**Kevin J Christensen, MOT, OTR/L, CMP**

Intermountain Health

## Education-

**2013** - University of Utah- Masters of Occupational Therapy

## Positions-

**2020 - Present:** Internal Process Control Coordinator for Technology and Telehealth, Intermountain Health, Salt Lake City, UT

**2020:** Advanced Training Program in Healthcare Delivery Improvement, Intermountain Healthcare, Salt Lake City, UT

**2018:** Certified Public Manager Certificate, State of Utah

**2013 – 2020:** Assistive Technology Specialist, Utah Center for Assistive Technology, Salt Lake City, UT

## Personal Statement

I am currently the Rehabilitation Internal Process Control (IPC) Coordinator for Technology and Telehealth at Intermountain Health. In that role I support over 1,400 therapist and leaders across 27 hospitals, 50 clinics in all rehabilitation disciplines and settings. I have a passion for technology and how it can improve access to life and enjoyment. I have 10+ professional years focused on technology and have learned how to appropriately implement new technology solutions, avoid barriers, and disseminate an evidence-based approach. My unique role is well-suited to the current project as I am in an ideal position to assist in the implementation of augmented reality for the vestibular program. I will also be able to ensure the collection of metrics and outcomes. I have the experience, knowledge, and leadership capabilities to successfully implement the proposed project.

Intermountain Health

# Innovations in technology that can improve efficiency, better engage caregivers and patients, and enhance the services you offer.

NARA Webinar
July 2023

Kevin Christensen MOT, ORT/L, CPM
*Internal Process Control Coordinator*
*Technology & Telehealth- Rehabilitation Services*

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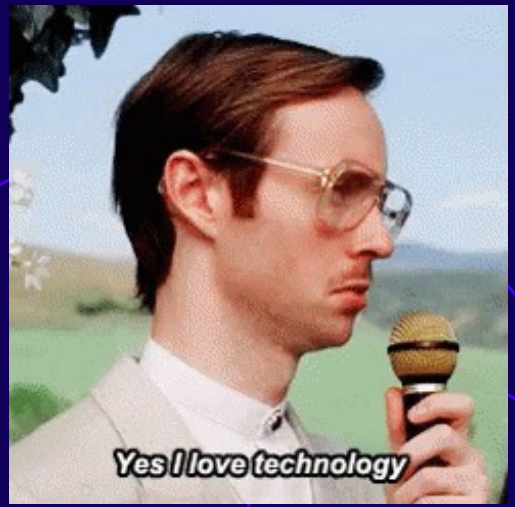
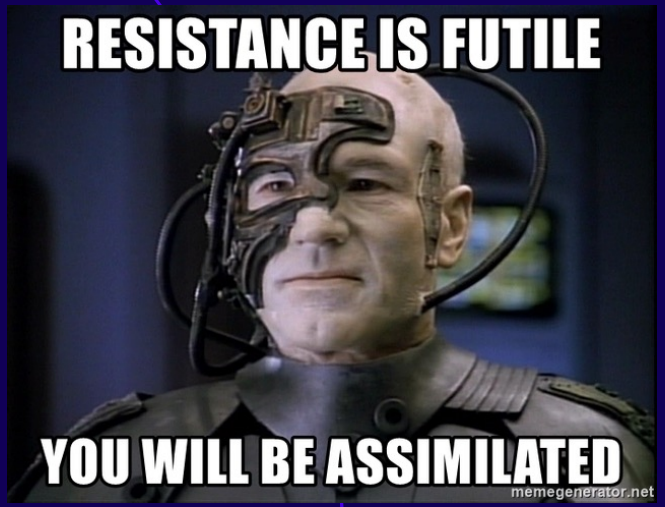
# What is your relationship with technology and the changes it creates?

Efficiency vs. Cumbersome

Engaging vs. Frustrating

Enhancing vs. Limiting





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# When Adapting New Technology:

1. You must clearly understand the problem before you can apply the tech
2. You must provide adequate support after adopting technology
3. Technology is not **the** solution, just the tool to help people solve a problem

# Examples of Technology Being Adopted by Intermountain Health

1. Technology Loan Library
2. Power Automate & Forms (Microsoft)
3. Digital Health Platforms
4. AI/Decision Assist/Chat GPT (Intermountain GPT)

# Technology Loan Library

The problems to be fixed

- 50+ Clinics and limited funds to purchase adequate technology for each.
- Feeling of being in the dark ages of technology- not meeting provider/patient expectations
- Lack of coordination and communication of technology success & failures across our large rehab system


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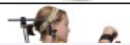
*Try Before You Buy

*Random Tech Needs

**66 Total Devices**
- AAC
- Environmental Access
- ADL Aids
- FES
- Therapeutic Exercise
- Pain Management

**Central Location**
- Ship out Via Internal Currier Services
- In Person Delivery & Training

**Accessible by all rehab care providers**

| Category | Name & Info Link | Picture | A | Tracking # | Availability | Checkout Form |
|---|---|---|---|---|---|---|
| TherEx | ActiveForce 2- Force & ROM Meter |  | Demo | D0067 | Checked Out | Checkout Form |
| TherEx | BoboHome |  | Demo | D0007 | Available | Checkout Form |
| TherEx | BoboMotion |  | Demo | D0008 D0036 | Available | Checkout Form |
| TherEx | FitLight Trainer 8 Disks |  | Trial | L0008 | Checked Out | Checkout Form |
| TherEx | FitMi |  | Trial | L0009-L0010 | Checked Out | Checkout Form |
| TherEx | HyperDash Extreme |  | Demo | D0061 | Avaliable | Checkout Form |
| TherEx | Jaeco MultiLink Mobile Arm Support Evaluation Kit Left & Right |  | Trial | L0014 | Available | Checkout Form |
| TherEx | Jaeco WREX Mobile Arm Support Evaluaiton Stand |  | Trial | L0015 | Available | Checkout Form |
| TherEx | Jaeco WREX Mobile Arm Support Evaluation Kit- Left |  | Trial | L0013 | Available | Checkout Form |
| | |  | | | | |

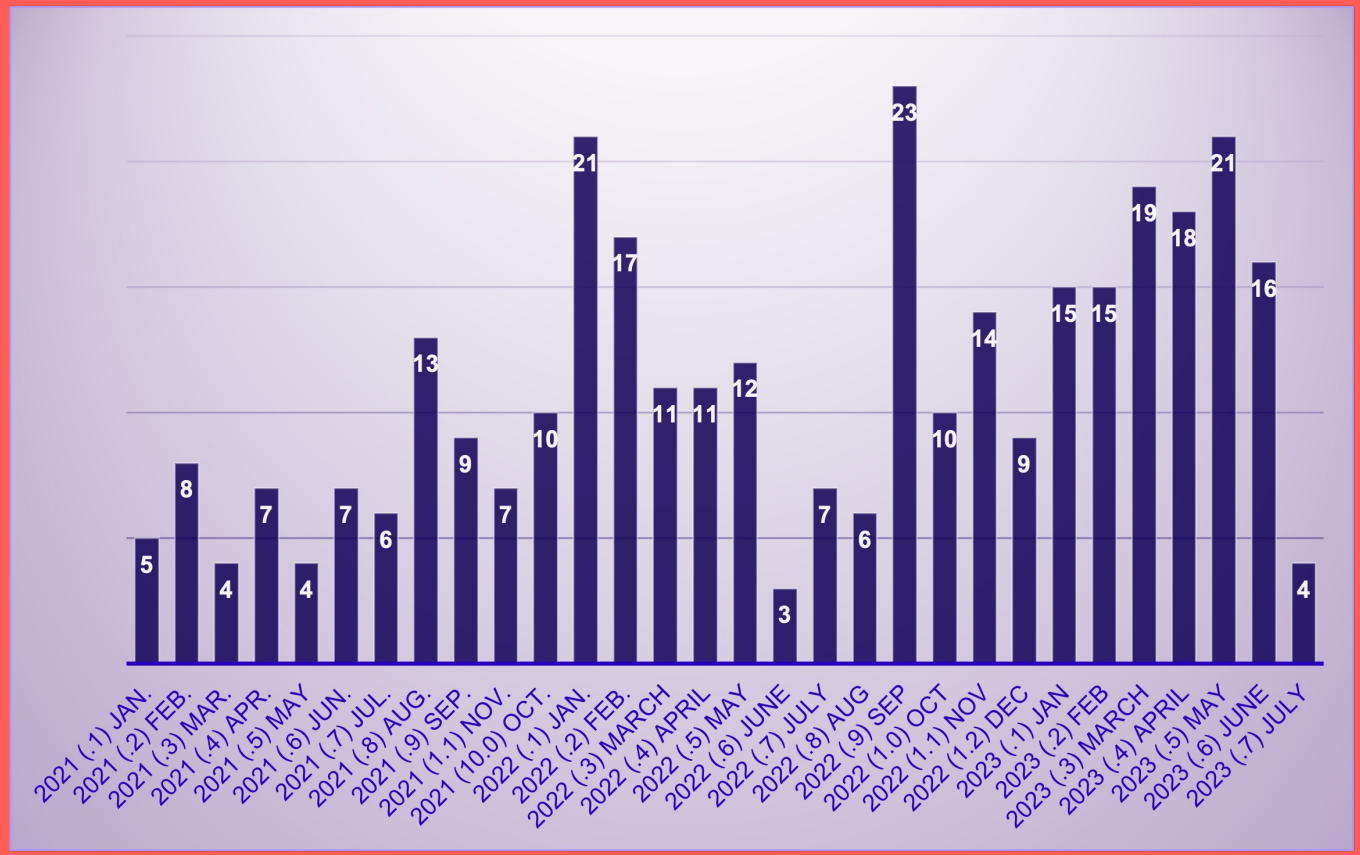
# # Checkouts

2021 = 80

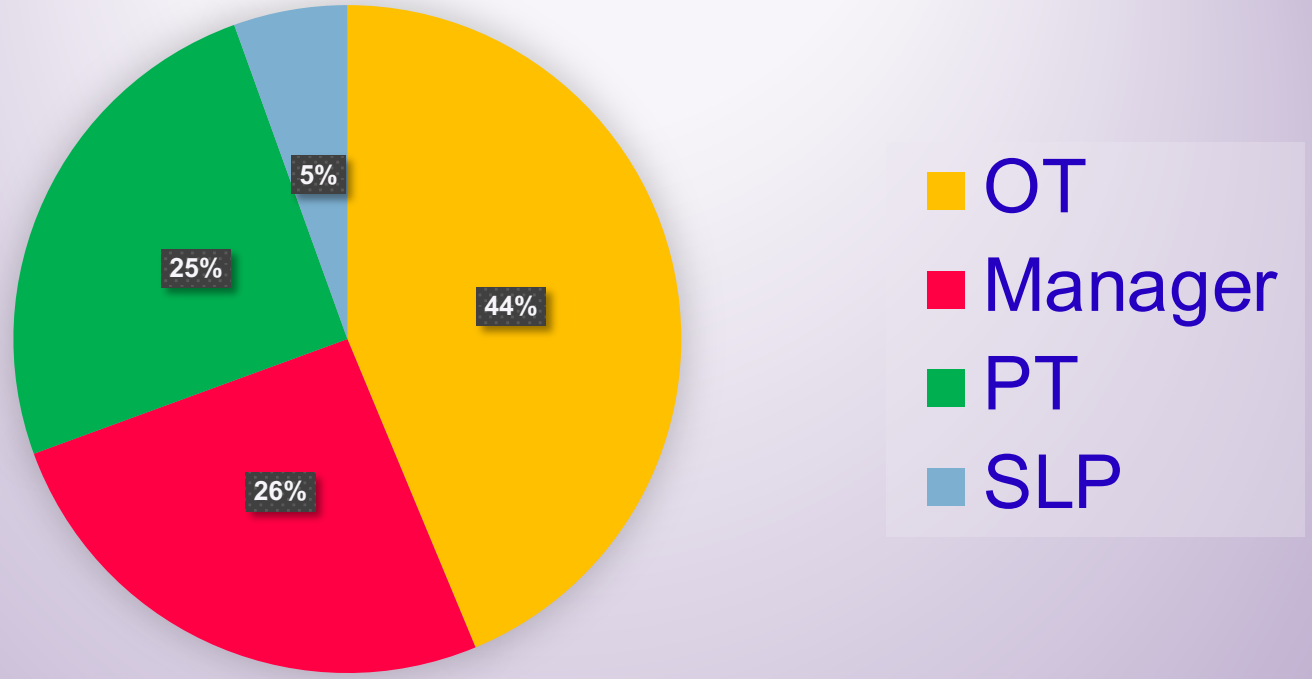
2022 = 144

2023 = *108

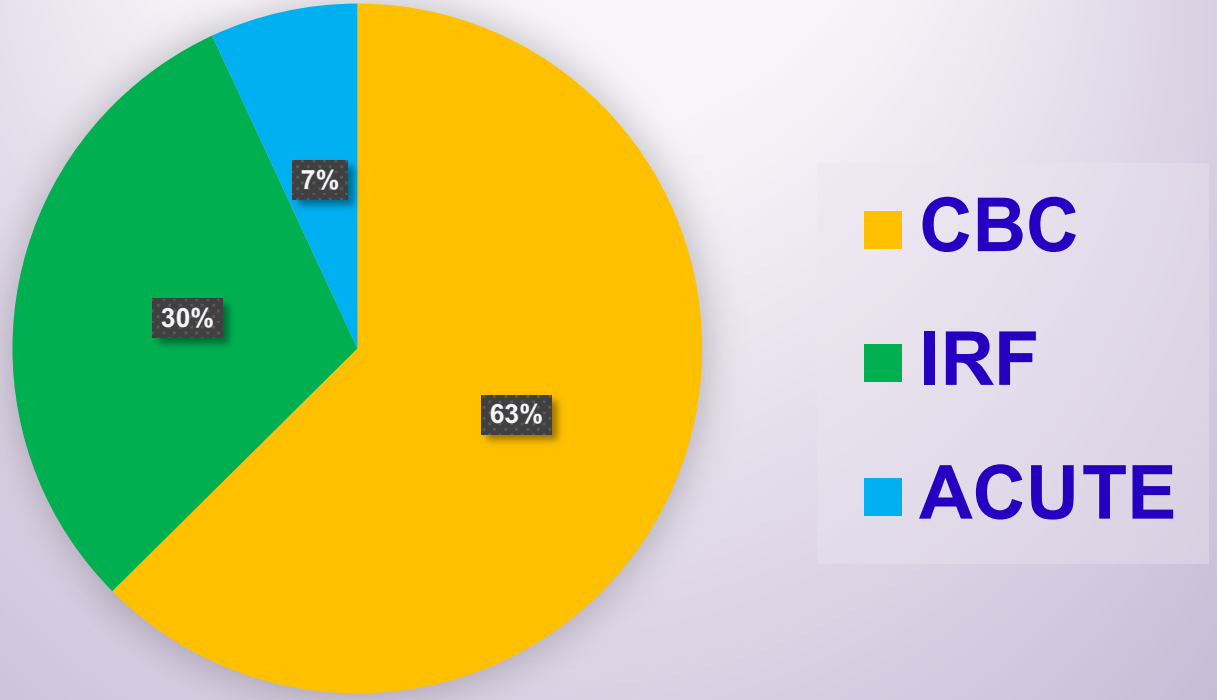
*As of June*



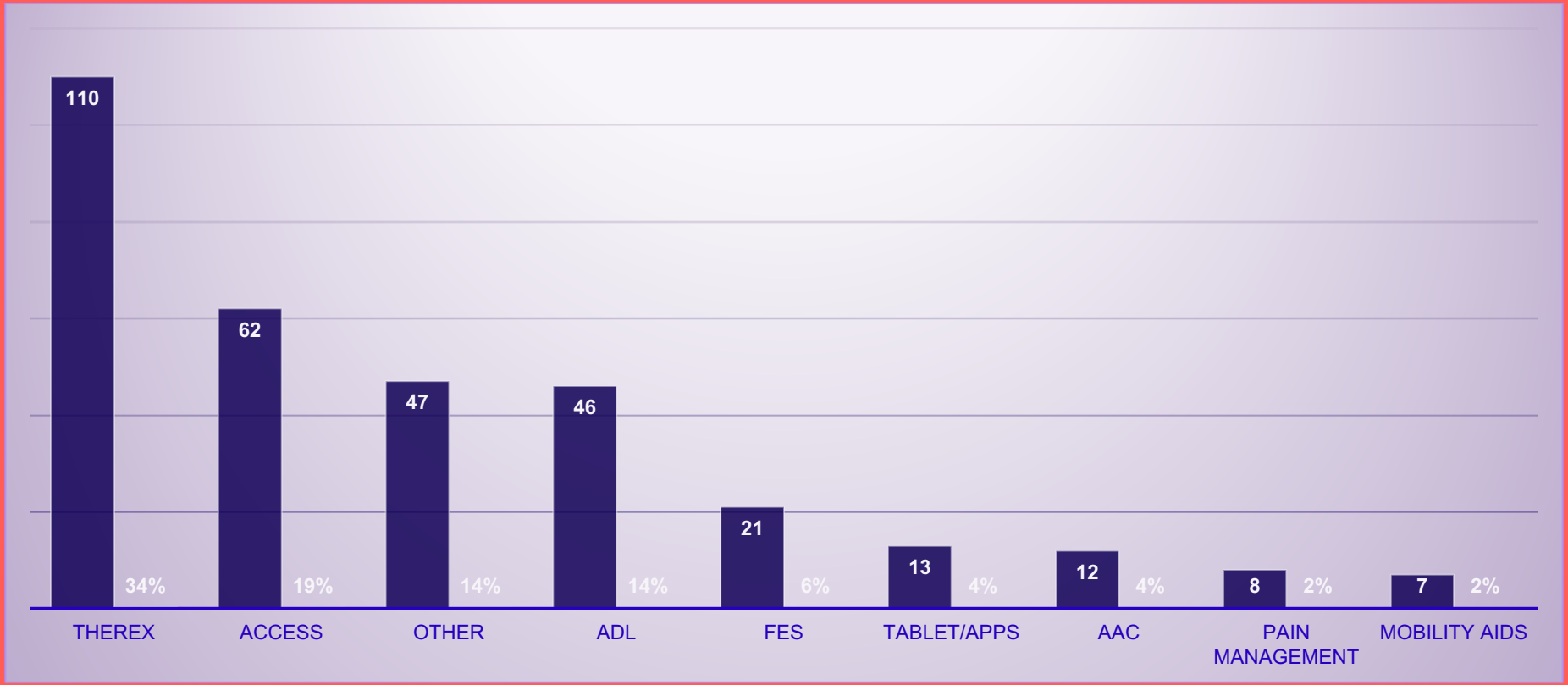
# Professions



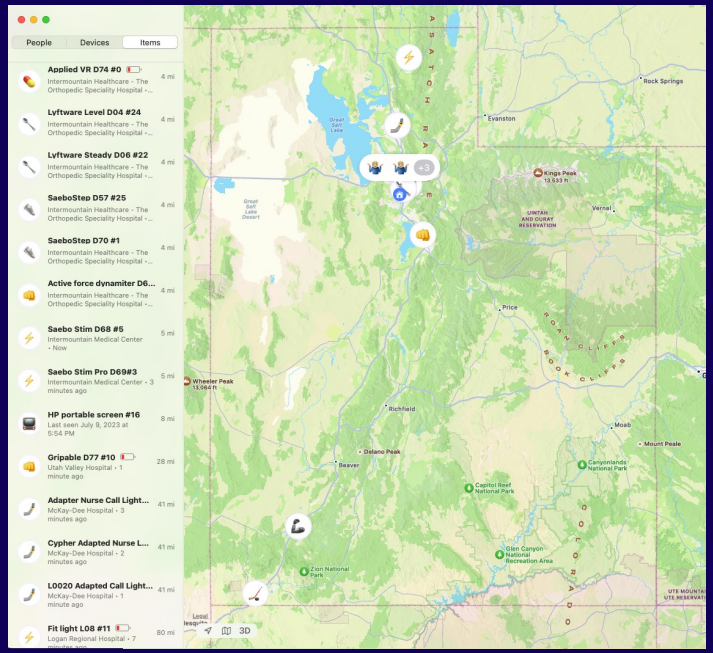
# Departments



# Categories


110
34%
62
19%
47
14%
46
14%
21
6%
13
4%
12
4%
8
2%
7
2%
THEREX
ACCESS
OTHER
ADL
FES
TABLET/APPS
AAC
PAIN MANAGEMENT
MOBILITY AIDS

# Overall = A Net Win




**Key Benefits**:
- Low risk to try new technology
- Greater access to critical tech, more than one clinic could ever have alone
- Vendors sometimes donate items to a library

**Potential Drawbacks:**
- Staff to manage the process
- Shipping can be costly if not already set up
- Need many clinics to share cost

**Key Reminders**:
- Use Apple AirTags to track assets
- Not all items are appropriate for a library
  - Easily shipped
  - Does not require specialty training

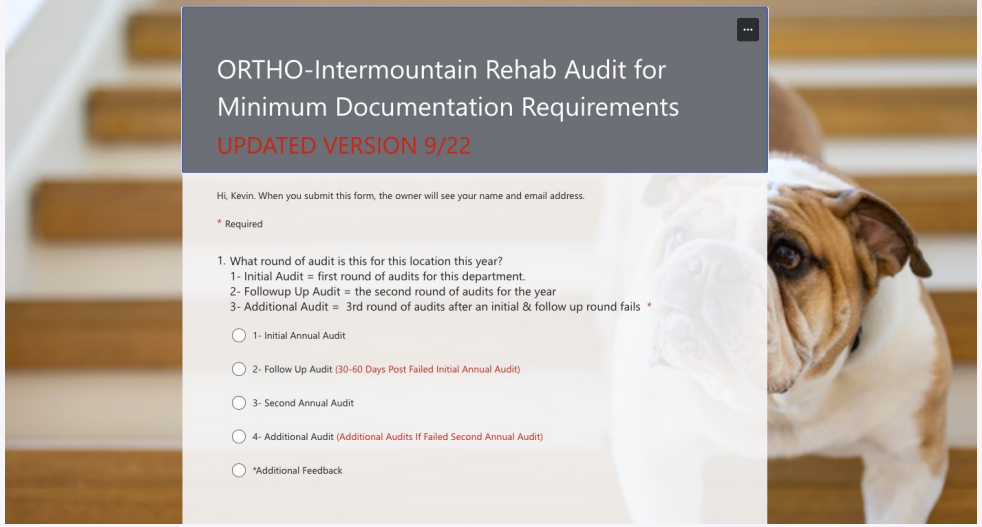
# Power Automate & Forms

## Combined Power That Can Make You Unstoppable

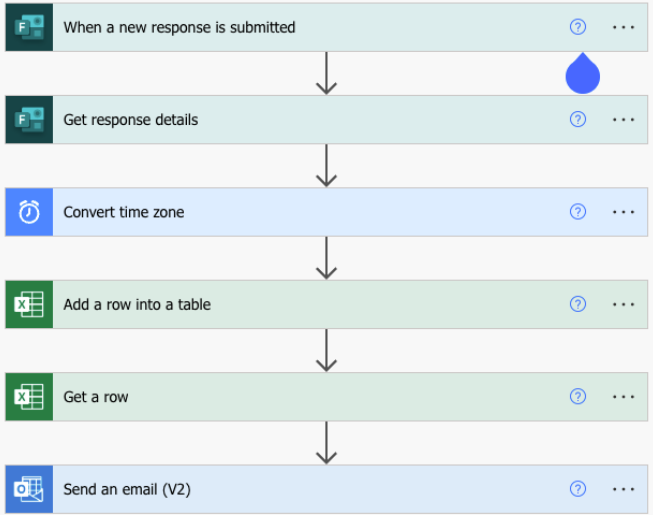
### The problems to be fixed

- Using pen and paper to collect data across our system
- Lack or central location and or ability to easily analyze or track the data collected
- Lack of standardization in how we collect data

**Microsoft Form-** is an online platform to create forms such as questionnaires, surveys, or quizzes. It standardizes the way certain data is collected.




**Power Automate** is “a service that helps you create automated workflows between your favorite apps and services to synchronize files, get notifications, collect data, and more



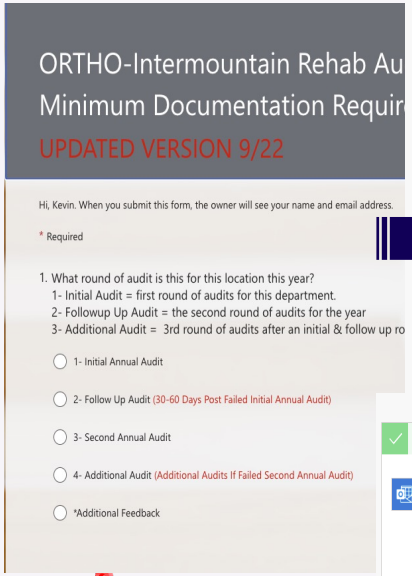
# Power Automate + Microsoft Forms

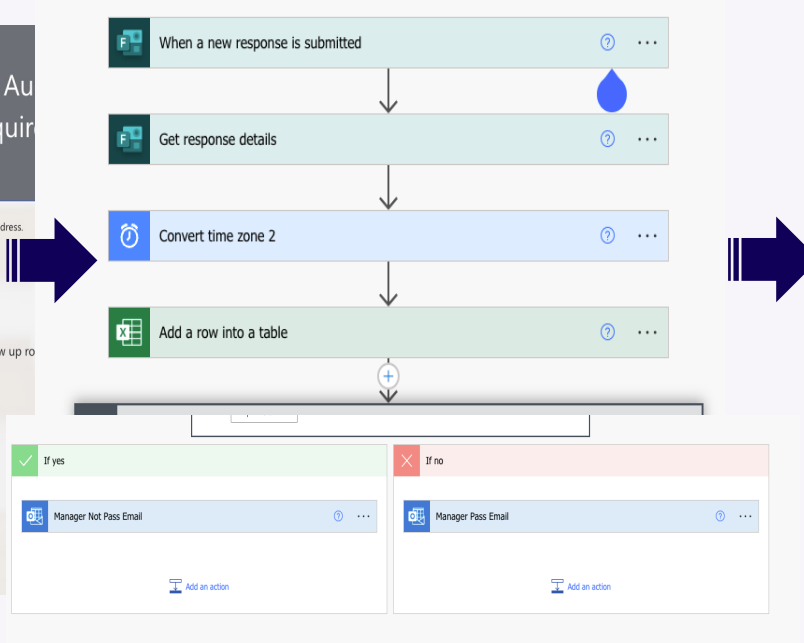
## Projects we have accomplished with these 2 tools

1. Documentation Audits- Leader and Peer Audits
2. Continuing Education Approval & Tracking Process
3. Provider Daily Productivity Trackers
4. Occupational Therapy ROMS Pilot
5. Patient Surveys w/Automated Email Reports
6. Request MedBridge Subscriptions
7. Technology Loan Library Request
8. Many Others…

# Audit Process-

1. Standardized Audit is Completed in Forms
   a) Power atomate collects that data
   b) Email sent to manager with filtered down data
2. Audit data is sent to a Master Spreadsheet
   c) Data is analyzed via spreadsheet and dashboards present data




## Pass Audits & Number of Audits

| | % Pass Critical Audit | | # Audits | | Total # Audits |
|---|---|---|---|---|---|
| Row Labels | No | Yes | No | Yes | |
| Alta View | 26% | 74% | 7 | 20 | 27 |
| American Fork | 40% | 60% | 19 | 29 | 48 |
| Bear River | 30% | 70% | 7 | 16 | 23 |
| Cassia | 31% | 69% | 12 | 27 | 39 |
| Heber Valley | 25% | 75% | 3 | 9 | 12 |
| Intermountain Medical Center | 18% | 82% | 3 | 14 | 17 |
| Layton | 13% | 88% | 2 | 14 | 16 |
| Logan | 41% | 59% | 17 | 24 | 41 |
| McKay Dee | 36% | 64% | 18 | 32 | 50 |
| Park City | 44% | 56% | 18 | 23 | 41 |
| Rehab Agency | 12% | 88% | 15 | 109 | 124 |
| Riverton | 15% | 85% | 4 | 22 | 26 |
| Spanish Fork | 33% | 67% | 4 | 8 | 12 |
| St. George | 38% | 62% | 46 | 76 | 122 |
| TOSH | 29% | 71% | 30 | 72 | 102 |
| Utah Valley | 21% | 79% | 6 | 22 | 28 |
| Grand Total | 29% | 71% | 211 | 517 | 728 |

# Overall

1. Standardized What Data We Collect
2. All Data in 1 Central Location
3. Automated Analysis, Reports, & Dashboards
4. Automated Alerts to Managers
5. Ability to Track Changes Over Time
6. Efficient for Auditors, Managers, & Care Providers
7. Flexibility to Change the Audit Process

# Digital Health Platform

**Telehealth / Remote Data Collection / Remote Therapeutic Monitoring**

**The problem to be fixed**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# Process to Define our Problem

**Through the lens of the SETT Model**

**Student/Client**

- Interested Departments
  - Rehab
  - MSK
  - Etc…16+ Departments
- Care Providers
  - Rehab Staff
  - Physicians
  - Nursing
  - Care Coordinators

**Environment**

- Where will we use this solution
  - Inpatient
  - Outpatient
  - Home & Community
- Types of Patients
  - Surgery
  - Rehab
  - Community Dwelling

**Tasks**

What do we need to accomplish:

1. Digital Patient Collected Outcomes & Data
2. Pathway to Inventions
3. Ability to Track Patients Over Time
4. Patient Retention, Referral & Ease of Access
5. Integration Into EMR

# What Vendor Can Solve our Problem

**Technology**

**Market Analysis & Vendor Survey (Microsoft Form)**

- Vendors completed custom questionnaire
- 16 Vendors down to 6 Vendors

**Vendor Presentations (FUTURE WORK)**

- How they fix our “problems”
- Departments grades each vendor using a standardized form (Microsoft Forms)

**Pilot, Contracting, and Implementation Support**

| Name | Critical Questions | Non Critical Questions | Total Questions |
|---|---|---|---|
| Vendor 1 | 26 | 27 | 53 |
| Vendor 2 | 26 | 24 | 50 |
| Vendor 3 | 23 | 23 | 46 |
| Vendor 4 | 23 | 23 | 46 |
| Vendor 5 | 28 | 17 | 45 |
| Vendor 6 | 25 | 20 | 45 |
| Vendor 7 | 21 | 22 | 43 |
| Vendor 8 | 23 | 18 | 41 |
| Vendor 9 | 22 | 19 | 41 |
| Vendor 10 | 20 | 19 | 39 |
| Vendor 11 | 20 | 19 | 39 |
| Vendor 12 | 21 | 15 | 36 |
| Vendor 13 | 17 | 19 | 36 |
| Vendor 14 | 19 | 16 | 35 |
| Vendor 15 | 16 | 18 | 34 |
| Vendor 16 | 17 | 9 | 26 |



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# Decision Assist

## AI Documentation / Chat GPT– Intermountain GPT / AI Dictation

**The problem to be fixed**

- Make Following Best Practice the Easiest Option
- Easily Train and Orient Care Providers to Current Best Practice
- Reduce Care Providers Time on Non-Skilled Task
- Improve Patient Outcomes and Care Provider Confidence
- Automate Clinical Quality Audits- Are Providers Following Evidence Based Care

# Educating Providers on Care Practice Guidelines Works

**TKA Rehab Practice Guideline**

| Phase | Treatment (Examples) | Compliance Measures | Milestones |
|---|---|---|---|
| I (0-4 Weeks)<br><br>Visits 1-6 | **ROM**: bike 5-10' no resistance; wall slides; passive knee ext. stretch; seated/prone bag hang; patellar mobilizations<br>**Strength**: SAQ, counter minisquats, clams, glute squeezes, s/l hip ADD<br>**Balance**: multi-directional stepping, weight shifting, side-stepping (UE support PRN)<br>**NMES** (per protocol) | Measure:<br>• Pain and disability<br>• AROM/PROM<br>Interventions:<br>• ROM<br>• Volitional strength<br>• Balance/Agility<br>• NMES (per protocol)<br>Implement home stretch program (bag hang) | • Complete 3x8 reps without fatigue<br>• Pain at rest <4/10<br>• AROM/PROM <10-90<br>• Independent with mobility in and out of home |
| II (2-6 Weeks)<br><br>Visits 8-14 | **ROM**: bike 5-10' no resistance, moving seat lower, add resistance when full rotation at lowest seat; wall slides; passive knee ext. stretch, seated/prone bag hang; patellar mobilizations<br>**Strength**: LAQ, SLR, clams, s/l hip ABD, step-ups/side step ups/side step up-overs, heel raises, hamstring curls, TKE<br>**Balance**: marching, backward walking, forward lunges (decrease UE support)<br>**NMES** (per protocol) | Measure:<br>• Pain and disability<br>• AROM/PROM<br>Interventions:<br>• ROM<br>• Volitional strength<br>• Balance/Agility<br>• NMES (per protocol)<br>Implement home stretch program (bag hang) | • AROM/PROM 0° to > 105°<br>• Minimal pain and swelling<br>• Voluntary quad control or 0° knee extension lag<br>• Heel strike/push off w/ least restrictive device<br>• Start focus on TKE in stance phase of gait<br>• Obtain baseline isometric quadriceps index and activation with a superimposed electrical stimulation burst at the end of week 4 |
| III (5-8 Weeks)<br><br>Visits 12-18 | **ROM**: Same as Phase II with lower seat/increased duration<br>**Strength**: resisted LAQ/hamstring curls, 4-way hip, ball squats, step ups/overs (increase height if good concentric/eccentric control)<br>**Balance**: balance board, forward lunging, SLS EO (progress surface), grape vine, figure 8 (progress volume/speed)<br>**NMES** (per protocol) | Measure:<br>• Pain and disability<br>• AROM/PROM<br>Interventions:<br>• ROM<br>• Volitional strength<br>• Balance/Agility<br>• NMES (per protocol)<br>Document patient compliance with bag hang | • Consistent with carryover of AROM 0° to >115°<br>• Collaborate with surgeon if by 4-6 weeks post-op carryover of AROM in flexion is less than 10°-15° from initial outpatient PT evaluation measurement. |
| IV (7-10 Weeks)<br><br>Visits 12-18 | **ROM**: As previous until milestones achieved<br>**Strength**: machine leg extension/curls, ball bridges, 4-way hip, leg press, calf press, ball squats w/ hold<br>**Balance**: Star excursion, SLS EC, side shuffles, grape vine, figure 8 walking, bkwd walking (progress volume/speed)<br>**NMES** (per protocol) | Measure:<br>• Pain and disability<br>• AROM/PROM<br>Interventions:<br>• ROM<br>• Volitional strength<br>• Balance/Agility<br>• NMES (per protocol)<br>Document patient compliance with bag hang | • AROM 0-120°<br>• Walk foot over foot up and downstairs without assistive device<br>• Unlimited walking distance with normalized gait and least restrictive device<br>• Quadriceps strength at 70% strength of uninvolved side |

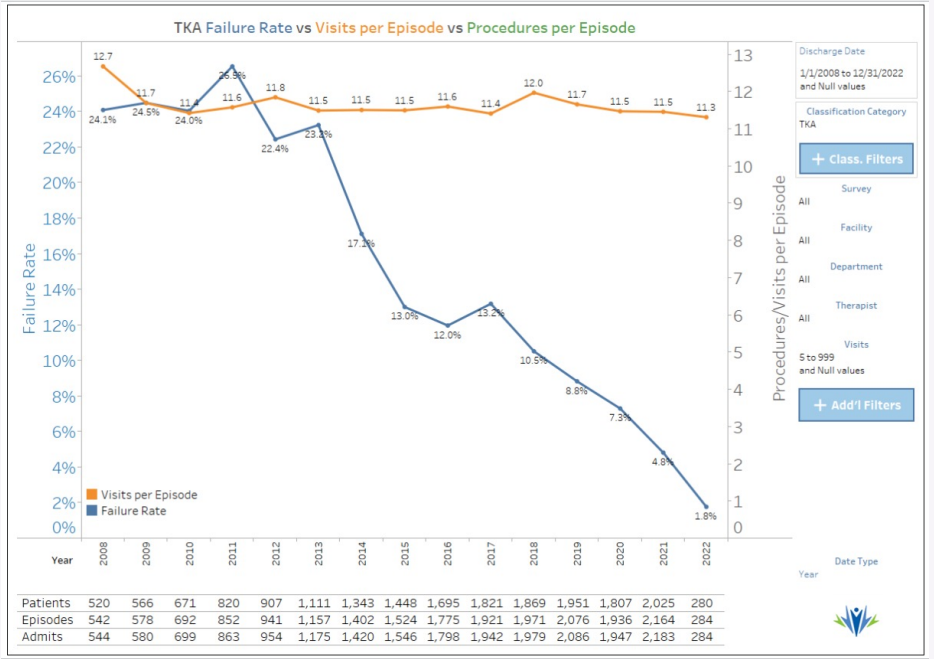
**Strength**: Start 70% 8RM with 3x8 reps → 3x10 once minimally fatigued → reassess 8RM/add resistance → 3x8 at new 8RM
**NMES**: proximal VL/distal VMO; 12s on: 50s off; max tolerable or 30% MVIC; isometric 60° flexion; until MVIC 70% of uninvolved
**Before discharge**: Practice safe kneeling one session (typically at >8 weeks); provide handouts on safe kneeling, local gyms, risk of weight gain after TKA, and nutrition

**Training**

**Re-Training**

**More Training**

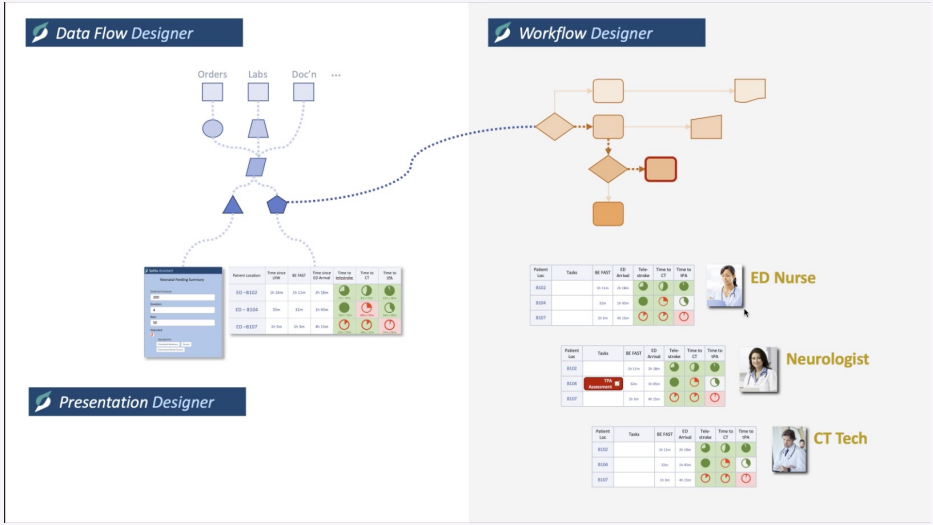
**Follow-Up**

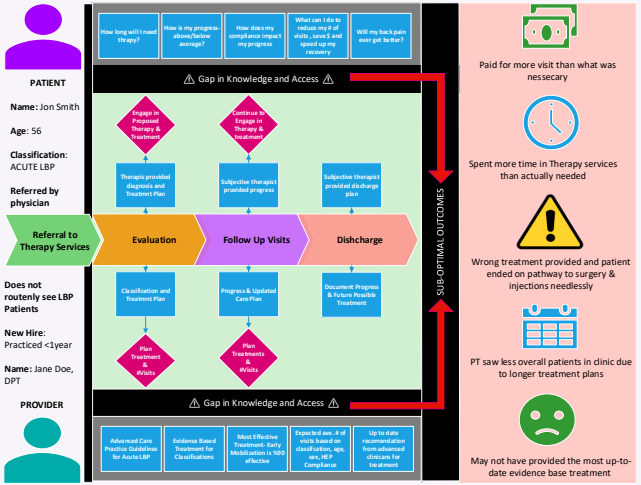


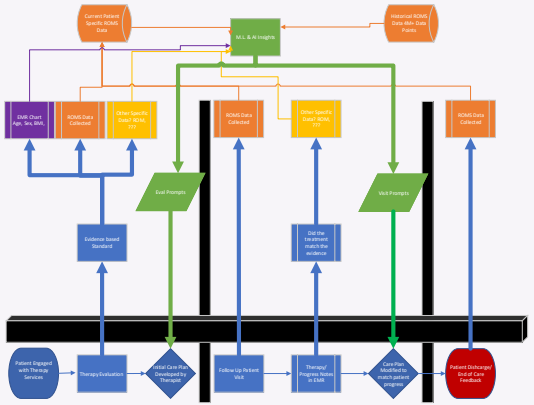

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Patients | 520 | 566 | 671 | 820 | 907 | 1,111 | 1,343 | 1,448 | 1,695 | 1,821 | 1,869 | 1,951 | 1,807 | 2,025 | 280 |
| Episodes | 542 | 578 | 692 | 852 | 941 | 1,157 | 1,402 | 1,524 | 1,775 | 1,921 | 1,971 | 2,076 | 1,936 | 2,164 | 284 |
| Admits | 544 | 580 | 699 | 863 | 954 | 1,175 | 1,420 | 1,546 | 1,798 | 1,942 | 1,979 | 2,086 | 1,947 | 2,183 | 284 |

# Automated Prompts for Care Practice Guidelines

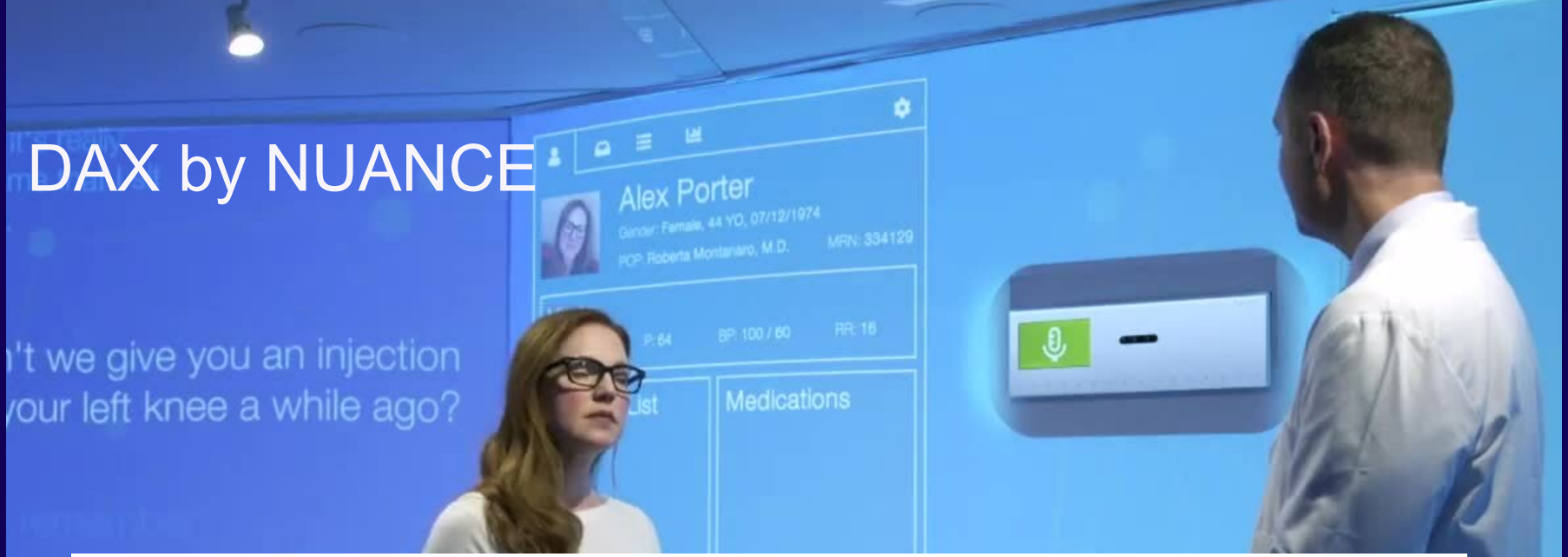
SaViaHealth
Custom Workflow in your EMR



# DAX by NUANCE




## The positive impact on care delivery

**7min**
saved per encounter, reducing documentation time by 50%

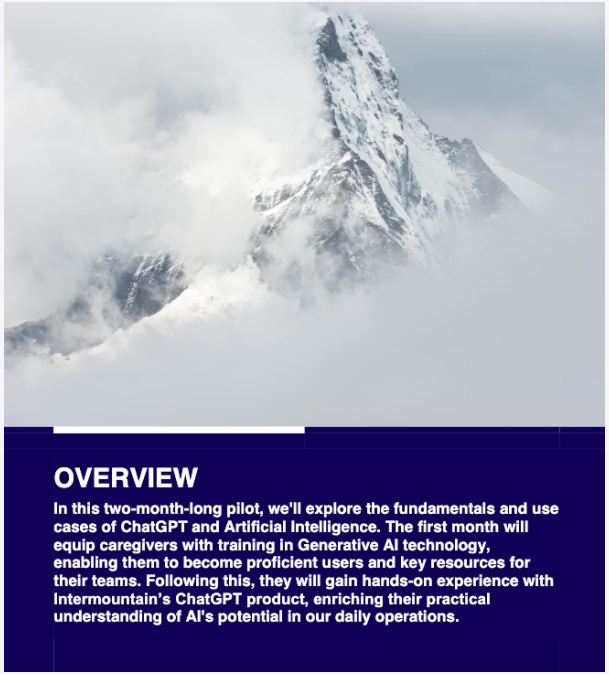
**70%**
reduction in feelings of burnout and fatigue

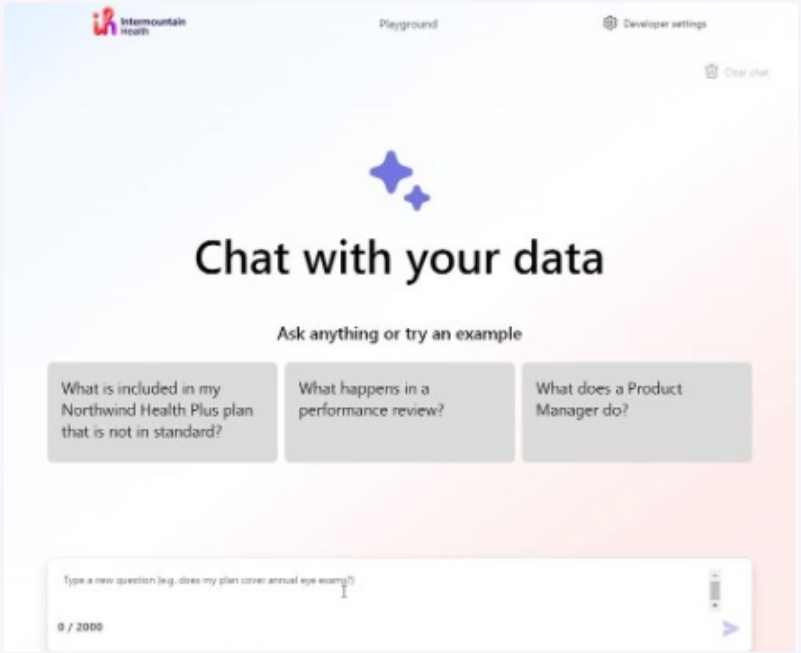
**3 of 4**
physicians state DAX improves documentation quality

**85%**
of patients say their physician is more personable and conversational

# AI & Generative Pre-training Transformer (GPT)

## Intermountain GPT



# We Must Continue to Develop the Tools & Processes→

1. Best Care = Easiest Path
2. Train & Maintain Staff Competence
3. Reduce Non-Skilled Tasks
4. Do More With Less Time/Resources/Etc.

# APTA- Academy of Research

**How Can we Prepare Therapist for the Future-**

**Goal #1**

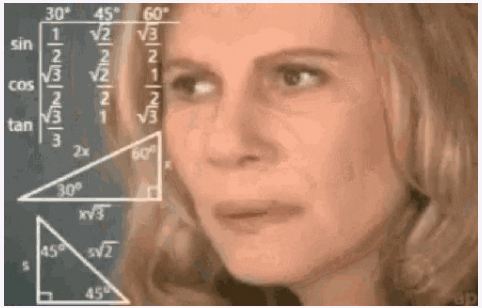
**The People & Patients** - Identify & develop skills & resources needed for therapist to adapt, and know how to use current and emerging appropriate technology

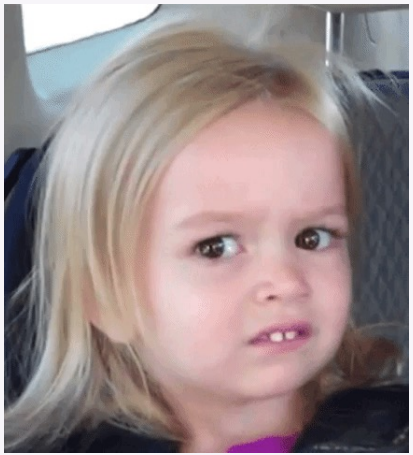
Goal #2

**The Data-** Clear a pathway for technology to augment not replace therapists

# FINISH LINE STATEMENTS- WHERE WE WANT TO BE IN 5-10 YEARS

1. **Tech Enabled Therapist**: *Therapist Are Open & Receptive to Using Current and Evolving Tech. in Clinical Practice*
2. **Comprehension & Use:** *Therapist Use Existing & Evolving Technologies*
3. **Measures & Outcomes:** *Therapists Use Technology to Measure Patient Outcomes & Experience to Improve Care.*
4. **Data Access & Data Driven:** *Therapist Know How to Interpret Data from Diverse Technology Sources*
5. **Disperse the Information**: AOTA, APTA, Etc..

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# Questions?

# Contact Information:

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# Thank you