

Indian Health Service

IHS EDR system and IHS OIT HIT Modernization

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AUGUST 23, 2023



2023 IHS OIT Partnership Conference

Disclosure of financial or other conflict of interest:

Dr Knutson has no financial ties, nor incentives, nor other conflict of interest with any commercial enterprises or organizations.

All screen shots in this presentation are of test/demonstration patients. No actual patient information is displayed.

IHS EDR Program / HIT Modernization

IHS EDR Program Update:

- IHS EDR Program Mission, Objectives and Strategy
- Status of IHS EDR Enterprise System
 - EDR Program “Admin Tool”
- IHS EDR and IHS HIT Modernization
 - EDR / EHR Interoperability
- Value-based Healthcare: Implications for IHS Dental Programs
- Future Evolution of IHS EDR / EHR Programs
- Interoperability-enhanced Healthcare

IHS EDR Program: Support IHS Mission & Vision

The IHS Electronic Dental Record program (EDR) directly supports IHS providers and clinics to maximize quality oral health services for federally recognized tribes seeking high-value dental healthcare for all eligible patients.

- ***IHS Mission: To raise the physical, mental, social, and spiritual health of American Indians and Alaska Natives to the highest level***
- ***IHS Vision: Healthy communities and quality health care systems through strong partnerships and culturally responsive practices***



IHS EDR Program Goals

IHS EDR Strategic Goals (in support of IHS Strategic Plan):


➤ Goal 1:

- Provide State of the Art EDR technology, maintain cutting edge innovation
- Support active interfaces with multiple IHS I/T/U EHR systems

➤ Goal 2:

- Identify patients-at-risk to ensure access to appropriate care
- Track effectiveness of care and overall outcome of program success

➤ Goal 3:

- Modernize information technology support
 - Provide data analytics and reporting system
 - Prepare for future innovation and development
- 

IHS EDR Purpose

- Support IHS Mission, Vision and Goals
- Patient Safety
 - Coordinate patient information from EHR, other sources
- Standardize & streamline patient care clinical documentation
- Support Revenue Generation
- Provide Clinical Data for IHS Leadership Decision Support
- EDR / EHR and IHS Workforce Modernization
- Provide / support IHS EDR system Training

IHS EDR Program Strategic *Goal* for [Oral] Health

People are typically born in excellent oral health
with no oral health disease.

Therefore, the overall mission to improve oral health is
actually a charge to maintain the original excellent oral health.

Prevention is the key to overall ‘improvement’ of oral health

IHS EDR Program Strategic *Plan* for [Oral] Health

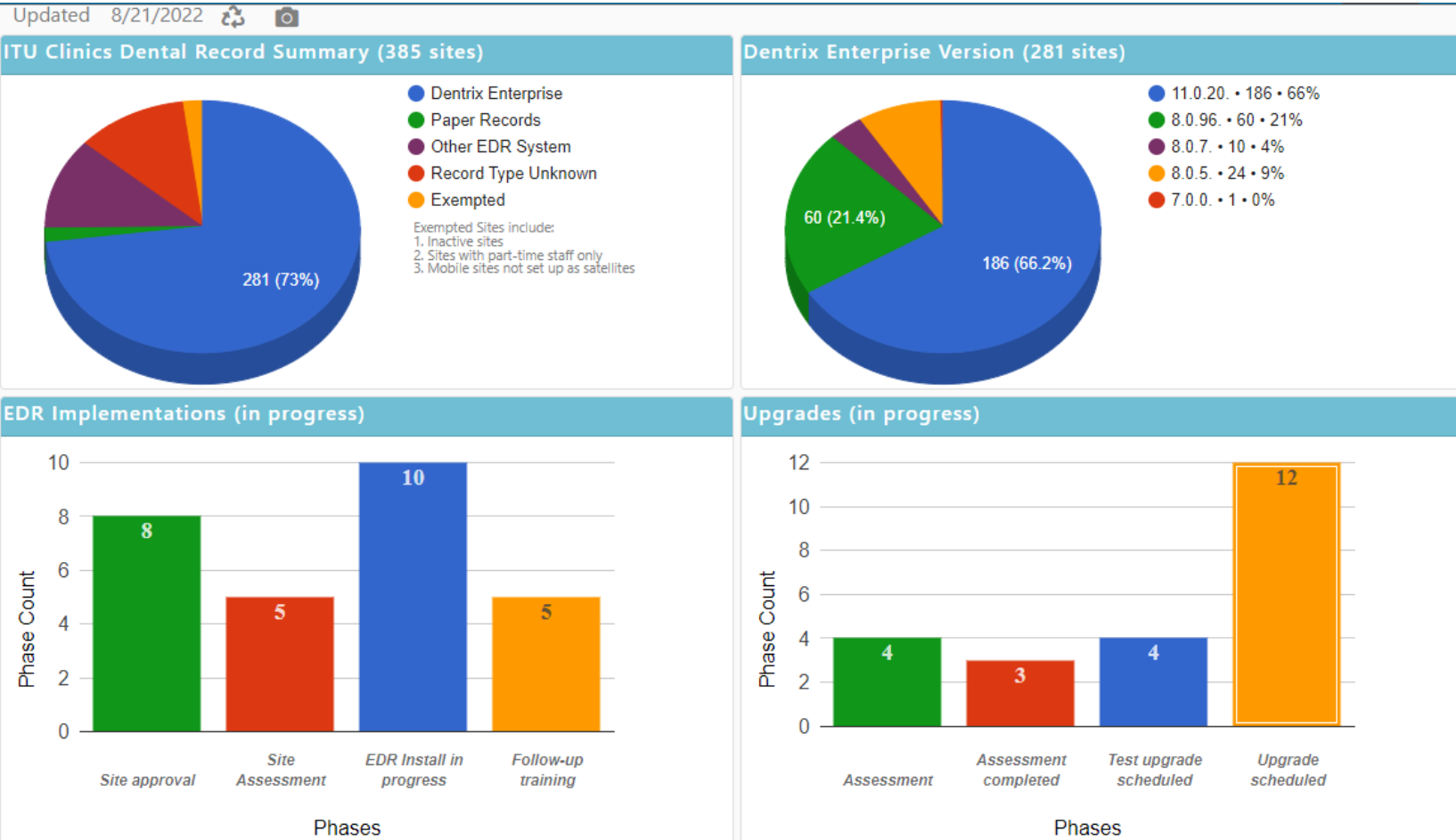
IHS EDR Program overall strategy:

- **Prevention is the key to reduction in oral health disease:**
 - Education is paramount, starting with families and caregivers
 - Effective prevention ‘treatments’ that reduce risk of oral disease
- **Control & treatment of chronic oral disease:**
 - Identify those at risk of oral disease & ensure timely access to care
 - Track efficacy of disease prevention & treatment interventions
- **Provide data for IHS leadership to make informed decisions**

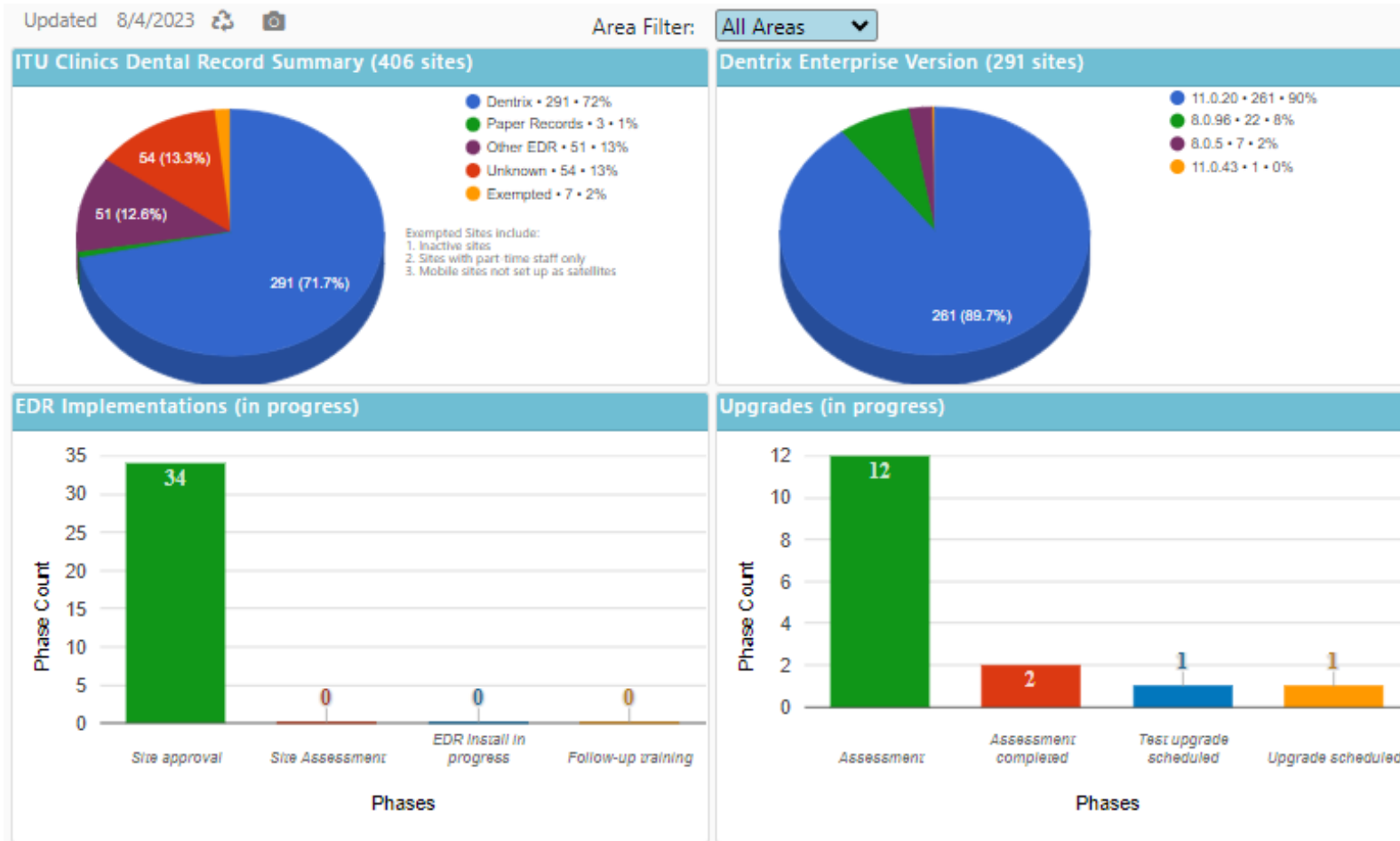
IHS EDR Program Status Update



IHS Dentrrix EDR Program - 2022



IHS Dentrix EDR Program - 2023



IHS Dentrix EDR Update

DXE 11.02.0 Enhancements:

➤ Current IHS version[s]:

- DXE 11.0.20.921 (IHS approved)
- DXE 11.0.20.1047 (IHS pending)
- (will likely be released by the time I give this presentation)

➤ Next major DXE version:

- DXE 11.0.44 (Release: 2024)

Stage 3 Meaningful Use Reporting
Patient Health Concerns
C-CDA Modifications
Batch Insurance Payment Enhancements
Outstanding Claims Manager
Family Balance Manager
Electronic Consent Form Enhancements
Patient List Templates
New Patient Finances Window
Referral Status & Report
Family Alerts
Treatment Request Manager Status Automation
Insurance Estimates
Access to Patient Information
DXOne Reporting Enhancements
837i Electronic Claim Submission
Patient Age and DOB in Appointment Book
Oral Health Status
HIM QA Reports in Document Center
More Information Enhancements
Patient Health Assessment - New Fields

All-digital Patient Consent module

- Activated through a Global Setting
- Consent Form template with prompts allow more customization per consent form
- Signed consent forms automatically store in Document Center
- “Printed” format is identical to current ‘paper copy’ format

The screenshot displays a software window titled "Consent Form". At the top, there is a dropdown menu set to "Oral & Maxillofacial Surgery". The main content area contains the following text:

Pain. Loss of bone around the teeth causing their loss. Possible delay of permanent tooth eruption.
Other _____.

Patient Consent/Understanding:
I consent and understand to the above and agree to cooperate with Dr. _____ for proposed treatment. I have had an opportunity to ask questions about the above treatment.

Disposal/Use of extracted teeth and/or other tissues:
I consent to the disposal of my extracted teeth, including other tissues and possible use of my extracted teeth by qualified authorities for scientific or educational purposes.

Below the text are four signature fields, each with a "Clear" button:

- Patient/Representative signature:** Includes fields for Name (Kristin Aaboe), Date (10/9/2020), and Relationship to patient (Self).
- Practice signature:** Includes fields for Name and Date (10/9/2020).
- Witness/Interpreter signature:** Includes fields for Name and Date (10/9/2020).
- Patient Identification:** Includes fields for Last, First Name (Aaboe, Kristin), Date of Birth (2/15/1933), and Chart # (AA0001H).

At the bottom right, there are buttons for "Print...", "Save", and "Close". On the right side of the window, there is a sidebar with a tree view showing "Oral Surgery" expanded to "Oral & Maxillofacial Surgery", with options for "new template" and "New Category".

Patient Health Assessment

- New fields for temperature, pulse ox and inhaled O2 concentration
- New fields automatically copy into Clinical Notes
- Ability to create Global Alert triggered by new fields

Patient Health Assessment - (Allen, Medicaid) [AL00300]

Vitals and BMI

Date	BP	Pulse	Temp	Age	Weight	Hgt/Len	BMI	Resp Rate	Pulse Ox	Inhaled O2 Conc	Provider
01/06/2021	0/0	0	100.0 °F	11	0.00 lbs	0' 0"	0.0	0	0%	0%	1ADMIN
05/19/2020	120/80	65	99.0 °F	10	120....	5' 7"	18.8	65	98%	98%	1ASSISTANT
09/04/2019	120/80	65	97.2 °C	10	59.0...	160....	23.0	0	0%	0%	DFILLEMK
08/27/2019	121/80	75	98.4 °F	10	130....	5' 3"	23.0	0	0%	0%	DFILLEMK
08/13/2019	120/80	72	98.6 °F	10	120....	5' 2"	21.9	0	0%	0%	SMITHJ

Add

Edit

Delete

Print

Graph

Close

Edit Patient Health Assessment

Vital Signs

Date: 1/ 6/2021

Systolic: 0 mmHg

Diastolic: 0 mmHg

Pulse (BPM): 0

Temperature: 100 °F

Respiratory Rate: 0

Pulse Oximetry: 0 %

Inhaled Oxygen Concentration: 0 %

Demographics

Age: 11

Weight: 0 lbs

Height / Length: 0 0 ft in

Calculated BMI: 0 kg/m2

Clinic Info

Provider: 1ADMIN >>

Clinic: CENTRAL >>

OK Cancel

Chart Provider Selection

Default Chart Provider allows quick verification of selected chart provider

- Family File Provider
- In the Patient Chart, changing the provider on an as-needed basis
- A setting that provides automation of appointment provider selected within Patient Chart

Practice Defaults

General | Claim Providers | eClaims Override

Default Student Prov: [] >> []

Default Instructor: [] >> []

Default Operatory: [] >> []

Default Copy Patient Information

Copy Patient Clinic: [CENTRAL] >> [Dentrix Enterprise Systems, Ir]

Copy Patient Provider: [1ASSISTANT] >> [ASSISTANT, Assistant]

Character to be Appended To Chart#: [0]

Default Chart Provider

Patient's Prov1 Provider from Selected Appointment

Specific Provider [DDONTISTPU] >> [Dontist, Perry 0]

IHS EDR & IHS HIT Modernization

- **IHS WILL CONTINUE TO USE DENTRIX ENTERPRISE (DXE) FOR EDR**
 - **EDR/EMR INTEROPERABILITY PLANNING IS KEY FOR IHS EHR MODERNIZATION**
- 

Value-based care

- ❖ Value-based care is a healthcare delivery model that focuses on achieving the best possible outcomes for patients while minimizing costs.
- ❖ In value-based care, healthcare providers are incentivized to deliver high-quality care, improve patient outcomes, and reduce unnecessary or duplicative services.

The emphasis is on achieving positive health outcomes rather than just providing services.

IMPROVE ORAL HEALTH OUTCOMES	ENHANCE PATIENT EXPERIENCE	REDUCE HEALTHCARE COSTS	FOCUS ON PREVENTIVE CARE	PROMOTE OVERALL POPULATION HEALTH
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Value-based care: key elements

- **Establish Quality Measures**
 - ✓ *Develop standardized, measurable parameters*
- **Incent Quality reporting**
 - ✓ *Create tools (dashboards) for providers to easily identify success*
- **Incent Quality Services**
 - ✓ *Invest in success; reimburse for success*
- **Create financially sustainable reimbursement incentive**
 - ✓ *Payer shares savings with providers to incent more high-value care*
- **Evaluate Gains / Accept Risk sharing**
 - ✓ *Enhance trust between provider and payer*

Value-based [oral] Healthcare

- ❖ Oral health was identified in the U.S. Department of Health and Human Service's Healthy People 2020 as one of 10 leading health indicators.
- ❖ According to the WHO, oral diseases disproportionately affect the poor and socially-disadvantaged members of society.



Value-based care: utilization measures

- **Reimbursement based on high performance on utilization measures**
 - ❖ *Percentage of patients fully utilizing preventive benefits*
 - ❖ *Outlier measure for newly fitted dentures requiring repair*
 - ❖ *Outlier measure for number of crowns*

- **Compensation based on quality and cost-efficiency measures:**
(aligned with NCQA standards of care)
 - ❖ *Annual dental visits (HEDIS)*
 - ❖ *Sealants*
 - ❖ *Topical fluoride*
 - ❖ *Preventive services*
 - ❖ *Utilization of services*



Value-based care: aligned activities

- **Payments for patient education, monitoring and counseling**
 - ❖ *“Dental Home” capitated payments (above per-service payments)*
 - ❖ *Disease management teams – focusing on under-utilizers of program benefits.*
 - ❖ *Improved cost sharing for appropriately using preventive benefits.*
- **Pilot Programs based on Administrative Measures:**
 - ❖ *Appointment wait times (i.e. 3rd Next Available Appointment [3NAA] measure)*
 - ❖ *Grievance / complaint rates*
 - ❖ *Electronic claims submissions*
 - ❖ *Use of plan portal(s)*
 - ❖ *Regular verification of provider directory information*

Value-based care: Liberty Dental

➤ Value-based incentives for civilian dental providers

❖ *Liberty B.R.U.S.H. program: (Benefits, Reward, Utilization, Services, Healthy outcomes)*

- *Assess improved oral healthcare outcome by measuring risk management*
 - *Is delivered dental care achieving oral health Risk mitigation?*
- *Commercial models measure: (example; based on claims data)*
 - *Decrease in percentage of patients at Moderate or High Caries Risk; and*
 - *Expanded prevention-oriented benefits during pregnancy*

➤ How oral health 'outcome' is measured:

- ❖ *Benefit program pays dentist to submit a 'claim' documenting patient current Caries Risk status*
- ❖ *Verify/measure if patients eligible for expanded benefits are receiving those benefits (claims)*
 - *Incentives are paid to provider based on how well the provider achieves these results*
 - *Patient participation in these expanded-benefit programs has achieved 40-50%*

Value-based care: looking ahead

➤ Challenges for Value-based [reimbursement] reform

- ❖ *Overall lower expense for dental care (vs. medical):*
 - ❖ *Dental care accounts for 4% of total healthcare 3rd party expense*
 - ❖ *Less attraction for investing in payment reform*
- ❖ *Fewer large groups / government programs engaged in reform*

➤ Potential for progress:

- ❖ *Medical – dental integration*
- ❖ *Progress made on identifying Quality measures*
- ❖ *Increasing body of literature on Alternate Payment Methods (APMs)*

Value-based care: IHS future state?

➤ **Evaluate if oral health improvement will decrease overall healthcare costs**

- ❖ *Significant difference in Program[s] sharing medical/dental **benefits** versus Program sharing overall healthcare **costs**.*

➤ IHS is a shared **cost** Program; i.e.

- ❖ *No benefit exclusions/copays, etc., to minimize actual cost to Program*



If a correlation of overall health improvement resulting in overall Program cost savings can be measured, potential for expanded oral health benefits can be justified.

IHS EDR / EHR: Interoperability

Goals/benefits of separate EDR / EHR systems with enhanced Interoperability

➤ Information Sharing Goals:

- ❖ *Communication with patients as well as communication between providers / clinics*
- ❖ *Note: Interoperability does not require a single system EDR / EHR 'program'*
- ❖ *Preserve unique EDR system capabilities: scheduling, patient care management & reporting*

➤ Accessibility of Data:

- ❖ *Allow for better function in remote regions*



➤ HL7 / FHIR* Medical/Dental Data Exchange:

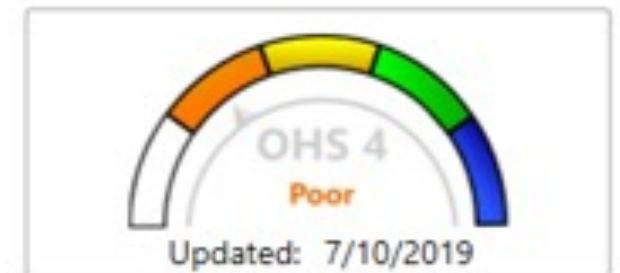
- ❖ *FHIR (Fast Healthcare Interoperability Resources) may be needed to allow improved data exchange*
- ❖ *Appropriately designed and updated interface can achieve integrated EHR/EDR interoperability*

** Allows data exchange between different computer systems regardless of how it is stored in those systems*

IHS Oral Health Status (OHS) Measure

A prevention-oriented tool to provide recording & tracking of oral health, leading to early diagnosis and timely intervention.

- *Emphasis on achieving positive health outcomes (vs. 'counting' services).*
 - ❖ *Reduce number of serious oral infections.*
 - ❖ *Decrease emergency room visits, medivac expenses*
- *OHS Measure Composite dashboard*
- *Multiple Tx Outcome reporting capabilities*



The IHS OHS measure uses standardized dental metrics assessing four basic oral health parameters:

1. Caries status.
2. Soft tissue condition (oral cancer, etc.)
3. Periodontal disease.
4. Abscessed teeth.

Also included are risk factors that affect oral health, to help identify patients for whom preventive therapies can be selectively provided.

Risk factors included in the OHS assessment:

1. Caries Risk.
2. Smoking.
3. Diabetes.
4. Dry Mouth.

IHS OHS classification categories:

Class 1: Excellent Oral Health

Class 2: Moderate/Good Oral Health

Class 3: Compromised Oral Health; Urgent care recommended

Class 4: Poor Oral Health; Needs immediate evaluation / care

Class 5: Patients previously in class 4, (expires to class 6 in 12 months)

Class 6: Unknown oral health status (previously OHS classes 1-5, now expired to “Unknown” OHS classification)

OHS Oral Health Score - Patient Name & Age (Standard Patient Title Bar)

Patient Oral Health (dental provider [objective] observations)

1. Was a complete examination including charting of abscessed teeth, carious lesions and needed restorations completed at this appointment? No Yes

No

When was the date of last complete exam? Last Exam N/A

Number of remaining teeth:

Are there any abscessed teeth? No Yes

Do any teeth require immediate treatment/restoration? No Yes

Estimate how many teeth have active carious lesions: 0 1-3 4-10 10+

2. Are any teeth identified for extractions due to caries, periodontal disease or abscesses? No Yes

Soft Tissue Exam

3a. Any definitively diagnosed oral or pharyngeal cancer? No Yes

3b. Any abnormal oral lesions indicated for biopsy? No Yes

4. Community Periodontal Index (CPI) Accept Previous Entry? No Yes

CPI Status

1-5	6-11	12-16
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
28-32	22-27	17-21
<input type="text" value="1"/>	<input type="text" value="3"/>	<input type="text" value="0"/>

Last Update: MM/DD/YYYY

5. Active Caries Depth Metric Accept Previous Entry? No Yes

Active Caries Depth

1-5	6-11	12-16
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
28-32	22-27	17-21
<input type="text" value="1"/>	<input type="text" value="3"/>	<input type="text" value="0"/>

Last Update: MM/DD/YYYY

Patient Oral Health Risk Factors

6. Caries Risk:

7. Smoking:

8. Diabetes?:

9. Dry Mouth?:

OHS
Excellent
Updated MM/DD/YY

OK

IHS Oral Health Status (OHS) Measure

- View OHS Score in More Information window
- Access OHS entry history in OHS tab
- Edit OHS entry (new security right)
- Graph Patient OHS on multiple patient factors: perio, caries risk, abscessed teeth, overall OHS classification, etc.

More Information - (OHS'O, Member) [CENTRAL][UTC -02:00][1ANNA][34574567][04/28/2005][15]

OHS'O, Member
Age 15
DOB 04/28/2005
Sex Female
SSN
Marital Child
Asd

Chart 34574567
Clinic CENTRAL
Prov1 1ANNA
Status Active
Billing Type 1

Home (345) 666-5544
Mobile
Work
Home Email
Work Email
Language
Ethnicity

OHS 4
Poor
Updated: 4/28/2020

Summary
Appointments

Dental Ins
Primary: none

Medical Ins
Primary: none

Next Appointments +

Continuing Care

Tags

Interoperability-enhanced Healthcare

Effective communication between all sections of the Electronic Health Record

- Does not require a single combined health record system
 - EDR and EMR can be separate systems
 - Retains unique efficiencies of each system
- Does require exchanging useful information between systems
 - Information is presented in a format that everyone can understand



IHS Oral Health Status (OHS) Dashboard

OHS Statistics

Date Range: 4/9/2019 - 4/9/2021

Age: <ALL>

Clinics: <ALL>

Providers: <ALL>

09/04/2021

Report Generated By: 1_KNUTSON

Page 1 of 1

Age Statistics	OHS 1	OHS 2	OHS 3	OHS 4	OHS 5	OHS 6	NO OHS	Age Total
Patient(s) that are 0 to 2 years old	56	84	22	21	0	0	285	468
Patient(s) that are 3 to 4 years old	48	73	45	59	2	1	263	491
Patient(s) that are 5 to 6 years old	52	38	67	24	23	35	392	631
Patient(s) that are 7 to 8 years old	63	59	85	29	61	72	357	726
Patient(s) that are 9 to 10 years old	75	93	72	18	45	64	398	765
Patient(s) that are 11 to 12 years old	66	82	94	83	38	55	391	809
Patient(s) that are 13 to 14 years old	72	64	56	49	72	69	508	890
Patient(s) that are 15 to 16 years old	93	83	72	65	77	89	333	812
Patient(s) that are 17 to 20 years old	175	159	139	79	95	146	873	1666
Patient(s) that are 21 to 30 years old	352	487	425	201	138	254	2976	4833
Patient(s) that are 31 to 40 years old	1027	825	763	523	255	327	1886	5606
Patient(s) that are 41 to 50 years old	955	763	824	569	266	359	394	4130
Patient(s) that are 51 to 60 years old	834	678	561	349	317	451	719	3909
Patient(s) that are 61 to 70 years old	694	845	389	352	244	358	233	3115
Patient(s) that are 71 to 80 years old	351	362	285	157	81	467	144	1847
Patient(s) that are 81 years and older	74	89	128	82	44	92	1198	1707
Patient(s) without a birthday entered	0	0	0	0	0	0	15	15
Total Number of Patients	4987	4784	4027	2660	1758	2839	11365	32420

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

1. Date of most recent complete dental exam

- The most recent OHS data entry
- OHS entry may be from a screening exam
 - OHS entry does not require a complete dental exam
- However, each OHS data entry does request a date of most recent complete dental exam, (if one was ever provided)
- If a complete dental exam was never provided, the 'date of last complete dental exam' [data field] will be blank in the chronological list of OHS entries in the patient's DXE chart

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

2. Number of remaining natural teeth (likely 1 – 28)

- This information is often used as an indirect assessment of a patient's past history of oral health or oral disease resulting in tooth loss.
- This number is not really useful in assessing a patient's current oral health status.
 - Therefore, this item is not incorporated into the overall IHS oral health assessment classification.

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

3. Presence of any abscessed teeth. (Yes or No)

- The presence of oral infections (abscessed teeth) is very important for a medical provider to know
- Therefore, this item is included in the overall patient oral health assessment classification
- Drives an automatic IHS OHS classification score of “4”

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

4. Estimated number of teeth with active carious lesions

- The number of teeth with existing active carious lesions indicates the prevalence of disease
 - Cavities are caused by bacteria; therefore cavities indicate potential infection
- Important for estimating the number of appointments required to establish Excellent (or Good) oral health status.
- (Note: Depth of decay is reported later.)
- More than ten active ‘cavities’ drives an IHS OHS classification score of “4”

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

5. Do any teeth require immediate treatment? (Yes or No)

- Allows the [dental] provider to report any condition that either the provider - or the patient - feel requires immediate care.
- This is allows a patient input on their oral health assessment status.
- **Does not necessarily mean the patient has a serious health risk**
- Drives an automatic OHS classification score of “4”

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

6. Do any teeth require extraction (for health reason[s]); (Yes or No)

- This is valuable as most 'dental clearance' formats want to know what dental treatment may require a delay in [medical] treatment for post-op healing.
 - Note: This OHS input should not be used to report elective extractions: (i.e. for orthodontic treatment.)
- Drives an automatic IHS OHS classification score of "4"

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

7. Is there any [definitively diagnosed] oral or pharyngeal cancer (Yes or No)

- The presence of a [definitively diagnosed] oral or pharyngeal cancer overrides all other 'positive' conditions
- Results in a "Poor" oral health classification until the condition is resolved
- Drives an automatic IHS OHS classification score of "4"

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

8. Are there any abnormal oral lesions indicated for biopsy (Yes or No)

- Presence of an undiagnosed oral or pharyngeal lesion/condition for which the [dental] provider recommends a biopsy overrides all other conditions
- Results in a “Poor” oral health classification until the condition is resolved
- Drives an automatic IHS OHS classification score of “4”

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

9. Current periodontal [gum tissue] condition (historical severity of periodontal disease.)
 - IHS OHS measure uses the Common Periodontal Index (CPI)
 - CPI is reported as the ‘worst’ pocket depth in each sextant of the mouth
 - 0, 1, 2, 3, or 4 (0 is “Excellent”; 4 is “Poor”)
 - CPI does not report active periodontal disease; therefore, it requires...
 - Four (or more) CPI sextant scores of “4” to drive an automatic IHS OHS classification score of “4”

Interoperability-enhanced Healthcare

Ten useful Oral Health measures for EDR/EHR/Patient message interface

10. Active Caries Depth (severity of caries disease)

- Reports the depth of active caries (in terms of encroaching on the pulp chamber) for the ‘worst case’ tooth in each sextant
 - 0, 1, 2, 3, or 4 (0 is “Excellent”; 4 is “Poor”)
- Could be a single tooth or multiple teeth
- Reporting depth of caries by sextant provides a good indication of the severity of active caries disease throughout the patient’s dentition
- Any active caries depth of “4” drives an automatic OHS classification of “4”

Interoperability-enhanced Healthcare

Each OHS measure entry also records four common [oral] health Risk factors:

1. **Caries Risk**
2. **Smoking (any tobacco or vaping use)**
3. **Diabetes (patient self-reported)** (could be a future EHR automated data entry)
4. **Dry Mouth (also if patient is using caries mitigation/preventive measures)**

These Risk factors will not impact overall IHS OHS classification score; however, these risk factors are useful in recommendation[s] for follow-up care and frequency of follow-up care.

Interoperability-enhanced Healthcare

Great [dental] information, but what does it mean for me?

OHS Classification: **Excellent (OHS classification 1)**

➤ With dental exam date (*within the past 24 months*):

1. Patient has had a complete dental exam within 24 months
2. Patient does not have any detectable ‘cavities’
3. Patient does not have any oral cancer / other soft tissue conditions
4. Patient does not have any abscessed teeth
5. Patient does not have any “immediate” oral health / dental treatment needs
6. Patient does not have any significant gum disease



Interoperability-enhanced Healthcare

Great [dental] information, but what does it mean for me?

OHS Classification: **Good (OHS classification 2)**

➤ With dental exam date (*within the past 24 months*):

1. Patient has had a complete dental exam within 24 months
2. Patient may have detectable ‘cavities’ (however, none are serious)
3. Patient does not have any oral cancer / other soft tissue conditions
4. Patient does not have any abscessed teeth
5. Patient does not have any “immediate” oral health / dental treatment needs
6. Patient may have some periodontal [gum] disease (nothing ‘serious’ at this time)



Interoperability-enhanced Healthcare

Great [dental] information, but what does it mean for me?

OHS Classification: **Compromised (OHS classification 3)**



➤ With dental exam date (*within the past 24 months*):

1. Patient has had a complete dental exam within 24 months
2. Patient may have several detectable ‘cavities’ (however, none are serious)
3. Patient does not have any oral cancer / other soft tissue conditions
4. Patient does not have any abscessed teeth
5. Patient does not have any “immediate” oral health / dental treatment needs
6. Patient may have some periodontal [gum] disease (but nothing ‘serious’ at this time)

Interoperability-enhanced Healthcare

Great [dental] information, but what does it mean for me?

OHS Classification: **Poor (OHS classification 4)**

➤ With dental exam date (*within the past 24 months*):

1. Patient has had a complete dental exam within 24 months
2. Patient may have several detectable 'cavities' (some may be serious)
3. Patient may have oral cancer / other soft tissue conditions
4. Patient may have abscessed teeth
5. Patient may have "immediate" oral health / dental treatment needs
6. Patient may have serious periodontal [gum] disease (could be historical, not active infection)



Interoperability-enhanced Healthcare

Great [dental] information, but what does it mean for me?

OHS Classification: **[Previously] Poor (OHS classification 5)**

➤ With dental exam date (*exam date is 24-36 months old*):

1. Patient's last dental exam was 24-36 months ago
2. Patient may have several detectable 'cavities' (some may be serious)
3. Patient may have oral cancer / other soft tissue conditions
4. Patient may have abscessed teeth
5. Patient may have "immediate" oral health / dental treatment needs
6. Patient may have serious [gum] disease (could be historical, not active infection)



Interoperability-enhanced Healthcare

Great [dental] information, but what does it mean for me?

OHS Classification: **Unknown (OHS classification 6)**

➤ With dental exam date (*last exam date is 24-36 + months old*):

1. Last dental exam was 24-36+ months ago; current OHS condition is **Unknown**
2. Patient **may have several** detectable ‘cavities’ (some may be serious)
3. Patient **may have** oral cancer / other soft tissue conditions
4. Patient **may have** abscessed teeth
5. Patient **may have** “immediate” oral health / dental treatment needs
6. Patient **may have** serious periodontal [gum] disease (could be historical, not active infection)



(had a previous OHS assessment)

Interoperability-enhanced Healthcare

Great [dental] information, but what does it mean for me?

OHS Classification: **Unknown** (“NO OHS” on OHS report)

➤ No dental exam date (*never had an OHS assessment*):

1. Unknown if patient has had a dental exam; current OHS condition is **Unknown**
2. Patient **may have several** detectable ‘cavities’ (some may be serious)
3. Patient **may have** oral cancer / other soft tissue conditions
4. Patient **may have** abscessed teeth
5. Patient **may have** “immediate” oral health / dental treatment needs
6. Patient **may have** serious periodontal [gum] disease (could be historical, not active infection)



(never had an OHS assessment)

Interoperability-enhanced Healthcare

OK, but what does an OHS assessment mean for the *patient*?

OHS Classification: If the patient has had an OHS entry, they are likely aware of their specific oral health 'status' (at least when they had that evaluation)

- If the date of last exam is within 24 months or OHS classification is 1, 2, 3 or 4
- Patient should be asked if they are aware of their [oral] health status
- 1. If the OHS classification score is "1", the patient does not need follow-up dental care
- 2. If the OHS classification score is 2, 3 or 4:
- 3. Patient *may have* 'cavities' (If class 4: some cavities may be serious)
- 4. Patient *may have* oral cancer / other soft tissue conditions (would be classification 4)
- 5. Patient *may have* abscessed teeth (would be classification 4)
- 6. Patient *may have* "immediate" dental treatment needs (would be classification 4)
- 7. Patient *may have* periodontal [gum] disease (could be historical, not active infection)

Interoperability-enhanced Healthcare

OK, but what does an OHS assessment mean for the patient?

OHS Classification: If the patient has not had an OHS entry (status: No OHS)

- Patient has not had any previous OHS assessment in EDR / EHR system
- Patient may not be aware if they have any specific oral health issues
 1. They may not be aware if they have any serious oral health issues
 2. Patient may have ‘cavities’ (some may be serious)
 3. Patient may have oral cancer / other soft tissue conditions
 4. Patient may have abscessed teeth
 5. Patient may have “immediate” oral health / dental treatment needs
 6. Patient may have serious [gum] disease (could be historical, not active infection)

Interoperability-enhanced Healthcare

OK, but how can we communicate oral health information with the patient?

- OHS '*data*' can be converted into statements everyone can understand
 - 14 examples of oral health information that could be programmed to be included on a patient medical encounter summary:
 - *'No disease condition noted' (or similar) will be displayed if the patient has no OHS-reported adverse [oral health] conditions or risks for that specific item*
1. Most recent complete [dental] exam is (15+) months ago
 - Medical clinic Impact / action:
 - If last complete exam has been more than 15+ months and OHS classification is 3, 4, 5 or 6, recommend referral to a dentist for a complete examination

2. Patient has 12 teeth [of 28 possible teeth] remaining.
 - Medical clinic Impact / action:
 - [Medical] provider / staff can ask the patient: *Does (the patient) report an inability or difficulty in chewing a 'normal' diet?*
 - This provides a patient input into medical/dental health assessment.
 - If patient does not report difficulty in chewing a 'normal' diet, further dental treatment may not be necessary at this time even if the patient does not have a full complement of teeth

3. The OHS measure data indicates the patient has abscessed teeth.
 - Medical clinic Impact / action:
 - *Recommend asking patient if they are aware of this diagnosis and if the [abscessed teeth] have been evaluated / treated*
 - Recommend referral to a dentist for a complete examination and treatment to address [possible] abscessed teeth

4. OHS data indicates the patient has multiple teeth with untreated active carious lesions.
 - Medical clinic Impact / action:
 - *Medical staff can provide the number of carious teeth range from the OHS data*
 - *Ask patient if they are aware of this diagnosis and if the cavities [carious teeth] have been evaluated / treated*
 - Recommend referral to a dentist for a complete examination and treatment to address [possible] active cavities

5. The OHS data indicates a need for immediate treatment of an [unknown] oral condition
 - Medical clinic Impact / action:
 - *Recommend asking patient if they are aware of this diagnosis and if the [unknown oral condition] has been evaluated / treated*
 - If this has not been addressed, recommend referral to a dentist for an evaluation and treatment to address [unknown] oral condition

6. The OHS data indicates a need for extraction of teeth (not an elective extraction)
 - Medical clinic Impact / action:
 - *Recommend asking patient if they are aware the need for extraction[s] and if the [extractions] has been evaluated / treated*
 - Recommend referral to a dentist for evaluation & treatment

7. The OHS data indicates the patient has a diagnosis of an oral or pharyngeal cancer
 - Medical clinic Impact / action:
 - *Recommend asking patient if they are aware of this diagnosis and if it is being treated / evaluated*
 - If patient is unaware of condition, recommend referral to a dentist for complete examination and evaluation

- 8. OHS data indicates the patient has a recommendation for biopsy of soft tissue lesion**
 - **Medical clinic Impact / action:**
 - *Recommend asking patient if they are aware of this recommendation and if it is being evaluated*
 - **If patient is unaware of condition, recommend referral to a dentist for complete examination and evaluation**

- 9. OHS data indicates the patient has a history of significant periodontal disease**
 - **Medical clinic Impact / action:**
 - *Recommend asking patient if they are aware of this diagnosis and if it has been evaluated and/or treated*
 - **If patient is unaware of condition, recommend referral to a dentist for complete examination and evaluation for possible periodontal treatment**

10. OHS data indicates the patient at least one very deep [dental/tooth] cavity that likely requires immediate treatment

- **Medical clinic Impact / action:**
 - *Recommend asking patient if they are aware of this of this diagnosis and if they are receiving appropriate restorative treatment and preventive dental care to prevent dental cavities*
- **If patient is unaware of condition (or risk factors), recommend referral to a dentist for a complete examination and treatment to address [possible] active cavities and preventive care**

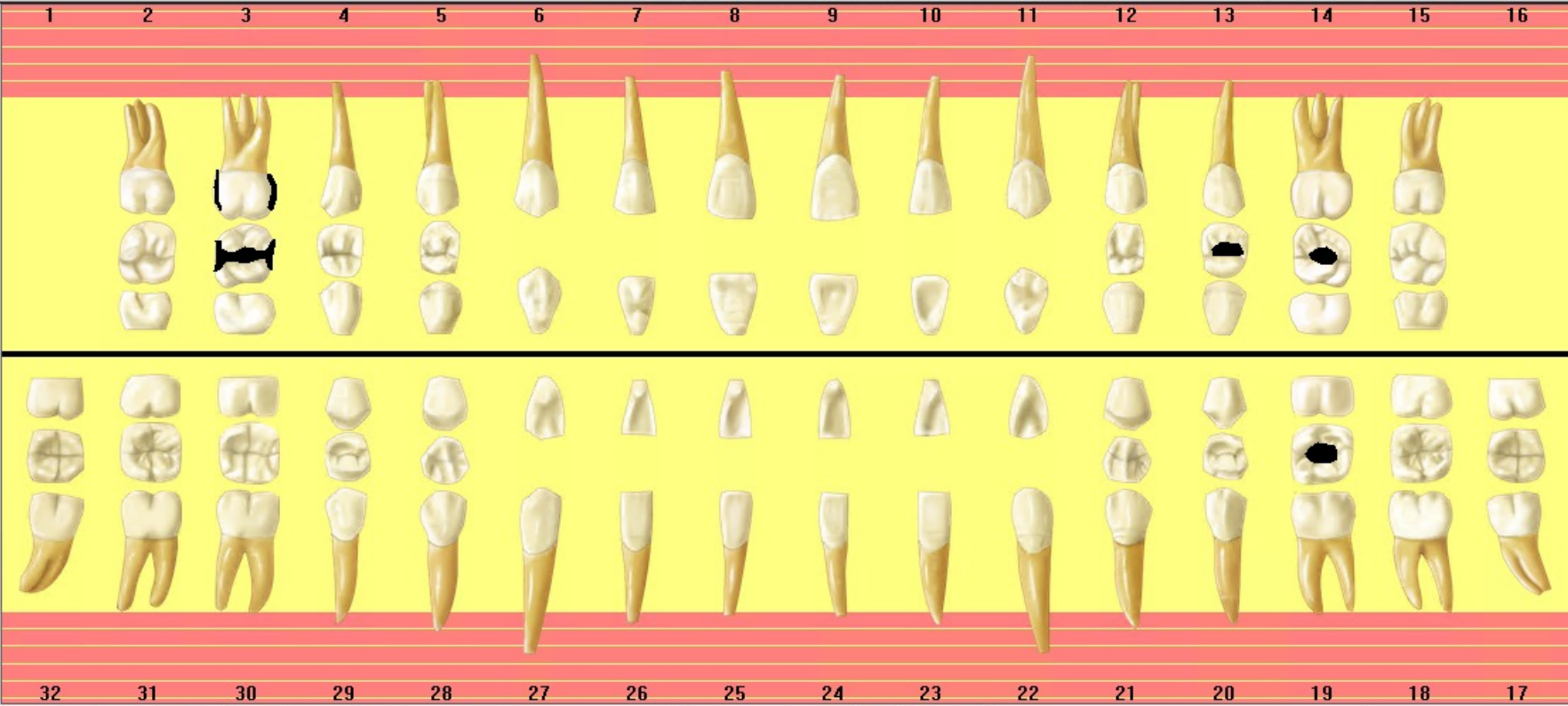
11. OHS data indicates the patient is at significant risk for dental cavities

- **Medical clinic Impact / action:**
 - *Recommend asking patient if they are aware of this risk and if they are receiving appropriate prevent dental care to prevent dental caries*
- **If patient is unaware of risk (or risk factors), recommend referral to a dentist for caries risk evaluation and appropriate follow-up preventive care**

- 12. OHS data indicates the patient uses tobacco products**
 - **Medical clinic Impact / action:**
 - ***Recommend asking patient if they are still using tobacco products and if they want assistance with tobacco cessation***
 - **If patient is willing, recommend referral for appropriate tobacco cessation program**

- 13. OHS data indicates the patient has history of diabetes**
 - **Medical clinic Impact / action:**
 - ***Recommend [medical clinic] evaluation of diabetes control***
 - **If OHS classification is: 2, 3, 4, 5 or 6, recommend referral to a dentist for complete [dental] examination and evaluation**

- 14. OHS data indicates the patient has [potential] dry mouth**
 - **Medical clinic Impact / action:**
 - ***Recommend evaluation of decreased salivary production / flow***
 - **Is patient aware that decreased saliva will contribute to [dental] cavities**
 - **Recommend referral to a dentist for complete [dental] examination and evaluation for appropriate preventive treatment / homecare instructions**



	Diagnostic	Preventive
	Restorative	Endodontics
	Periodontics	Prosth, remov
	Maxillo Prosth	Implant Serv
	Prosth, Fixed	Oral Surgery
	Orthodontics	Adjunct Serv
	Conditions	IHS - Other
	EO	Ex
	Treat Plan	Complete
	Clear	

Chart Notes View ABC >>

Date	Tooth	Surf	Proc	Prov	Clinic	Description	N	D	M	Stat	AP	Amount
08/10/2023				JKNU...	CENTRAL	Clinical Note						
08/10/2023	19	O	15105	43215...	CENTRAL	Caries/decay				CON		
08/10/2023	14	O	15105	43215...	CENTRAL	Caries/decay				CON		
08/10/2023	13	O	15105	43215...	CENTRAL	Caries/decay				CON		
08/10/2023	3	MOD	15105	43215...	CENTRAL	Caries/decay				CON		
04/18/2023				JKNU...	CENTRAL	Clinical Note						
04/18/2023	16		D7210	43215...	CENTRAL	Extract, erupted th, rem oth		D		C		0.00
04/18/2023	1		D7210	43215...	CENTRAL	Extract, erupted th, rem oth		D		C		0.00

Notes

Medical Alert:
 Medications:
 Allergies:
 Since Last Visit: Medical Alert: No Change
 Medications: No Change
 Allergies: No Change

Pain Scale Type: Numeric Pain Scale Pain Level: 0

Description:
 Exam type: Periodic evaluation (D0120)
 The dental team and patient confirmed identity and completed pre-procedural verification steps and time-out prior to initiating evaluation in accordance with Universal Protocol., Re-verification was continuous throughout the procedure. and Health history reviewed and medications reconciled.

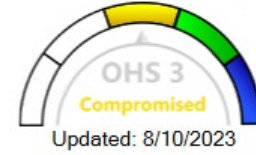
AP

- Treat Plan
- Completed
- Existing
- Conditions
- Exams
- Clinic Notes
- Consent Forms



BPRM'NEW, ENALPHIE

Age 83	Chart 232101875238	Home (329) 857-3345
DOB 01/01/1940	Clinic EDRDEHR	Mobile
Sex Male	Prov1 4321567891	Work
SSN	Status Active	Home Email
Marital Married	Billing Type 1	Work Email
12587 WAR CLOUD DR CORONA, CA 92881		Language
		Ethnicity



- Summary
- Appointments
- Procedures
- Medical Alerts
- Treatment Plans
- Health Assessments
- Treatment Requests
- Billing
- OHS

Last Exam Date	OHS Entry Date	Age At Time of Exam	OHS Score	Natural Teeth #	Absc'd Teeth	Active Carious Lesions	Immediate Treatment	Extractions	STE	CPI	ACD	Caries Risk	Smoking Tobacco Use	Diabetes
8/10/2023	8/10/2023	83	3	26	No	4-10	No	No	No	1	2	Moderate	No	No patient



Graph

Family ▼

Status	Name	Age
Guar	BPRM'NEW, ENALPHIE	83
	BPRM, ENFRIEND	93
	BPRM, ENFOUR	73

Patient Oral Health (Dental Provider [objective] Observations)

1. Was a complete examination including charting of abscessed teeth, carious lesions and needed restorations completed at this appointment? No Yes

Yes

Number of remaining teeth: >>

Are there any abscessed teeth? No Yes

How many teeth have active carious lesions? 0 1-3 4-10 11+

Do any teeth require immediate treatment/restoration? No Yes

2. Are any teeth identified for extractions due to caries, periodontal disease or abscesses? No Yes

Soft Tissue Exam

3a. Any definitively diagnosed oral or pharyngeal cancer? No Yes

3b. Any abnormal oral lesions indicated for biopsy? No Yes

4. Community Periodontal Index (CPI)

Accept Previous Entry? No Yes

CPI Status

1-5 6-11 12-16

28-32 22-27 17-21

Last Update: 8/10/2023

5. Active Caries Depth Metric

Accept Previous Entry? No Yes

Active Caries Depth

1-5 6-11 12-16

28-32 22-27 17-21

Last Update: 8/10/2023

Patient Oral Health Risk Factors

6. Caries Risk:

7. Smoking:

8. Diabetes?

9. Dry Mouth?

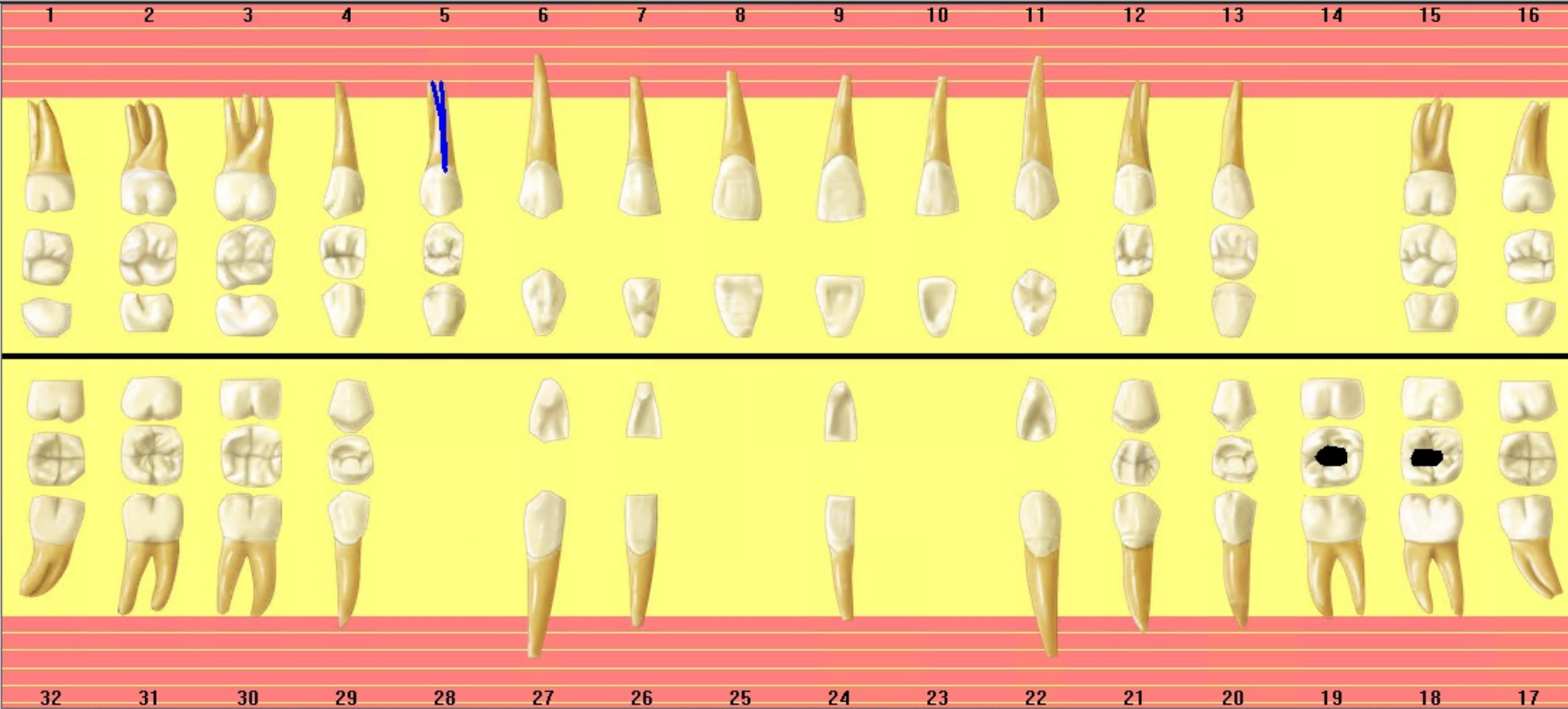


Updated: 8/10/2023

Last modified at 8/10/2023 by KNUTSON, JOEL

OK

Cancel



	Diagnostic	Preventive
	Restorative	Endodontics
	Periodontics	Prosth, remov
	Maxillo Prosth	Implant Serv
	Prosth, Fixed	Oral Surgery
	Orthodontics	Adjunct Serv
	Conditions	IHS - Other
EO	Ex	Treat Plan
Complete	+	

Clear

Chart Notes

Date	Tooth	Surf	Proc	Prov	Clinic	Description	N	D	M	Stat	AP	Amount
08/10/2023	19	O	15105	JKNU...	CENTRAL	Caries/decay				CON		
08/10/2023	18	O	15105	JKNU...	CENTRAL	Caries/decay				CON		
08/10/2023				JKNU...	CENTRAL	Clinical Note						
08/10/2023				JKNU...	CENTRAL	Clinical Note						
11/23/2022				JKNU...	CENTRAL	Clinical Note						
11/23/2022				JKNU...	CENTRAL	Consent Form						
10/14/2022				JKNU...	CENTRAL	Clinical Note						
10/14/2022				JKNU...	CENTRAL	Consent Form						
06/02/2022	28		D7140	JKNU...	EDRDEHR	Extract,erupted th/exposed rt		D		C		100.00
06/02/2022	25		D7140	JKNU...	EDRDEHR	Extract,erupted th/exposed rt		D		C		100.00
06/02/2022	23		D7140	JKNU...	EDRDEHR	Extract,erupted th/exposed rt		D		C		100.00
06/02/2022			15008	JKNU...	EDRDEHR	Plaque				CON		
06/01/2022	14		D7140	JKNU...	EDRDEHR	Extract,erupted th/exposed rt		D		C		1200.00

Notes

- AP
- Treat Plan
- Completed
- Existing
- Conditions
- Exams
- Clinic Notes
- Consent Forms



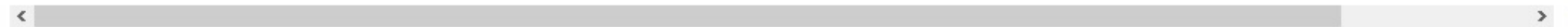
DEMO, AMENDMENT (E) T.

Age 43	Chart 23210112025	Home (555) 555-6579
DOB 05/22/1980	Clinic EDRDEHR	Mobile
Sex Male	Prov1 JKNUTSON	Work (555) 999-7703
SSN 791-99-4222	Status Active	Home Email
Marital Unknown	Billing Type 1	Work Email
PO BOX 2803		Language
ALB, NM 87119		Ethnicity



- Summary
- Appointments
- Procedures
- Medical Alerts
- Treatment Plans
- Health Assessments
- Treatment Requests
- Billing
- OHS

Last Exam Date	OHS Entry Date	Age At Time of Exam	OHS Score	Natural Teeth #	Absc'd Teeth	Active Carious Lesions	Immediate Treatment	Extractions	STE	CPI	ACD	Caries Risk	Smoking Tobacco Use	Diabete
8/10/2023	8/10/2023	43	2	28	No	1-3	No	No	No	1	2	Low	Yes	No patie



Graph

Family ▼

Status	Name	Age
Guar	DEMO, AMENDMENT (E) T.	43
	MCCORD, ALBERT L.	43

Patient Oral Health (Dental Provider [objective] Observations)

1. Was a complete examination including charting of abscessed teeth, carious lesions and needed restorations completed at this appointment? No Yes

Yes

Number of remaining teeth: >>

Are there any abscessed teeth? No Yes

How many teeth have active carious lesions? 0 1-3 4-10 11+

Do any teeth require immediate treatment/restoration? No Yes

2. Are any teeth identified for extractions due to caries, periodontal disease or abscesses? No Yes

Soft Tissue Exam

3a. Any definitively diagnosed oral or pharyngeal cancer? No Yes

3b. Any abnormal oral lesions indicated for biopsy? No Yes

4. Community Periodontal Index (CPI)

Accept Previous Entry? No Yes

CPI Status

1-5 6-11 12-16

28-32 22-27 17-21

Last Update: 8/10/2023

5. Active Caries Depth Metric

Accept Previous Entry? No Yes

Active Caries Depth

1-5 6-11 12-16

28-32 22-27 17-21

Last Update: 8/10/2023

Patient Oral Health Risk Factors

6. Caries Risk:

7. Smoking:

8. Diabetes?:

9. Dry Mouth?:



Last modified at 8/10/2023 by KNUTSON, JOEL

OK

Cancel



	Diagnostic	Preventive
	Restorative	Endodontics
	Periodontics	Prosth, remov
	Maxillo Prosth	Implant Serv
	Prosth, Fixed	Oral Surgery
	Orthodontics	Adjunct Serv
	Conditions	IHS - Other
	EO	Ex
	Treat Plan	Complete
	Clear	+

Chart Notes View REC >>

Date	Tooth	Surf	Proc	Prov	Clinic	Description	N	D	M	Stat	AP	Amount
08/10/2023				JKNU...	CENTRAL	Clinical Note						
10/05/2022	32		D7140	JKNU...	CENTRAL	Extract,erupted th/exposed rt		D		TP		0.00
10/05/2022	17		D7140	JKNU...	CENTRAL	Extract,erupted th/exposed rt		D		TP		0.00
10/05/2022	1		D7140	JKNU...	CENTRAL	Extract,erupted th/exposed rt		D		TP		0.00
10/05/2022				JKNU...	CENTRAL	Clinical Note						
10/05/2022				JKNU...	CENTRAL	Consent Form						
03/10/2022				JKNU...	EDRDEHR	Clinical Note						
03/10/2022	32		15002	JKNU...	CENTRAL	Impacted - Distal				CON		
03/10/2022	21		15015	JKNU...	CENTRAL	Fractured Root				CON		
03/10/2022	20		15016	JKNU...	CENTRAL	Retained Root				CON		
03/10/2022	19		15016	JKNU...	CENTRAL	Retained Root				CON		
03/10/2022	18		15015	JKNU...	CENTRAL	Fractured Root				CON		
03/10/2022	17		15002	JKNU...	CENTRAL	Impacted - Distal				CON		

Notes

Medical Alert:

Medications:

Allergies:

Since Last Visit: Medical Alert: No Change

 Medications: No Change

 Allergies: No Change

Pain Scale Type: Numeric Pain Scale Pain Level: 0

Description:

AP

Treat Plan

Completed

Existing

Conditions

Exams

Clinic Notes

Consent Forms

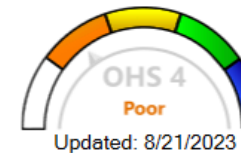


DEMO, APRIL

Age 46
 DOB 03/13/1977
 Sex Female
 SSN 106031377P
 Marital Married
 8701 High Ridge St
 ALBUQUERQUE, NM 87777

Chart 232101999101
 Clinic EDRDEHR
 Prov1 JKNUTSON
 Status Active
 Billing Type 1

Home (505) 222-7894
 Mobile
 Work (505) 444-8710
 Home Email
 Work Email
 Language
 Ethnicity



- Summary
- Appointments
- Procedures
- Medical Alerts
- Treatment Plans
- Health Assessments
- Treatment Requests
- Billing
- OHS

Last Exam Date	OHS Entry Date	Age At Time of Exam	OHS Score	Natural Teeth #	Absc'd Teeth	Active Carious Lesions	Immediate Treatment	Extractions	STE	CPI	ACD	Caries Risk	Smoking Tobacco Use	Diabetes
8/21/2023	8/21/2023	46	4	32	No	1-3	Yes	Yes	No	1	1	High	No	No patient



Graph

Family ▾

Status	Name	Age
Guar	DEMO, APRIL	46

Patient Oral Health (Dental Provider [objective] Observations)

1. Was a complete examination including charting of abscessed teeth, carious lesions and needed restorations completed at this appointment? No Yes

Yes

Number of remaining teeth: >>

Are there any abscessed teeth? No Yes

How many teeth have active carious lesions? 0 1-3 4-10 11+

Do any teeth require immediate treatment/restoration? No Yes

2. Are any teeth identified for extractions due to caries, periodontal disease or abscesses? No Yes

Soft Tissue Exam

3a. Any definitively diagnosed oral or pharyngeal cancer? No Yes

3b. Any abnormal oral lesions indicated for biopsy? No Yes

4. Community Periodontal Index (CPI)

Accept Previous Entry? No Yes

CPI Status

1-5 6-11 12-16

28-32 22-27 17-21

Last Update: 8/21/2023

5. Active Caries Depth Metric

Accept Previous Entry? No Yes

Active Caries Depth

1-5 6-11 12-16

28-32 22-27 17-21

Last Update: 8/21/2023

Patient Oral Health Risk Factors

6. Caries Risk:

7. Smoking:

8. Diabetes?

9. Dry Mouth?



Updated: 8/21/2023

Last modified at 8/21/2023 by KNUTSON, JOEL

Interoperability-enhanced Healthcare

Interoperability is more than access to, or sharing, health record information/data

Interoperability-enhanced Healthcare must provide efficient & effective communication when & where it is indicated / needed

Coordinated interoperability does not occur spontaneously; we must plan for it



Cybersecurity

HHS National FYSA: 2023 Multi-State Cyberattack - PMH, Northeastern U.S.

BLUF: A ransomware attack involving hospitals under the umbrella of [Prospect Medical Holdings](#) (PMH) is currently underway. So far, a reported 18 hospitals in 4 states: California, Connecticut, Pennsylvania, and Rhode Island are impacted. Initial reports indicate partial loss of services, and diversions at multiple facilities. Hospitals believed to be impacted:

- California
 - Bellflower Behavioral Health Hospital
 - Foothill Regional Medical Center
 - Los Angeles Community Hospital
 - Norwalk Community Hospital
 - Southern California Hospital at Culver City
 - Southern California Hospital at Hollywood
 - Van Nuys Behavioral Health Hospital
- Connecticut
 - Eastern Connecticut Health System
 - Waterbury Health
 - Rockville General Hospital
 - Manchester Memorial Hospital
- Pennsylvania
 - Crozer-Chester Medical Center
 - Delaware County Memorial Hospital

IHS EDR Program Contact Information

IHS DOH EDR Website:

www.ihs.gov/doh/edr/

IHS DOH EDR Project Managers: (Dr. Damon Pope; Dr. Joel Knutson)

IHSEDR@ihs.gov

DOH CDE link:

<https://www.ihs.gov/DentalCDE/>

DOH Portal link:

<https://ihs.gov/doh/>



Questions

What can we do to improve IHS EDR for you?

Joel Knutson

Contact: ihseidr@ihs.gov



