Telemedicine

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Goals and Objectives

At the conclusion of this session, the learner should be better able to:

• Define Telemedicine
• Explain the advantages that Telemedicine may provide
• Design a potential workflow for Telemedicine
Show of Hands

Who currently is using Telemedicine?

Anyone want to share in what capacity?
Show of Hands

Who is interesting in using Telemedicine?

Anyone want to share what they hope to accomplish?
Telemedicine – what is it?

Anyone know any synonyms?
Telemedicine – what is it?

Anyone want to define Telemedicine?
Telemedicine – what is it?

• Synonyms → eHealth, Telehealth, mHealth, Digital Health, Mobile Health, Virtual Visits, Video Visits, etc.

• No uniform definition/ terminology
Telemedicine – what is it?

The Health Resources and Services Administration (HRSA):

“the use of electronic information and telecommunication technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health and health administration.”

Telemedicine – what is it?

- Center for Connected Health Policy – Telehealth:
  - encompasses a broad variety of technologies and tactics to deliver virtual medical, health and education services.
  - is not a specific service, but a collection of means to enhance care and education delivery.
Telemedicine – what is it?

Center for Connected Health Policy
Telehealth concept implies that

The patient and clinician are in separate physical spaces and are connected via computer/internet device/telephone
Telemedicine – Prevalence

• Forbes anticipated in 2014 that in 2018 eHealth used by 22 Million households

  https://www.forbes.com/sites/ciocentral/2014/04/03/virtual-health-care-visits-will-revolutionize-the-industry-if-we-let-it/#e64a2557c25e

• 61% of health care institutions use some form of telehealth (HIMSS 2016)

  HIMMS = Healthcare Information and Management Systems Society
Telemedicine – Name that medium!

Teleconferencing / Live Video

https://www.lifewire.com/benefits-of-video-conferencing-4108480
Telemedicine – Name that medium!

https://www.lifewire.com/benefits-of-video-conferencing-4108480

Email

http://www.hypebot.com/q/6a00d83451b36c69e201bb096f75197d0-popup
Telemedicine – Name that medium!

https://www.lifewire.com/benefits-of-video-conferencing-4108480

https://www.linuxjournal.com/content/message-you-sir

Texting
Telemedicine – Name that medium!

Asynchronous Messaging
Telemedicine – Name that medium!

Almost as obvious as texting
Healthcare consulting firm focused on best practices

- Reviewed 693 telehealth-related questions submitted over 2 years in 2018
- Found that the interest in real-time virtual visits in 2017 increased by 41%

https://www.advisory.com/research/market-innovation-center/the-growth-channel/2018/01/telehealth-market-trends?WT.mc_id=Email|Balert|x|TGC|2018Jan15|&elq_cid=340104&x_id=003C000001CuVFhIAN
Healthcare consulting firm focused on best practices

• Most organizations still building general knowledge and slowly gearing up from interest → adoption
  – <20% focused on telehealth implementation
  – 4% requested guidance beyond pilot phase
• Many questions related to telehealth policy and ROI
• Reimbursement becoming more favorable

https://www.advisory.com/research/market-innovation-center/the-growth-channel/2018/01/telehealth-market-trends?WT.mc_id=Email|Balert|x|TGC|2018Jan15&elq_cid=340104&x_id=003C000001CuVFhIAN
A College Health Angle
Things to Consider - eHealth Adoption in College Health – 3 Key Questions

• How are college health services leveraging technology to deliver high quality, convenient and cost effective care outside of traditional face to face visits?
  – 92% ages 18-29 in US own smart phone (2017 PEW Research Center)
A College Health Angle
Things to Consider - eHealth Adoption in College Health – 3 Key Questions

• Disparities addressed?
  – Improve access to students who might otherwise not access care?
  – Solutions that could respond to health care and social justice disparities on campuses?
A College Health Angle
Things to Consider - eHealth Adoption in College Health – 3 Key Questions

• How provide services?
  – Apps and / or self care resources
  – Home-grown vs. third party product
  – Synchronous (interactive) vs. Asynchronous (store and forward)
  – Integrated with the EHR vs. external or stand-alone
What is the Patient Perception of Telehealth Visits?


- Large, urban, multihospital health system; implemented enterprise-wide
  - 3,018 scheduled video visits over 18 months
- Departments
  - Derm, ED, FM, Neuro, OB/ Gyn, Psych, Rad-Onc, Rads, Rehabilitation medicine
  - Med Subspecialties – Allergy, Cards, Endo, GI, Heme, ID, Nephro, Onc, Pulm, Rheum
  - Surgical Subspecialties – Anesthesia, General Surg, Neurosurg, Oral Maxillofacial surg, ENT, Pre-admission testing, Uro
- Objective – Report on health system and patient experience with implementation of a telehealth scheduled video visit program
- 764 patients surveyed

What is the Patient Perception of Telehealth Visits?


• Survey results:
  – 91.6% reported satisfaction
  – 82.7% perceived quality similar to an in-person visit
  – 86.0% scheduled video visit made it easier to access care
  – 87.6% estimated saving at least 1 hours of time
    • 40.8% estimated saving >3 hours of time
  – 86.7% agreed/ strongly agreed easy to use
  – 90.0% would use it again
  – Net promoter score, a measure of patient satisfaction, was very high at 52

• Concluded that telehealth for scheduled visits can improve access to care across a range of clinical scenarios with favorable patient experiences

Net Promotor Score?
Net Promotor Score?

Asked would you recommend this service to another person?

• Yes – Promotor
• No – Detractor
• Not sure Neutral
Net Promotor Score?

Net Promotor Score =
% Promotors - % Detractors

Scale:
-100 to 100
Patients' Satisfaction with and Preference for Telehealth Visits
Polinski JM, Barker T, Gagliano N, Sussman A, Brenan TA, Shrank WH; March 2016

• Cross-sectional patient satisfaction survey -- 2014
• CVS minute clinic staffed by assisting nurse with clinician
• Chief Compliant
  – Pharyngitis
  – Sinusitis
  – Otitis media/ externa
  – URI
  – Bronchitis
  – Allergic rhinitis
  – Influenza
  – Conjunctivitis
  – UTI
• 1,734 patients surveys analyzed (out of an approximately 4,400 estimated patients)
Patients' Satisfaction with and Preference for Telehealth Visits
Polinski JM, Barker T, Gagliano N, Sussman A, Brenan TA, Shrank WH; March 2016

- Survey completers
  - 70% women; 41% had no usual place of care
- 94 to 99% reported being "very satisfied" with all telehealth attributes
- 33% “preferred” a telehealth visit to a traditional in-person visit
- 57% “liked” telehealth
- Lack of health insurance increased odds (by 20%) of preferring telehealth
  - (OR = 0.83, 95% CI, 0.72-0.97)

Patients' Satisfaction with and Preference for Telehealth Visits
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• Other predictors of liking telehealth
  – Female gender (OR = 1.68, 1.04-2.72)
  – Understanding of telehealth (OR = 2.80, 1.81-4.32)
  – Quality of care received (OR = 2.34, 1.42-3.87)
  – Telehealth's convenience (OR = 2.87, 1.09-7.94)

• Nearly 100% of patients reported they “definitely” or “probably” would use telehealth personally and would recommend to someone else

• Patients reported high satisfaction with telehealth experience. Convenience and perceived quality of care were important, suggesting telehealth may facilitate access to care
• Cross-sectional, retrospective analysis of claims, virtual visits vs. traditional settings for similar conditions
• <65 without serious chronic conditions; index visit plus 3 wks.
• Complaints
  • Sinusitis
  • URI
  • UTI
  • Pink eye
  • Bronchitis
  • Pharyngitis
  • Influenza
  • Cough
  • Dermatitis
  • GI symptoms
  • Ear pain
• 59,945 visits
  – 4,635 virtual
  – 55,310 non-virtual

Virtual Visits for Acute, Non-urgent Care: A Claims Analysis of Episode-Level Utilization
Gordon AS, Adamson WC, DeVries AR; Feb 2017

RESULTS:

- Similar f/u outpatient visit rates
  - Virtual: 28.09%
  - PCP: 28.10% (P=0.99), RHC: 28.59% (P=0.51)

Virtual Visits for Acute, Non-urgent Care: A Claims Analysis of Episode-Level Utilization
Gordon AS, Adamson WC, DeVries AR; Feb 2017

RESULTS:

• Similar f/u outpatient visit rates
• Lower lab rates
  – Virtual: 12.56%
  – PCP: 37.40%, RHC: 36.79%, UCC: 39.01%, ED: 53.15% (all P<0.001)

Virtual Visits for Acute, Non-urgent Care: A Claims Analysis of Episode-Level Utilization

Gordon AS, Adamson WC, DeVries AR; Feb 2017

RESULTS:

• Similar f/u outpatient visit rates
• Lower lab rates
• Lower imaging rates
  – Virtual: 6.62%
  – PCP: 11.26% (P<0.001), RHC: 5.97% (P=0.11),
  UCC: 8.77% (P<0.001), ED: 43.06% (P<0.001)

Virtual Visits for Acute, Non-urgent Care: A Claims Analysis of Episode-Level Utilization

Gordon AS, Adamson WC, DeVries AR; Feb 2017

RESULTS:

- Similar f/u outpatient visit rates
- Lower lab rates
- Lower imaging rates
- Less expensive (including medical and pharmacy costs) by:
  - PCP: $162
  - RHC: $36
  - UCC: $153
  - ED: $1,735
Virtual Visits for Acute, Non-urgent Care: A Claims Analysis of Episode-Level Utilization

Gordon AS, Adamson WC, DeVries AR;  Feb 2017

- Concluded that virtual care appears to be a low-cost alternative to care with lower testing rates.

- Similar follow-up rate suggests adequate clinical resolution and that patients are not using virtual visits as a first step before seeking in-person care.

College Counseling from a Distance: Deciding Whether and When to Engage in Telemental Health Services
Higher Educational Mental Health Alliance (HEMHA) 4-2018

- Funded by the HEMHA member organizations: AACAP, ACCA, ACHA, ACPA, American Psychiatric Association, American Psychological Association, AUCCCD, JED, and NASPA
- Presented during development in 2017 at: ACHA, American College Counseling Association, American Psychological Association, Association for University and College Counseling Center Directors
- Outlines potential benefits, limitations, and legal and ethical concerns regarding telemental health services in the field of college student mental health
- Intended to aid college mental health professionals and administrators in making informed decisions about if, when, and to whom telemental health services should be provided.
- Case studies, tools, resources

- This is **worthwhile resource** to consider reviewing if considering the provision of telehealth mental health services
Reference List / For More Information

• Bacterial Sexually Transmitted Disease Screening Outside the Clinic—Implications for the Modern Sexually Transmitted Disease Program. Bernstein, K et al. Sex Transm Dis. 2016 Feb; 43(2 Suppl 1):S42-S52.
• College Counseling from a Distance: Deciding Whether and When to Engage in Telemental Health Services. HEMHA Guide (http://hemha.org/hemhapress/wp-content/uploads/2018/04/HEMHA-Distance-Counseling_FINAL.pdf)
• Creating a Framework to Support Measure Development for Telehealth. National Quality Forum, August 31, 2017
• Prepare for Adoption of Virtual Visits for Primary care. The Advisory Board; 2015.
• Telehealth State Policy 51 States. The Advisory Board; 2017
Duke Student Health
Virtual Visits

https://www.tandfonline.com/loi/vach20
Current E-Health Efforts

• Initial process
  – Explained purpose / goal
  – Discussed with leadership
  – Discussed with office dedicated to e-health
  – Discussed with providers
  – List of appropriate medical issues developed
  – Did homework and looked for platforms
  – Developed workflows
    • How to schedule
    • Asynchronous formal messaging process (never implemented)
Current E-Health Efforts

• Platform issue settled (go ahead given)
  – Created pre-made:
    • Notes for providers
    • Patient instructions
    • Order sets
  – Obtained hardware
    • 2 screen system
  – Training
    • Nurses (RNs)
    • Providers
    • Front Desk
Current E-Health Efforts, Complaints Addressed:

- Latent Tuberculosis *
  - Initial discussion
  - Direct Observed Therapy (DOT)

- Mental Health
  - Anxiety follow up
  - Depression follow up

- PrEP (Pre-Exposure Prophylaxis for HIV)*
  - Initial discussion
  - Refills

- Reproductive Health
  - Contraceptive consultation
  - Contraceptive refills
  - STI counseling/ testing (ASx)
  - Vaginitis symptoms (c/w prior)

- Skin infection f/u
- Thyroid medicine f/u
- Urinary tract infections symptoms (c/w prior)

Provider driven complaint/ follow up
Software Used for E-Health Services

• EPIC is the software used; it is also our EMR
• Seamless Jabber interface with EPIC, automatically links to correct patient
• We also utilize Cisco Spark for real-time computer support when issues arise
Marketing Strategies for E-Health Services

• Since rollout (Fall 2017):
  – Word of mouth
  – Information on written patient instructions

• Jan 2018
  – Facebook ad – 1,700 impressions, 212 engagements
  – Chronicle print ad – 8,000 copies circulated, 66 engagements
  – Chronicle digital add – 55,176 impressions, 46 engagements

• Jan 2018-April 2018
  – Student Health Homepage Banner – 16,600 impressions
Scheduling Strategies for E-Health

- Dedicated ½ days
- Scheduled only by providers or RNs
- Providers have increased flexibility
Scheduling Strategies for E-Health

Flowsheets created to help RNs in scheduling

Vaginitis VV Triage

Patient calls in with vaginitis sx (itching, increased discharge, odor)

Have you had similar sx in the past?

Was it a yeast infection or BV?

Any pelvic pain currently?

Any concern for STI?

Schedule an in person visit

Schedule an in person visit

Schedule an in person visit

Schedule an in person visit

Schedule a VV
Asynchronous Visits

STD Check request
- Are you having abnormal or pelvic pain?
  - Clinic Visit
  - STD Check (Male e-Visit Results to Incorporate Virtual Visits into Duke SHS)
- Reason for Request (select multiple)
  - Pelvic Discharge
    - Clinic Visit
  - New Partner
  - Possible Exposure
  - Just to check
- How often are condoms used?
  - Always
  - More than 1/2 the time
  - Occasionally
  - Rarely
  - Never
- Are you having sex?
  - Anal Sex
  - Oral Sex
  - Vaginal Sex
- How many sexual partners have you had this year?
- Have you ever had an STD (yes/no)?
- Do you have any concerns about sexual/condom use?
  - e-Visit OK and encourage clinic visit for discussion
- e-Visit OK (Provider may ask student to come in based on risk)
Pitfalls and Lessons Learned

• HIPAA compliance
• Details are critical
  – Right patient
  – Return phone #
  – Consent for video visit
  – Plan the process
• Practice, practice, practice
• Technology lag (one way for these to work well, many ways for these to go sideways)
• High satisfaction
• Marketing
• IT support
Student Health Virtual Visit Feedback July – Dec 2017

N = 16 (all from PC)
Student Health Virtual Visit Feedback July – Dec 2017

- Strongly Disagree
- Disagree
- Neither Agree or Disagree
- Agree
- Strongly Agree

- Having a telehealth visit made receiving care more accessible for me
- I would prefer a telehealth visit now rather than waiting for a face-to-face...
- I would prefer a face-to-face visit with a specialist rather than a video v...
- This telehealth visit was just as good as a comparable face-to-face visit...
- If offered as an option, I would make more of my physician visits telehealth...
- I was satisfied with my telehealth experience.
Net Promotor Score
July – Dec 2017

40% Detractor
20% Passive
40% Promoter
Student Health Virtual Visit Feedback Jan – May 2018

N = 9 (8 from PC, 1 from phone)
Net Promotor Score
Jan – May 2018

0% Detractor
0% Passive
100% Promoter
Feedback on why like Telemedicine?

• Ease of communication.
• Ease of use, especially with our program not being directly on campus (also, we are in class from 8am-5pm most days).
• Very convenient and provided me with an equal amount of information
• I simply needed a refill and it was much easier and achieved the same result.
• It was very convenient and I felt comfortable having a discussion with my provider in that setting
What could we have done better?

• The computer system did not work well. I think it would be beneficial if Duke designed an application that could be downloaded on a cellphone or iPad interface for these visits.

• I was unable to see the Dr. ***, but we were able to speak with one another. It wasn't any fault of hers, it was an issue with the connection, despite both of us being on the Duke network.

• I thoroughly enjoyed my first telehealth appointment and have no recommendations for improvement.

• I had a lot of difficulty connecting to the video from my mobile phone so we ended up just doing a phone call. This was fine but the system wasn't particularly good for video on phone.
Thank You!
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