Telehealth Centers of Excellence

Emerging Technologies in Healthcare: Telemedicine, AI and the future.

CME on the Sands- May 26, 2025

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UMMC Center for Telehealth

Acknowledgment

This presentation was made possible by the Health Resources and Services Administration (HRSA) of the US Department of Health and Human Services (HHS) as part of the National Telehealth Centers of Excellence Award (U66RH31459). The contents are those of the author(s) do not necessarily represent the official views of nor an endorsement by the HRSA, HHS or the US Government.

Objectives

Describe how Telehealth and other Emerging Technologies like AI can improve healthcare, specially in rural states like Mississippi.

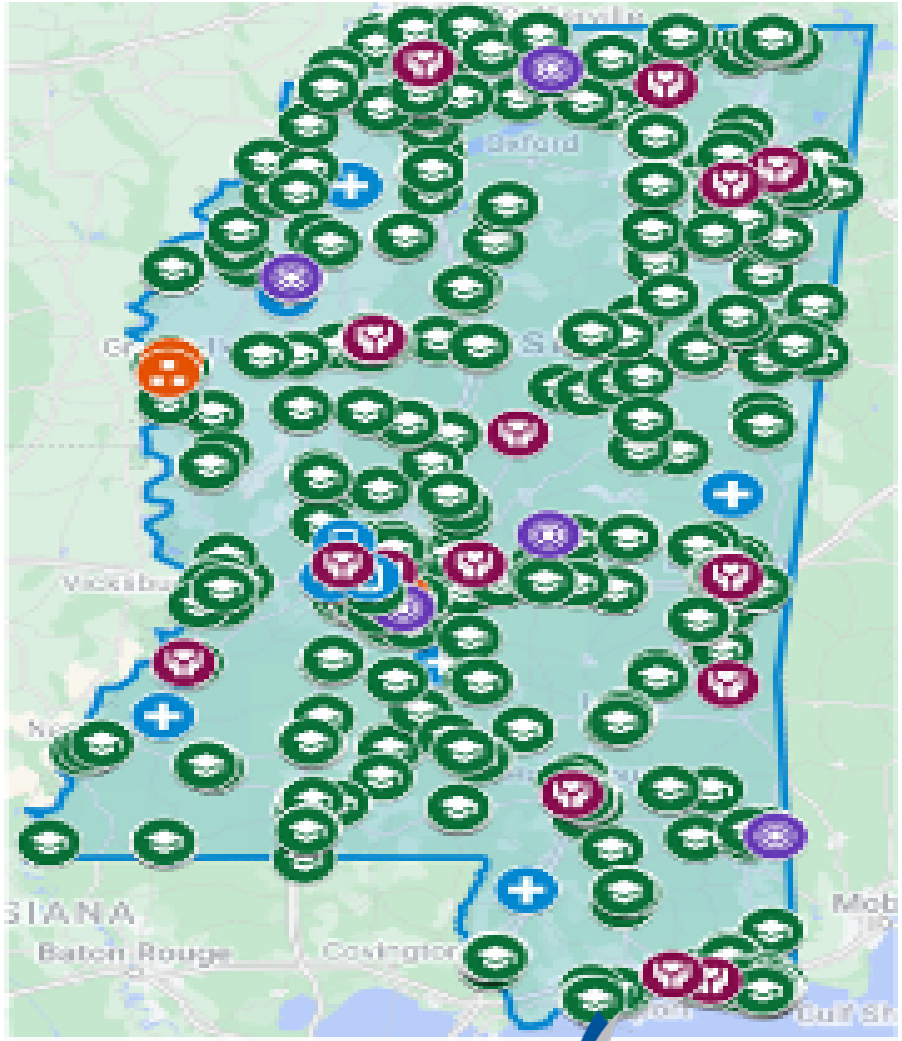
COMMITTED TO SERVING MISSISSIPPI COMMUNITIES

TELEHEALTH PLAYS A KEY ROLE BY DRAMATICALLY INCREASING ACCESS TO CARE IN RURAL AND UNDERSERVED AREAS ACROSS THE STATE

53 OF MISSISSIPPI'S 82 COUNTIES ARE MORE THAN A 40 MINUTE DRIVE FROM SPECIALTY SERVICES.

UMMC TELEHEALTH HELPS COMMUNITIES OFFER MUCH-NEEDED MEDICAL CARE IN AREAS WITH FEW OR NO MEDICAL SPECIALTIES.

- School-Based Telehealth
- TelEmergency
- TeleMental Health
- TeleInfectious Disease
- TeleNetworking
- Corporate
- UMMC2You



UMMC™ Center for Telehealth

Implementation of AI based Scribe to Improve Patient Engagement for Telehealth Visits and Reduce Provider Burnout

Role of AI in Telehealth

AI has the potential to enhance Telehealth by making it more accessible, efficient, and effective.

Virtual assistant

Improved patient outreach

Remote monitoring

Efficient triage

Patient engagement

Preventing provider burnout

Clinical Decision Support (triage, disease progressions, diagnostic algorithms)

Overview

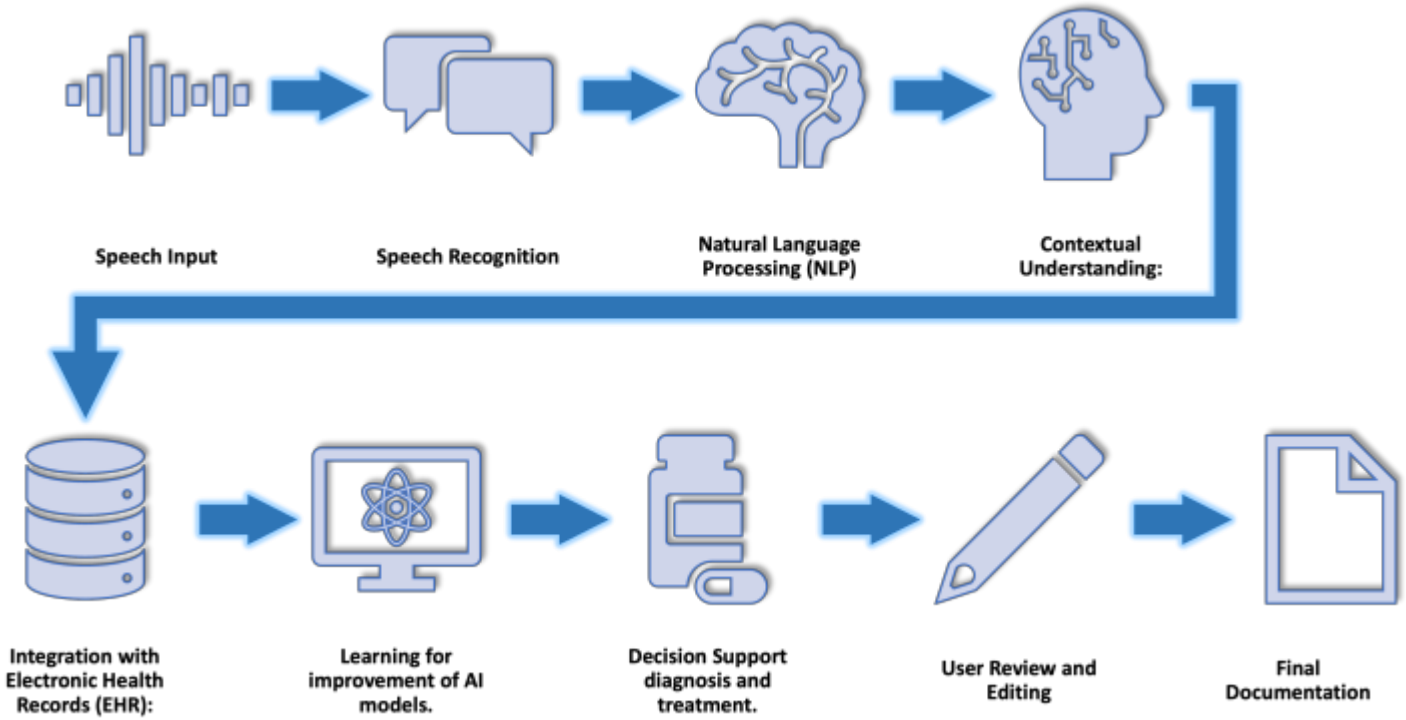
Provide more time for direct interaction/communication between patient and provider by automating the task of documentation using AI based technology (AI Scribe).

What is AI scribe ?

AI scribe uses artificial intelligence to transcribe spoken language into written text.

AI scribes leverage machine learning, natural language processing (NLP), and speech recognition technologies to automate the transcription process. This results in faster, more accurate transcriptions without manual intervention.

How AI Scribes Work



AI Scribe Flowchart

https://www.linkedin.com/pulse/transforming-healthcare-glimpse-ai-revolution-satish-swarnkar-3a8vc

Telehealth Workflow

1. Click to start AutoScribe and speak to the patient as usual

2. Click to end the visit and receive clinical documentation for review immediately

3. Paste the note into Epic

Subjective:

Chief Complaint:

Brendan is a 75 year old male presenting today for medication refills and ongoing back pain.

HPI:

Patient reports needing refills for multiple medications including a a heart medication (R
pressure medication (L-opril). Patient is unsure of the specific names and dosages for t
have their wife send in a list.

Patient has been experiencing back pain for approximately three months, which began
boxes. The pain is located over the left part of their buttocks and is described as a dull,
and goes, lasting for a long time before subsiding and then returning. Patient denies an
sensations. They report some leg weakness, which they attribute to a previous knee su

ROS:

ROS is otherwise negative, see HPI.

Current Medications:

Medication	Dose	Route	Frequency
R-statins (Rosuvastatin)	20 mg	Oral	Once daily
L-opril (Lisinopril)	10 mg	Oral	Once Daily

Allergies:

Allergen	Reaction
Ibuprofen	Asthma, hives
Penicillin	Hives

Objective:

Vitals:

BP:	118/76
BP Location:	Right arm
Patient Position:	Sitting
Pulse:	72
Temp	97.8 F (36.6 C)

UMMC COE Project Overview

Pilot Group

Specialties: Behavioral Health (Psychiatry, Social Work, and Counseling), Geriatrics, and Urgent Care

User Count: 19

Care Setting: Virtual

Ambience Product Scope

Ambience Product: AutoScribe

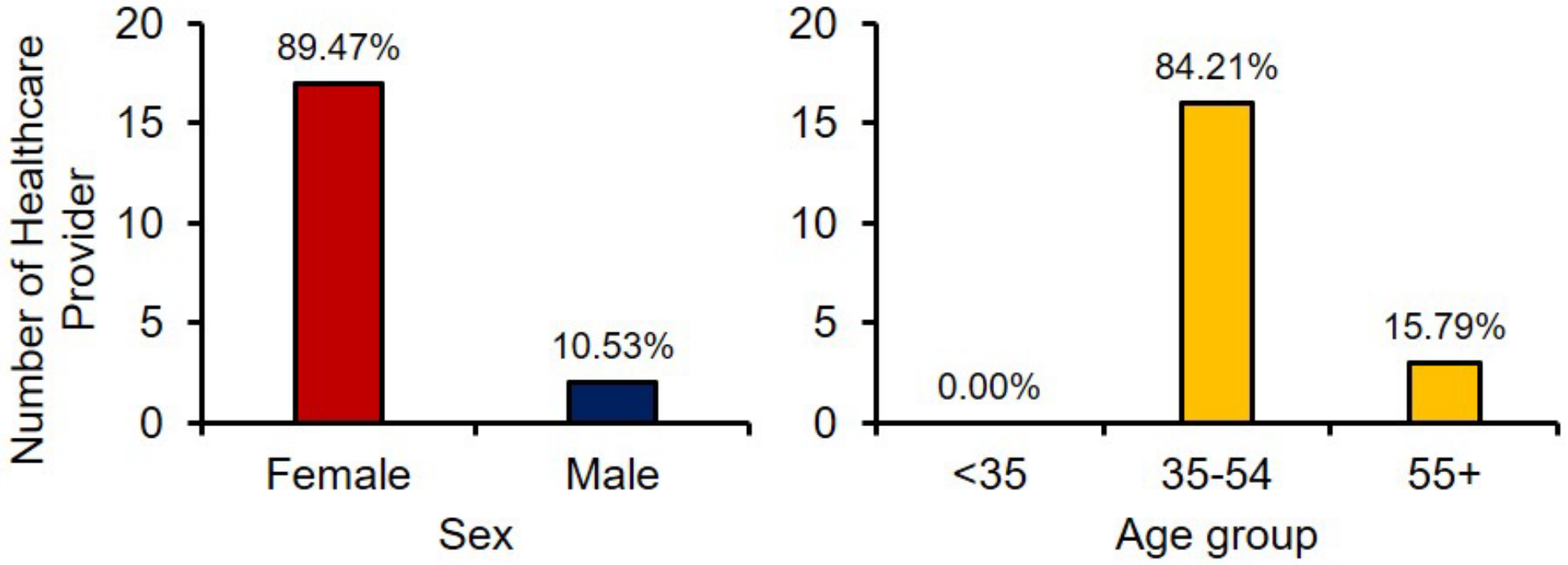
Platform Version Selected: Microsoft Edge Extension

UMMC Software Utilized

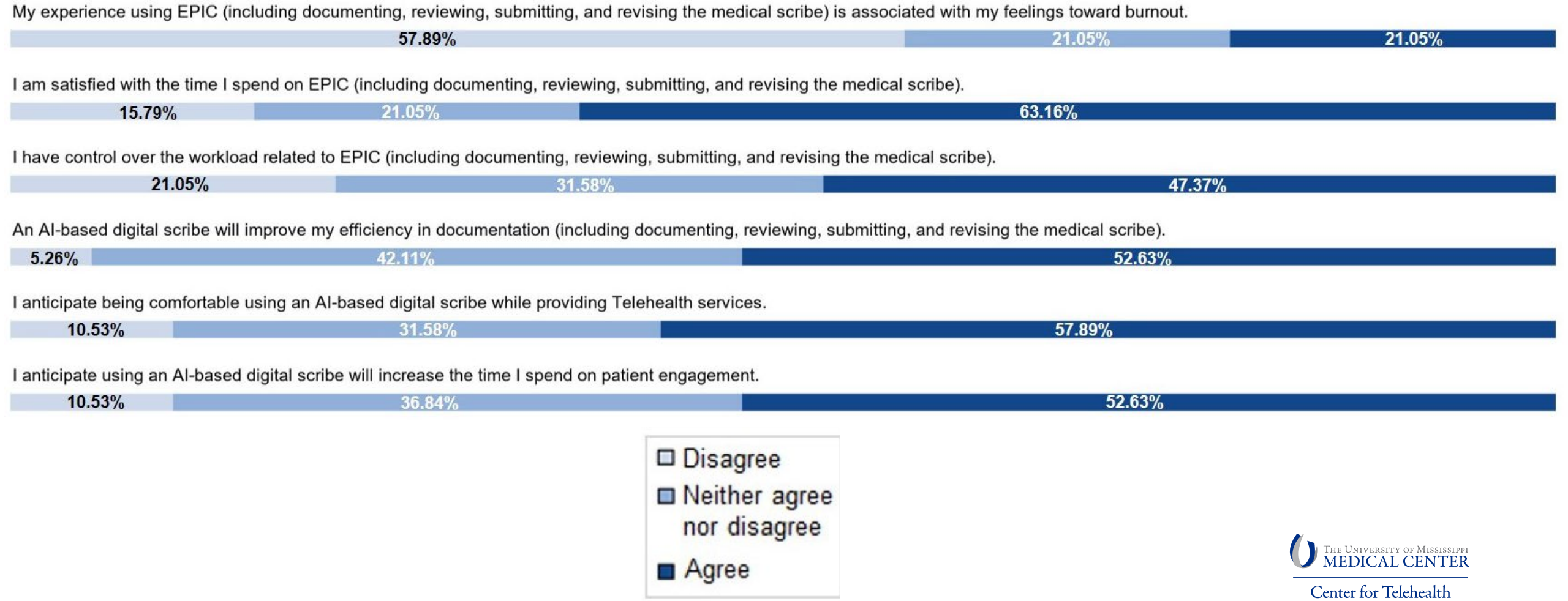
EMR: Epic

Telehealth Platform: ExtendedCare (Launch from Epic and Accessed Directly via Online Portal)

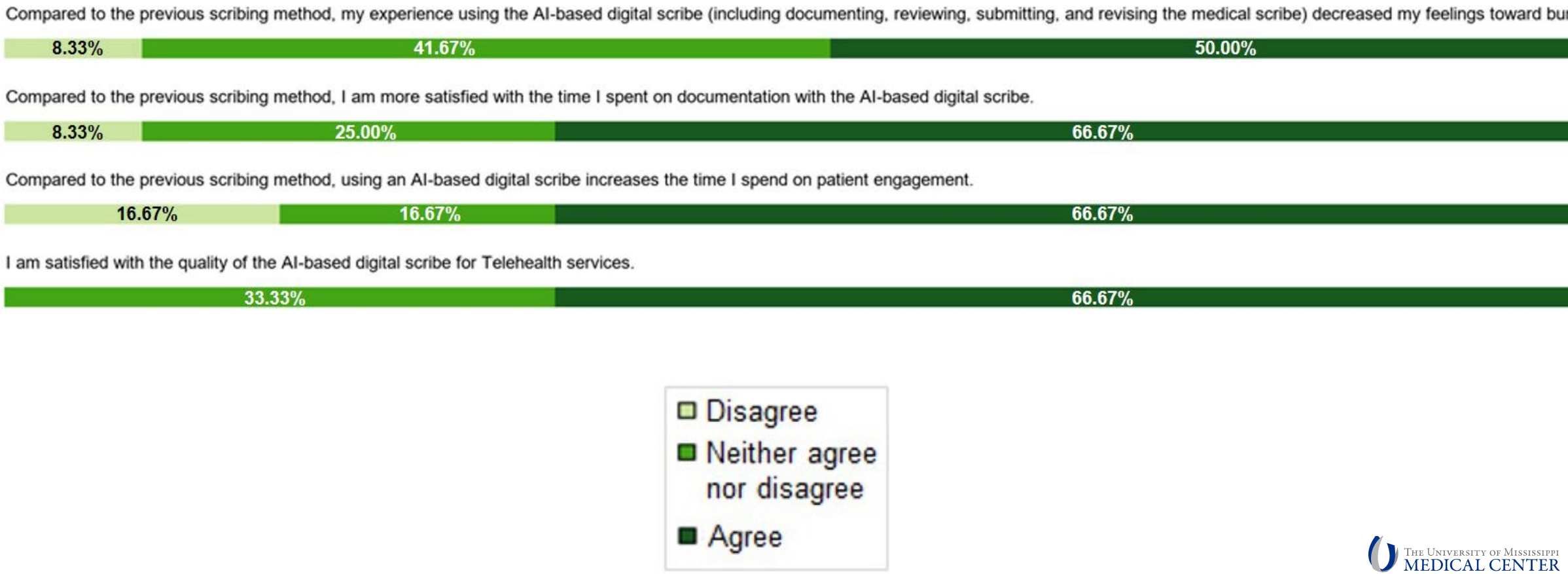
Provider Survey Results



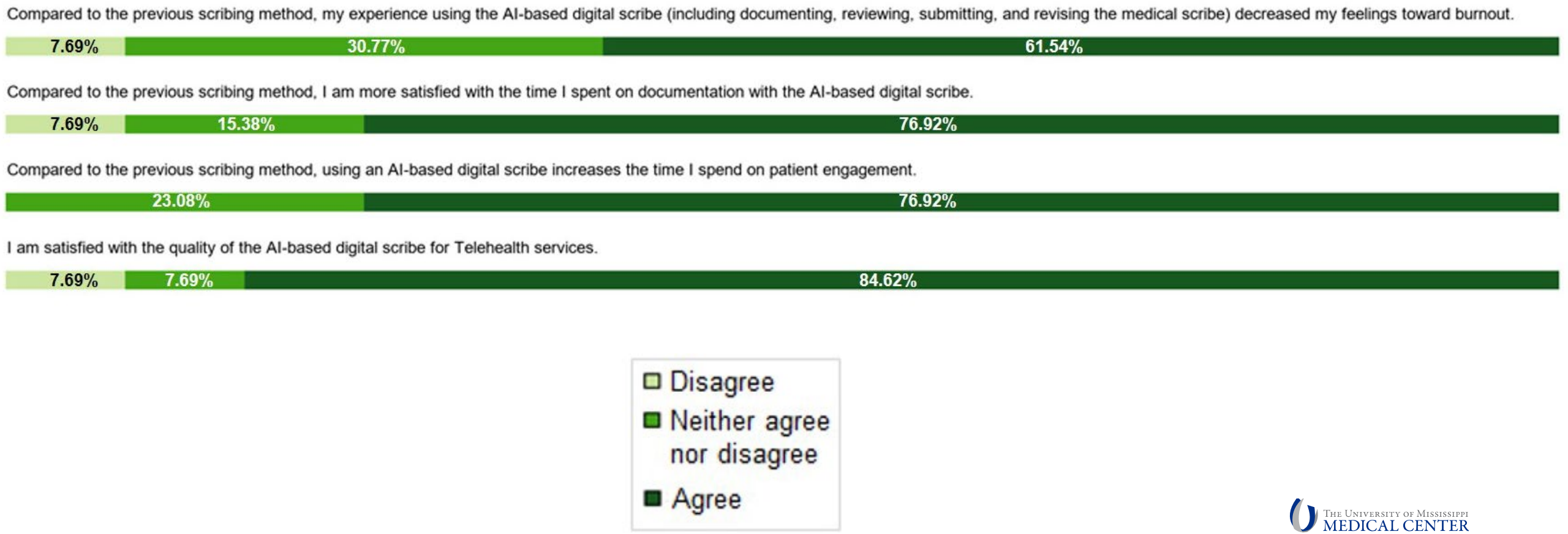
Provider Survey Results: Pre-implementation



1 month post-implementation



3 months post-implementation



Provider Survey: Conclusion and Future Directions

- An AI-based scribe has the potential to improve patient-provider interactions
- Automating documentation tasks allows providers to focus more on patient care
- Future work will focus on addressing cost-effectiveness of the AI-scribing tool

A full range AI-powered applications are deeply integrated into the EMR and meet the unique needs of each clinical specialty.

AutoScribe

Gold standard documentation tuned for clinical specialties, generated in real-time.

AutoCDI

CDI assistance that analyzes conversations to ensure ICD-10, CPT codes, and documentation support each other.

AutoAVS

Comprehensive after-visit summaries tailored for the patient and written in their preferred language(s).

AutoRefer

Clinically relevant and well-organized referral letters to specialists.

AutoPrep

Intelligent pre-charting to help catch up on context and design the agenda for the visit.

Challenges with AI Scribe Generated Note/Documentation

Risk	Potential Impact	Mitigation Strategies
Inaccuracy & Hallucination	Incorrect diagnoses, treatment errors, patient harm	- Require human review - Fine-tune on clinical data - Highlight uncertain content
Contextual Misunderstanding	Loss of nuance; misrepresentation of patient history or intent	- Use structured templates - Support multi-modal inputs - Segment small talk
Overreliance on AI	Clinicians overlook errors, propagate flawed documentation	- Provider training - Mandatory review window - Track edits via audit logs

Challenges with AI Scribe Generated Note/Documentation

Privacy & Consent	Violation of patient confidentiality; legal repercussions	- Obtain explicit, informed consent - Allow opt-out - Process data on-device
Data Security	Breaches, data leaks, identity theft	- Encrypt data at rest and in transit - Enforce access controls - Vet third-party tools
Bias & Discrimination	Unequal care or documentation across different patient groups	- Train on diverse datasets - Conduct regular bias audits - Document model behavior
Legal & Regulatory Gaps	Lack of clarity on liability; potential malpractice exposure	- Define shared accountability with vendors - Include legal disclaimers - Engage policymakers

Augmentation of the Virtual Nursing Program Using AI

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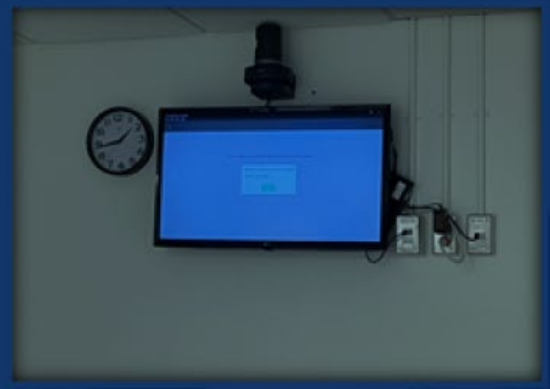
Pilot Program



Implementation - March 20, 2023

- 6 West: 14 Bed Unit
- Adult Med-Surg

Staffing Structure

- Onsite - "Bunker"
- 9am-9pm, 7 days a week

Technology

Patient Room

- Pan/Tilt/Zoom Camera and Monitor, Speakers
- iPad with MyChart Bedside (education, satisfaction questionnaire)

Virtual Nurse Bunker

- Secure Chat Integrated with EPIC Platform
- 4 Screens: Hyperspace, Focuses Patient, Video Call, EPIC Monitor

NURSE WORKLOAD REDUCTION

Admissions

Bedside Nurse: **38 minutes**

VS

Virtual Nurse: **23 minutes**

Discharges

Bedside Nurse: **31 minutes**

VS

Virtual Nurse: **13 minutes**

550 Hours Saved

BEDSIDE RN HOURS SAVED IN THE **FIRST YEAR**
(ADMISSIONS AND DISCHARGES ONLY)

Results

0%

RN Turnover

In the first 18 months

★★★★★

The virtual nurse program is very helpful because it helps me with time management and admissions and discharges if I'm tied up or have to do something in another patient room. Also a skill I may question I can call them and they can walk me through it. They help reassess pain and are like my extra hands from a distance and do several behind the scene things for myself and the patients regarding their care. Adding the virtual nurse system was a great implementation especially when it is used to our advantage. Sometimes messaging MD can be a hassle and even during RAPIDs and code they can assist in those situations as well.

★★★★★

I feel that the Virtual RN's are very beneficial to nursing workflows. They are able to take so much off of the primary nurse. Not only admissions and discharges, but also rounding and being another set of eyes in case the patients start to take a turn. The virtual nurses have lots of nursing experience and are a wealth of knowledge.

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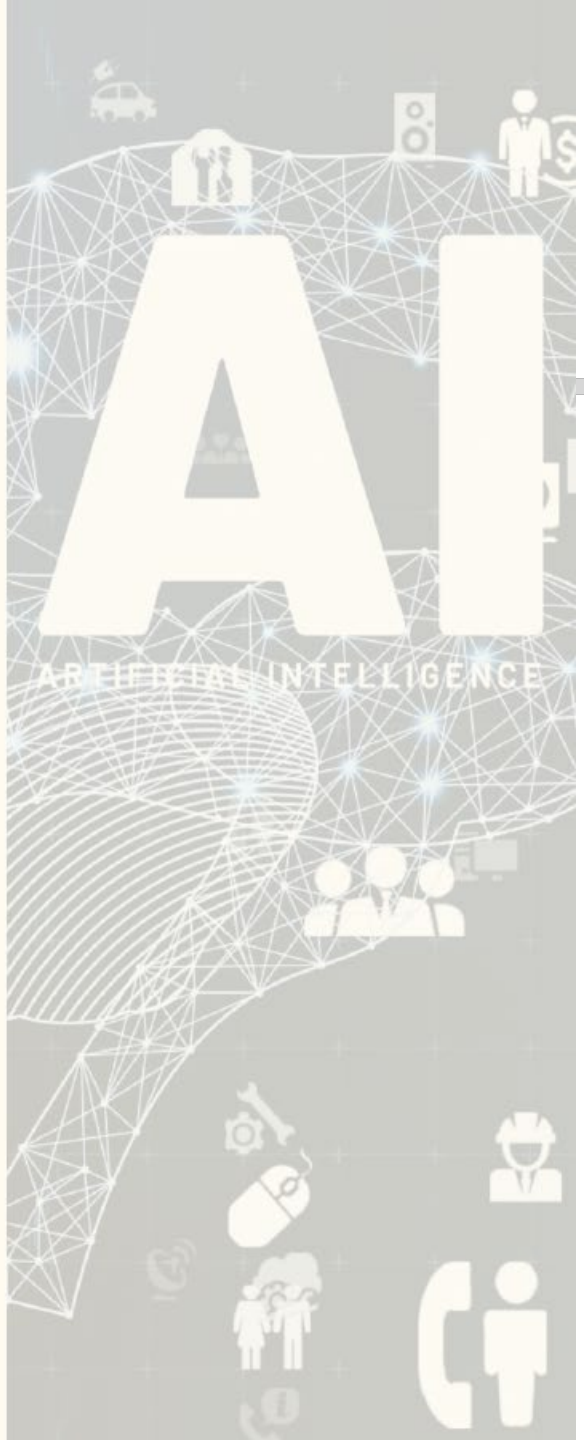
Future State

Expansion and Growth

- Additional Nursing Units
- Changing platforms to include AI technology



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Clinical Sites

Units: 6 West & 4 North

Number of Beds: 46

Phase 1: Enhance virtual nursing capabilities and fall prevention with Remote Observers

Phase 2: Pressure Ulcer Prevention

Units: ED, Med-Surg

Number of Beds: 33

Phase 1: Artisight AI dashboard with visual fall risk alerts at nursing station and Teleconsult

Phase 2: Pressure Ulcer and Hand Hygiene

Units: 2nd floor, Med-Surg

Number of Beds: 49

The Industry-Defining AI-Powered Platform Built by Clinicians

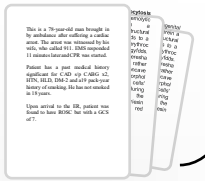
Computer Vision

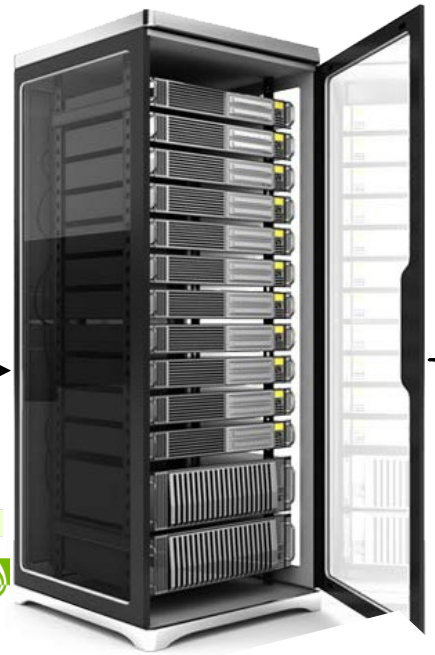
Voice Recognition

Ultra-Wideband

Telemetry

LLM





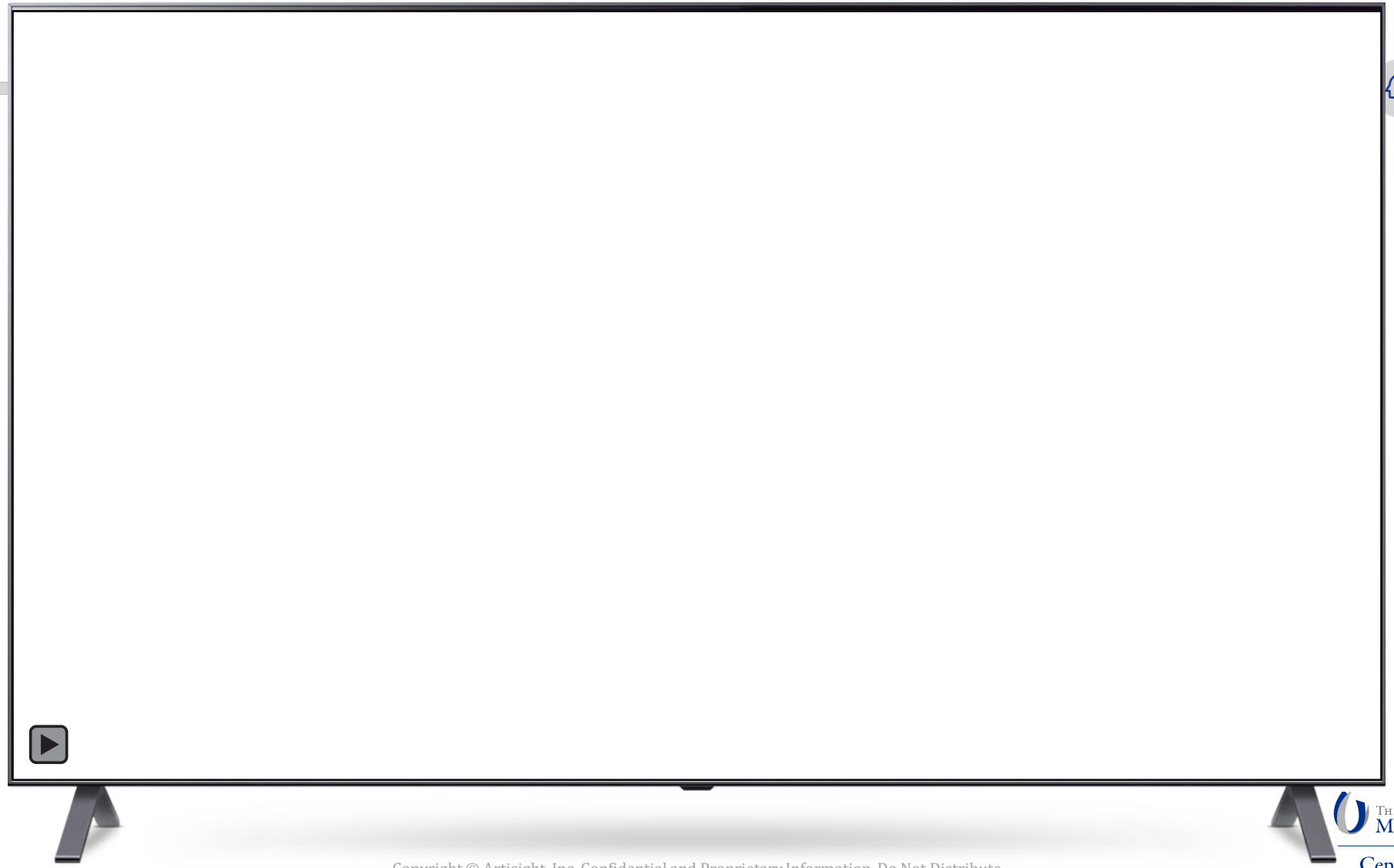
Remote Nursing

Tele Health

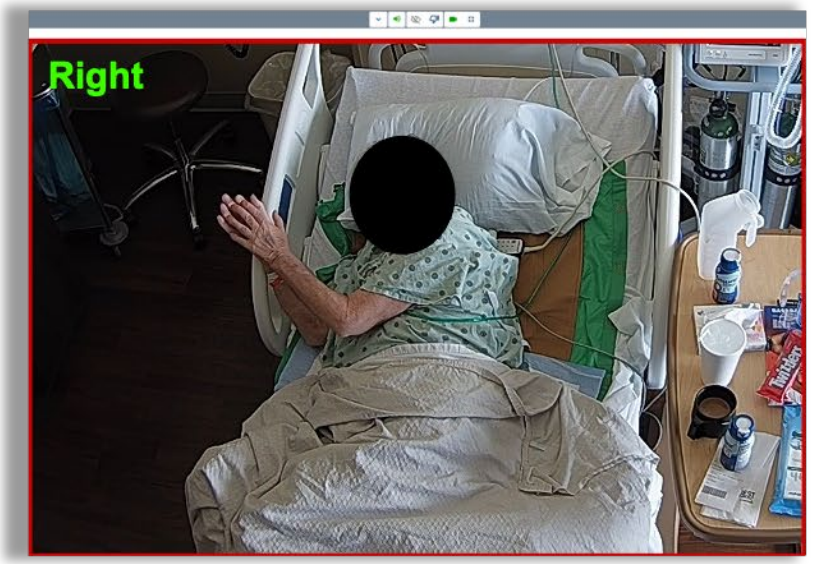
Fall Prevention

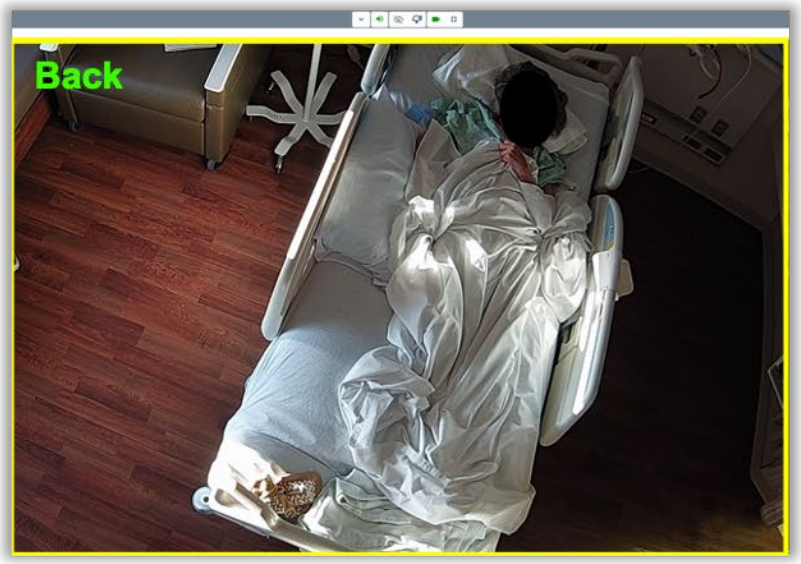
- Enhance Care Delivery
- Improve Patient Outcomes
- Increase Staff Satisfaction
- Increase Patient Satisfaction

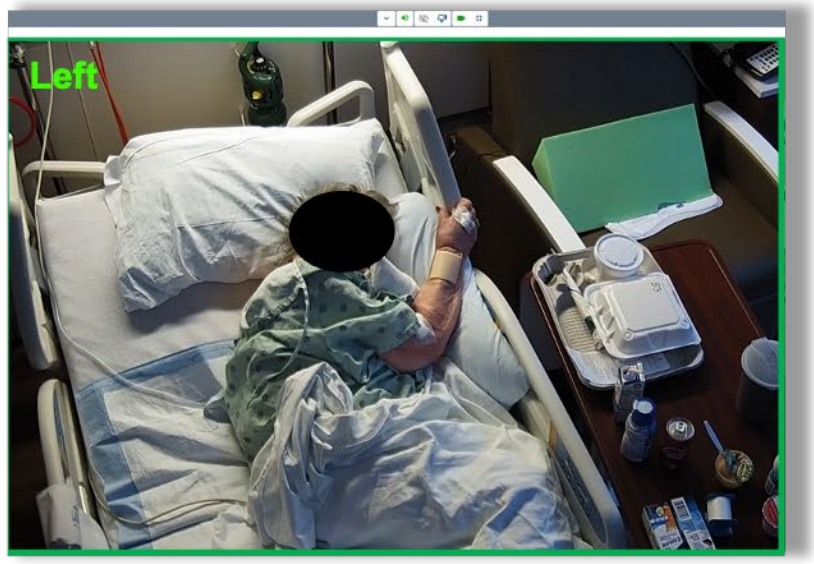
Fall Prevention



Pressure Ulcer Prevention







Admissions and Discharges

	Jan-25	Feb-25	Mar-25	Apr-25
6 WEST				
Admission	37	41	46	25
Discharge	48	57	66	45
Tranfers				5
	Jan-25	**Feb-25**	**Mar-25**	**Apr-25**
4 NORTH				
Admission		93	120	99
Discharge		140	129	125
Tranfers		7	46	19

<u>February- 4/24 totals</u>

Admissions – 424

269 Hours (11 Days) Saved

Discharge – 562

290 Hours (12 Days) Saved

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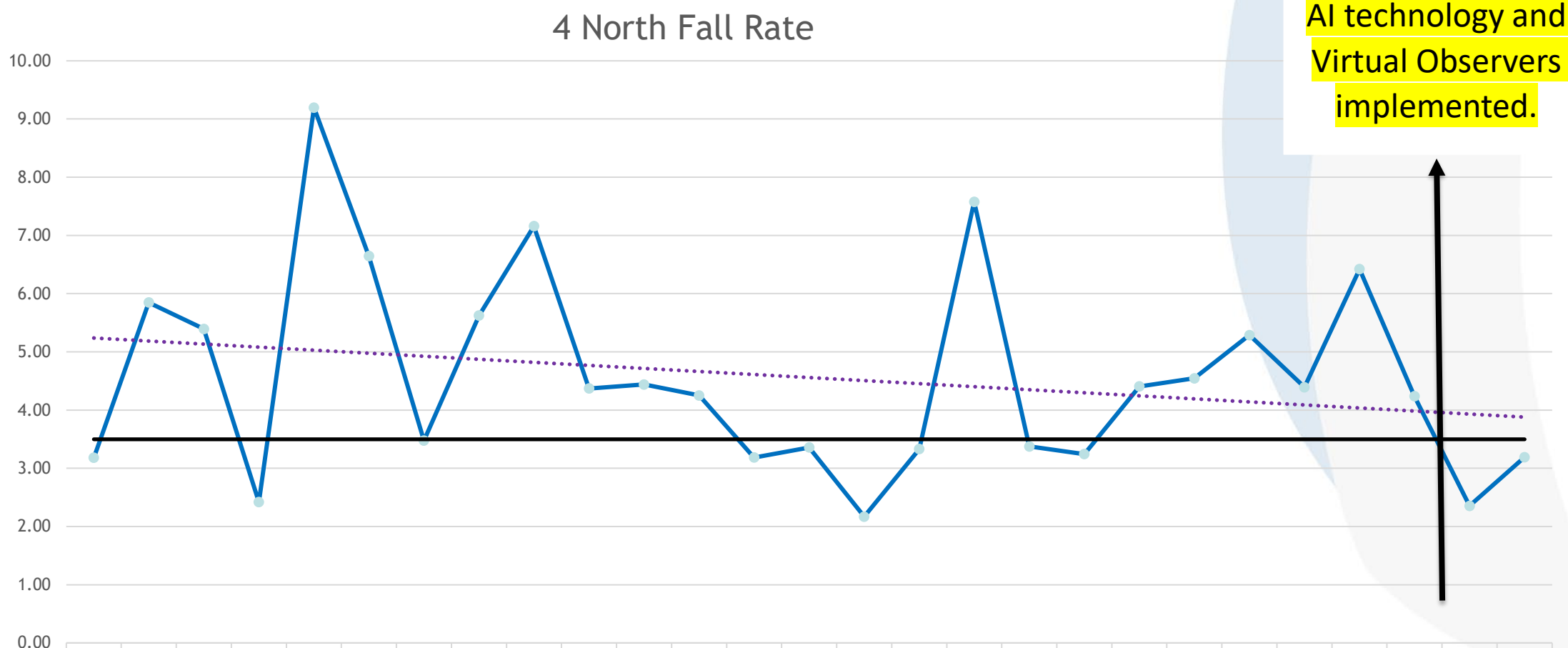
Virtual Observer

Artisight on 6W and 4N			
Patients being monitored: 20			
	Feb-25	Mar-25	Apr-25
Falls prevented with redirection:	223	529	221
(call into room or use phrases)			as of 4/21
Falls prevented with staff interventions:	49	149	79
(Red overhead alarm)			as of 4/21

Redirection Total: 973

Staff Interventions: 277

Quality – 4N FALLS



AI technology and Virtual Observers implemented.

	Jan-23	Feb-23	Mar-23	April-23	May-23	June-23	July-23	Aug-23	Sept-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	June-24	July-24	Aug-24	Sept-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25
4 North	3.18	5.85	5.39	2.42	9.20	6.64	3.48	5.62	7.16	4.37	4.44	4.25	3.18	3.36	2.17	3.33	7.58	3.38	3.24	4.41	4.55	5.29	4.39	6.42	4.24	2.35	3.19
UMMC Goal	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5

<u>2 falls on same patient being monitored on 4N.</u>

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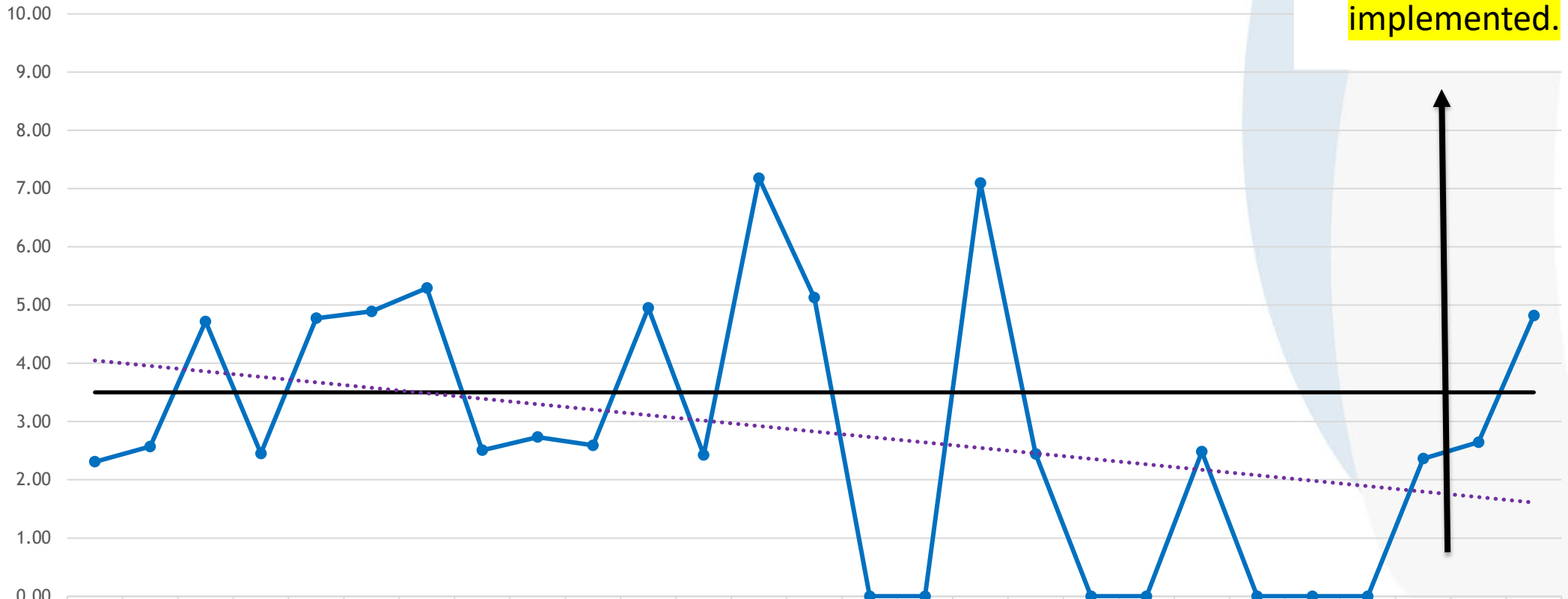
Quality – 6W FALLS

AI technology and Virtual Observers implemented.



	Jan-23	Feb-23	Mar-23	April-23	May-23	June-23	July-23	Aug-23	Sept-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	June-24	July-24	Aug-24	Sept-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25
6 West	2.31	2.57	4.72	2.45	4.77	4.89	5.29	2.51	2.73	2.59	4.95	2.43	7.18	5.13	0.00	0.00	7.10	2.44	0.00	0.00	2.48	0.00	0.00	0.00	2.36	2.64	4.82
UMMC Goal	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5

NO falls on patients being monitored 6W.

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Shortage of Specialists in Mississippi

Limited access to specialty care is a major cause of inequity in healthcare

- More work for PCPs and staff
- Delayed care for patients
- More ER use
- Worse clinical outcomes

Provider to Provider consults (e-consult)

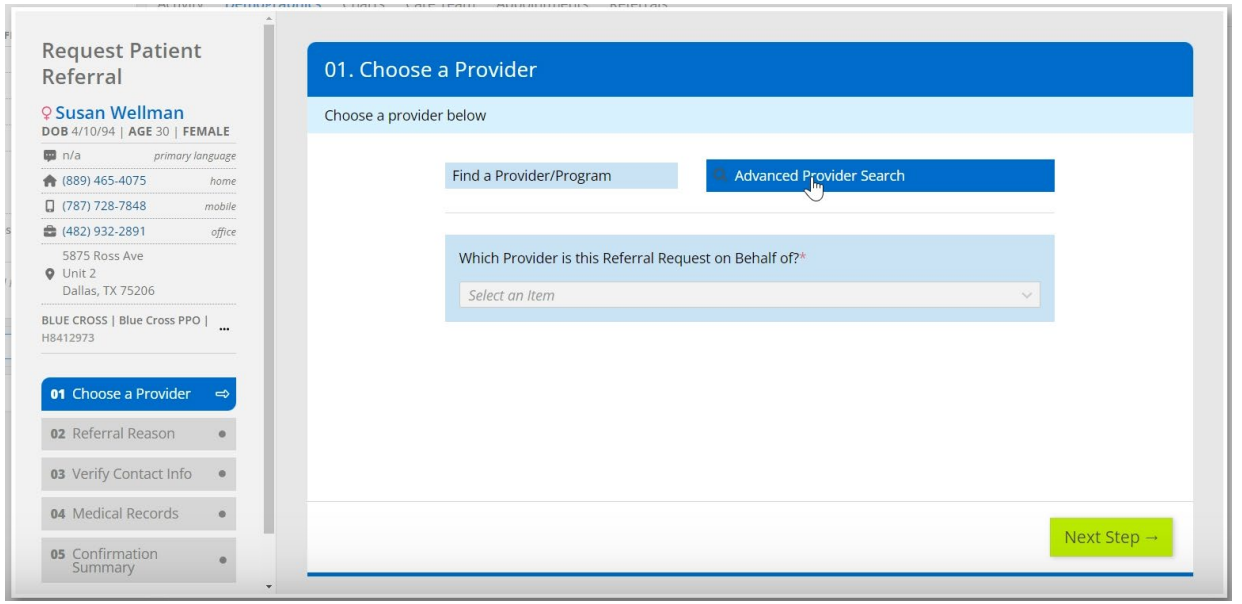
E-consults

- e-consult is an asynchronous electronic communication that enables primary care providers to obtain specialists' inputs into a patient's care treatment without requiring the patient to go to a face-to-face visit.
- The initiating provider sends a secure message, often with lab reports, images, or other necessary documentation, to the specialist asking advice about diagnosis and patient management.

Utilizing HIE for Referrals

HIE Clinical Referrals

- Anyone on the Intellitrue platform can utilize a new referral system to refer patients to any other provider that has been configured to receive referrals.
- Can be utilized regardless if the provider EMR has been setup for Direct Messaging and/or they don't know how to utilize direct messaging for referrals.



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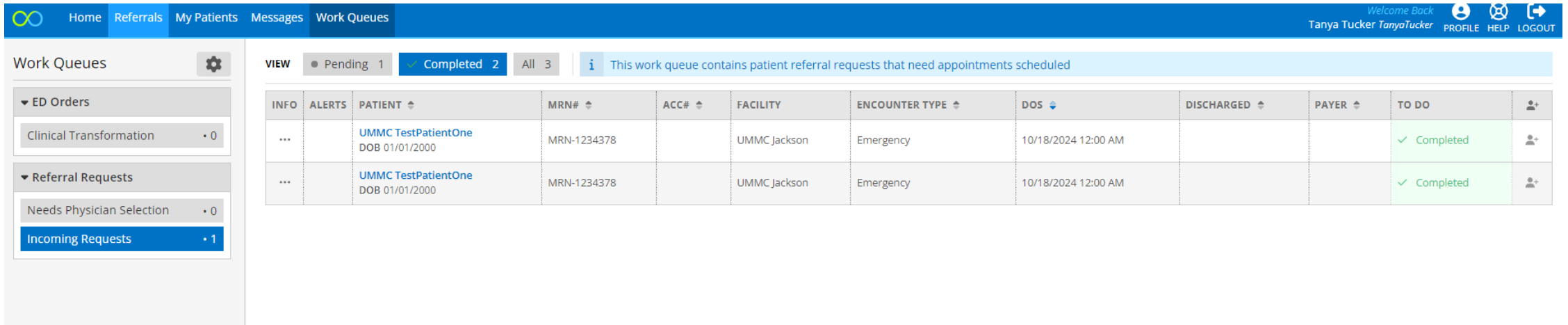
Referrals

- The benefit of this system is it can be utilized for both regular in person referrals, as well as eConsults.

HIE Referral Work Queue Vision

The Referral Work Queue is a snapshot of all referrals made and their status.



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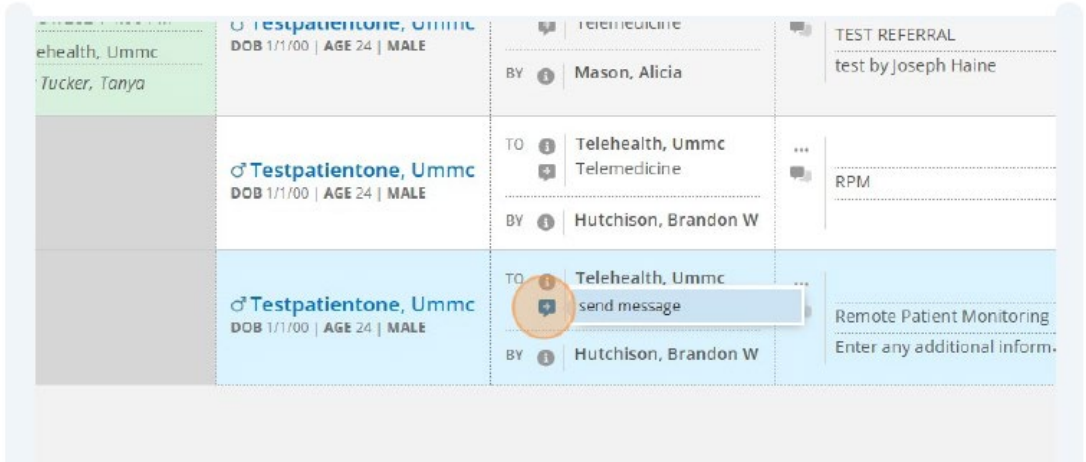
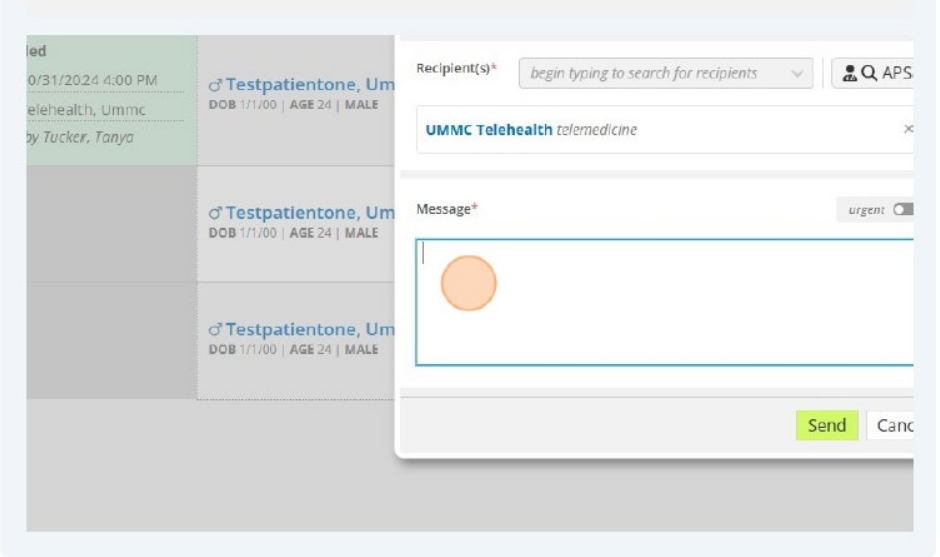
HIE Referral Work Queue Vision

- Need to check on a referral? Send a message within the platform:





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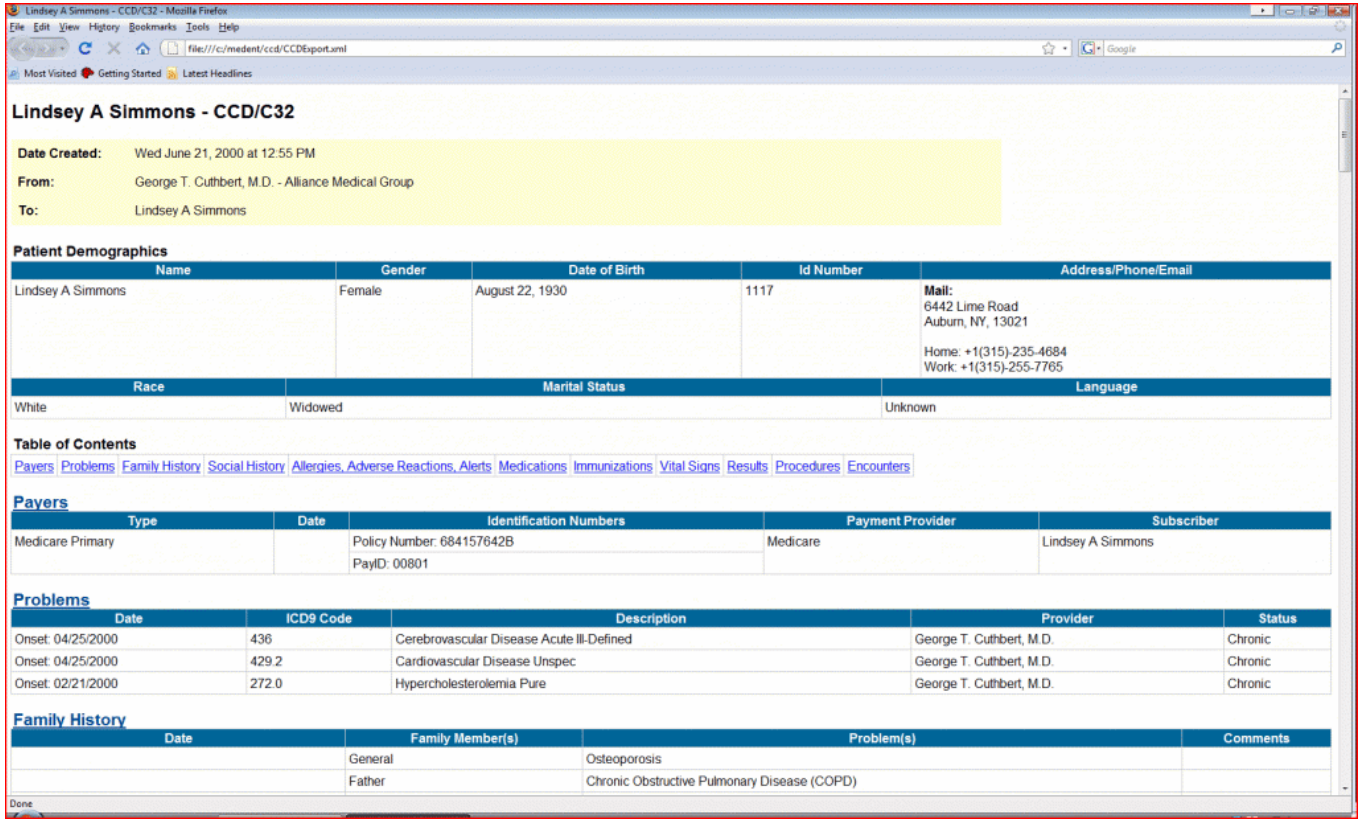
Solution – AI Based Summaries



Lindsey A Simmons - CCD/C32 - Mozilla Firefox

File Edit View History Bookmarks Tools Help

file:///c:/medent/ccd/CCDExport.xml

Most Visited Getting Started Latest Headlines

Lindsey A Simmons - CCD/C32

Date Created: Wed June 21, 2000 at 12:55 PM

From: George T. Cuthbert, M.D. - Alliance Medical Group

To: Lindsey A Simmons

Patient Demographics

Name	Gender	Date of Birth	Id Number	Address/Phone/Email
Lindsey A Simmons	Female	August 22, 1930	1117	**Mail:** 6442 Lime Road Auburn, NY, 13021 Home: +1(315)-235-4684 Work: +1(315)-255-7765

Race	Marital Status	Language
White	Widowed	Unknown

Table of Contents

Payers | Problems | Family History | Social History | Allergies, Adverse Reactions, Alerts | Medications | Immunizations | Vital Signs | Results | Procedures | Encounters

Payers

Type	Date	Identification Numbers	Payment Provider	Subscriber
Medicare Primary		Policy Number: 684157642B PayID: 00801	Medicare	Lindsey A Simmons

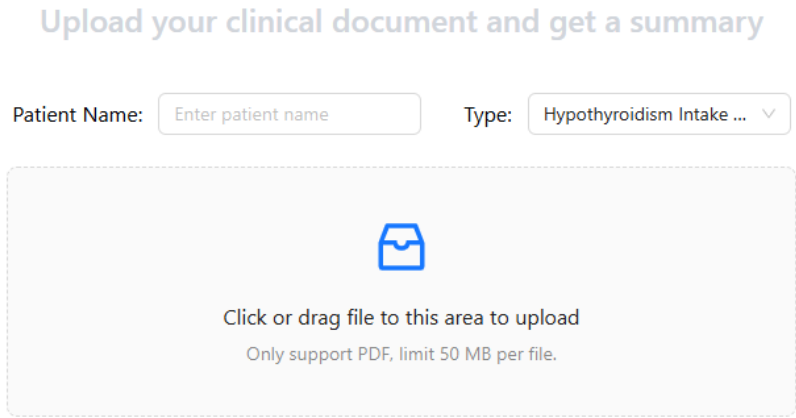
Problems

Date	ICD9 Code	Description	Provider	Status
Onset: 04/25/2000	436	Cerebrovascular Disease Acute Ill-Defined	George T. Cuthbert, M.D.	Chronic
Onset: 04/25/2000	429.2	Cardiovascular Disease Unspec	George T. Cuthbert, M.D.	Chronic
Onset: 02/21/2000	272.0	Hypercholesterolemia Pure	George T. Cuthbert, M.D.	Chronic

Family History

Date	Family Member(s)	Problem(s)	Comments
	General	Osteoporosis	
	Father	Chronic Obstructive Pulmonary Disease (COPD)	

Done



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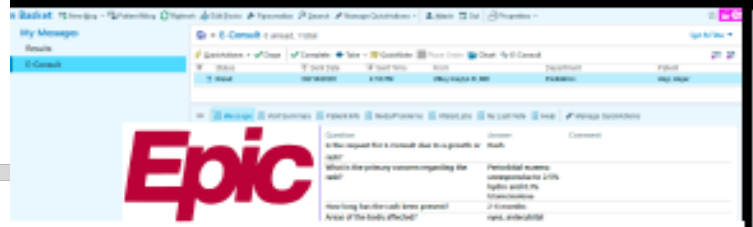
eConsult programs with dermoscopy

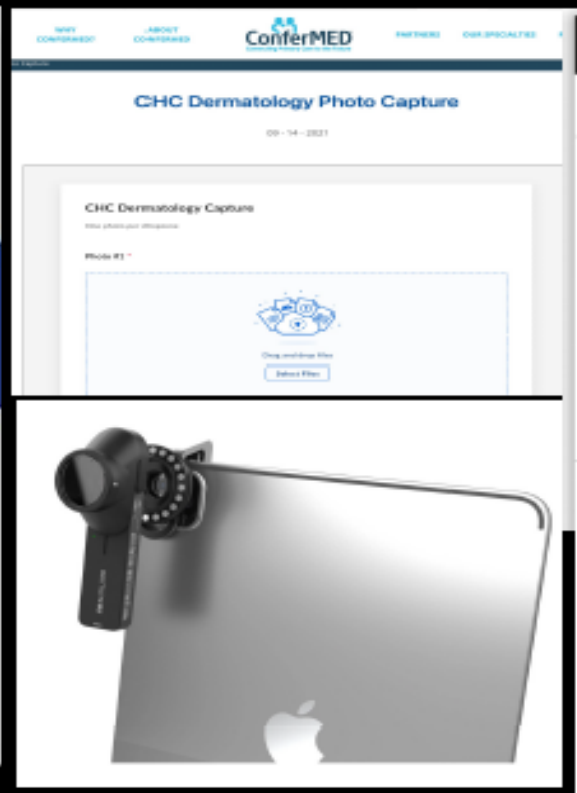


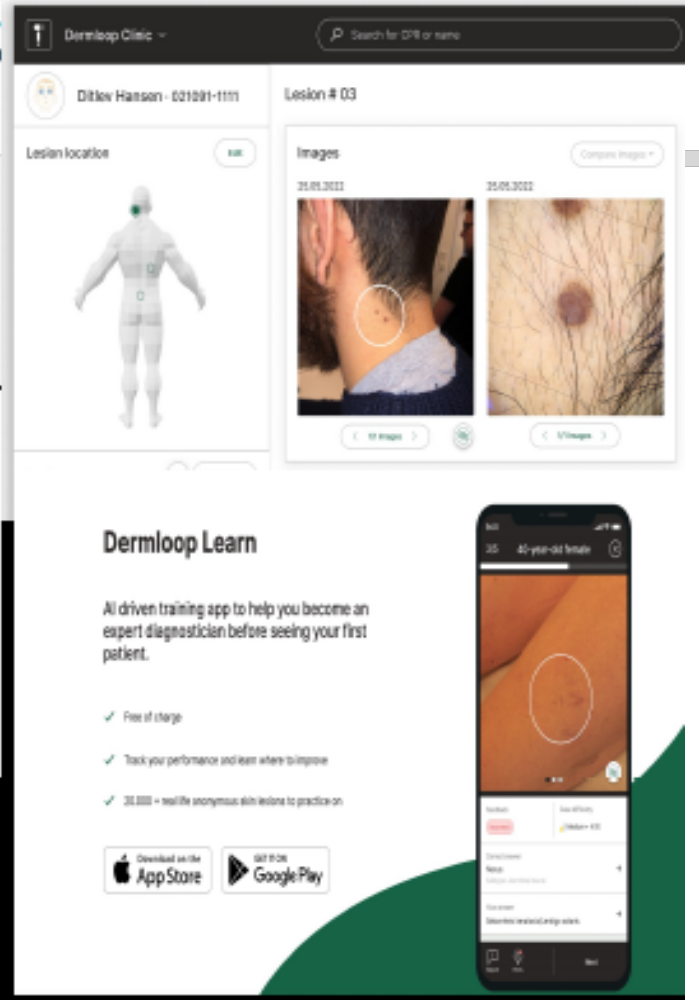
E-Consult Order

Question	Answer
Is the request for E-Consult due to a growth or rash?	Growth
How long has the growth been present?	More then 5 years
Choose all that apply:	Enlarging or changing colors
Prior biopsy?	No
Prior Treatment?	No
Organ or bone marrow transplantation, or other form of immunosuppression?	No
Past medical history of skin cancer?	No past medical history
Personal or family history of melanoma?	No
Social history of tanning bed use?	No
1) Far away anatomical image:	DOCUMENT
2) Up close image:	DOCUMENT
3) Dermoscopic polarized image:	DOCUMENT
4) Dermoscopic non-polarized image:	DOCUMENT

Maine Medical Center
MaineHealth

OHSU





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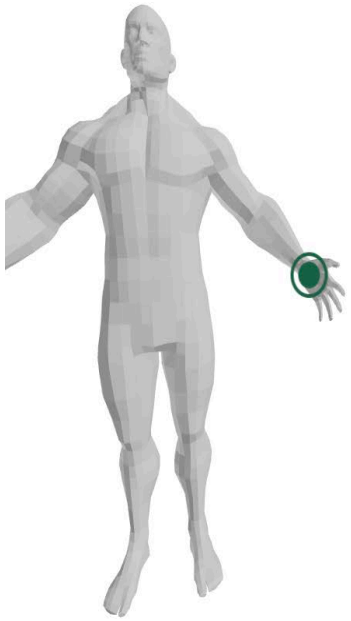
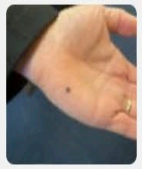
eConsult with dermoscopy version 5.0

John Baker
DOB • 10/11/1991 (32 yo)
Acc No. • 25136

Lesion location





#01 • Vascular tumor/Hemorrhage
Telereferral • Pending diagnosis
02.01.2024

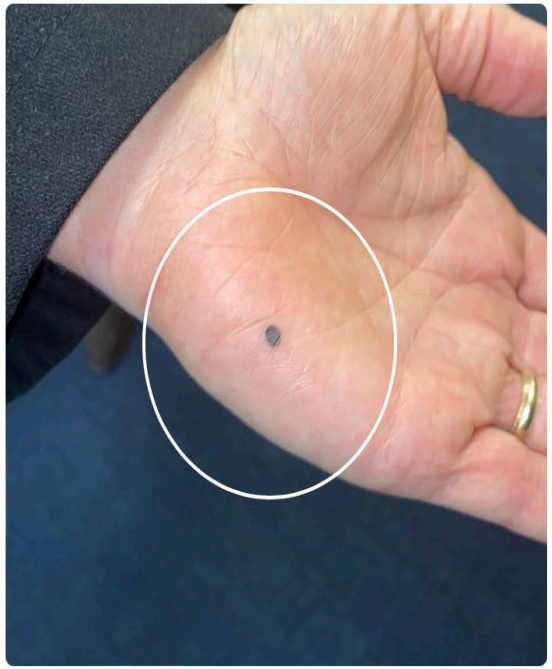
Melatech

Overview • Lesion #01

Images

Compare images

Overview image
02.01.2024 (Baseline)
Download image



1/1 Images

Dermoscopic image
02.01.2024 (Baseline)
Download image

1/1 Images

2 Telediagnosis • Mandatory

2.1 Primary diagnosis

Search for diagnosis

Search for diagnosis

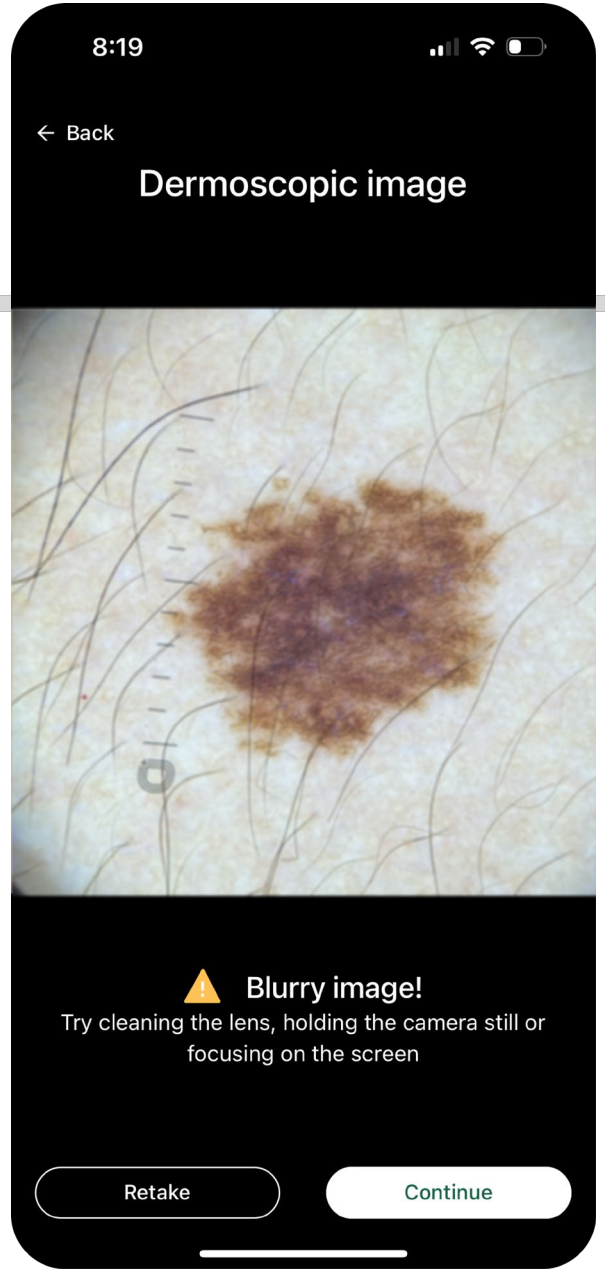
Or search most used

Hemangioma	Seborrheic keratosis
Melanoma	Squamous cell carcinom
Actinic keratosis	Unspecified nevu
Dermatofibroma	Basal cell carcinom

Unable to determine

Add additional diagnosis

3 Conclusion



Melatech

Dermloop

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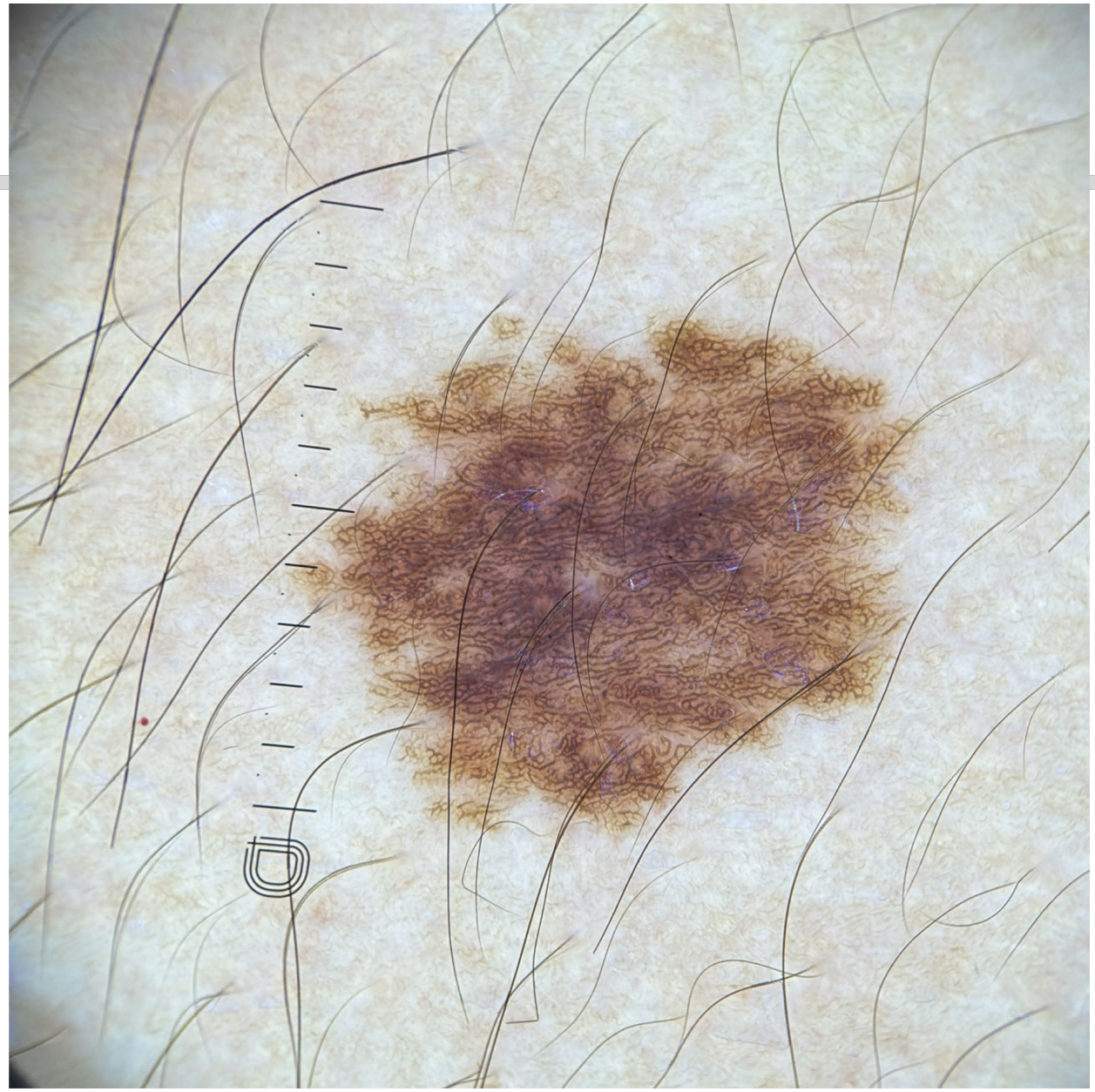
Center for Telehealth

AI-assisted image capture reduces risk of poor image quality to less than 2%

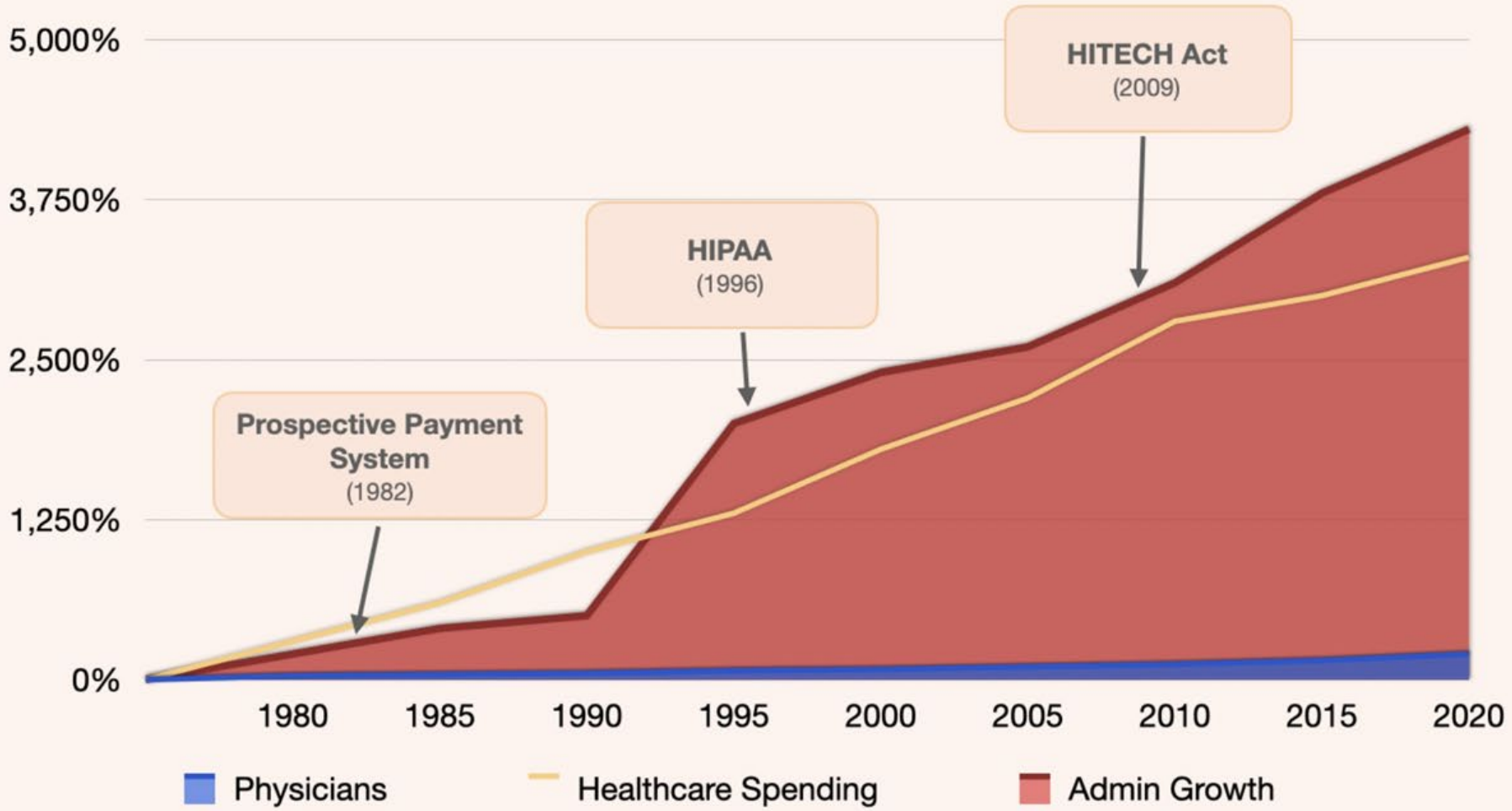


ETHICAL CONSIDERATIONS	DESCRIPTION
1. Algorithmic Bias	Biased based on data (historical)
2. Patient Autonomy	Limited understanding
3. Accountability and Liability	Determining responsibility
4. Transparency	Source of data utilized
5. Privacy and security	Protection of PHI
6. Access	Unequal access to AI technologies

Yadav, J Arti Inte & Cloud Comp, 2024

Financial Considerations

Percentage Growth of Healthcare Administration

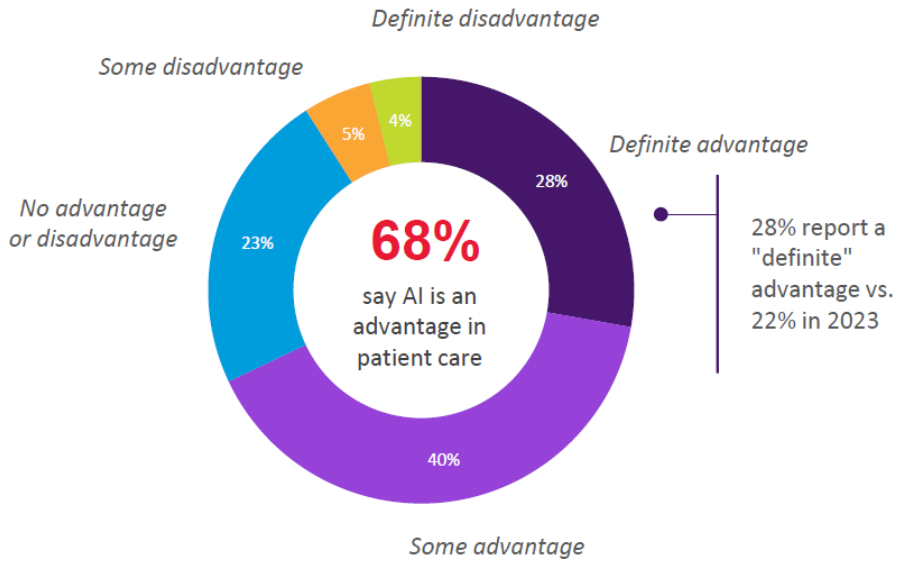


Enter

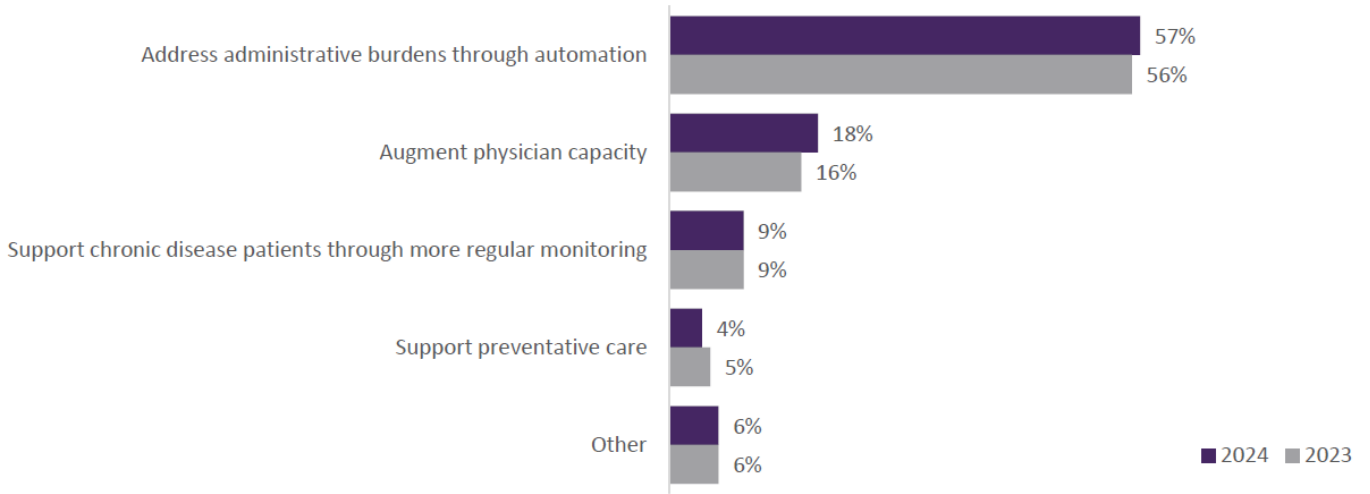
enter.health

Rapid increase in AI users

Percent of respondents stating they currently use at least one of the 15 AI use cases presented



Biggest Area of Opportunity for AI



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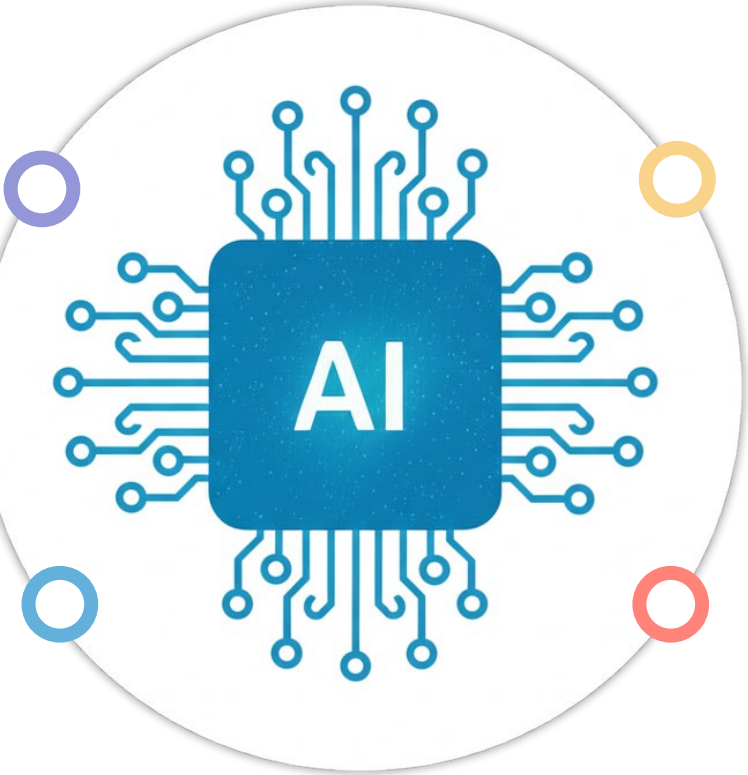
Center for Telehealth

(American Medical Association, 2025)

DIRECT VALUE

Task Automation

- Focus on Complex or Value-Add Activities



Improved Revenue Cycle Management

- Faster Claims Processing
- Reduced Denials

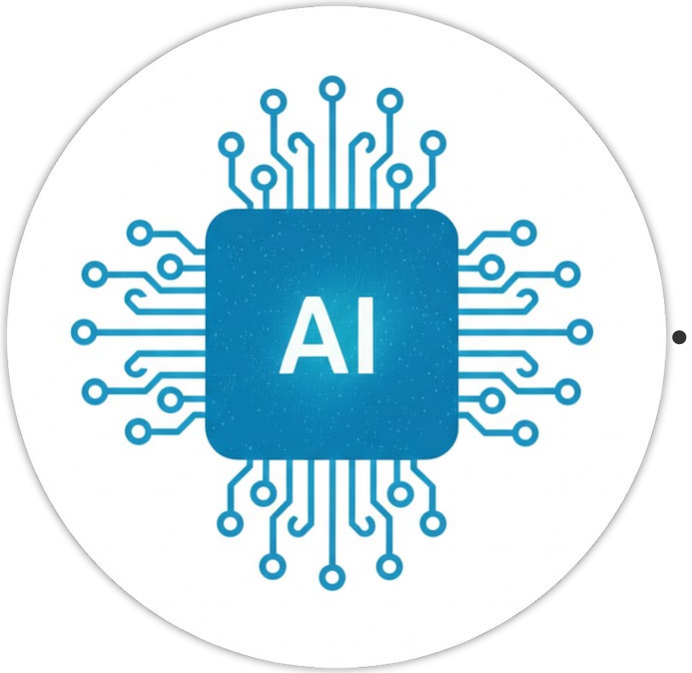
Enhanced Diagnostic Efficiency and Accuracy

- Faster and Accurate Diagnoses
- Reduced Misdiagnosis and Complications

Predictive Analytics

- Reduced Readmissions
- Value-Based Care

INDIRECT VALUE



Reduce Physician Burnout

Data Driven Decision Making

Patient Experience

- Streamlined Scheduling
- Pre-Visit Data Aggregation
- Personalized Resources
- Improved Outcomes

HEALTHCARE AI EXAMPLES

Clinical Documentation

AI SCRIBE

Direct Savings

1 hr/day saved =
$48-$69k/yr per provider

(AMA, 2024)

Indirect Benefits

- Reduce Burnout
- Improve Work/Life Balance
- Provider Retention

Coding and Billing

AI CODING AND CHARGE CAPTURE

Direct Savings

30-50% denials reduction on $10k denials/mo =
$36k-$60k/yr

(McKinsey, 2021)

Indirect Benefits

- Faster Submissions
- Fewer Denials

Prior Authorization

AI PRIOR AUTH FORMS

Direct Savings

13 hrs/week saved =
$50,700 per physician annually

(AMA, 2024)

Indirect Benefits

- Reduced Delays in Care
- Improve Approval Rates

HEALTHCARE AI EXAMPLES

Risk Stratification

PREDICTIVE ANALYTICS

Direct Savings

10% less readmissions for chronic conditions = $150,000/yr

(AMA/Geisinger, 2024)

Indirect Benefits

- Reduced Readmissions
- Improve ACO/Shared Savings

Patient Triage

AI CARE ROUTING

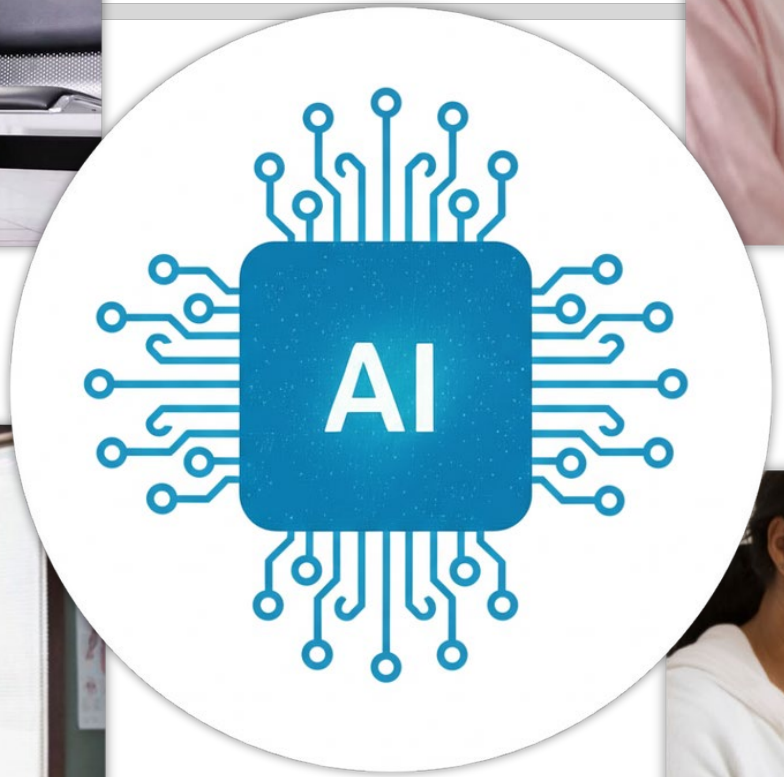
Direct Savings

45% ER Deflection = $36-$90k/yr in shared savings

(Novant, 2022)

Indirect Benefits

- Optimize Patient Flow
- Reduce Overburdened Areas



Center for Telehealth

It’s all About Teamwork!

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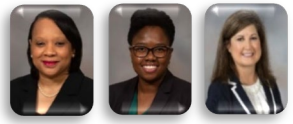
RN Care Coordinators



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Office for the Advancement of Telehealth, grant number U6631459

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Thank You!

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