Medical-Dental Integration via Electronic Health Record

David S. Gesko, DDS, FACD
Sr. Vice President & Dental Director
HealthPartners®
Greetings from Minnesota!
HealthPartners at a glance:

A team of 25,000 people

Health Plan
- 1.8 million health and dental members in Minnesota and surrounding states

Medical Clinics
- 1.2 million patients
- 1,800 physicians
  - HealthPartners Medical Group
  - Park Nicollet Health Services
  - Stillwater Medical Group
  - TRIA
- 55 medical and surgical specialties
- 55 primary care clinics
- Multi-payer

Dental Clinics
- 600,000 dental members
- 75 dentists, 60 hygienists
- 4 Dental Therapists
- Specialties: oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics
- 24 locations

Seven Hospitals
- Regions: 454 bed Level 1 trauma
- Methodist: 426 bed acute care hospital, featuring the Jane Brattain Breast Center
- Lakeview: 97 bed acute care hospital, national leader in orthopedic care
- Hudson: 25 bed critical access hospital, award winning healing arts program
- Westfields: 25 bed critical access hospital, regional cancer care
- Amery: 25 bed critical access hospital, including four clinics and an assisted living facility
- St. Francis: 86 bed community hospital (partial owner)

Research & Education Institute
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Research & Education Institute
What differentiates our Organization?

- Coverage
- Education
- Research
- Care
Our unique position

Medical Group & Clinics

Pharmacy

Institute for Education & Research

Hospitals

Medical & Dental Health Plan

DENTAL GROUP
Striving towards the Triple Aim

Source: IHI; Developed by R. Ramoni
A Shared Purpose

HealthPartners
Triple Aim
Health
Experience
Affordability

Research generates knowledge & innovation

Dental Plan structures reimbursement, develops provider resources, influences quality

HPDG provides care & shapes delivery
The evolving definition of “quality”...

• Dental School definition:
  – Sharp line and point angles
  – “Extension-for-Prevention”
  – “3-point” occlusal contacts

• Evolving definition:
  – Improved population health
  – Reduced risk
  – Greater value proposition
  – Cost-effective results

Triple-Aim
Minnesota is known for Innovation!
HealthPartners is also known for Innovation.
Dental Therapy in the Headlines!

My Job: Kathlyn Leiviska, dental therapist

Kathlyn Leiviska is a licensed dental therapist for HealthPartners Dental Clinics in St. Paul.

By LAURA FRENCH  |  APRIL 13, 2015 — 8:07AM

Dental therapist is a new role in the United States, according to Kathlyn Leiviska. “It’s existed in other countries in the world, but never here,” she said. “In 2008, people from the University of Minnesota School of Dentistry traveled the world to look at different types of programs.” The enabling legislation was implemented in 2009.
We live in a life of change...

Amazing what you can get when you spend over $1 Billion!
How many of you remember this?
Dentistry is changing too...

Dentists in China successfully used a robot to perform implant surgery without human intervention

SCMP
Alice Yan, South China Morning Post
© Sep. 21, 2017, 10:08 PM  •  3,431
“A good hockey player plays where the puck is. A great hockey player plays where the puck is going to be.”
Wayne Gretzky
Why consider *change*?

“Insanity: doing the same thing over and over again and expecting different results.”

*Albert Einstein*
The “Health” component:

Health of a Population

- Evidence-based care
  - Understanding how patient is doing with respect to population with same diagnosis
- Reporting data consistently
  - Determining cost-effectiveness of treatments
- Per Capita Cost
  - Enhanced communication
  - Tailoring care to diagnoses
  - Administrative efficiencies

Experience of Care
HealthPartners Dental Group

Practice principles:
- The delivery of care based on evidence-based care guidelines
- A focus on disease management, disease risk assessment and risk reduction
- The preservation of hard and soft tissue
- The application of a medical model of care to dentistry
- Maintain/improve on overall cost-of-care
HealthPartners Dental Group

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Goals of being “Evidence-Based”

Best evidence

Best evidence

Best evidence

Best evidence

Clinical Guidelines
Evidence-based Care Guidelines
HealthPartners’ Dental Group: Current Guidelines

- Caries
- Periodontal disease
- Oral Cancer
- Treatment Planning
- Endodontic Care
- Third-Molar Care
Building a Simulation System To Train Dentists To Practice Evidence-Based Dentistry

*Case-based learning, structured around an internet interface*
HealthPartners Dental Group

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Medical + Dental Integration = Epic

Problem list, medication list, lab results
Caries Risk Assessment

Caries Primary

Caries Transitional

Caries Permanent

Caries Risk: Permanent Dentition

Risk Factors

- Moderate
  - 1-2 caries in last 3 years
  - active dental appliance
  - cariogenic dietary practices
  - government supplemental insurance
  - suboptimal fluoride

- High
  - 3 or more caries in last 3 years
  - medically/physically compromised
  - medication/medication
  - radiation therapy head/neck
  - Sjogren's syndrome

Provider-Driven Risk

- edentulous
- low
- moderates
- high

Interventions

Periodontal Disease

Oral Cancer
Risk Assessments Recorded

1/1/2008 through 6/31/2017

Percent of Exams

Quarter

Caries_Pct
Perio_Pct
OC_Pct
Goal
Caries Interventions Prescribed

Caries Interventions Prescribed
1/1/2008 through 6/31/2017

Percent of Caries Risk Assessments

Quarter
### Perio Risk Assessment

#### Periodontal Disease

**Risk Factors**

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recession</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trauma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral hygiene</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Secondary Risk Factors**

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Risk Score**

<table>
<thead>
<tr>
<th>Score</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Provider-Driven Risk**

**Interventions**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>High</th>
<th>Moderate</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall at 3-6 months</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Antibacterial rinse</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Education on OR and disease</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Education for risk reduction</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>OR adjunct</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Periodontal therapy</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Recommended tobacco cessation</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Referral for periodontal therapy</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Re-evaluation</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Patient Interventions**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall at 0-6 months</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Antibacterial rinse</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Perio Interventions Prescribed

Perio Interventions Prescribed
1/1/2008 through 6/31/2017

- Interventions for Mod Risk
- Interventions for High Risk
- Moderate Goal
- High Goal

Percent of Perio Risk Assessments

Quarter
Oral Cancer Risk Assessment
Oral Cancer Interventions Prescribed

Oral Cancer Interventions Prescribed
4/1/2008 through 6/31/2017

Percent of Risk Assessments

Quarter

Elevated_OC_Interv_Pct
Goal
### Personal Dental Care Report

**Prepared for:** SP Test  
**Age:** 32  
**Exam date:** 01/16/2012

**Dentist:** Dr. John Jones  
**Clinic:** St Paul Dental Clinic

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Your Risk Description</th>
<th>Today's exam</th>
<th>Last exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent caries</td>
<td>One or more caries in last 3 years</td>
<td>Moderate</td>
<td>Low</td>
</tr>
</tbody>
</table>

What we recommend to reduce your risk level for Caries Disease:
- Daily rinsing of fluoride product purchased at HealthPartners pharmacy or other retail store. Rinse with fluoride rinse once or twice daily at times other than when brushing.
- Application of a concentrated fluoride product to the teeth in the clinic to assist in remineralization.

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Your Risk Description</th>
<th>Today's exam</th>
<th>Last exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of or active periodontal disease</td>
<td>Have had a diagnosis of periodontal disease, with or without past treatment</td>
<td>Moderate</td>
<td>Low</td>
</tr>
</tbody>
</table>

What we recommend to reduce your risk level for Periodontal Disease:
- Consider quitting tobacco habit, participate in a QuitLine program or other means of quitting.

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Your Risk Description</th>
<th>Today's exam</th>
<th>Last exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco use</td>
<td>Use of tobacco—either smoking or smokeless</td>
<td>Elevated</td>
<td>Low</td>
</tr>
</tbody>
</table>

What we recommend to reduce your risk level for Oral Cancer:
- Consider quitting tobacco habit, participate in a QuitLine program or other means of quitting.

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We recommend that you schedule your next dental check-up for **March 2012**.

Thank you for visiting the St Paul Dental Clinic. We are pleased to provide dental care for you.

If you have any questions, please call us at (651) 293-8300 or visit our website at www.healthpartners.com/dental

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**Color Key**
- Low
- Moderate
- High/Elevated

- **Today’s Blood Pressure:** 115/72
HealthPartners Dental Group

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➢ Maintain/improve on overall cost-of-care
Cavities

Replacement Filling $300

Root Canal $1200

Molar Life Cycle

Filling $130

Crown $1,200

Implant $6,000

Healthy Tooth

Annual Maintenance $10/year

Total Average Lifetime Cost ~$9,000
HealthPartners Dental Group

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The Nation’s Network

Network Director: Gregg Gilbert
Computer Assisted Tobacco Intervention in Dental Practice Settings—The CATI Study

Brad Rindal, Emily Durand, Charles Huntley, Cheri Rolando, Wendy Jorgenson, Michelle Emerson

HealthPartners Regional Dental Meetings
The Problem

Tobacco is...

- The single greatest cause of disease and premature death in America today.
- Responsible for more than 430,000 deaths each year.
- Approximately 20% of adult Americans currently smoke.
- 3,000 children and adolescents become regular users of tobacco every day.
- Societal costs approach $100 billion each year.

The solution:
Most smokers (>70%) express a desire to stop smoking; if they successfully quit, the result will be both immediate and long-term health improvements. Clinicians have a vital role to play in helping smokers quit.

Research demonstrates that efficacious treatments exist and should become a part of standard caregiving. Research also shows that delivering such treatments is cost-effective.

In summary, the treatment of tobacco use and dependence presents the best opportunity for clinicians to improve the lives of millions of Americans nationwide in a cost-effective manner.

The research question:

- **Question**: Will dentists and dental hygienists assess interest in quitting, deliver a brief tobacco intervention, and refer to a tobacco quit line more frequently if their EDR gives them computer-assisted guidance?
- **Design**: Randomize clinics matched on key characteristics
- **Setting**: HealthPartners Dental Group clinics.

NIH award: RC1DE020295
The Research Design

Why is this important?

Clinical trial, group randomized by clinic

Control Clinics
“Usual care”

Intervention Clinics

DH Float Pool

Arden Hills
Central MN
Inver Grove Heights
Midway
Riverside
St. Paul
West
Woodbury
White Bear Lake

Apple Valley
Bloomington
Blaine
Como
Coon Rapids
Brooklyn Center
Maplewood
The CATI “Smart Tool”
Supporting SBIRT—an evidence-based approach facilitates the 5 A’s

Ask/Assess
With items 68-71 complete...

...an automatic calculation of dependency...

Advise
...creates, personalized, evidence-based provider scripts...

Assist/Arrange
...and quick links to helpful patient info
Tobacco use is assessed as part of a comprehensive health history.

**Health History**

68. Tobacco user
   Type/Daily Amt: Cigarettes 21-30 per day
   Pipe
   Smokeless

69. How soon after you wake up do you use tobacco? 6-30 minutes
70. Previous attempts to quit? Yes
71. Are you interested in quitting tobacco? 1-6 Months (Contemplation)

A rules-based algorithm automatically generates a pop-up provider script (16 possible message combinations).

**Dependency Scripts**

- It’s great that you’re thinking about quitting smoking because it would have a huge impact on your oral health.
- Review findings like perio stats if applicable (Perio and smoking brochure).
- When you’re ready to quit, HealthPartners has a lot of ways to help you.
- There is a free Quitline that can help you plan and help you quit (Quitline Info Sheet).
- There are also medications to help with quitting (Medication Info Sheet).
- I want to encourage you to try to quit again. It takes an average of 6 quit attempts before people quit for good.

Clicking “Discussed” automatically documents dependency level and script use.

**Discussion Note**

02/10/2012 RDH Initials Dependency Level = Moderate

- Discussed Quitline and info sheet.
- Discussed quit medications and info sheet.
- Encouraged patient to try to quit again, as it often takes many attempts

At next visit, discussion notes are reviewed as part of health history review.

Illustration by Heiko Spallek
What does this tell us about the CATI tool in the environment of HealthPartners Dental Clinics?

1. Patients are being screened at high levels and report high satisfaction across all clinics.

2. Most returning patients expect dental providers to talk to them about smoking and feel the provider listens and shows a genuine interest.

3. The tool was successful in promoting an SBIRT approach in HPDG clinics.

4. Most patients feel they are getting the right amount of information.
### Results

<table>
<thead>
<tr>
<th>Patient response to question, “At your most recent visit, did your dentist or hygienist . . .”</th>
<th>Smokers seen in usual care clinics (8) (n=285)</th>
<th>Smokers seen in intervention clinics (7) (n=263)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>. . . ask about your <strong>interest in quitting</strong> smoking?</td>
<td>70.9 % (200/282)</td>
<td>89.1% (228/256)</td>
<td><strong>.0001</strong></td>
</tr>
<tr>
<td>. . . talk about <strong>specific strategies</strong> for quitting smoking</td>
<td>25.5 % (72/282)</td>
<td>48.4 % (124/256)</td>
<td><strong>.003</strong></td>
</tr>
<tr>
<td>. . . refer you to a <strong>tobacco quit line</strong></td>
<td>17.4 % (49/282)</td>
<td>38.9 % (100/257)</td>
<td><strong>.007</strong></td>
</tr>
</tbody>
</table>

Why address tobacco in the dental office?

• There are nearly as many dental hygienists practicing in the United States (181,800)\(^1\) as primary care physicians (209,000).\(^2\)

• The number of dental hygienists is expected to increase to 250,000 by 2020.\(^1\)

• Half of Americans visit a dental office each year,

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\(^2\)The Number of Practicing Primary Care Physicians in the United States. \[http://www.ahrq.gov/research/findings/factsheets/primary/pcwork1/index.html\].
Why address tobacco in the dental office?

• In contrast to the 7-15 minute primary care doctor’s visit, dental visits average about 60 minutes
• Dental visits are focused on one topic, oral health; physicians must address many topics
• Dental hygienists are passionate about prevention
• Addressing tobacco use increases patient satisfaction
Blood Glucose screening in the dental office:

Random blood glucose testing in dental practice: A community-based feasibility study from The Dental Practice-Based Research Network
Andrei Barasch, Monika M. Safford, Vibeke Qvist, Randall Palmore, David Gesko and Gregg H. Gilbert
JADA 2012;143(3):262-269
10.14219/jada.archive.2012.0151

The following resources related to this article are available online at jada.ada.org (this information is current as of November 10, 2014):
Blood Glucose Testing in Dental Practice: A Community-Based Feasibility Study

• Diabetes mellitus affects over 20 million Americans
• 54 million have been diagnosed with pre-diabetes
• Estimated 4% of Americans may have the disease but have not been diagnosed.
• Optimal glycemic control in only 35% of diabetics
• Additional methods are needed for screening patients at risk or poorly managed

• The aim of this study were to examine feasibility of diabetes testing among dental patients
Dentist Final Survey

• Duration of testing was reported to take less than 2 min in 29% of practices; 2-5 min in 64% of practices; and 5 min or more in 7% of practices

• 65% reported testing was not disruptive

• 82% reported testing is beneficial to practice

• 93% reported testing for patients at risk should be implemented

• 100% reported testing was well received by patients

Conclusion

• Opportunistic glucose testing in dental practice appears to have excellent acceptance from both practitioners and patients who experienced such screening.

• Barriers to testing appear to be surmountable.
Potential opportunities
Screening, diagnosing, chronic care management

- Rates of Undiagnosed
  - Hypertension: 7.8%
  - Diabetes: 2.7%
  - Cholesterol: 8.2%

- Immunizations

- Link with Diabetes & Vascular disease
  - Diabetes can increase the risk of gum disease.
Why consider this kind of screening?

27 MILLION PEOPLE visit a dentist and not a physician each year.²
Impact on affordability:

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 screened

Health Policy Institute
ADA American Dental Association®
HealthPartners®
HealthPartners Dental Group

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The “Affordability” component:
Evolution

- HealthPartners has long pointed to Total Cost of Care
- Differences in care delivery patterns
- Telling measure: crowns per 1000 members or patients

- This back from a decade ago...
## Crown prescribing pattern

<table>
<thead>
<tr>
<th></th>
<th>Crowns Age 35-65</th>
<th>Humans Age 35-65</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HPDG</td>
<td>2,086</td>
<td>12,552</td>
<td>17%</td>
</tr>
<tr>
<td>Capitated</td>
<td>766</td>
<td>3,752</td>
<td>20%</td>
</tr>
<tr>
<td>Other</td>
<td>3,911</td>
<td>14,213</td>
<td>28%</td>
</tr>
</tbody>
</table>
Total Cost of Care
Total Cost PMPM (PL + ML)
Age/Gender/Benefit Adjusted

This information is proprietary and confidential.
Use is prohibited without express written permission from HealthPartners Dental Plan.

Not to be confused with discount.
This encompasses both Price and Utilization.

Traditional Dental
Contracted Dental Providers
HPDG

Price
Utilization

HealthPartners
The “Experience” component:

Health of a Population

- Evidence-based care
- Reporting data consistently
- Determining cost-effectiveness of treatments

Experience of Care
- Understanding how patient is doing with respect to population with same diagnosis
- Enhanced communication
- Tailoring care to diagnoses
- Administrative efficiencies

Per Capita Cost
Dental Plan Member Survey

Results Summary

Market Research and Strategic Information
Background

- Measures adult commercial comprehensive members’ satisfaction with dentist and dental office
- Mailed to a sample of 2,848 with a follow-up mailing
  - 632 surveys returned, a 22% response rate
- 95% confidence interval within ±4 percentage-points of error
The ‘Your Dentist’ topic is composed of 6 measures:

<table>
<thead>
<tr>
<th>How would you rate:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoroughness of the treatment</td>
<td>93%</td>
</tr>
<tr>
<td>Attention given to what you had to say</td>
<td>94%</td>
</tr>
<tr>
<td>Amount of time you spent with dentist</td>
<td>85%</td>
</tr>
<tr>
<td>Dentist’s explanation of what was done</td>
<td>92%</td>
</tr>
<tr>
<td>Effectiveness of staff’s education improving or maintaining oral health</td>
<td>92%</td>
</tr>
<tr>
<td>Overall quality of care you received</td>
<td>94%</td>
</tr>
</tbody>
</table>
Specific measures:

<table>
<thead>
<tr>
<th>How would you rate:</th>
<th>Total 2015</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>
Oral health as part of overall health
## U.S. Expenditures 2010

<table>
<thead>
<tr>
<th>Diagnostic Conditions</th>
<th>U.S. Expenditures*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Conditions</td>
<td>$107 Billion</td>
</tr>
<tr>
<td><strong>Oral Health Conditions</strong></td>
<td><strong>$102 Billion</strong></td>
</tr>
<tr>
<td>Trauma-related Disorders</td>
<td>$82 Billion</td>
</tr>
<tr>
<td>Cancer</td>
<td>$82 Billion</td>
</tr>
<tr>
<td>Mental Disorders</td>
<td>$73 Billion</td>
</tr>
<tr>
<td>COPD, Asthma</td>
<td>$64 Billion</td>
</tr>
</tbody>
</table>

*Agency for Healthcare Research & Quality
Medical Expenditures Panel Survey, 2010
**American Dental Association
Periodontal disease...
Periodontal (Gum) Disease
Health burden:

50 percent
US adults over 30 with periodontitis

91 percent
patients with heart disease who also have periodontitis

73 percent
how often dentists could identify diabetes based on teeth
Patients with periodontal disease who received treatment had better outcomes than patients without treatment.

- Fewer hospital admissions: 67%
- Fewer ER visits: 54%
- Lower overall medical costs: 28%

Study looked at patients with periodontal disease from 2009-2011.
Pharmacy integration...
Drug Impact on Oral Health

Common side-effects from medications that affect oral health:

• Dry mouth
• Altered taste
• Inflammation, mouth sores of the soft tissues of the mouth
• Cavities
The role of saliva...

“Cleans” your mouth

Allows for proper speech

Buffers the acid/base relationship in the mouth

Aids in taste...

 Begins the digestive process

Comfort
More than 1600 medications linked to dry mouth

Including these common medications:
1. Antihypertensives – blood pressure medications
2. Urinary incontinence medications
3. Antipsychotic medications
4. Antidepressants
5. Antibiotics
6. Antihistamines
7. Antidiarrheal/gastric medications
8. Bronchodilators
9. Pain medications
10. Diuretics

Source: HealthGrades
Antibiotic stewardship

• Avoiding overuse
• Consensus between primary care, dental, infectious disease, cardiology, orthopedics
• Standing order for RNs to follow. Simplifies it for patients, fewer visits and phone calls

Opioids

• Reduction in prescribing of over 90,000 opioids pills per year
Impact of work focused on Opioid reduction
Where do we go next?
Driving to achieve results...

- Accepted Metrics of Quality
- Diagnostic Codes
- Integration with Overall Health
- Risk Assessment

TRIPLE-AIM RESULTS

- Workforce evolution
- Performance Measurement
- Reimbursement system evolution
- Dental Research
Thank you!

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