



DQA Pediatric Oral Health Performance Measure Set: Overview of Measures and Validation Process

Jill Boylston Herndon, Ph.D.
Department of Health Outcomes and Policy
Institute for Child Health Policy
College of Medicine, University of Florida

Objectives, Indicators, Measures & Metrics

Pre-Conference Workshop
National Oral Health Conference
Huntsville, Alabama
April 21, 2013

Presentation Overview

- **Measure Testing Overview**
 - Feasibility
 - Reliability
 - Validity
- **DQA Measure Overview**
 - Phase 1 Testing: Enrollment Criteria
 - Phase 1 Testing: Elevated Risk
 - Measures and Sample Results from Phase 1 Testing

Testing the DQA Measures

- **Who's Testing?** Institute for Child Health Policy, University of Florida
- **What data are included?** Administrative enrollment and claims data from:
 - Florida Agency for Health Care Administration – Florida Medicaid
 - Florida Healthy Kids Corporation – Florida CHIP
 - Texas Health & Human Services Commission – Texas Medicaid and CHIP
 - DentaQuest – commercial data
- **What type of payers and reimbursement mechanisms are represented?**
 - Medicaid FFS, PCCM, managed care (>5 million children)
 - CHIP managed care (>1 million children)
 - Commercial (>250,000 children)
- **Reporting period**
 - Using data from CY 2010 and CY 2011; plus additional (prior) years as needed for 2-year measures and identification of elevated risk

Testing the DQA Measures

- **Key Phases of Testing**
 - Finalize enrollment requirements for denominator definitions (completed)
 - Finalize methodology for identifying “elevated risk” (completed)
 - Test feasibility, reliability, and validity (ongoing)
- **Collaborative Process with Stakeholders**
 - ICHP holds twice monthly calls with the DQA Research and Development Committee (includes representatives from dental providers, dental plans, community health centers)
 - Regular input is sought from a broad range of key stakeholders as needed for specific topic/content areas
 - Interim report was disseminated for public comment in March

Feasibility of Measures

A measure will be considered feasible if the data necessary to score the measure are available in administrative databases.

- Data fields critical to calculating the measure must be consistently available for capture in administrative databases
- Plans and programs must assess missing and invalid rates for each critical data field
 - and take measures to improve data quality where missing and invalid rates exceed acceptable levels
- Take into account the personnel and system resources required to calculate the measure
 - measures should not have unnecessary complexity
- Some data elements may be standardized and consistently available across entities (e.g., CDT codes)
- Some data elements may be reported differently across entities (e.g., provider ID, place of service)

Reliability of Measures

Reliability is the degree to which the measure is free from random error . . . and allows for meaningful comparisons across states, programs, individual providers or institutional providers.

- Measure specifications – denominator criteria, numerator criteria, exclusions – need to be clear and consistently applied
- Measures should be based on standardized data elements as much as possible; missing/invalid data should be minimized
- Measure calculation should allow for comparisons between plans, programs, states at a point in time and over time

Validity of Measures

Validity demonstrates the extent to which a measure truly measures that which it is intended and designed to measure.

Strategies to assess validity:

- Evaluate face validity – does measure reflect quality of care and can it distinguish good and poor quality – through systematic assessment process by experts
- Compare measure scores to national means and to rates reported in the published literature
- Use dental records to validate critical data elements
- Identify measure-risk stratification combinations to:
 - evaluate capacity of measures to detect disparities
 - validate measures by assessing whether measure scores are different for sub-populations known to have differences in access to and quality of care



DQA Measure Overview

- **Population:** 0-20 years
- **Data Type:** administrative enrollment and claims/ encounter data
- **Calculated for:**
 - “Dental” services: services provided by or under the supervision of a dentist
 - “Oral health” services (selected measures): services provided by medical providers or allied dental providers not under supervision of a dentist

DQA Measure Overview

Clinical Quality: Access & Process

- Oral Evaluation
- Topical Fluoride
- Sealants (6–9 yrs; 10–14 yrs)
- Preventive Services
- Care Continuity (2-year measure)
- Usual Source of Services (2-year measure)

Health Care Delivery: Use of Services

- Utilization of Services
- Treatment

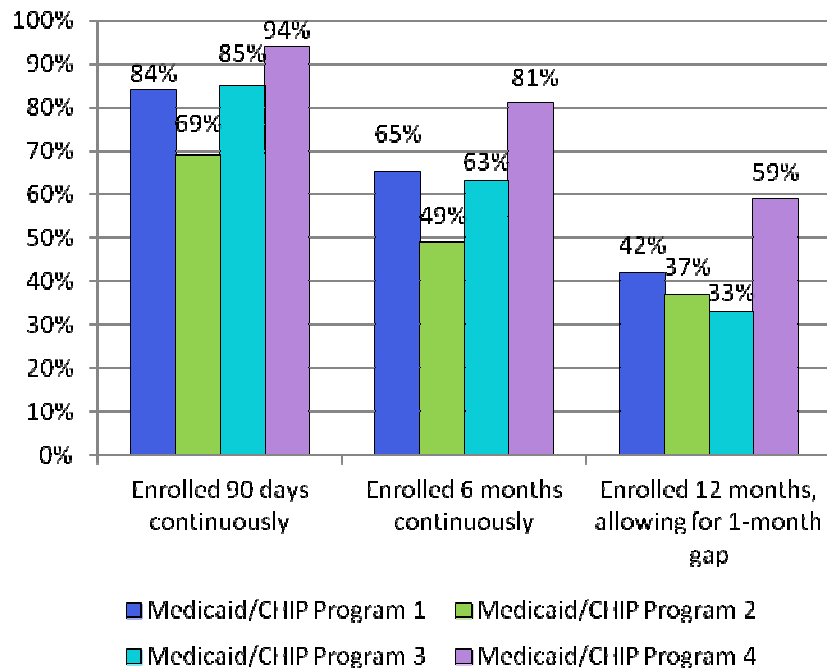
Health Care Delivery: Costs

- Per Enrollee/User Cost of Clinical Services
- Percentage of Child Healthcare Expenditures

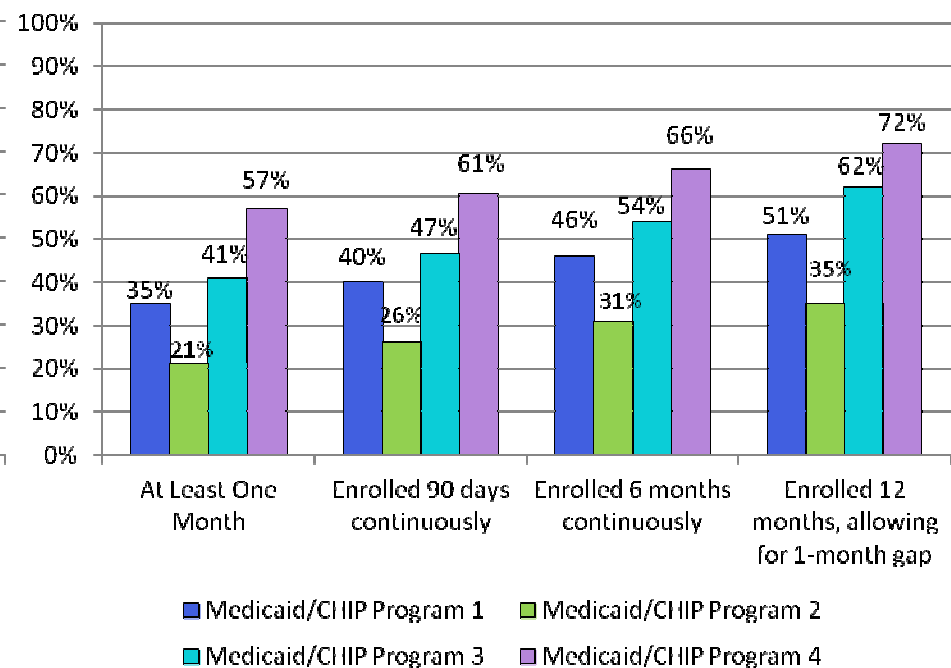
Phase 1 Testing: Enrollment Criteria

- Enrollment criteria impact on eligible (included) population and rates:

Percentage of Members Enrolled “Any Time” Who Meet Different Enrollment Length Criteria



Percentage of Members Receiving Oral Evaluation During Year Reported for Different Enrollment Criteria



Phase 1 Testing: Elevated Risk

- **Purpose:** Identify population at moderate to high risk for caries
- **How:**
 - Strongest evidence-based indicator of caries risk in administrative data is evidence of caries treatment
 - Set of CDT codes used to identify caries-related treatment
 - For children who meet enrollment (≥ 6 months in reporting year) and age (<21 yrs) criteria: search for any of the CDT codes in the reporting year or any of the three prior years
- **Application:** Part of denominator criteria for fluoride and sealant Prevention Measures

DQA MEASURES: EXAMPLE RESULTS

Overall Use and Oral Evaluation

Utilization of Services

What: Percentage receiving at least one dental/oral health service

Enrollment criteria: (1) \geq 90 days*; (2) \geq 6 months

Purpose: Overall use and access measure; provides context for other measures

*Note: Similar to current CMS-416

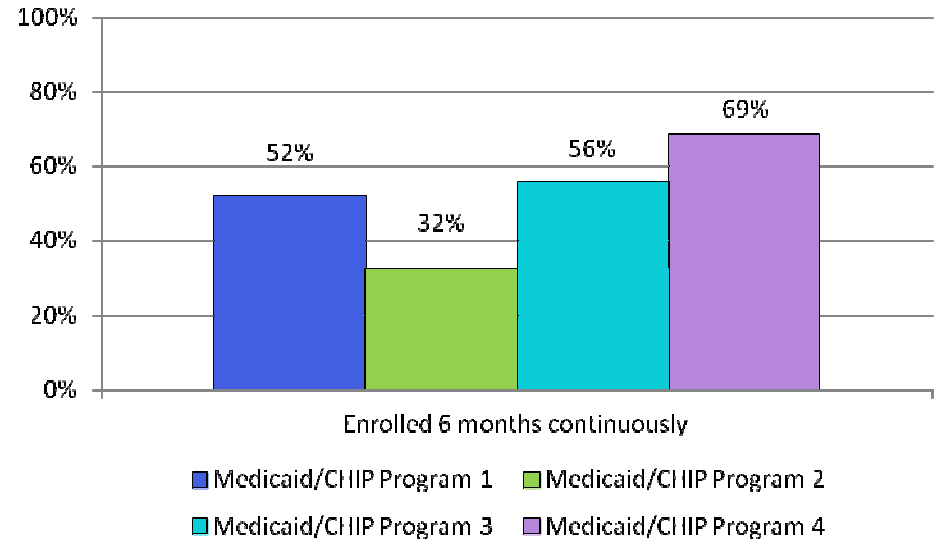
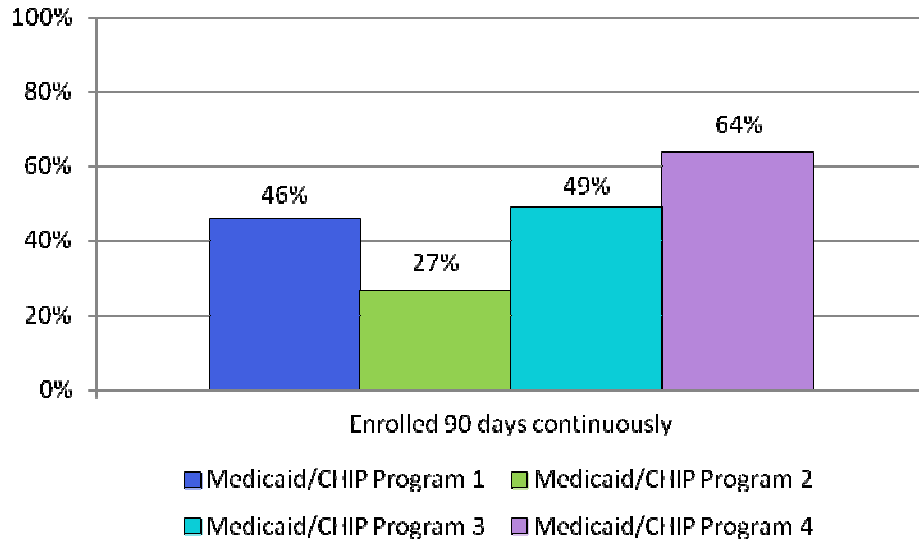
Oral Evaluation

What: Percentage receiving at least one periodic or comprehensive oral evaluation during the reporting year

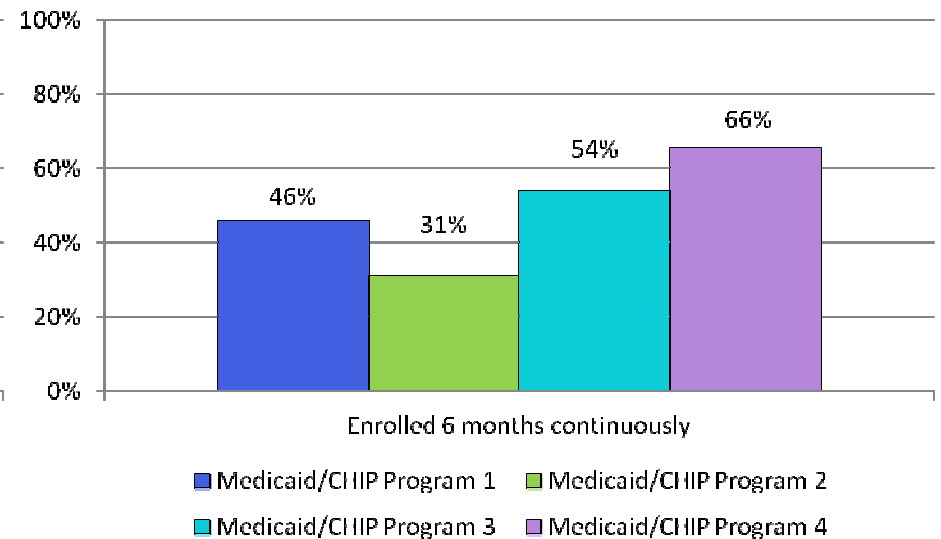
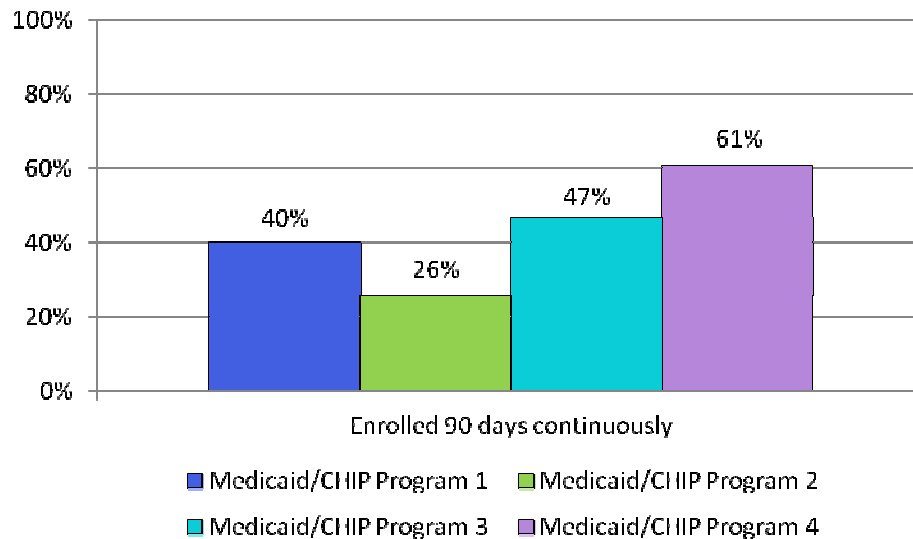
Enrollment Criteria: (1) \geq 90 days; (2) \geq 6 months

Purpose: Access and process measure

Overall Use: Utilization of Services



Access: Oral Evaluation



Primary Prevention

Fluoride

Enrollment: Full-year, allowing single one-month gap

Measure: Percentage receiving 0, 1, 2, 3, \geq 4 treatments during year

Purpose: Addresses both receipt and intensity

Sealants

Enrollment: \geq 6 mo.

Measure 1:
Percentage 6-9 years receiving sealant on 1st permanent molar

Measure 2:
Percentage 10-14 years receiving sealant on 2nd permanent molar

Purpose: Addresses age-specific prevention

Fluoride/Sealants

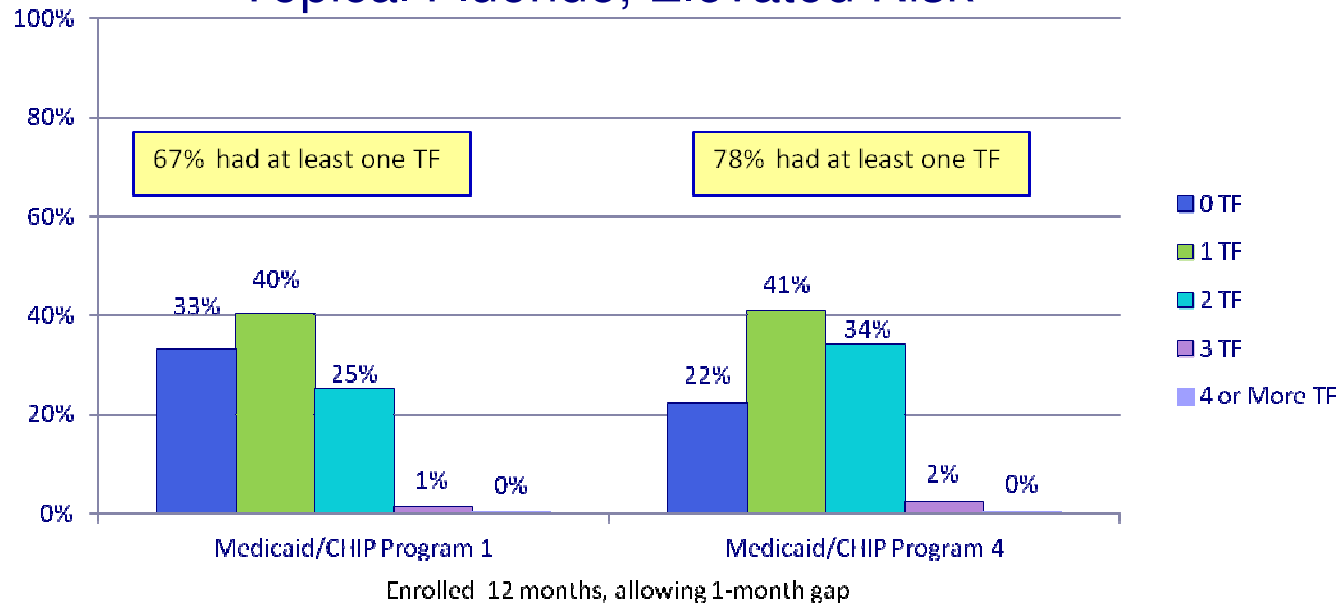
Enrollment: \geq 6 mo.

Measure: Percentage receiving either fluoride or sealants during the year

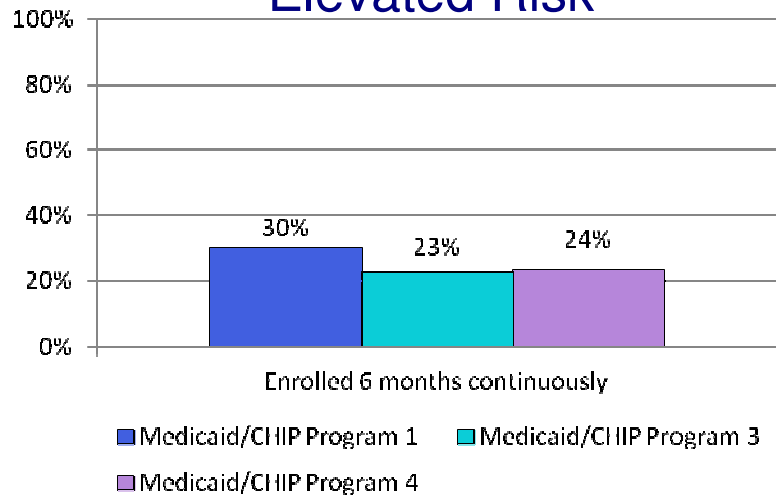
Purpose: Captures overall receipt of at least one primary prevention service

Note: These measures are assessed for all members meeting age/enrollment criteria AND who are identified as at *elevated risk* based on evidence of caries treatment.

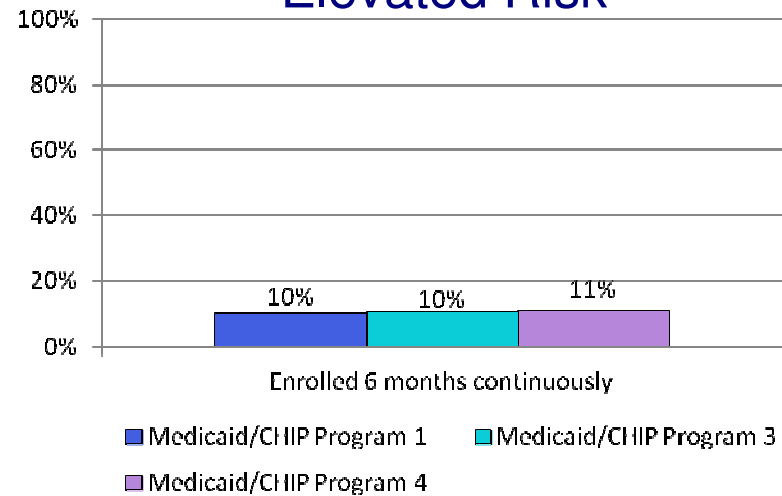
Topical Fluoride, Elevated Risk



Sealants for 6-9 Years Elevated Risk



Sealants for 10-14 Years Elevated Risk



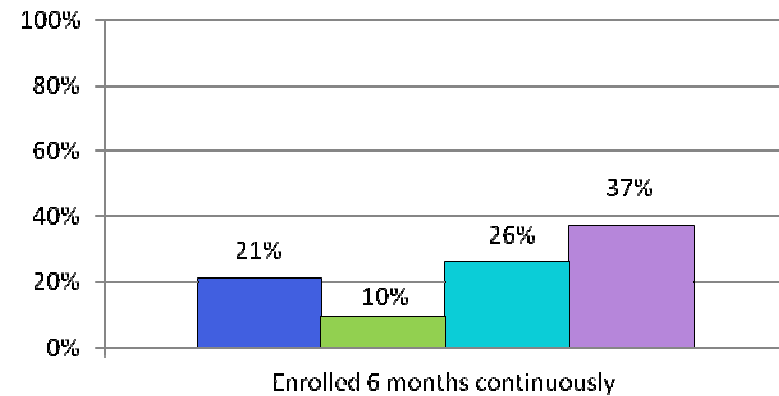
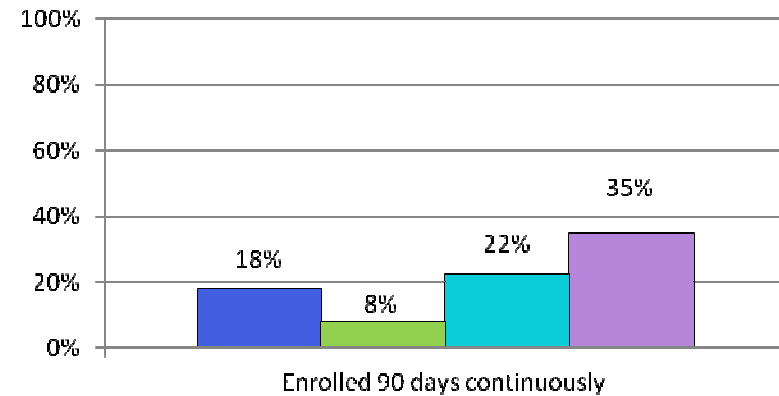
Treatment

What: Percentage receiving at least one treatment service (CDT 2000 – 9999) during the reporting year

Enrollment criteria: (1) \geq 90 days*; (2) \geq 6 months

Purpose: Use of services; designed to be used in conjunction with other measures (e.g., evaluate trends in prevention and treatment over time)

*Note: Similar to current CMS-416



Two-Year Measures

Care Continuity

Enrollment: ≥ 6 months in each of 2 consecutive years

Measure: Percentage who had an oral evaluation in each of two years

Purpose: Designed to capture continuity of access to/use of care over time

Usual Source of Services

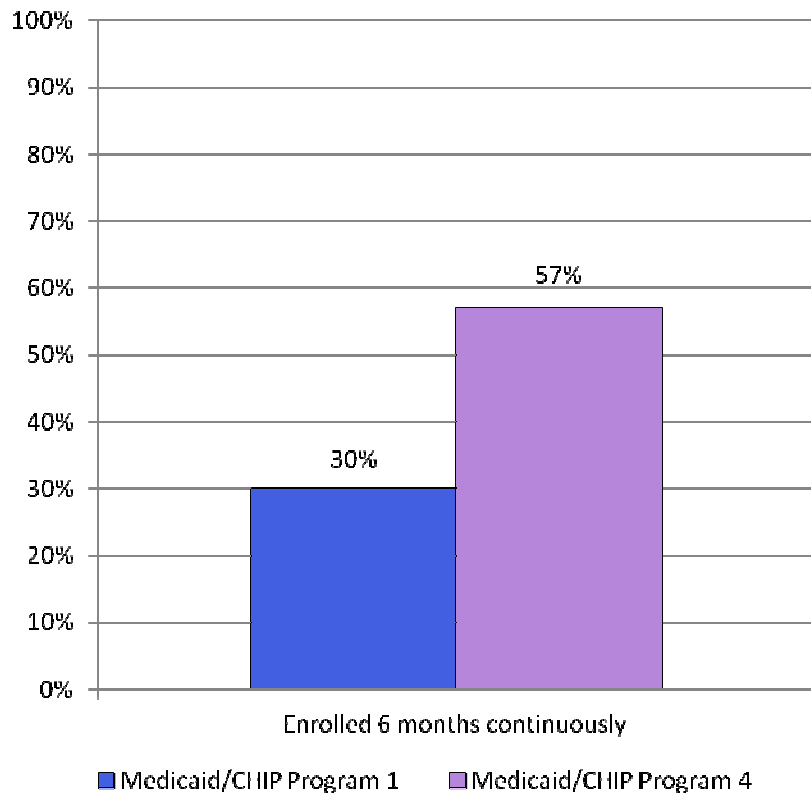
Enrollment: ≥ 6 months in each of 2 consecutive years

Measure: Percentage who had any dental service from the same practice or clinical entity in each of two years

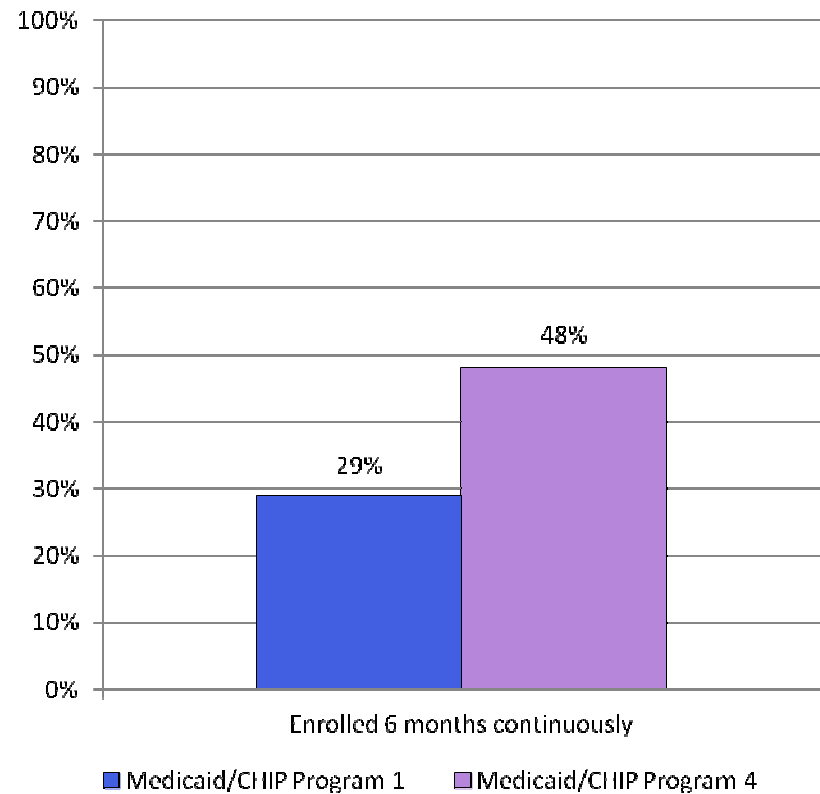
Purpose: Designed to measure whether the child has a usual source of dental care

Two-Year Measures

Care Continuity



Usual Source of Services



Health Care Delivery: Cost Measures

Per Enrollee/User Cost of Services

Enrollment: \geq 1 month

Measure: Per member per month cost for dental/oral health services receive during year

Purpose: Cost of care; resource use

Percentage of Expenditures

Enrollment: \geq 1 month

Measure: Percentage of overall health expenditures attributable to dental/oral health

Purpose: Cost of care; resource use



Questions



- Which DQA measures will help you with program/plan monitoring?
- Which DQA measures will help you with identifying opportunities for and ongoing evaluation of performance improvement?
- Which DQA measures best address your group's HP2020 objective?

Acknowledgements: Project Partners

**Florida Agency for Health
Care Administration**



**Florida Healthy Kids
Corporation**



**Texas Health and Human
Services Commission**



DentaQuest



**Dental Quality Alliance
Research and Development
Committee**



Acknowledgements: Project Team

Investigators

Jill Boylston Herndon, PhD

Health economics, child health services research, Medicaid/CHIP quality evaluation

Frank Catalanotto, DMD

Pediatric dentist, pediatric oral disease, disease prevention, access to services

I-Chan Huang, PhD

Health outcomes and quality measurement, patient-center outcomes, risk adjustment

Nancy Rudner, DrPH, MSN, MPH

Health care quality improvement processes, record reviews, health plan quality assessment

Betsy Shenkman, PhD

Health outcomes, child health services research, Medicaid/CHIP quality evaluation

Scott Tomar, DMD, MPH, DrPH

Public health dentist, oral epidemiology, modifiable risk factors, access to services

Programming Team

Yijun Sun

Lead Programmer on Project

Howard Xu

Programmer (Florida data)

Sunil Chilruvi

Programmer (Texas data)

Deepa Ranka

Associate Director Data Analytics

Records Review Team

Carla Bredehoeft

Charlie Gwin

Research Assistant

Alex Craen

Thank you!

Jill Boylston Herndon, Ph.D.
Associate Professor
Director, Health Outcomes Research and Training
Department of Health Outcomes and Policy
Institute for Child Health Policy
College of Medicine, University of Florida
herndojb@ufl.edu

