

Reconnecting Mouth and Body

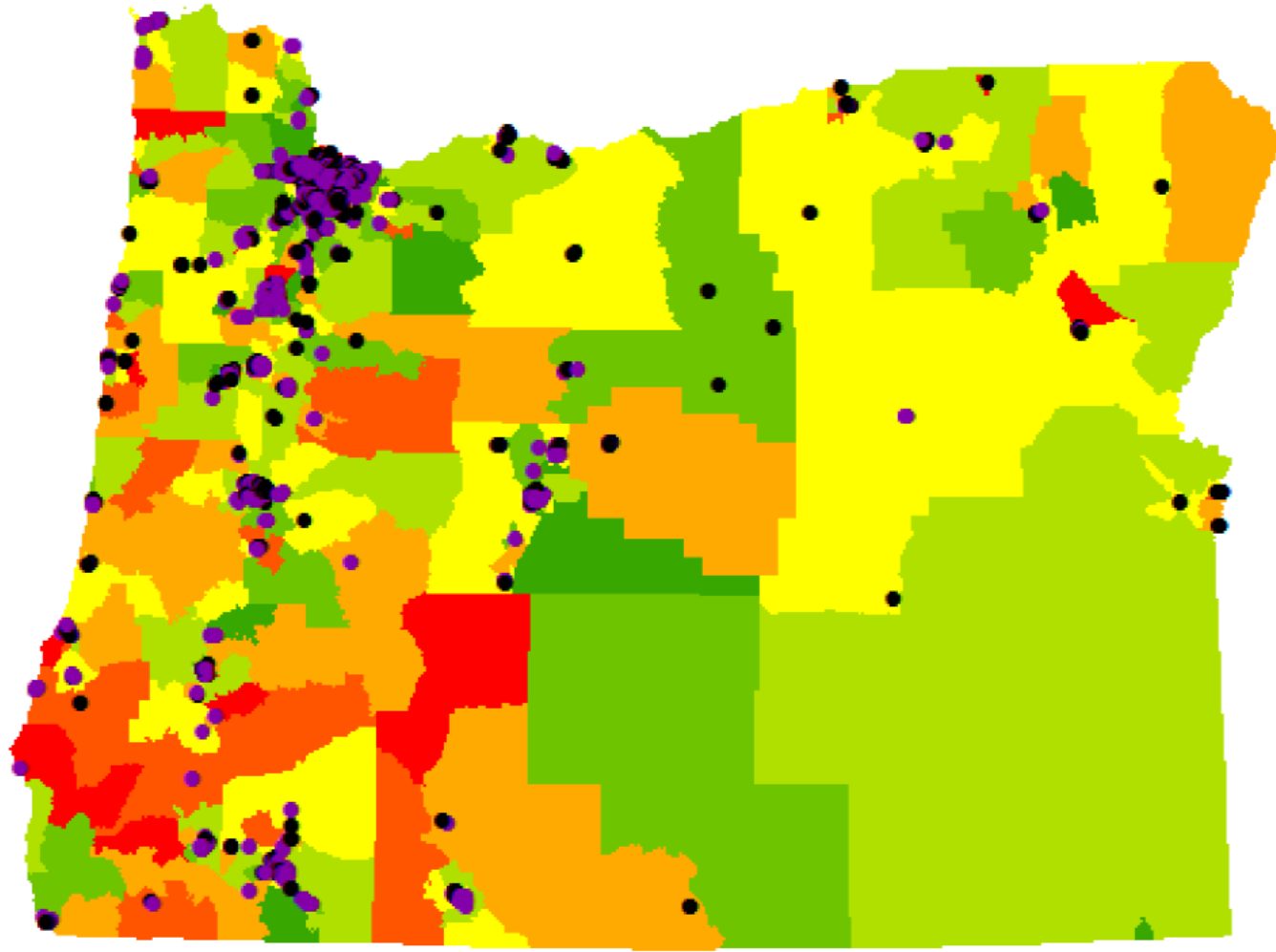
Making Integration Work

Marko Vujicic, PhD

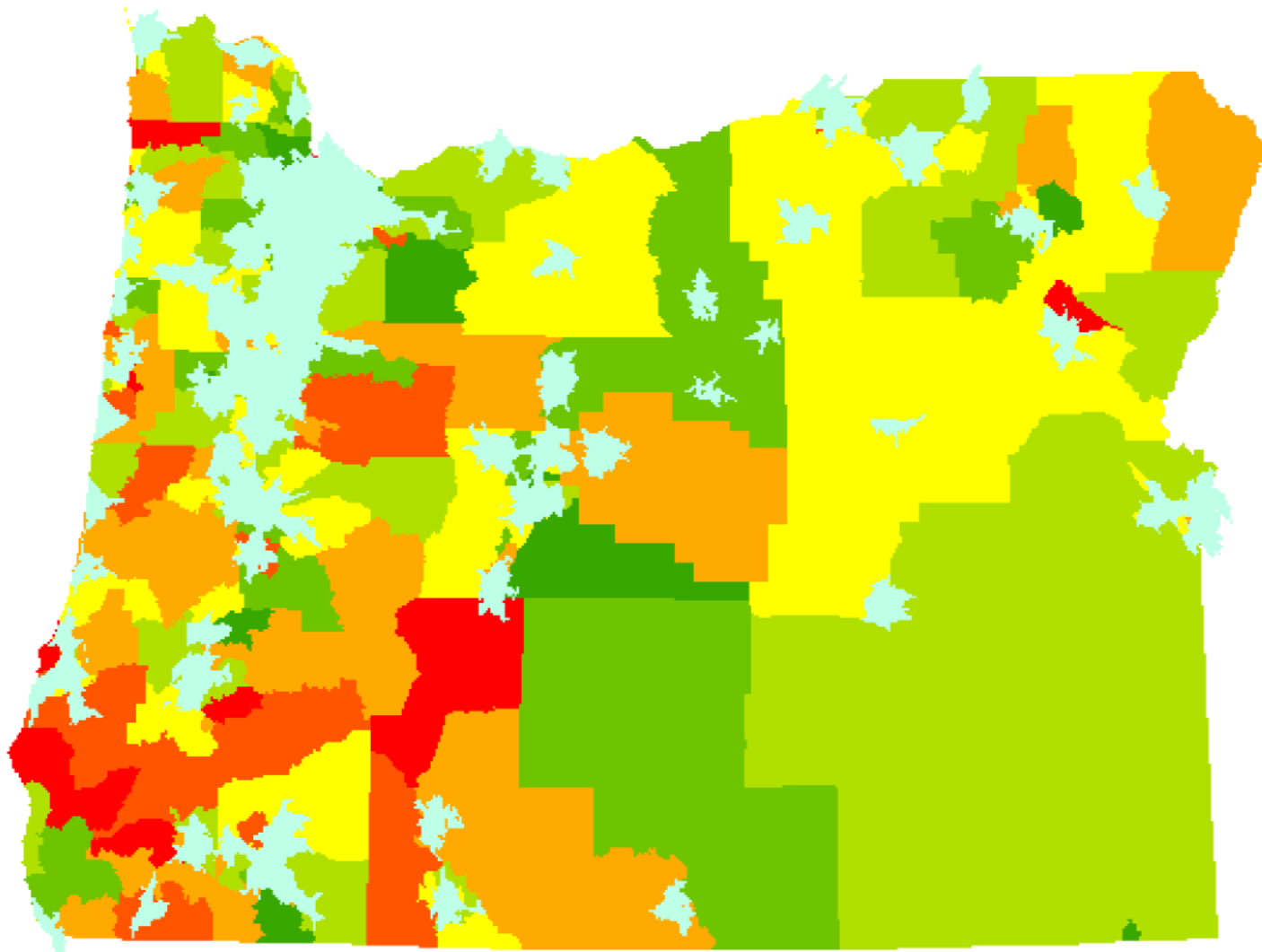
Chief Economist & Vice President

Health Policy Institute

Access



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Table 1. Percent of Population within Certain Travel Time of a Dental Office

State	Drive Time	All Population, All Dental Offices	Publically Insured Children Less than 18 Years Old, Medicaid and CHIP Dental Offices
Oregon	5 Minutes	79.3%	73.7%
	15 Minutes	93.5%	91.6%
	30 Minutes	98.7%	98.5%




Table 2. Percent of Pediatric Medicaid Population by Medicaid Population to Medicaid DDS Ratio (15 Minute Catchment Area)

State	Medicaid DDS to Pediatric Medicaid Population Ratio	Percent
Oregon	<500:1	73.2%
	2000:1-500:1	17.1%
	>2000:1	2.2%
	Outside Catchment	7.6%

Why Integration?



“You can’t be healthy
without good oral health.”

*C.E. Koop
fmr. U.S. Surgeon General*

Primary Care in Dental Offices

ADANews

CDC announces \$3 million in awards to strengthen chronic disease, oral health program collaborations

August 26, 2016

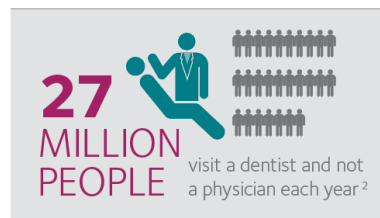
Atlanta — The Centers for Disease Control and Prevention announced Aug. 24 that it has awarded \$3 million in funding to six state health departments in an effort to strengthen collaborations between chronic disease and oral health programs.

Screening for Chronic Diseases in the Dental Office

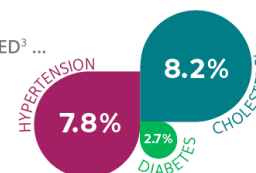


\$153
BILLION

in lost productivity each year due to chronic disease¹



RATES OF UNDIAGNOSED³ ...



SCREENING FOR CHRONIC DISEASES IN DENTAL OFFICES COULD REDUCE U.S. HEALTH CARE COSTS BY ...

up to **\$102.6**
MILLION per year

OR

up to **\$32.72**
per person screened⁴

¹ Wilens D, Agrawal S. Unhealthy US workers' absenteeism costs \$153 billion. Gallup. October 17, 2011. Available at: www.gallup.com. Accessed February 6, 2014.
² Vujcic M, Israelson H, Attkisson J, Kesting R, Parniani T, Zusi M. Guest editorial — A profession in transition. *Journal of the American Dental Association*. February 2014.
³ Fryar CD, Hirsch R, Eberhardt MS, Yoon SS, Wright JD. Hypertension, high serum total cholesterol, and diabetes: Racial and ethnic prevalence differences in U.S. adults, 1999–2006. *NCHS data brief*, no. 36. Hyattsville, MD: National Center for Health Statistics; 2010.
⁴ Nasseh K, Greenberg B, Vujcic M, Glick M. The effect of chairside chronic disease screenings by oral health professionals on health care dollars. *Am J Public Health*. 2014 Feb 13 [E-pub ahead of print].

For more information, contact the Health Policy Institute at hpi@ada.org.

HPI Health Policy Institute
ADA American Dental Association*

Oral Health and Health Care Costs

Impact of Periodontal Therapy on General Health Evidence from Insurance Data for Five Systemic Conditions

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James B. Bramson, DDS, Jerome J. Blum, DDS

Background: Treatment of periodontal (gum) disease may lessen the adverse consequences of some chronic systemic conditions.

Purpose: To estimate the effects of periodontal therapy on medical costs and hospitalizations among individuals with diagnosed type 2 diabetes (T2D); coronary artery disease (CAD); cerebral vascular disease (CVD); rheumatoid arthritis (RA); and pregnancy in a retrospective observational cohort study.

Methods: Insurance claims data from 338,891 individuals with both medical and dental insurance coverage were analyzed in 2011–2013. Inclusion criteria were (1) a diagnosis of at least one of the five specified systemic conditions and (2) evidence of periodontal disease. Subjects were categorized according to whether they had completed treatment for periodontal disease in the baseline year, 2005. Outcomes were (1) total allowed medical costs and (2) number of hospitalizations, per subscriber per year, in 2005–2009. Except in the case of pregnancy, outcomes were aggregated without regard to reported cause. Individuals who were treated and untreated for periodontal disease were compared independently for the two outcomes and five systemic conditions using ANCOVA; age, gender, and T2D status were covariates.

Results: Statistically significant reductions in both outcomes ($p < 0.05$) were found for T2D, CVD, CAD, and pregnancy, for which costs were lower by 40.2%, 40.9%, 10.7%, and 73.7%, respectively; results for hospital admissions were comparable. No treatment effect was observed in the RA cohorts.

Conclusions: These cost-based results provide new, independent, and potentially valuable evidence that simple, noninvasive periodontal therapy may improve health outcomes in pregnancy and other systemic conditions.

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Introduction

There is a growing body of evidence that periodontal (gum) disease is associated with negative systemic health consequences for individuals with certain diseases and conditions. To the extent that this is true, it is reasonable to expect that successful treatment of periodontal disease might prevent or mitigate at least some adverse effects associated with

medical conditions such as type 2 diabetes (T2D); rheumatoid arthritis (RA); cerebral vascular disease (CVD); and adverse pregnancy outcomes.

Direct confirmation of such links generally poses formidable difficulties arising from the long time course of chronic disease, the complex and multifactorial nature of the medical outcomes, and the ethical issues surrounding controlled clinical trials. Nevertheless, the potential preventive value of such a simple and low-risk intervention as dental hygiene in the management of patients with serious medical conditions justifies efforts to determine whether, and to what degree, a causal link exists.

Periodontal disease is a chronic inflammatory disease in which a pathogenic bacterial biofilm develops on the tooth root surface in a susceptible patient. If untreated, it can lead to alveolar bone resorption, infection, and tooth loss. It has been suggested that periodontal disease may also have an impact on systemic health via dissemination

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HEALTH ECONOMICS LETTER

THE RELATIONSHIP BETWEEN PERIODONTAL INTERVENTIONS AND HEALTHCARE COSTS AND UTILIZATION. EVIDENCE FROM AN INTEGRATED DENTAL, MEDICAL, AND PHARMACY COMMERCIAL CLAIMS DATABASE

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ABSTRACT

Periodontal disease has been linked to poor glycemic control among individuals with type 2 diabetes. Using integrated dental, medical, and pharmacy commercial claims from Truven MarketScan® Research Databases, we implement inverse probability weighting and doubly robust methods to estimate a relationship between a periodontal intervention and healthcare costs and utilization. Among individuals newly diagnosed with type 2 diabetes, we find that a periodontal intervention is associated with lower total healthcare costs (–\$1799), lower total medical costs excluding pharmacy costs (–\$1577), and lower total type 2 diabetes-related healthcare costs (–\$408). © 2016 The Authors. *Health Economics* Published by John Wiley & Sons Ltd.

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KEY WORDS: periodontal intervention; type 2 diabetes; healthcare costs and utilization; inverse probability weighting; doubly robust estimation

1. INTRODUCTION

A bidirectional relationship has been established between type 2 diabetes and periodontitis, otherwise known as periodontal disease (Taylor *et al.*, 1996; Chee *et al.*, 2013). However, the evidence is mixed as to whether periodontal interventions in individuals with type 2 diabetes lead to improvements in glycemic control and other health outcomes (Simpson *et al.*, 2015; Engebretson and Kocher, 2013). These studies sought to determine whether periodontal interventions for individuals with type 2 diabetes result in reduced inflammatory markers in the body. Reduced inflammation could lead to fewer diabetes-related complications, which would lower the probability of hospitalizations and emergency room visits and subsequently reduce total healthcare costs. We evaluate whether a periodontal intervention in the 2 years after initial diagnosis of type 2 diabetes is associated with lower healthcare costs and utilization in years 3 and 4. We also perform a subgroup analysis among individuals who start prescription drug treatment for type 2 diabetes after initial diagnosis. Our objective here is to determine whether a periodontal intervention is associated with lower healthcare costs among individuals who are managing their type 2 diabetes with prescription drug treatment.

2. STUDY DATA AND METHODS

2.1. Data source

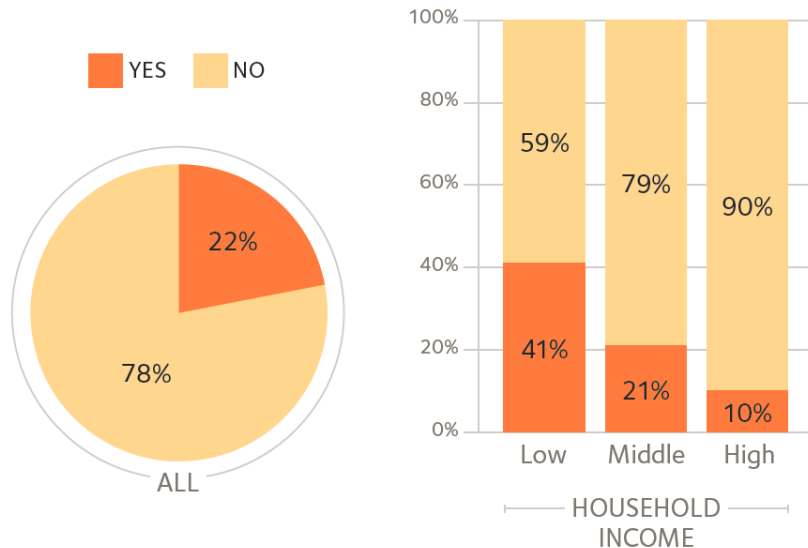
We use integrated medical, pharmacy, and dental claims from Truven Health MarketScan® Research Databases. For more information, please see Appendix A1 in the Supporting Information.

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Oral Health and Well-Being in Oregon

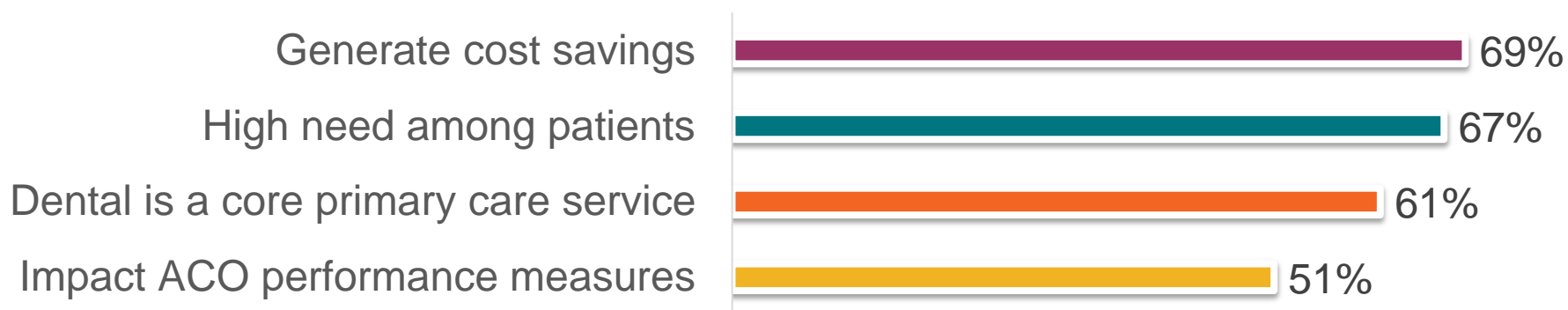
Appearance of Mouth and Teeth Affects Ability to Interview for a Job



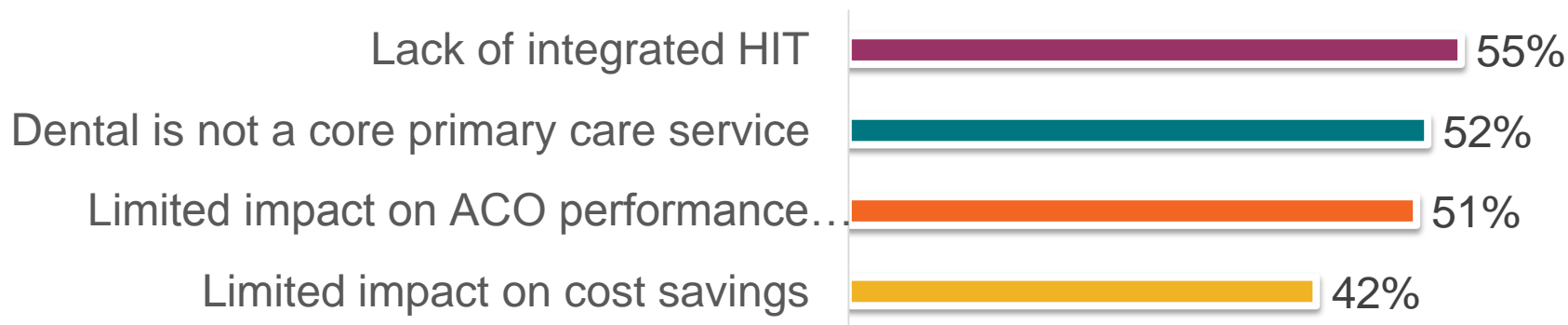
33% of low income adults reduce participation in social activities due to the condition of their mouth and teeth.

Dental Care Within ACOs

Inclusion Motivations for ACOs Currently Including or Planning to Include Dental (N=49)

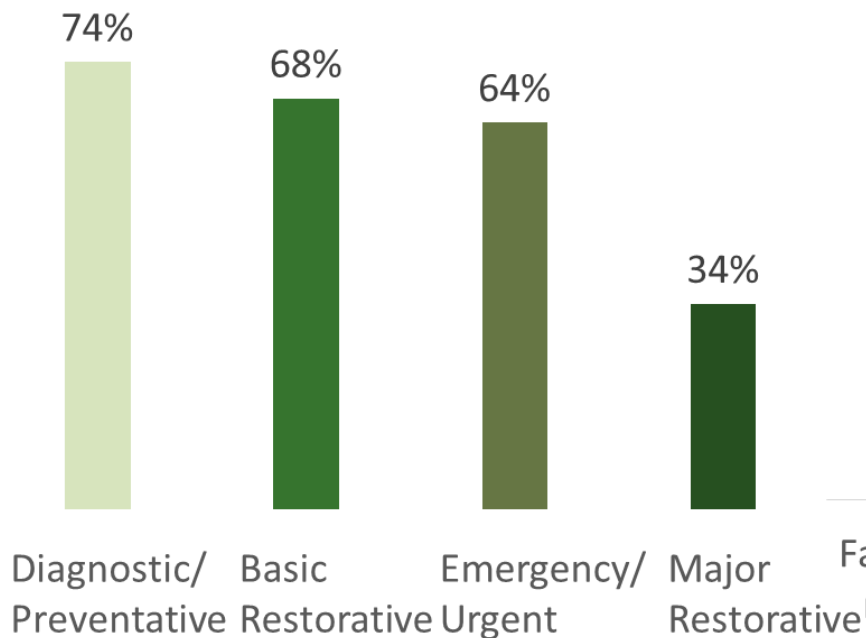


Exclusion Motivations for ACOs Currently Excluding or Not Planning to Include Dental (N=168)

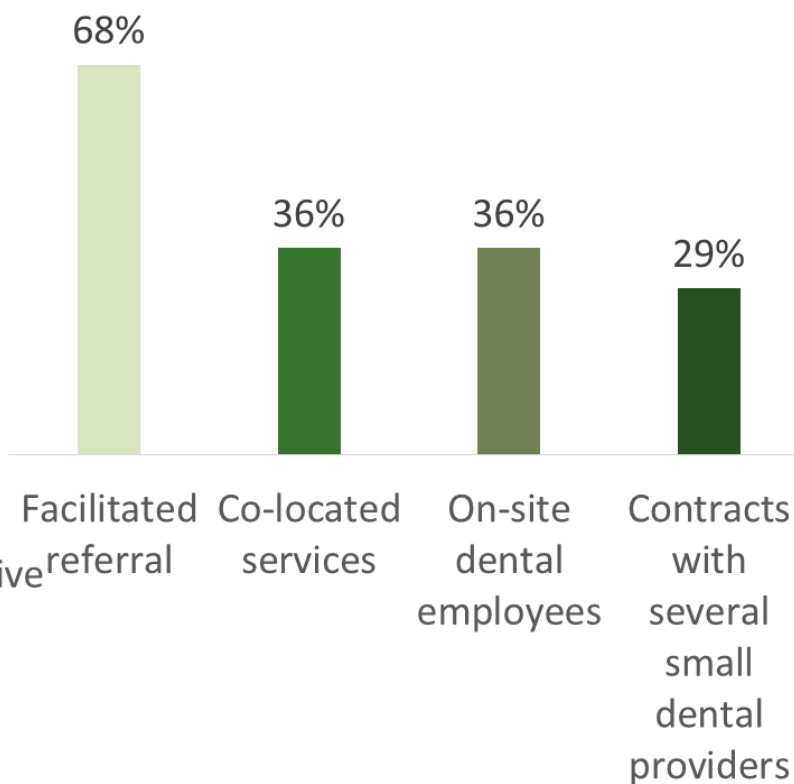


Dental Care Within ACOs

Dental Services Provided among ACOs



Delivery Models used among ACOs

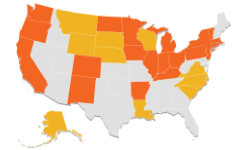


Three Key Actions

1. Embrace the “value agenda” in oral health



2. Expand dental coverage...but redesign it first



3. Enhance collaboration between dental care and medical care providers

