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Asynchronous Healthcare Definitions and Use Cases

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What is Asynchronous Healthcare?

"Asynchronous Healthcare" means an exchange of information that does not occur in real-time involving the secure collection and transmission of a patient's medical information, education, and resources to support families or clinicians/providers including, but not limited to:

- clinical data (e.g., clinical images, laboratory results, remote monitoring)
- self-reported medical history/information
- provider to provider consultations
- peer support
- patient instructions, education, and decision aids

When should Asynchronous Healthcare be utilized?

The use of Asynchronous Healthcare should be left to the provider's discretion, in consultation with the patient and or caregiver, so long as it meets the standard of care. The use cases outlined below are a few examples of how async healthcare can be utilized.

What are some of the different types of Asynchronous technologies?

- **Intake forms** – Digital version of pre-visit questions, which could cover, for example, demographics or insurance coverage.

- **Static digital interviews** – A series of questions in a predetermined order. This can be used to collect information in advance of a visit, but cannot be used to suggest diagnosis and treatment, provide clinical decision support, and does not significantly impact provider work time.

- **Adaptive digital interviews** – A series of questions that adapt based on patient responses. These adaptive interviews can be based on clinical logic and decision making, meaning that they can suggest a diagnosis and treatment plan, provide advanced clinical decision support, and significantly decrease provider work time. In some applications the discrete data provided by the patient can be constructed into clinical SOAP style notes further decreasing administrative burden.

- **Hybrid visits** – Augmented in-person or video visits using asynchronous intake forms (static or adaptive) to reduce intake time and provider documentation. Hybrid visits also provide an experience that meets modern consumer expectations while offering providers flexible options for following up with patients.

- **Remote patient monitoring & diagnostics updating** – Patients can provide self-measured diagnostics (temperature, pain level, mobility, etc.) or images asynchronously to their provider.

- **Consultations** – Asynchronous communication when consulting with specialists and other physicians. Consultations can be used to share photos, compare findings, and more.
- **Interactive patient education** that enables teams to assign or e-prescribe videos, interactive multimedia, pdfs and other resources to educate patients and families, to document education or the informed consent process, or collect patient goals and preferences.

Acute Conditions

A college student suspects she may have a UTI. She accesses asynchronous care offered by her local health system, urgent care chain, or direct to consumer healthcare company. It takes her 3 minutes to set up an account and 6 minutes to answer clinically appropriate questions that adapt as she inputs her symptoms. Ten minutes after she's submitted her responses a provider responds to her confirming she has a UTI and includes a treatment plan and any relevant medications for her to pick up at her preferred pharmacy.

Surgery

A man in his early 60s and a smoker had chronic lower back pain and was not doing well in physical therapy. His surgeon suggested lumbar fusion surgery. Prior to the surgery he was required to watch an interactive decision aid (also called an interactive video), about chronic lower back pain, its relationship to depression/smoking, and the various surgical and non-surgical options. This interactive video could be watched in the comfort of his home with family on any internet device. The doctor could see when his patient completed the video, and if the man/family/partner had any questions that were not answered in the video they could put them into the platform and the doctor would follow up. After viewing the video, the man understood that there was a correlation between smoking, depression, and chronic lower back pain. The man decided he needed to seek help for his depression and stop smoking. He decided to pursue these treatments before moving forward with the invasive, high-risk surgery.

Behavioral Health

A patient logged onto the portal and created an account (their own 'medical record'). The patient completed an assessment, which included clinical data from medical, developmental, psychiatric, educational, work, drug and alcohol, and legal history, as well as mental health history and current mental health symptoms; this assessment took a little more than an hour. The assessment was an adaptive form, which means the questions the patient was asked change based on each of the patient's responses as they proceeded through the assessment. The completed

assessment was sent to a psychologist for review, and the psychologist made a diagnosis and sent recommendations back to the patient. If needed, the psychologist could have emailed or used messaging through patient support team (synchronously). Most models are decoupled between assessment and synchronous medical treatment.

Dermatology

A patient sent a picture of her arms from her iPhone to the Dermatologist. The Dermatologist received the photo and evaluated it on his/her own schedule. The doctor noticed the patient had dry, cracked, scaly skin and redness. The doctor diagnosed the patient with eczema and provided a few over-the-counter treatment suggestions.

Asynchronous care in dermatology uses still photography to document the condition in question. While video may not produce crisp images, most smartphone cameras provide detailed photographs sufficient for diagnostic purposes. These photographs, combined with a platform offering care continuity, store-and-forward technology involving detailed patient intake and photo records, provide an excellent diagnostic environment, creating an ongoing record of disease progression or regression. Alongside photographs, written patient accounts of the severity of disease, symptoms, and mitigation efforts offer a more complete view of the history of the condition and may illuminate better options for treatment going forward.

Chronic

A patient's blood sugar data, collected electronically through his/her Bluetooth-enabled glucometer, are automatically uploaded into the device company's cloud. Once in the cloud, the data can be collated into graphs or trend charts. This will facilitate the interpretation of the data and therefore the providers' decision making, and ultimately can make the office visit or other provider interactions more efficient. The data are reviewed by the patient's care manager, an RN, within one business day.

Prescription Refills

A patient can log onto a virtual care platform and request a refill of a needed medicine. After providing specific information and a review by a provider, the refill can be provided. This is helpful for those who are new to an area or who are traveling, those who are without primary care, or patients unable to see their provider in person.

Published by the American Telemedicine Association

Async Telehealth Special Interest Group

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