Digital Transformation: A Telehealth Story

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HIMSS21

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Welcome

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Conflicts of Interest

Jon W. McKeenby, DSC, MBA, CPHI

Has no real or apparent conflicts of interest to report.
Conflict of Interest

Patricia Coffey, MS, RHIA, CPHIMS, CPHI

Has no real or apparent conflicts of interest to report.
Agenda

- Review NIH Clinical Center
- Review Learning Objectives
- Review NIH CC Telehealth Program
- Review Telehealth Visits
- Review Virtual Waiting Room
- Review Virtual Rounding
- Review Virtual Regulatory Audits
Learning Objectives

• Learning Objective 1: Identify and apply methods to implement and sustain virtual health capabilities for COVID-19 and beyond.
• Learning Objective 2: Employ value-based solutions for care team members and patients.
• Learning Objective 3: Develop an evolutionary plan that identifies Key Performance Indicators and Critical Success Factors for each item.
• Learning Objective 4: Implement a secure web-based portal to ensure virtual regulatory audits and other critical research study compliance reviews continue during periods of restricted onsite activities.
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 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; HIPAA Exempt.
• Intramural research at the CC is a small portion of what NIH does.
Our Mission

- Patient Care in a Clinical Research Environment
The Clinical Research Information System (CRIS) is the name of the installation of Allscripts Sunrise Clinical Manager at the NIH CC.

CRIS serves the NIH Clinical Center (CC) as well as the NIH Institutes and Centers (ICs).

The mission of the CC is to provide hope through pioneering clinical research to improve human health.

CRIS supports approximately 1,000 research studies which are actively recruiting and/or following participants.

The CRIS user community of 4,600 includes credentialed and non-credentialed users: IC Physicians, IC Research Nurses, Clinical Center Nurses, Patient Care Services, IC Clinical Staff, CC Clinical Department Staff, Occupational Medical Services Staff, CC and IC Administrative Staff and IT support users.

Electronic Medical Record Adoption (EMRAM)

- Certified at Stage 7: 2015; Recertified 2018; Recertification Scheduled 2021.
- HIMSS Outpatient Electronic Medical Record Adoption Model (O-EMRAM)
  - Certified at Stage 7: 2018; Recertification Scheduled 2021.
NIH CC Telehealth Program

- **Virtual visits** - ability for patient care and/or research study appointments to be conducted through a virtual platform where either the patient is located remotely from the facility, or the care provider(s) is located remotely, or both parties are located remotely.

- **Virtual rounding** - ability for care team/research team meetings to be conducted through a virtual platform. The patient and at least one care team member is located in the facility. Other team members may or may not be located remotely.

- **Virtual waiting room** - ability for patients to check in remotely for appointments at the facility and wait outside of the physical patient care area waiting room until electronically notified that their provider(s) is ready to see them for the appointment.

- **Virtual regulatory audits** - ability for clinical research study monitors to review documents in the electronic health record and institute research systems virtually using an electronic platform.
Vendors/Products

- Allscripts Sunrise Clinical Manager
- Allscripts FollowMyHealth
- Allscripts Clinician Portal
- Cloverleaf Interface Engine
- Microsoft Teams
- AndorHealth ThinkAndor®
Virtual Visits
NIH CC Telehealth Program – Initial Requirements

• Develop a Telehealth program to enhance clinical care and clinical research at the NIH CC.
• Utilize vendors and products that are accessible to the NIH CC user base.
• Evolve with function and maturity and adapt to changes due to the changing world.
• Include the following set of initial services: telehealth visits, virtual rounding, virtual waiting room.
• Ability for maturation and adaptation of the services including integration with the EHR.
• Ability to conduct virtual regulatory audit and research study compliance reviews.
• Support for laboratory testing at outside laboratories with integration into the EHR.
Telehealth Visits

- Provide virtual “care” to patients who are not able to travel to the CC.
- 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.
Microsoft Teams

- Good Faith Provision for Telehealth supports the use of the Microsoft Teams platform.
- HIPAA-compliant tool for virtual meetings between patients and providers as well as provider to provider.
- Although NIH is not a HIPAA-covered entity, this safe harbor applies.
- Privacy/security protected. Rated as a Moderate System and meets the designation for this purpose.
- No account creation necessary for patient use.
Medical Administrative Series Policy

• Provides guidance regarding the utilization of telemedicine/telehealth by healthcare providers (e.g. medicine, nursing, nutrition, social work, spiritual care, rehabilitation medicine, etc.) in conducting research as well as the provision of clinical care, patient support, and consultation to patients.
• Does cover the conduct of research as well as the delivery of clinical care, patient support, and consultation incidental to research through synchronous telehealth.
  ▪ Recruitment
  ▪ Screening
  ▪ “Outpatient Visit”
  ▪ Clinical consultation
• Does not cover asynchronous telehealth/telemedicine.
• Does not cover telephone conversations, electronic mail messages or FAX.
• Does not address human subjects research requirements in law, regulation, or NIH Office of Human Subjects Research Protection (OHSRP) policy -- Principal Investigators (PIs) must seek input from the OHSRP.
Telehealth Concierge Services

- NIH Clinical Center Health Information Management Department provides telehealth concierge services.
- Concierge services are necessary in order for the effort to be successful and provide important support services.
- Artificial Intelligence (AI) Concierge Services:
  - Coordinate scheduling appointments in MS Teams.
  - Provide educational materials for NIH staff and patients.
  - Contact and educate patients about the telehealth (MS Teams) process.
  - Provide patients with the telehealth visit link.
  - Assist patients with any technical issues.
  - Assist providers with telehealth documentation-related issues.
  - Contact patients prior to their appointments to perform technical readiness assessment.

- Patients can also view scheduled appointments in the Patient Portal.
### Telehealth Visits

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<th>Appointments</th>
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<tr>
<td>May 2020</td>
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</tr>
<tr>
<td>June 2020</td>
<td>528</td>
</tr>
<tr>
<td>July 2020</td>
<td>705</td>
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<td>August 2020</td>
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<td>September 2020</td>
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<tr>
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</tr>
<tr>
<td>November 2020</td>
<td>898</td>
</tr>
<tr>
<td>December 2020</td>
<td>938</td>
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<td>January 2021</td>
<td>884</td>
</tr>
<tr>
<td>February 2021</td>
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<td>March 2021</td>
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<tr>
<td>April 2021</td>
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<tr>
<td>May 2021</td>
<td>957</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>11,076</strong></td>
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Telehealth Visits
Key Performance Indicators

- **Current:**
  - Telehealth “Kept” appointments vs. “Cancelled” appointments
  - Concierge 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
Telehealth Concierge Support

Telehealth Support

- Telehealth Incoming Calls
- Telehealth Support Hours

June: 250
July: 300
August: 400
September: 350
October: 275
November: 425
December: 300
January: 225
February: 200
March: 250
April: 225
May: 200

Month
Virtual Regulatory Audits Conducted

Regulatory Audit Reviews

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<tr>
<th>Month</th>
<th>Audits Conducted</th>
<th>Audits Days</th>
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<tr>
<td>May-21</td>
<td>1350</td>
<td>2700</td>
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Telehealth Visits
Future Development

• Telehealth technology that integrates directly within CRIS (e.g. NIH CC Patient Portal (FollowMyHealth), other MS Teams add-ons).

• Improved user interface for patients and providers.

• Robust administrative dashboard for program management and data tracking/reporting.

• Support for remote, electronic consenting.

• Interface with outside organizations that have laboratory reporting capabilities across the United States.
Virtual Rounding
Virtual Rounding Needs

• Conduct multi-disciplinary team rounds.

• Provide platform for large teams to meet and discuss patient’s status and plan virtually as necessary.

• Provide social distancing and connectivity for team members located remotely.

• Provide iPads on mobile carts on nursing units and outpatient care areas.
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 to access iPad and log into provider/staff-only rounding dashboard.
- Staff selects the patient from dashboard list and invites other providers/family/caregivers to virtual rounding session.
- Staff initiates virtual rounding session from iPad and all invitees join remotely from their own devices through MS Teams.
**Virtual Rounding Device**

**HELLO! My Name is Thom**

Here are some things to know about me:

- If I am turned off, press the button on the back of the case.
- My Bluetooth speaker is already paired with me, so I am good to go.
- If you don't see the blue power light on my Bluetooth speaker, make sure to press the power button.
- If you need to increase my speaker's volume use the + sign.
- Please don't remove my speaker; it would get lonely without me.
- I am set up in Kiosk mode.
- Don't forget to charge me if my batteries start to get low.
- I belong to [INSERT UNIT], so if you see me outside the unit, please take me back.
- If I have technical problems, please contact 301-496-####.
Pre-Visit Reminder Configuration

• iPad is in Kiosk mode initially.

• Staff will click “Staff Login” to log into the Clinical Center’s dashboard.

Welcome to the NIH Clinical Center! Your provider will be with you shortly.
Staff Login

- NIH Staff use their existing NIH credentials to log into the Rounding Dashboard.
iPad Per Room-Rounding Dashboard

- Users can access the dashboard to view all the patients.
- User walks into the patient room logged into the dashboard.
- iPad used to start the rounding session.
iPad Per Room-Rounding Dashboard – Starting Session

• A modal pops up where the provider/nurse can enter email addresses or mobile numbers of other providers, family, etc. who need to join the event.

• Invitations are sent to these individuals to join the rounding session.

• User selects ‘Start Session’ to begin the Rounding session.
  • Status for patient changes to ‘In Progress’.
Join Rounding Session

- Invited providers will receive a notification via SMS or email address provided to join the rounding session via webRTC.
- WebRTC allows providers and patients to have video consults without having to download an app.
- Alternatively, providers may login to the dashboard and join a session already “in progress”.

Hello! Your patient is ready for you to begin your rounding session. To begin, click andor.com/HE4F3G. Text STOP to opt out.

Hello! Your patient is ready for you to begin your rounding session. To begin your visit, click andor.com/HE4F3G.
Staff Login

- Patient rounding session will start on the provisioned devices via Microsoft Teams.
Virtual Rounding
Next Steps

- System configuration in process.
- Device set up and configuration in process.
- Devices in use in ICU.
- Early adopters – August 2021.
- Full roll-out throughout 2021.
Virtual Waiting Room

**Arrival 1**
Patients “join the waiting room” from anywhere (once they arrive at the Clinical Center).

**Move Freely 2**
Patients wait wherever they desire – socially distanced from others and await alert with further instructions.

**Get Updates 3**
Patients receive text message/email regarding wait time status.

**Team Ready 4**
Configured patient notifications via text message/email when their provider is ready to see them. Patients proceed to patient care unit.
AI Concierge Enabled Virtual Waiting Room

• Pre-visit Reminder:
  • Patient receives SMS and/or email reminder two days prior to scheduled appointment.

• Patient Virtual Waiting Room:
  • Patient receives an AI Concierge alert 30 minutes prior to scheduled appointment time to join the Virtual Waiting Room once they arrive at the facility.

• Patient On-Site Arrival with Mobile Device
  • Patient selects link and ‘arrives’ in Virtual Waiting Room.
  • Patient is asked to join the appointment by the AI Concierge.
  • Patient is ready and can leave the page. When the provider is ready to begin the visit, the patient will receive another alert to present to the appointment location.
AI Pre-Visit Concierge Alert

- Patient receives a text/email message reminder about his/her upcoming appointment.
Patient Virtual Waiting Room with AI Concierge

- Patient receives a text/email 30 minutes prior to their scheduled appointment time to join the Virtual Waiting Room.
  - Content is configurable
  - Cadence is configurable
**Patient Virtual Waiting Room with AI Concierge**

- Patient “enters” Virtual Waiting Room.
- Patient clicks ‘Start’ to begin and the AI Concierge walks the patient through the registration process.
- Patient is ready and can leave the page. When the provider is ready to begin the visit, the patient will be invited to join.
Integrated Patient Queue Dashboard (Virtual + In-person)

• Patient Statuses:
  • SCHEDULED – appointment scheduled
  • ARRIVED – Patient is registered and has arrived at NIH Clinical Center.
  • IN PROGRESS – Visit is in progress.
  • COMPLETED – Visit completed.

• Actions
  • JOIN – staff/provider initiate appointment with patient.
  • PATIENT CALLBACK – staff/provider can call patient when they are ready to begin the visit (this changes status to In Progress).
  • COMPLETE VISIT – Change visit status to completed.
  • MESSAGE PATIENT – Customized messages can be sent to patient (Ready-Proceed to Front Desk etc.).
**Provider Ready Message**

- Patients in the Virtual Waiting Room receive an email and SMS text when the provider is ready to see them.
Integrated Patient Queue Dashboard (Virtual + In-person)

- If the patient is scheduled for 2 or more appointments, selecting the patient’s first appointment on the dashboard will display future appointments.
- Once the first appointment has been completed, the patient will be alerted of his/her next appointment.
- The patient will receive an alert when the provider is ready.
Virtual Waiting Room
Next Steps

• System configuration in progress.

• Implement with early adopter locations Summer 2021.

• Phase 1 – check in using patients’ mobile devices.

• Phase 2 – include kiosk check-in for patients without mobile devices and others as desired.
Virtual
Regulatory
Audits
The Challenge

- Clinical research studies are supported by groups of monitors who are not employees of the NIH.

- Monitors usually conduct compliance reviews onsite within the Health Information Management Department (HIMD) in order to access the electronic health records of research study participants and the institutes’ corresponding research records.

- HIMD along with the Department of Clinical Research Informatics (DCRI) developed a portal that provides a secure, electronic method for monitors to access records through a web-based portal that provides views into the organization’s electronic health record.

- Monitors request access to this portal to view assigned research participants’ medical records and requests for approval are routed through the institutes.

- During restrictions due to COVID, HIMD was able to provide support of critical research activities through use of the portal.
Implementation Overview

- The NIH CC utilizes Allscripts’ Sunrise Clinical Manager (SCM) product as its EHR (called CRIS).

- Prior to the pandemic, monitors would be provided a restricted read-only SCM account and be assigned a list of patients’ records associated only with the research study they were reviewing.

- HIMD worked with DCRI to leverage the Allscripts clinician portal product which is designed to be used as mechanism for organizational clinicians to access the EHR from locations outside of their ‘home’ organization.

- The infrastructure of the clinician portal was used and a new tab was built by DCRI to provide access to specific documentation, results, summary views, and links to PACS images.

- Monitors do not have access to modify information, enter orders or enter documents.

- Institutes request/authorize access to the portal for monitors assigned to review compliance with specific research studies and provides a list of patients whose records the monitors are authorized to review.

- HIMD creates time limited accounts and assigns patients to the accounts.

- HIMD monitors access, reviews audit logs and coordinates other institute record review needs with the NIH institute contacts.

- Accounts are deactivated once the monitor completes his/her review activities.
Resulting Value

The effort saves a large amount of space that will be repurposed as well as travel costs for monitors who normally would travel from across the country.

HIMD went from supporting an average of 50 onsite audits with an average of 176 audit days/year to supporting an average of 36 audits remotely with an average of 120 days. HIMD only needed to support 3 total onsite audits over the past year and expects that to continue.
Virtual Regulatory Audits Lessons Learned

Develop clear training and reference materials.

Include a time for lengthy testing and include institute contact individuals who assist in coordinating monitoring activities.

Ensure staff supporting the portal are available to respond to questions and are aware of how to triage problems and are aware of remote assistance tools available (technical issue vs. system user issue).
We Presented

- The NIH Clinical Center
- The NIH CC Telehealth Program
- The Telehealth Visits
- The Virtual Waiting Room
- The Virtual Rounding
- The Virtual Regulatory Audits
NIH CC Telehealth Program Project Team

- Tricia Coffey, HIMD
- Jon McKeepy, CIO
- Maria Joyce, CFO
- Amanda Grove, HIMD
- Marisa Owens, HIMD
- Yulia Broydo, DCRI
- Seth Carlson, DCRI
- Yenshei Liu, DCRI
- Jeanne Preuss, DCRI
- Cory Stephens, DCRI
- Christine Wellesley, DCRI
- Joey Wightman, DCRI
Questions
Thank you!

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