

USING AI SMART SEARCH AND SUMMARIZATION TO REDUCE CLINICIANS COGNITIVE LOAD

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Family Medicine / IT Provider Liaison

Mile Bluff Medical Center

Christine Silva, CPMM, CPM

Senior Director, Field Marketing

MEDITECH

ABOUT ME

1995 Graduate of UW-Madison.

Preceptorship at Mile Bluff Medical Center.

Serving as Primary Care Physician Assistant since 1995.

During my career at MBMC I have worked in Family Medicine but also provided service in multiple areas including:

- Acute Care
- Surgical Assisting
- Urgent Care
- Sand Ridge Secure Treatment Center

Lead APP since 2008

2022 started role as IT Provider Liaison

Currently serving on MBMC Medical Exec Committee



ABOUT

MILE BLUFF MEDICAL CENTER

Independent Medical Center located in Mauston, WI. Based in rural South Central Wisconsin, the Medical Center serves a population of more than 55,000 residents in an eight-county region.

- 40-bed acute care hospital
- 2 nursing and rehab centers
- 5 outreach medical clinics
- 2 dialysis centers
- Wide variety of specialty care services



WHY

THE TRANSITION TO IT?

A strong desire to be an efficient provider who delivers a high-level of care to my patients.

Frustrations with our two EHR system started a process of burnout that was worsened by the pandemic.

Request to be a Super User for our new EHR turned into the role of Clinical Co-Champion.

Patient Care and IT Liaison

- Giving our providers a voice with IT
- Train providers in EHR
- Implementation and optimize workflows
- Work to improve EHR functionality



OUR EHR JOURNEY

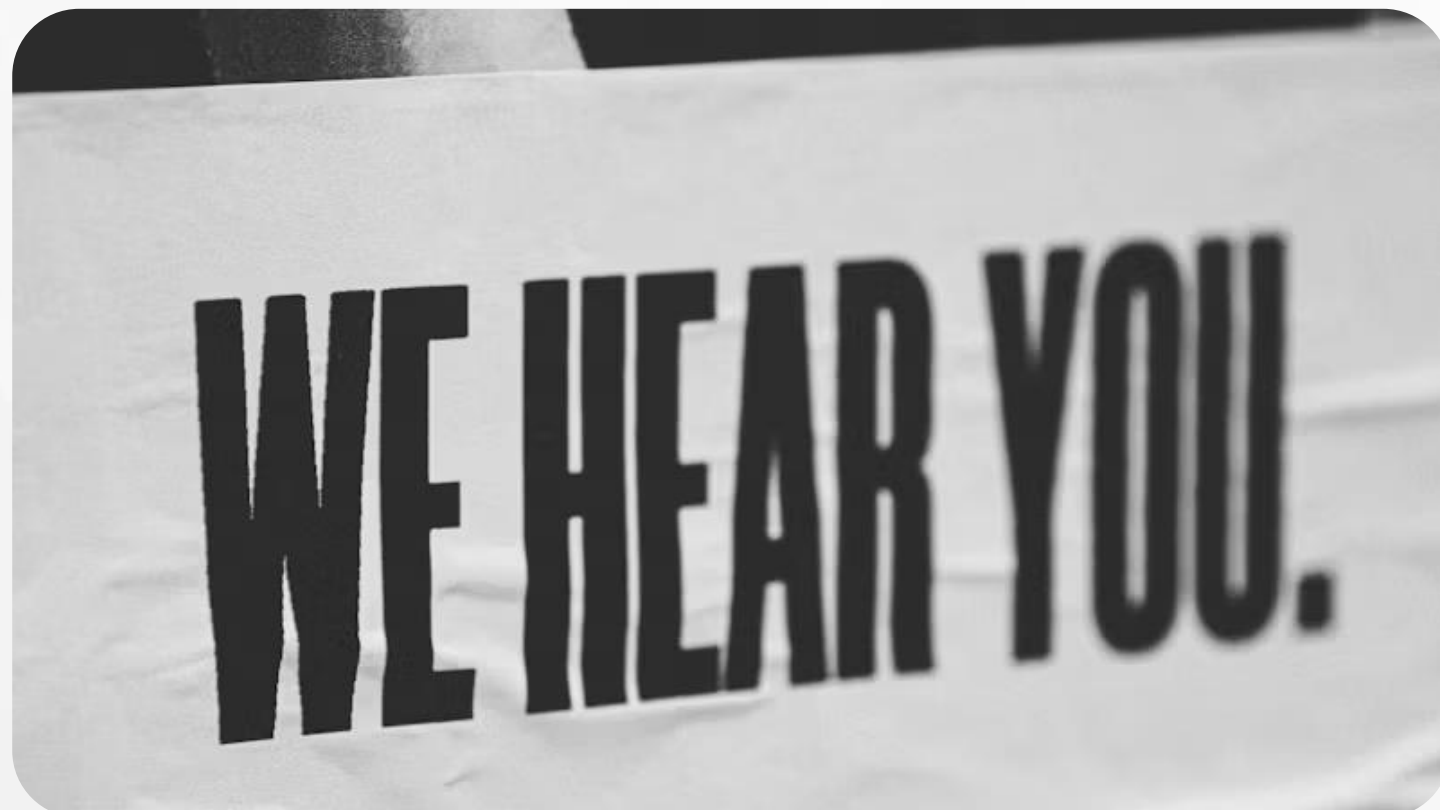
- **2008** -Hospital converted from paper chart to MEDITECH C/S
- **2012** -Clinics converted from paper chart to NextGen EHR
- **2012-2021** spent navigating two non-cloud based EHRs
- Small **IT department** of about **9 employees**



SURVEY SAYS...



- Organizational surveys repeatedly noted dissatisfaction with two EHR system.
- **2021** -Transition to MEDITECH Expanse.
- Cloud-based EHR, Service through MEDITECH. Having one source of truth, leading to better communication, provider engagement, and patient satisfaction.



ONE PROBLEM REMAINS.

CHART REVIEW

Cognitive Fatigue and Burnout

searching for information.

Information needed could be buried in a scanned document that are **hundreds of pages**.

Importing discovered data can be **time-consuming**.

Updating the problem list and medical history management is more difficult without **accurate information**.



Trying to find hidden data is **less time with the patient** and more focus on the EHR.



Scanned document review in the EHR could be a **multitude of clicks**.



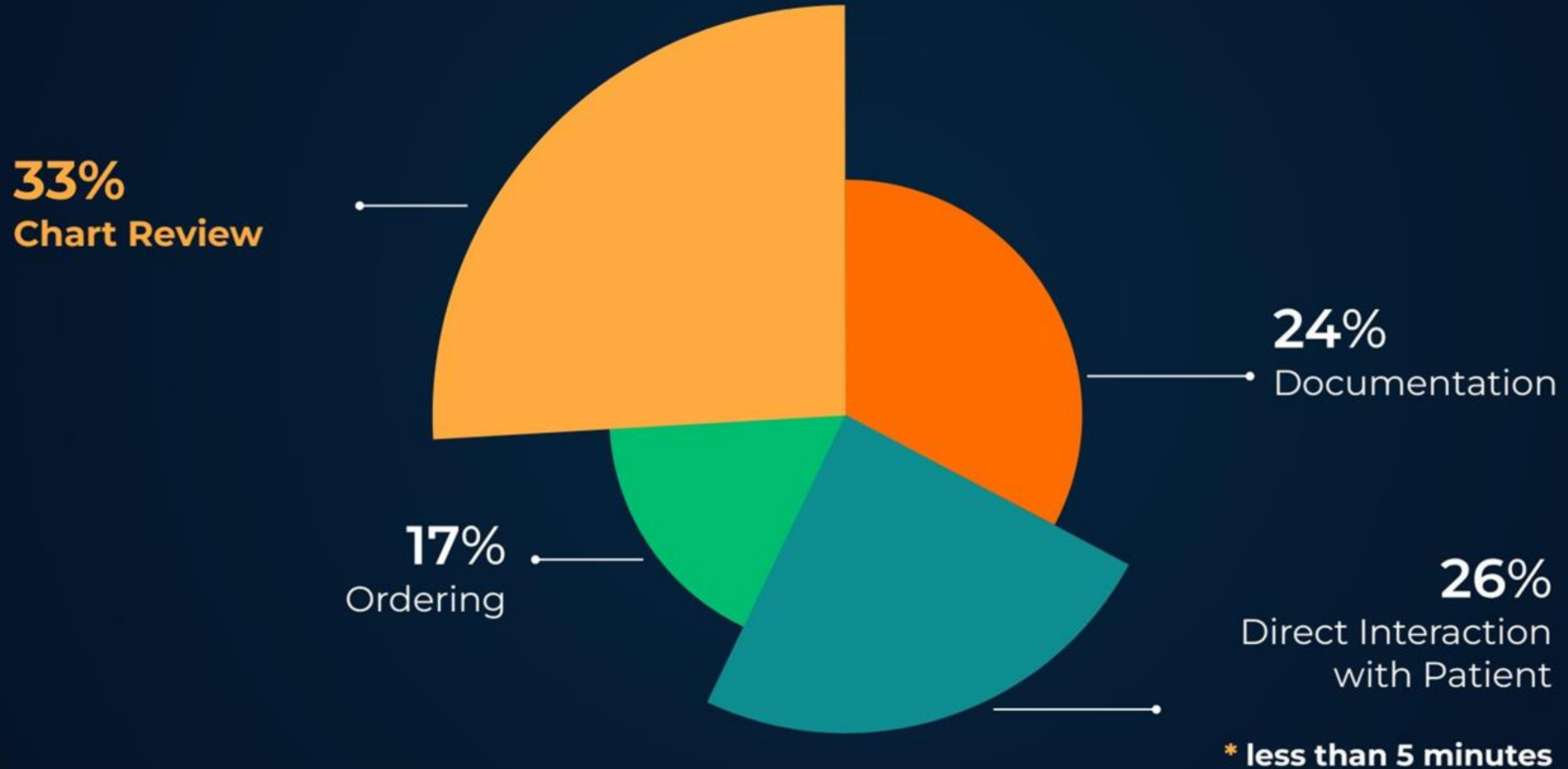
Patients can not be relied upon to know all **details** of their medical history.



Not having the right information can lead to **unnecessary or repeat testing**.



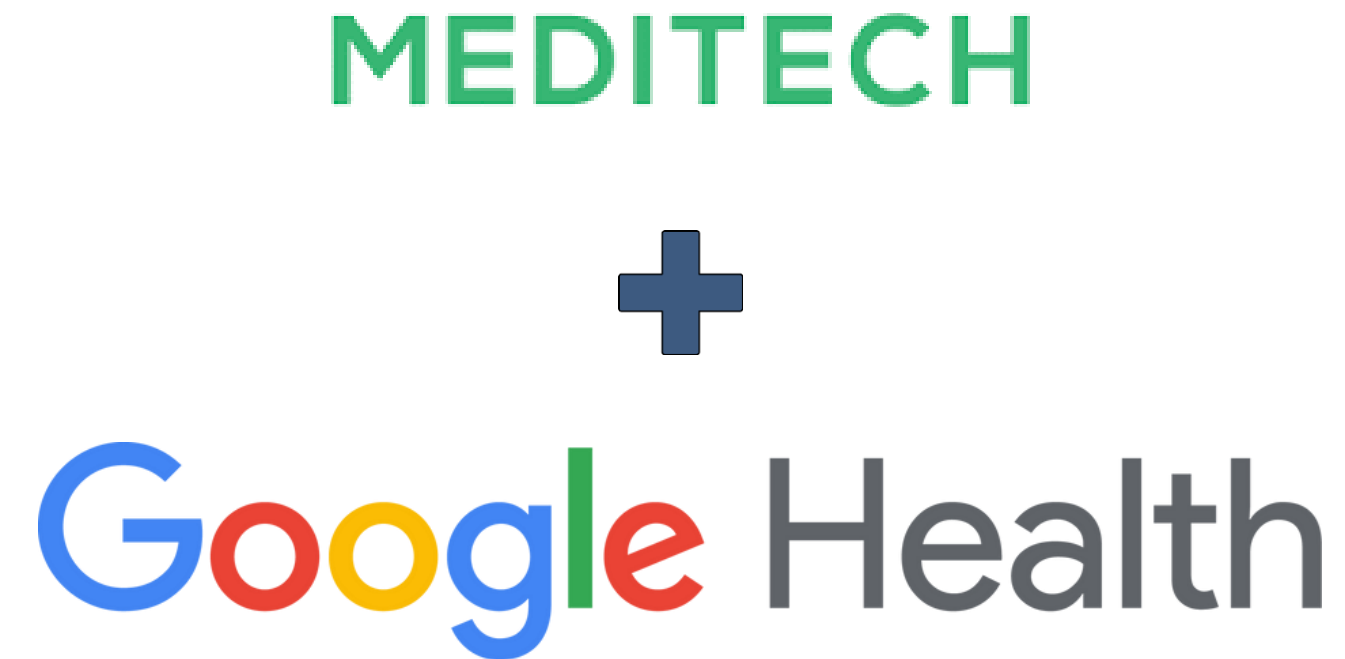
Average Outpatient Patient Encounter = 16 minutes and 14 seconds



PARTNERSHIPS SOLVE PROBLEMS

If somebody offers you an amazing opportunity but you are not sure you can do it, **say yes** – then learn how to do it later!

- *Richard Branson*



We have been a long time customer of MEDITECH. A **relationship** of service and trust has been developed over that time.

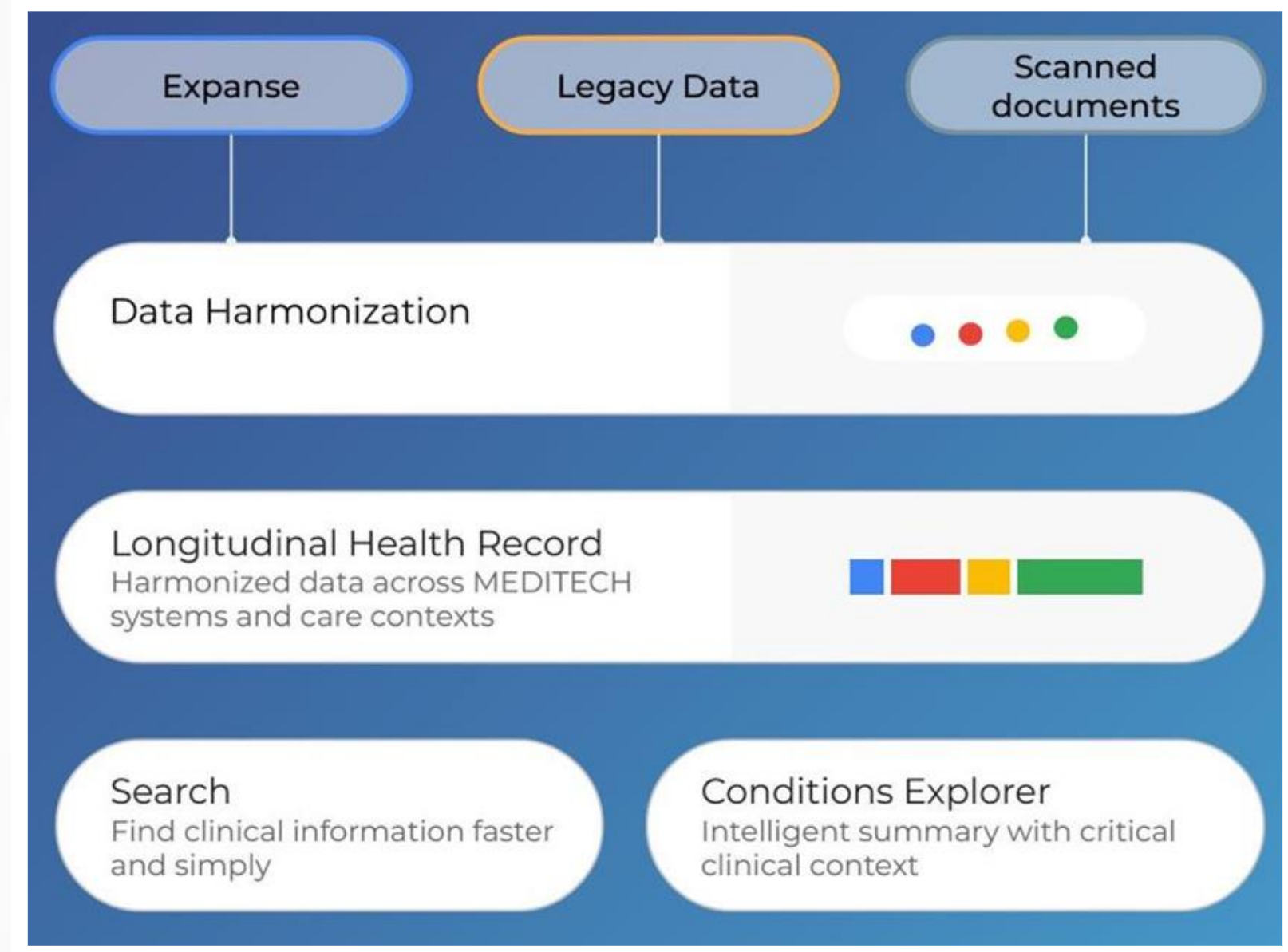


Having the chance to work with a **big tech** company may not come along again especially with an advancement that fits our exact needs.



HOW TO MAKE A MEANINGFUL IMPACT

- ➔ **Enhance clinician satisfaction**
 - Reduce burnout
 - Reduce cognitive load
- ➔ **Increase efficiency**
 - Better use of information
 - Increase throughput
- ➔ **Improve patient experience**
 - Focused Engagement
 - More time with the provider
- ➔ **Deliver high quality care & Improve outcomes**
 - Close care gaps
 - Holistic preventative care



THE SOLUTION

Search - tuned specifically to medical field

- Recognizes shorthand and acronyms
- Faxed and scanned documents
- Recognizes handwritten notes

Conditions - AI generated problem list based on clinical notes

- Supporting evidence is presented
- Second level insights - labs, notes, and reports



ENHANCE CLINICIAN SATISFACTION

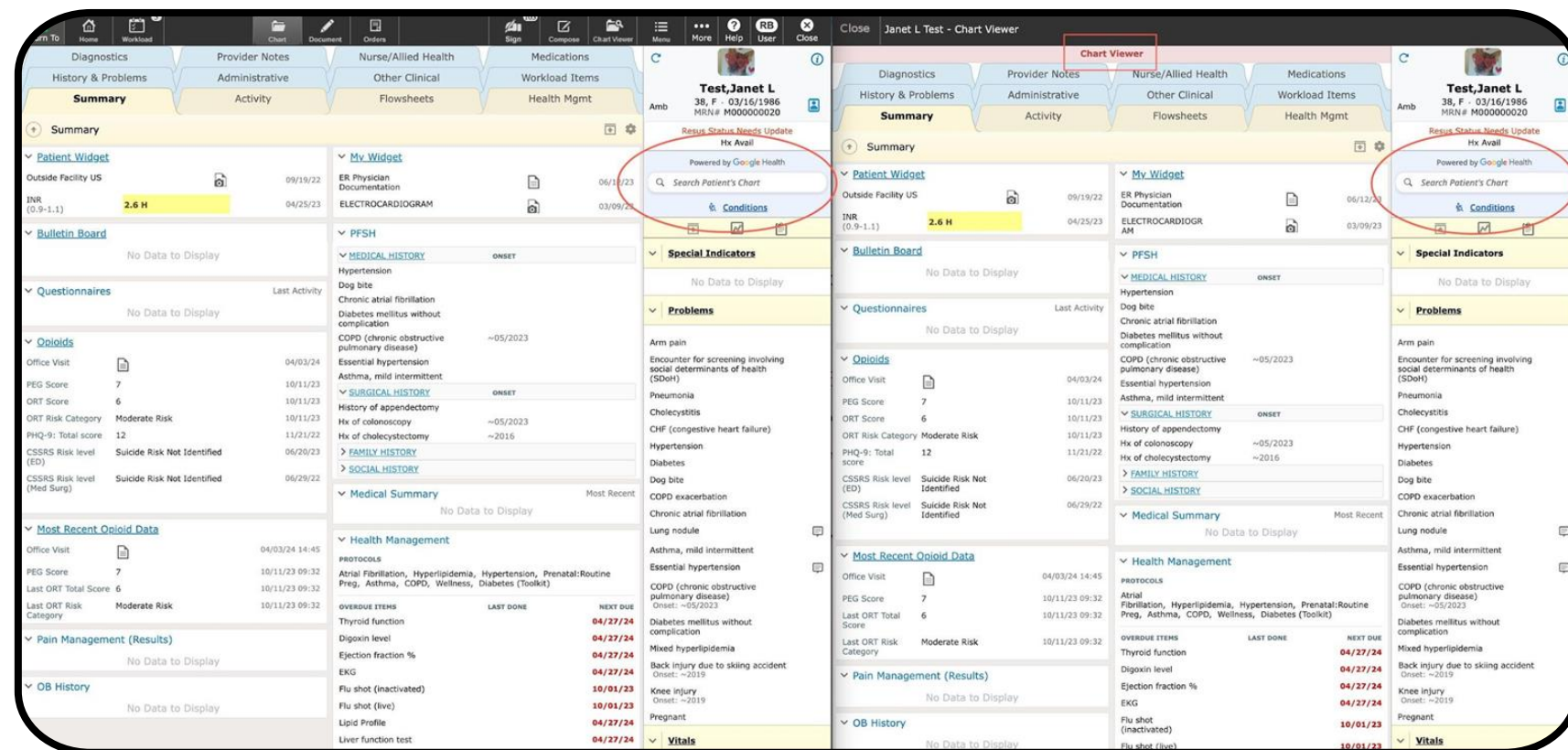
By reducing time looking within the EHR
and rapidly surfacing information needed.



Powered by **Google Health**

 *Search Patient's Chart*

 **Conditions**

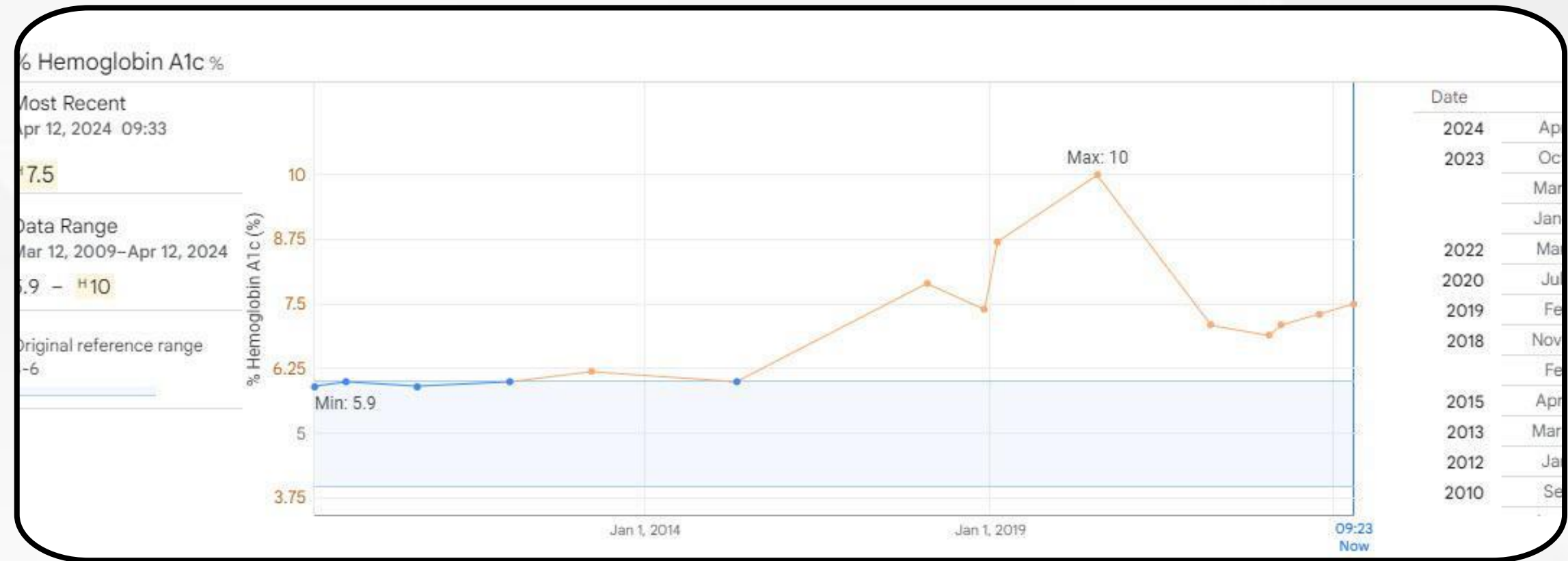


INCREASE EFFICIENCY

Improving access to information within any
workflow.

IMPROVE PATIENT EXPERIENCE

Increase focused engagement and empowering the patient.



DELIVER HIGH QUALITY CARE IMPROVE OUTCOMES

Close the gaps in care delivery and provide a complete set of information for disease management.

SEARCH

RAPIDLY SURFACE INFORMATION

Search results for sodium chloride tablets

2024 Jan 17 98 Other Note Transfer Records

Search results Match 5 / 295

Page 9 2 matches

NAME	75 13
DOB	11/27
HEIGHT	5'7"
WEIGHT	170
HAIR	BRN
EYES	GRN
SKIN	Fair

Page 10 13 matches

START taking these medications

sodium chloride 1 GM tablet	Take 1 (one) tablet by mouth 3 times daily with meals
-----------------------------	---

CONTINUE these medications which have CHANGED

II sulfamethoxazole-trimethoprim (Bactrim DS; Septra DS) 800-160 MG tablet Take 2 (two) tablets by mouth 3 times daily for 7 days

II - Potential duplicate medications found. Please discuss with provider.

CONTINUE these medications which have NOT CHANGED

albuterol (Proventil; Ventolin) (2.5 MG/3ML) 0.083% nebulizer solution	Inhale by mouth 2 times daily
albuterol HFA (Proventil; Ventolin; Proair) 108 (90 Base) MCG/ACT inhaler	Inhale 1 (one) puff by mouth every 6 hours as needed
azelastine (Astellin) 0.1 % nasal spray	Spray 1 (one) spray into each nostril once daily as needed
Fluticasone Furoate (Arnuity Ellipta) 200 MCG/ACT	Inhale 1 puff by mouth once daily
Lactobacillus (FLORAJEN ACIDOPHILUS PO)	Take 1 capsule by mouth once daily
loratadine (Claritin) 10 MG tablet	Take 1 (one) tablet by mouth once daily
losartan (Cozaar) 50 MG tablet	Take 1 (one) tablet by mouth at bedtime
melatonin 5 MG capsule	Take 1 (one) capsule by mouth at bedtime

Page 11 22 matches

10 / 98 | 100%

CLOSE THE CARE GAPS

IMPROVE PATIENT COMPLIANCE

insulin prior auth

All Results (8) Observations (0) Meds (0) Notes (1) Reports (0) Orders (0) Scanned (7)

2022 Aug 4 4 Other Note Prescription/Prior Auth

Search results 8 matches

Cigna. Medication Prior Authorization Form

Medication requested: (please specify name, strength, and dosing schedule)
 Levemir FlexTouch 100UNIT/ML Pen-Injectors
 Duration of therapy: Lifetime Quantity: 15 per 9 days ICD10: E11.45

Is the requested medication for a chronic or long-term condition for which the prescription medication may be necessary for the life of the patient? Yes No

Diagnosis related to use: E11.45

Alternative Medications:
 Has your patient ever received the generic alternative of the requested medication?
 Yes No No generic available
 (If yes) Did your patient try more than one manufacturer of this generic? Yes No Unavailable

Please provide the following details for each trial: manufacturer name, date(s) taken and for how long, and what the documented results were of taking the drug, including any intolerances or adverse reactions your patient experienced. (please note that the manufacturer's information can be obtained through the dispensing pharmacy):

Drug Name	Dates taken & how long	Documented results, including intolerances/adverse reactions the patient experienced
Insulin detemir	1/13/21 → 3/31/21	

Has your patient ever received any other alternative treatments for this diagnosis? Yes No
 (if yes) Please provide the following details: date(s) taken and for how long, and what the documented results were of taking this drug, including any intolerances or adverse reactions your patient experienced:

Drug Name	Dates taken & how long	Documented results, including intolerances/adverse reactions the patient experienced
Lantus Solostar	11/9/14 → 01/04/21	
Basaglar	1/16/21 → 01/26/21	
Humalog	current	

Page 2 of 3

(if no to any question above) Is your patient able to use any other alternatives for this diagnosis? Yes No
 (if no) Please provide the reason(s) why your patient is unable to use the available alternative(s):

AI GENERATED PROBLEM LIST

Conditions




Show 8 ▾

All time ▾

Body system ▾

Active

Last mentioned First mentioned

Diabetes mellitus 	16d ago	Mar 18, 2022
Steatosis of liver	16d ago	Mar 18, 2022
Hypertensive disorder 	16d ago	Mar 18, 2022
Benign prostatic hyperplasia	16d ago	Mar 18, 2022
Mixed hyperlipidemia	16d ago	Mar 18, 2022
Obesity	16d ago	Mar 18, 2022
Sleep apnea 	16d ago	Mar 24, 2023
Venous varices	16d ago	Mar 18, 2022

▾ More active conditions

Procedures

Last mentioned First mentioned

Bronchoscopy	16d ago	Mar 18, 2022
Debridement	11mo ago	May 25, 2023

Historical

Last mentioned First mentioned

Hyperuricemia	16d ago	Mar 18, 2022
Radiologic infiltrate of lung	16d ago	Mar 18, 2022
Hypoxia	16d ago	Jul 13, 2023
Onychomycosis	10mo ago	Mar 24, 2023
Ingrowing nail	10mo ago	May 25, 2023

Signs and symptoms

Last mentioned First mentioned

Fatigue	1y ago	Mar 24, 2023
Decreased hearing	2y ago	Sep 16, 2022

LEADING CHANGE

PROJECT MANAGEMENT

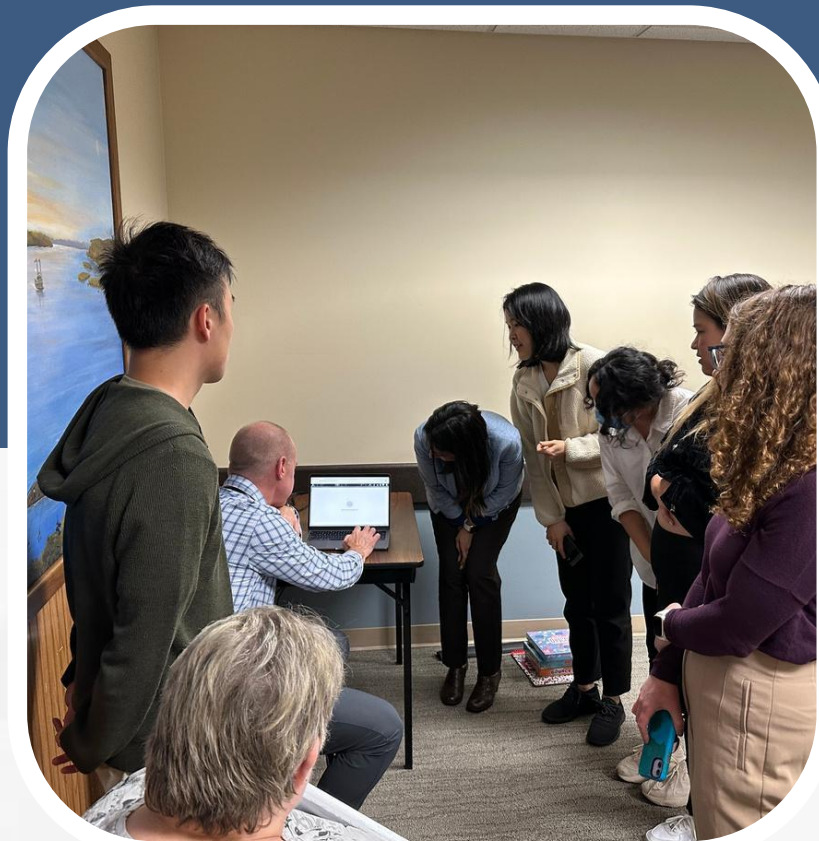
Bringing three teams together

Coordinate Tech Teams

Foster Communication

Develop Relationships

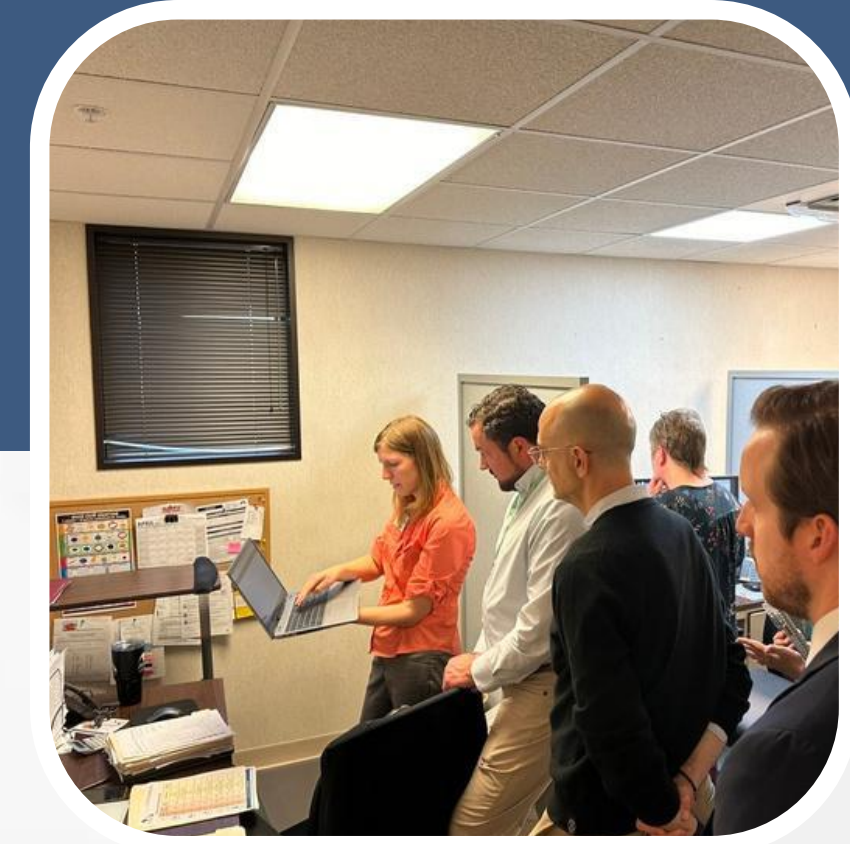
Testing and Validation



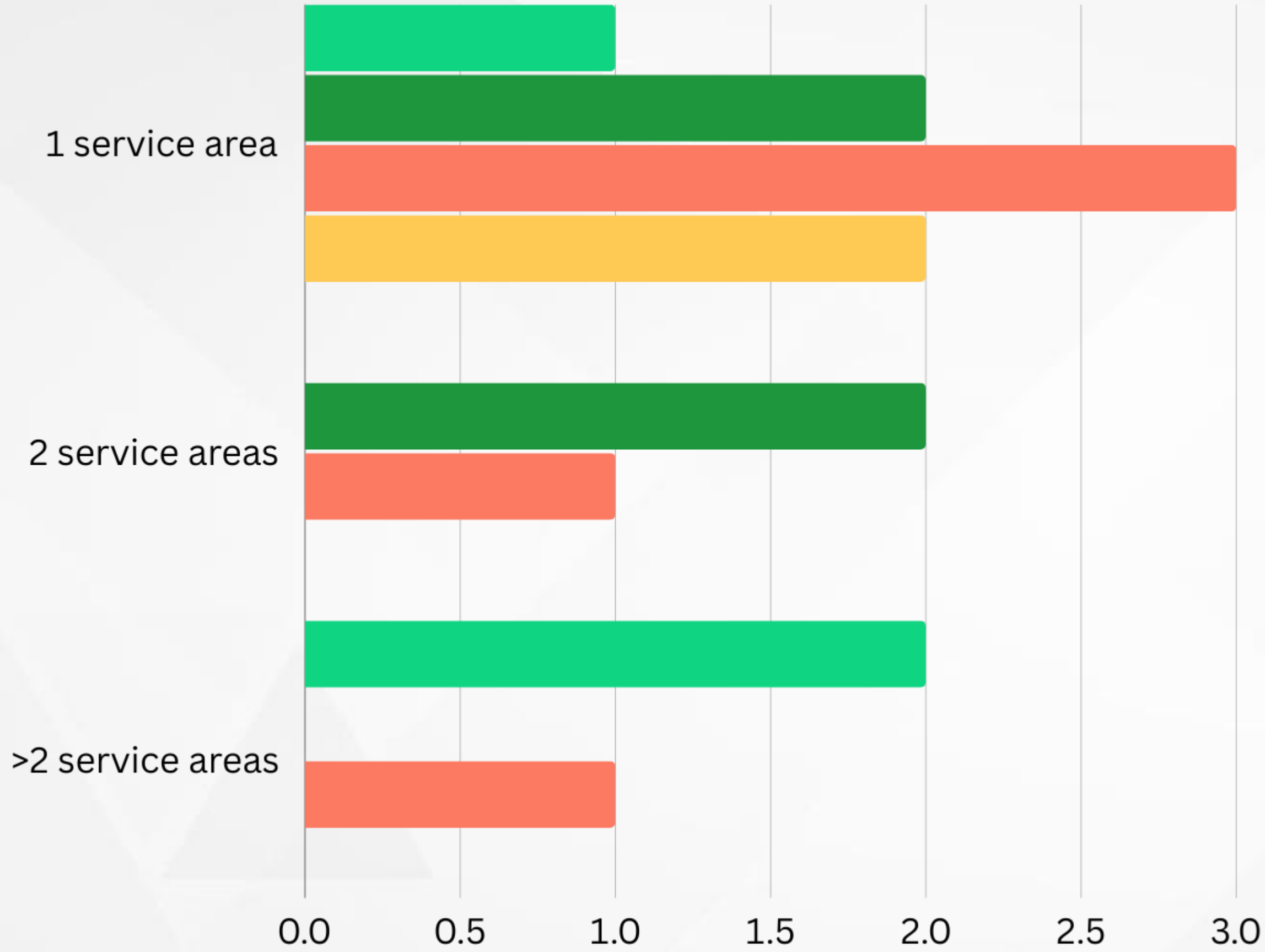
In-person and Virtual Meetings



Site Visits



Physician APP RN Pharm & PCS



14

CLINICAL
CHAMPIONS

The **Impact of Search and Summarization** at Mile Bluff

176 Users | Rapid Adoption Across **23** Departments



53 MDs/APPs

61 RNs

48 Allied Health Professionals

14 HIM Specialists

Acute Care
Obstetrics
Surgery
Speech

ER / Urgent Care
Outpatient Clinics (9)
Infusion & Cancer Care (ICC) / Wound Care

Diabetes Education
Infection Control
Pharmacy
Social Services

Med Refill Team
HIM
Revenue Cycle
Long Term Care

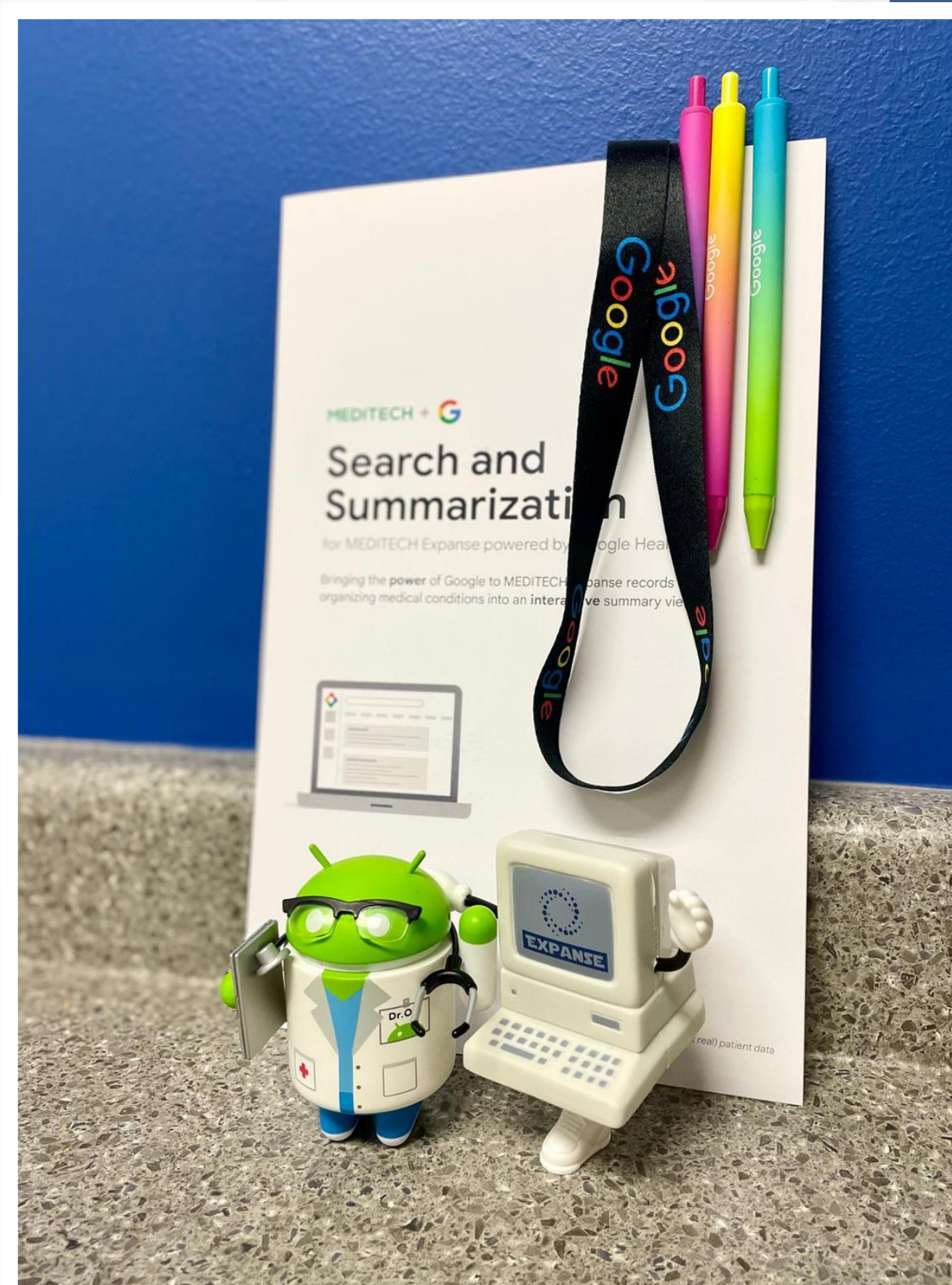
GO LIVE JANUARY

- 86.3% of Users on Boarded in 3 days
- 69.5% response rate on pre-pilot survey
- Zero outstanding login issues - smooth sailing!



“This is definitely the **smoothest and most engaged go live** that I’ve been part of in my entire career. The collective success of the launch and the widespread adoption wouldn’t have been possible without the support of the amazing clinical champions and the strong organizational culture at Mile Bluff. This **collaboration** serves as a prime example of how different organizations can come together, maximize their strengths and achieve mutually beneficial outcomes.”

Matthew Abraham, Google Health, Program Manager



GOALS

VALUE AND IMPACT

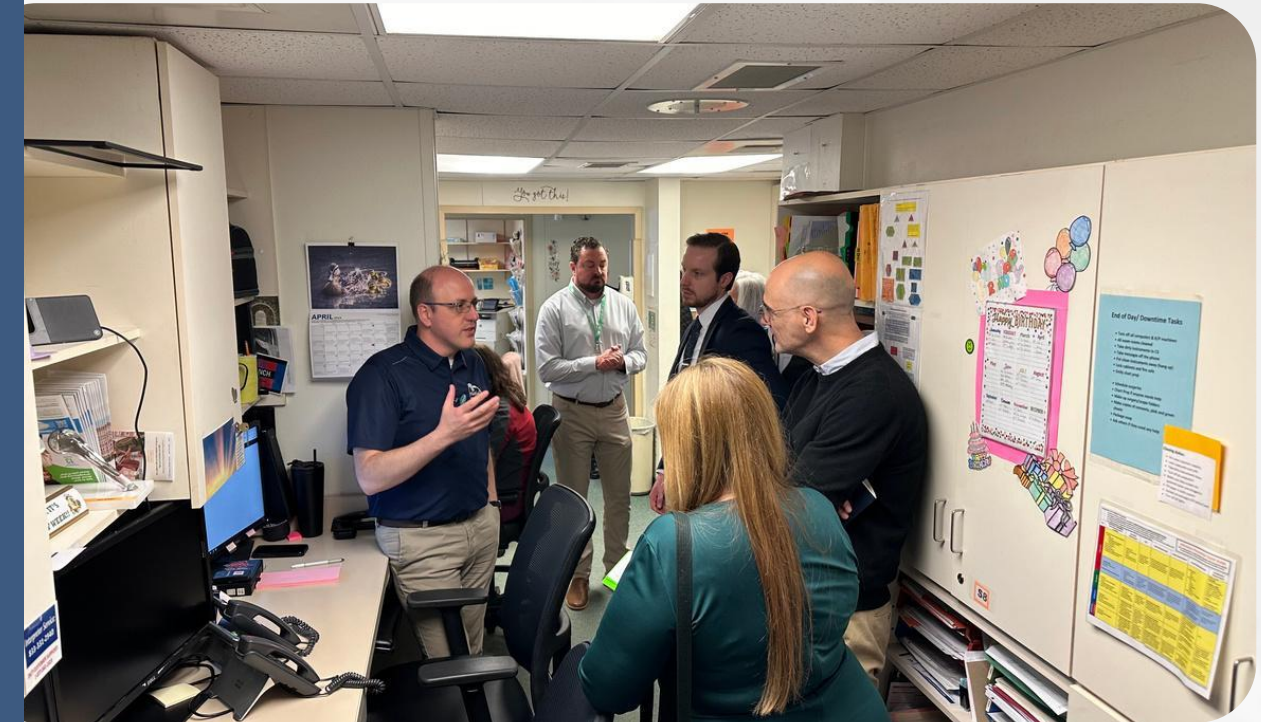
Ease of Access - Are users easily able to find and access Search & Conditions Explorer integration?

Helpfulness - Do users find value and joy in using Search & Conditions Explorer?

Engagement - Do users interact frequently and deeply with Search & Conditions Explorer?

Adoption - Do users discover and try Search & Conditions Explorer?

Retention - Do existing users keep returning to Search & Conditions Explorer?



VALUE AND IMPACT

EASE OF ACCESS

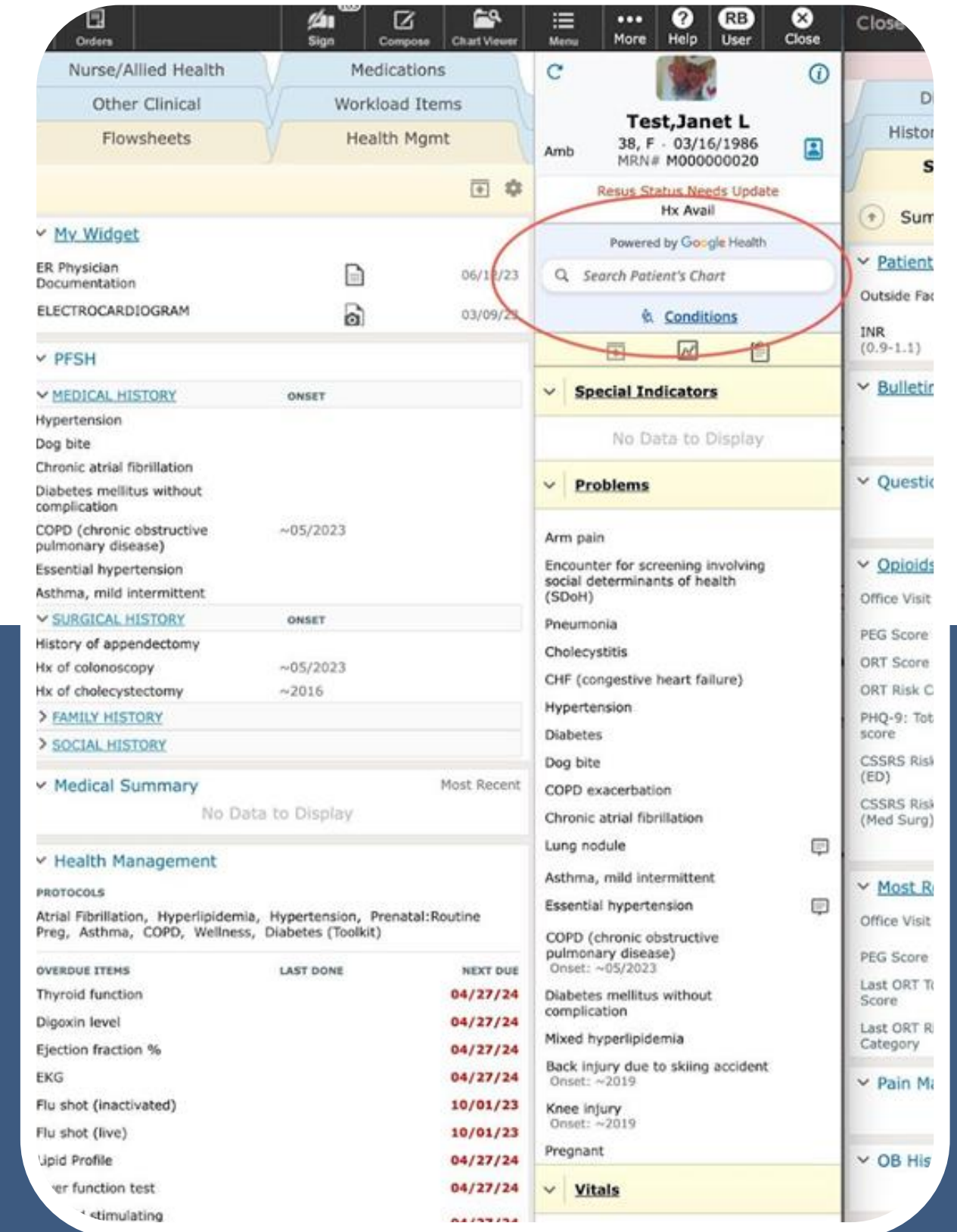
Are users easily able to find and access
Search & Conditions Explorer integration?



Post Launch Survey: **86%** of users report
being **somewhat or very satisfied with
Search and Summarization**



“I searched for a DNR, and it pulled up the
scanned document, and **I found it right
away. It saved us that day in the ER.**”
Meg Devito - ED Technician



VALUE AND IMPACT

HELPFULNESS

Do users find value and joy in using Search & Conditions Explorer?



Post Launch Survey: **76%** of users report that Search and Summarization is **very or extremely helpful in accomplishing specific tasks.**



“I used to spend about 15 minutes per patient cleaning up problem lists, especially for new patients or patients transferred to me from other providers. The **search and summarization functionality will help me cut this time down significantly.**”

Dr. Gatzke-Plamann - CMO, Family Medicine



VALUE AND IMPACT

ENGAGEMENT

Do users interact frequently and deeply with Search & Conditions Explorer?



Post Launch Survey: **91%** of users report that Search and Summarization **feels somewhat or much faster than before.**



“I am tasked with reviewing hundreds of pages of discharge summaries and scanned documents from other sites each day. **This functionality is going to transform my entire workflow.**”

Kayla Bilek - HIMS Department



VALUE AND IMPACT

ADOPTION

Do users discover and try Search & Conditions Explorer?

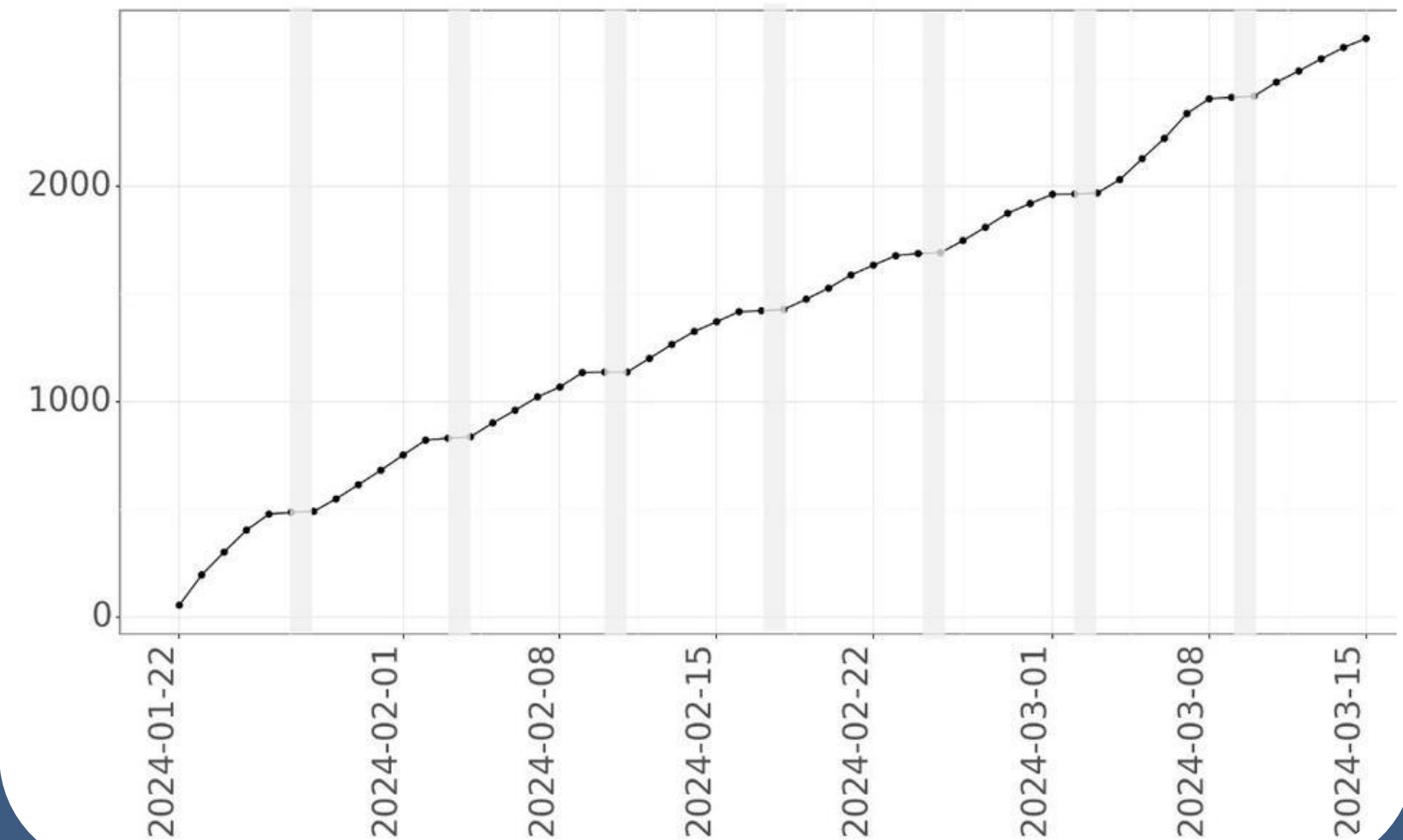


Users are effortlessly trained in the solution, swiftly onboarded, ensuring no additional burden for both the user and the patient.



If Search and Summarization were a separate application or located elsewhere in Expanse, I wouldn't use it as much or more likely at all. **I think it's a phenomenal tool and has made my life easier."**
Dr. Allegra Ponshock - Family Medicine, OB

Do users interact frequently and deeply with S&S?
Cumulative Patients Viewed



VALUE AND IMPACT

RETENTION

Do existing users keep returning to Search & Conditions Explorer?



The seamless integration of the solution into workflows and its benefits ensure enduring engagement from users across the board.



“A powerful solution with intuitive ease of use and reliability makes for a revolutionary leap in healthcare delivery.

I believe this solution will elevate both patient experience and provider satisfaction.”

Randall Brandt, PA-C - Family Medicine



EMERGING USE CASES

➔ **Nephrology/Dialysis**

➔ **Cardiac Rehab**

➔ **eICU**

➔ **Radiology**



➔ **Cardiology**

➔ **Hematology/Oncology**

FROM PILOT TO SCALE

Careful consideration of further use cases with an ongoing emphasis on training and optimization of our system. Any additional AI tools will continue to focus on patient and provider success.

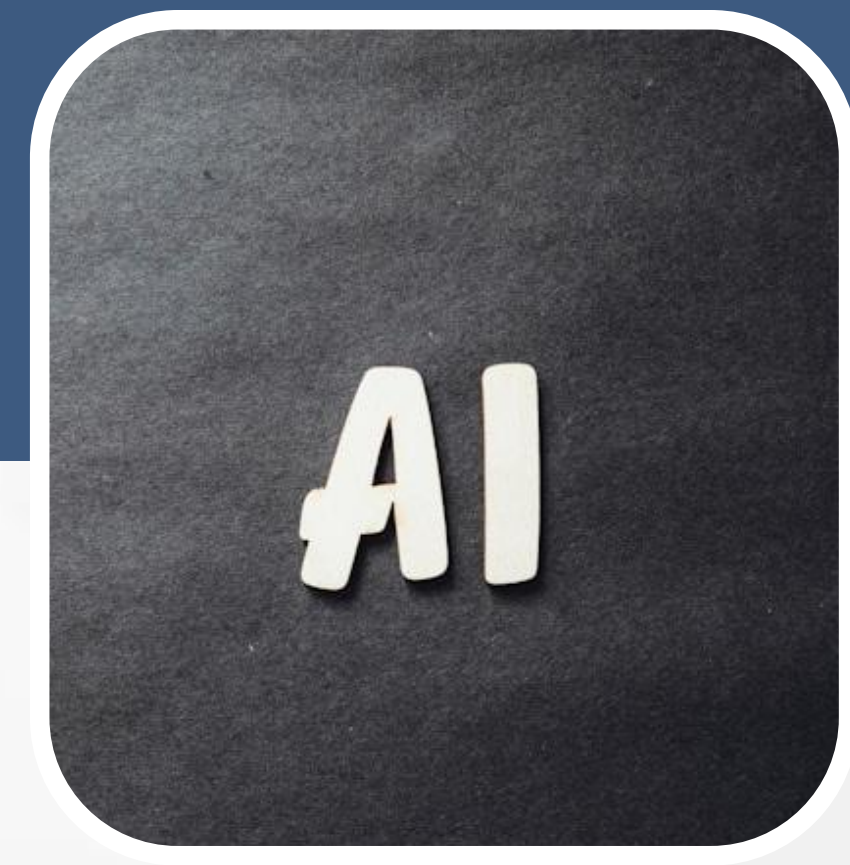
Explore Use Cases



Focus on Training



Ambient Listening



WHAT WOULD YOU DO WITH 5 MINUTES?

Dr. Kattenbraker - Sleep Medicine

Saves at least 5 minutes per patient for visit planning.

See another patient

Jen Anderson, MA - General Surgery

Pre-op planning time reduced by at least 5 minutes per patient.

Make a phone call

Brianna Juszczak, RN - Acute Care Director

Saves at least 5 minutes per chart for quarterly reporting and sepsis reviews.

Return an email



Run a mile???



Brenda Tetzke, RN - Infection Control

At least 5 minutes saved with Surgical Site Infection review and other reporting measures.

Review your calendar



Jason Nuttall, ATC - Orthopedics

5 minutes saved for new patient visits and total joint surgery prep.

Get the kids to soccer practice



Randy Brandt, PA-C - Family Medicine

5 minutes saved in reviewing workload messages and transfer documents.

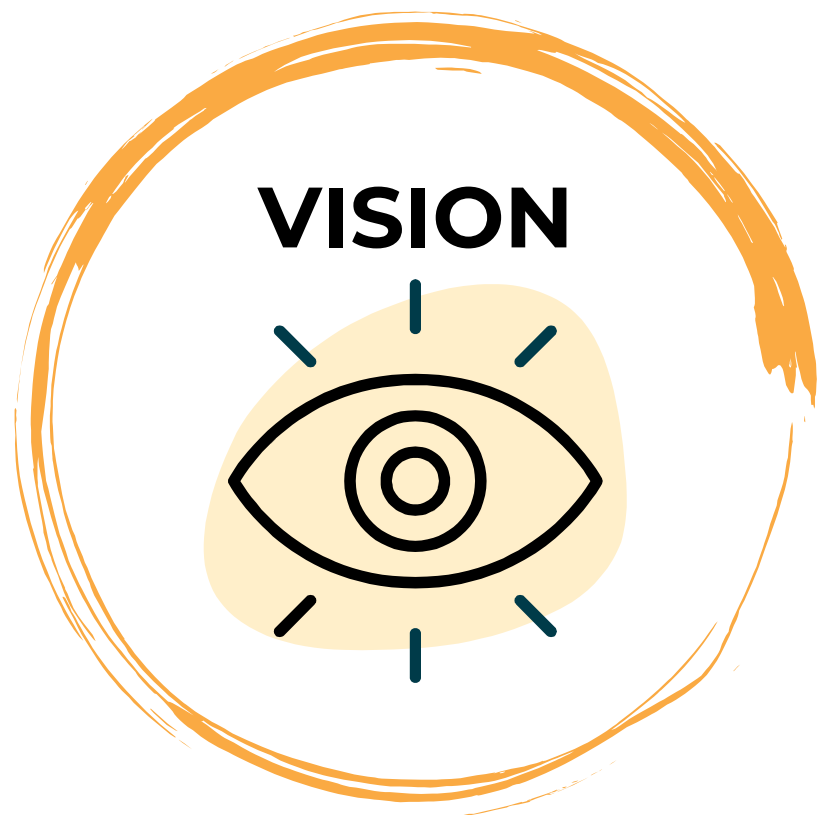
Help make supper

MEDITECH
EXPANSE

THE INTELLIGENT
EHR PLATFORM



MEDITECH



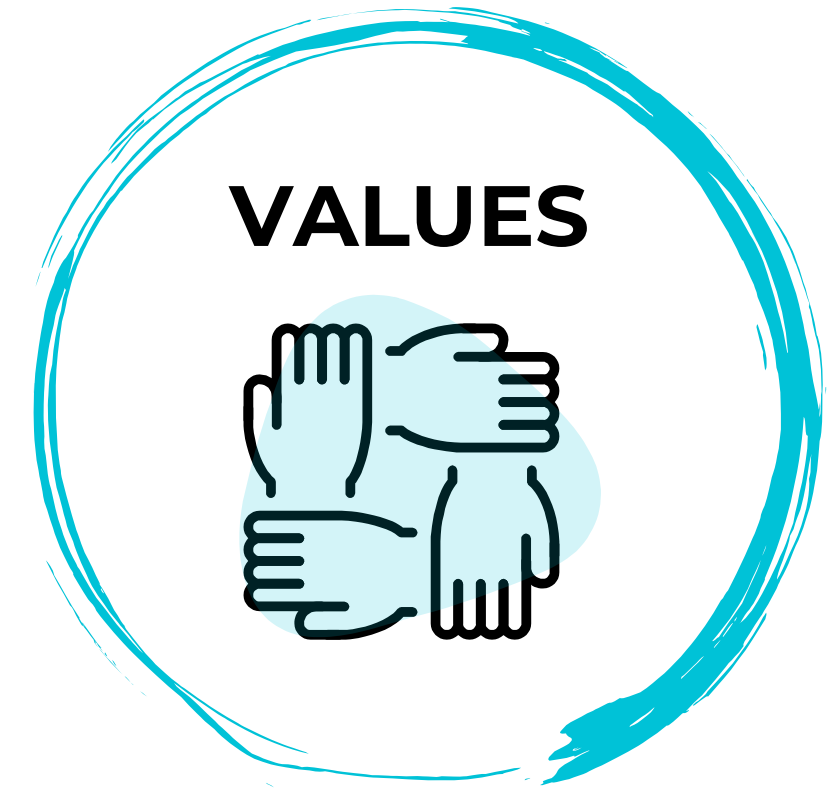
VISION

Advance digital health record technology so every patient and their providers can access their health information and fully participate in their care.



MISSION

Enable global healthcare organizations to deliver safe, efficient, and impactful care to the communities they serve through our comprehensive software, services, and technology



VALUES

- **Integrity**
- **Investing in the future**
- **Sustainability and focus**
- **Fiscal responsibility**
- **Positive long-term impact**

MEDITECH and AI: Our Mission



MEDITECH's mission is to provide technology that enables healthcare organizations to deliver **safe, efficient, and impactful care**; our approach to incorporating AI into EHR solutions is thoughtful, deliberate, and driven by an understanding that it should safely **enhance the experience** for **patients, care teams, and health systems.**

A Vision for the Practical Integration of AI

- Decrease clinician burden
- Enhance the patient experience
- Improve organizational efficiency
- Empower health systems to develop an AI strategy that is sustainable and safe



MEDITECH EXPANSE



THE INTELLIGENT PLATFORM

Patient Connect

Natural language understanding & sentiment analysis to route patient responses

Virtual Assistant

Conversational AI to streamline navigation and ordering

Ambient listening

LLMs & NLP to auto generate clinical visit notes

Expansive search and summarization, powered by Google Health

LLM, NLP, GenAI

Auto generation of clinical documentation

Hospital course summary, nurse hand-off

Capacity management

No-Show Prediction
OR Block Utilization

IMPACT

Expanse search and summarization



CLINICIANS

Saving an average of 7.5 minutes per patient

Pre-visit prep for primary care, sleep medicine; clinic pre-op



INFECTION CONTROL

Saving ~40 hours a month

~5 SSI reviews/month. Reviews previously took hours or days, now done in 15 minutes.



HEALTH INFORMATION MANAGEMENT

Saving approximately 16.7 hours a week

Used on 50 patients/week; saves 10-30 minutes per patient, which is a 25-40% reduction of time.

Empower with Generative AI Auto-Generating Clinical Documentation:

| Hospital Course Summary

Problem Statement

Transitions of care are highly vulnerable points in the care process for patients. Care transitions should be facilitated through comprehensive and concise communication of pertinent information necessary to maintain a high-quality of care and treatment for patients.

Benefits

Automate the generation of a hospital course narrative within the discharge summary. Potential benefits include:

1. time-savings.
2. enhanced note quality through more concise narratives and a reduction in errors or accidental omissions of information.
3. timely transfer of discharge documentation.

Hospital Course/Discharge Summary

Discharge Plan [Cancel] [Save] [Save & Close]

Reason For Visit Left Leg Deep Vein Thrombosis (DVT)

**Hospital Course (Required)* Click to Enter Hospital Course

Generate

Patient Disposition Home, Self-Care

Referrals Add Me

Add Reference Links Click to Enter Addl Reference Links

Discharge Comment Click to Enter Discharge Comment

Discharge Date/Time Click to Enter Discharge Date/Time

Today/Now

Bourne, Lawrence
Acute 71, M · 09/29/1952
MRN# MR00676665

ADM IN, 1S 1S16 -4

6ft 1in BSA: 2.28m²
230lb 4oz BMI: 30.4kg/m²

Acc# MG0000105642 Full Code

Powered by Google Health

Search Patient's Chart

Conditions

Allergies

[Amoxicillin Trihydrate]
[Potassium Clavulanate]

Problems

HCC

Empower with Generative AI Auto-Generating Clinical Documentation:

| Nurse Handoff

Problem Statement

Transitions of care are highly vulnerable points in the care process for patients. Shift changes and transitions of care within the acute setting require nursing staff to exchange necessary patient information to ensure continuity of care and patient safety.

Benefits

Automate the generation of a nurse note within the Expanse Nurse Handoff routine. Potential benefits include:

1. time-savings.
2. enhanced note quality through more concise narratives and a reduction in errors or accidental omissions of information.

Nurse Handoff Summary

Return To Home Chart Document Orders Discharge Sign Workload Menu More Help User Close

Rachel Wilkes, RN MEDITECH General Hospital Find Patient

Staff Nurse 3 2 North 18 More Lists Close Hand... Open Patient Sum... Remove from My ... Clear My L...

Name Room A/S

Carbone, John 2E-27 76 M

Clancy, Joshua 2E-11 53 M

Mahoney, Hillary 2E-19 65 F

Attending ... Generazo, Jim

Allergies iodine

Special Ind... Mild fall risk

Code Status Resus Status Not ...

Precautions

Vital Signs 09:21 Temperatur... 09:21 Pulse Rate ... 09:21 Respiratory... 09:21 Pulse Oxim...

Oxygen

Diet

Clancy, Joshua 53 M • 02/14/1970 1EAST 2E-11

Code Status: Resus Status Not Ordered No Hx Avail

Allergy/Adv: iodine

Admit Date: 01/03/2024 07:03 (...)

Account #: MG0000109101

Attending: Generazo, Jim, RN

Search to add to user's l... Note Both Widgets

History

Widget data for 01/03/2024 (ADM IN)

New New from previous Draft **Generate**

AI-Generated Hand Off Note in Process. Please Wait...

Registration Status: ADM IN

Primary Language:

Preferred Language:

Active Medications

Generic Name	Dose Route Freq PRN Reason	Start Stop	Last Admin Dose Admin
Prednisone	40 mg	01/03/2024 10:00	
Prednisone 5 Mg/ 5 MI Solution	PO DAILY SCH	01/09/2024 09:59	

Patient Demographics

Portal

333

nd Ave Massachusetts

Next of Kin Clancy, June (Wife) (508)998-6655

Person to Notify Clancy, June (Wife) (508)998-6655

Primary Insurance Self Pay

Vital Signs

01/03/2024 09:21

BP **140/84 H**

Special Indicators

Mild fall risk

Lab Results Last 24 Hrs Most Recent

No Data to Display

Problems

No Data to Display

Home Meds

Confirmed

Last Updated: 01/03/2024 By Rachel Wilkes

MEDICATIONS (INSTRUCTIONS)

Active

atorvastatin



Thank You

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Christine Silva, CPM, CPMM

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