Lessons Learned and Best Practices from Rural Telemedicine

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Conflict of Interest

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Has no real or apparent conflicts of interest to report.

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

1. Examples of Tele-Health services
2. Benefits of Telemedicine
3. Telemedicine adoption
4. Overcoming barriers in adoption
5. Deployment and ongoing management.
Learning Objectives

• Illustrate best practices in telemedicine;

• Integrate telemedicine practices in rural care delivery to broaden application; and

• Explain the benefits of telemedicine in safety-net populations.
Benefits of Telemedicine-Patients

1. Specialty care; limited numbers (intensivists, dermatologists) or time constraints (stroke, neurologists)

2. Isolated patients; distance (rural locations), disability (cerebral palsy), and disease (Ebola)
Benefits of Telemedicine-Populations

1. Rural patients with limited access and/or long travel to access healthcare.

2. Disease Management
   a. Congestive heart failure
   b. Diabetes
   c. Wound care
   d. COPD
   e. Hypertension
Telemedicine Program Adoption

Promote Adoption

- Benefits
- Barriers

Impede Adoption

Problems in Healthcare → Needs for Telemedicine → Applications and Adoption
Unsustainable Trends

Aging Population

- Analysis of Bureau of Census and Population Projections
  - 2010: 9% 64 and Younger, 15% 65 and Older
  - 2015: 10% 64 and Younger, 30% 65 and Older
  - 2020: 11% 64 and Younger, 50% 65 and Older

Nursing Demand

- Health Resource and Service Administration
  - In Millions: 2010 - 1.94, 2015 - 1.90, 2020 - 1.81

Intensivist Demand

- JAMA 2000, Compacs Study
  - 2010: 2.82
  - 2015: 2.57
  - 2020: 2.35

- Practicing Intensivists Needed for 24x7: 6,500 to 25,000

- % change of Population
  - 2010: 9% 64 and Younger, 15% 65 and Older
  - 2015: 10% 64 and Younger, 30% 65 and Older
  - 2020: 11% 64 and Younger, 50% 65 and Older

64 and Younger 65 and Older
Supply Demand

Practicing Intensivists Needed for 24x7

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High Cost of Healthcare

- **10 - 15% are ICU Beds**
  - Reference: HRSA

- **33% of hospital costs are accounted for in the ICU**
  - CCM 2008 vo.26 #12 Millbrandt

- **50% of Hospital Deaths are patients treated in the ICU**
  - Leapfrog Group

- **$180 billion annually**
  - Advisory Board & SCCM 2006
Telehealth/telemedicine as critical tools for helping to achieve the Triple Aim:

1.) Better care

- More access to care with less disruption to lives.
- Easier for patient’s to adhere to appointment times.
- Less overwhelming than visiting a doctor’s office in person.
- Improve the patient-provider relationship by making it less intimidating.
- Providing for opportunity for increased interaction.
- Resulting in better outcomes for patients.
- Gives patients greater access to specialty care providers who might not be in their geographic area.

Source: 1Advanced Telehealth Solutions “How Telehealth Hits the Mark on the Triple Aim”
Telehealth/telemedicine as critical tools to achieving the Triple Aim (cont.):

2.) Better health for all populations¹
   • Allows providers to manage care with drastically improved efficiency while not compromising care for younger population.
   
   • Helps all healthcare providers move more quickly by allowing them to see more patients in less time.
   
   • Receive remotely generated health monitoring information about patients for improved response time.
   
   • Provide ongoing, interactive patient education.

Source:¹ Advanced Telehealth Solutions “How Telehealth Hits the Mark on the Triple Aim”
Telehealth/ telemedicine as critical tools to achieving the Triple Aim (cont.):

3.) More efficient and reduce costs

- Reduces the cost of providing healthcare.
- Allows providers to manage more patients in less time.
- Reduce personnel costs because less staff are able to manage more clients.
- Research shows that telehealth reduces hospital readmission, decrease length of stay, and cuts down on emergency room visits.

Source: ¹ Advanced Telehealth Solutions “How Telehealth Hits the Mark on the Triple Aim”
Barriers to Adoption

• Organizational Challenges
  • Resistance to change
  • Failure to get approval from decision makers
  • Significant lack of understanding of the technology
  • Lack of specialized training from nursing/medical schools
  • Funding

• Patient Challenges
  • Lack of understand of care delivery
  • Limited access to high speed internet
Overcoming Barriers

• Conduct a thorough technology inventory. What technology can be leveraged for telemedicine program?

• Create a scope of work or concept document for the requestor of the program.

• Create a Business Plan by the requesting department.

• Hardware selection
Hardware Selection

• Avoid consumer based video software.

• Determine on premises vs cloud-based solutions.

• Determine hardware needs

• Design an “interoperable” technical platform to work across multiple platforms as well as software and hardware multipoint bridges.

• Determine buy vs. lease products and implications on PHI.
Network Bandwidth

• For optimal evaluation, 768 Kbps transmission speed is needed but several consultations can take place with 384 Kbps.

• Per ATA’s technical guidelines, the minimum bandwidth for adequate bandwidth, resolution, and speed for a clinical consultation is 386 Kbps in both downlink and uplink directions.

• Resolution should be set at a minimum of 640 x 360 and have a speed at 30 frames per second.

• In the event of any network deactivations or emergency management protocols, there should be a downtime procedure set in place for specialist, provider, and patient.

• The higher the transmissions speed, the better performance on the network will be seen on a telemedicine consult.
Mobile and Wireless

- There has been a huge insurgence of moving away from conference room only use for telemedicine and make these conferences room more mobile and using “over the counter” mobile devices.

- The use of certain telemedicine software may require a vendor-approved wireless assessment that passes their checklist for wireless redundancy.

- When incorporating mobile and wireless technology into a telemedicine program, it is best to design a Bring-Your-Own-Device (BYOD) strategy.

- Test, test, and retest all approved software devices
  > Windows, Mac, IOS, Android, Tablets, and Smartphones.
Privacy and Security

• Same obligation for security and privacy safeguards as with face-to-face care delivery. HIPAA applies.

• Business Associate Agreement needs to be in place with video conferencing solution.

• Patient consent for telemedicine should be executed.

• Avoid the use of unencrypted communication platforms.
  • Encryption standard should include FIPS 140-2 (aka the Federal Information Processing Standard as well as the American Encryption Standard).
Privacy and Security

• After installation and deployment of telemedicine program, a new risk assessment should be completed.

• Update your PHI inventory accordingly, to ensure all telemedicine platforms are included.

• Include privacy and security training into all telemedicine training for appropriate staff.

• Authentication process should be in place for unique username and password validation and passwords should be reset every 90 days.

• Inactive sessions should be timed out after 15 minutes of inactivity.

• Privacy features should include auto muting, video muting, room locking, and the ability to easily change from public to private mode.
Deployment

Initial Approval

Funding Allocation

Project Manager Assigned

Project Plan Created

Go-Live Date
Custom Documentation/Training

• All telemedicine program incorporating home telehealth visits should the creation of custom documentation for the following areas:
  • The process on how the patient will receive the proper telemedicine appointment.
  • A general overview guide of the telemedicine software and it’s uses.
  • A guide on approved hardware to use for the telemedicine consult.
  • A guide on how to download the necessary telemedicine software onto their own device.
  • A guide on how to install the necessary telemedicine software.
  • A telemedicine patient consent form.
  • A video etiquette guide (more on this later)
• A training session should take place with the necessary physician champion, non-physician clinical champion, and anyone else who is interacting with the patient over video.
• Creation of all custom documentation should be available in print format as well as available in electronic copy or available online via a website or URL.
Mock Testing Events

• Mock testing events should be setup within the end user environment (including the physician champion, non-physician clinical champion, and anyone else who is interacting with the patient over video) ESPECIALLY with the patient if they are using their own device from home.
• During the mock event, the administrative staff should communicate with the patient and verify video and audio on both sides.
• If the hardware and software allow for Far End Camera Control (FECC) and control over the Pan-Tilt-Zoom camera, this should also be tested the end users (typically nursing station or remote specialist).
• All testing should be recorded within a checklist to building reliability and accuracy of the equipment and the staff.
• Any failed tests or tests resulting in pixilation, audio feedback, or poor network bandwidth should be taken into consideration by the telemedicine support team and further testing with those identified.
  • Possibly migrating from a cell service to WiFi service.
  • Possibly moving to a better location for better signal.
Video Etiquette: Remote Specialists and Patients

• During a teleconsultation, both the provider and the patient locations are considered a patient examination room regardless of the location’s intended use.

• The room should be a sufficient size to accommodate not only the patient and/or family member but also the necessary equipment.

• The room should be safe, adequately lit, have minimal external noise, and provide comfortable seating.

• The room should be designed with audio and visual privacy and be able to accommodate posture and movement visualization.

• Pagers, cell phones, (unless being used as the device for the teleconsultation) and other electronic devices that could cause a disturbance should be turned off if remaining in the room or removed from the room during the length of the consultation.

• For the provider:
  • The room should be in a quiet location, minimizing exposure to home or office noise, busy corridors, stairwells, parking lots, waiting rooms, restrooms, or other sources of the house.
  • Rooms without windows are better for quality image transmission with less camera glare.
  • Rooms with windows should have shared or blinds to reduce the light and glare.
  • The environment needs to be designed to enhance the quality of the video and audio interactions and to accommodate the equipment that might need not normally be in an examination room.

• Providers should never, ever, ever think that they can ever perform a consultation in public places like Starbucks, McDonalds, or even Panera Bread.

• For more assistance in room design, the California Telemedicine and eHealth Center have created a Room Design Program Guide.
Deployment and Management

• All new telemedicine programs should be vetted through the Telehealth Executive Committee (TEC) technical and clinical viability.

• Once the programs are approved via the TEC, the proper funding will need to be approved by the department’s administrative senior administrator or be vetted through the standard Project Management Office (usually this is with IT).

• Once the funding has been approved and a project manager has been assigned to run the program (either with the IT organization or the telemedicine group), a project plan will need to be created with tasks created, accountability assigned to each tasks, and realistic due dates.

• The assigned project manager should also create a risk assessment document. It should be reviewed by all parties and have clear signoff from all accountable parties.

• While a “soft” date for go-live should be given, a go-live date should be assigned and not keep be prolonged out. The program needs to be started and the necessary protocols put in place otherwise telemedicine will never expand throughout the organization.

• Avoid prolonged pilots that never seem to account for anything and never get funded.

• Most times, the physician champion and Sr. Administrator who understand that telemedicine is a tool will come to you.

• **Don’t try to force telemedicine onto everyone.**

• **You either get it or you don’t.**
Go-Live, Survey, and Data Analytics

• When the day of Go-Live for the launch of the telemedicine program comes, the telemedicine clinical and technical teams should activate their implementation go-live plan.

• Remote Specialist, end-user provider, and patient should be surveyed for their feedback of the program – clinical, technical, and administrative questions should be asked.

• Since more programs are going virtual, satisfaction surveys should be electronic or use a credible survey tool to get feedback more quickly.

• If patients are emailed or mailed a satisfaction survey, the submission of these survey results may take longer via standard mail, fax, or trying to scan/email them back to the department.

• All satisfaction survey results should be collected, catalogued, and provided back to the clinical, technical, and departmental telemedicine champions for their review and modification of the program.

  • Most of the modifications may be focused on the technical side but all answers should be taken with a grain of salt. Again, this is a new program and not all programs are perfect.
Program Marketing/Public Affairs Communications

• Since telemedicine and telehealth are still very new, those who have active programs should educate providers and patients by creating marketing materials – website, apps, brochures, TV commercials, etc.

• Contact patients to see if they will provide any quotes that can be included in brochures or even have them videotaped for websites referrals to the programs.

• Contact the Public Affairs Department to have a press release statement or article written about the telemedicine program for further marketing of the program.

• For internal programs that are being developed for internal hospital or healthcare employees, human resources should be contacted about promoting these services during annual benefit signup timeframe.

• Takeaways – If patients are not aware of the program (how the technology works, benefits, risks, etc.), how do you expect to grow adoption?
Support Structure

• Create a support team that will support the program during normal business hours.
  • Create a telemedicine support help line and email address to receive incoming requests.
  • For those programs from Monday – Friday needing 8-5 support, the support team should be picking up the incoming help line calls.
  • For those telemedicine programs needing 24/7/365, a telemedicine support contract should be created to charge for these services.
    > The contract will pay for on-call support and bringing on additional staffing.
  • Create a call schedule for on-call telemedicine support coverage.
  • Provide a mechanism for remote support of telemedicine customers.
  • Create a call escalation protocol for 1st, 2nd, and 3rd level support.
  • Create a standard downtime procedure protocol to relay to end users in the event of network or wireless outages.
  • Identify and train departmental “Super Users” who can act as the eyes and ears to provide additional assistance in the event of any redundant problems.
    • This can help mitigate issues and reinforce software training with Super Users.
Questions

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