Telemedicine & Telehealth Efforts

of the

U.S. Government

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About the Editor

Michael Erbschloe has worked for over 30 years performing analysis of the economics of information technology, public policy relating to technology, and utilizing technology in reengineering organization processes. He has authored several books on social and management issues of information technology that were published by McGraw Hill and other major publishers. He has also taught at several universities and developed technology-related curriculum. His career has focused on several interrelated areas:

- Technology strategy, analysis, and forecasting
- Teaching and curriculum development
- Writing books and articles
- Publishing and editing
- Public policy analysis and program evaluation

Books by Michael Erbschloe

Social Media Warfare: Equal Weapons for All (Auerbach Publications)
Walling Out the Insiders: Controlling Access to Improve Organizational Security (Auerbach Publications)
Physical Security for IT (Elsevier Science)
Trojans, Worms, and Spyware (Butterworth-Heinemann)
Implementing Homeland Security in Enterprise IT (Digital Press)
Guide to Disaster Recovery (Course Technology)
Socially Responsible IT Management (Digital Press)
Information Warfare: How to Survive Cyber Attacks (McGraw Hill)
The Executive's Guide to Privacy Management (McGraw Hill)
Net Privacy: A Guide to Developing & Implementing an e-business Privacy Plan (McGraw Hill)

Introduction

Telemedicine seeks to improve a patient's health by permitting two-way, real time interactive communication between the patient, and the physician or practitioner at the distant site. This electronic communication means the use of interactive telecommunications equipment that includes, at a minimum, audio and video equipment. The implementation of telemedicine in routine health services has been impeded in many setting because of a lack of scientific evidence for its clinical and cost effectiveness.

But things are changing. Based on advances in information and communications technologies, medical professionals as well as other "health and care" providers can now offer increasingly robust, remote (from their location to another), interactive (two-way) services to consumers, patients and caregivers.

The terms used to describe these broadband-enabled interactions include telehealth, telemedicine and telecare. "Telehealth" evolved from the word "telemedicine." "Telecare" is a similar term that you generally hear in Europe. All three of these words are often – but not always – used interchangeably. They can also have different meanings depending on who you ask. And that's precisely why you should ask your doctor, your insurance provider, your nurse, anyone who's part of your health and care universe.

Telemedicine can be defined as using telecommunications technologies to support the delivery of all kinds of medical, diagnostic and treatment-related services usually by doctors. For example, this includes conducting diagnostic tests, closely monitoring a patient's progress after

treatment or therapy and facilitating access to specialists that are not located in the same place as the patient.

Telehealth is similar to telemedicine but includes a wider variety of remote healthcare services beyond the doctor-patient relationship. It often involves services provided by nurses, pharmacists or social workers, for example, who help with patient health education, social support and medication adherence, and troubleshooting health issues for patients and their caregivers.

Telecare generally refers to technology that allows consumers to stay safe and independent in their own homes. For example, telecare may include consumer-oriented health and fitness apps, sensors and tools that connect consumers with family members or other caregivers, exercise tracking tools, digital medication reminder systems or early warning and detection technologies.

Although the terms "telemedicine" and "telehealth" are often used to describe similar types of technologies, the term "telemedicine" has historically been used to refer specifically to bilateral, interactive health communications with clinicians on both "ends" of the exchange (e.g., video conferenced Grand Rounds, x-rays transmitted between radiologists or consultations where a remote practitioner presents a patient to a specialist). Whereas, the term "telehealth" incorporates not only technologies that fall under "telemedicine," but also direct, electronic patient-to-provider interactions and the use of medical devices (e.g., smartphone applications ("apps"), activity trackers, automated reminders, blood glucose monitors, etc.) to collect and transmit health information, often with the intent to monitor or manage chronic conditions. Currently, there are four basic modalities, or methods, of telehealth:

1. Live video (synchronous): Live, two-way interaction between a person (patient, caregiver, or provider) and a provider using audiovisual telecommunications technology. While these videoconferences had historically and exclusively been provider-to-provider telemedicine encounters, many companies such as Teladoc and LiveHealth Online are now videolinking patients directly to clinicians on a daily basis.

2. Store-and-forward (SFT): Transmission of videos and digital images such as x-rays and photos through a secure electronic communications system. As compared to a "real-time" visit, this service provides access to data after it has been collected. Generally, diagnostic information (e.g., x-rays, CT scans, EEG printouts) are recorded or captured at the patient's site of care, and then sent to a specialist in another location. Because of the lag, or delay, between the time an image is sent and when it is interpreted, SFT is often referred to as "asynchronous."

3. Remote patient monitoring (RPM): Personal health and medical data collection from an individual in one location, which is transmitted to a provider in a different location. RPM is used primarily for the management of chronic illness, using devices such as Holter monitors to transmit information including vital statistics (e.g., blood pressure, blood oxygen levels) to clinicians.

4. Mobile health (mHealth): Smartphone apps designed to foster health and well-being. These apps range from programs which send targeted text messages aimed at encouraging healthy behaviors to alerts about disease outbreaks to programs or apps that help patients with reminders to adhere to specific care regimens. Increasingly, smartphones may use cameras, microphones, or other sensors or transducers to capture vital signs for input to apps and bridging into RPM.

Link: https://www.healthit.gov/playbook/patient-engagement/#Telehealth

In the current environment of a shortage of healthcare professionals, greater incidence of chronic conditions, and rising healthcare costs, telemedicine offers a potential tool to improve efficiency

in the delivery of healthcare. The need for telemedicine is further compounded by the following

factors:

- Significant increase in the U.S. population—estimated growth of 20 percent
(to 363 million) between 2008-2030
- Shortage of healthcare professionals being educated, trained and licensed
- Increasing incidence of chronic diseases around the world, including
diabetes, congestive heart failure and obstructive pulmonary disease
- Need for efficient care of the elderly, home-bound, and physically
challenged patients
- Lack of specialists and health facilities in rural areas
- Adverse events, injuries and illness at hospitals and physician's offices
- Need to improve community and population health

Link: http://ita.doc.gov/td/health/telemedicine_2009.pdf

The Connect2HealthFCC Task Force is working to raise consumer awareness about the value of

broadband in the health and care sectors. The FCC's Connect2Health Task Force and its work on

consumer health issues can be found at www.fcc.gov/health.

Telemedicine: Medicaid and Medicare

For purposes of Medicaid, telemedicine seeks to improve a patient's health by permitting two-way, real time interactive communication between the patient, and the physician or practitioner at the distant site. This electronic communication means the use of interactive telecommunications equipment that includes, at a minimum, audio and video equipment.

Telemedicine is viewed as a cost-effective alternative to the more traditional face-to-face way of providing medical care (e.g., face-to-face consultations or examinations between provider and patient) that states can choose to cover under Medicaid. This definition is modeled on Medicare's definition of telehealth services (42 CFR 410.78). Note that the federal Medicaid statute does not recognize telemedicine as a distinct service.

Telemedicine Terms

Distant or Hub 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.

Originating or Spoke site: Location of the Medicaid patient at the time the service being furnished via a telecommunications system occurs. Telepresenters may be needed to facilitate the delivery of this service.

Asynchronous or "Store and Forward": Transfer of data from one site to another through the use of a camera or similar device that records (stores) an image that is sent (forwarded) via telecommunication to another site for consultation. Asynchronous or "store and forward" applications would not be considered telemedicine but may be utilized to deliver services.

Medical Codes: States may select from a variety of HCPCS codes (T1014 and Q3014), CPT codes and modifiers (GT, U1-UD) in order to identify, track and reimburse for telemedicine services.

Telehealth (or Telemonitoring) is the use of telecommunications and information technology to provide access to health assessment, diagnosis, intervention, consultation, supervision and information across distance.

Telehealth includes such technologies as telephones, facsimile machines, electronic mail systems, and remote patient monitoring devices, which are used to collect and transmit patient data for monitoring and interpretation. While they do not meet the Medicaid definition of telemedicine they are often considered under the broad umbrella of telehealth services. Even though such technologies are not considered "telemedicine," they may nevertheless be covered and reimbursed as part of a Medicaid coverable service, such as laboratory service, x-ray service or physician services (under section 1905(a) of the Social Security Act).

Provider and Facility Guidelines

Medicaid guidelines require all providers to practice within the scope of their State Practice Act. Some states have enacted legislation that requires providers using telemedicine technology across state lines to have a valid state license in the state where the patient is located. Any such requirements or restrictions placed by the state are binding under current Medicaid rules.

Reimbursement for Telemedicine

Reimbursement for Medicaid covered services, including those with telemedicine applications, must satisfy federal requirements of efficiency, economy and quality of care. States are encouraged to use the flexibility inherent in federal law to create innovative payment methodologies for services that incorporate telemedicine technology. For example, states may reimburse the physician or other licensed practitioner at the distant site and reimburse a facility fee to the originating site. States can also reimburse any additional costs such as technical support, transmission charges, and equipment. These add-on costs can be incorporated into the fee-for-service rates or separately reimbursed as an administrative cost by the state. If they are separately billed and reimbursed, the costs must be linked to a covered Medicaid service.

State Flexibility in Covering/Reimbursing for Telemedicine Services and the Application of General Medicaid Requirements to Coverage of Telemedicine Services

Telemedicine is viewed as a cost-effective alternative to the more traditional face-to-face way of providing medical care (e.g., face-to-face consultations or examinations between provider and patient). As such, states have the option/flexibility to determine whether (or not) to cover telemedicine; what types of telemedicine to cover; where in the state it can be covered; how it is provided/covered; what types of telemedicine practitioners/providers may be covered/reimbursed, as long as such practitioners/providers are "recognized" and qualified according to Medicaid statute/regulation; and how much to reimburse for telemedicine services, as long as such payments do not exceed Federal Upper Limits.

If the state decides to cover telemedicine, but does not cover certain practitioners/providers of telemedicine or its telemedicine coverage is limited to certain parts of the state, then the state is responsible for assuring access and covering face-to-face visits/examinations by these

"recognized" practitioners/providers in those parts of the state where telemedicine is not available.

Therefore, the general Medicaid requirements of comparability, state wideness and freedom of choice do not apply with regard to telemedicine services.

CMS Approach to Reviewing Telemedicine SPAs

- •States are not required to submit a (separate) SPA for coverage or reimbursement of telemedicine services, if they decide to reimburse for telemedicine services the same way/amount that they pay for face-to-face services/visits/consultations.

- •States must submit a (separate) reimbursement (attachment 4.19-B) SPA if they want to provide reimbursement for telemedicine services or components of telemedicine differently than is currently being reimbursed for face-to-face services.

- •States may submit a coverage SPA to better describe the telemedicine services they choose to cover, such as which providers/practitioners are; where it is provided; how it is provided, etc. In this case, and in order to avoid unnecessary SPA submissions, it is recommended that a brief description of the framework of telemedicine be placed in an introductory section of the State Plan and then a reference made to telemedicine coverage in the applicable benefit sections of the State Plan. For example, in the physician section it might say that dermatology services can be delivered via telemedicine provided all state requirements related to telemedicine as described in the state plan are otherwise met.

Link: https://www.medicaid.gov/medicaid/benefits/telemed/index.html

Medicare

Whether expanding Medicare coverage for telemedicine services would increase or decrease federal spending is difficult to predict, but doing so depends on two main considerations:

- •The payment rates that would be established for those services, and

- •Whether those services would substitute for (or reduce use of) other Medicare-covered services or would be used in addition to currently covered services.

It is believed that if all or most telemedicine services substituted for or prevented the use of more expensive services, coverage of telemedicine could reduce federal spending. If instead telemedicine services were mostly used in addition to currently covered services, coverage of telemedicine would tend to increase Medicare spending. Many proposals to expand coverage of telemedicine strive to facilitate enrollees' access to health care. Therefore, such proposals could increase spending by adding payments for new services instead of substituting for existing services.

Because coverage of telemedicine services in Medicare's traditional fee-for-service program is limited, so is evidence about the effects of such coverage. Thus, Congressional Budget Office (CBO) must often draw inferences from other sources—such as the experience of private managed care plans—when developing cost estimates. However, an important limitation of that evidence is that private plans generally have more ways to influence doctors' choices and to limit the services that their enrollees use than are available in Medicare's fee-for-service program (which the Department of Health and Human Services and its contractors run). As a result, even if coverage of telemedicine reduced net costs for some private plans, the greater difficulties involved in ensuring that services are used appropriately in the fee-for-service Medicare program mean that proposals to expand coverage of services in that program could increase federal spending.

Given the substantial interest in proposals related to telemedicine, CBO has prepared the discussion below, which further describes the issues that arise in defining a telemedicine benefit and how CBO estimates the budgetary effects of those proposals.

Telemedicine services include virtual visits with doctors or other professionals, remote monitoring of patients' conditions, and off-site analysis of medical imaging or test results. Providers may offer telemedicine through various means of communication, including phone calls, video chats, text messages, email, and websites. With the varied possibilities, proposals to expand coverage for telemedicine or telehealth services in Medicare would need to define several factors, including:

- The services that would be covered and their allowed methods of delivery,
- The types of providers and sites of care that could be paid to offer those services, and
- The types of patients or beneficiaries who would be eligible to receive such services.

CBO's analysis of such proposals would take into account how they differed from Medicare's coverage of telemedicine services under current law. Now, Medicare providers can be paid to furnish certain telemedicine services by using specified methods and sites of service—but only for patients who live in rural areas. (Those patients generally visit a facility that has some staff but that accesses some doctors remotely.) In general, Medicare pays the distant doctor or other provider of telemedicine the same fee that Medicare would have paid for an in-person office visit, and the site where the patient receives the services is paid a facility fee. Medicare's total payments are thus higher for telemedicine services than for equivalent services delivered conventionally. Whether similar arrangements would apply for any expansion of coverage for telemedicine depends on the details of legislative proposals.

Although offering telemedicine to rural enrollees could improve the quality of care that such enrollees receive and could be more convenient for them, doing so might not reduce Medicare spending on their care. More broadly, if rural or urban enrollees would otherwise not have received care because of difficulties in obtaining access to doctors, providing telemedicine might well increase spending on services Medicare covers instead of substituting for services that would have been covered without telemedicine. Without other constraints, the added convenience for enrollees of receiving telemedicine rather than face-to-face care could increase their demand for and use of Medicare-covered services. Provisions governing the cost-sharing requirements that enrollees face for telemedicine services would also affect their demand for those services.

Extracted from a blog post by Lori Housman, Zoë Williams, and Philip Ellis dated July 29, 2015
Link: https://www.cbo.gov/publication/50680

Telemedicine at the Federal Communications Commission (FCC)

The Connect2HealthFCC taskforce is exploring the intersection of broadband, advanced technology and health and further charting the broadband future of health care – serving as an umbrella for all FCC health-oriented activities to help enable a healthier America.

By identifying regulatory barriers, as well as incentives, and building stronger partnerships with public and private stakeholders in the areas of telehealth, mobile applications, and telemedicine, we seek to accelerate the adoption of advanced health care technologies — leveraging broadband and other next-gen communications services, highlighting promising health IT and telemedicine initiatives across the country and abroad, and expediting a vital shift to more ubiquitous, broadband-enabled health care solutions along the entire health and wellness continuum.

Vision: Everyone connected to the people, services and information they need to get well and stay healthy. This will require:

Robust connections

- Anywhere
- On-demand and in real time
- Trusted and secure (platforms and devices)

Integrated and seamless care

- Patients and caregivers
- Health systems and clinicians
- Social service agencies
- Community health centers
- Wellness providers (e.g., grocery stores, fitness centers)
- Centers of learning

- Research and data analytics

Empowered and engaged consumers

- Interactive, healthy decision support
- Consumer-generated health data
- Targeted digital health and wellness content

Mapping Broadband Health in America tool allows users to visualize, overlay and analyze broadband and health data at the national, state and county levels. The maps are an interactive experience, enabling detailed study of the intersection between connectivity and health for every county in the United States. The resulting maps can be used by both public and private sectors, and local communities, to identify opportunities and gaps in connectivity and care. Go directly to the mapping tool.

In November 2016, the FCC's Connect2Health Task Force and the Consumer and Governmental Affairs Bureau's Office of Intergovernmental Affairs co-hosted a webinar to further explore the potential of the Mapping Broadband Health in America platform for the public sector. This one-hour "deeper dive" webinar was particularly tailored to the needs and interests of state and local government offices and agencies. (https://www.fcc.gov/news-events/events/2016/11/mapping-connected-health-county-county)

The Connect2HealthFCC Task Force's Mapping Broadband Health in America tool allows users to visualize, overlay and analyze broadband and health data at the national, state and county levels – informing policy prescriptions and investment decisions.

The maps are an interactive experience, showing various pictures of the intersection between connectivity and health for every county in the United States. Users can generate customized maps that show broadband access, adoption and speed alongside various health measures (e.g., obesity, diabetes and physician access) in urban and rural areas.

These maps can be used by both public and private sectors, and local communities, to identify opportunities and gaps in connected care.

You can explore questions like:

- What is the relationship between connectivity and health?

- What is the chronic disease picture in higher vs. lower connectivity areas?

- Where can existing broadband infrastructure be leveraged now – by policymakers, entrepreneurs, or other stakeholders -- to help address physician shortages or high levels of chronic disease?

- Where do infrastructure gaps and poor health outcomes coincide – both at the national and county level – in order to better target and prioritize marketplace solutions and private sector investment?

Key features of these maps:

- Interactive data visualization tools

- Easily accessible statistics about connectivity and health at the national and state levels, to help ground the user experience

- Customizable zoom levels to state, county, or automatic

- Unique URLs created for each customized map to facilitate sharing and collaboration

- Support of open government and open data initiatives through APIs and downloadable data sets

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