

TELEMEDICINE 101 FOR INTERNISTS

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20 SEPTEMBER 2019

FL ACP SCIENTIFIC MEETING 2019

WESTIN FT LAUDERDALE BEACH

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CONSIDERATIONS FOR TELEMEDICINE

- What is a doctor?
- How do we practice?
- What are the elements for a visit?
- What are the type of telehealth?
- How can it work?
- What are the rules?

WHAT IS A DOCTOR?

- Definition: “a qualified practitioner of medicine”, a “physician”
- Derivation:
 - Latin – teacher – from the verb “docere” – to teach
 - Middle English – learned person
- A learned person who is a teacher.
- Note: It’s not to order tests, follow quality metrics, prescribe medications at every visit, etc.

THE IMPORTANCE OF HISTORY & BASIC EXAM

- **Bernard Lown (Physician, Nobel Peace Prize Laureate) – 75% of diagnosis from history alone.**
 - Lown B. The lost art of healing: practicing compassion in medicine. New York: Ballantine Books; 1999.
- **BMJ – 82% from history alone; W J Med – 76%**
 - Hampton JR, Harrison MJG, Mitchell JRA, Richard JS, Seymour C. Relative contributions of history-taking, physical examination, and laboratory investigation to diagnosis and management of medical outpatients. *BMJ*. 1975;2:486–489. doi: 10.1136/bmj.2.5969.486.
 - Peterson MC, Holbrook JH, Von Hales D, Smith NL, Staker LV. Contributions of the history, physical examination, and laboratory investigation in making medical diagnoses. *West J Med*. 1992;156:163–165.
- **Arch IM – BASIC physical exam adds about 18%**
 - Paley L, Zornitzki T, Cohen J, Friedman J, Kozak N, Schattner A. Utility of Clinical Examination in the Diagnosis of Emergency Department Patients Admitted to the Department of Medicine of an Academic Hospital. *Arch Intern Med*. 2011;171(15):1393–1400. doi:10.1001/archinternmed.2011.340

WHAT IS TELEMEDICINE?

- Telemedicine is the remote delivery of health care services and clinical information using telecommunications technology; i.e., internet, wireless, satellite, and telephone media. --- by a licensed medical professional!

TERMINOLOGY



Telehealth – health education services, remote monitoring of vital signs, ECG or blood pressure and remote doctor-patient consultations (telemedicine). It also allows for e-prescribe medications and remotely prescribed treatments.



Telecare – mobile monitoring devices, medical alert systems, and technology like computers and telephones. Continuous remote monitoring of patients enables telecare to track lifestyle changes over time as well as receiving alerts relating to real-time emergencies.



Telemedicine – use of information technologies and electronic communications to provide remote clinical services to patients including digital transmission of medical imaging.

WHEN DID TELEMEDICINE START?

- So, when did it start?
- 1948 – PA – first radiographs sent by phone
- Late 1950s – U NE – first CCTV in medicine
- Late 1960s – Miami – sent EKGs over EMS radio to EDs.
 - Also joint venture between NASA and Nebraska Psychology Institute
- Late 1970s – remote patient monitoring joint venture between Kaiser Foundation and Lockheed Missile & Space
- 1993 – formation of American Telemedicine Association
- 2009 – HITECH Act
- Question: Is not giving advice over the phone to your patient or covering for your practice partner also telemedicine?

WHAT TELEMEDICINE IS NOT

- A computer evaluating, diagnosing, and treating a patient.
- A robot seeing you from beginning to end.
- A physician simply being an operator of a device rather than an expert.
- A survey/questionnaire that is reviewed later and then treatment prescribed.
- A way for patients to get medications that they think they need and are entitled to.
- A cash cow or pure service industry (e.g. Burger King).

TYPES OF TELEHEALTH



LIVE (SYNCHRONOUS)
VIDEOCONFERENCING



STORE-AND-FORWARD
(ASYNCHRONOUS)
VIDEOCONFERENCING



REMOTE PATIENT
MONITORING (RPM)



MOBILE HEALTH
(MHEALTH)



OPERATIONAL TYPES



DIRECT TO CONSUMER
(DTC)



SECOND OPINION



CONSULTATIVE/ASSISTANCE
TO ANOTHER PHYSICIAN
(USUALLY GEOGRAPHICALLY
OR RESOURCE LIMITED)



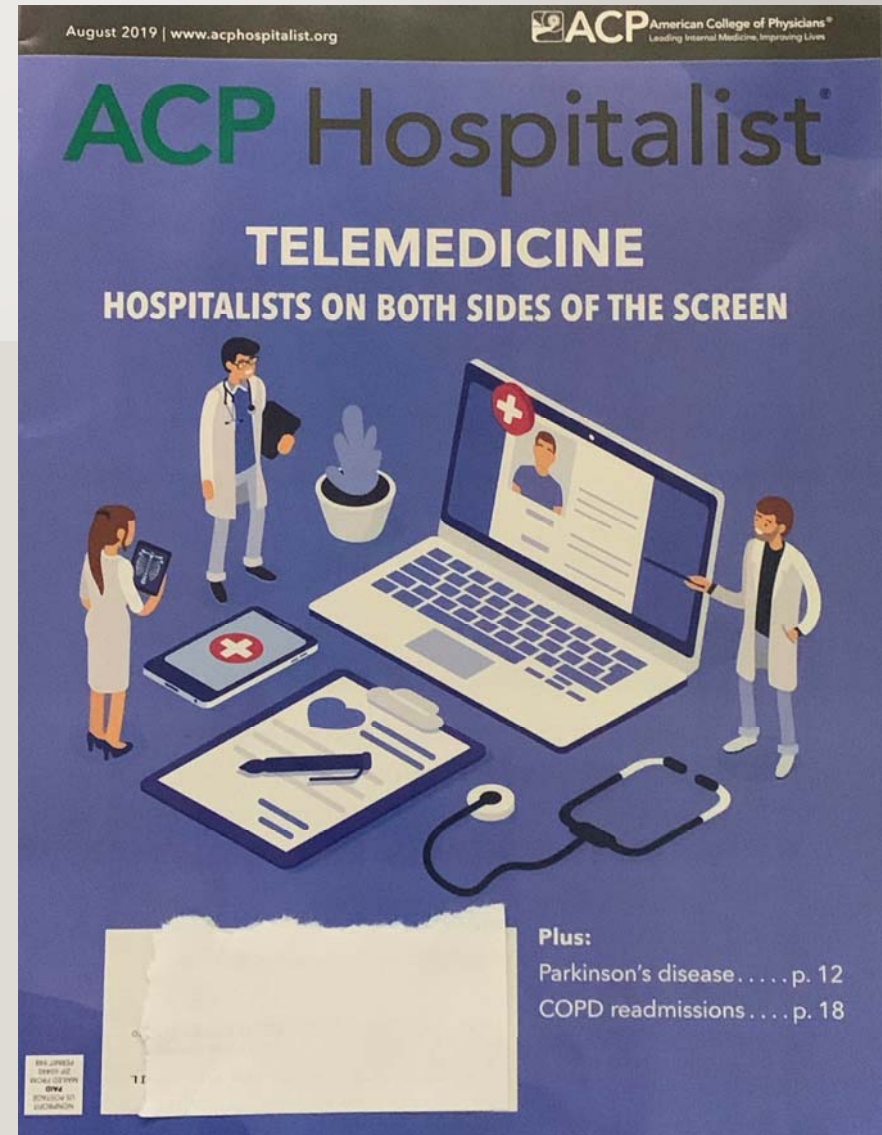
OUTPATIENT
MANAGEMENT



POST DISCHARGE
FOLLOW-UP

IN THE HOSPITAL (BRIEFLY)

- Hospitalists
 - Tele-presence robots in the acute care hospital and skilled nursing facility
 - Remotely navigated
 - With electronic stethoscope, ophthalmoscope, otoscope only requiring nurse or aide to assist
 - 2-way communication – video and audio
 - Tele-neurology – e.g. stroke evaluation
 - Tele-infectious disease – for wound evaluation, interview, antibiotic stewardship
 - Tele-dermatology
 - Tele-ICU
 - Post-discharge care e.g. CHF/cardiac monitoring
 - Etc.



WHAT CAN PHYSICIANS DO?



Direct to Consumer through private telemedicine companies



Acute care visits – UTI, “sinusitis”, emergency NCD med refills, general counseling



Chronic care – DM2, HTN



Wellness – cardiac risk reduction – diet, exercise, stress management, sleep, etc. – Lifestyle Medicine



Patients pay cash, through their private insurance, or as part of employee benefit plan.



Creating and curating mHealth educational information



Research/development of new AI-driven telehealth products

PROS AND CONS

- Pros:
- Patients love the convenience, quick access, one on one interaction without being late or rushed.
- Practice your interviewing and diagnostic skills.
- Can set up follow up online appointments, follow patients, order labs.
- Can help patients with anxiety about their condition and/or second opinions.
- Interact with patients worldwide.
- Cons:
- Limitation of technology. Can't diagnose and treat many conditions.
- Difficult to console patients. No hands-on support.
- Patients sometimes have unrealistic expectations because of the convenience – “I paid for this consult to get an antibiotic and now you're not going to give me one!”

STANDARDS

- You must practice the same level of care as you would an in-person visit understanding current technological limitations.
- Examples: You can't diagnose cardiac chest pain through current technology.
- You can advise on treatment for an URI based on history and exam (look at their throat, have them palpate sinuses, feel neck, listen to their breathing and voice, observe their skin) – since most URIs are viral anyway.

EXAMPLES OF VISIT CONDITIONS

- UTI
- Conjunctivitis
- URI
- Medicine Refill
- Depression
- Birth Control
- ED
- Lab/Test review
- Rash

EXAMPLE I

- Conjunctivitis:
 - Can easily see an eye on video to assess for injection, icterus and symmetry
 - Visual acuity with help of eye chart applications which can be downloaded while on the phone
 - Instruct patients to move eyes to evaluate extra ocular movements
 - Have the patient use a flashlight to evaluate for reactivity
- *These are all very basic and not comprehensive of what I do in every such consult.

EXAMPLE 2

- Pharyngitis:
 - Finagle the camera to evaluate the tonsils for redness, exudates and swelling
 - Ask the patient to evaluate if they have tenderness over their lymph nodes
 - Observe if they cough, or have a runny nose, and observe them take their temperature

EXAMPLE 3

- Ankle Pain:
 - Use the Ottawa Ankle rules
 - Ask whether they were bearing weight at time of injury
 - Have patient the family or patient palpate over the specific areas of bony tenderness included in the rule
 - Evaluate whether they can bear weight
 - If it is all negative, you can save most patients a visit to the urgent care or emergency department for an X-ray.

GUIDELINES

- General operational guidelines – American Telemedicine Association
- Policy Recommendations to Guide the Use of Telemedicine in Primary Care Settings: An American College of Physicians Position Paper – Annals of Internal Medicine – 17 November 2015

CONCERNS

- Is there higher antibiotic prescribing through telemedicine versus primary care offices. Answer: No It's the same.
- Uscher-Pines L, Mulcahy A, Cowling D, Hunter G, Burns R, Mehrotra A. Antibiotic Prescribing for Acute Respiratory Infections in Direct-to-Consumer Telemedicine Visits. JAMA Intern Med. 2015 Jul;175(7):1234-5.
- Shi Z, Mehrotra A, Gidengil CA, Poon SJ, Uscher-Pines L, Ray KN. Quality Of Care For Acute Respiratory Infections During Direct-To-Consumer Telemedicine Visits For Adults. Health Aff (Millwood). 2018 Dec;37(12):2014-2023.

- Does telemedicine result in less inappropriate ordering and resources used?
 - Answer: It can.
 - Uscher-Pines L, Mulcahy A, Cowling D, Hunter G, Burns R, Mehrotra A. Access and Quality of Care in Direct-to-Consumer Telemedicine. *Telemed J E Health*. 2016 Apr;22(4):282-7.

GENERAL LAWS

- It's variable and changes annually but generally you must have a minimum of a telephonic encounter. Most states require video for diagnosis and prescribing for a new doctor-patient relationship..
- DEA requires an exam to prescribe (can do this through video but debatable through phone).
- You cannot prescribe controlled substances through telemedicine per DEA regulations – yet.
- You must be licensed in the state where the patient is located.
 - If the patient lives in Florida but you are seeing the patient for the first time or for a new problem and they're in California, you **MUST** be licensed in California.



There must be a valid patient–physician relationship for a professionally responsible telemedicine service to take place.

A telemedicine encounter itself can establish a patient–physician relationship through real-time, technically appropriate audiovisual technology.

In the absence of direct previous contact or an existing relationship before a telemedicine encounter, the physician must take appropriate steps to establish a relationship based on the standard of care required for an in-person visit, or consult with another physician who does have a relationship with the patient.

The benefits of increased access to care through telemedicine must be balanced with risks from the loss of the in-person encounter—for example, misdiagnosis potential; overprescribing; absent in-person interactions, including the therapeutic value of touch, and body language; and continuity of care.

ETHICS

- New guidance (2019) from American College of Physicians
 - Sulmasy LS, Bledsoe TA, for the ACP Ethics, Professionalism and Human Rights Committee. American College of Physicians Ethics Manual: Seventh Edition. Ann Intern Med.;170:S1–S32.
- World Medical Association
 - <https://www.wma.net/policies-post/wma-statement-on-the-ethics-of-telemedicine/>

THE WORLD MEDICAL ASSOCIATION, INC.

Document no:	SMAC 210/AI/Oct2018	Original: English
Title:	Proposed WMA Statement on Artificial or Augmented Intelligence in Medical Care	
Destination:	Socio-Medical Affairs Committee 210 th Council Session WMA General Assembly, Reykjavik 2018 Harpa Convention Center Reykjavik, Iceland 3-6 October 2018	Action(s) required: For consideration
Note:	This is submitted by the American Medical Association (AMA).	
Related existing WMA policies:	- WMA Statement on Mobile Health 2015 - WMA Ethical Considerations regarding Health Databases and Biobanks 2016 (Declaration of Taipei) - WMA Statement on Cyber Attacks on Health and other Critical Infrastructure 2016	
Keywords:	Artificial Intelligence, Augmented Intelligence, Machine Learning, Data Integrity, Patient Data	

THE FUTURE

- AI – Augmented not Artificial Intelligence
- Not replacing physicians but assisting their decision analysis, diagnostics, and treatment options/paradigms as well as ongoing care.
- Use of remote devices and wearables – CERTIFIED
- Interoperability of records and data

SELECTED RESOURCES



American Telemedicine Association – www.americantelemed.org



International Society for Telemedicine and eHealth (Basel, Switzerland)
– www.isfteh.org



Center for Telehealth and eHealth Law – www.ctel.org – advocacy



Center for Connected Health Policy – www.cchpca.org – regulatory
education



HealthIT.gov – federal telemedicine policy



Norwegian Centre for Integrated Care & Telemedicine (Tromsø,
Norway) – www.telemed.no (one of the best in the world – degree
education also)

RELATED CONFERENCES



American Telemedicine Association –
annual conference



CTeL – biannual workshops/roundtables



Consumer Electronics Show (Las Vegas,
January) – large eHealth section



HIMSS (Health Information and
Management Systems Society) – annual

FLORIDA TELEMEDICINE LAW

- Took BOM Rule as Its Base, BUT:
- Out of State Providers Do NOT need Florida license, but do need
 - Accountability to Florida Courts; and
 - Accountability to Florida Board of Medicine
- No controlled substance prescribing via telemedicine (except psychiatric and hospice)
- Standard of Care Does Not Change
- Telemedicine may be used for initial visitation
- Payment issues persist

QUESTIONS



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