Defining, Clarifying, and Implementing Digital Health Tools

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1-800-273-TALK(8255)

Or text:

Crisis Text Line

741-741

Dial 988

Objectives

Define digital health tools

→

Clarify the application of digital tools in mental health treatment

→

Outline the implementation of digital tools in clinical practice

Define Digital Health Tools

Prevalence of Mental Illness in the US

52.9 million US adults (**21.0%**) had a mental illness in 2020[1]

Only **46.2%** of those with a mental illness received mental health services in 2020[1]

In 2020, **~21.0 million** adults (**8.4%**) had ≥ 1 major depressive episode[2]

US, United States.
1. National Institute of Mental Health. Mental Illness. Jan 2022. https://www.nimh.nih.gov/health/statistics/mental-illness. Accessed May 27, 2022.
2. National Institute of Mental Health. Major Depression. Jan 2022. https://www.nimh.nih.gov/health/statistics/major-depression. Accessed May 27, 2022.

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Access to Adequate Mental Health Treatment Is Insufficient; Digital Tools Can Help

Patients experience many barriers to accessing mental health care[1–8]

Digital tools can improve access to mental health care[2,6,9,10–15]

Provider access

Tracking

Time

Stigma

Engagement

Financial

1. Ofonedu ME et al. *J Child Fam Stud*. 2017;26(3):863–876.
2. Mongelli F et al. *Focus (Am Psychiatr Publ)*. 2020;18(1):16–24.
3. Andrilla CHA et al. *Am J Prev Med*. 2018;54(6 Suppl 3):S199-S207.
4. Khalifeh AH et al. *J Psychosoc Nurs Ment Health Serv*. 2021;59(1):39–51.
5. Arnaez JM et al. *J Ment Health*. 2020;29(2):182–190.
6. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020;18(4):424–427.
7. Saxon V et al. *J Ment Health Clin Psychol*. 2018;2(3):23–26.
8. Wakida EK et al. *Syst Rev*. 2018;28;7(1):211.
9. Toll ET et al. *JAMIA Open*. 2019;2(3):282-290.
10. Larrison CR et al. *J Behav Health Serv Res*. 2018;45(1):133–142.
11. Torous J et al. *J Technol Behav Sci*. 2019;4:73–85.
12. Patel NA and Butte AJ. *NPJ Digit Med*. 2020;3:159.
13. Dang A et al. *J Fam Med Prim Care*. 2020;9:2207–2213.
14. Friis-Healy et al. *JMIR Ment Health*. 2021;8(1):e25456.
15. Powell AC et al. *BJPsych Open*. 2020;6(2):e16.

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Digital Solutions in the US

	Digital Health	Digital Medicine	DTx	
			Nonprescription DTx	Prescription DTx (PDT)
Definition	All technologies that engage patients in their health and well-being (eg, smart devices, telehealth, wearables, apps)[1]	Evidence-based technologies to measure and intervene in the service of human health (eg, remote patient monitoring devices, digital diagnostics, digital biomarkers)[1,2]	Evidence-based therapeutic interventions (driven by software) to manage a medical condition (eg, apps, digital sensors, games to improve behavioral functioning)[1–4]	Evidence-based therapeutic interventions (driven by software) to manage or treat a medical condition (eg, apps, digital sensors, games to improve behavioral functioning)[1–4]
Regulatory Oversight	Not subject to FDA review[4]	FDA review/approval depends on product[4,5]	Subject to regulation by the FDA[1,5]	Regulated and cleared by the FDA[1,5]
Clinical Evidence	Not required[4]	Required[4]	Required[1,4,5]	Required[1,4,5]

DTx, digital therapeutics; FDA, Food and Drug Administration, PDT, prescription digital therapeutic; US, United States.

1. Dang A, et al. *J Family Med Prim Care*. 2020;9(5):2207–2213.
2. Coravos A, et al. *Digit Biomark*. 2019;3:31–71.
3. Chung JY. *Transl Clin Pharmacol*. 2019;27(1):6–11.
4. Digital Therapeutics Alliance. Digital Health Industry Categorization. Nov 2019. https://dtxalliance.org/wp-content/uploads/2019/11/DTA_Digital-Industry-Categorization_Nov19.pdf. Accessed May 26, 2022.
5. Hong JS, et al. *Comput Methods Programs Biomed*. 2021; 209:106319.

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Clarify the Application of Digital Tools in Mental Health Treatment

Digital Health Tools From the HCP's Perspective

Digital tools can factor into a patient's mental health care plan in several ways[1–11]

Diagnostics

Examples include:

- Computer tablet at a clinic visit to screen patients for suicidal thoughts[1]

- Wearables-derived data associated with cardiovascular risk markers[2]
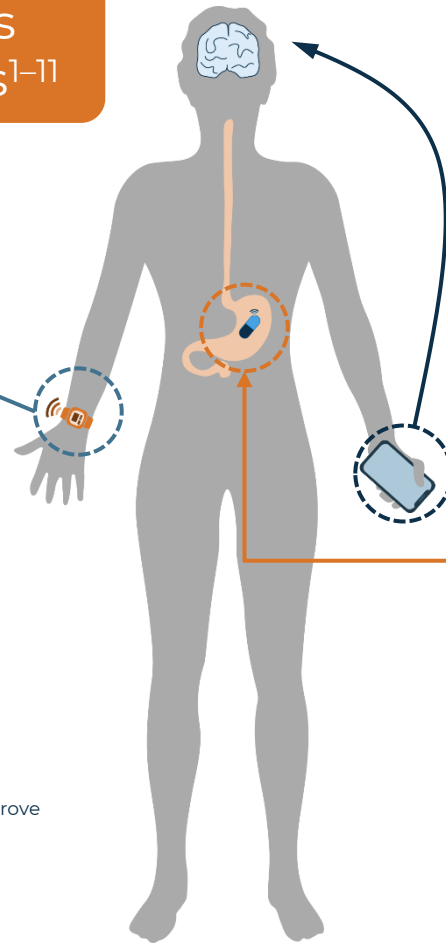
Therapeutics

Examples include:

- CBT for patients with chronic insomnia[3]

- Video game-based treatment for children with ADHD[4]

Monitoring

Examples include:

- Electronic health records to coordinate care[1]

- Pills with embedded electronic sensors that detect when a pill was ingested[5]

- Smartphone apps for patients to self-record mood and energy levels[6]

ADHD, attention-deficit/hyperactivity disorder; CBT, cognitive behavioral therapy; FDA, Food and Drug Administration; GPS, global positioning system; HCP, health care provider.

1. Falconer E et al. *Neuropsychiatr Dis Treat*. 2018;14:2337–2349.
2. Zhou W et al. *J Med Internet Res*. 2022;24(7):e34669.
3. Morin CM. *Expert Rev Med Devices*. 2020;17(12):1239–1248.
4. FDA News Release. FDA Permits Marketing of First Game-Based Digital Therapeutic to Improve Attention Function in Children with ADHD. June 15, 2020.
5. Aldeer A et al. *Applied System Innovation*. 2018;1:14.
6. Rajagopalan A et al. *Brain Sci*. 2017;7:150.
7. Dang A, et al. *J Family Med Prim Care*. 2020;9(5):2207–2213.
8. Hilty DM et al. *J Technol Behav Sci*. 2021:1-26.
9. Umbricht D et al. *Front Psychiatry*. 2020; 11:574375.
10. Corden ME et al. *Digit Health*. 2016; 2:2055207616663069.
11. Waltz E. *Nat Biotechnol*. 2018 Jun 6;36(6):481–482.

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Evaluating Digital Tools From the HCP's Perspective

Digital tools should be able to integrate into existing clinical care workflows[1]

What might HCPs consider for digital tools?

- Coverage by standard malpractice insurance[2]
- Data privacy / security assured by EHR vendor and by HCP's own practice or hospital[2]
- Reimbursement for time spent using digital tools[2]

What do HCPs want from digital tools?

- Improved work efficiency[2]
- Increased patient safety[2]
- Enhanced or more accurate diagnostic abilities[2]
- Reduced stress and burnout[2]
- Better quality of patient-HCP relationships[2]

How will the digital tool be used?

- Interactions outside of clinic visits[3]
- Synchronously or asynchronously used[3]
- Integration with clinic workflows and health care systems[1]
- Established plan for patient emergencies[3]

EHR, electronic health record; HCP, health care provider.

1. Mathews SC et al. *npj Digit Med*. 2019 May 13;2:38.
2. American Medical Association. Digital Health Study. Physicians' motivations and requirements for adopting digital clinical tools. 2020. https://www.ama-assn.org/system/files/2020-02/ama-digital-health-study.pdf. Accessed August 22, 2022.
3. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020;18(4):424-427.

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Evaluating Digital Tools From the Patient's Perspective

Digital health tools should demonstrate real-world applicability and usability[1]

What might patients consider for digital tools?

- Products that are safe and effective[2]
- To be given appropriate informed consent[2,3]
- Ongoing optimization and analysis of tool performance[2]
- Product and provider compliance with privacy and security standards[2,3]

What do patients want from digital tools?

- To understand the tool's intended purpose, main features, potential benefits, and possible risks[3–5]
- Interactive elements[4]
- Ease of navigation[4]
- Readability[4]
- Easier access to their data[6]

How will the digital tool be used?

- Accessible on a range of platforms[4]
- Option to communicate with providers to share questions and concerns[7]
- Data can be collected passively or actively[8,9]

1. Mathews SC et al. *npj Digit Med*. 2019 May 13;2:38.
2. Digital Therapeutics Alliance and Health Advances, LLC. Guidance to Industry: Classification of Digital Health Technologies. June 2023. https://dtxalliance.org/wp-content/uploads/2023/06/Guidance-to-Industry-Classification-of-Digital-Health-Technologies-2023Jun05.pdf. Accessed August 18, 2023.
3. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020;18(4):424-427.
4. Patel S et al. *J Med Internet Res*. 2020;22;e16228.
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7. Rajagopalan A et al. *Brain Sci*. 2017;7:150.
8. Hategan A et al. *J Technol Behav Sci*. 2019:4:171–177.
9. Ben-Zeev D. *Psychiatr Serv*. 2017;68:107–108.

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How Can Digital Tools Enhance Mental Health Care?

Patient Perspective

- Provide education/information on condition and care plans[1,2]
- Reinforce behavioral changes[1,3]
- Aid in self-monitoring[1]
- Increase access to care (24/7 access)[1,3,4]

CARE MENU

Health & Wellness Apps

Suggested Apps

Monitoring & Self-Assessment Apps

Telehealth/DTx

In-person Visit

HCP Perspective

- Increase clinical efficiency[5]
- Strengthen HCP-patient relationship[4]
- Improve clinical outcomes such as[5,6]:
  - Symptomology and functioning[5,6]
  - Patient hospitalizations[6]
- Provide remote care[5,6]
  - Send and receive health care data, monitor patient status, provide evidence-based care

DTx, digital therapeutics; HCP, health care provider.

1. Birnbaum F, et al. Acad Emerg Med. 2025;22(6):754–756.
2. Polillo A, et al. JMIR Ment Health. 2021;8(5):e24567 doi: 10.2196/24567.
3. Torous J, et al. JAMA Network Open. 2020;3(7):e2010918 doi:10.1001/jamanetworkopen.2020.10918.
4. Presti LL, et al. Sustainability. 2019;11,220 doi:10.3390/su11010220.
5. Henry TA. AMA. 5 insights into how physicians view, use digital health tools. October 2022. https://www.ama-assn.org/practice-management/digital/5-insights-how-physicians-view-use-digital-health-tools. Accessed May 26, 2023.
6. Hatch A, et al. JMIR Ment Health. 2018;5(2):e46 doi: 10.2196/mental.9777.

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Considerations for Implementing Digital Tools

- HCPs should consider patient disposition and ability to interact with the given tools
  - Ideal candidates are patients who are:
    - Highly motivated[1,2]
    - Functioning well in their occupations[1]
    - Able to access required resources[1,2]
    - Interested in utilization of new technology[1,2]
  - Digital tools may not work as well for patients who:
    - Have limited digital literacy or access to devices or charging[3]
    - Need the tool in a different language than is offered[4]
    - Do not have insurance coverage[1]
    - Have more severe symptoms or substance use struggles[1]
- Patients should have a thorough understanding of the potential risks, including privacy breaches, issues with trust or misunderstandings, and technical problems[5]

HCP, health care provider.
1. Hatch A, et al. *JMIR Ment Health*. 2018;5(2):e46 doi: 10.2196/mental.9777.
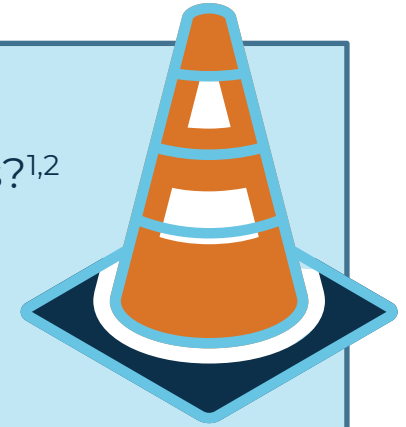2. Birnbaum F, et al. *Acad Emerg Med*. 2025;22(6):754–756.
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5. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020;18(4):424–427.

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Outline the Implementation of Digital Tools in Clinical Practice

Factors That Can Challenge Integration of Digital Tools

Feasibility considerations
- How will the digital tool fit in with daily clinical care?[1]
- Will it increase administrative time?[1]

Ethical implications
- Have informed consent documents been implemented consistently?[2,3]
- How can HCP-patient boundaries be maintained?[2]

Cultural considerations
- What ethnic, racial, and socioeconomic factors may impact how care is offered and received?[2]

Legal requirements
- What are the practice guidelines?[1,2]
- What are the local or regional practice guidelines?[2]
- What issues of privacy, security, and HIPAA / HITECH laws need to be considered?[1,2]

Potential risks of digital tool usage
- What are the limits of the tool's technology?[2,4]
- How can you ensure patient adherence?[3]
- How will you be reimbursed?[5]
- Will the tool adversely affect patient lifestyle?[6]

HCP, health care provider; HIPAA, Health Insurance Portability and Accountability Act;
HITECH, Health Information Technology for Economic and Clinical Health.

1. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020;18(4):424–427.
2. Mishkind M. Apps & eHealth Programs for Mood Disorders. National Network of Depression Centers 12th Annual Conference. Advances In Psychiatry: COVID-19 And Beyond. Virtual Meeting. October 2, 2020. https://nndc.org/wp-content/uploads/2020/10/Matt-Mishkind-2020-NNDC-Conference.pdf. Accessed August 22, 2022.
3. Coravos A et al. *Digit Biomark*. 2019;3:31–71.
4. Gordon WJ et al. *npj Digital Medicine.* 2020;3:14.
5. IQVIA. Digital Health Trends 2021: Innovation, Evidence, Regulation, and Adoption. July 2021. https://www.iqvia.com/insights/the-iqvia-institute/reports/digital-health-trends-2021. Accessed January 31, 2022.
6. Patel S et al. *J Med Internet Res.* 2020;22;e16228.

Implementing Digital Health Tools:
A Role for Digital Navigators?

- Human support for technology is an unmet need that **can help bridge the gap** between individuals and HCPs, support technology users, and improve clinical outcomes[1,2]


Connect *individuals* to the most suitable digital tools[1]

Support and train *HCPs* to use the platforms and understand data output[1]

Patient

Human support

HCP

- A **digital navigator** is a newly proposed role within the care team, who aims to[3]:
  - Help select evidence-based apps
  - Create clinically meaningful summaries of patient app data
  - Troubleshoot technology issues for patients

HCP, health care provider.
1. Ben-Zeev D. *Psychiatr Serv.* 2017;68:107–108.
2. Dopke CA et al. *JMIR Form Res.* 2021;5:e25810.
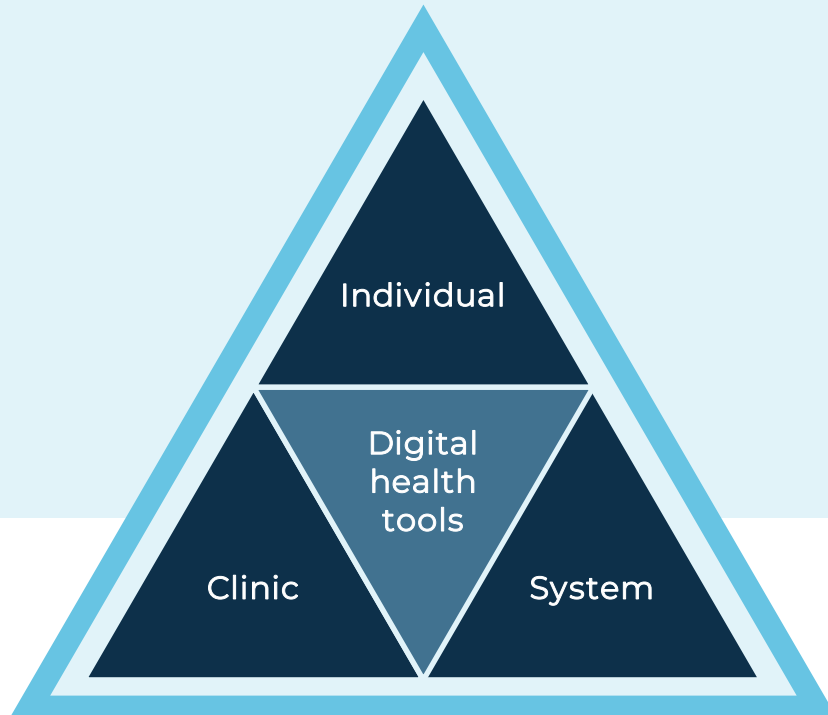3. Connolly SL et al. *Curr Psychiatry Rep.* 2021;7;23(7):38.

How are digital tools currently used in practice?
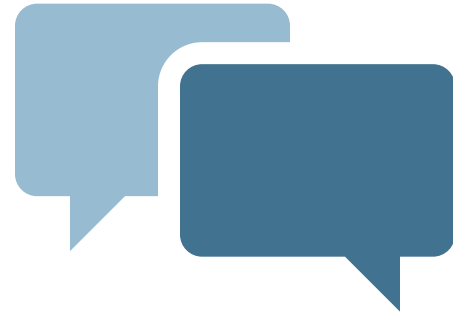
What hurdles or strategies have you considered for implementation?

HCP Setup and Utilization of Digital Tools

Integrated care: Always evolving[1,2]

Triangle diagram:
- Individual
- Digital health tools
- Clinic
- System

EHR, electronic health record; HCP, health care provider.
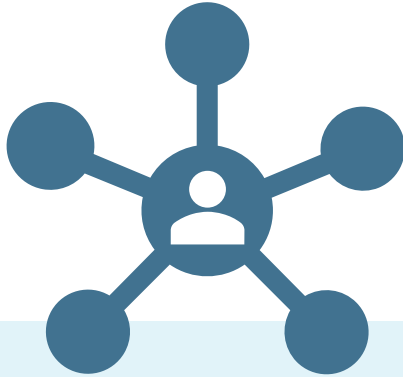1. Torous J, et al. *World Psychiatry*. 2021 Oct;20(3):318–335.
2. Emerson MR, et al. *Transl Behav Med*. 2023 Aug 11;13(8):612–623..

Technical tips: Split-screen setup

- EHR and workflow tabs side-by-side
- Ready access to information during the visit
- Central floating camera appears patient-side as if you are face-to-face

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Flowchart of Workflow Integration

Example of how Dr Behrens integrates digital support
- Include rich text within the "Visit Summary"
- Hyperlinks within for patients to access additional information

Example of how Dr Emerson builds a digital tool care team
- Overcome technical and time constraints to maximize utilization of care team
- Trained nurses may fill the role of digital navigators
- Social workers can further guide patients on app options and answer queries

Visit summary

Plan

Resources

Apps

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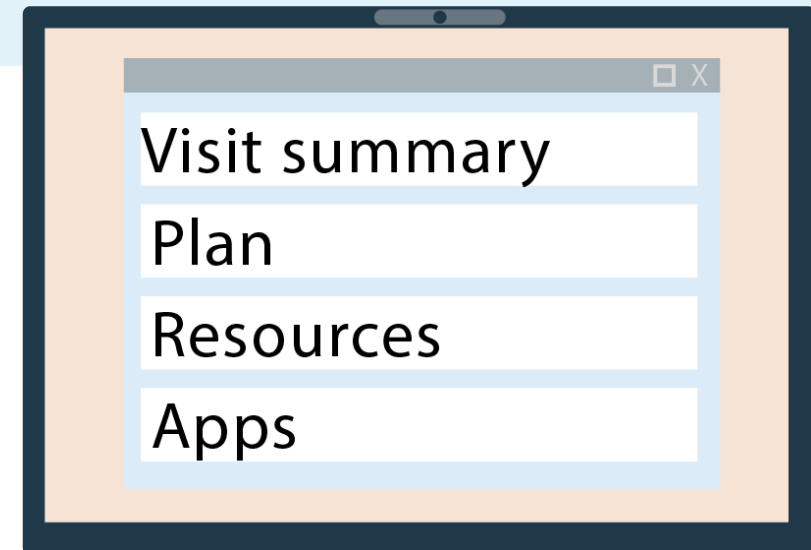
Summary

- Digital tools can help **address unmet needs** in accessing mental health treatment[1]

- **A wide variety** of digital health tools exist[2,3]:

  – Health and wellness apps

  – Patient monitoring and assessment tools

  – Digital therapeutics

- To guide successful implementation[4–6]:

  – Determine patients who **want** digital tools as part of their care

  – Confirm **necessary staff/IT support** to integrate digital tools into clinical workflow

  – Develop agreed upon **goals and communication frequencies**
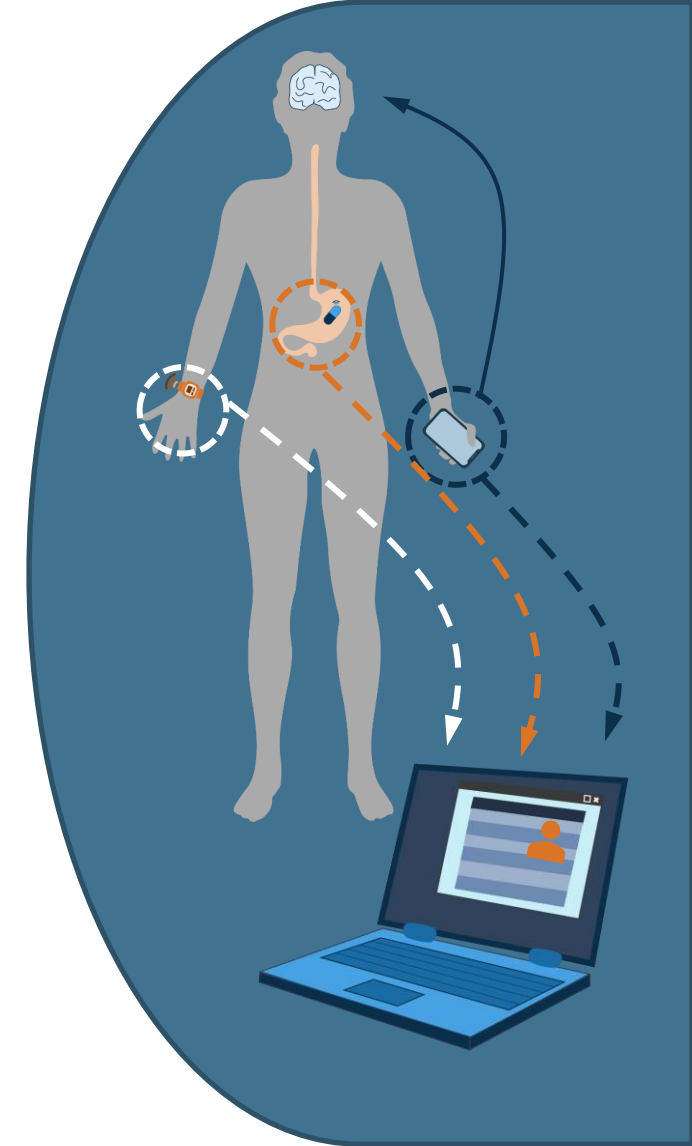
IT, information technology.

1. Dang A et al. *J Fam Med Prim Care*. 2020;9:2207–2213.
2. Digital Therapeutics Alliance and Health Advances, LLC. Guidance to Industry: Classification of Digital Health Technologies. June 2023. https://dtxalliance.org/wp-content/uploads/2023/06/Guidance-to-Industry-Classification-of-Digital-Health-Technologies-2023Jun05.pdf. Accessed August 18, 2023.
3. Digital Therapeutic Alliance. Digital Health Industry Categorization. https://dtxalliance.org/wp-content/uploads/2019/11/DTA_Digital-Industry-Categorization_Nov19.pdf. Accessed August 22, 2022.
4. Hatch A, et al. *JMIR Ment Health*. 2018;5(2):e46 doi: 10.2196/mental.9777.
5. Connolly SL et al. *Curr Psychiatry Rep*. 2021;7;23(7):38.
6. Stubbe DE. *Focus (Am Psychiatr Publ)*. 2020;18(4):424–427.

Closing

Digital Role-play
Coming Soon!

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