

THE VALUE OF ORAL HEALTH INFORMATION EXCHANGE

November 17, 2020

Learning Objectives

1. Summarize the value of oral health information exchange
2. Describe the current challenges and opportunities for oral health information exchange
3. Identify opportunities to engage in information exchange at local, state, regional and national levels.

Housekeeping

- Participants are in audio only mode. If you have questions for the panel please use the Q/A feature.
- A copy of the slides and a link to the recording will be shared after the webinar concludes. They will also be available on the dentaquestpartnership.org website under the **Learn** tab. Select **Webinars**.
- In order to receive CE credit you must fill out the webinar evaluation, which will be shared at the end of the presentation. The evaluation must be completed by **EOD Friday, November 25** to receive CE credit. CE certificates will be distributed a few days after the webinar takes place.
- Your feedback is also greatly appreciated.



The DentaQuest Partnership is an ADA CERP Recognized Provider. This presentation has been planned and implemented in accordance with the standards of the ADA CERP.

*Full disclosures available upon request

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Partnership
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ONLINE LEARNING CENTER

The DentaQuest Partnership Online Learning Center strives to provide engaging resources for anyone looking to implement practice improvement and/or prevention-focused care within their unique environment.

[If you missed the webinars related to Best Practices for Re-Opening Dental Clinics or Teledentistry you can view the recordings and download the slides. You will also have the option to earn CE credits upon completion of these webinars.](#)

Webinars | My Learning | Online Courses | Resource Library

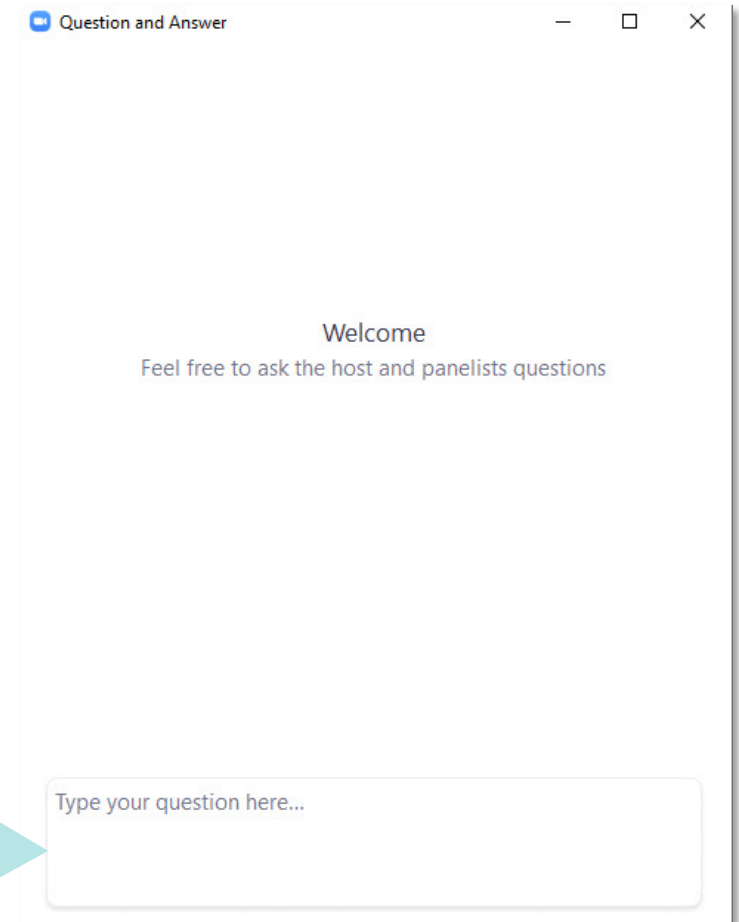
Visit our website to access past webinar recordings and earn CE credits upon completion of the online learning modules.

<https://www.dentaquestpartnership.org/learn>

Question and Answer Logistics

- After the presentations we have time allocated for audience Q&A.
- We are not going to take any questions in between presentations. We will be monitoring the Zoom Q&A box through the entire presentation and we will do our best to answer all of your questions at the end.

Type your question in the **Question and Answer** box.



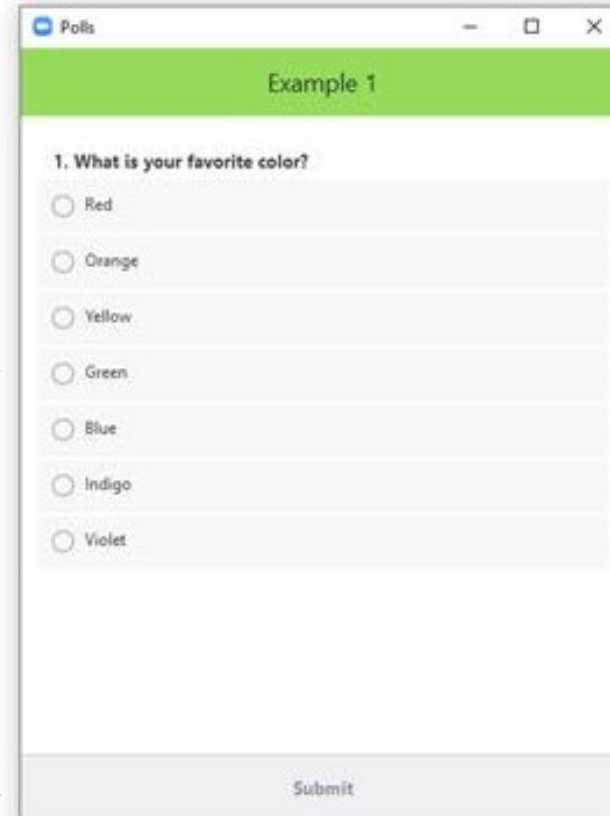
Audience Polling

POLLING



Make your selection

Don't forget to hit
Submit

A screenshot of a mobile application window titled "Polls". The window has a green header bar with the text "Example 1". Below the header, the question "1. What is your favorite color?" is displayed. There are eight radio button options listed vertically: Red, Orange, Yellow, Green, Blue, Indigo, and Violet. At the bottom of the window, there is a grey bar with the text "Submit".

ORAL HEALTH INFORMATION TECHNOLOGY

Virtual Convening
November 17 & 19, 2020

DentaQuest[®]
Partnership
for Oral Health Advancement

**THIS MOMENT
DEMANDS
COLLECTIVE
ACTION**



**HEALTH CARE IS A
HUMAN RIGHT**



ORAL HEALTH INEQUITIES HAVE A PROFOUND IMPACT



22%

Black adults are **22% less likely** than White adults to have had a **routine dental visit** in the past year.



68%

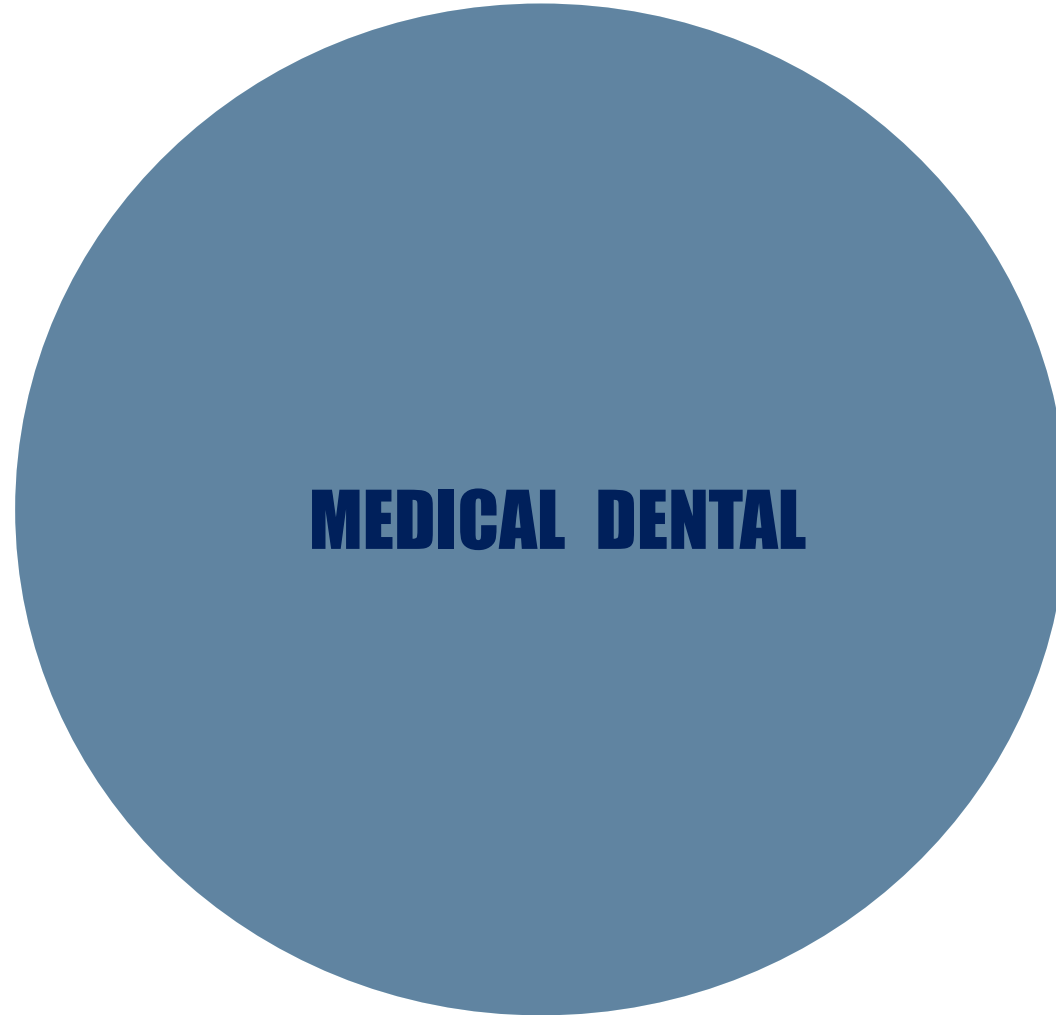
Black adults are **68% more likely** than White adults to have **unmet dental needs**.



52%

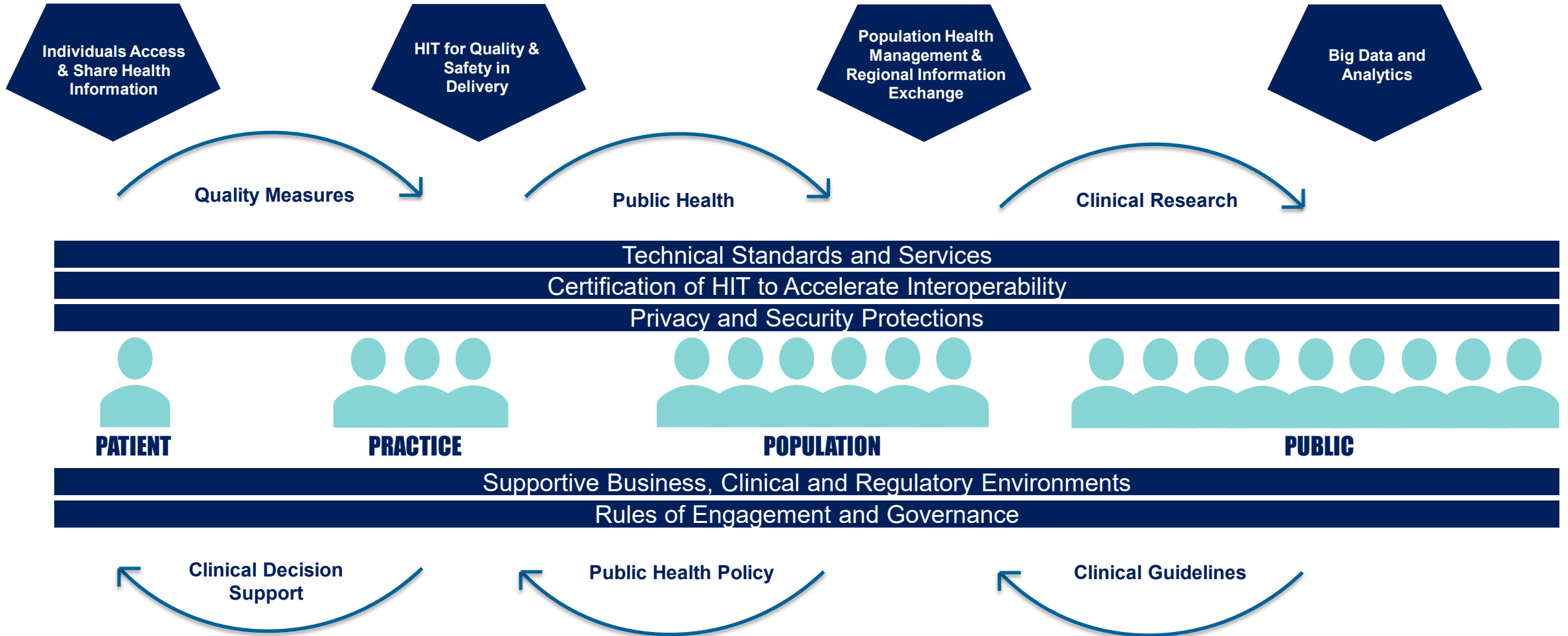
Latino adults are **52% more likely** than White adults to report having **difficulty doing their job** very often or fairly often **due to poor oral health**.

BREAKING DOWN SILOS REQUIRES INTEROPERABILITY



PUT DATA TO WORK

HEALTH INFORMATION TECHNOLOGY ECOSYSTEM



OUR CALL TO ACTION

1. Embrace an innovation mindset
2. Put data to work
3. Clear roadmap for individual and collective work ahead

THANK YOU!

Myechia Minter- Jordan, MD, MBA

President and CEO

**DentaQuest Partnership for Oral Health Advancement and
Catalyst Institute, Inc.**

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DentaQuest 
Partnership
for Oral Health Advancement

Benefits of Information Exchange

POLLING



THE VALUE OF ORAL HEALTH INFORMATION EXCHANGE



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President and CEO,

DentaQuest Partnership for Oral Health Advancement and Catalyst Institute



Alan Morgan, MPA

Chief Executive Officer, National Rural Health Association



Amit Acharya, BDS, MS, PhD

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Sean Boynes, DMD, MS

Vice President, Health Improvement,

DentaQuest Partnership for Oral Health Advancement



National Rural Health Association

The Rural Policy Perspective

Alan Morgan, MPA
Chief Executive Officer

Workforce Shortages

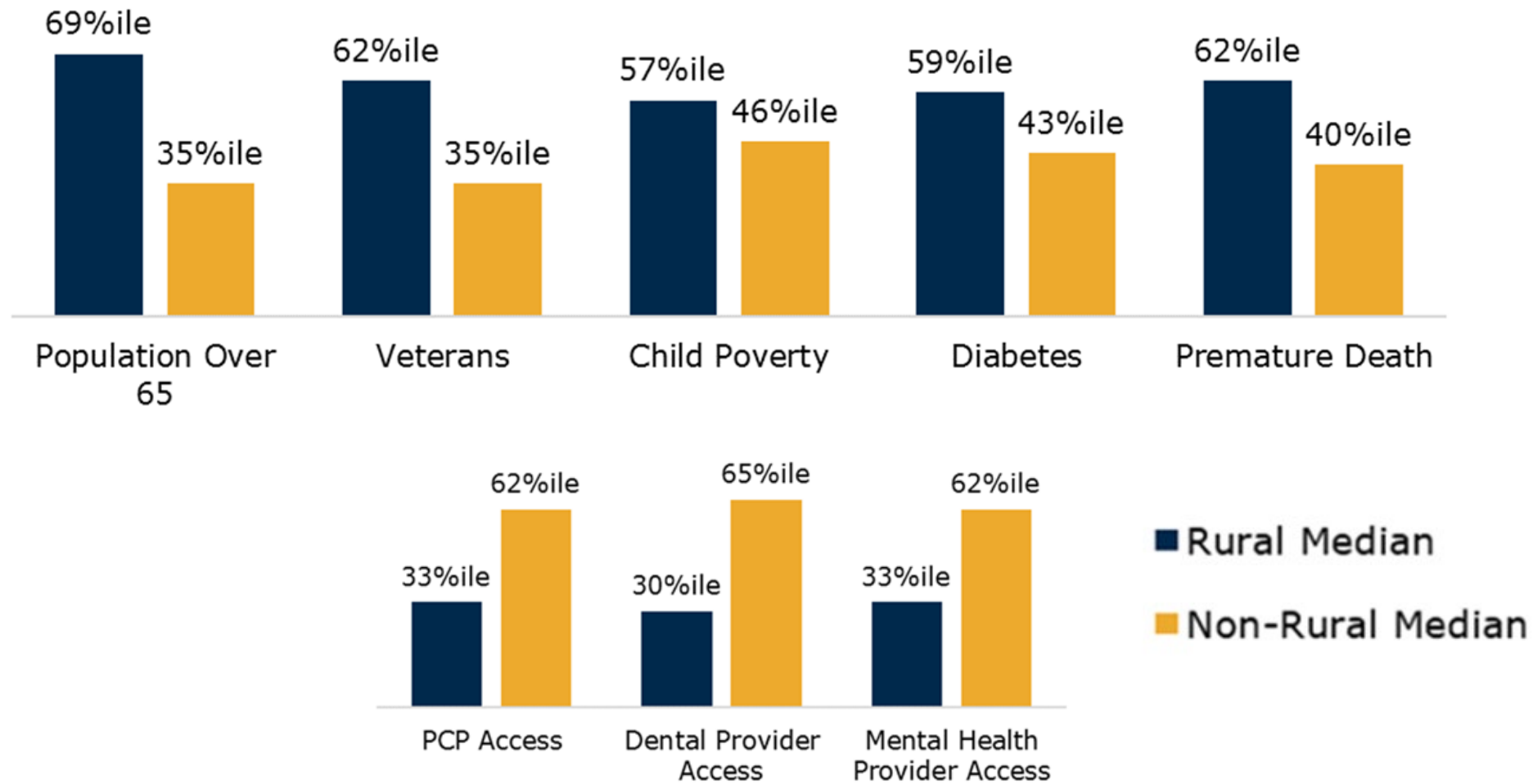


Your voice. Louder.

- Only 9% of physicians practice in rural America.
- 77% of the 2,050 rural counties are primary care HPSAs.
- More than 50% of rural patients have to drive 60+ miles to receive specialty care.



Summary: Rural Populations are Older, Less Healthy, Less Affluent and Have Limited Access to Multiple Types of Care

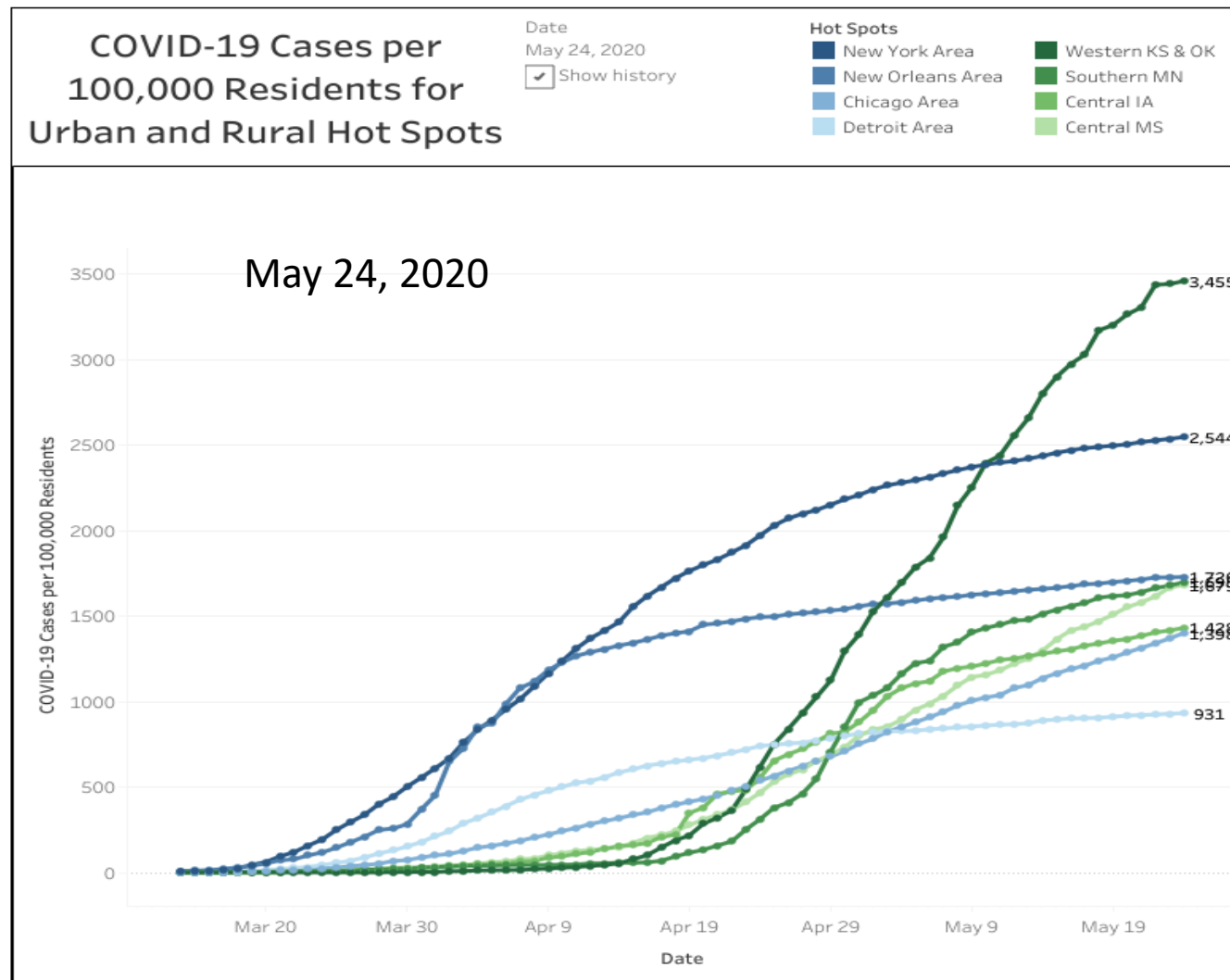




“Coronavirus strains cash-strapped hospitals, could cause up to 100 to close within a year”

Josh Salman and Jayme Fraser
USA TODAY NETWORK

Rural COVID concerns increase in May/June



CMS Center for Innovation

OLDER MODELS

- Frontier Extended Stay Clinic (FESC)
- Frontier Community Health Integration Project (F-CHIP)
- Rural Community Hospital Demonstration Program

NEWER MODELS

- Global Budget Model
 - Sen. Bob Casey (D-PA)
- 24/7 ER Model with Cost-Based Reimbursement
 - Community Outpatient Hospital
 - REACH ACT

Rural has an Older, Sicker and Poorer Population



- The median age of adults living in rural areas is greater than those living in urban:
 - Rural: 51 years
 - Urban: 45 Years
- 18.4% of rural residents are age 65+, whereas its 14.5% in urban
- Rural areas have higher rates of several health risk factors/conditions:
 - Obesity
 - Diabetes
 - Smoking

The State of Rural America



Your voice. Louder.

U.S. Census show that after a modest four-year decline, the population in nonmetropolitan counties remained stable from 2014 to 2019 at about 46 million. (2014-2019 rural adjacent to urban saw growth.)

A screenshot of a mobile browser displaying a New York Times article. The browser's address bar shows "nytimes.com". The page header includes the New York Times logo and navigation links for "SUBSCRIBE" and "LOG IN". The article is categorized as "Opinion" and has the title "Something Special Is Happening in Rural America". The lead paragraph reads: "There is a 'brain gain' afoot that suggests a national homecoming to less bustling spaces." The author is identified as "By Sarah Smarsh", with a bio stating: "Ms. Smarsh is the host of the podcast 'The Homecomers' and the author of the memoir 'Heartland.'"



National Rural Health Association

Alan Morgan, CEO

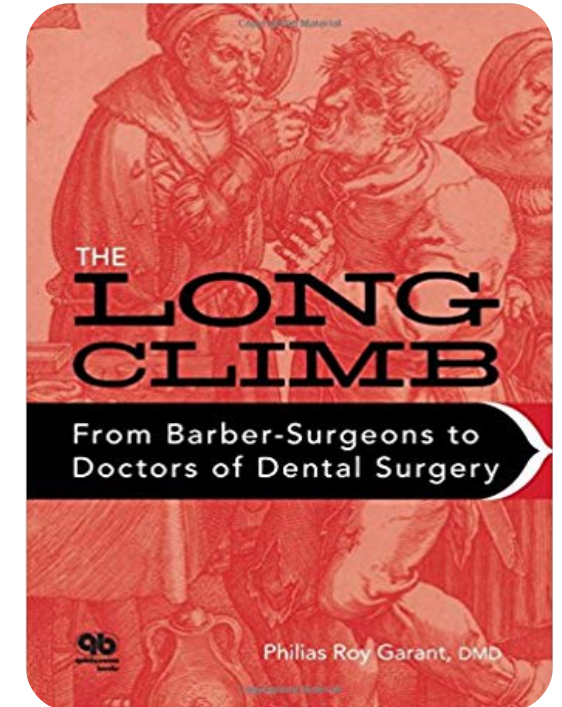
amorgan@nrharural.org
Twitter: @Amorganrural
#ruralhealth

ORAL HEALTH INFORMATION TECHNOLOGY VIRTUAL CONVENING

The Value of Oral Health Information Exchange

Amit Acharya, BDS, MS, PhD, FAMIA
Executive Director, Marshfield Clinic Research Institute
Chief Dental Informatics Officer, Family Health Center
Marshfield Clinic Health System





Source: <https://www.hughesfamilydentistry.com/uncategorized/oh-my-how-things-have-changed-some-fun-facts-about-the-history-of-dentistry/>
<https://www.sutori.com/story/the-history-of-dentistry--tqEnrevtkGtVt1QQHSBoiy4W>

The Long Climb: From Barber-Surgeons to Doctors of Dental Surgery – Authored by Dr. Garant





Importance of Oral Health

Over the last 25 years, public health leaders including the Surgeon General, the Institute of Medicine, and others have recognized:

- 1) Oral health is a ‘Silent Epidemic’ that disproportionately affects the poor;
- 2) Poor oral health significantly impacts overall health and has dire economic and human cost to society;
- 3) Cooperation and integration by the dental and medical professions is needed to adequately address the issue.



A Costly Dental Destination

Hospital Care Means States Pay Dearly

A decade of rising dental-related emergency room visits

Source: [A Costly Dental Destination: Hospital Care Means States Pay Dearly](#)

Feb 28, 2012



\$88 million **FL** More than 115,000 hospital ER visits for dental problems produced charges exceeding \$88 million (2010).ⁱ

\$23 million **GA** The approximately 60,000 emergency hospital visits for non-traumatic dental problems or other oral health issues cost more than \$23 million (2007).ⁱⁱ

\$5 million **IA** More than 10,000 visits to hospital ERs for dental reasons cost Medicaid or other public programs almost \$5 million (2007).ⁱⁱⁱ

\$4.7 million **MN** The 10,000-plus dental-related ER visits to seven hospitals in the state's largest urban area cost more than \$4.7 million (2005).^{iv}

\$6.9 million **MO** ER charges for dental-related visits to Kansas City hospitals totaled about \$6.9 million (2001–2006).^v

\$4 million **NV** The cost of dental visits to hospitals was estimated at nearly \$4 million (2005).^{vi}

\$31 million **NY** The cost of treating young children for decay-related ailments in hospital emergency rooms or ambulatory surgery centers jumped from \$18.5 million to more than \$31 million (2004–2008).^{vii}

\$7 million **WI** More than 32,000 emergency room visits resulting from dental ailments cost nearly \$7 million (2009).^{viii}

Oral-Systemic Connection

Research is Catching Up
with Clinical Practice, page 1

Perio Reports Vol. 24 No. 1
Oral-Systemic Connection, page 2

hygienetown

January 2012

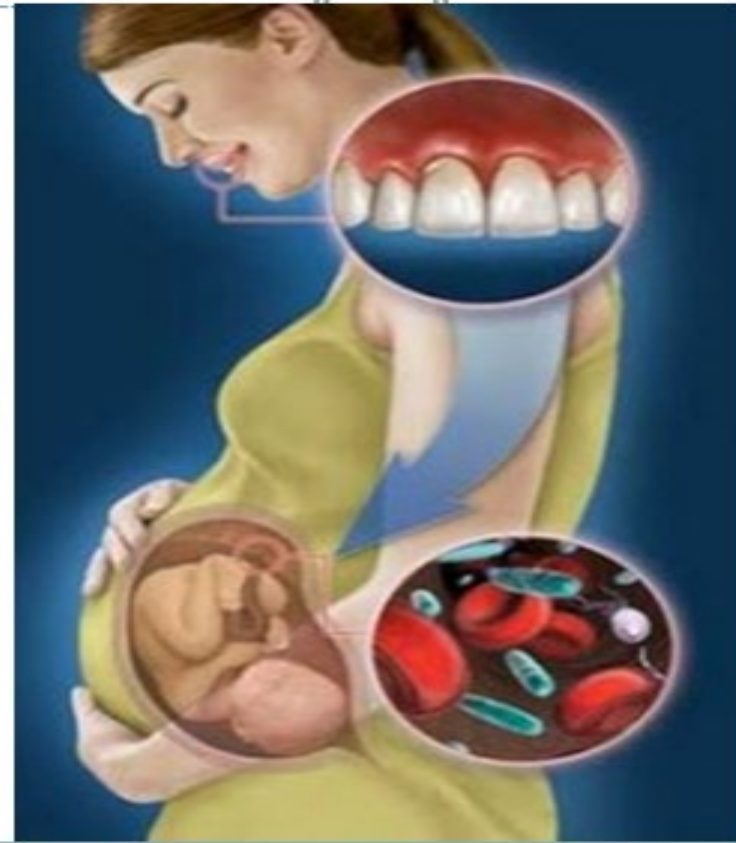
with Perio Reports by Trosha E. Griffith, D.M.S.

It is **All Related**

"Oral-Systemic Periodontal Therapy" – A Case Study
page 11

Surrounded by the Top Minds in Medicine
Discussing Oral-Systemic Health page 15

A Division of Moran Media, L.P.



Without good periodontal health, there can not be good general health.

Periodontal disease (commonly known as gum disease) can affect the state of your whole body. Over the past few years, studies have shown a definitive link between your oral health and your general health.

Mouthing OFF

Here are a few of the many health problems that can be aggravated by poor oral hygiene:

- STROKE**
 - Those with adult periodontitis may have increased risk of stroke.
- RESPIRATORY INFECTIONS**
 - Inhaling bacteria from the mouth and throat can lead to pneumonia.
 - Dental abscess buildup creates a dangerous source of bacteria that can be inhaled into the lungs.
- HEART DISEASE**
 - Those with adult periodontitis may have increased risk of heart attack.
 - Adults are more likely to be diagnosed with cardiovascular disease.
 - Bacteria from the mouth may cause clogging problems in the cardiovascular system.
- SEVERE OSTEOPEMIA**
 - Reduction in bone mass (osteopenia) is associated with gum disease and related health issues, particularly in women.
 - Low bone density is associated with tooth loss in postmenopausal women.
- UNCONTROLLED DIABETES**
 - Those with periodontal disease can struggle to control their blood sugar.
 - Periodontal disease can contribute to bacterial overgrowth in the mouth.
 - Diabetes and periodontal disease increase their risk of tooth loss by twenty times.
 - People with type 2 diabetes are three times more likely to have periodontal disease than are non-diabetics.
- PRETERM OR LOW BIRTHWEIGHT BABIES**
 - Those with adult periodontal disease are more likely to have babies born to an underweight or premature baby.
 - Periodontal disease may increase the potential for preterm or low birthweight babies.

Remember, there are a number of additional oral care benefits available through an oral care regimen. Brushing, flossing regularly, and certain dietary choices can help keep your oral health in good shape. All the things all you needed was a toothbrush!

For a greater assessment of periodontal disease and other diseases mentioned in this article, check out these helpful associations:

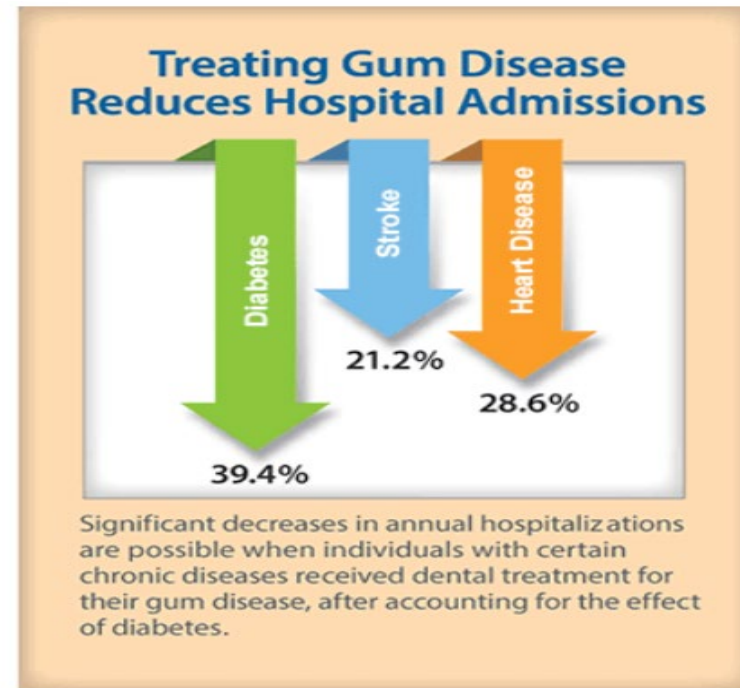
- American Academy of Periodontology**
For news, prevention, and publications.
www.aap.org
- American Academy of Periodontology**
For a greater assessment of periodontal disease and other diseases mentioned in this article, check out these helpful associations.
- American Heart Association**
For news, prevention, and publications.
www.heart.org
- National Osteoporosis Foundation**
For news, prevention, and publications.
www.nof.org
- The National Women's Health Resource Center**
For news, prevention, and publications.
www.nwhrc.org

Estimote 8/2008/2009

MORNING MEDIA
CORPORATION

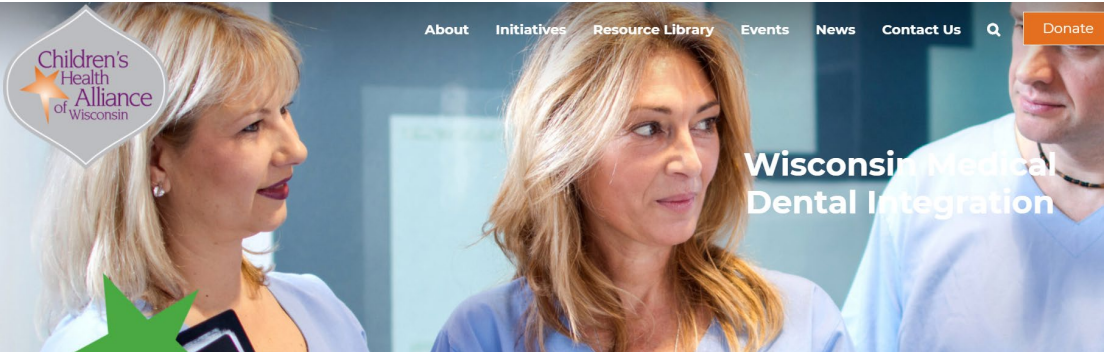
The Economic View

- United Concordia pursued original research conducted by Dr. Jeffcoat, and reported that treating gum diseases could be translated to lowering annual medical saving costs for diabetes, stroke, heart disease and pregnancy outcomes and reducing hospital admissions¹.



1. Jeffcoat MK, Jeffcoat RL, Gladkowski PA, Bramson JB, Blum JJ. Impact of Periodontal Therapy on General Health: Evidence from Insurance Data for Five Systemic Conditions, American Journal of Preventive Medicine, 47 (2014) pp. 174–182. DOI: 10.1016/j.amepre.2014.04.001

Opportunities for Integrated Care Models



Wave I began in 2015 with

28 RDHs integrated into

18 sites within

16 healthcare organizations

INTEGRATION OF ORAL HEALTH WITH PRIMARY CARE IN HEALTH CENTERS: PROFILES OF FIVE INNOVATIVE MODELS



Tier 1 Current State Stand alone dental without LPN	Tier 2 Salmon Creek Co-located dental + medical with no nurse	Tier 3 Beaverton/Gilsan Co-located or stand alone with embedded nurse	Tier 4 Cedar Hills Co-located with embedded nurse + physician
Tier 1 has no embedded medical staff and currently it relies on patient engagement and education through the patient friendly handout at a stand alone dental office	Tier 2 has no embedded medical staff, it relies on the dental team engaging the patient in a co-located facility <u>Care Gaps Addressed in this Tier:</u> 1. Nurse Facing: <ul style="list-style-type: none"> Immunizations Lab Work DM Foot Exam *The dental team coordinates patient care through a warm handoff to lab or Nurse Treatment Room (NTR) in the co-located medical office building	Tier 3 has two different models: A) Co-located with regular LPN and B) Stand alone with LPN LEAD <u>Care Gaps Addressed in this Tier:</u> 1. Nurse Facing: <ul style="list-style-type: none"> Immunizations Lab Work - Only Lead LPNs DM Foot Exam 2. Scheduling Clinician Facing Appointments for Patients 3. Patient Education	<u>Care Gaps Addressed in this Tier:</u> 1. PC Clinician Facing (through the embedded Clinician) <ul style="list-style-type: none"> Well-child Physicals Cervical Cancer Screenings BP screening 2. Nurse Facing: <ul style="list-style-type: none"> Immunizations Lab Work- Only Lead LPNs DM Foot Exam 3. New Diagnosis 4. Patient Education

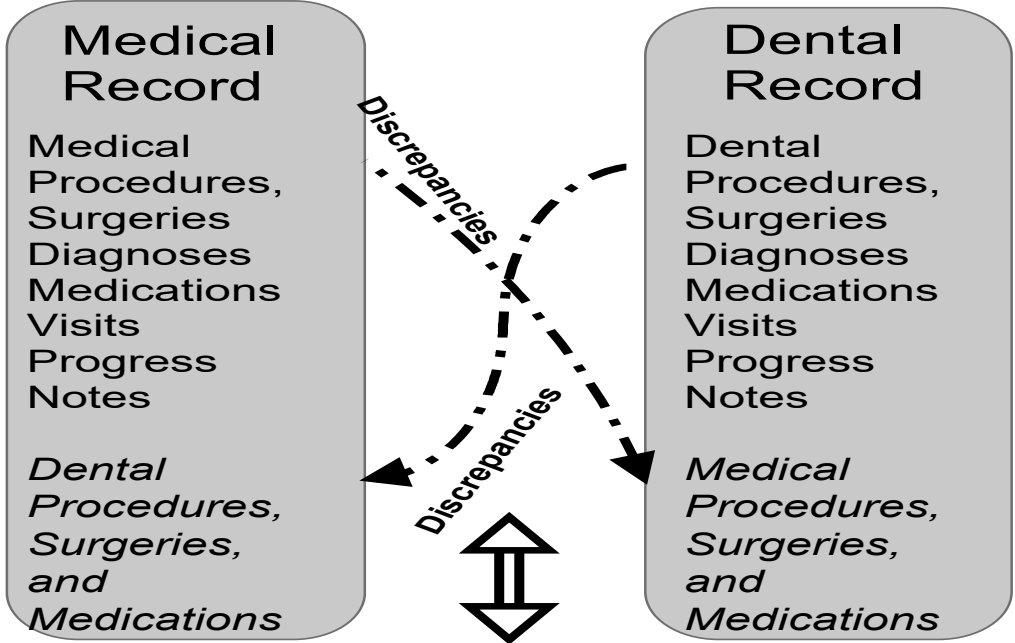
KAISER PERMANENTE

Source: <https://oralhealth.hsds.harvard.edu/files/oralhealth/files/kennethwright.pdf>

Integrated Care Models via Electronic Medical-Dental Health Records

Virtual Integration

*Health Records in Silos
Can Compromise Quality and Safety
through Inconsistencies/Discrepancies*



Reports relayed (informally) by patients
Databases (patient records, paper or EHRs) not synchronized



Medical care providers' perspectives on dental information needs in electronic health records

Amit Acharya, BDS, MS, PhD; Neel Shimpi, BDS, MM;
Andrea Mahnke, MS; Richard Mathias, DDS; Zhan Ye, PhD

The use of electronic health records (EHRs) has demonstrated value in promoting health care providers' efficiency and effectiveness.¹ EHRs have empowered health care providers by allowing greater access to patient health information and communication tools that facilitate shared decision making, resulting in better patient health outcomes. This digital health environment has opened further avenues for establishing a medical-dental integrated EHR (iEHR) that encompasses



Supplemental material
is available online.

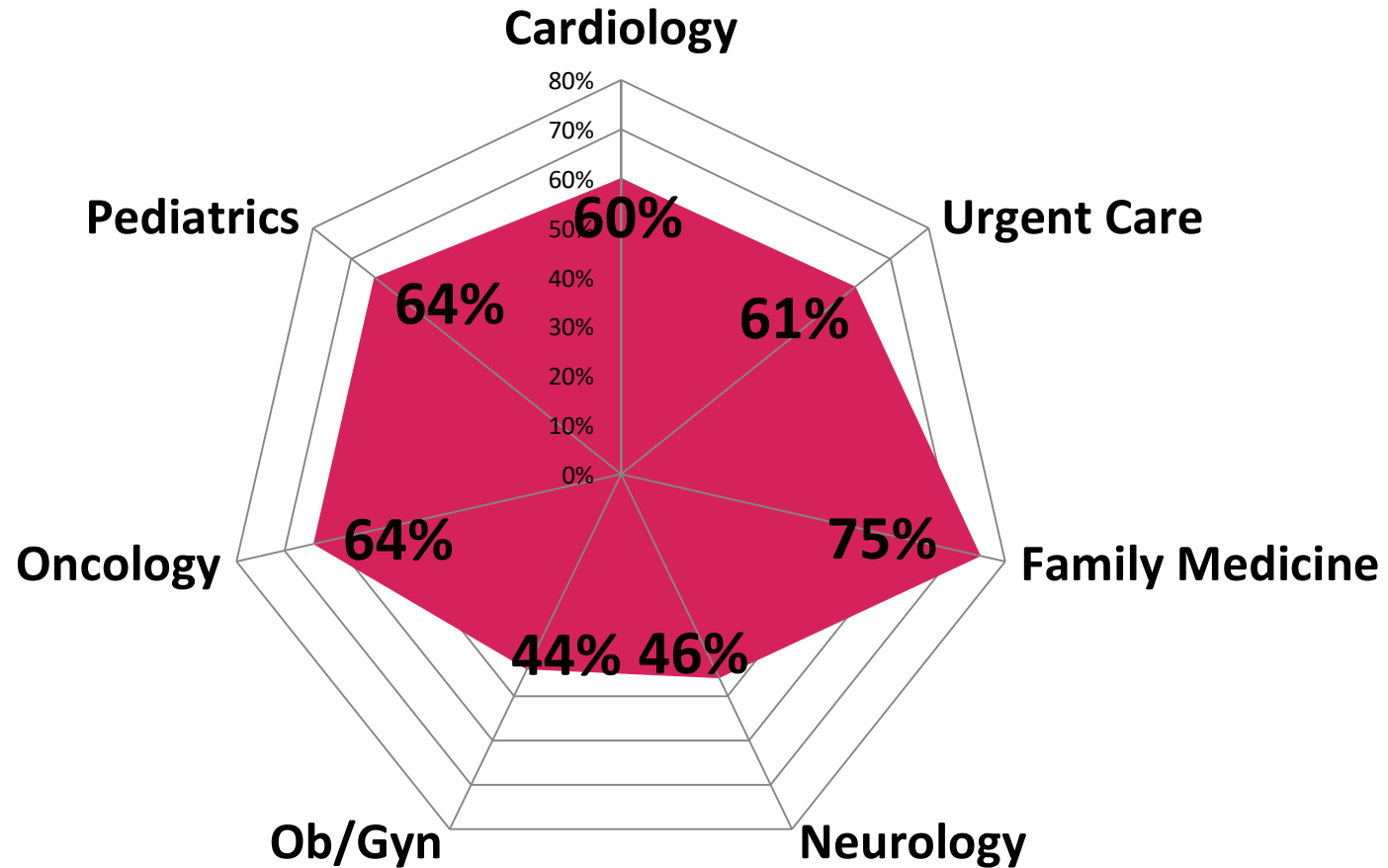
ABSTRACT

Background. The authors conducted this study to identify the most relevant patient dental information in a medical-dental integrated electronic health record (iEHR) necessary for medical care providers to inform holistic treatment.

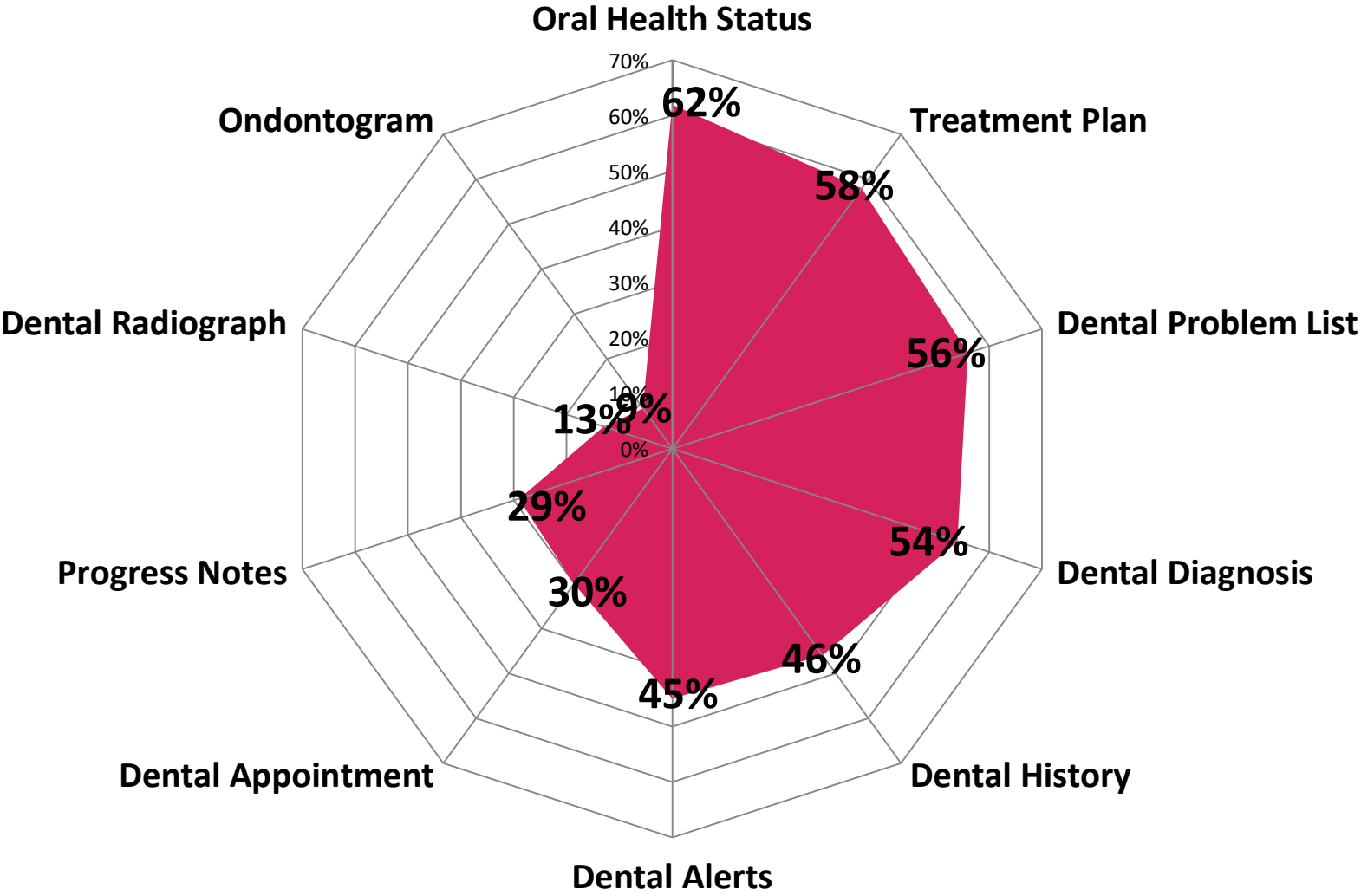
Methods. The authors collected input from a diverse sample of 65 participants from a large, regional health system representing 13 medical specialties and administrative units. The authors collected feedback from participants through 11 focus group sessions. Two independent reviewers analyzed focus group transcripts to identify major and minor themes.

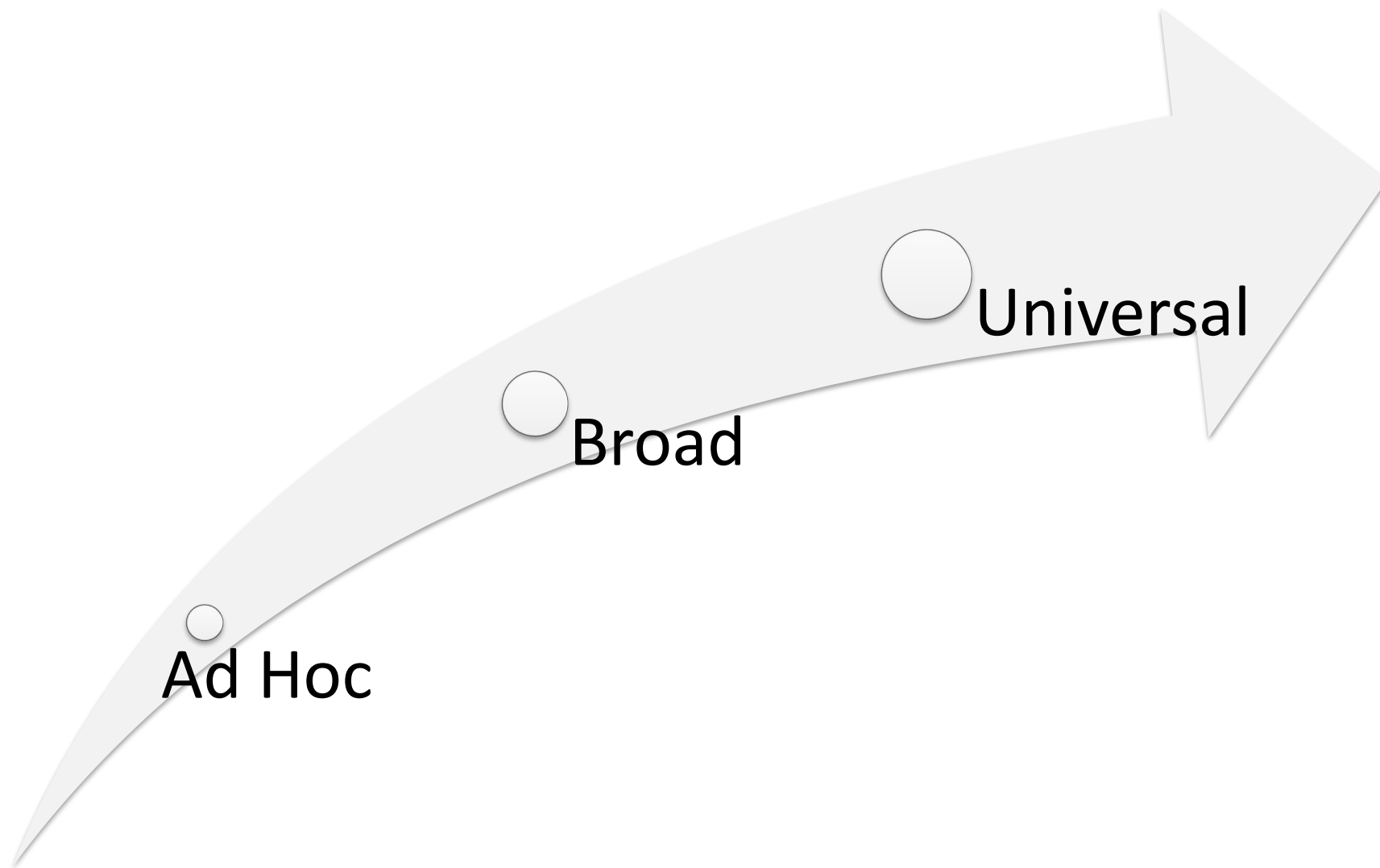
Results. The authors identified 336 of 385 annotations that most medical care providers coded as relevant. Annotations strongly supporting relevancy to clinical practice aligned with 18 major thematic categories, with the top 6

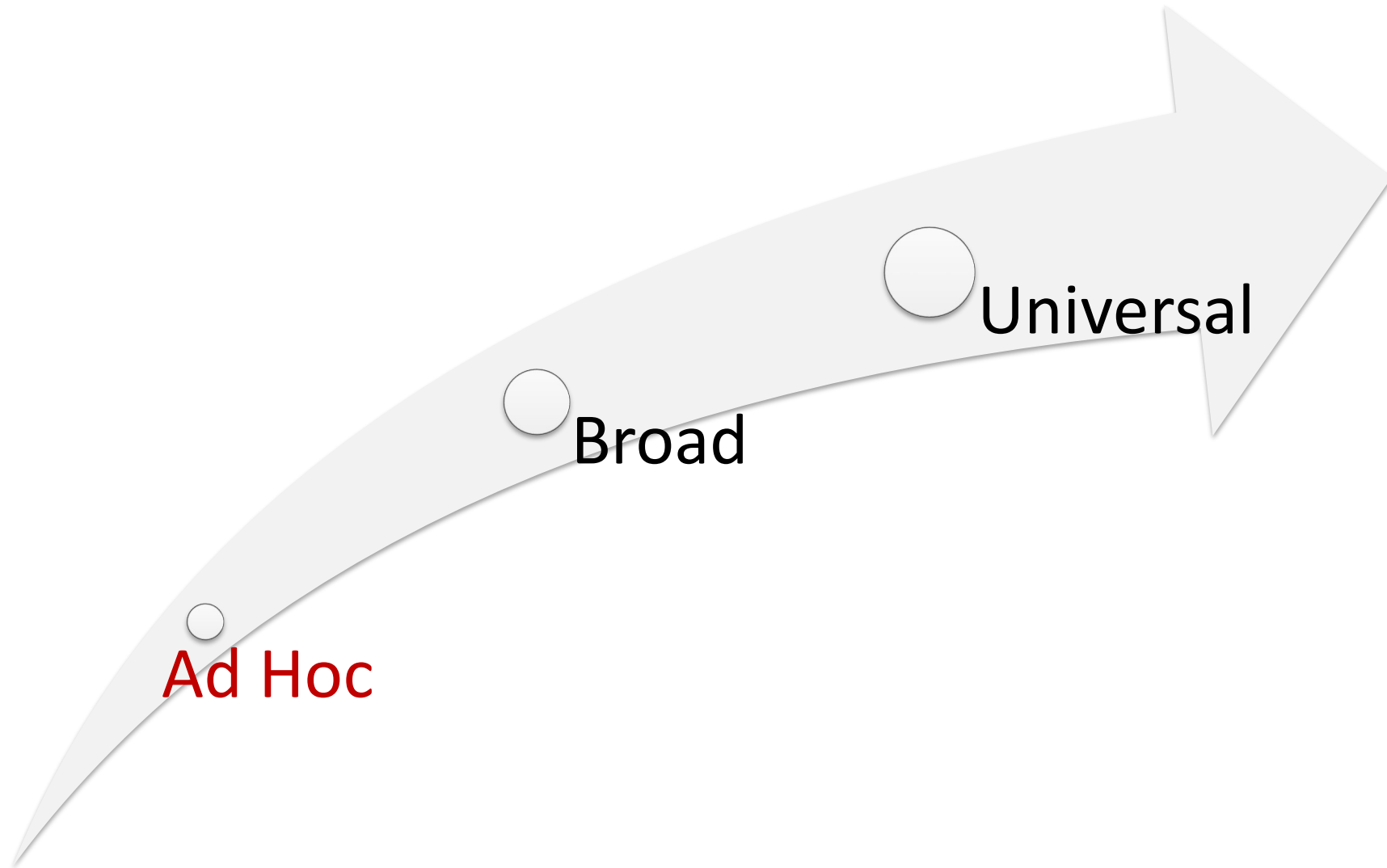
Require Patient's Dental Information to Provide Effective Medical Care



What dental information would medical providers would like to access in an EHR?

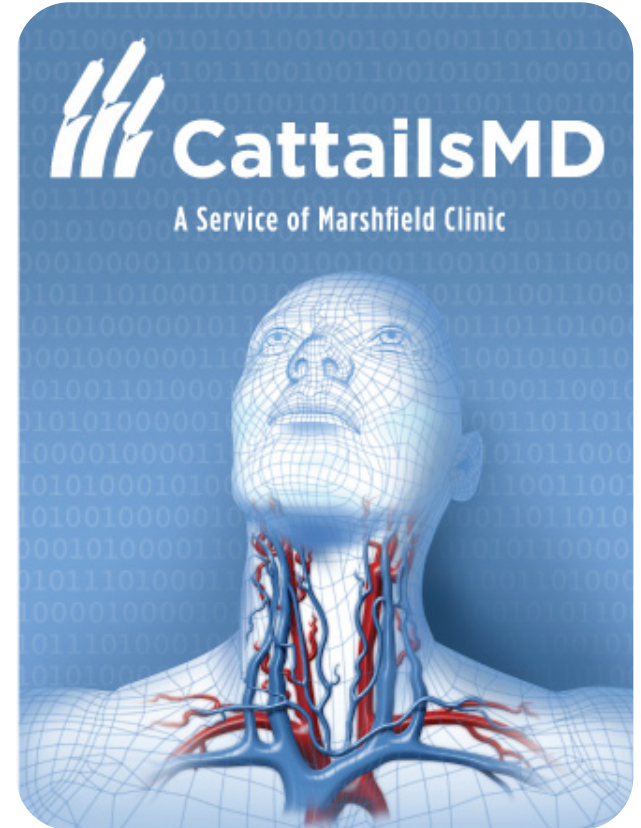






Integrated Medical-Dental EHR at Marshfield Clinic Health System

- One of the very unique Medical-Dental EHR Environment to support Comprehensive Patient Care, Research and Education;
- Supports well over 150,000 unique patients;
- Developed from an open source dental software platform, Open Dental;
- Grants from Delta Dental of Wisconsin and Family Health Center of Marshfield;



Post Completed Procedures (2)

Enter Treatment Primary Planned Appointment Movement Show Tooth Chart Legend

Add Procedure
 Category: Dentist
 Oral Evaluation: Radiographs Hygiene Endodontics Removable Pro Oral Surgery Adjunct Service Z Codes Conditions Other
 Procedure: Search...
 •Amalgam
 •Composite
 •Root Canal
 •Sedative Filling
 •Compl Dent- Maxilla
 •Compl Dent- Mandi
 •Immed Dent- Maxill
 •Immed Dent- Mand
 •Part Resn Base Mx
 •Part Resn Base Mr
 •Part Metal Base Mx
 •Part Metal Base Mr
 •Upgraded Part Mx
 •Part Metal Base Mr
 •Upgraded Part Mn
 •Part Flex Base Mx
 •Part Flex Base Mn
 •Ext Cml Rem Decid

Diagnosis
 Caries.misc
 Caries.enamel
 Caries.dentin
 Caries.into pulp
 Caries.arrested
 Caries.pit and fiss
 Caries.smth surf
 Caries.root surf
 Caries.recurent
 Attrition
 Abrasion
 Erosion
 Cracked tooth

Secondary Provider
 Surfaces
 B/F V
 M O/I D
 L Add
 Clear

Commit Treatment
 TxPlan Comp
 Refer Existing

Attributes
 Supernumerary
 Attach to Referral

Observation & Vitals

Test

Observations
 Needs Collection Height
 Needs Collection Weight
 Needs Collection Body Mass Index
 Needs Collection Tobacco Use
 04/30/14 Blood Pressure 120/80 mmHg
 07/24/13 Weight 24.95 kg (55 lbs)
 05/30/13 Body Mass Index 11.4 kg/m²
 05/30/13 Height 97.79 cm (38.5 in), 87.08 %

Family History

Dental Alerts
 Pre-Medication REQUIRED
 Arthritis
 Asthma
 Cleft palate
 Glaucoma

Active Medication

Family History

Active Medications
 Last Updated
 09/08/14 Adapalene (Differin®) Topical 0.1% Gel Apply as dir...
 04/25/14 Adapalene (Differin®) Topical 0.1% Gel Apply as dir...
 04/25/14 Albuterol (AccuNeb®) Inhalation 1.25mg/3 mL Nebu...
 04/25/14 Amitriptyline 25mg Tablet 2 Tablet(s) (50 mg) by mout...
 04/25/14 Amoxapine 100mg Tablet 1 Tablet(s) (100 mg) by mout...

Allergies and Adverse Reactions

Allergies/Adverse Reactions - Clinical Alerts
 Active Drug (Verified 05/28/2014 By McGregor, Kristi L)
 Adapalene Topical (Differin®)
 Active Non-Drug (Verified 05/28/2014 By McGregor, Kristi L)
 Adhesive tape: Anaphylaxis; Itching; Runny nose
 Clinical Alerts
 None

Problem List

Problems
 Last Dx'd All Problems for this Patient
 07/03/2014 Dental caries [521.00]
 06/11/2014 Impetigo [68.4]
 AC separation, type 3, left, initial encounter [831.04]
 Duck gait [781.2] ; "test"
 Croup [464.4] ; "testing"
 06/01/2014 Zar possession [309.9]
 Belief in possession by Zar spirits [309.9]
 03/25/2014 Psoriasis [696.1]

Progress Notes						
Date	Th	Surf	Code	Description	Stat	Amount
07/03/2014	B	M	D2140	Provider: Dental Development, IS DDS (144464) •Amalgam - One Surface, Primary or Permanent	TP	
09/09/2013	21	O	D2140	Provider: Dental Development, IS DDS (144464) •Amalgam - One Surface, Primary or Permanent	TP	
05/15/2013	17		D7210	Provider: Dental Development, IS DDS (144464) •Surgical Removal of Erupted Tooth Requiring Elevation of Mucoperiosteal Flap and Removal of Bone and/or Section of Tooth	TP	
01/08/2013	28	M	D2140	Provider: Dental Development, IS DDS (144464) •Amalgam - One Surface, Primary or Permanent	TP	
11/09/2012	B	O	D2140	Provider: Dental Development, IS DDS (144464) •Amalgam - One Surface, Primary or Permanent	TP	
11/09/2012	17	O	D2140	Provider: Dental Development, IS DDS (144464) •Amalgam - One Surface, Primary or Permanent	TP	
10/30/2012	TR		D5110	Provider: Dental Development, IS DDS (144464) •Complete Denture - Maxillary	TP	
04/23/2012	16		15101	Provider: Dental Development, IS DDS (144464) Missing tooth	C	
08/23/2011	4	O	D2140	Provider: Dental Development, IS DDS (144464) •Amalgam - One Surface, Primary or	TP	
08/01/2011	24	ID.D	D2331	Provider: Dental Development, IS DDS (144464) •Resin-based Composite - Two Surfaces, Anterior specific to treatment notes ** Created: 08/01/2011 By Natalie F. Yoder	TP	
07/13/2011				Provider: Dental Development, IS DDS (144464) Clinical Note ** Created: 07/13/2011 By Mahnke, Andrea N		
07/07/2011	81		15009	Provider: Dental Development, IS DDS (144464) Watch Tooth	C	
07/06/2011	28	O	D2140	Provider: Dental Development, IS DDS (144464) •Amalgam - One Surface, Primary or Permanent	TP	
07/06/2011	8		15009	Provider: Dental Development, IS DDS (144464) Watch Tooth	C	
07/06/2011	9		15009	Provider: Dental Development, IS DDS (144464)	C	



Prevention Reminders - Immunizations - Requests

	DUE	Previous Service
Td-Adult/Tdap	OVERDUE	-
Mammogram	OVERDUE	-
Pap Smear	OVERDUE	-
Fasting Lipid Profile	OVERDUE	-
Urine Microalbumin Test	OVERDUE	-
Hemoglobin A1c	OVERDUE	-
Eye Exam	OVERDUE	-
Comprehensive Foot Exam	OVERDUE	07/21/09 - (CMR)
Pneumococcal	DUE	-
Prevention		
Td-Adult/Tdap	OVERDUE	-
Pneumococcal	DUE	-
Zoster	01/01/30	-
Early Detection		
Mammogram	OVERDUE	-

Vitals [View][Plans] [Expand]

- Needs Collection Height
- Needs Collection Weight
- Needs Collection Blood Pressure
- Needs Collection Body Mass Index
- Needs Collection Depression Screening PHQ
- Needs Collection Diabetes Care Plan (Plan Recommended)
- Needs Collection Tobacco Use
- Needs Collection Diabetic Foot Exam
- Needs Collection Functional Status

No Vitals Found.

Blood Type
No Blood Type Found.

Allergies/Adverse Reactions - Advance Directives - Clinical Alerts - Caregivers

Needs Review Active Drug
Needs Review Active Non-Drug

Active Drug
No Known Drug Allergies/Adverse Reactions (NKDA)

Active Non-Drug
No Known Non-Drug Allergies/Adverse Reactions (NKNDA)

Advance Directives
None

Clinical Alerts
None

Caregivers
None

Active Medications MedRec Required (Annual)

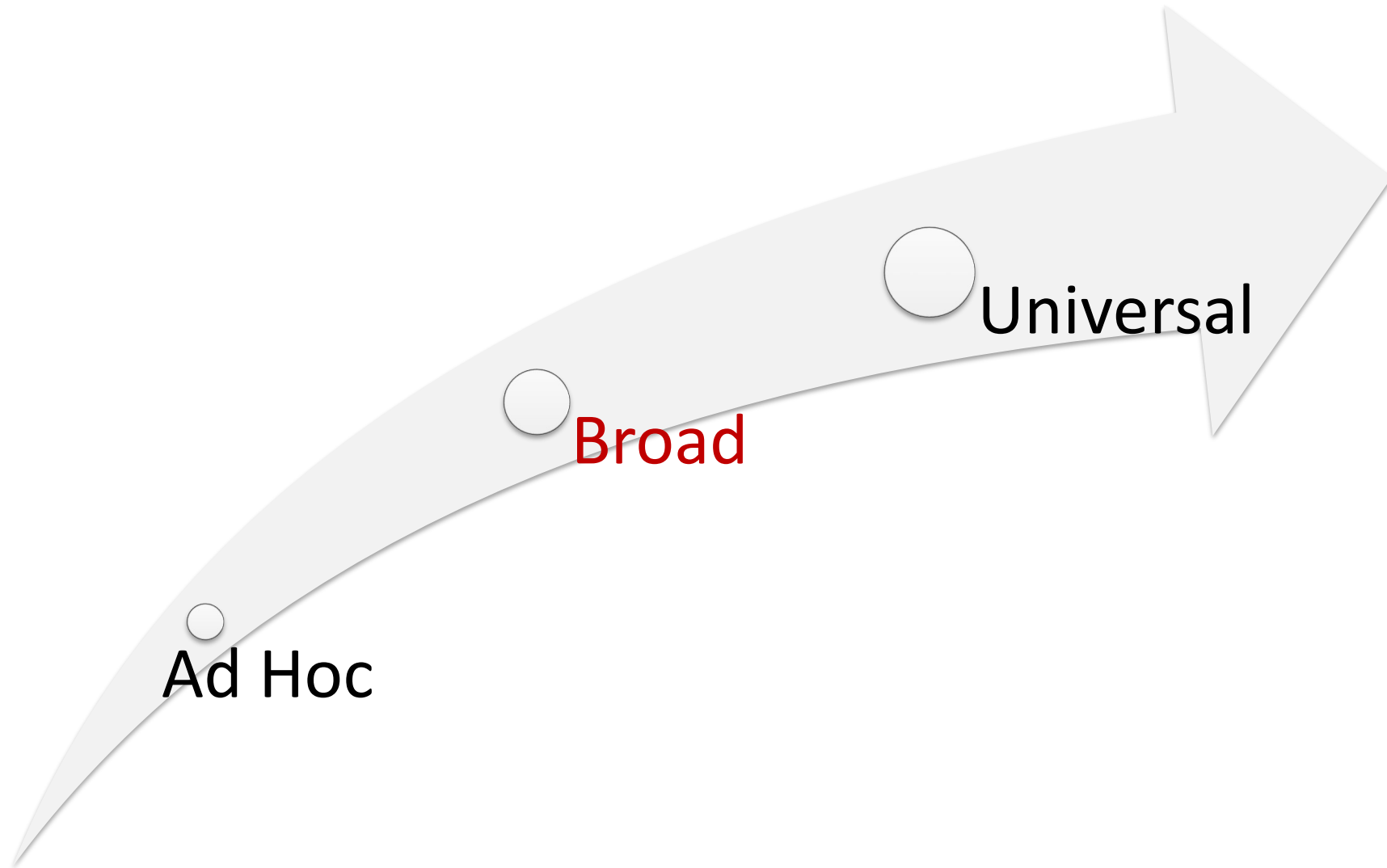
Last Updated	Medication
04/21/16	Acetaminophen (Tylenol Extra Strength®) 500mg Tablet 2 Tablet(s) (1,000 mg) by mouth every 4 to 6 hours
04/21/16	Amitriptyline 25mg Tablet 1 Tablet(s) (25 mg) twice daily
04/21/16	Amitriptyline 10mg Tablet 1 Tablet(s) (10 mg) by mouth twice daily
04/21/16	Amoxicillin 500mg Capsule 1 Capsule(s) (500 mg) three times daily
04/21/16	Fluticasone Nasal 50mcg/Actuation Spray, Suspension 1 Spray(s) in each nostril twice daily as needed
04/21/16	Lidocaine Topical 5% Ointment Apply as directed topically to affected area

Appointments (Not seen in FAMILY PRACT for 3 years)

No Appointments Found.

Dental Appointments

- Past**
- @ Dental Development, IS DDS(144464) - - (CMR)
TRAINING Dental Center
 - @ Dental Center, Park Falls (190649) - - (CMR)
Park Falls Dental Center
 - @ Dental Center, Park Falls (190649) - - (CMR)
Park Falls Dental Center
 - @ Dental Center, Park Falls (190649) - - (CMR)



One Integrated IT Platform: EPIC Wisdom



KP HealthConnect Integrated Health Record

- ❖ **One single platform** and supporting infrastructure for the KP EHR
- ❖ **Integration** of appointing, billing and claims functions
- ❖ **View and cancel** upcoming dental appointments
- ❖ **Scalable and flexible** technology supporting growing membership, integrated facilities and new care delivery models (mobile, worksite, teledentistry, virtual dental home)

Snapshot View

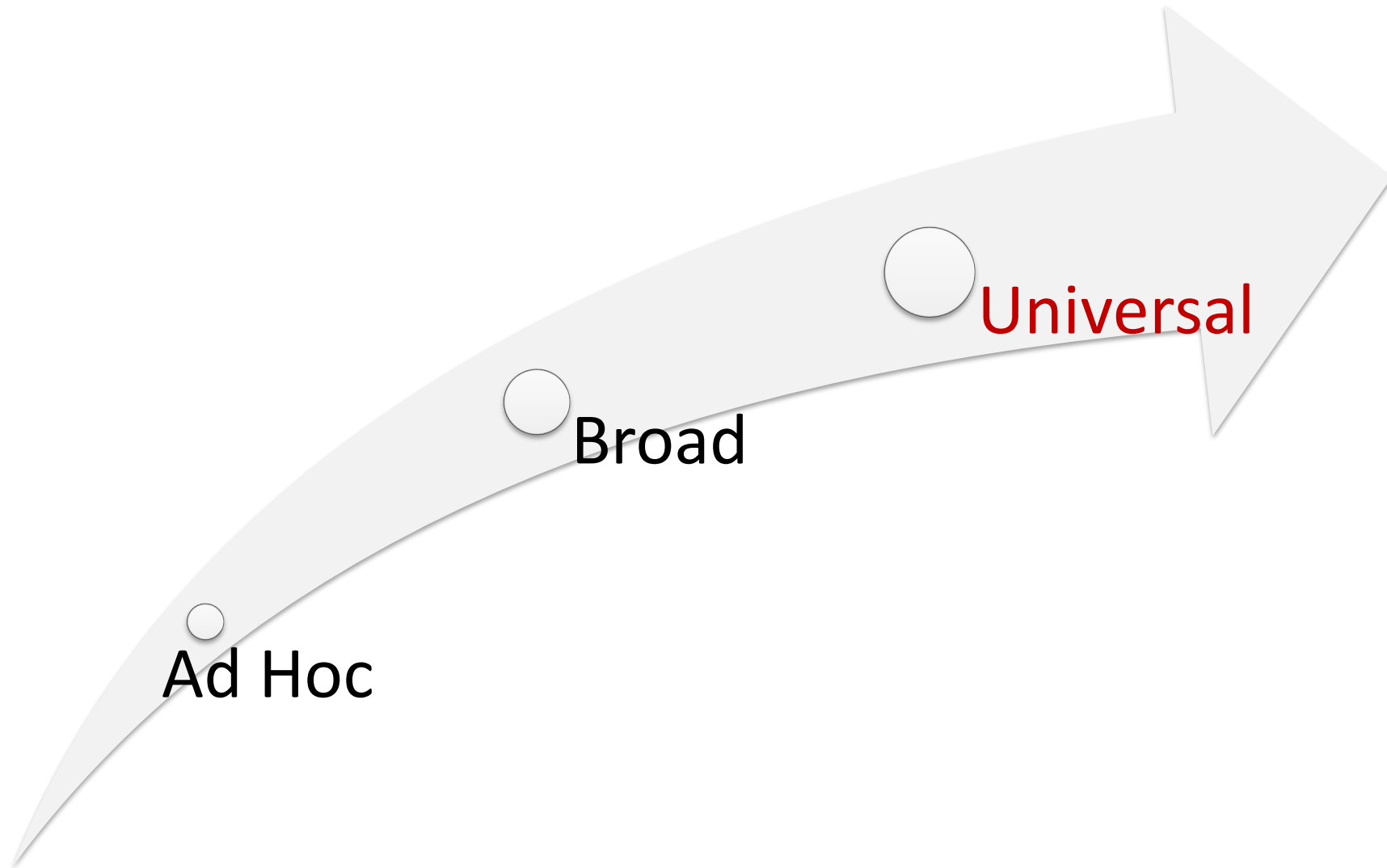
The screenshot displays the EPIC Snapshot View for patient Isabella Brussetti. The interface is organized into several panels:

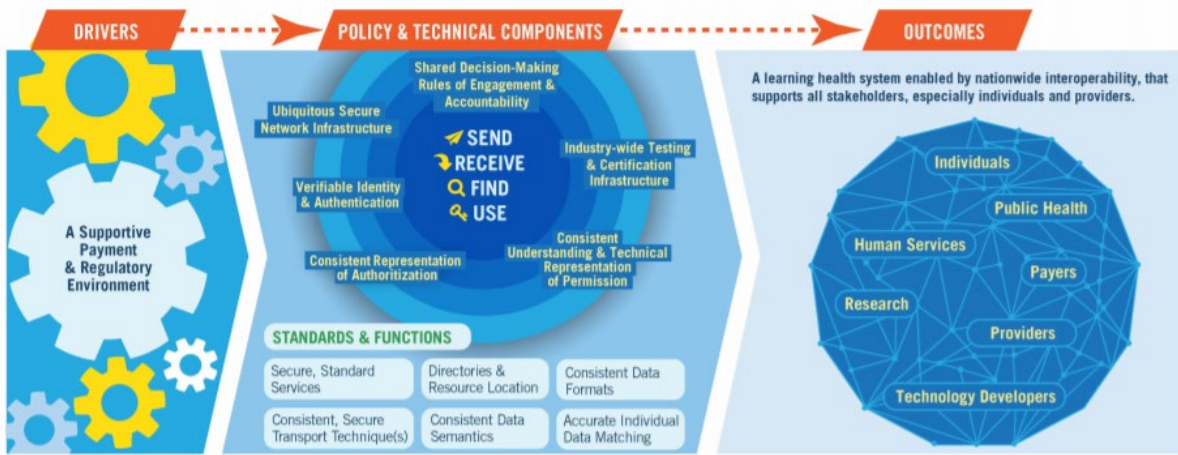
- Demographics:** Isabella Brussetti, 45 year old female, 3029 SE 28TH AVE, PORTLAND OR 97228. Contact info: 503-222-1344 (M), 503-261-2828 (H).
- Medications:** Atorvastatin (LIPITOR) 40 mg, 0.5T (20 MG) PO ONCE DAILY FOR CHOLESTEROL. Status: Start as Reviewed, Reviewed by You at 8:27 AM.
- Allergies:** No known allergies. Status: Start as Reviewed, Reviewed by You at 8:28 AM.
- Medical History:** FAMILY, HYPERCHOLESTEROLEMIA.
- Surgical History:** None.
- Family History:** None.
- Social History:** Smoking Status: Never Smoker, Urine: No.
- Marijuana Use History:** Custom History: None.
- Vitals:** Encounter date: 8/25/18, 8/25/18. Last reading: 0:25 AM, 7:34 AM. BP: 120/80, 120/80. Pulse: 72, 70.
- Exercise Vitals:** No data recorded.
- My Last Outpatient Progress Note:** Status: Incomplete, Last Edited: Thu Aug 23, 2018 11:59 AM PDT, Encounter Date: 8/25/2018. Chief Complaint: (HYG) CHIEF COMPLAINT:137100.
- Patient Dental Care Compliance:** OHAP Screen: [yes/no: 51]. Oral Cancer Screen Completed: [yes/no: 51]. Findings: (None Noted OR 61532 "None noted").
- Health Maintenance:** Topics include PAP AGE 30-64 Q5 YRS (due 3/24/2021), MAMMOGRAM SCREENING (due 3/24/2021), and INFLUENZA VACD (due 9/12/2018).
- Reminders and Results:** None.
- Significant History/Details:** Interpreter needed? No. No open orders.
- Family Comments:** None.
- Cumulative Estimated Radiation Dose at KP/NC, starting 6/12/2010:** None.
- Implants:** No implants to display.



Source: <https://oralhealth.hsdm.harvard.edu/files/oralhealth/files/kennethwright.pdf>







Health Information Exchange

The goals are:

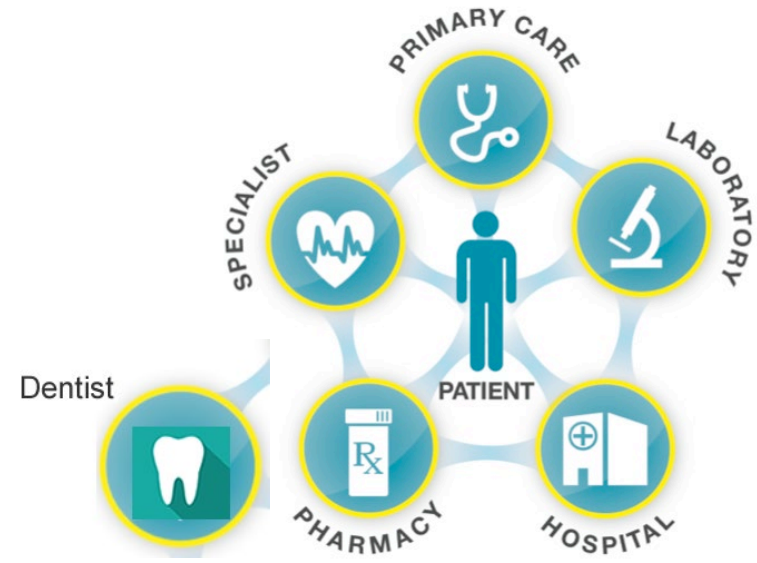
- **2015-2017:** Send, receive, find and use priority data domains to improve health care quality and outcomes.
- **2018-2020:** Expand data sources and users in the interoperable health IT ecosystem to improve health and lower costs.
- **2021-2024:** Achieve nationwide interoperability to enable a learning health system, with the person at the center of a system that can continuously improve care, public health, and science through real-time data access.

Source: Connecting Health and Care for the Nation: A Shared Nationwide Interoperability Road Map-<https://www.healthit.gov/sites/default/files/hie-interoperability/Roadmap-Executive%20Summary-100115-4pm.pdf>

The Office of the National Coordinator for Health Information Technology

Connecting Health and Care for the Nation

A Shared Nationwide Interoperability Roadmap



Source: <https://www.healthit.gov/topic/health-it-and-health-information-exchange-basics/health-information-exchange>



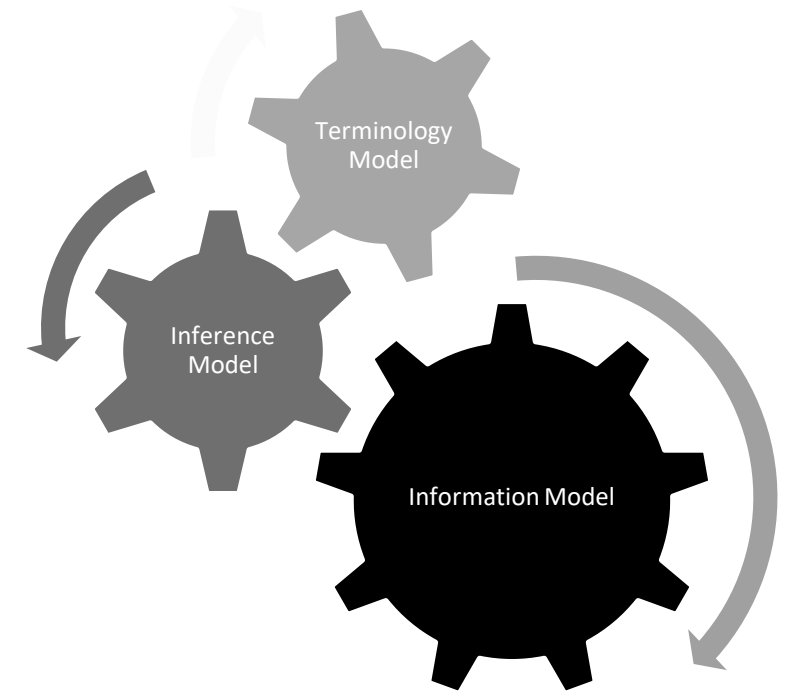
Interoperability

- According to section 4003 of the **21st Century Cures Act**, the term **'interoperability,'** with respect to health information technology, means such health information technology that— "(A) enables the **secure exchange** of electronic health information with, and use of electronic health information from, other health information technology **without special effort on the part of the user**; "(B) allows for **complete access, exchange**, and use of all electronically accessible health information for authorized use under applicable State or Federal law; and "(C) **does not constitute information blocking** as defined in section 3022(a).“



Syntactic + Semantic Interoperability

- In order for HIE, we need to achieve syntactic and semantic interoperability.
 - Syntactic Interoperability: ability of multiple systems to exchange information
 - Semantic Interoperability: ability to use the information that has been exchanged.
- Need to take into account 3 principled models and their interfaces*



* Interface of Inference Models with Concept and Medical Record Models, (Rector AL et al. , AIME 2001: 314-323)



ANSI/ADA - Standards Committee on Dental Informatics

ADA American Dental Association®
America's leading advocate for oral health

- ANSI/ADA Specification 1000: Standard Clinical Data Architecture for the Structure and Content of an Electronic Health Record
- ANSI /ADA Specification 1039: Standard Clinical Conceptual Data Model
- ANSI /ADA Specification 1040: Dental Extension to the ASTM Continuity of Care Record
- ANSI /ADA Specification 1067: Electronic Dental Record System Functional Requirement
- ADA Tech Report No. 1085: Implementation Guidelines for Secure Transmission of PHI in Dentistry

Health Level 7 (HL7)

- HL7 Electronic Health Records (EHR) Dental Health Functional Profile, Release 1- US Realm
- HL7 FHIR (Fast Healthcare Interoperability Resources)



The Value of Oral Health Information Exchange

Case Study: Integrated Model of Care





55 Clinical Locations *in* 34 Communities

WE HAVE A
CHILDREN'S HOSPITAL

1 of only 4 *in* Wisconsin

220,000
Security Health Plan
members

across all 72 Wisconsin counties

**Marshfield Clinic
Research Institute**

the largest

**PRIVATE MEDICAL
RESEARCH INSTITUTE**
in Wisconsin

3 Ambulatory
Surgery Centers

3 Skilled Nursing
Facilities

6 Research
Centers

7 Hospitals

8 Urgent Cares

10 Dental Clinics

17 Pharmacies

33 Clinical
Laboratories

1,200
PROVIDERS

328,000
Unique Patients

3.5 million
Patient Encounters

Academic Location *for the*
University of Wisconsin

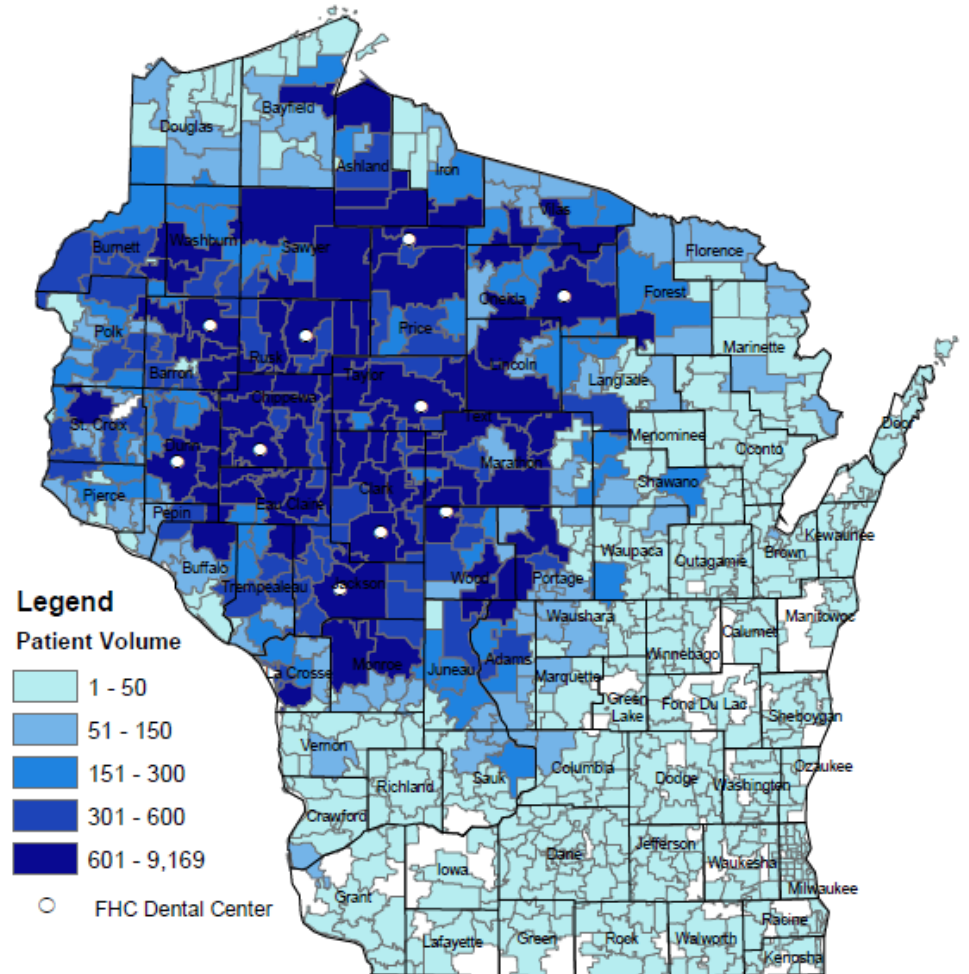
School of Medicine & Public Health

We collaborate with
**400 Community
Organizations**
on Community Health Initiatives

November 2002 - June 30, 2020

- 10 FQHC providing dental services to people from all of Wisconsin's 72 counties

Fiscal Year	# of Unique Patients
2007	12,504
2008	19,192
2009	24,138
2010	30,680
2011	40,114
2012	46,346
2013	44,233
2014	49,389
2015	51,485
2016	54,896
2017	58,894
2018	58,932
2019	56,538

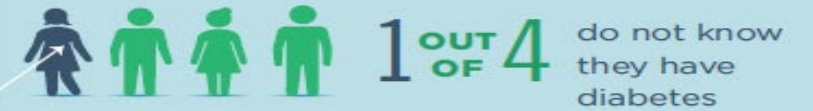


Diabetes in United States

DIABETES

29.1
MILLION

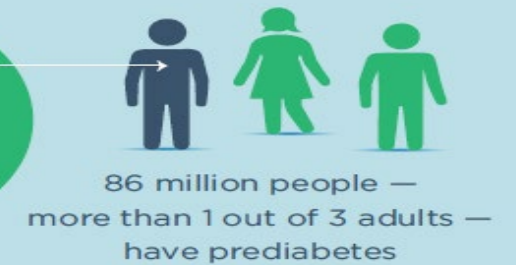
29.1 million people have diabetes



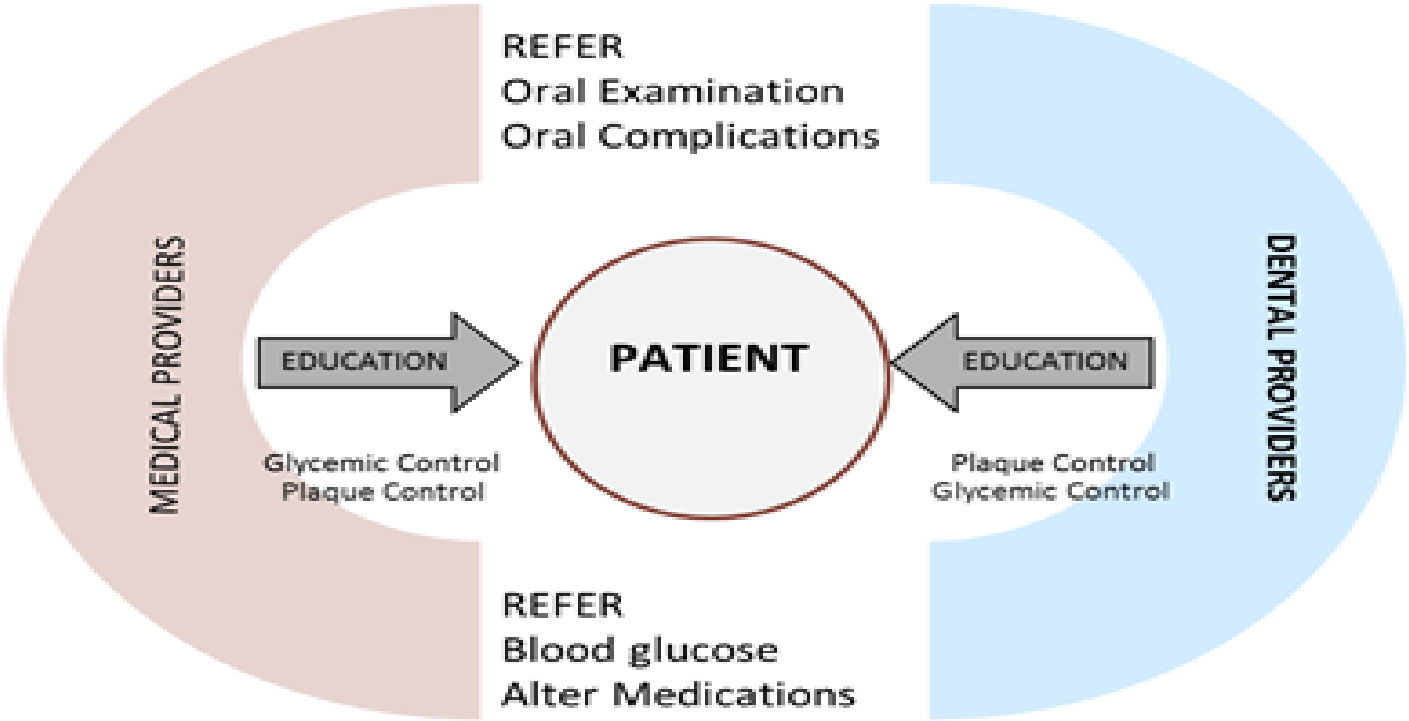
- The estimated total Death rates due to diabetes will double between 2005 to 2030 and will be the 7th leading cause of death in 2030.
- The U.S. Department of Health and Human Services have listed Dental diseases as one of the complications of Diabetes.

PREDIABETES

86
MILLION



Patients with Diabetes



Oral Exam Alerts for All Diabetic Patients in EHR

Alert for conducting Visual Oral Examination of Diagnosed Diabetic Patients in EMR

- If partially dentulous AND has not been to a dentist in more than 6 months;
- If completely edentulous AND has not been to a dentist in more than 12 months;

Rebecca Training-Dental (2091827) Female 48 years 01/01/1970 - Dashboard

File View Tools Clinical Link Help

Prevention

Td-Adult/Tdap	OVERDUE	-
Flu	DUE	-
Pneumococcal-please ask your provider to review RECI for vaccine type due PPSV23 or PCV13	DUE	-
Zoster	01/01/20	-

Early Detection

Mammogram	OVERDUE	-
Consider Cervical CA Screening	OVERDUE	-
Fasting Lipid Profile	OVERDUE	-

Diabetes Type 1

Fasting Lipid Profile	OVERDUE	-
Urine Microalbumin Test	OVERDUE	-
Hemoglobin A1c	OVERDUE	-
Oral Exam	OVERDUE	declined 08/16
Comprehensive Foot Exam	OVERDUE	07/21/09 - (CMR)
Flu	DUE	-
Pneumococcal-please ask your provider to review RECI for vaccine type due PPSV23 or PCV13	DUE	-

Vitals [View]

Needs Collection Height
Needs Collection Weight
Needs Collection Body Mass Index
Needs Collection Oral Exam
Needs Collection Tobacco Use

07/14/14 Hypertension Care Plan (View Plan)
04/30/14 Blood Pressure 120/80 mmHg
11/05/13 Depression Screening PHQ Score: 19 (View Plan)
Functional Status:
11/05/13 Deaf/difficulty hearing - Yes
Blind / difficulty seeing - Yes
07/24/13 Weight 24.95 kg (55 lbs)
07/23/13 Visual Acuity: both eyes; 20/13-1; correction
05/30/13 Body Mass Index 11.4 kg/m² (Plan - See PCP)
05/30/13 Height 97.79 cm (38.5 in), 87.08 %
05/30/13 Pulse 62 bpm
05/30/13 Respiration 18 rpm
05/30/13 Temperature 36.00 °C (96.8 °F)
Tobacco Use: Yes - Cigarettes
03/15/13 Former smoker - greater than one year
Work secondhand exposure
02/25/13 Length 165.10 cm (65 in)

Blood Type





Section 9: Oral Care

Concern	Care/Test	Frequency
Oral Care	<ul style="list-style-type: none"> Simple inspection of gums and teeth for signs of periodontal disease Oral exam by general dentist or periodontal specialist 	<p>At diagnosis, then each focused visit</p> <p>At diagnosis, then individualize based on oral assessment and risk</p>

MAIN TOPICS INCLUDED IN THIS SECTION:

- Visual Oral Inspection and Oral Health Education by Primary Provider
- Oral Examination by Dentist
- A Team Approach: Medical-Dental Collaboration
- Identifying Undiagnosed Diabetes in the Dental Care Setting
- Identifying Undiagnosed Periodontal Disease in the Primary Care Setting
- Additional Resources
- References

Identifying Undiagnosed Periodontal Disease in the Primary Care Setting

Collecting Oral Exam Information in EHR

Collection

Oral Exam:

Collected Date Time: 09/04/2014, 00:00 [Current Time]

Last visit to a dental provider: [Clear] - 07/20/10

* Last periodontal exam/teeth cleaning (required):

Date / /

Unsure In the last year In the last 3 months In the last 6 months In the last 9 months More than a year

Does the patient have any natural teeth present?: [Clear]

Yes No

Did you conduct a visual oral examination today?: [Clear]

Yes No

Visual Oral Exam Observations (optional):

Bad Breath Swollen gums Bleeding gums

Redness of the gums Ulcers in the mouth Red/White lesions in the mouth

Tooth decay Broken teeth Missing teeth

Other

None

Refer to (optional):

Internal Dentist (FHC) External Dentist Advised the patient to follow-up with their Dentist



JDR Clin Trans Res. 2018 Apr;3(2):188-194. doi: 10.1177/2380084418759496. Epub 2018 Feb 26.

Screening for Diabetes Risk Using Integrated Dental and Medical Electronic Health Record Data.

Acharya A¹, Cheng B², Koralkar R¹, Olson B¹, Lamster IB², Kunzel C³, Lalla E³.

- Best performing, parsimonious model that can be implemented in a dental setting for presence of prediabetes/diabetes:
 - Model 12: **age, number of missing teeth, % of teeth with at least one pocket $\geq 5\text{mm}$, and overweight/obesity;**
 - Easily implementable with the routinely collected data in a dental setting;
 - Achieved an **area under the ROC** (Receiver Operating Characteristic) curve of **0.68** (95% CI: 0.659, 0.693);
 - Yielding a **sensitivity (TPR) of 0.78** and a **specificity (TNR) of 0.46;**



Diabetes Risk Alert in EDR: Machine Learning Approach

[Hide Dental Alerts & Medical Data](#)

Diabetic Alerts

Patient is a known Diabetic and has not seen his/her Primary Care Provider in the last 12 months: Please advise the patient to see their Primary Care Provider

Observations

Needs Collection Height
 Needs Collection Weight
 Needs Collection Body Mass Index
 Needs Collection Tobacco Use
 Needs Collection Functional Status

05/25/17 Blood Pressure 120/80 mmHg
 Tobacco Use: Current - Cigarettes

12/01/16 Home secondhand exposure
 Not interested in quitting

05/11/16 Height 139.70 cm (55 in)

12/18/15 Weight 68.04 kg (150 lbs)
 Functional Status:
 Deaf/difficulty hearing - Yes
 Blind / difficulty seeing - Yes
 Difficulty dressing / bathing - Yes

05/30/13 Body Mass Index 11.4 kg/m² (Plan - See PCP)

Dental Alerts

Pre-Medication REQUIRED
 Angina
 Anorexia
 Arthritis
 Artificial heart valve
 Asthma
 Bisphosphonates
 Blood Thinners
 Cancer

[Hide Dental Alerts & Medical Data](#)

Diabetic Alerts

Patient is at risk for Dysglycemia: Please consider referring to Primary Care Provider

Observations

Needs Collection Height
 Needs Collection Weight
 Needs Collection Blood Pressure
 Needs Collection Fall Risk
 Needs Collection Body Mass Index
 Needs Collection Tobacco Use
 Needs Collection Blood Glucose Screening
 Needs Collection Functional Status

06/05/16 Blood Pressure 120/80 mmHg
 06/05/16 Body Mass Index 33.6 kg/m²
 06/05/16 Height 142.24 cm (56 in)
 06/05/16 Weight 68.04 kg (150 lbs)
 09/10/14 Falls: None
 09/10/14 Tobacco Use: Never
 No secondhand smoke exposure

Dental Alerts

None

Family History

Needs Collection

Active Medications MedRec Required (Transition)

Last Updated

07/16/14 Albuterol (AccuNeb®) Inhalation 1.25mg/3 mL Nebu...
 07/15/14 ALPRAZolam 0.25mg Tablet 1 Tablet(s) (0.25 mg) by m...



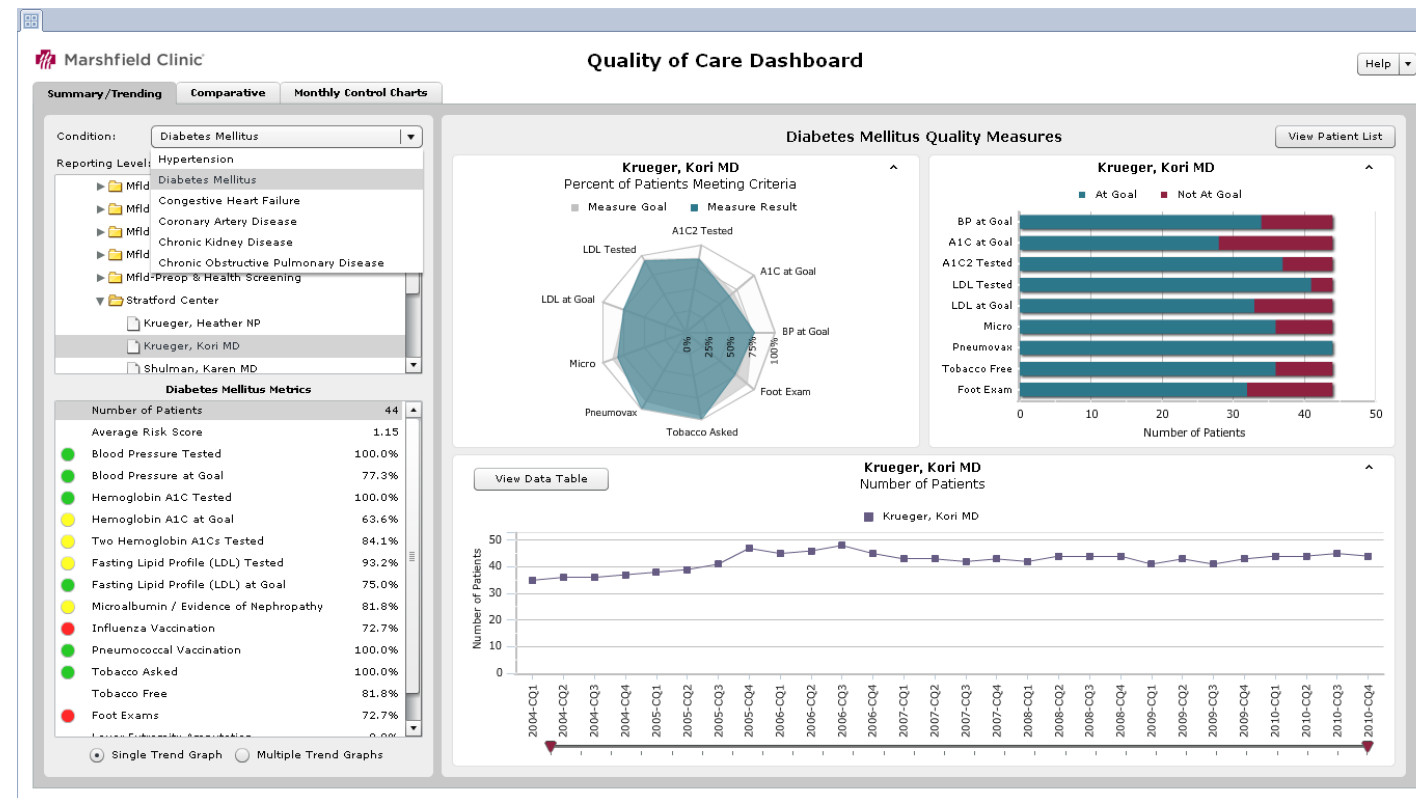
Integrated Medical-Dental Enterprise Data Warehouse

- Comprehensive data warehouse, supporting business and research queries
- Contains about 10 million patient-years of data
- The availability of patient's medical and dental data is enabling several oral-systemic studies;
- Enabling development of quality improvement initiatives;



Physician Group Practice Demo

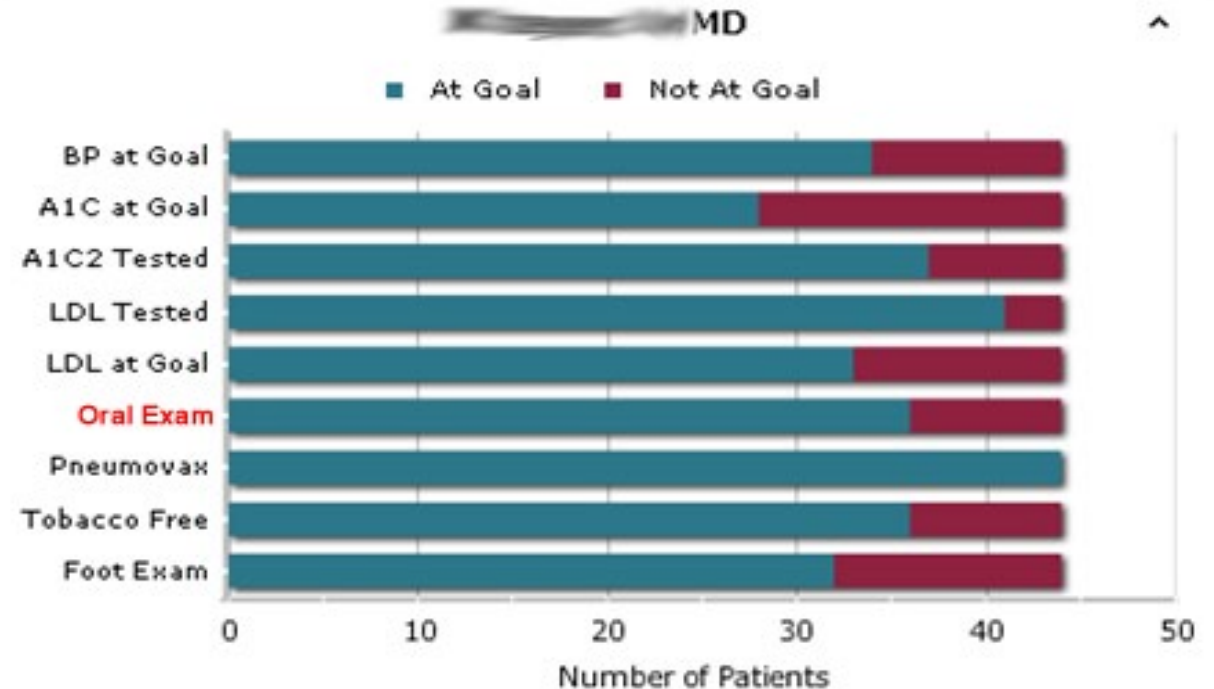
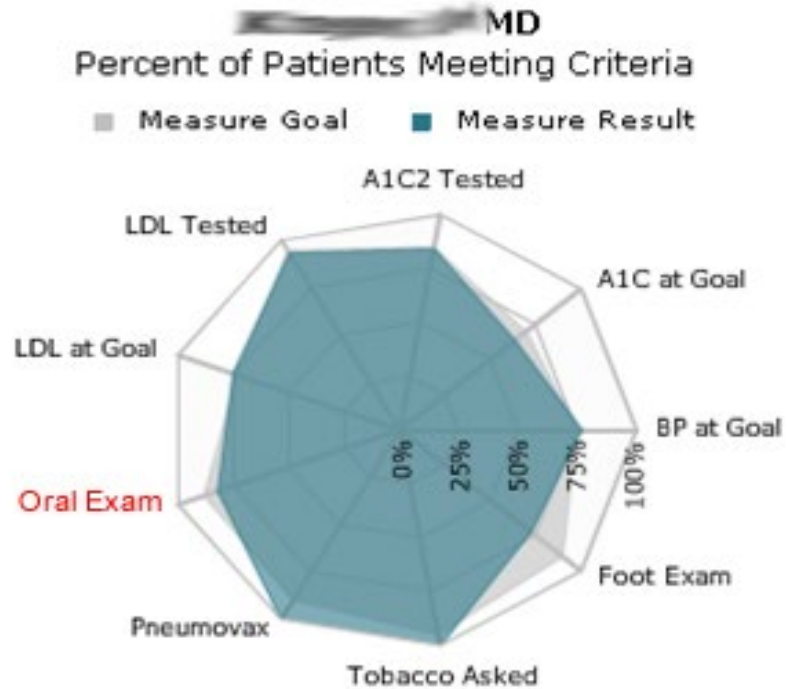
- MCHS 1 of 10 large PGP invited by CMS → prove that providing high quality coordinated health care could also save \$;
- MCHS this year exceeded 98 percent of the quality measures;
- Saved > \$118 million over the 5 performance years reported to Medicare program;
- Developing similar HIT infrastructure to managing oral-systemic diseases;



Extension of the Quality of Care Dashboard to Monitor Oral Health

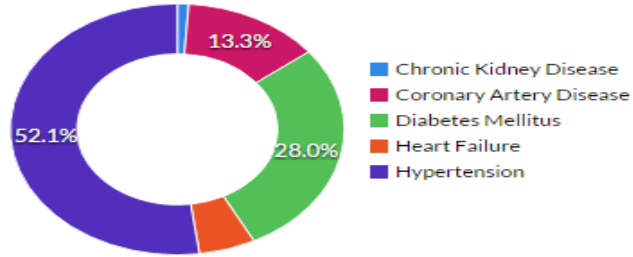
Diabetes Mellitus Quality Measures

[View Patient List](#)

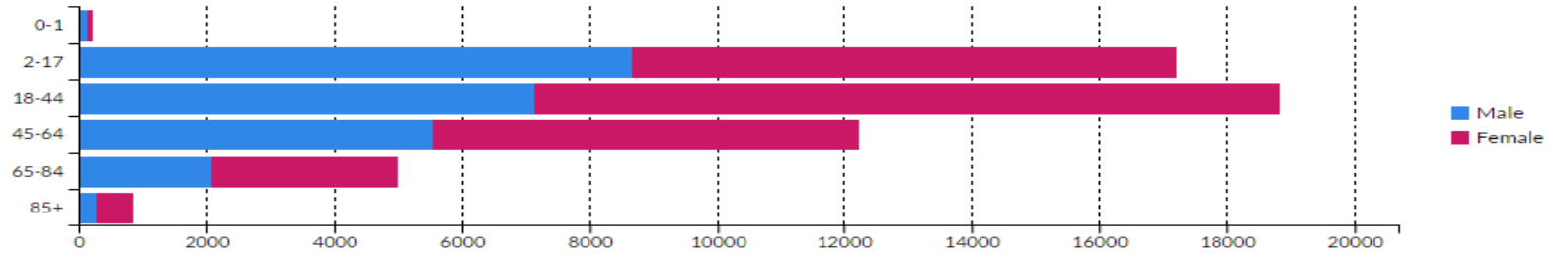


Population Health

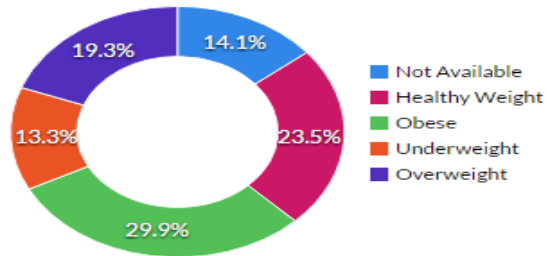
Disease Conditions



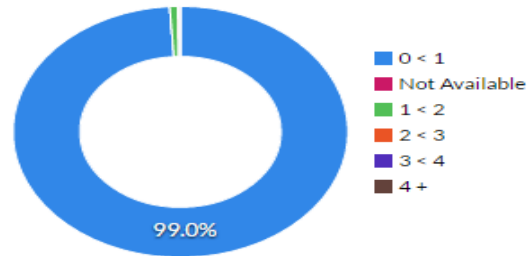
Age & Gender Demographics



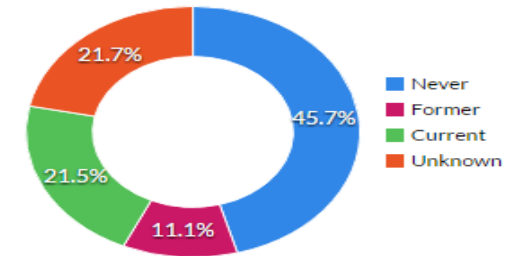
BMI Category



HCC Risk Score

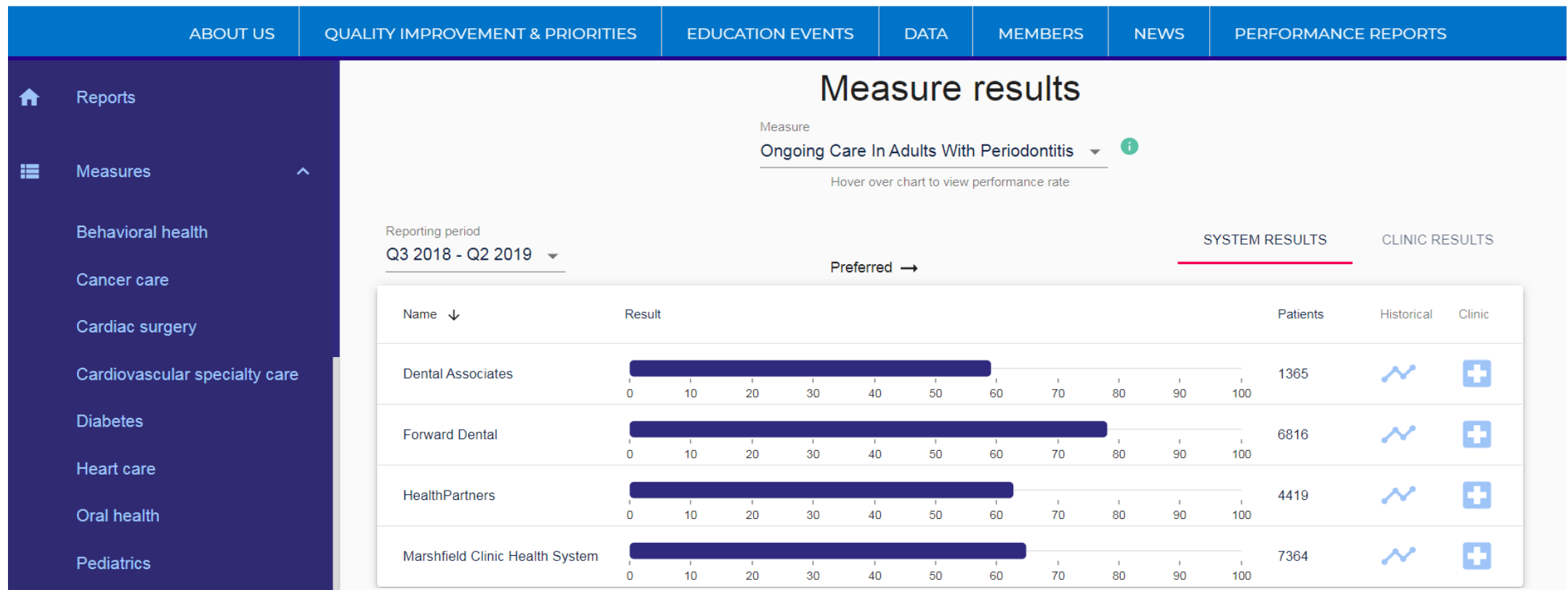


Tobacco Use



Dental Quality Improvement Initiatives

WCHQ has created the nation's first regional oral health collaborative.



Discussion Paper

After Visit Summaries: A Tool Whose Time Has Come for Use in Dentistry

Alice M. Horowitz, Lindsey A. Robinson, Man Wai Ng, and Amit Acharya*
July 9, 2014

INSTITUTE OF MEDICINE Advising the nation • Improving health
OF THE NATIONAL ACADEMIES

*The authors are participants in the activities of the IOM Roundtable on Health Literacy.

After Visit Summaries & Patient Portals

Service name	Due next	Last service date	Request appointment
▶ Comprehensive Foot Exam	Overdue		<input type="checkbox"/>
▶ Oral Exam	Overdue	10/13/2011	<input type="checkbox"/>
▶ Fasting Lipid Profile	Overdue	6/20/2012	<input type="checkbox"/>
▶ Pneumococcal	Overdue		<input type="checkbox"/>

CONDITIONS AND DIAGNOSES

Conditions and diagnoses come in many shapes and sizes. Some are as minor as a cut that requires an urgent care visit while others might be life altering.

Contact Your Care Team
We are ready to assist you with questions regarding your conditions and diagnoses.

Send a message

Share Download Print

Active Conditions

Diabetes mellitus with periodontal disease

(2016-present) [History](#)

Additional Resources:
[Krames Staywell »](#)
[MedlinePlus »](#)

Procedures
[View procedures »](#)

Right sacral radiculopathy

(2016-present) [History](#)

Recommended Articles
• [Lumbar MRI scan](#)
• [Lumbar MRI scan](#)

Additional Resources:
[Krames Staywell »](#)
[MedlinePlus »](#)

Procedures
[View procedures »](#)

Radicular low back pain

(2014-present) [History](#)

Recommended Articles
• [Lumbar MRI scan](#)
• [Lumbar MRI scan](#)

Additional Resources:
[Krames Staywell »](#)
[MedlinePlus »](#)

Procedures
[View procedures »](#)

Displacement of intervertebral disc of lumbosacral region

(2016-present) [History](#)

Additional Resources:
[Krames Staywell »](#)
[MedlinePlus »](#)

Procedures
[View procedures »](#)



Oral Health

CDC > Oral Health home > Dental Sealants



Oral Health home

Basics of Oral Health +

Oral Health Fast Facts +

Oral Health Infographics +

Community Water Fluoridation +

Dental Sealants -

Dental Sealant FAQs

School Sealant Programs +

[SEALS](#)

SEALS

Sealant Efficiency Assessment for Locals and States (SEALS) is designed to capture, store, and analyze school sealant program data. Programs can use this information to evaluate the effectiveness of individual [school sealant programs](#) by comparing the benefits (e.g., averted treatment) with the associated costs (e.g., resources used, labor hours). SEALS also allows programs to generate both an individual school sealant event report and a consolidated report summarizing all program school sealant events.



SEALS allows local sealant programs to evaluate their administrative and supply costs, and resources used to deliver services in schools. Using SEALS ensures uniform data collection across diverse programs. As a result, state oral health programs can use SEALS data to analyze the reach and effectiveness of local programs across their state. They can compare programs to identify best practices contributing to school sealant program efficiency and set benchmarks for per child costs and service delivery times.

[SEALS log-in](#)



Children's Health Alliance of Wisconsin

About Initiatives Resource Library Events News Contact Us [Donate](#)

Wisconsin Seal-A-Smile

Wisconsin Oral Health Coalition Healthy Smiles for Mom and Baby Wisconsin Seal-A-Smile Wisconsin Medical Dental Integration



Provide Service

John Doe on

Quick moves ▾

- Decay Present
- ↑ Tooth Partially Erupted
- Sealant Present
- Sealant Prescribed
- ⚙ Tooth Filled
- P Primary Tooth
- ★ Sealant Placed Today
- Reseal Recommended
- ✕ Tooth Missing
- Non Program Sealant Present

Tooth 29 ✕

Tooth Status

- Decay Present
- Tooth Filled
- Tooth Missing
- Tooth Partially Erupted

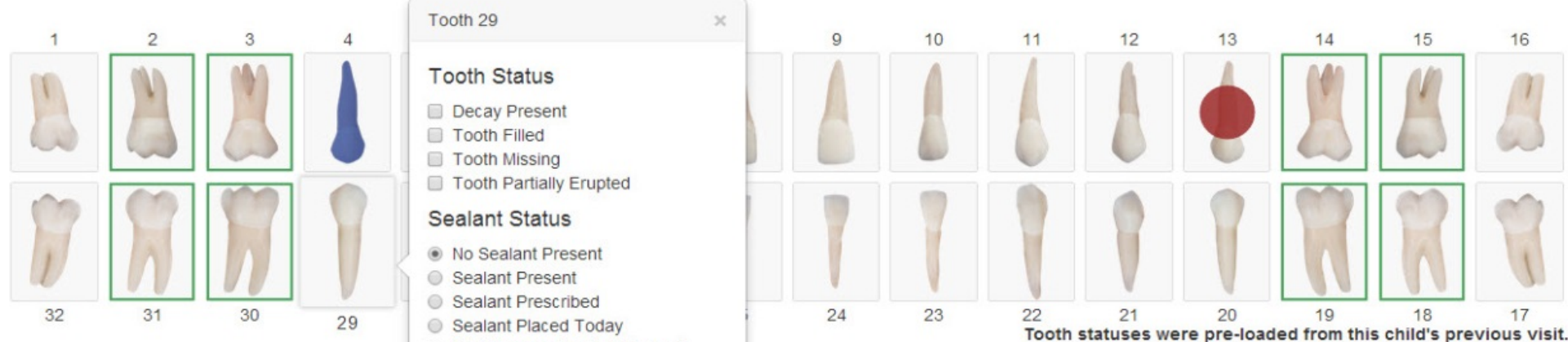
Sealant Status

- No Sealant Present
- Sealant Present
- Sealant Prescribed
- Sealant Placed Today
- Non Program Sealant Present
- Reseal Recommended

Primary Status

- Permanent
- Primary

close



Tooth statuses were pre-loaded from this child's previous visit.

Services

Services Provided Today

- Screening
- Fluoride Treatment
- Sealant Delivery
- Retention Check

Service History





HHS Public Access

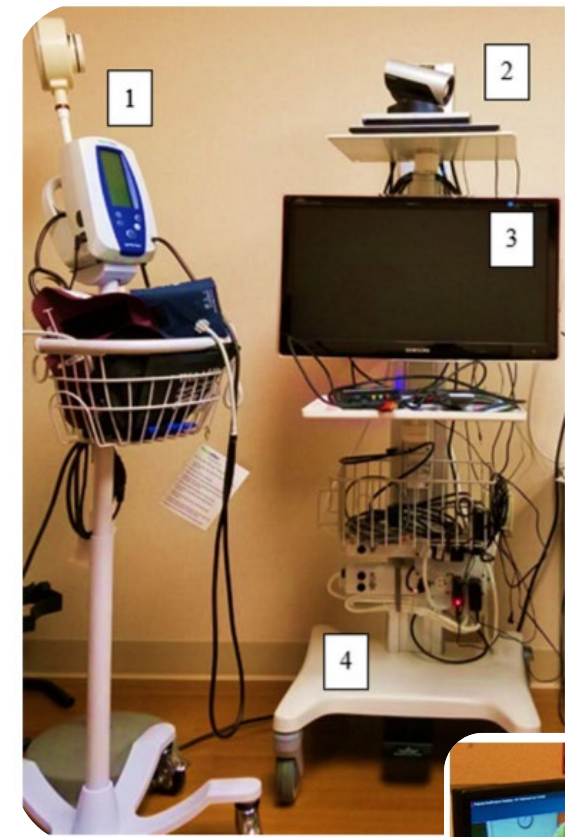
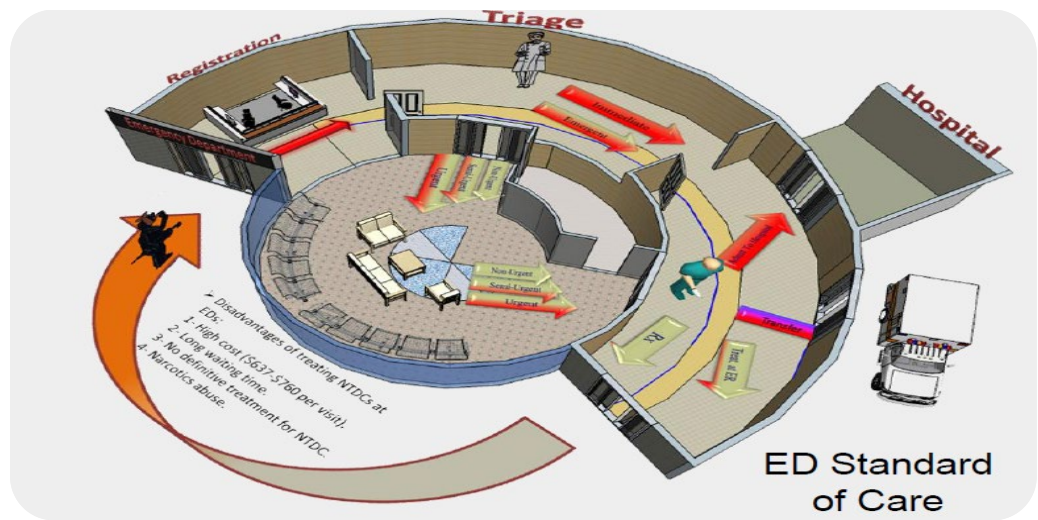
Author manuscript

Am J Dent. Author manuscript; available in PMC 2020 July 12.

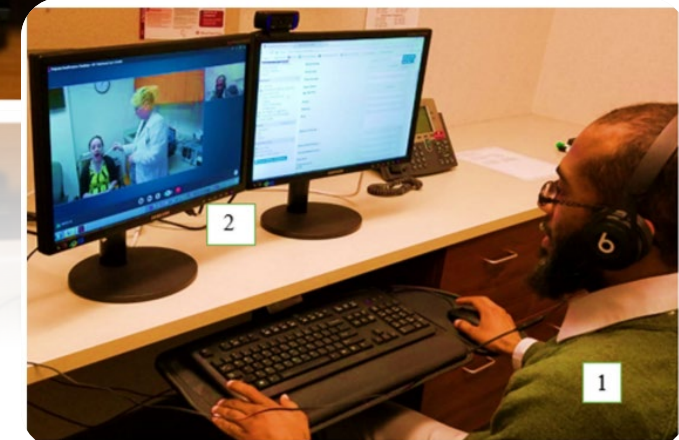
Published in final edited form as:
Am J Dent. 2020 February ; 33(1): 48–52.

Feasibility of Establishing Tele-Dental Approach To Non-Traumatic Dental Emergencies In Medical Settings

Adham Abdelrahim, BDS, MSc^{a,b}, Neel Shimpi, BDS, MM, PhD^a, Harshad Hegde, BE, MS^a, Katelyn C Kleutsch^a, Po-Huang Chyou, PhD^c, Gaurav Jain, DDS^d, Amit Acharya, BDS, MM, PhD^a



- 1= Vital signs monitor
- 2= HD Conference Camera System
- 3= TV/Monitor
- 4= Telehealth cart
- 5= MouthWatch intraoral camera



Acknowledgements



National *Interprofessional Initiative*
on Oral Health *engaging clinicians
eradicating dental disease*

National Institute of Dental
and Craniofacial Research



SecurityHealth Plan_{SM}
Promises kept, plain and simple.[®]



Marshfield Clinic[®]
Research Institute



Marshfield Clinic[®]

 **DELTA DENTAL**[®]

HRSA
Health Resources & Services Administration



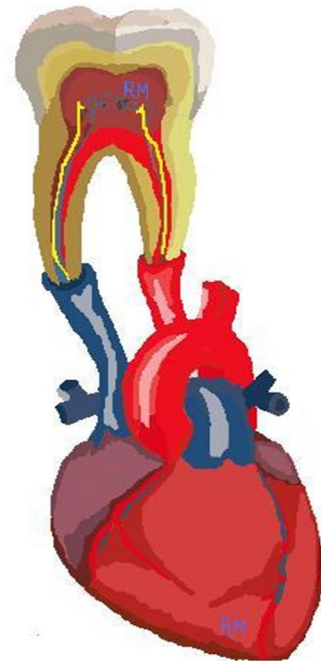
“The best scientific thought is agreed that dentistry is a field of medicine. . . There is no logical right whatever to isolate [the oral cavity] from the rest of the body as if it were made up . . . of ivory pegs in stone sockets.”

– Dr. Alfred Owre

Dean of Dentistry

University of Minnesota, 1905-27

Columbia University, 1927-33



Thank You!

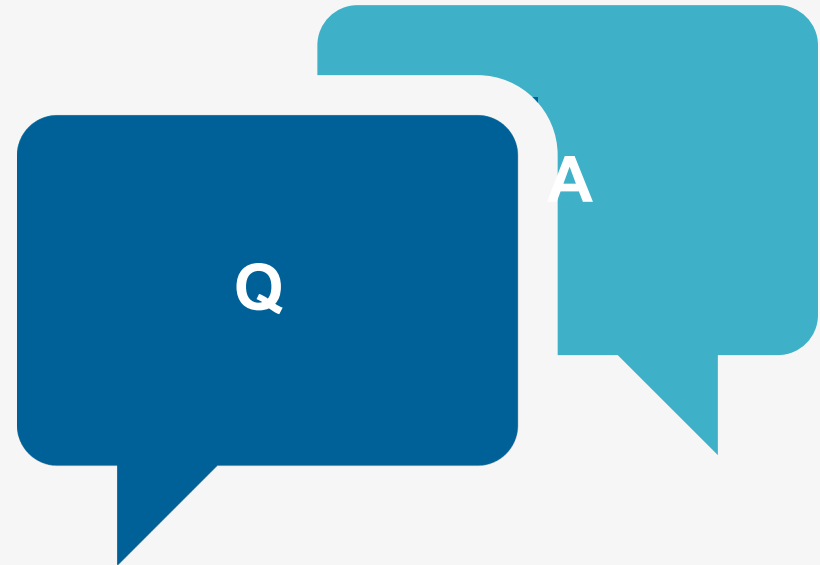


Barriers to Information Sharing

POLLING



Panel Discussion and Audience Questions



Webinar Evaluation

<https://www.dentaquestpartnership.org/node/213235>

Must complete by **EOD Wednesday, November 25 in order to receive CE credit*

Upcoming Sessions:

- Oral Health Interoperability and Care Coordination - November 17, 1:00 pm ET
- Social Determinants of Health and Oral Health IT – Thursday, November 19, 10:00 am ET
- Oral Health System Transformation: Healthcare Data and Technology as a Driver for Health Improvement – Thursday, November 19, 1:00 pm ET

[Sign up](#) to receive our newsletter to get more information on future webinars!

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Partnership
for Oral Health Advancement