Intro to Telemedicine 101
The New Normal for Outpatient Cardiology

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Massachusetts General Hospital
Associate Professor, Harvard Medical School
Session Plan

• Introduction

• Telemedicine Terminology

• Overview of Technology in Telemedicine

• Telemedicine Tenets: Traversing its Tumultuous Tentacles

• Will this work?

• Yes, let me explain

• Not so difficult, feels familiar

• Agility is key: We are here to help
Why Telemedicine?

Keep clinicians and patients safe from exposure

Ensures a continued workforce in the face of quarantines

Avoid healthcare standstill: continue to provide routine care

Mitigate financial losses

Up to 75% of outpatient volume in COVID rich areas will be virtual over the next year.
The Outpatient Toolbox

- In-person visits
- Virtual Synchronous Visits
- Asynchronous communication
- Electronic Consultation
- Remote Monitoring
- Digital Tracking
- Wearables
- Data

Source: American Hospital Association, January 2015 Trend Watch, The Promise of Telehealth For Hospitals, Health Systems, and Their Communities
# Telemedicine Improves Access and Quality

<table>
<thead>
<tr>
<th>Provider</th>
<th>Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reduce No-Show</td>
<td>• Increase convenience</td>
</tr>
<tr>
<td>• Improve adherence</td>
<td>• Improve education</td>
</tr>
<tr>
<td>• Increase clinic capacity</td>
<td>• Incorporate family</td>
</tr>
<tr>
<td>• Physician flexibility</td>
<td>• Contribute to community</td>
</tr>
<tr>
<td>• Expanded clinic hours</td>
<td>• Decreased cost/time</td>
</tr>
<tr>
<td>• Multi-disciplinary care</td>
<td>• Improved access to care</td>
</tr>
<tr>
<td>• <em>Engagement</em></td>
<td>• <em>Respect</em></td>
</tr>
</tbody>
</table>
Types of Virtual Visits in Telemedicine

- Phone
- Stand alone video
- Integrated EMR based Video
Virtual Visit Patient Requirements

Patients can use a smartphone, tablet, laptop or desktop computer (with camera)

May require download of virtual visit system

May require enrollment in patient portal
Virtual Visit Clinician Requirements

- A smartphone, laptop, tablet or desktop computer (with camera)
- A video conferencing system
  - EMR integrated HIPAA-compliant conferencing system
  - Stand-alone HIPAA-compliant system*
Option for no-cost Telemedicine Phone or Video Visits (mobile application and desktop)
Use Cases for Telemedicine Abound

Chronic Disease Care
• Lifestyle education
• Vital digital tracking
• Early symptom detection
• Cardiac Rehabilitation
A 40 yo male needs his 3\textsuperscript{rd} Valve Replacement

- Pulmonic valve disease needing reoperation
- Goal is to hold his hand and tell him
- Patient response is surprising
Complex virtual care is possible for all
Improve Access to Care
Common Concerns

Physical Exam
Vital Signs
Technical Issues
Special Populations
3 Major Technology Pitfalls

- The internet has high volume: grabbing an address from a frozen browser and opening and pasting it into a new browser often works.

- Make sure your video and sound is on, remind your patient of the same

- Allow pop-ups, often needed in televisit scenarios
Regulatory Considerations

• Rapidly changing, helps to have assigned individuals reviewing governmental and private insurer policies
• Out-of-state provision now available
• Telephone may fade: aim for video for the long-run
• Digital add-ons will need to be studied for approval
Telemedicine Takeaways

• Technology and Workflows will evolve
  • agility is essential

• Recording and publishing process and outcomes is key
  • improve quality and inform payor policies

• Evolution of medicine to ensure high-quality, safe care
  • partnership between clinicians and patients
Telemedicine Terminology

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Bastian, Virginia
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Telehealth

“The Health Resources Services Administration defines telehealth as the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration. Technologies include videoconferencing, the internet, store-and-forward imaging, streaming media, and terrestrial and wireless communications”

https://www.healthit.gov/faq/what-telehealth-how-telehealth-different-telemedicine
Telemedicine

“The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities”

Telemedicine

Asynchronous
  Store & Forward

Patient remote Monitoring
  Imaging Documents
  E-Consults

Synchronous
  Live

Live Video/Audio
Remote Consults
Distant Site

Site at which the physician or other licensed practitioner delivering the service is located at the time the service is provided via telecommunications system

Location of the patient at the time the service being furnished via a telecommunications system occurs.

Bandwidth: The carrying capacity of a communications channel

- Streaming services can reduce the carrying capacity
- Video games can slow bandwidth
- Some internet providers throttle high users

https://thesource.americantelemed.org/resources/telemedicine-glossary
Broadband

Communication capable of carrying different types of data on separate channels permitting a large number of messages to be transmitted simultaneously.

https://thesource.americantelemed.org/resources/telemedicine-glossary
Encryption: A system of encoding electronic data provides security in protecting confidential information.

https://thesource.americantelemed.org/resources/telemedicine-glossary
M-Health

Mobile devices used for health services and treatment

MOBILE PHONES
TABLETS
SMART WATCHES
FITNESS TRACKERS
GLUCOMETERS
WEARABLE DEVICES
APPLICATIONS

https://thesource.americantelemed.org/resources/telemedicine-glossary
Peripheral Devices

https://thesource.americantelemed.org/resources/telemedicine-glossary
Learning Objectives

• Identify different technology platforms for telemedicine and examples of which platforms work for different patient encounters

• Explore telemedicine peripherals for remote patient assessment

• Identify pitfalls
Telehealth Technology Platforms

Patient-to-provider
- Virtual visits
- Wearables
- Secure messaging

Provider-to-provider
- E-consults
- Implantables
- Second opinion consults

Telehealth modalities
- Real-time video virtual visits
- Remote patient monitoring
- Asynchronous store-and-forward

Source: Service Line Strategy Advisor research and analysis.
Telehealth Delivery Mechanisms and Examples

• Networked Programs
  • Link tertiary care centers to outlying clinics

• Point-to-Point Connections
  • Telestroke, tele-ICU, radiology,
  • mental health
Telehealth Delivery Mechanisms and Examples

• Primary or Specialty Care to Home
  • Home-based rehab, vital sign monitoring

• Home to Monitoring Center
  • Implantables, monitoring devices

• eHealth Consumer Services
  • Education/outreach, epidemic tracking, glucometers
Specialties Leading Way in Telehealth

Certain specialties are leading the way partly because technology can address the needs they have to take care of their patients remotely!
Where is the technology now?

<table>
<thead>
<tr>
<th>Technology feature</th>
<th>Function</th>
<th>Example use</th>
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<tbody>
<tr>
<td>Camera</td>
<td>Image capture</td>
<td>Teledermatology store-and-forward</td>
</tr>
<tr>
<td>Video</td>
<td>Audio-visual conferencing</td>
<td>Primary and urgent care virtual visits</td>
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<tr>
<td>Bluetooth peripherals</td>
<td>Manual biometric data collection</td>
<td>Monitoring CHF and COPD patients</td>
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<tr>
<td>Smartphone, wearable-based sensors</td>
<td>Manual and automatic biometric data collection</td>
<td>Monitoring heart rate, steps, food intake, etc.</td>
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<td>Ingestible sensors</td>
<td>Automatic biometric data collection</td>
<td>Digestible pill for tracking medication adherence</td>
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<tr>
<td>Artificial intelligence and machine learning</td>
<td>Diagnosis and treatment recommendations</td>
<td>Imaging interpretations</td>
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<td>Simulated therapy</td>
<td>Chat bot for mental health</td>
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<td>Provider training</td>
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Source: Service Line Strategy Advisor research and analysis.
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• Identify pitfalls
All rely on established telehealth peripherals of video and store-and-forward technology

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What peripherals do cardiologists need in the remote care of patients?

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Source: Service Line Strategy Advisor research and analysis.
Cardiology Peripherals: Exam and Assessment
Adjunctive Data
Remote Treatments
Learning Objectives

• Identify different technology platforms for telemedicine and examples of which platforms work for different patient encounters

• Explore telemedicine peripherals for remote patient assessment

• Identify pitfalls
Patient Barriers – Technology should be seamless
Data Fragmentation

• Video-visit platforms have their own EHR that may or may not communicate with existing health records – **EMR INTEROPERABILITY**

• Need to merge **ACCESS** with **CONTINUITY**
Conclusions

• Telehealth platform should suit the population served whether is patient-provider or provider-provider

• Peripherals are the key to telehealth for cardiology providers

• Ultimately, technology should be frictionless for patients and providers
Telemedicine Tenets: Traversing its Tumultuous Tentacles

Debbi Lindgren-Clendenen RN, MN, GNP-BC, AGPCNP-BC, APNP, APRN, CNP
Disclosure:
Debbi Lindgren-Clendenen (Deb LC) is NOT an attorney, coder, biller, compliance or credentialing officer...
Objective:

• At the end of this presentation, the cardiology attendee will be able to:

• Define and differentiate tenets integral to an initial / evolving successful telehealth program environment

- **Who**
  - Providers (Team)
  - Patients

- **What services/equipment**
  - Supplementary vs replacement
  - New/expansion
  - **HIPAA compliant**—platforms/peripherals

- **Where (Providers) (Patients)**
  - Dedicated Space
  - Portable

- **When**
  - Visit frequency

- **Why**
  - Rationale for offering telehealth/telemedicine services
Determine your “telehealth picture/plan”

- Contracting
  - Physician-owned
  - Joint venture
  - Subcontract
- Credentialing
  - Extension of provider’s relationship
  - Telehealth

Partner with legal/compliance
Tenets: Regulations

- Tenets
  - Regulations
    - Federal
    - State

<table>
<thead>
<tr>
<th>Regulations</th>
<th>Pre-COVID</th>
<th>COVID (Now)</th>
<th>Post COVID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>42 CFR 410.78 (etc)</td>
<td>CARES Act 1135 Waiver</td>
<td>?</td>
</tr>
<tr>
<td>State</td>
<td>Telemedicine Medicaid</td>
<td>Emergency Acts specific to state</td>
<td>?</td>
</tr>
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</table>

Designate “expert” on regulations (provider)
Tenets: Licensing

- Licensing
  - Single State

- Interstate
  - Physicians
    - IMLC – Interstate Medical Licensure Compact
  - NPs
    - No APRN Compact yet

- PAs
  - Interstate Compact

Know your state’s and surrounding region’s licensing requirements for telehealth
Tenets: Reimbursement

- Payers
  - CMS (Federal)
    - Geographic limitations
  - State (Medicaid)
    - Visit Frequency
  - Commercial / Private Payers
    - “Telehealth Entity” contracts

Identify CMS “expert” within your practice/region and partner
<table>
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<tr>
<th>Item</th>
<th>Pre Covid</th>
<th>COVID</th>
<th>Post Covid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telehealth services</td>
<td>... interactive audio and video telecommunication system that permits real-time communication between provider at the distant site, and the beneficiary at the originating site.</td>
<td>Expanded to include telephone, virtual</td>
<td>?</td>
</tr>
<tr>
<td>Patients Location</td>
<td>Originating Site, must be in a county outside of a Metropolitan Statistical Area (MSA) or a rural Health Professional Shortage Area (HPSA) in a rural census tract.</td>
<td>Waived MSA, HPSA, Beneficiary's home is now included</td>
<td>?</td>
</tr>
<tr>
<td>Authorized originating sites</td>
<td>Physician and practitioner offices, hospitals, critical access hospitals (CAH), rural health clinics, federally qualified health centers, hospital-based or CAH-based renal dialysis centers (including satellite), skilled nursing facilities (SNF), community mental health centers (CMHC), renal dialysis facilities, homes of beneficiaries with end-stage renal disease (ESRD) getting home dialysis, mobile stroke unit</td>
<td>ED, inpatient services expansion, etc</td>
<td>?</td>
</tr>
</tbody>
</table>
## Chart – CMS and Telehealth (cont)

<table>
<thead>
<tr>
<th>Item</th>
<th>Pre Covid</th>
<th>COVID</th>
<th>Post Covid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distant Site Practitioners</strong></td>
<td>Physicians, nurse practitioners, physician assistants, nurse midwives, clinical nurse specialist, certified registered nurse anesthetist, clinical psychologist and clinical social workers, registered dietitian or nutrition professional</td>
<td>Includes physical therapists, occupational therapists, speech pathologists</td>
<td>?</td>
</tr>
<tr>
<td><strong>Remote evaluation of patient</strong></td>
<td>Limited to established patients only</td>
<td>Licensed clinical social workers, clinical psychologists, physical therapists, occupational therapists can provide e-visits. E-visits are non-face-to-face communications with their practitioner by using online patient portals.</td>
<td>?</td>
</tr>
<tr>
<td><strong>video/images</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E visits</strong></td>
<td>noncovered</td>
<td>both new and established patients patients with only one disease Now shorter periods of 16 days are accepted as long as other requirements are met</td>
<td>?</td>
</tr>
<tr>
<td><strong>Remote patient monitoring</strong></td>
<td>Multiple conditions, acute/chronic mix, 16 days of monitoring established patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Telephone Evaluation</strong></td>
<td>Non-covered service</td>
<td>When clinicians are furnishing any evaluation and management E/M service that would otherwise be reported as an in-person or telehealth visit, using audio-only technology, practitioners may bill using these telephone E/M Codes provided that it is appropriate to context of service using audio-only technology and all of the required elements in the applicable telephone E/M code description are met.</td>
<td>?</td>
</tr>
<tr>
<td>Item</td>
<td>Pre Covid</td>
<td>COVID</td>
<td>Post Covid</td>
</tr>
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<td>------------------------------------------------</td>
<td>---------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Frequency Limitations</td>
<td>inpatient visit once every three days;</td>
<td>Inpt - No restrictions on frequency</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>SNF visit once every 30 days</td>
<td>SNF - No restrictions on frequency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crit care consult once a day</td>
<td>Crit care consult can be more than once a day</td>
<td></td>
</tr>
<tr>
<td>Practitioner Location</td>
<td>Licensed in the State while enrolled in the</td>
<td>Temporarily waive CMS and Medicaid' requirements that</td>
<td>?</td>
</tr>
<tr>
<td>(Licensing)</td>
<td>Medicare program</td>
<td>physicians and non-physician practitioners be licensed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>valid license</td>
<td>in the state where they are providing services. State</td>
<td></td>
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<tr>
<td></td>
<td>furnishing services in a state in which the</td>
<td>requirements will still apply.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>emergency is occurring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stark Law</td>
<td>cannot make referrals for certain healthcare</td>
<td>Remuneration and referrals described in the blanket</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>services payable by Medicare if physician or</td>
<td>waivers must be solely related to COVID-19 purposes</td>
<td></td>
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<tr>
<td></td>
<td>immediate family member has a financial</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>relationship with the entity performing the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>service.</td>
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Summary

• Establish your telehealth program framework, goals and surround yourself with a team willing to change/learn/evolve
• Partner with experts on federal and state regulations
• Be ready for change as telehealth environment is evolving
• HIPAA, Code of Federal Regulations and CMS MLN are your friends!
Resources:

- US Department of Health and Human Services: HIPAA standards for privacy of individually identifiable health information. 45 CFR Parts 160 and 164; August 14, 2002


Resources: (cont)

• Coronavirus Preparedness and Response Supplemental Appropriations Act, March 6, 2020

• Medicaid.gov Disaster Response Toolkit; https://www.medicaid.gov/resources-for-states/disaster-response-toolkit/index.html

• Center for Connected Health Policy; The National Telehealth Policy Resource Center: https://www.cchpca.org
COVID-19 Hub