GUIDANCE FOR ASSESSING TELEMEDICINE VENDORS

Telemedicine platform is a health information technology (health IT) software that offers a wide array of features that health care providers use to store, share, and analyze health information remotely. These usually offer a wide variety of features that enable physicians to practice telehealth in different ways, such as connecting with a patient via secure, high-resolution video for a remote visit, sharing medical images, sending text messages or online chats in real-time, and submitting prescriptions to the patient's pharmacy (eVisit, 2018).

This guidance document from the faculty, alumni, and graduate students of the UP Manila Medical Informatics Unit, is fourth in the series of telemedicine guidance documents. This may be useful for:

- Filipino physicians in a solo practice and hospitals/clinics deciding on what telemedicine platform to use;
- Telemedicine platform providers

This guidance seeks to answer the following questions:

1. What are the considerations when selecting a telemedicine platform or app?
2. How can a telemedicine platform or app be assessed?

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1. What are the considerations when selecting a telemedicine platform or app?

Before considering a vendor/provider, the physician or the organization should determine their goals and aims in adapting a telemedicine technology. This will have a bearing when it comes to specifics in evaluating the vendors and the service they offer. Features of telemedicine platforms cannot be tailored as one-size fits all programs, but should be adjusted depending on (1) how the individual physician or organization plans to incorporate the telemedicine technology in their current work process and how this aligns to identified goals, (2) extent of services is the individual physician or the organization intending to deliver through the use of telemedicine, (3) sustainability of the service as planned by the individual physician or organization who will be using the technology. Expectations on the scale of the project must be anticipated at the beginning.

The AMA Telehealth Playbook (2020), reminds us to do our due diligence in selecting a telemedicine vendor/provider. While most begin with their own network, including word-of-mouth referrals from experienced practices, we should also look for third party reviews, case studies, and ask for live vendor demos to gain a realistic picture of the process if it aligns to your organization (or individual) goals. Choosing a telemedicine provider / vendor for a long-term partnership ensures an expert resource & support throughout the implementation process from start to finish, and a partner as equally motivated as the physician to achieve a successful outcome.

Business Information

Costs of telemedicine platforms depend on several variables such as number of users, how large is the practice, how advanced the technology, and what features are included. Complicated systems often means more expensive costs, hence it is important to know the type of set-up you need for your practice. Simplevisit (2016) classifies the costs into: technology, implementation, adoption, expansion.

Several vendors offer freemium for the use of their telemedicine platform. They may offer free use of the basic features but will charge a fee for additional features or services, and will incur indirect costs to running a telemedicine practice.

Determining your budget helps in identifying the platform you are going to choose and the features you are going to include. Additional costs considerations may include medical devices for specialties (i.e. examination camera, ENT scope), communication platform, telemedicine hardware packaging, and training.

Technology

When discussing telemedicine platforms in terms of its technology, this must include both hardware and software requirements. Hardware includes the infrastructure upon which the telemedicine platform will operate on. Software includes the features and functionalities available on the actual telemedicine platform / app. Both hardware and software must be compatible with each other to prevent errors when running the program.

Hardware includes the computer / mobile device that is to be used, the internet router and provider, camera, microphones, and other monitoring devices that may be used during a

teleconsult. Software includes the telemedicine platform / app, its messaging functions (i.e., voice, text, video), documentation features, its capability for integration into an existing EHR, interoperability, and whether customization of features is allowed.

Each aspect of the technology used must be evaluated for its appropriateness to the physician's practice. For example, a dermatologist setting up a telemedicine practice may require a higher quality for images or videos compared to a rheumatologist. It is highly encouraged that these requirements be identified by the different professional societies for their specific practice.

The American Telemedicine Association (2020) defines four types of telehealth technology currently available:
1. **Live Video Conferencing (synchronous)** is the delivery of a live, interactive consultation between a physician and a patient, or a physician and a consulting specialist.
2. **Store and forward (asynchronous)** transmits diagnostic images, vital signs, and/or video clips with patient vdata for review at a later time.
3. **Remote patient monitoring (RPM)** is the use of devices to remotely collect and send data to a physician, including vital signs, blood glucose, heart ECG, etc.
4. **Mobile health (mHealth)** is the use of the internet and wireless devices in health care.

Identifying which technology you wish to use will help in determining which telemedicine platform to use. Opting for a telemedicine platform that allows storage and transmission for remote patient monitoring may cost more than others, but may be essential for patients who require constant monitoring of vital signs and/or blood chemistry.

Security / Privacy

As discussed in previous documents, while technology has allowed the ease of recording, we reiterate that when a telemedicine visit is recorded without consent, the integrity of the trust between patient and physician is harmed (Rodriguez, 2015; Elwyn, 2017) This is also important in evaluating telemedicine platforms. As mentioned in Section 13 of the Data Privacy Act, sensitive personal and privileged information requires consent from all parties involved. This is supported by the Anti-Wiretapping Law (as amended by HB8378) where unauthorized recording by any party is unlawful.

Software systems are complex and contain components that are usually beyond the lenses of health professionals. Yet the greatest risk and accountability of a telemedicine interaction is borne by the clinicians. The AMA Telehealth Playbook (2020) indicates that physicians are increasingly recognizing the importance of good cyber hygiene. Cybersecurity is not just a technical issue, it's a patient safety issue. Cyberattacks can cause interruptions in practice operations, compromised records and direct threats to the patient's wellbeing.

When evaluating the security of telemedicine platforms, clinicians are directed to ask the platform vendors for a security conformance statement. Some vendors have this already prepared and contains some of the following elements:

- Web application security practices
- Data center and infrastructure practices

There are many features that vendors provide for the use of their telemedicine platforms but the following are important technical safeguards that must be present in any telemedicine platform or

app to ensure that physicians are able to provide the appropriate healthcare to their patients in a safe and secure environment (Mussman, 2016; Iafolla, 2020):

- Restriction of health information access to those who are authorized ("authorized" persons who are given access is clearly defined)
- A clearly outlined scheme for screening and confirming the identity of requests for access to confidential health information data (i.e., police clearance, court request)
- Secure, encrypted communication
- Mechanism to monitor communications that contain health information
- Corroborate data to ensure its integrity
- Presence of disaster recovery measure of health information
- Protection measures against inappropriate physical access to protected data
- Availability of technical support and their terms and conditions
- Availability of training or implementation support

Lacking full knowledge of IT security, the clinicians are directed to request for these security conformance statements from the vendors. Alternatively, the clinicians may also require the vendor to fill up the Google Vendor Security Assessment Questionnaire (VSAQ) accessible at https://vsaq-demo.withgoogle.com/.

Because telemedicine entails the middling service provider (vendor), it is not an exclusive privileged clinical encounter by the patients and their doctor. Hence there is inherent difficulty when it comes to the protection of sensitive and private information. It is, therefore, important to take the following considerations in selecting a telemedicine platform (Kubicki, 2020):

- Clearly stated types of health information that the vendor can access, and whether that is for the purpose of reporting, for analytics, or even for submission as per court request for evidence to legal proceedings
- Clearly stated measures that the vendor take to protect such health information from security breach
- Clearly stated actions that the vendor will take in the event that a security breach ensues

In compliance with local regulations, service providers must comply with the terms set forth within the Data Privacy Act of 2012. Both healthcare providers and patients must be made fully aware of and consent obtained to allow the collection and use of health information for the terms declared by the vendor (Republic of the Philippines, 2012).

Customer Service and Usability

Strategically engaging stakeholders or the users will maximize the impact of telehealth. A variety of source materials should be available from the vendor (or developed with the healthcare providers) to support different learning styles. Value-adds such as these make a big difference. (AMA Telehealth Playbook, 2020)

Telemedicine is a new way of interaction with patients. The usability of the platform to be translatable to the clinic/hospital workflow is vital. Technology may be tested with a patient advocate, a member of the patient advisory board or staff member who is not familiar with the project. Technology may be too complex if test users cannot operate the program on their own without the help of vendor training. Having an IT care team host practice sessions with those less tech savviness can help the users achieve the best outcomes. (AMA Telehealth Playbook, 2020)

Clinical Validation

Focusing on the key success goals or relevant data points will allow the healthcare provider or the institution/organization to determine whether they have achieved success. If goals have not yet been achieved, it should be determined if this is due to an issue with telehealth technology, patient engagement or the organizational implementation. Then, opportunities to restructure the program must be sought for improvement. If the program is successful, it can be scaled or expanded for greater impact. (AMA Telehealth Playbook, 2020)

Telemedicine vendors may provide metrics such as number of telehealth visits, call durations, utilization rates. However, it is up to the healthcare provider or its institution to use this to correlate this with other variables such as reduction in no-shows, clinical outcomes, patient/staff satisfaction, or compliance with treatment. Evaluation beyond the number of visits ensures that metrics provide a holistic picture of patient and clinician experience, operational efficiencies and costs. (AMA Telehealth Playbook, 2020)

2. How can a telemedicine platform or app be assessed?

Assessment of a Telemedicine Vendor / Provider	
Business Information	• What is the company category – Clinical Decision Support, Big Data, Analytics, or Telemedicine alone or with EHR Interoperability? • What is the company's main value proposition? • What is the total cost of using this platform (i.e., subscription fees, equipment and set-up, training, customization, maintenance)? • Can the platform help me / my organization realize my / our goals for implementing a telehealth service? • What other sources of additional information are available (i.e., executive summary, pitch deck, demo video)?
Technology	**Hardware** • How well does it operate with the current IT network and speed? (How long does it take for the platform to load?) • Does it support HD audio or video? • If I use its video call function, is it able to provide continuous video streaming? • Can the platform be run on different devices (i.e., iOS, Android, how about browser differences)?
	Software • Can it directly integrate with a new EHR or be interoperable with a pre-existing EHR? • Can you customize the platform to fit your needs? (organizations will have specific needs, hence flexibility to customize the software or program is important) • What modes of communication does it support (i.e., email, chat, voice calls, video calls)?

	• Does it have other features that are beneficial (i.e., ePrescription, scheduling, billing, consent)? • Does the platform use device storage or is it cloud-based? • Does the platform store information (i.e., text, video, audio)?

Security / Privacy	• Is data collection in compliance with the currently existing data privacy law?
	   ○ Who else owns or will have access to the patient's data?
	   ○ Is it collected and/or shared in a hub or repository?
	   ○ Is it sold, used for marketing, or used to generate revenue or train new algorithms?
	• Is there user authentication and authorization?
	• Are there processes in place for updates, security patches and maintenance?
	• Does it provide a high level of data security (i.e., encryption, DPA compliance, signed BAA)?
	• Are there measures to mitigate cyberthreats?

	Physician-Facing concerns:	**Patient-Facing concerns:**
	• How will the platform ensure the patient's privacy and confidentiality of information? • What options are available to export patient data if I choose to discontinue using your telehealth technology service?	• Are patients able to provide consent through the platform before each visit? • Do patients have access to their personal data? • If patients have privacy and security questions, who should they contact?

Customer Service	• Is there technical support for both physicians and patients? • Is the vendor able to provide quality service for their technical support? • Do they have a content program that offers information on news and best practices in the telemedicine field, even after launch?
Usability	• Is the platform interface user-friendly? ○ Is it intuitive or easy to use for the doctor and the patient? • Does the platform allow teleconsults with multiple specialty physicians? • Are there billing features for patients/clinicians (i.e., autofilling CF4 form of Philhealth, support for HMO claims)?
Clinical Validation	• Does the platform allow recording and analysis of clinical outcomes? • Can the telehealth visit data be analyzed? (to refine, adjust, and allocate future resources, as well as support the academic advancement by contributing data for research)

Adapted from the AMA Telehealth Playbook (2020); Mussman (2016); Sime (2018); Iafolla (2020)

Local telemedicine vendors were asked to answer a self-assessment questionnaire from the AMA Telehealth Playbook. The survey results will be reported once complete.

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APPENDIX A. Telemedicine Platforms in the Philippine Setting

In a survey conducted among physicians in the Philippines, two questions were asked regarding their preferences in selecting a telemedicine platform. The first question asked what are their considerations in selecting a telemedicine platform [see Table 1]. Physicians were given a list of 18 features and functionalities of telemedicine platforms and asked to rank their level of importance to them when choosing a telemedicine platform: (1) not important at all, (2) somewhat unimportant, (3) neither important nor unimportant, (4) somewhat important, and (5) very important. The top three responses that physicians consider of great importance in selecting a telemedicine platform is privacy and confidentiality of information, platform is secure, and complies with Data Privacy Act (DPA). Of the 152 physician respondents, 142 listed privacy and confidentiality of information as very important. 140 listed platform is secure as very important, and 136 responded complies with Data Privacy Act (DPA) as very important.

The second question asked physicians to assess the level of importance of ten (10) basic features of telemedicine platforms in their practice [see Table 2]. The top three responses that physicians consider very important in their practice are Allows for obtaining my patient's consent before a teleconsult (116 responses), ePrescription functionality (113 responses), and browser compatibility (107 responses).

Table 1. Physicians Responses to Considerations in Selecting a Telemedicine Platform in the Philippines, 2020 (n=152)

Considerations in selecting a Telemedicine App / Platform	(1) Not Important at all	(2) Somewhat unimportant	(3) Neither important nor unimportant	(4) Somewhat important	(5) Very important
User-friendly interface	0	1	1	20	130
Customizable features	1	2	10	65	74
Allows for obtaining my patient's consent before a teleconsult	1	0	5	30	116
Tech support for both patient and physician	1	2	4	21	124
Compatibility with different platforms (i.e., computer, mobile iOS and android)	1	0	5	19	127
Privacy and confidentiality of information	0	0	1	9	142
Platform is secure (i.e., end-to-end encrypted)	0	0	1	11	140
Ability to export my patient's data (i.e., as an excel file)	1	2	14	45	90
Ability to record teleconsults in my preferred format (i.e., clinic notes, audio, video)	1	0	21	52	78
App may be run without software installation (i.e., on browser)	1	3	24	55	69
Cost of using the app / platform	0	1	5	31	115
Video quality	0	0	8	42	102
Audio quality	0	2	4	23	123
Complies with Data Privacy Act (DPA)	0	0	3	13	136
Can be integrated into an Electronic Health Record (EHR)	1	1	9	47	94
Ability to set appointments through the app/platform	2	2	7	43	98
Billing and payment can be done through the app / platform	3	0	12	34	103
ePrescription functionality	1	1	6	22	122

Table 2. Physicians Responses to Telemedicine Features the consider important, 2020 (n=152)

Telemedicine app/platform Features	(1) Not Important at all	(2) Somewhat unimportant	(3) Neither important nor unimportant	(4) Somewhat important	(5) Very important
Allows for obtaining my patient's consent before a teleconsult	1	2	5	28	116
Export feature for my patient's data (i.e., as an excel file)	1	5	11	53	82
Ability to record teleconsults in my preferred format (i.e., clinic notes, audio, video)	1	3	16	51	81
Browser compatibility	0	3	6	36	107
HD Video	1	2	12	60	77
HD Audio	1	2	12	47	90
Electronic Health Record (EHR) Integration	1	4	6	59	82
Appointment setting through the app/platform	2	2	7	46	95
Billing and payment can be done through the app / platform	3	2	13	34	100
ePrescription functionality	1	2	8	28	113