moreover, Medicaid spends over $1 billion dollars annually on dental-related emergency department visits, which often results in unnecessary hospitalization and costs to the healthcare system. 

These observations are not only true for dental caries but also for other preventable conditions such as heart disease and diabetes, where prevention and intervention can save lives and reduce costs. 

Improving quality of dental care is an essential component of improving overall health and reducing the burden of preventable diseases. 

Over the past 24 years, the field of medicine has advanced its quality claims by applying industry-driven quality improvement methods to the design and delivery of care. 

Quality improvement (QI) involves the use of research and evidence-based practices to improve the delivery of healthcare services, leading to better outcomes and reduced costs. 

The Joint Commission, a non-profit organization dedicated to improving quality and safety in healthcare, has developed standards and guidelines to promote quality improvement in dental care. 

These standards and guidelines include measures to prevent and treat dental caries, reduce complications, and improve patient outcomes. 

QI initiatives have been successful in reducing the incidence of dental caries and improving patient outcomes. 

For example, the American Dental Association (ADA) has developed guidelines for dental caries prevention and treatment, which include the use of fluoride varnish, sealants, and topical fluoride applications. 

These initiatives have been successful in reducing the incidence of dental caries in children and adolescents. 

Moreover, QI initiatives have been successful in improving the overall quality of dental care, resulting in increased patient satisfaction and reduced costs. 

QI initiatives have been successful in improving the overall quality of dental care, resulting in increased patient satisfaction and reduced costs. 

In conclusion, improving quality in dentistry is an imperative for the profession. 

By implementing QI initiatives, dental professionals can improve the delivery of high-quality care, reduce the burden of dental caries, and improve patient outcomes. 

QI initiatives can also help dental professionals reduce costs and improve their bottom line. 

QI initiatives can also help dental professionals reduce costs and improve their bottom line. 

Improving quality in dentistry is an imperative for the profession. 

By implementing QI initiatives, dental professionals can improve the delivery of high-quality care, reduce the burden of dental caries, and improve patient outcomes. 

QI initiatives can also help dental professionals reduce costs and improve their bottom line. 

Improving quality in dentistry is an imperative for the profession. 

By implementing QI initiatives, dental professionals can improve the delivery of high-quality care, reduce the burden of dental caries, and improve patient outcomes. 

QI initiatives can also help dental professionals reduce costs and improve their bottom line. 

Improving quality in dentistry is an imperative for the profession. 

By implementing QI initiatives, dental professionals can improve the delivery of high-quality care, reduce the burden of dental caries, and improve patient outcomes. 

QI initiatives can also help dental professionals reduce costs and improve their bottom line. 

Improving quality in dentistry is an imperative for the profession. 

By implementing QI initiatives, dental professionals can improve the delivery of high-quality care, reduce the burden of dental caries, and improve patient outcomes. 

QI initiatives can also help dental professionals reduce costs and improve their bottom line. 

Improving quality in dentistry is an imperative for the profession. 

By implementing QI initiatives, dental professionals can improve the delivery of high-quality care, reduce the burden of dental caries, and improve patient outcomes. 

QI initiatives can also help dental professionals reduce costs and improve their bottom line.
Learning Objectives

• Describe the difference between ED utilization for dental and non-dental conditions

• Identify specific factors that are significantly associated with ED utilization for dental conditions

• Describe the gender, race and income disparities in ED utilization for dental conditions

• Define the challenges and opportunities for achieving health equity in ED utilization for dental/oral health related conditions

• Identify specific factors associated with the high level of return ED visits for DOHRC
Oral Health and Systemic Health

- Cardiovascular Diseases
- Nutritional & Metabolic Diseases
- Musculoskeletal Diseases
- Respiratory Tract Diseases
- Female Urogenital Diseases & Pregnancy Complications
- Male Urogenital Diseases
- Immune System Phenomena
- Physiological Phenomena
- Immune System Diseases
- Skin & Connective Tissue Diseases
- Hematologic & Lymphatic Diseases
- Reproductive & Urinary Physiological Phenomena
- Nervous System Diseases
- Digestive System Diseases
- Virus Diseases
- Bacterial Infections & Mycoses
- Neoplasms
- Pathological Conditions, Signs & Symptoms

Association between Overall Health and Oral Health

National Oral Health Surveillance System (NOHSS) and HRQOL: Percentage with fair or poor self-rated health

Each data point is state

Chalmers et al JADA 2017

Adults aged 18+ who have visited a dentist or dental clinic in the past year

Adults aged 18+ with fair or poor self-rated overall health
Life expectancy vs. health expenditure over time (1970-2014)

Health spending measures the consumption of health care goods and services, including personal health care (curative care, rehabilitative care, long-term care, ancillary services and medical goods) and collective services (prevention and public health services as well as health administration), but excluding spending on investments. Shown is total health expenditure (financed by public and private sources).

2013 Health Care Spending in the United States

Ambulatory: $761 billion
Inpatient health care: $712 billion
Dental: $112 billion
Pharmaceuticals: $303 billion

Data source: Health expenditure from the OECD. Life expectancy from the World Bank. Licensed under CC-BY-SA by the author Max Roser. The interactive data visualization is available at OurWorldInData.org. There you find the raw data and more visualizations on this topic.
2013 Health Care Spending in the United States

On which conditions does the US spend the most money, and how are they changing over time?

1. Diabetes mellitus
2. Ischemic heart disease
3. Low back and neck pain
4. High blood pressure
5. Falls
6. Depression
7. Oral disorders
8. Vision and hearing loss
9. Skin diseases
10. Pregnancy and postpartum care

Annualized rate of change, 1996–2013:
- Diabetes mellitus: 101.408, 6.10%
- Ischemic heart disease: 88.108, 0.20%
- Low back and neck pain: 87.608, 6.50%
- High blood pressure: 83.908, 5.10%
- Falls: 76.308, 3.00%
- Depression: 71.108, 3.40%
- Oral disorders: 66.408, 2.90%
- Vision and hearing loss: 59.008, 2.80%
- Skin diseases: 55.708, 3.50%
- Pregnancy and postpartum care: 55.608, 2.90%

Note: Spending on oral disorders includes oral surgery and cavities, including fillings, crowns, tooth removal, & dentures; skin diseases include conditions such as cellulitis, cysts, acne, and eczema.

*Totals reflect amount of spending that could be broken down by condition.

National Health Expenditures and Dental Services Expenditures Aggregate and per Capita Amounts, Percent Distribution and Annual Percent Change by Source of Funds: Calendar Years 2009-2025
1996 Dental Spending in the United States

2013 Dental Spending in the United States

DenteQuest Institute

2013 Access to Dental Service (0-20 years)
The Problem

The Cost of Health Care
How much are we spending?

$2.5 Trillion
spent in the U.S. on health care in 2009

The Cost of Health Care
How much is waste?

WASTE: $765 Billion
30% of 2009 total health care spending
National Trends in ED utilization for Dental

Counts of DOHRC: 2,548,423, 2,136,839, 2,095,195, 2,229,651

Rates of DOHRC: 817.90, 680.30, 666.35, 699.15

Graph showing the counts and rates of DOHRC discharges from 2011 to 2014.
Most Commonly Diagnosed Dental Conditions

- 521.00 - Unspecified Dental Caries: 27%
- 522.5 - Periapical Abscess Without Sinus: 17%
- 522.4 - Acute Apical Periodontitis of Pulpal Origin: 3%
- 525.9 - Unspecified Disorder of the Teeth and Supporting Structures: 47%
- Other: 6%
The following slides are part of manuscript in progress and can not be distributed or published online
Maryland: The Patients

Why are Maryland’s Cost Lower?

- **The Hospital Rate Regulation Model (from 1974/1977) and the All-Payer Model (from 2014).**
  - Sets identical hospital service rates for all payers
  - From 2014, includes outpatient costs.
  - 2014 CMS waiver includes goals in line with the Triple Aim

- **2016 progression plan to extend to chronic care management**
Repeat Visits
The following slides are part of manuscript in progress and can not be distributed or published online.
Dental Care in the Emergency Departments

• Costs are high $820 per visit
• For Dental Medicaid bears the burden
• Age and gender disparities
• Racial disparities (state)
• Income disparities
• Majority of patients are healthy
• Nondefinitive care with high return rate (state)
Learning Objectives

• Describe the difference between ED utilization for dental and non-dental conditions

• Identify specific factors that are significantly associated with ED utilization for dental conditions

• Describe the gender, race and income disparities in ED utilization for dental conditions

• Define the challenges and opportunities for achieving health equity in ED utilization for dental/oral health related conditions

• Identify specific factors associated with the high level of return ED visits for DOHRC
Natalia I. Chalmers DDS, PhD

Diplomate, American Board of Pediatric Dentistry
Director, Analytics and Publication
DentaQuest Institute, 10320 Little Patuxent Pkwy, Suite 231
Columbia MD, 21044
Natalia.Chalmers@DentaQuestInstitute.org
(202) 579-5801