



## AN ASSESSMENT OF COSTS AND SAVINGS ASSOCIATED WITH ORAL CARE IN THE UNITED STATES IN 2014

Uma Kelekar, PhD.

Virginia Oral Health Summit,

Richmond, Virginia



# Background

- **Poor oral hygiene extends beyond the mouth**

- **Association between oral health and systemic diseases**

- Untreated caries are linked with abscesses, cellulitis, and systemic spread of diseases in adulthood (Mouradian, Wher & Crall, 2000)
    - Children with caries are also said to be more likely to weigh less than 80% of their ideal body weight (Acs, Shulman, MW, & Chussid, 1999).
    - Periodontitis as a contributing factor in the worsening of systemic diseases including type II diabetes, cardiovascular disease, stroke and pneumonia (Fowler et al., 2001, Offenbacher et al. 2009, Teeuw et al. 2010, Labeau and Blot, 2011, Berkey and Scannapieco, 2013).
    - Relationship between pregnancy and oral infections

- **Evidence of Cost Savings**

- Jeffcoat et al. (2014) recent study demonstrated significant cost savings resulting from treating periodontal disease in those with one or more chronic conditions
    - Some studies found oral decontamination (OD) to be a cost-saving strategy in the prevention of VAP(Sona et al. 2009; Van Nieuwenhoven, 2004).
    - Some studies (Kannelis et al., 2000; Rashewsky et al., 2012) demonstrated significant cost savings in treating dental caries outside of the hospital setting
      - Difference in the cost as almost 20 times higher in a hospital than the average cost in a dental clinic
    - Several studies (Dasanayake et al., 2003; Weintraub et al., 1993) found dental sealants to be highly cost-effective in the treatment of caries.

# Cost Analysis

	Total Cost (in 2014 US dollars)
<b>Direct Costs</b>	114,231,375,093
<b>Oral Cancer Costs</b>	
Lower Estimate	3,078,276,351
Upper Estimate	4,895,626,269
Per Capita Lower Estimate	77,565
Per Capita Upper Estimate	123,358

- Overall, the National Dental Expenditure (National Health Accounts, CMS), was estimated to be approximately \$114 billion
  - Cost of services provided in establishments operated by dental professionals
- Oral Cancer is expensive to treat
  - Based on the estimates of Jacobson et al. (2012), if 30% of the cases were detected early, oral cancer costs ranged between \$3 and \$5 billion.
- In 1989, 189 million hours of work were lost annually as a result of their own dental visits and to assist friends or relatives (Gift, Reisine, and Larach, 1992)
- School-going children with dental problems, missed approximately 52 million school hours annually

# Evidence of Cost Savings

HOW COULD WE SAVE MONEY?	PER CAPITA SAVINGS	POTENTIAL SAVINGS TO THE SOCIETY(in 2014 dollars)
<b>TREATMENT OF PERIODONTAL DISEASE</b>	<b>\$2,840.00</b> (Diabetes) <b>\$5,681.00</b> (Cardiovascular disease or stroke) <b>\$1,089.00</b> (Heart disease or Coronary Artery Disease) Jeffcoat et al., 2009) <b>\$2,433</b> (Jeffcoat et al., 2009) (Pregnancy)	If 50% of diabetics benefit, we can save \$34 billion If 25% of the pregnant women benefit, we can save around \$4 billion
<b>ORAL CARE TO VENTILATOR ASSOCIATED PNEUMONIA (VAP) PATIENTS</b>	<b>Reduction of up to 50% of cases</b> as a result of oral care in VAP patients (Sona et al. 2009)	If we can reduce 50% of VAP cases that can cost around \$25,000, the society can save approximately \$3.5 billion.
<b>EARLY TREATMENT OF ORAL CANCER</b>	Early detection has several benefits – use of less aggressive treatments, lower costs, and higher survival rates (Mignogna et al. 2002; Jacobson et al., 2012).	If 40% of the cases were detected early, we can save approximately \$169 million- \$248 million.
<b>EARLY TREATMENT OF DENTAL CARIES</b>	Difference between cost of treatment for a child delaying the first preventive visits - <b>\$285</b> (Savage et. al. 2004) <b>Savings of \$16 to Medicaid</b> in restorative costs – (Dasanayake et al., 2003)	If 40% of children benefit from dental sealants, the society could save approximately \$80 million.
<b>TREATMENT OF ORAL CONDITIONS OUTSIDE THE EMERGENCY ROOM OR OPERATING ROOM</b>	Switching treatment from OR to a dental clinic saved <b>\$1,904</b> - (Kanellis et al., 2000) <b>\$6,889</b> - (Rashewsky et al. 2012)	If 50% of the ER visits reduce, we can save around \$800 million. If 50% of the OR visits reduce, we can save around \$743 million.



# How could we achieve these savings?

- ▶ Increase access to oral care through dental insurance
  - ▶ In 2012, while 34% of adults were uninsured, 64% of the elderly did not have any form of dental coverage
- ▶ Increase utilization of dental services among those with access to care
  - ▶ In 2011, 36% of adults, 45% of children, and 42% of the elderly visited a dentist in a year
- ▶ Increase awareness of the benefits of oral care to children and adults
- ▶ Provide oral health programs (examples: dental sealants, fluoride varnish) in our schools.