Telemedicine

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Faculty Disclosures

Rachel Busch, APRN:

- **Consultant**: Amgen, Novartis, Janssen, Pfizer
- **Speakers Bureau:** Amgen, Novartis, Pfizer, Mallinkrodt

The History of Telemedicine

Telemedicine was initially seen with ECG information was sent via telephone wires however this was the earliest form seen in the mid to late 19th century.

In the 1960s the age of space is when telemedicine in its more modern form was beginning to be available driven by the military and space travel to allow for longer distances of communication.

World Health Organization (2009). Introduction to Telemedicine: opportunities and developments in Member States: report on the second global survey on eHealth 2009. (Global Observatory for eHealth Series, 2).

What Is Telemedicine

- "Telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve patients' health status." As defined by The American Telemedicine Association. 2010.

Majerowicz, Anita; Tracy, Susan. "Telemedicine: Bridging Gaps in Healthcare Delivery."
Journal of AHIMA. 2020; 81, (5),52-53,56. https://library.ahima.org/doc?oid=100028#.X7FAr2hKhPY

Telemedicine Types

Type	Description
Synchronous	Telephone visit Virtual Conference
Remote Patient Monitoring	Collection of data and reporting of it
Asynchronous	E Consult – PCP to Specialist discussion Store and forward – collection of data forwarded to another place for evaluation (MIR, Xray, Labs) E Visit – Online exchange between patient and provider example in HER messaging via portal.

Majerowicz, Anita; Tracy, Susan. "Telemedicine: Bridging Gaps in Healthcare Delivery."
Journal of AHIMA. 2020;81, (5),52-53,56. https://library.ahima.org/doc?oid=100028#.X7FAr2hKhPY;
Vimalananda, V.g., Guppte,G.,Seraj, S.M.,Orlander, J.,Berlowitz, D.,Fincke, B.G., Simon, S.R.
Journal of Telemedicine & Telecare. 2015;21(6) 323-330. Doi:10.1177/1357633X15582108.

Telemedicine Limitations Based on Age and Race

- A study by Lam et al. (2018), showed that 32% of an older population, mean age 79.6, were not ready for telemedicine.

- Of those over the age of 65, 35% did not own a computer and 38% did not have internet. (Ryan & Lewis, 2017).

- With more income came more hand held devices or computers along with broadband internet.

- Metropolitan areas had a higher rates of internet (78%) and computer ownership (80%) then non metropolitan areas.

- By race those who owned desktop or laptop, broadband and a hand held device were Asians at 80%, followed by Whites at 65%, 55% of Hispanics and 49% of blacks.

Ryan, C., & Lewis, J.M. (2017). *Computer and internet use in the United States: 2015*: American community survey reports, U.S. Census Bureau, https://www.census .gov /content/dam/Census/library/publications/2017/acs/acs-37.pdf; Lam, K., Lu, A.D., Shi, Y., & Covinsky, K.E. Assessing telemedicine unreadiness among older adults in the united states during the covid-19 pandemic. *JAMA Internal Medicine.* 2020;180(10),1389-1391. https://doi:10.1001/jamainternmed.2020.2671

The Problem With Telemedicine

- Cannot do a Physical Exam

- Cannot necessarily see clearly what the patient wants to show you

- Patients or Providers are unable to maintain connectivity which increases time expenditure on visits as communication form will change (i.e. facetime to telephone)

Ryan, Camille, and Jamie M. Lewis. "Computer and Internet Use in the United States: 2015."
American Community Survey Reports, ACS-37, U.S. Census Bureau, Washington, DC, 2107.

Difficulties With Telemedicine and Flow

- Difficulty or inability to connect

- Dropped connections

- Unclear videos

- Staff/Provider/Patient resistance to clinical changes and flow

Sharma, U., & Clarke, M. Nurses' and community support workers' experience of telehealth: a longitudinal case study. *BMC health services research.* 2014; 14(164). https://doi.org/10.1186/1472-6963-14-164.

Pre-COVID-19

- Telemedicine was initially meant for rural areas although decreasing over time

- Hub and Spoke design

- Needed licensure in multiple states; License requirement was based on the patient's location at the time of the visit

- HIPAA Compliant Platform was required

- The need for a pre-existing relationship for controlled substance to be written

Center for Connected Health Policy:The National Telehealth Policy Research Center. (2018).
State telehealth laws & reimbursement policies.
https://www.cchpca.org/sites/default/files/2018-10/CCHP_50_State_Report_Fall_2018.pdf.

What Did COVID-19 Do?

- Health and Human Services Restrictions removed:

  - I.E Location changes (home vs remote site)

  - No need for a rural requirement

  - Relaxation of state border licensing restrictions

  - Payments for Telephone visits by CMS

  - Not requiring a HIPAA compliant platform

  - Not auditing telehealth visits?

Health and Human Services (2020). Policy changes during the covid 19 public health emergency.
https://telehealth.hhs.gov/providers/policy-changes-during-the-covid-19-public-health-emergency/

Why Is Telemedicine Valid With or Without COVID-19

ACR Work force Survey 2015 – Projected shortage of Rheumatology Providers

Ongoing data is showing patients satisfaction remains elevated with Telemedicine as it provide easier access

Recognized by all health insurance companies as equivalent to in person E&M codes

Wootton, R., Craig, J., Patterson, V. (Ed.) *Introduction to Telemedicine*. 2006. Second edition.
Royal Society of Medicine PR LTD.

Options to Use Telemedicine

- Skype

- Chiron

- Facetime

- Google Duo

- Doximity

- Doxy.me

- Whatsapp

- Hub and spoke (Pt travels to location to virtually access provider)

- ETC

Centers for Medicare & Medicaid Services. *Medicare telemedicine health care provider fact sheet.* 2020. https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet.

Who Is the Right Patient for a Telemedicine Visit

- Chronically stable

- No transportation

- Osteoporotic Patients being cleared for medications

- Medication refill

- COVID-19 positive patient

- Patients with acute contagious viral/bacterial illness

Kulcsar, Z., Albert, D., Ercolano, E., & Mecchella, J. N. Telerheumatology: A technology appropriate for virtually all.
Seminars in arthritis and rheumatism. 2016; 46(3), 380–385. https://doi.org/10.1016/j.semarthrit.2016.05.013;
Shenoy, P., Ahmed, S., Paul, A., Skaria, T.G., Joby, J., & Alias, B. Switching to teleconsultation for rheumatology in the
wake of the COVID-19 pandemic: feasibility and patient response in India. *Clinical Rheumatology*. 2020; 39(9), 2757–2762.
https://doi.org/10.1007/s10067-020-05200-6.

Who Is the Right Patient for a Telemedicine Visit

How do the Providers decide?

- Shenoy et al. in 2020 in India looked at patients via a 2-step screening to decide who was appropriate for telemedicine evaluation. At the end of all this out of 975 people found appropriate for telemedicine visit 74% opted for it, making it a feasible option and to decrease patient load in high volume areas.

- Be aware in a 2016 study by Kulscar et al 19% were found to not be appropriate.

Kulcsar, Z., Albert, D., Ercolano, E., & Mecchella, J. N. Telerheumatology: A technology appropriate for virtually all. *Seminars in arthritis and rheumatism.* 2016; 46(3), 380–385. https://doi.org/10.1016/j.semarthrit.2016.05.013;
Shenoy, P., Ahmed, S., Paul, A., Skaria, T.G., Joby, J., & Alias, B. Switching to teleconsultation for rheumatology in the wake of the COVID-19 pandemic: feasibility and patient response in India. *Clinical Rheumatology.* 2020; 39(9), 2757–2762. https://doi.org/10.1007/s10067-020-05200-6.

Who Is NOT the Right Patient for a Telemedicine Visit

- Acute or new issue patients – joint pain, effusions

  - New patients

  - Second visits?

Shenoy, P., Ahmed, S., Paul, A., Skaria, T.G., Joby, J., & Alias, B. Switching to teleconsultation for rheumatology in the wake of the COVID-19 pandemic: feasibility and patient response in India. *Clinical Rheumatology.* 2020; 39(9), 2757–2762. https://doi.org/10.1007/s10067-020-05200-6.

How to Improve Identifying Those Who Need in Office vs Telemedicine

- While we know who already needs to be seen vs not in office. How do we implement this to take up less staff's time?

- Some Health systems have developed a logic bot who can differentiate based on answers who needs to be seen immediately vs who can wait and can be seen via Telemedicine. (Hollander & Carr, 2020)

Hollander, J.E., & Carr, B.G. Virtually perfect? Telemedicine for covid-19.
The New England Journal of Medicine. 2020;(382) 1679-1681. doi:10.1056/NEJMp2003539.

The Benefits to Telemedicine

- The obvious known benefits include:
  - Increased Access for patient to providers and vice versa (Remote areas)
  - Continue treatment without increasing exposure to providers and patients in the COVID 19 Pandemic
  - Intervene in a timely manner
  - Decrease in cost to the Patient (copays waived) and Physician (time)
  - Decrease in overall care gaps
  - Decrease in overall medical costs including hospitalizations (find article)

Matsumoto, R.A., England, B.R., Mastarone, G., Richards, J.S., Change, E., Wood, P.R., & Barton, J.L.
Rheumatology clinicians' perceptions of telerheumatology within the veterans health administration: A national survey study.
Military Medicine. 2020. usaa203, https://doi.org/10.1093/milmed/usaa203

Is Telemedicine Better?

- Rheumatology providers that are experienced in telemedicine in Rheumatology were able to diagnose and treat via Video conferencing effectively. (Martin-Khan et al, 2011).

- Phone calls were not found to be as reliable. (McDougall et al, 2016).

- Patients were found to be returning within one week of telephone visit due to lack of visualization.

Martin-Khan, M., Wootton, R., Whited, J., Gray, L.C. A systematic review of studies concerning observer agreement during medical specialist diagnosis using videoconferencing. *Journal of Telemedicine and Telecare.* 2011; 17(7),350-357; Mcdougall, John A., Ferucci, Elizabeth, D., Glover, J., & Fraenkel, L. Telerheumatology: A Systematic Review. *Arthritis Care & Research.* 2017; 69(10), 1546-1557. https://doi.org/10.1002/acr.23153.

How to Ensure a Technologically Stable Visit With a Patient

- Have the patient do a dry run of the telemedicine platform if new to this or if it is not already known

- Ensure both patient and provider have a good internet connection if videoconferencing

Martin-Khan, M., Wootton, R., Whited, J., Gray, L.C. A systematic review of studies concerning observer agreement during medical specialist diagnosis using videoconferencing. *Journal of Telemedicine and Telecare.* 2011; 17(7),350-357; Mcdougall, John A., Ferucci, Elizabeth, D., Glover, J., & Fraenkel, L. Telerheumatology: A Systematic Review. *Arthritis Care & Research.* 2017; 69(10), 1546-1557. https://doi.org/10.1002/acr.23153.

Best Practices for a Good Telemedicine Visit

- Make eye contact with the patient

- Let them know when you are speaking with someone else

- Have them show you any visible swollen or tender joints

- Let the patient guide the conversation to have them feel involved

- Ensure patient is dressed appropriately and/or not driving

Gordon, H.S., Solanki, P., Bokhour, B.G. et al. "I'm Not Feeling Like I'm Part of the Conversation."
Patients' Perspectives on Communicating in Clinical Video Telehealth Visits. *J GEN INTERN MED.* 2020; **35,** 1751–1758.
https://doi.org/10.1007/s11606-020-05673-w; Kulscar, Z., Albert, D., Ercolano, E., Mecchella, J.N.
Telerheumatolog: A technology appropriate for virtually all. *Seminars in arthritis and rheumatism.* June 2016; 46(3).
DOI: 10.1016/j.semarthrit.2016.05.013.

How to Do a Good Exam via Telemedicine

- There are 10 areas to touch on when doing a thorough telemedicine exam.

- This will involve the patient as well.

  1. Vital signs – BP at home, Pulse, 02.

  2. Skin Assessment – Have the patient perform a self assessment and if anything found have them show you over video.

  3. HEENT – ASK! About their hearing and taste. Look! At their sclera.

  4. Neck – Have them turn their heads side to side any limitation or pain that is noted.

Benziger, C. P., Huffman, M. D., Sweis, R. N., & Stone, N. J. The Telehealth Ten: A Guide for a Patient-Assisted Virtual Physical Examination. *The American Journal of Medicine.* 2020. S0002-9343(20)30597-0. Advance online publication. https://doi.org/10.1016/j.amjmed.2020.06.015.

How to Do a Good Exam via Telemedicine

5. Heart – If possible have the patient check their pulse to check for abnormalities or a caregiver.

6. Lungs – Listen for any wheezes or coughing after having a patient inhale and exhale deeply with an open mouth.

7. Abdomen – Ask! Is the abdomen distended, soft?

8. Extremities – Ask! Are the hands distally having color changes or cold sensitivity? Feel! Have patients put their hands around the calf to see if one leg is larger then the other. Have them feel their achilles tendon for tenderness. Lower extremity edema have them show you their legs.

Benziger, C. P., Huffman, M. D., Sweis, R. N., & Stone, N. J. The Telehealth Ten: A Guide for a Patient-Assisted Virtual Physical Examination. *The American Journal of Medicine.* 2020. S0002-9343(20)30597-0. Advance online publication. https://doi.org/10.1016/j.amjmed.2020.06.015.

How to Do a Good Exam via Telemedicine

9. Neuro – Ask! Does the patient notice any weakness in arms or legs? Are they using a cane or walker and do they feel stable when they walk? Watch! Do they push up when they get out of a chair (Proximal muscle weakness)?

10. Social factors that impact health – Ask! Diet, exercise, stress at home, sleep.

11. Do they have transportation and housing?

Benziger, C. P., Huffman, M. D., Sweis, R. N., & Stone, N. J. The Telehealth Ten: A Guide for a Patient-Assisted Virtual Physical Examination. *The American Journal of Medicine.* 2020. S0002-9343(20)30597-0. Advance online publication. https://doi.org/10.1016/j.amjmed.2020.06.015.

Telemedicine and Exam Reliability

- When examining multiple specialties including rheumatology Martin-Khan et al, 20 did find that reliability existed with telemedicine visits.

Martin-Khan, M., Wootton, R., Whited, J., & Gray, L.C. A systematic review of studies concerning observer agreement during medical specialist diagnosis using videoconferencing. *Journal of Telemedicine and Telecare*. 2011; 17(7),350-357. https://doi: 10.1258/jtt.2011.101113.

Telemedicine and Stratifying Patient Activity in RA

- Patient reported outcomes have become more relevant in identifying a patient's disease activity level in the face of social distancing and telemedicine use.

- RAID has been found to be just as effective as a DAS-28 to identify the patient disease level.

Taylor,P.C. Adopting PROs in virtual and outpatient management of RA. *Nature Reviews Rheumatology.* 2020;
(16) 477-478. https://doi.org/10.1038/s41584-020-0449-6.

How We Can Improve Gout Outcomes With Telemedicine and Monitoring

- It was found that with in 2 telemedicine visits and ongoing monitoring patients were able to maintain low Serum Uric acid levels with telemedicine monitoring.

Gupta L, Misra DP, Agarwal V, et al. Management of rheumatic diseases in the time of covid-19 pandemic: perspectives of rheumatology practitioners from India. *Annals of the Rheumatic Diseases.* Published Online First: 16 April 2020. doi: 10.1136/annrheumdis-2020-217509.

What About Other Diseases

- Not much data for connective tissue disease

- More outcome research is needed

Gkrouzman, E., Wu, D. D., Jethwa, H., & Abraham, S. Telemedicine in Rheumatology at the Advent of the COVID-19 Pandemic. *HSS Journal: the Musculoskeletal Journal of Hospital for Special Surgery.* 2020. 1–4. Advance online publication. https://doi.org/10.1007/s11420-020-09810-3.

The Patient's Perception

- In a Polish study by Opnic et al there was no difference in the perception of telemedicine whether it was city vs rural area.

- Telephone visits were found to have lower patient satisfaction then videoconferencing.

Opinc, A., Łukasik, Z., & Makowska, J. The attitude of Polish rheumatology patients towards telemedicine in the age of the COVID-19 pandemic. *Reumatologia.* 2020; 58(3), 134–141. https://doi.org/10.5114/reum.2020.96665

Telemedicine After COVID-19

- Representative Roger Williams in Texas recently introduced a bill to extend the current format of Telemedicine Oct 2nd. However it is not yet passed, and there are multiple variations of this bill that have been introduced.

- As of November 14th we know most companies are honoring telemedicine reimbursements through 12/31/2020. Everything is based on the declaration of Public Health Emergency (PHE). We will know sometime in December if it will be extended another 90 days.

- Behavioral health will be extended through the next year.

Williams, R. (2020). https://williams.house.gov/media-center/press-releases/rep-williams-introduces-bill-to-expand-telehealth-coverage-and-protect; Centers for Medicare & Medicaid Servies. *Current Emergencies.* 2020. https://www.cms.gov/About-CMS/Agency-Information/Emergency/EPRO/Current-Emergencies/Current-Emergencies-page.

Telemedicine and the Future

The future may have a place for Augmented reality and virtual reality as Telemedicine.

- Certain applications such as XRHEALTH which does telemedicine treatment and would help pts with stress, anxiety, and chronic pain syndromes (Fibromyalgia) (prescription program and treatment via telemedicine).

- DocPal Is an AI who takes all the upfront information from a patient including vitals, Medication, Allergies, Range of motion, and complaints which initiates telemedicine visits. Still in R&D.

Zugara. 2019. http://zugara.com/augmented-reality-is-poised-to-improve-telemedicine-orange-labs-introduces-project-docpal;
Wicklund, E. 2020. Newclinics use telehealth to bring VR treatments to the patient's home.
https://mhealthintelligence.com/news/new-clinics-use-telehealth-to-bring-vr-treatments-to-the-patients-home.

Current Billing Limitations

- Changes in billing practices starting January 1.

- 95/97 guidelines for billing going away: ROS & Physical exam no longer required. These guidelines apply to all visit notes including Telemedicine.

- More like a SOAP note.

- More Rheumatology friendly – You will be documenting your thought process.

- Billing will be based on Medical risk (Complexity of medical decision making) or time (all time that is patient related not just face to face).

Centers for Medicare & Medicaid Services (CMS). HHS. Patient protection and affordable care act; HHS benefit and payment parameters for 2021; notice requirement for non-federal governmental plans. *Federal Register.* 2020; 85(94). 1-99. https://www.govinfo.gov/content/pkg/FR-2020-05-14/pdf/2020-10045.pdf