

Shared Decision Making and Patient Empowerment in the Digital Age: A Conversation Between a Clinician and Patient Advocate (2-Part Series)

Patient Engagement Through Technology

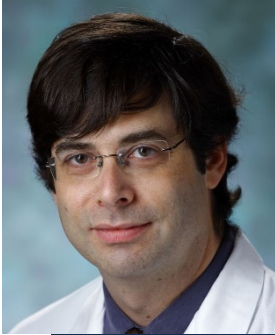
Adam Kaplin, MD, PhD

Chief Scientific Officer
MyMD Pharmaceuticals
Baltimore, MD

Kathy Day, MPA, BA, AA

President
Pro Caregiver Consultants
Folsom, CA

Our Featured Speakers



Adam Kaplin, MD, PhD
Chief Scientific Officer
MyMD Pharmaceuticals

Dr. Kaplin completed his undergraduate training at Yale University and his MD and PhD training at the Johns Hopkins School of Medicine. He was the Chief Psychiatric Consultant to the Johns Hopkins Multiple Sclerosis and Transverse Myelitis Centers. Dr. Kaplin's research is focused on understanding the biological basis of depression and dementia and discovering new ways to diagnose, prognosticate, and treat these diseases. Recently, he has transitioned to working in the pharmaceutical industry as the Chief Scientific Officer of MyMD Pharmaceuticals, which is developing first-in-class therapeutics for a range of autoimmune diseases and immune-mediated neuropsychiatric illnesses. He is now Adjunct Faculty at Johns Hopkins School of Medicine.



Kathy Day, MPA, BA, AA
President
Pro Caregiver Consultants

Kathy Day, MPA, earned her BA in Legal Studies and her Masters in Public Administration from Brandman University. She is the founder and President of Pro Caregiver Consultants, a non-profit organization dedicated to providing hope and resources to families whose loved ones have serious psychiatric brain illnesses. She is a family member who has been very active in her loved one's care. Kathy has been active in legislative reform at the local, state, and federal levels and runs support groups on social media. She is the Patient and Caregiver Section Advisor for PsychU and frequently participates in webinars and group meetings to educate attendees on the value of family member inclusion in the treatment plan.

PsychU Webinar Rules Of Engagement

Otsuka Pharmaceutical Development & Commercialization, Inc. (OPDC) and Lundbeck, LLC. have entered into collaboration with *OPEN MINDS*, to explore new ways of bringing/increasing awareness around serious mental illness.

OPDC/Lundbeck's interaction with *OPEN MINDS* is through PsychU, an online, non-branded portal dedicated to providing information and resources on important disease state and care delivery topics related to mental illness. One of the methods employed for the sharing of information will be the hosting of webinars. Webinars conducted by OPDC/Lundbeck are based on the following parameters:

When conducting medical dialogue, whether by presentation or debate, OPDC/Lundbeck and/or its paid consultants aim to provide the viewer with information that is accurate, not misleading, scientifically rigorous, and does not promote OPDC/Lundbeck products.

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**Suicide Prevention
Hotline/Lifeline
1-800-273-TALK(8255)**

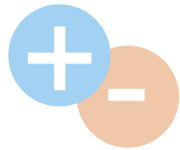
Or text:

**Crisis Text Line
741-741**

Objectives



Introduce tools available to facilitate shared decision making and patient empowerment

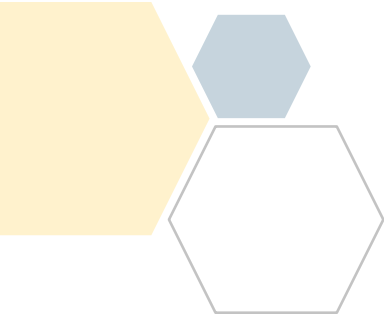


Review the pros and cons of using technology to facilitate patient engagement



Discuss the impact of technology on patient engagement from the perspectives of a clinician and patient advocate

Overview of Tools for Facilitating Patient Empowerment



Patient Empowerment and Mobile Mental Health

- Mobile health apps can facilitate shared decision making, increase satisfaction with care, improve adherence, and empower patients^{1,2}
- There are >10,000 mental health apps, which can³:
 - Track symptoms³
 - Educate³
 - Provide adjunctive therapy³
 - Remind about medications²
 - Identify signs of relapse, prompting clinical intervention²
 - Facilitate shared decision making⁴

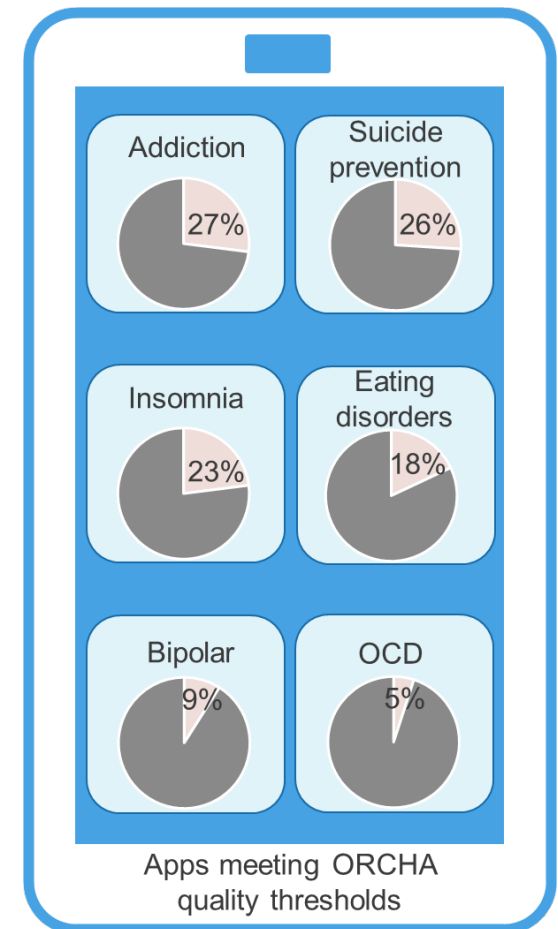


1. Rahimi SA et al. *Glob Health Action*. 2017;10(suppl 3):1332259.
2. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020; 18(4):424–427.

3. Hasselberg MJ. *J Am Psychiatr Nurses Assoc*. 2020; 26(1):102–111.
4. Chapman L et al. *JMIR Res Protoc*. 2017; 6(10):e206.

Pros and Cons of Mobile Mental Health

- Pros to app use:
 - Apps can educate patients¹
 - They can be used from home²
 - They may improve treatment adherence²
- Cons to app use:
 - Apps are not closely regulated¹
 - They may have issues with data security¹
 - Their quality is variable: ORCHA reviewed 584 mental health apps and found the majority (70.4%) did not meet quality thresholds³








OCD, obsessive-compulsive disorder; ORCHA, Organisation for the Review of Care and Health Apps

1. Hasselberg MJ. *J Am Psychiatr Nurses Assoc.* 2020; 26(1):102–111.

2. Rahimi SA et al. *Glob Health Action.* 2017;10(suppl 3):1332259.

3. ORCHA. What is the Health of Mental Health Apps? 2020, <https://orchahealth.com/health-of-mental-health-apps>. Accessed June 21, 2021.

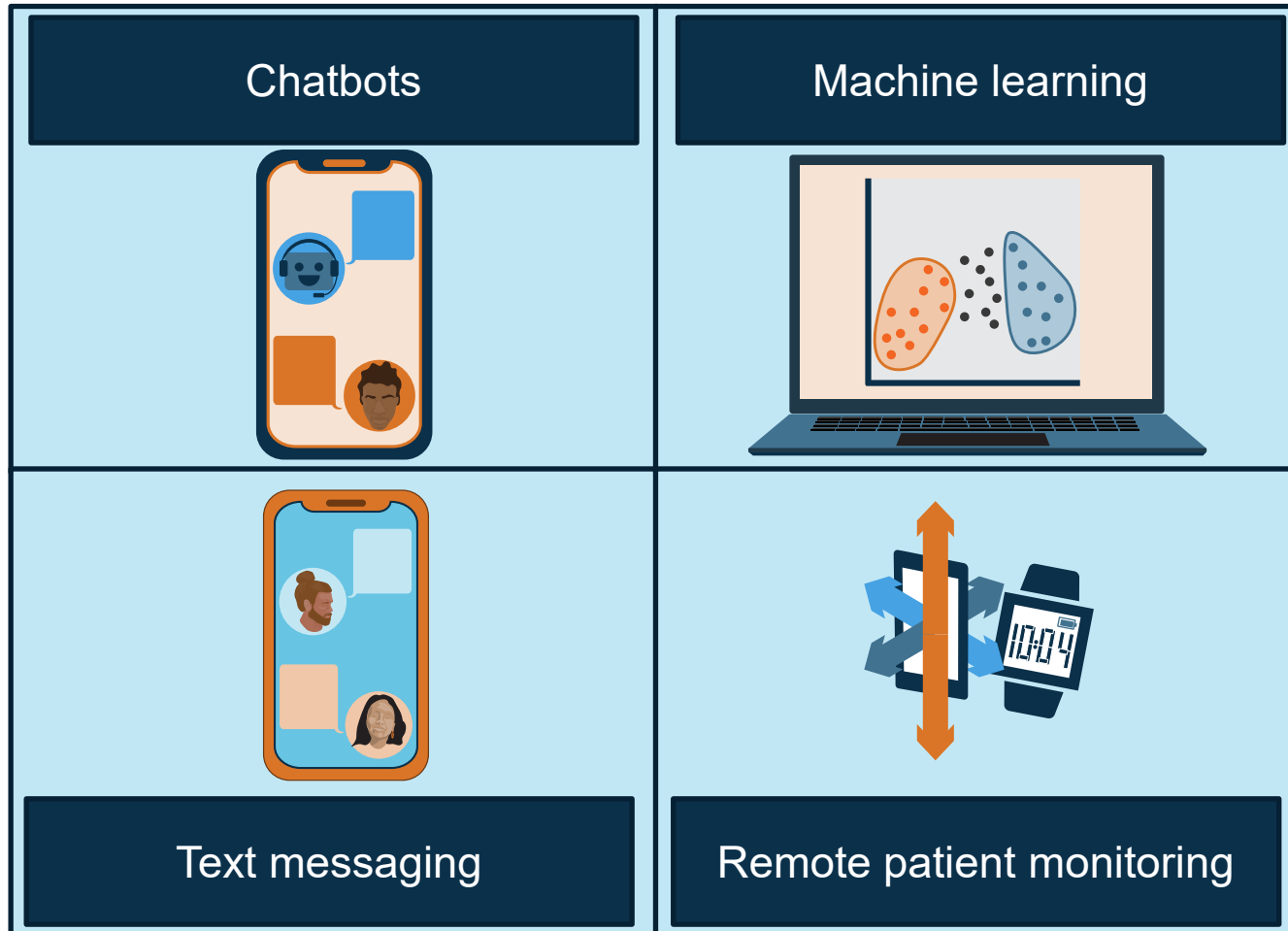
Examples of Tools and Organizations that Evaluate Mental Health Apps

MARS ¹	ORCHA ²	PsyberGuide ³	mHealth App Trustworthiness checklist ⁴	APA App Advisor ⁵
<p>Rates app on:</p> <ul style="list-style-type: none"> Engagement Functionality Aesthetics Information quality Subjective quality 	<p>Rates app on:</p> <ul style="list-style-type: none"> Clinical assurance Data privacy User experience 	<p>Rates app on:</p> <ul style="list-style-type: none"> Credibility based on evidence User experience (via MARS) Transparency Expert reviews 	<p>Rates app on:</p> <ul style="list-style-type: none"> Informational content Organizational attributes Societal influence Technology-related features User control 	<p>Rates app on:</p> <ul style="list-style-type: none"> Privacy and security Clinical foundation and evidence Usability Data sharing and integration with therapeutic goal
				

APA, American Psychiatric Association; ETH, Eidgenössische Technische Hochschule; MARS, mobile app rating scale; ORCHA, Organisation for the Review of Care and Health Apps; QUT, Queensland University of Technology.

1. Stoyanov SR et al. *JMIR Mhealth Uhealth*. 2015;3:e27.
2. ORCHA. What is the Health of Mental Health Apps? 2020, <https://orchhealth.com/health-of-mental-health-apps>. Accessed June 21, 2021.
3. Neary M, Schueller SM. *Cognitive and Behavioral Practice*. 2018;25(4):531–537.
4. van Haasteren A et al. *Digit Health*. 2019;5:1:21.
5. American Psychiatric Association. The App Evaluation Model. 2021. <https://www.psychiatry.org/psychiatrists/practice/mental-health-apps/the-app-evaluation-model>. Accessed 24 June, 2021.

Examples of Other Digital Tools

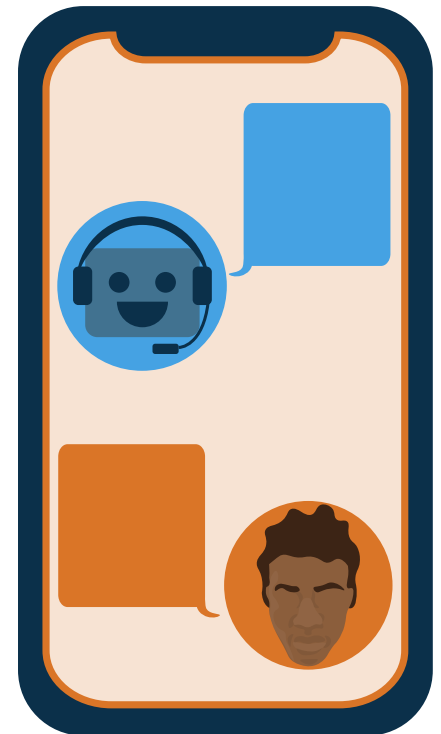


Chatbots

Chatbots are automated technologies that enable communication between humans and computers in natural language¹

Chatbots can be used to:²

- Perform guided self-assessment (on depression, anxiety, stress, sleep, etc)
- Track assessment scores over time and view progress
- Provide personalized links to self-help resources
- Talk with a virtual therapist
- Keep a mood diary



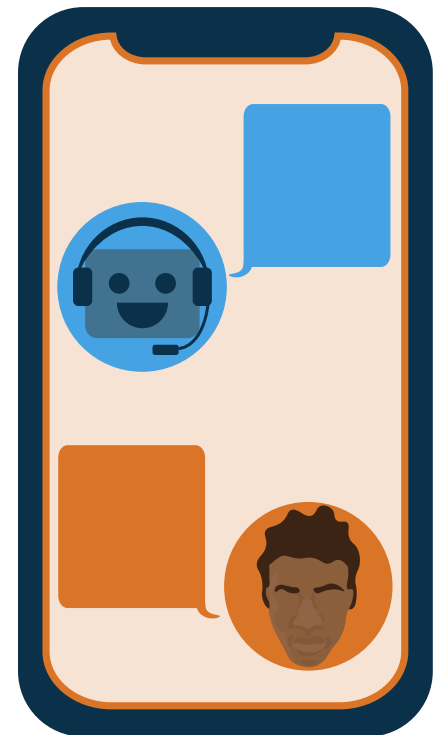
1. Chaudhary J et al. *Int Res J Eng Technol*. 2021; 8(2):1241–1246.

2. Cameron G et al. Best Practices for Designing Chatbots in Mental Healthcare—A Case Study on iHelp. Proceedings of the 32nd International BCS Human Computer Interaction Conference (HCI). 4 - 6 July 2018. DOI: 10.14236/ewic/HCI2018.129.

Chatbots

Pros: give instant access 24/7, provide anonymity for the user, can help with waitlists, improve access, engage youth

Cons: their conversation is artificial and unsophisticated, they are unable to fully replicate human empathy



Cameron G et al. Best Practices for Designing Chatbots in Mental Healthcare—A Case Study on iHelpr. Proceedings of the 32nd International BCS Human Computer Interaction Conference (HCI). 4–6 July 2018. DOI: 10.14236/ewic/HCI2018.129

Machine Learning

Machine learning uses computers to create algorithms that detect patterns in large data sets

Examples of machine learning as applied to mental health include using it to analyze:

- EEG data to better understand mental health conditions such as which parts of the brain are different in depression
- Genome-wide data to identify genetic risk factors for mental illness
- Voice and video data to identify mental health status
- Social media data to evaluate stress, depression, and suicide risk
- EHRs to predict outcomes such as risk of suicide



EEG, electroencephalogram; EHRs, electronic health records
Su C et al. *Transl Psychiatry*. 2020; 10(1):116.

Machine Learning

Can be used for personalizing mental health treatment. For example, researchers:

1. Obtain patient symptom data from a large clinical trial
2. Have the computer identify clusters of symptoms
3. Pool data from many large trials
4. Test in the pooled data if the newly-defined symptom clusters respond differently to treatments
5. Predict how patients with a specific cluster of symptoms will respond to treatment



Chekroud A et al. *JAMA Psychiatry*. 2017; 74(4):370–378.

Machine Learning

PROS

- Increases understanding of complex data¹
- Helps with clinical decision-making¹
- May improve clinical outcomes²
- Can categorize symptoms into subgroups responding to different treatments in a way that is easy to visualize²

CONS

- Currently has modest prediction ability²
- May group symptoms in a complicated way²
- The inner workings of the model are opaque (we don't know *why* it works)³
- Allows for researcher bias with some approaches (specifying how many clusters)²
- Requires large data sets¹
- Is affected by misdiagnosis of patients, since quality of the algorithm is determined by the accuracy of the data¹

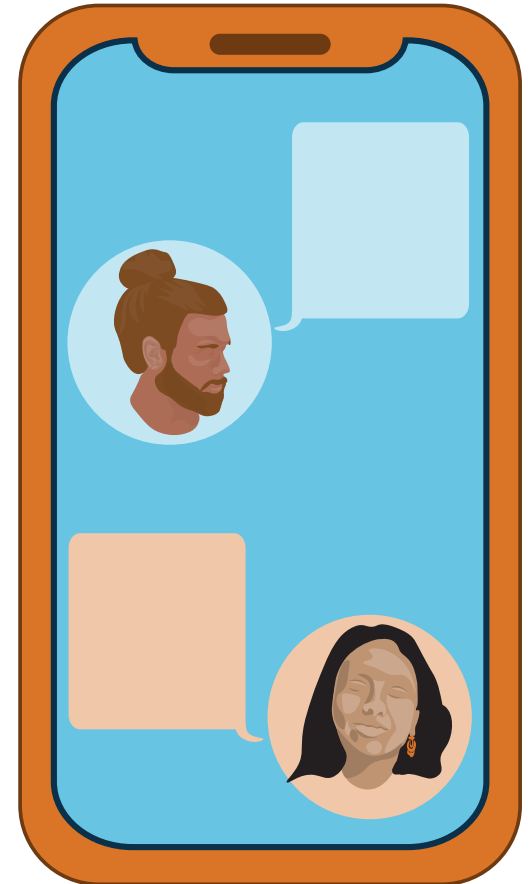
1. Su C et al. *Transl Psychiatry*. 2020; 10(1):116.
2. Chekroud A et al. *JAMA Psychiatry*. 2017; 74(4):370–378.

3. Vellido. *Neural Computing and Applications*. 2020; 32:18069–18083.

Text Messaging

Text messaging can be automated or manual, and used to:

- Remind patients to take medication and attend appointments¹
- Facilitate communication with a mental health professional²
- Can be combined with other treatments to increase efficacy³



1. D'Arcey J et al. *JMIR Ment Health*. 2020; 7(4):e16993.
2. McCall T et al. *JMIR Ment Health*. 2020; 7(2):e15801.

3. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020; 18(4):424–427.

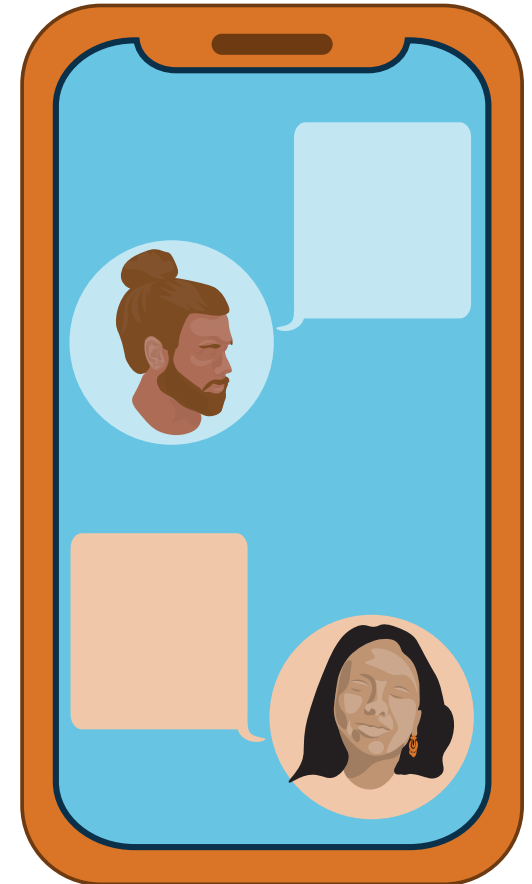
Text Messaging

Pros¹

- Increases appointment attendance
- Is safe and well-tolerated by individuals with psychosis
- Strengthens relationship with therapists when used adjunctively (improves availability)
- Improves medication adherence

Cons^{1,2}

- Need to develop safety protocols
- Some patients are concerned about issues of privacy and confidentiality
- Can feel impersonal



1. D'Arcey J et al. *JMIR Ment Health*. 2020; 7(4):e16993.
2. McCall T et al. *JMIR Ment Health*. 2020; 7(2):e15801.

Remote Patient Monitoring

- Patients can opt into remote monitoring via technologies like smartphones, smartwatches, holter monitors, and actigraphs (which measure movement, steps, sleep-wake patterns, activity cycles)¹
- Real-time data collection is more accurate than recall¹ or back-filling²
- Remote patient monitoring can be used to predict relapse¹
- Factors such as active screen time, activity, and geographic movement (from cell tower data) are linked to depression severity¹



mobile phones



actigraphs



electrocardiograms



GPS



microphones



accelerometers

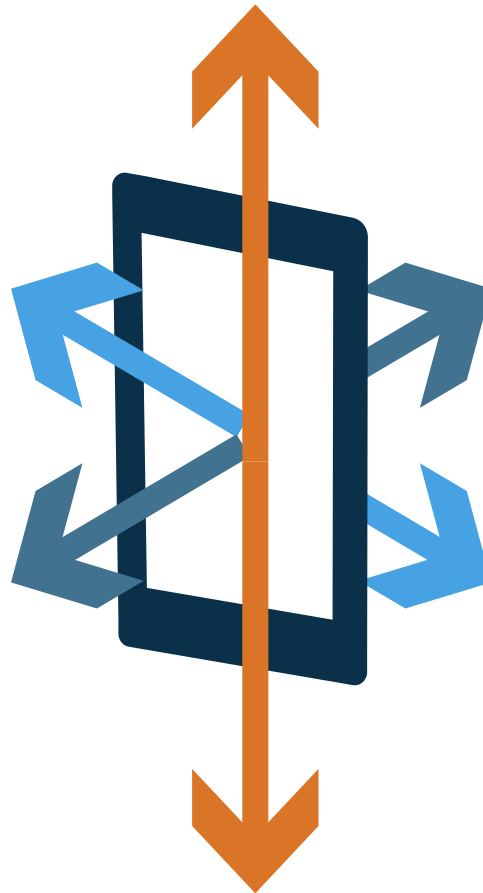
1. Hilty DM et al. *J Technol Behav Sci.* 2021; 1–26.

2. Ladores S and Bray LA. *J Nursing Practice Applications & Reviews of Research.* 2017; 7(2): 13–21.

Remote Patient Monitoring

PROS

- Makes care more patient-centered
- Can collect data constantly rather than just at an appointment
- Enables real-time feedback and clinical decisions
- Collects data in natural settings



CONS

- Raises privacy issues (third party access to data)
- Poses threats to data security
- Could compromise anonymity (with enough data, a person *could* be identifiable)
- Can be limited by sensor precision (could be less accurate than gold standard)

Hilty DM et al. *J Technol Behav Sci.* 2021; 1–26.

Pros and Cons of Using Technology to Facilitate Patient Engagement

Pros of Using Technology to Facilitate Patient Engagement

- + Increases access to medical information, empowering patients¹
- + Allows better visualization, which can improve patient understanding and facilitate informed consent¹
- + Can reduce hospitalizations and costs²
- + Can expediate updates (eg, digital decision aids can be updated faster than paper ones¹)
- + Helps decrease stigma by enabling discrete treatment²
- + Can help patients feel safer, accessing treatment via technology from their own homes²
- + Is of interest to many patients, who would like to use their phones for reminder texts, symptom monitoring, and check-ins³
- + Lessens barriers for those with difficulty traveling to in-person care^{1,2}

1. Rahimi SA et al. *Glob Health Action*. 2017;10(suppl 3):1332259.

2. Hasselberg MJ. *J Am Psychiatr Nurses Assoc*. 2020; 26(1):102–111.

3. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020; 18(4):424–427.

Cons of Using Technology to Facilitate Patient Engagement

- May increase suspiciousness in some patients¹
- Is not closely regulated by the FDA²
- Has issues with usability and engagement (patients may use it just once)²
- Raises concerns about the safety and privacy of personal data²
- Could degrade quality of the patient-provider relationship if technology is used to replace time spent with patients³
- Is not of interest to or as effective in all patients¹

FDA; Food and Drug Administration

1. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020; 18(4):424–427.

2. Hasselberg MJ. *J Am Psychiatr Nurses Assoc*. 2020; 26(1):102–111.

3. Rahimi SA et al. *Glob Health Action*. 2017;10(suppl 3):1332259.

Discussion: Impact of Technology on Patient Engagement

Can you give examples of technology you have used for facilitating patient empowerment?



How do you use synchronous versus asynchronous tools?



Do you have any advice
for those considering
using technology for
shared decision making?



Have apps improved the shared decision making process?



Questions

Closing

**Part 1 of this webinar series took place on November 16th:
“Shared Decision Making and the Use of Digital Tools.”
You can find it on PsychU if you are interested in learning more.**