

# AHIMA<sup>®</sup>23 CONFERENCE



## **Examining Digital Solutions that Improve Care Delivery and Health Management**

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# Conflicts of Interest

Tricia Coffey

Dr. Jon McKeeby

Have no real or apparent conflicts of interest to report.



# Learning Objectives

- Overview of the National Institutes of Health (NIH) Clinical Center
- Define Virtual Health as a Sustainable Approach to Healthcare and Clinical Research
- Develop an Enterprise Platform for Virtual Health
- Assess Virtual Health Capabilities for the Entire Care Continuum
- Employ a Virtual Health Strategy Ensuring Healthcare Organizations Thrive
- Describe the Roles Health Information Management (HIM) Professionals Play in these Efforts



# NIH Clinical Center Profile

- Nation's largest hospital devoted entirely to clinical research
- Bedside to bench to bedside: Research labs adjacent to patient care units
- All patients are on clinical research protocols
- Patients are partners in the research
- Expertise in rare & refractory diseases
- More clinical trials with rare diseases and behavioral health diagnoses than anywhere else
- No Billing; No Emergency Room; No Labor and Delivery or Nursery
- Compliant with Privacy Act of 1974; Health Insurance Portability and Accountability Act (HIPAA) Exempt
- Intramural research at the NIH Clinical Center is a small portion of what NIH does



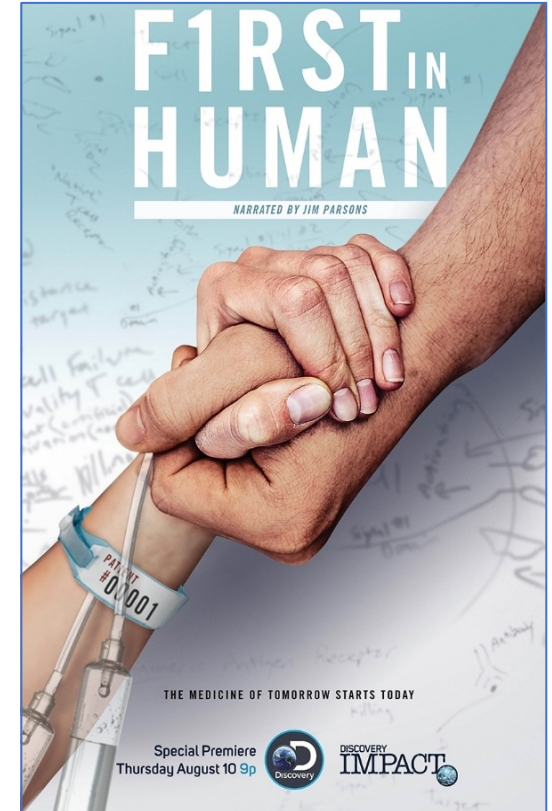
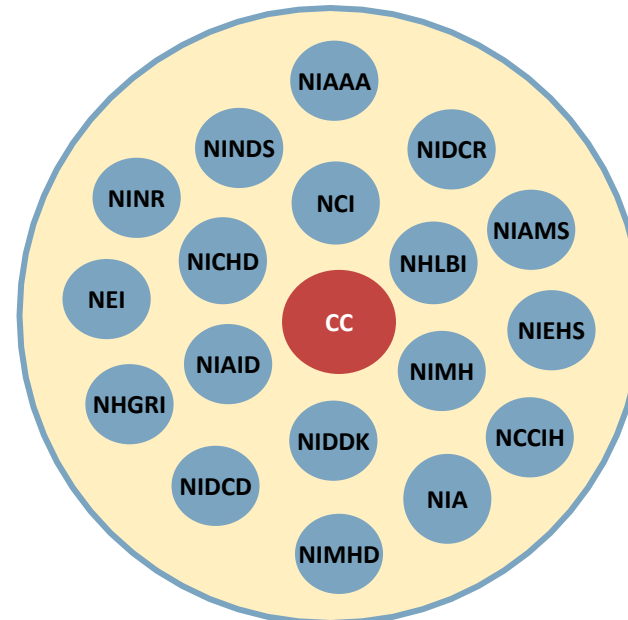
# Our Mission



# Science



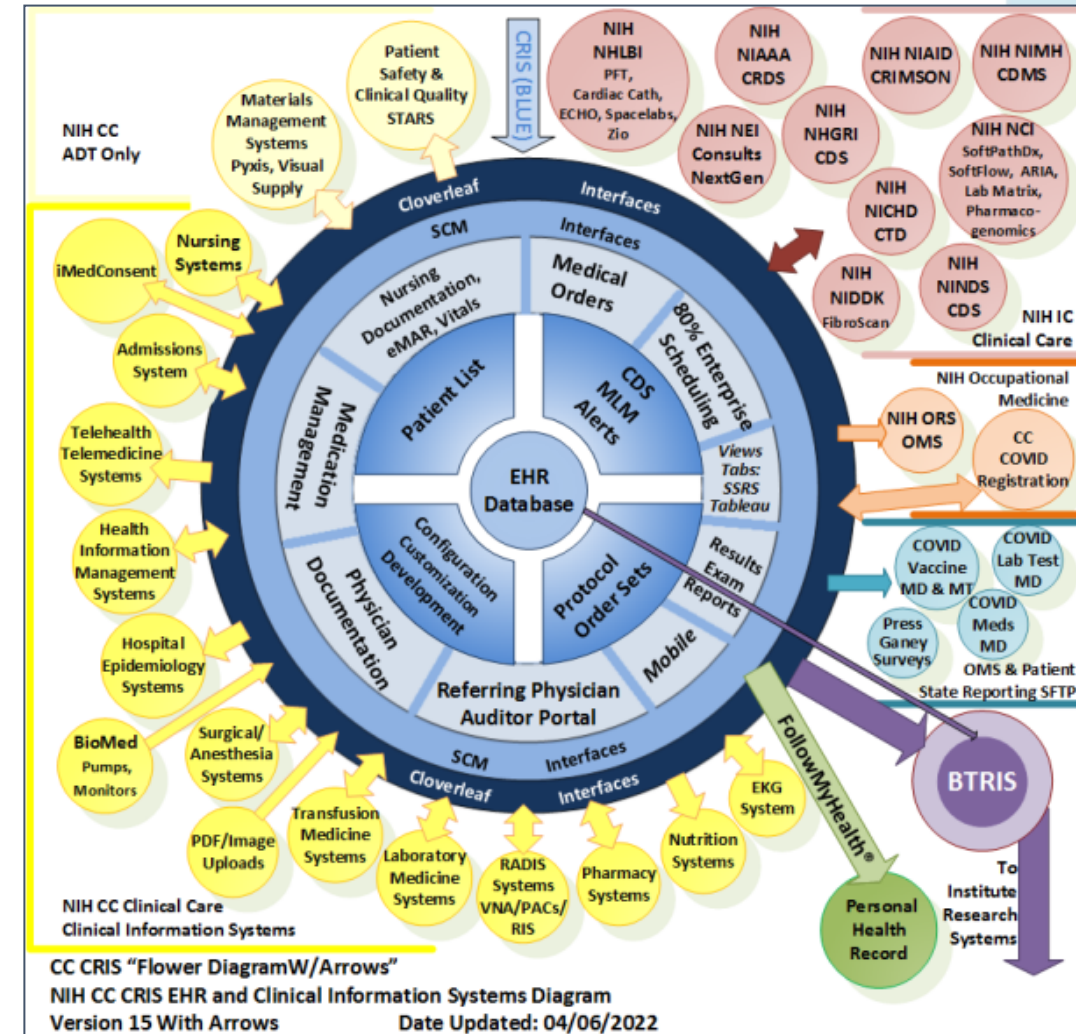
# Patient Care



# Summary of Discovery Channel Documentary

# NIH Clinical Center Profile

- Clinical Research Information System (CRIS) = electronic health record for the NIH Clinical Center (CC)
- CRIS serves the NIH Clinical Center as well as the NIH Institutes and Centers (ICs)
- CRIS supports approximately 1,000 research studies which are actively recruiting and/or following participants
- CRIS user community of 4,600 includes credentialed and non-credentialed users: IC physicians, IC research nurses, CC nurses, patient care services, IC clinical staff, CC clinical department staff, occupational medical services, CC & IC administrative staff, and Information Technology (IT) support users.
- HIMSS Electronic Medical Record Adoption (EMRAM)
  - Certified at Stage 7: 2015; Recertified in 2018 and 2021.
- HIMSS Outpatient Electronic Medical Record Adoption (O-EMRAM)
  - Certified at Stage 7: 2018; Recertified in 2021.



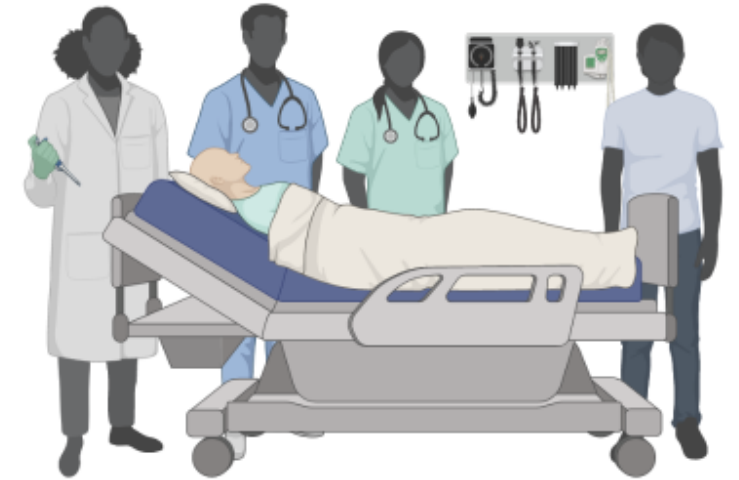
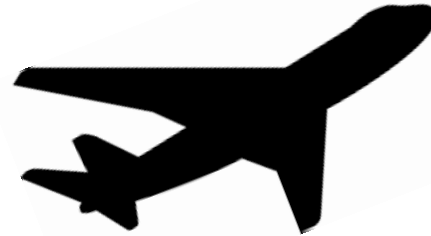
# NIH Clinical Center Virtual Health Program



# How We Provide Team-Based Care at NIH

## Team


- Investigators and Researchers
- Physicians
- Other Clinicians
- Nurses
- Study Coordinators
- Case Managers
- Patient Care Coordinators
- Laboratory Staff





An aerial photograph of a large, multi-story brick university campus. The buildings are interconnected and feature numerous windows, some with glass facades. The campus is surrounded by lush green trees and a clear blue sky with light clouds. A blue cloud graphic is overlaid in the upper right corner, containing the text '#1: Efficiency'.

**#1: Efficiency**



**#2:  
Communication**



**#3: Inclusivity  
and Family-  
Centered Care**

WHERE HEALTH INFORMATION  
**COMES TO LIFE**



# Why the Telehealth Hesitancy?

- Comfort with technology and troubleshooting
- Telehealth literacy
- Effects on research (data/samples)
- Lack of knowledge on how to integrate into team workflows
- Lack of a digital “hug”



ThinkStock



# Overcoming Telehealth Hesitancy for Clinician-Researchers

- Track longitudinal outcomes and data streams using telehealth
- Clinician input into design and implementation
- Potential for send-in samples
- Other opportunities:
  - Artificial Intelligence/Machine Learning
  - Health data extraction/Patient-related outcomes
  - mHealth





Photo credit: NIH UNITE

## Designing for Equity

- Voice activated technology (e.g. live closed captioning)
- Provide url's rather than complicated app downloads
- Disabilities? Impairments? Preferred Language for Healthcare?
- Limited English proficiency/Translator services-ability to send Short Message Service (SMS) messages or links to family members or translator services
- Strengthen digital literacy? Outreach? (e.g. concierge services)

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# Virtual Health Program Requirements

- Develop a virtual health program to enhance clinical care and clinical research at the National Institutes of Health (NIH) CC.
- Utilize vendors and products that are accessible to the NIH broad user base.
- Evolve with function and maturity and adapt to changes due to the changing world.
- Ability for maturation and adaptation of the services including integration with the Electronic Health Record (EHR).
- Ability to conduct virtual regulatory audit and research study compliance reviews.
- Support for laboratory testing at outside laboratories with integration into the EHR.



# NIH Virtual Health Program Components - Current

- Virtual Visits
- Virtual Rounding
- Virtual Waiting Room
- Pre-Visit Questionnaires
- Messaging
- Electronic Intensive Care Unit (eICU)
- Clinical Research Study Support



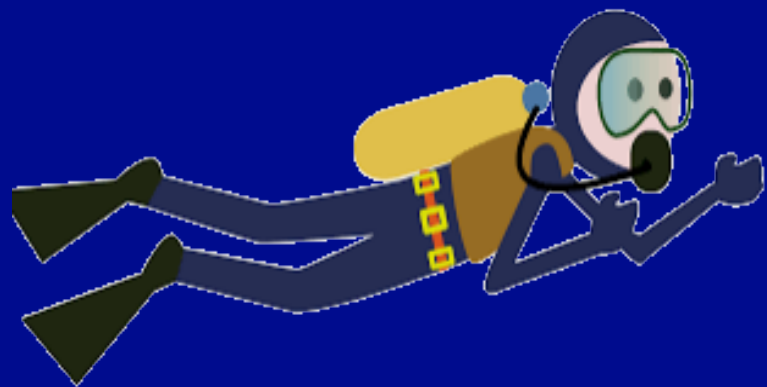


# NIH Virtual Health Program Components - Future

- Remote Patient Monitoring – Organizational Program
- Telesitting
- Mobile Patient Experience (MPE)



# A Deeper Dive Into Some Components



# Virtual Visits



# Virtual Visits Requirements

- Provide virtual “care” to patients who are not able to travel to the facility
- Provide support for remotely located consult services to provide virtual “care” to inpatients (patients may be provided iPads to utilize)
- Maintain contact with patients to ensure continuity of study compliance and healthcare needs
- Provide visual and verbal exchange with patients
- Ensure a secure mechanism to support virtual health
- Support easy and quick implementation for NIH providers and their patients
- Provide access via any mobile device or computer
- Available support model within NIH to troubleshoot issues
- Future: AI support for clinical documentation in EHR



# Virtual Visits Functionality

- Text/email messages with appointment reminders for patients
- Waiting Room functionality
- Dashboard functionality for technical assistance during visits as necessary
- Visit metrics reporting
- Secure, web-based platform - No application download required
- Easy to include/invite others to the visit at any point (prior to, same day, during the visit)
- Easy screen-sharing

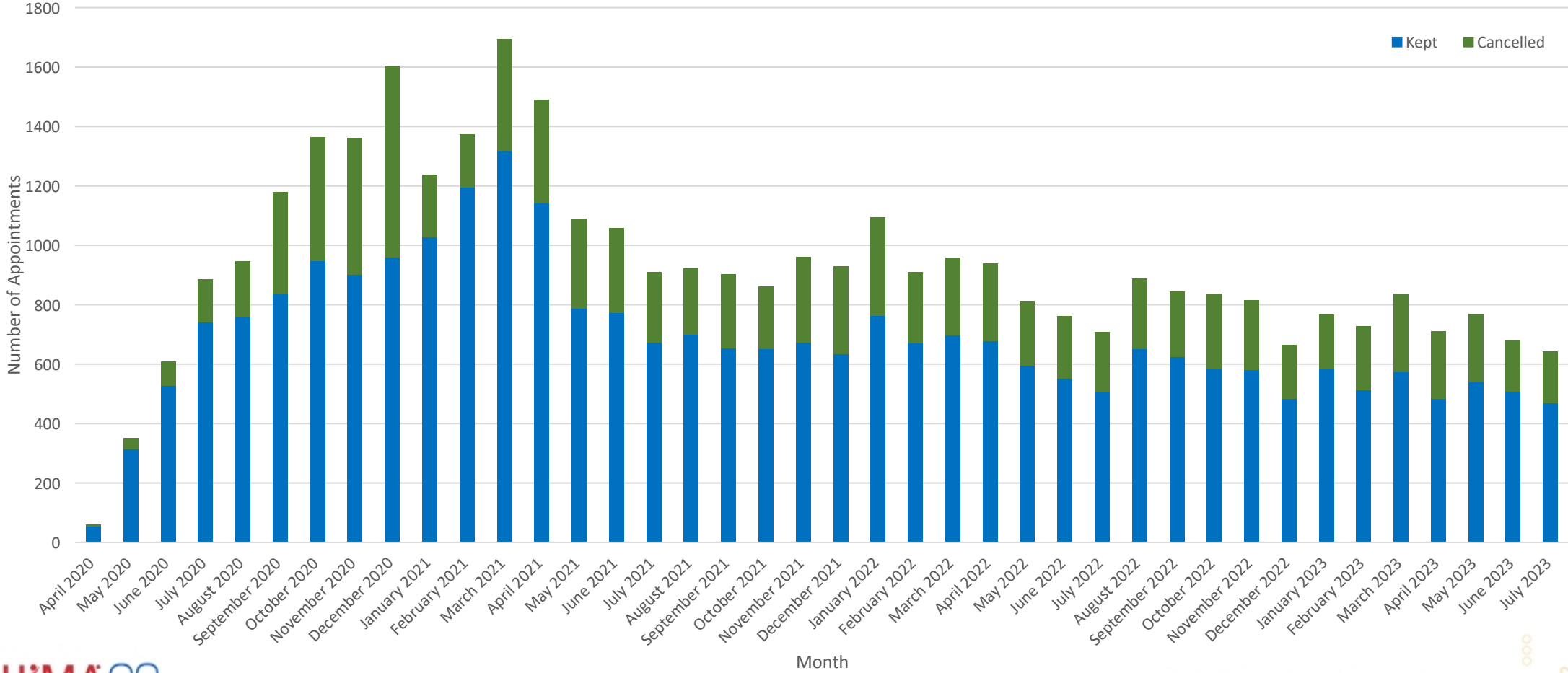


# Virtual Visits – Key Performance Indicators

- **Current:**
  - Telehealth “Kept” appointments vs. “Cancelled” appointments
  - Support service metrics
  - Virtual regulatory audits conducted
- **Future:**
  - Telehealth visit success rate
  - Patient perception survey questions related to telehealth
  - Provider and healthcare team survey questions related to telehealth
  - Social Determinants of Health and the impact on successful telehealth visits



# NIH Clinical Center Telehealth Appointments



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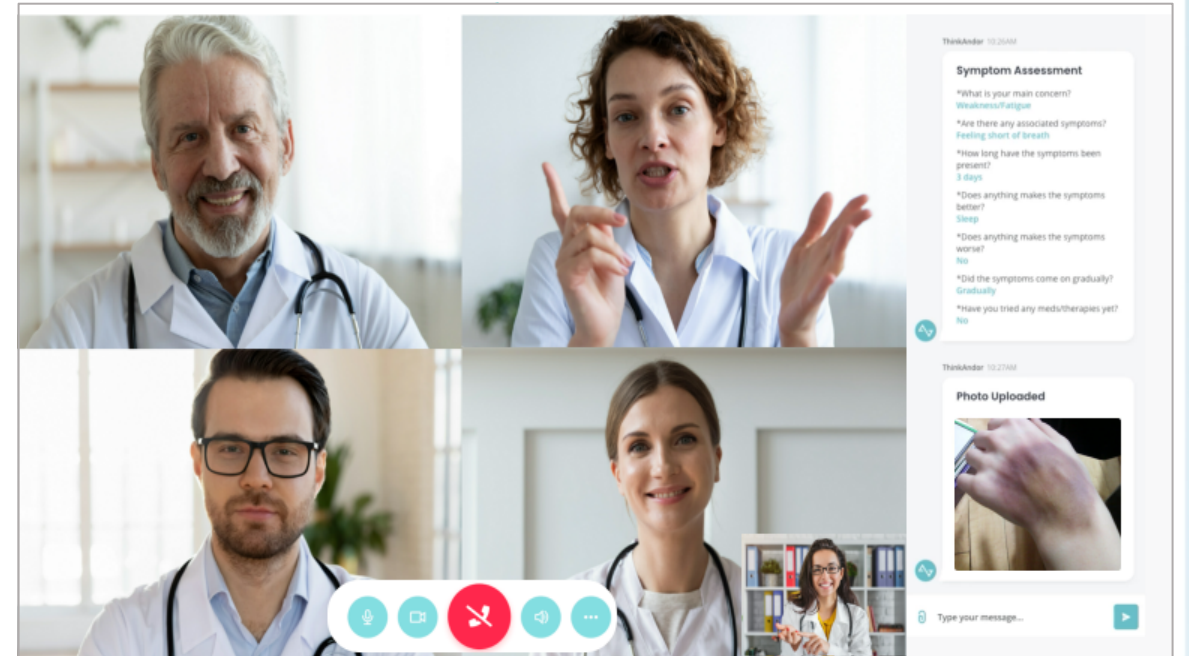
# Virtual Rounding





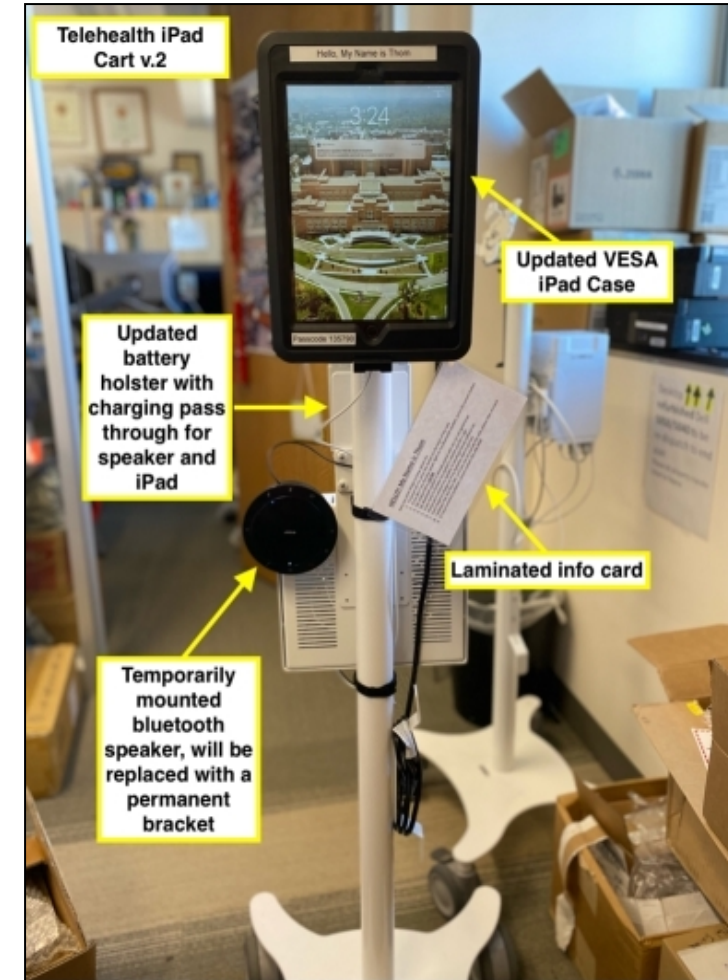
# Virtual Rounding Functionality

- Supports multi-disciplinary collaboration
- Provides platform for large teams to meet and discuss patient's status and plan virtually as necessary
- Enhances social distancing and connectivity for team members located remotely
- Provides iPads on mobile carts on nursing units and outpatient care areas
- Supports individual patient rounding and team-based rounding
- Flexible platform for family members/others to join as necessary



# Virtual Rounding Process

- iPad on cart is at the bedside in kiosk mode or staff carries iPad to room to initiate rounds
- Staff enters room and logs into provider/staff-only rounding dashboard
- Staff selects the patient from dashboard list
- Staff initiates virtual rounding session from iPad
- Staff invites other providers/family/caregivers to virtual rounding session



# Virtual Waiting Room (Digital Front Door)

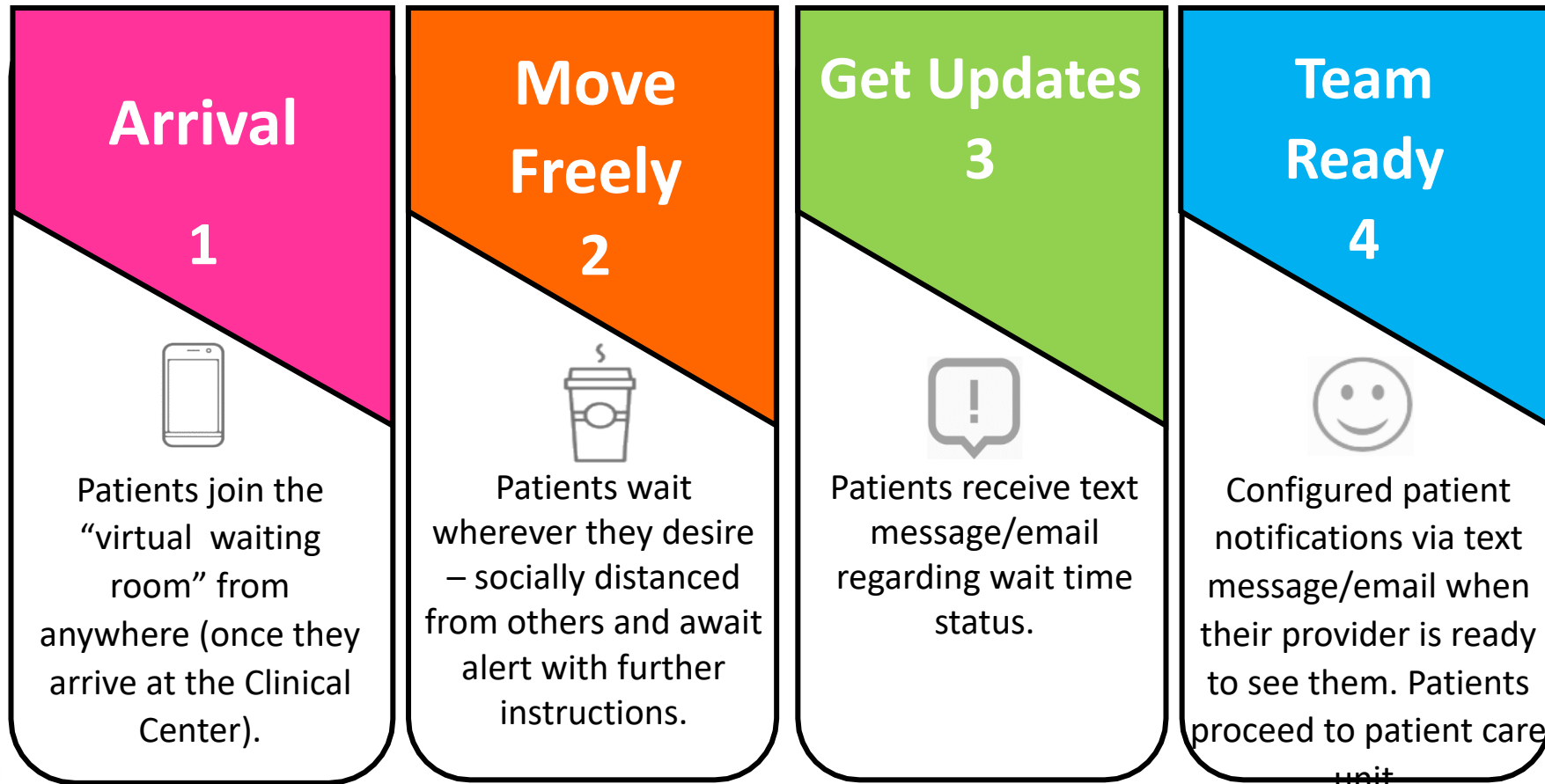


# Digital Front Door Functionality

- Appointment reminders sent via SMS/email to patient
- Final message includes link for patient to check in for appointment
- Staff in patient care area accesses dashboard and manages patient queue
- Dashboard supports sending return messages to patient following check in if desired
- Customization based on appointment type (instructions, etc.)



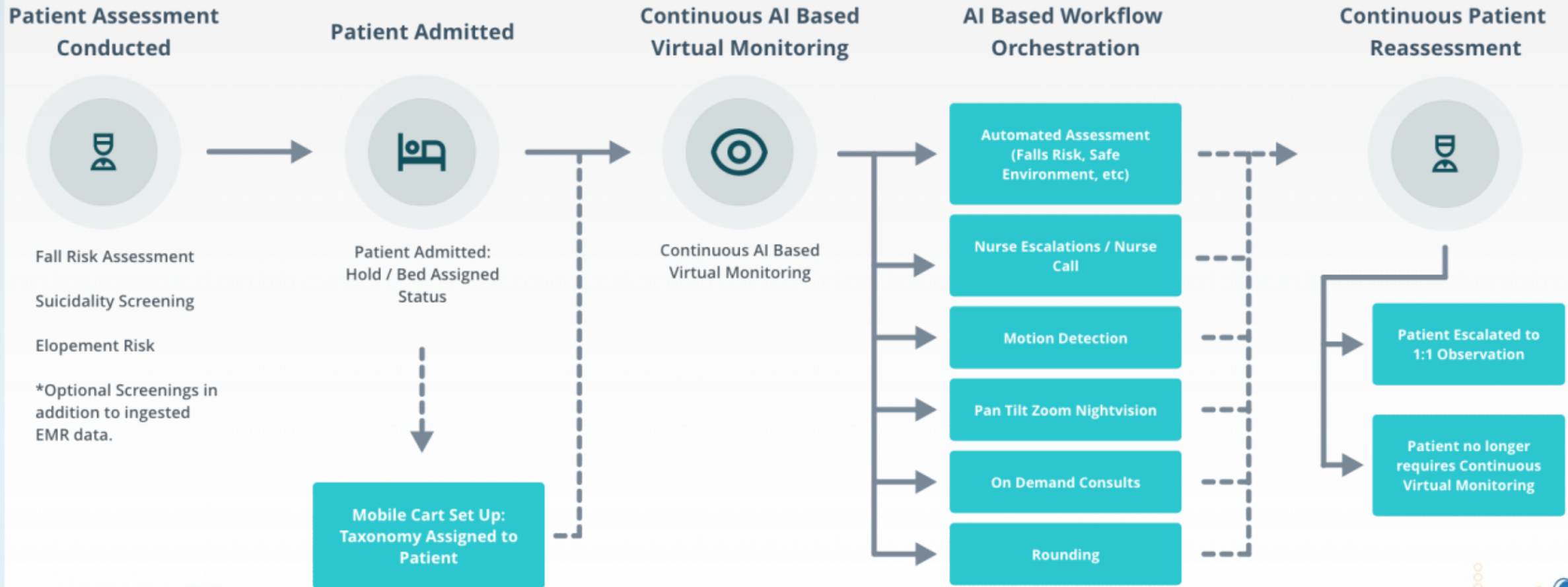
# Digital Front Door Process



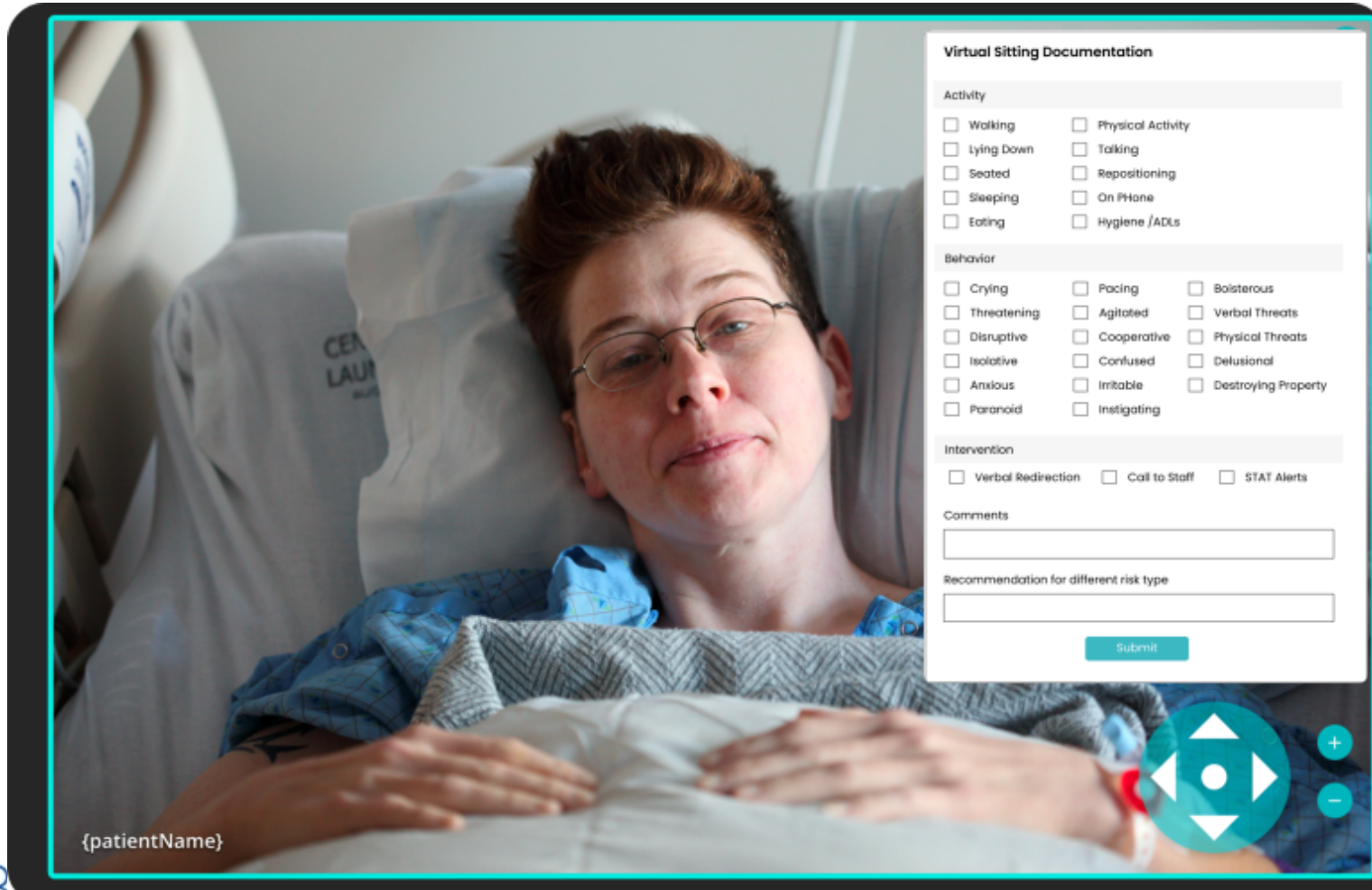
# Telesitting



# Telesitting Functionality



# Telesitting-Motion Detection & In-Room Notifications



The image shows a patient lying in a hospital bed, wearing glasses and a blue hospital gown. A white overlay titled "Virtual Sitting Documentation" is positioned on the right side of the frame. The overlay contains several sections with checkboxes for recording patient activities and behaviors. At the bottom of the overlay is a "Submit" button. In the bottom right corner of the video frame, there is a circular navigation pad with directional arrows and a central dot, along with plus and minus icons. The text "(patientName)" is visible in the bottom left corner of the video frame.

**Virtual Sitting Documentation**

**Activity**

- Walking
- Lying Down
- Seated
- Sleeping
- Eating
- Physical Activity
- Talking
- Repositioning
- On Phone
- Hygiene /ADLs

**Behavior**

- Crying
- Threatening
- Disruptive
- Isolative
- Anxious
- Paranoid
- Pacing
- Agitated
- Cooperative
- Confused
- Irritable
- Instigating
- Boisterous
- Verbal Threats
- Physical Threats
- Delusional
- Destroying Property

**Intervention**

- Verbal Redirection
- Call to Staff
- STAT Alerts

**Comments**

\_\_\_\_\_

**Recommendation for different risk type**

\_\_\_\_\_

Submit

(patientName)





# Clinical Research Study Support



# Clinical Research Study Support Functionality

- Customizable cadences
- Support for research participants (reminders, etc.)
- Customizable messages, questionnaires, diaries, requests for information sent to research participants
- Dashboard management by clinical research team
- Discrete data returned for researcher for analysis
- Discrete data returned/interfaced to electronic health record as clinical documentation as necessary



# Program Roadmap – March 2020 – Feb 2024

*Connecting with Research Participants through Unique Partnerships in NIH Clinical Research Programs*



## Mar 2020– Apr 2020 Telehealth Program Established

- Commercially available, secure meeting platforms evaluated.
- Telehealth concierge service established.
- First telehealth visit conducted through MS Teams



## May 2020 – July 2020 Continued Support & Growth of Telehealth Program

- Telehealth MAS policy approved by MEC.
- Implementation of a robust SMS/email platform for ‘just in time’ messaging to patients through Andor platform.

## Aug 2020 – Dec 2020 New Telehealth Platform Modules Added

- Virtual rounding component added to Andor platform.
- Virtual visit component added to Andor platform.

## Jan 2021 – June 2023 Requirements Gathering

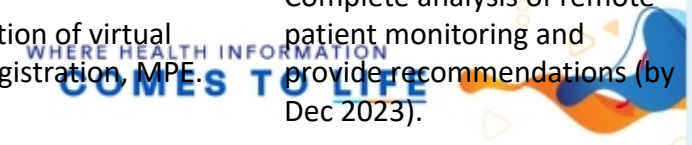
- Requirements gathering to support early adopter for clinical research study support.
- Requirements gathering for Virtual Waiting Room.
- Requirements gathering for Mobile Patient Experience (MPE).

## July 2023 – Oct 2023 Configuration

- Implementation of clinical research study (questionnaires). Early adopter targeted September 2023).
- Configuration for Virtual Waiting Room for OP4, OP7 and CT.
- Configuration of virtual patient registration, MPE.

## Sept 2023 – Feb 2024 Implementation

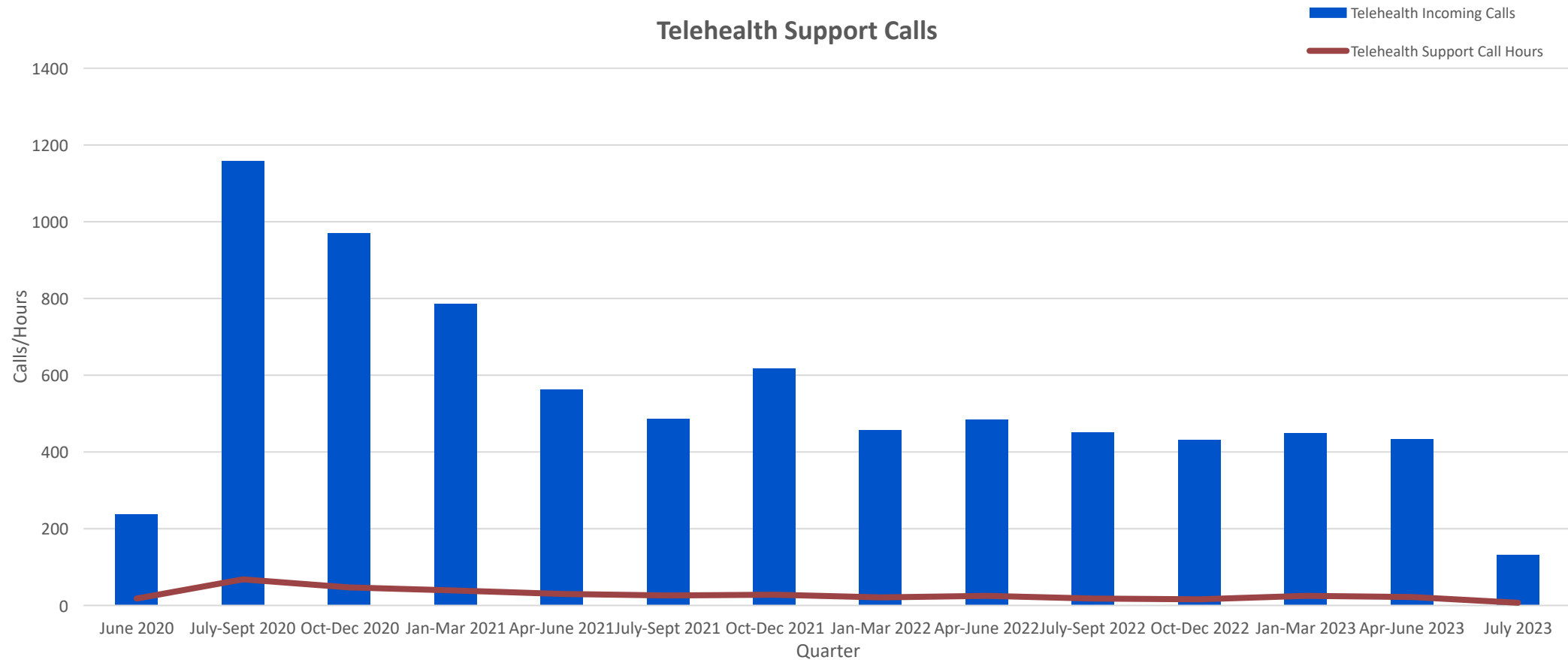
- Virtual Waiting Room – go live.
- MPE – go live.
- Assess clinical research study support process and implement for early adopters (by Dec 2023).
- Complete analysis of remote patient monitoring and provide recommendations (by Dec 2023).



# So, What is Health Information Management's Role in All of This?



# Concierge Service Metrics



# HIM Professionals Wear Many Hats!



Project managers



Technical experts



Front-line technical support –  
concierge service



Policy advocates



Patient engagement  
managers



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# Questions?

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