



Department
of Health

Preliminary
Findings

Impact of Dental Care on Health Care Events and Costs

New York State Medicaid, Adults 40-64 years

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Background

Origin of Current Study

- Oral infections and the resulting inflammatory response are risk factors in the progression of some Non-Communicable Diseases (NCDs)
- Recent studies have shown reduced health care costs and improved outcomes among those who received preventive oral care and with treatment of periodontal disease
- To-date, research has primarily looked at private payer populations

Study Objectives

- To investigate the relationship between utilization of dental care, health care events, and costs in a high need public payer population (NYS Medicaid)
- Describe these relationships for NCDs linked to dental health

Medicaid in New York State

- As of November 2018, New York Medicaid enrollment was more than 6.5 million individuals
- Majority (nearly 80%) enrolled in managed care
 - Includes individuals with specialized health care needs including managed long term care, HIV care, mental health and substance use services, and care for developmental disabilities
- Combined federal/state/local spending in 2019 = \$70.2 Billion¹
 - ~32% of state budget

NYS Medicaid Dental Benefit Package

- **Covers “Essential Services”**
 - Preventive, prophylactic, and other routine dental care
 - Services and supplies required to alleviate a serious health condition
 - Inpatient diagnostic, palliative, and therapeutic dental care

NYS Medicaid Dental Benefit Exclusions

Non covered services include:

- Periodontal surgery and crown lengthening
- Molar root canal for members 21 years and over*
- Immediate full or partial dentures
- Fixed partial dentures*
- Replacement of partial or full dentures prior to schedule*
- Cosmetic dentistry
- Adult orthodontics
- Implants (unless medically necessary)

*May be covered under certain circumstances including medical necessity

Prophylaxis Allowances and Policy

- **Prophylaxis:** Once per six-month period
- **Periodontal Maintenance:** Once per six-month period

Note: Not to be used in conjunction (within six-months of each other), or on the same date of service as periodontal root planning and scaling

Treatment Allowances and Policy

- **Endodontics**
 - Prior authorization required

- **Surgical (Gingivectomy or gingivoplasty)**
 - Reimbursable solely for the correction of severe hyperplasia or hypertrophy associated with drug therapy, hormonal disturbances, or congenital defects

Treatment Allowances and Policy

- **Non-Surgical (Root Planning and Scaling)**
 - Must demonstrate clinical loss of periodontal attachment, and;
 - Periodontal pockets and sub-gingival accretions on cemental surfaces in the quadrant(s) being treated, and/or;
 - Radiographic evidence of crestal bone loss and changes in crestal lamina dura, and/or radiographic evidence of root surface calculus.
 - Limit: every two years (per quad). No more than two quads on single date.
- **Extractions**
 - Prior authorization for certain procedures

Study Methodology

Specifications

- **Study period:** Three years, July 1, 2012 – June 30, 2015
 - Dental care became part of the managed care plan benefit package in 2012
- **Population:**
 - Adults ages 40 – 64
 - Not eligible for Medicare (dually eligible)
 - Continuously enrolled in NYS Medicaid for 36 month study period
 - Exclusions: residents of long term care facilities and those receiving hospice services

Outcomes and Comparisons

- **Outcomes of Interest**
 - Events
 - Emergency Department (ED) Visits
 - Hospitalizations
 - Costs
 - ED
 - Hospitalization
 - Pharmacotherapy
 - Total Cost of Health Care, Excluding Dental
- **Comparison Groups**
 - No Dental Care (referent)
 - Any Preventive Care*
 - Preventive Care w/o Anti-Infective Tx**
 - Preventive Care with Anti-Infective Tx
 - Anti-Infective Tx w/o Preventive Care

* Any preventive care group is not mutually exclusive from the other preventive care groups

** Anti-Infective Therapy (Tx) was defined as tooth extraction and/or endodontic therapy

Non-Communicable Disease (NCD) Cohorts

- **Cardiovascular Disease (CVD)**

- Major cardiac septal anomalies
- Major congenital heart diagnosis
- CHF
- Valvular disorders
- Anginas and Ischemic heart disease
- Myocardial infarction
- Arterial fibrillation
- Dysrhythmias and conduction disorders
- Hx coronary artery bypass
- Hx coronary angioplasty
- Cardiac device status
- Coronary atherosclerosis
- Hypertension
- Ventricular and atrial septal defects
- Minor chronic diagnosis
- Other major cardiovascular diagnoses

- **Diabetes Mellitus**

- **Respiratory Disease**

- Major anomalies
- COPD and bronchiectasis
- Chronic pulmonary diagnoses
- Asthma
- Chronic bronchitis

- **Cognitive Impairment**

- Neurodegenerative diagnosis except multiple sclerosis and Parkinson's
- Alzheimer's Disease and other dementias

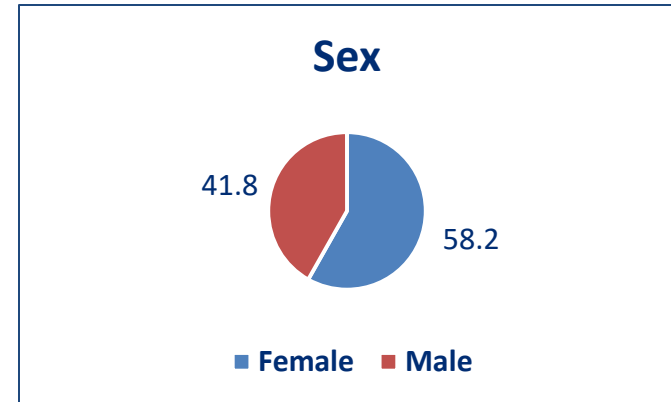
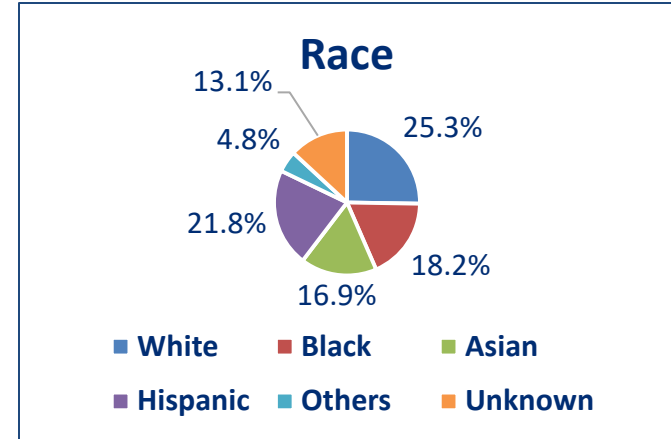
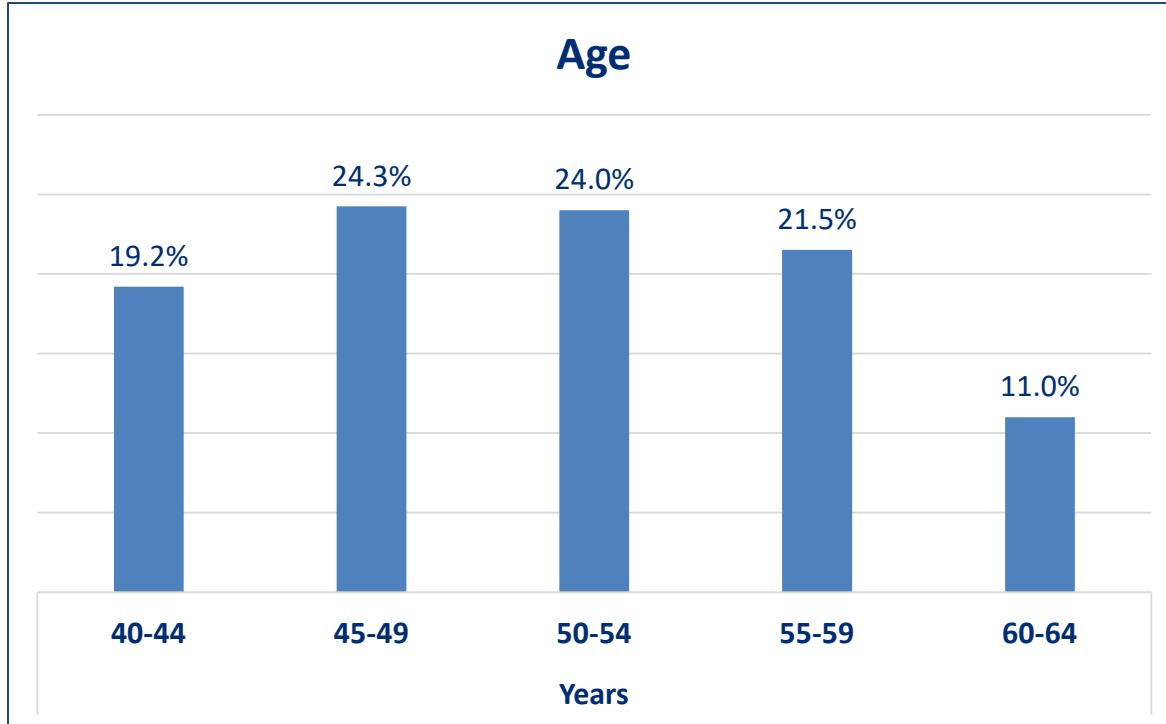
Analysis

- Demographics
- Cross-sectional (yearly)
- Longitudinal: Utilization in years 1 and 2 with outcomes in year 3
- Effect of increasing frequency of preventive care utilization
- Effects within NCD cohorts

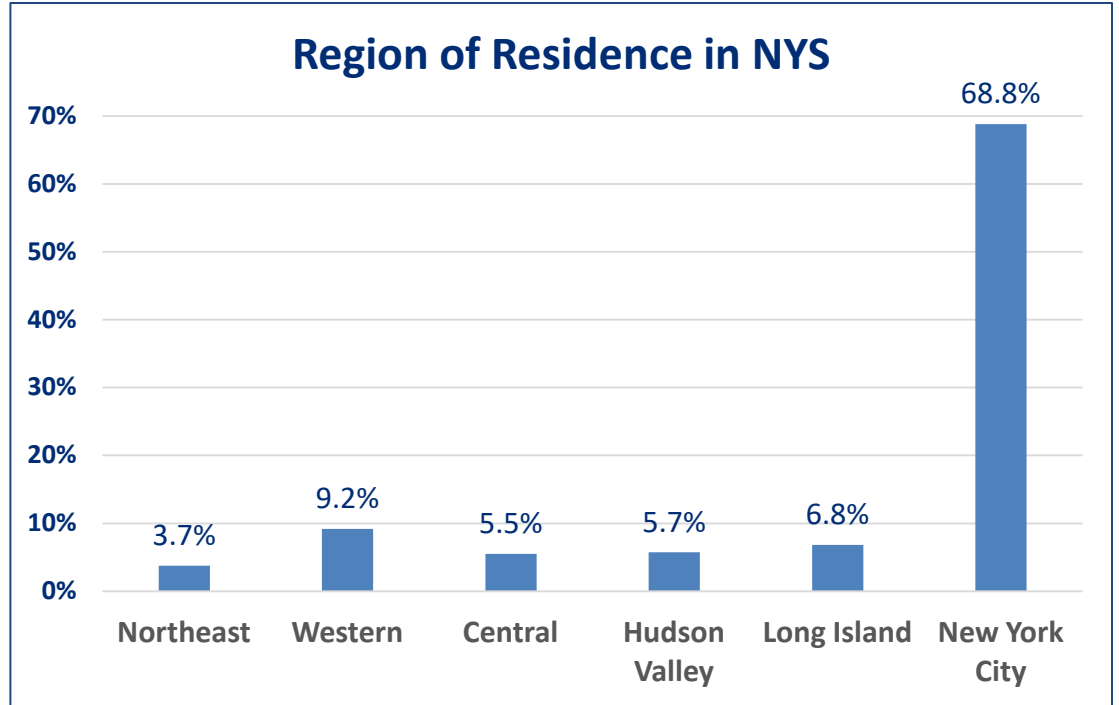
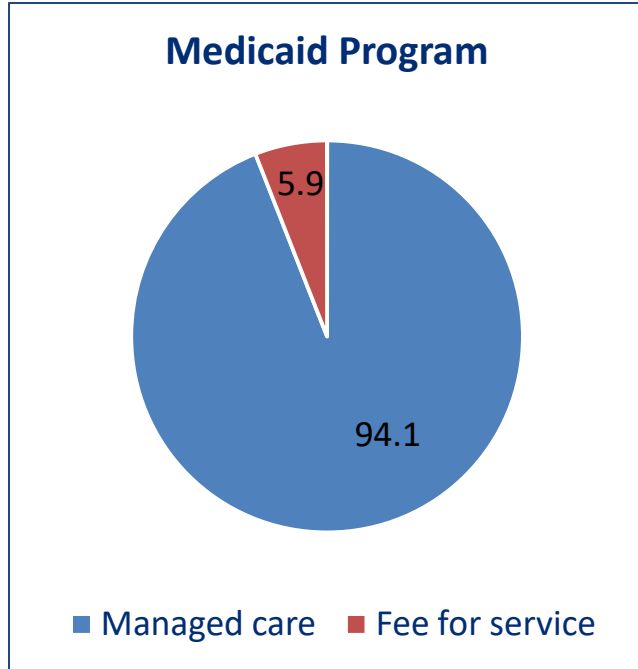
Preliminary Findings

Cohort Demographics

Final Cohort Size: n= 535,038



Cohort Demographics



Cohort Demographics

Clinical Risk Group Assignment*	% of Cohort
Healthy	17.1 %
Significant Acute Disease	3.0 %
Single Minor Chronic Disease	6.5 %
Minor Chronic Disease in Multiple Organ Systems	3.3 %
Single Dominant Disease or Moderate Chronic	20.5 %
Chronic Disease in Multiple Organ Systems	40.4 %
Dominant Chronic Disease in 3 + Organ Systems	4.0 %
Dominant Metastatic Malignancies	0.7 %
Catastrophic Conditions	4.7 %

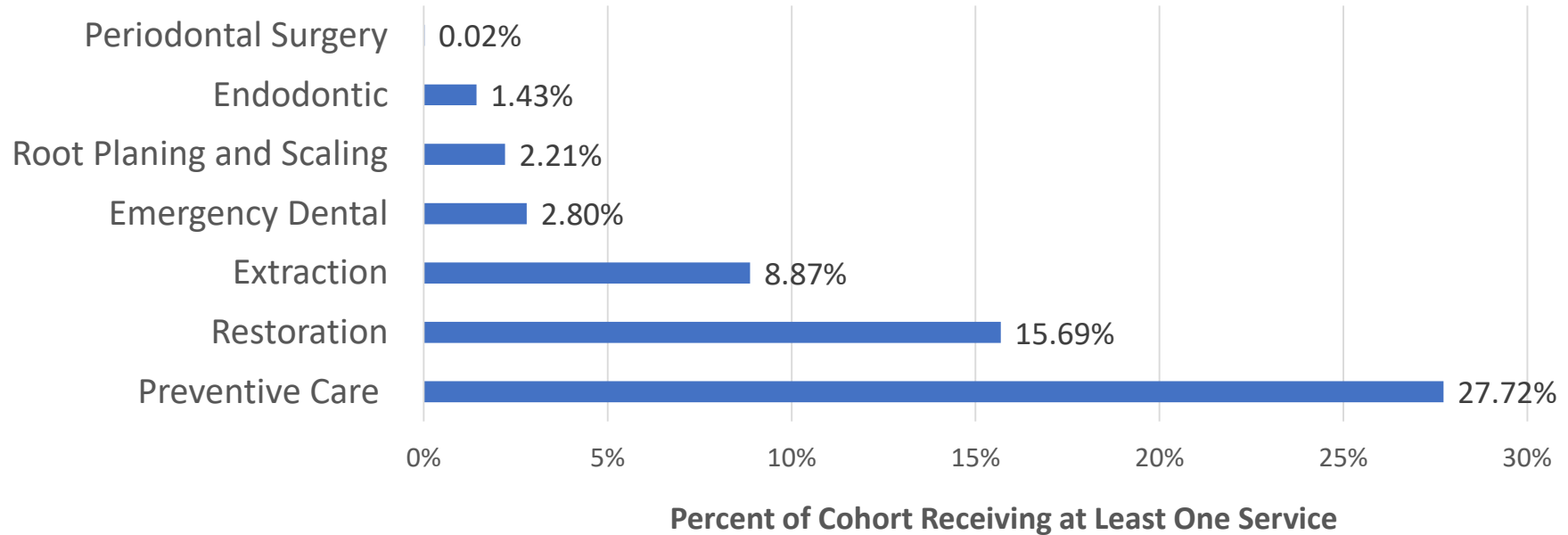
*Assignment generated using 3M® Clinical Risk Grouping Software

Cohort Demographics

- More than a quarter (27%) received Supplemental Security Income (SSI) from the Federal Government based on being aged, blind, or disabled
- More than a third (36%) received cash assistance from the State

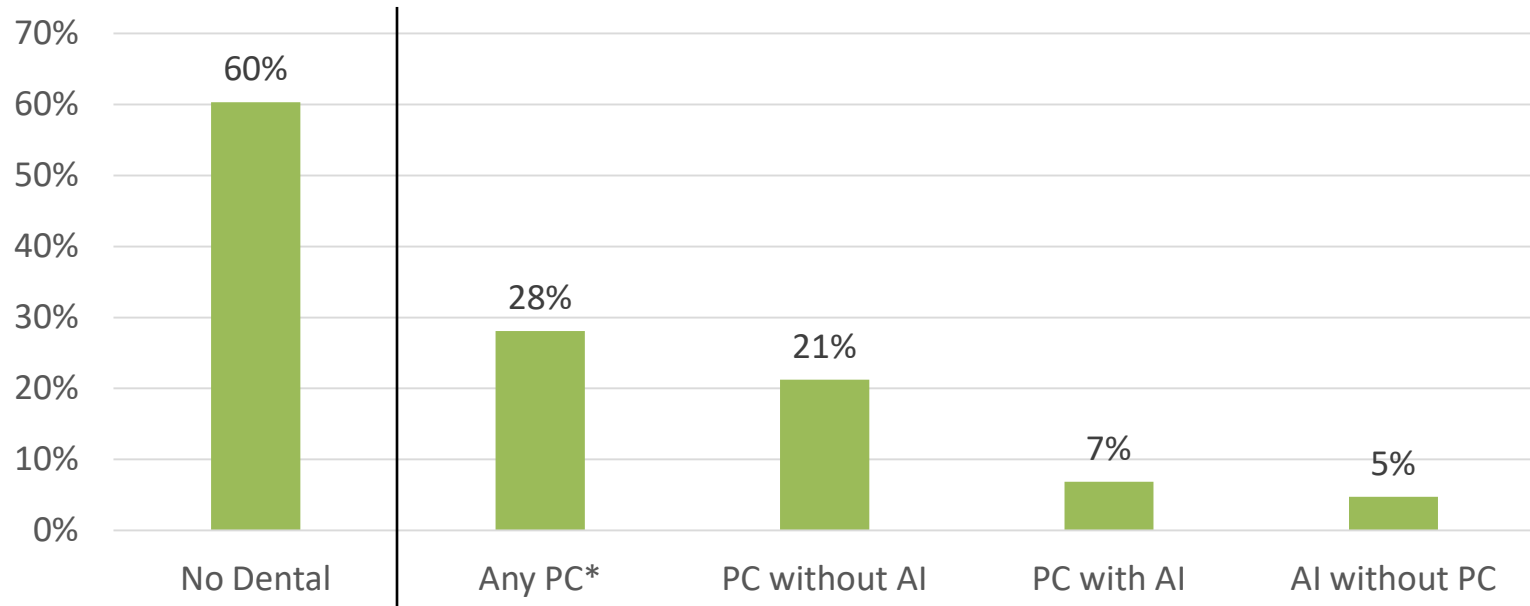
Utilization of Dental Services

Percent of Study Cohort Utilizing Dental Services*, 2012-2013



Comparison Groups

Percent of Cohort by Utilization Category, 2012-2013



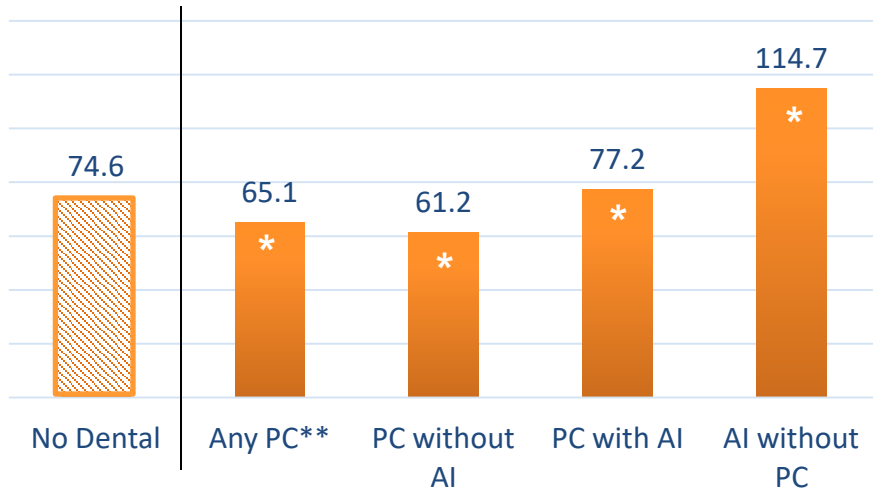
Key: PC = Preventive Care AI = Anti-Infective Therapy

* Not mutually exclusive from other groups with PC

Note: Mutually exclusive groups do not sum to 100 because of utilization of other dental services

Cross-sectional: Event Rates by Dental Care Utilization, July 2012 – June 2013

ED Visit Rate Per 100 People

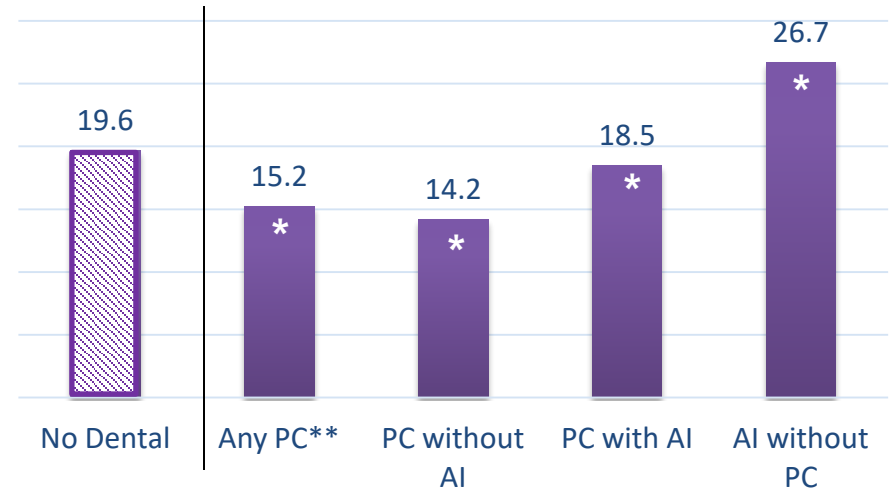


* Statistically different from No Dental ($p < 0.01$)

Key: PC = Preventive Care AI = Anti-Infective Therapy

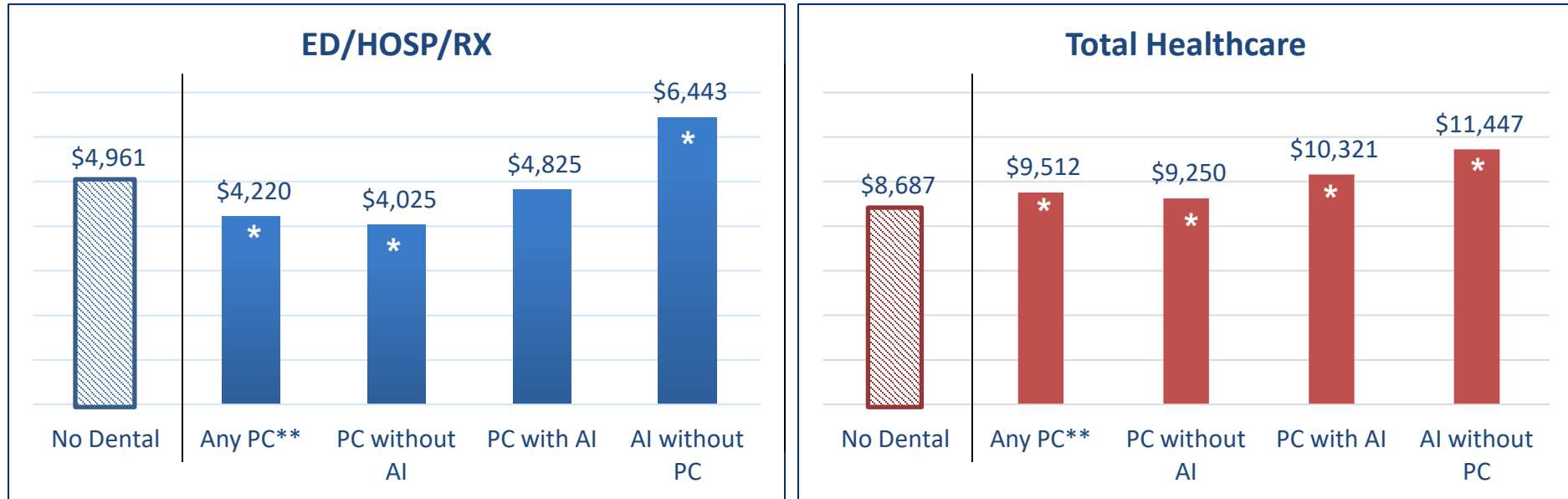
** Not mutually exclusive from other groups with PC

Hospitalization Rate Per 100 People



 Referent Group

Cross-sectional: Costs¹ by Dental Care Utilization, July 2012 – June 2013



* Statistically different from No Dental ($p < 0.01$)

 Referent Group

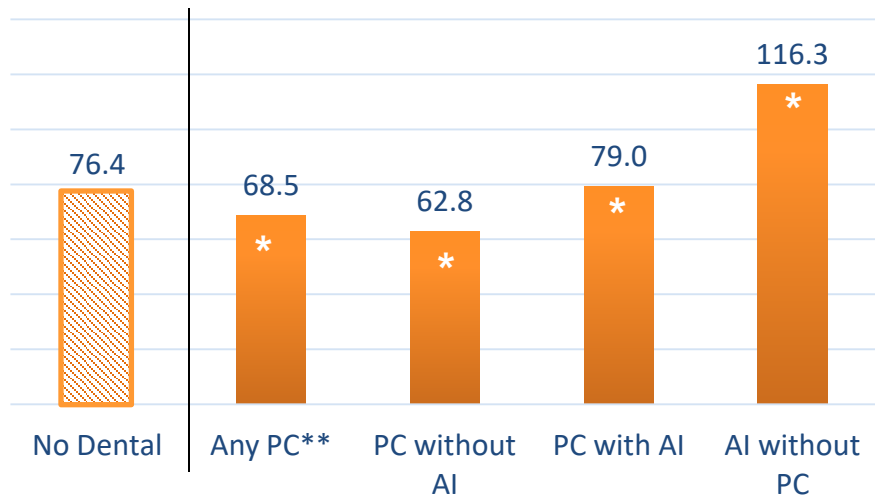
Key: PC = Preventive Care AI = Anti-Infective Therapy
ED = Emergency Department Visit Hosp = Hospitalization Rx = Prescription Drug

** Not mutually exclusive from other groups with PC

1. Per Person Average Cost. Total healthcare cost excludes cost of dental care

Longitudinal: Year 3 Event Rates by Dental Utilization in Years 1 and 2

ED Visit Rate Per 100 People

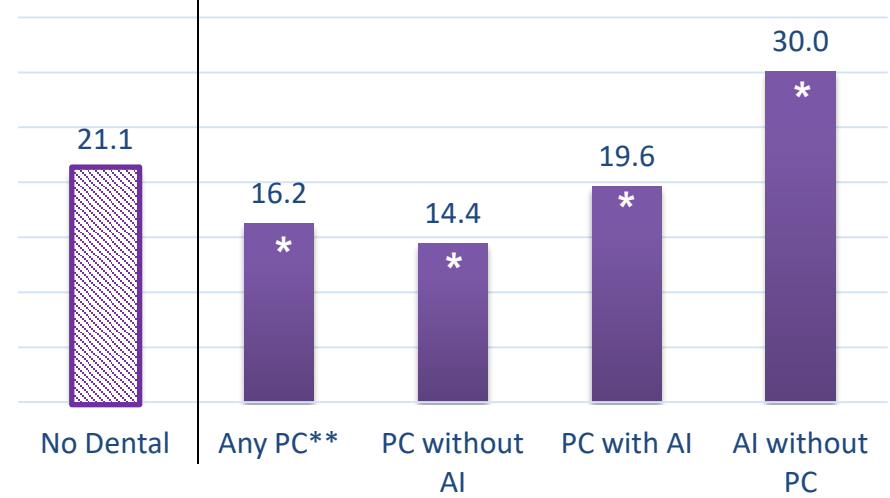


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Key: PC = Preventive Care AI = Anti-Infection Therapy

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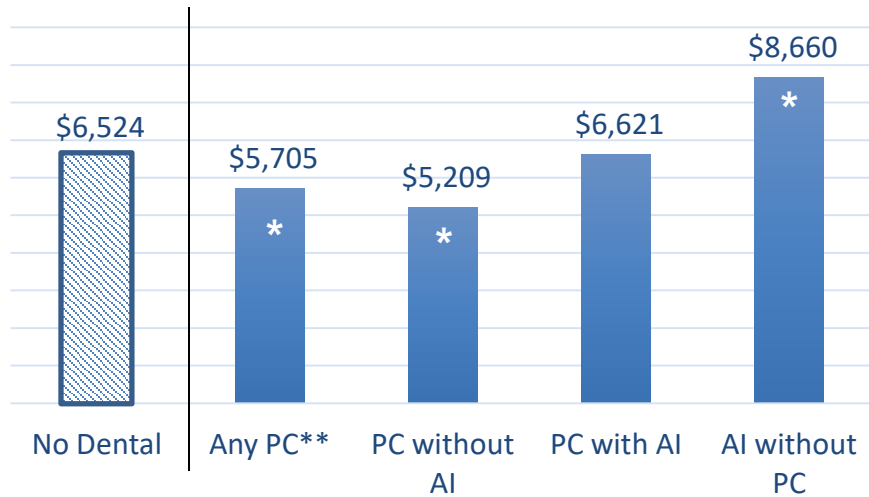
Hospitalization Rate Per 100 People



 Referent Group

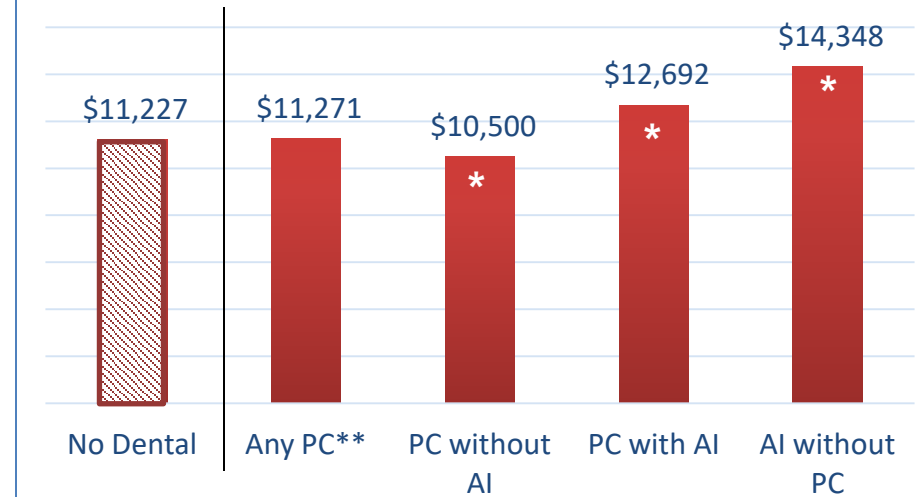
Longitudinal: Year 3 Costs¹ by Dental Utilization in Years 1 and 2

ED/HOSP/RX



* Statistically different from No Dental ($p < 0.01$)

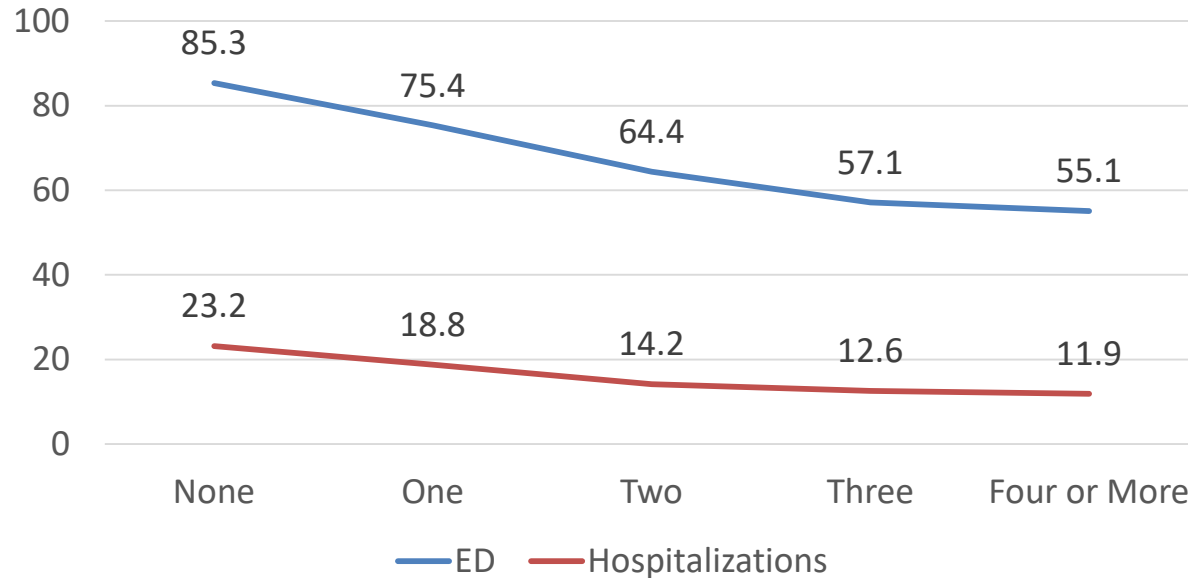
Total Healthcare



Referent Group

Impact of Frequency of Preventive Care

Year 3 Events Rates Per 100 People, by Number of Preventive Visits over Years 1 and 2



Key:

ED = Emergency Department Visit Hosp = Hospitalization Rx = Prescription Drug

Note: Overall change in rates across increasing frequency of preventive care was statistically significant ($p < 0.001$) for all categories of care

NCDs Focus: Difference in Preventive Care vs No Dental

Rate reductions and cost savings among those with NCDs

Year 3 outcomes based on utilization of services in years 1 and 2

CVD

- ED (-13.1 per 100 ppl)
- Hosp (-7.6 per 100 ppl)
- Total Cost PP (-\$772)

Diabetes

- ED (-16.9 per 100 ppl)
- Hosp (-10.3 per 100 ppl)
- Total Cost PP (-\$2,065)

Respiratory

- ED (-25.5 per 100 ppl)
- Hosp (-13.1 per 100 ppl)
- Total Cost PP (-\$2,259)

Cognitive Impairment

- ED (-66.6 per 100 ppl)
- Hosp (-30.9 per 100 ppl)
- Total Cost PP (-\$8,194)

Key:

ED = Emergency Department Visit Hosp =Hospitalization Total Cost PP = Total average cost per person, excluding cost of any dental care



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Concluding Remarks

- This study is comprehensively examining the effect of dental treatment on health care outcomes and costs in a Medicaid program
- Preliminary findings
 - Provision of preventive dental services is associated with:
 - Reduced ED and hospitalization rates
 - Reduced ED, Hospitalization, and Rx costs
 - Reduced Total Healthcare Costs for those with NCDs
 - Beneficial effects are modified by:
 - The need for anti-infective therapy (endodontic treatment and or tooth extraction)
 - Frequency of preventive care utilized
- This analysis is continuing, to more specifically define associations and adjust for the unique needs of subsets of this Medicaid population

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Questions

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