What is the problem of access to oral care services and improvement in oral health?

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University of Washington and Advantage Dental Services, LLC are grantees of Reducing Health Care Disparities through Payment and Delivery System Reform - a national program of the Robert Wood Johnson Foundation.
- The problem
- We are part of the solution
- PREDICT
- Conclusions
The problem
Untreated tooth decay is 1.5 to 3 times higher for Hispanics, American Indians and African Americans compared with non-Hispanic white children.
Oregon Smile Survey 2012: 3rd graders

Percentage of population with outcome, primary and permanent teeth:

- Had a Cavity: 63% Lower Income, 38% Higher Income
- Untreated Decay: 25% Lower Income, 13% Higher Income
- Rampant Decay: 19% Lower Income, 8% Higher Income
Dental care

Children covered by Medicaid
2000: 21 million
2010: 33 million

Through the 2010 affordable Care act (aCa) at least 5.3 million more children gained dental coverage by 2014

And adults too!
School screening and preventive programs

- Target high-risk schools
- Children are treated equally within a school, regardless of their oral health or risk
- Low rate of return of consents for screening: 30% to 50%
- Few dentist visits following referral recommendations: 20%
- Limited resources to reach all children

Dark, 2000
Nelson, 2012
Dental Care
Compensation and Delivery System

Capitation system becoming increasingly common for Center for Medicare and Medicaid Services.

However:

- Incentivizes low utilization
- Reactive and inefficient:
  - Clients seek the service
  - Few clients use most of the resources
  - High relapse rate and costs
- Goals for improvement: counts all utilization equally
Re-envisioning the Dental Care system

- Incentivizes a population risk-based approach: universal progressive system

- Pro-active and efficient:
  - Service seeks clients: Go where the need is
    - Prevention and disease stabilization in low-cost settings
    - Complex treatments in clinics
  - Scale up: better use of parapropfessionals and dentists
  - Focus on primary and secondary prevention, reduce costs

- Goals for improvement and compensation plan: evidence-based, risk-based and team-based
We are part of the solution

PREDICT

delivery and payment system redesign
PREDICT delivery and payment system

- A quality improvement project of Advantage Dental Services, LLC

- A partnership between the University of Washington and a for-profit dental care organization (Advantage)

- Supported by
  - the Central Oregon Health Council’s Quality Improvement Measures Targeted Quality program
PREDICT
delivery and payment system redesign

Population-centered
Risk- and
Evidence-based
Dental Interprofessional Care Team
PREDICT Implementation

**What**
Quality improvement project

**When**
Jan 2016 – Dec 2017

**Who**
All 41,000 children (< 21 years old), pregnant women and new mothers enrolled in Oregon Health Plan (Oregon’s Medicaid) and served by Advantage Dental Services

**Where**
Community settings (WIC, schools, etc) and dental clinics of 7 rural counties in Oregon
PREDICT planning model
outcomes, drivers and core components

**Improve quality and equity of care**

- Increase access to dental care
- Increase screenings and caries risk assessments
- Increase caries risk-based preventive dental care
- Increase treatments provided by EPP dental hygienists
- Decrease hospitalizations for caries treatment

**Improve patient’s parent satisfaction**

**Improve oral health and oral health equity**

- Decrease the percentage of elevated caries risk children with untreated dental caries

- Decrease per patient costs

**Provide patient-centered comprehensive services through interprofessional teams**

- Build teams to implement program to provide care
- Perform dental caries risk assessment
- Establish a dental home for participants
- Communicate culturally and linguistically appropriate manner

**Provide evidence-based care**

- Implement evidence-based guidelines on dental caries diagnosis, risk assessment and treatments
- Provide training on guidelines and processes

**Support efficient performance and financial management**

- Establish evaluation and continuous care improvement process
- Identify performance indicators for core clinical and business processes
- Provide frequent evaluation reports
- Redesign the reward system (pay for performance)
- Align service funding to promote interprofessional teamwork

**Leadership, governance structure and policies**

- Reinforce current stakeholder support
- Enhance the organizational structure
- Convene and support Dental AIM County Advisory committees
- Enforce policies on dental practice

**Health Information Technology (HIT)**

- Develop and implement a Caries Database
- Enhance electronic health records - EHR
- Develop and implement a decision support system within EHR
- Develop and implement a coordinated care tool for case management
- Develop and implement standardized reporting routines for monitoring
The TEAM

- Extended-Practice Permit (EPP) Dental Hygienists in community settings
- Dentists and specialists in dental practices
- Case managers and outreach workers
- HIT specialists and administrative staff
PREDICT:
Redesign the delivery system

- Evidence-based Clinical guidelines development and training

- Progressive Universal Dental Care System
  - All children continuously assessed for caries
  - Children receive treatments based on their individual needs
PREDICT:
Redesign the payment system
Capitation system with global budgeting and pay-for-performance

- Incentivize the whole team: dentists, dental hygienists, case managers, outreach workers, HIT and administrative staff
- Withhold funds from global budget
- Set performance goals annually
- Monitor performance monthly
- Reward quarterly for good performance
Will this work?
Theory-informed and evidence-based intervention

Rigorous evaluation to generate the highest level of evidence

Commitment of the company to publish the results
**PREDICT Evaluation**

**What**
- Randomized controlled trial

**When**
- August 2015 – July 2017

**Who**
- Test: ~41,000 children (< 21 years old)
- Control: ~41,000 children (< 21 years old)

**Where**
- Test: 7 rural counties in Oregon
- Control: 7 rural counties in Oregon
**PREDICT**

- Population-based: All children
- Progressive Risk-based prevention: children at elevated risk
- Caries arrest care at community settings and restorative/surgical care at dental offices
- Referrals with intensive case management: Several letters, calls, and problem-solving/support
- Continuity of care
- Data collection: intensive data collection

**CONTROL**

- Need-based: Not all schools
- Not risk-based prevention: all children treated the same
- Restorative care at dental offices
- Basic referrals: one letter and 2 call attempts
- Continuity of care: ?
- Data collection: intensive data collection
PREDICT Evaluation: Outcomes

- Quality of care and Oral-Health related Quality of Life
  - Baseline and final interview of 840 parents of children < 21 years old, pregnant women and new mothers (60 per county)

- Dental caries
  - Baseline and final clinical exams of 1160 target population

- Dental utilization and cost
  - Data from claims for all 82,000 target population

- Organizations’ readiness for implementing changes
  - Baseline and final survey of Advantage’s providers and staff
Conclusions

New dental care delivery and payment system is possible

Better access and quality of care (convenient places)
Better oral health
Decrease disparities in dental care and oral health

Simple, large RCT for evaluation
Partnership between university, for-profit company and foundation
Thank you

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<table>
<thead>
<tr>
<th>Procedure</th>
<th>Evidence</th>
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<tbody>
<tr>
<td>Screening and Risk assessment</td>
<td></td>
</tr>
<tr>
<td>Management of caries by risk</td>
<td></td>
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<tr>
<td>Case management</td>
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<td>Toothbrushing with fluoridated toothpaste – caries prevention</td>
<td>~22%</td>
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<td>Silver diamine fluoride twice a year – caries prevention</td>
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<td>Silver diamine fluoride twice a year – caries arrest</td>
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<tr>
<td>Silver diamine fluoride + sealants twice a year – caries arrest/restore function</td>
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<td>Glass ionomer sealants – caries prevention</td>
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