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Virtual Care Implementation ECHO

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# Remote Monitoring in Mental Health Care

# Disclosures

- none

# Learning Objectives

- Define Remote Patient Monitoring (RPM)
- Name advantages and caveats to RPM
- Identify at least two applications in mental health care settings

# What Is Remote Monitoring?

- Remote patient monitoring (RPM) - the use of technology to monitor patient health **outside** clinics, hospitals
- Shifting from **episodic, synchronous** encounters (ie, visits) towards **continuous, asynchronous** encounters



# Remote Monitoring in Medicine

## SWINOMISH EXPERIENCES WITH EXPANDED CGM UTILIZATION AND REMOTE PATIENT MONITORING

Justin Iwasaki, MD, MPH & Michael Lawrence, PharmD, BCPS, BC-ADM

Swinomish Indian Tribal Community (SITC) Medical Clinic

Virtual Care Implementation ECHO – Monday May 13, 2024

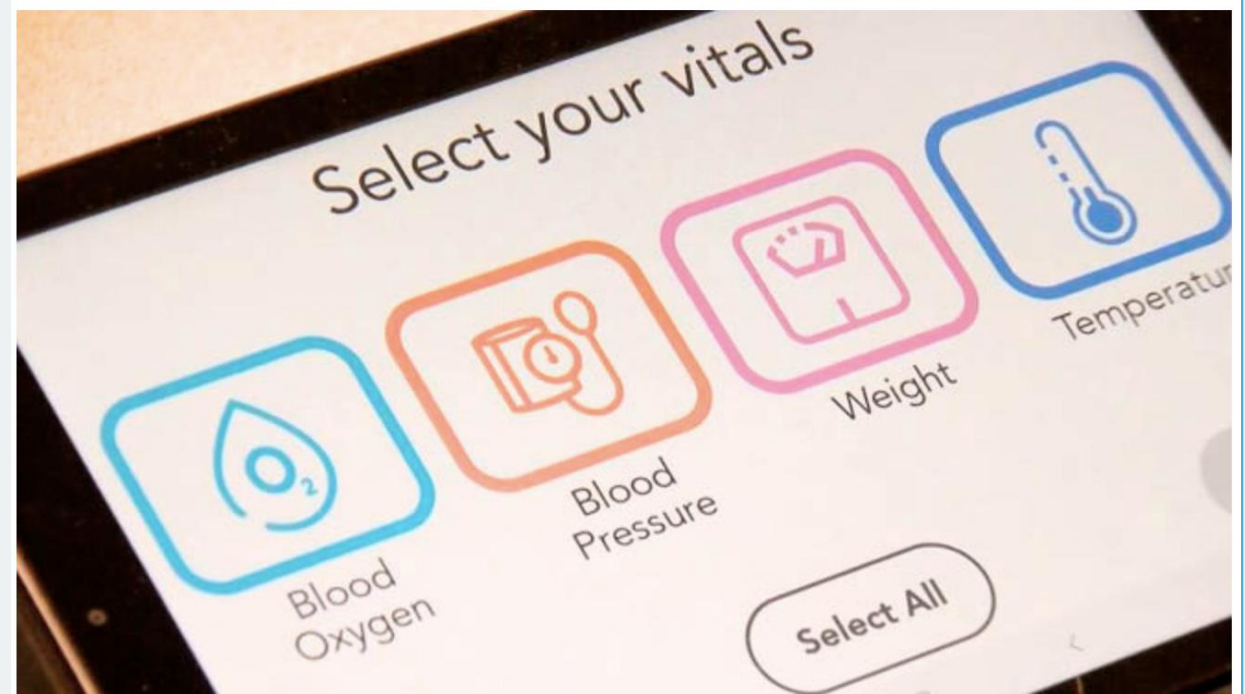
- Some medical fields adopted RPM earlier - diabetes, sleep medicine, infectious disease
  - Mayo Clinic patient review of RPM for COVID
  - VCI ECHO: Remote Physiological Monitoring in Diabetes
  - VCI ECHO: Experiences with Expanded Glucose Monitoring and Remote Patient Monitoring
  - Updates to CPT (billing) codes in 2020 helped incentivize RPM (documentation and device requirements)

<https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/remote-patient-monitoring-comprehensive-care-at-home>

Ekekezie O, Hartstein GL, Torous J. Expanding Mental Health Care Access—Remote Therapeutic Monitoring for Cognitive Behavioral Therapy. *JAMA Health Forum*. 2023;4(9):e232954. doi:10.1001/jamahealthforum.2023.2954

# Remote Patient Monitoring in Mental Health

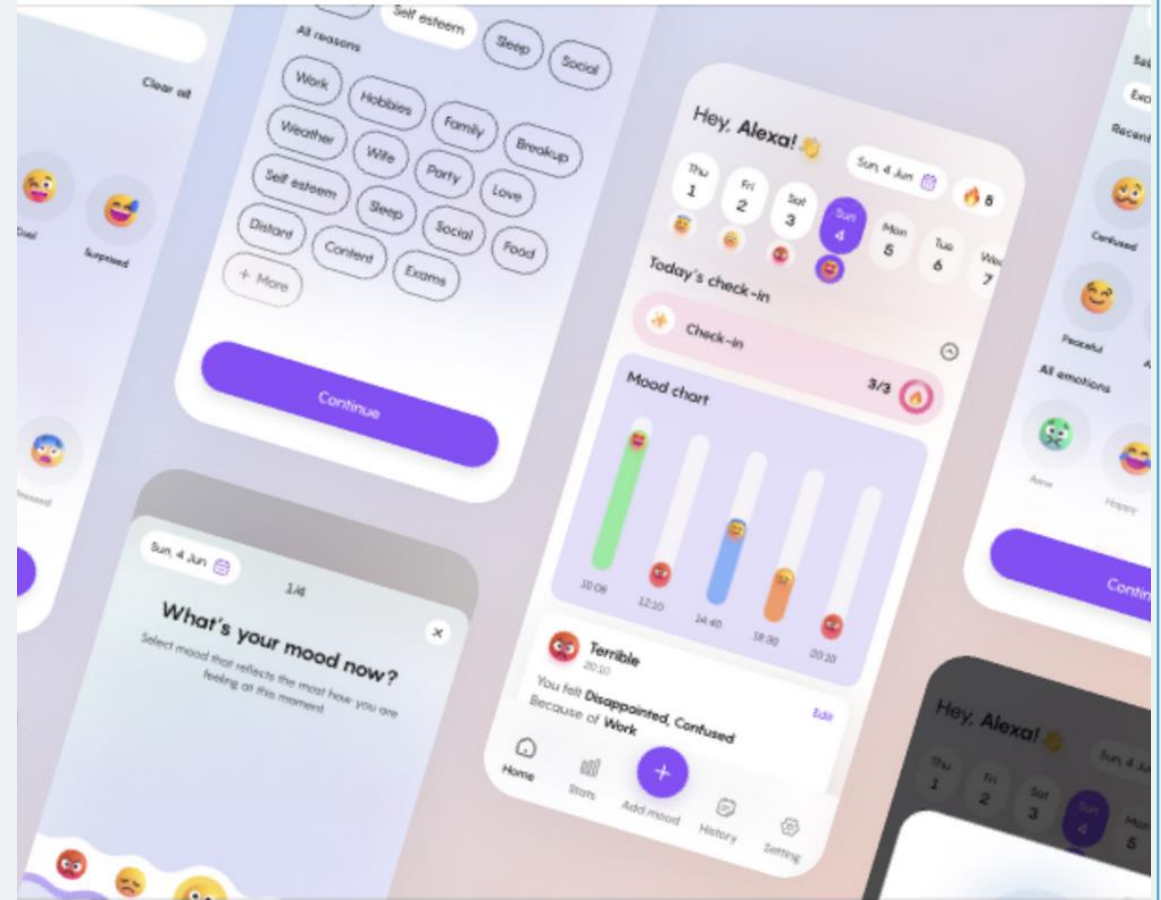
- Mental health care has been slower to adopt RPM
  - RPM traditionally more focused on physiological monitoring (ie, blood pressure), oftentimes not as relevant to mental health care
  - Insurance reimbursement not incentivized for mental health care
  - Caution for over-monitoring



<https://www.mayoclinichealthsystem.org/hometown-health/speaking-of-health/remote-patient-monitoring-comprehensive-care-at-home>

# Mental Health Applications

- Mood tracking
- Validated measures like PHQ9, GAD7
- Completing therapy homework asynchronously (CBT)
- Research/data collection
- VCI ECHO prior presentations:
  - Monitoring Digital App Based Mental Health Therapies



# Research: RPM in Mental Health Treatment

- **Goal:** Determine the feasibility/acceptability of an in-home remote monitoring system for people diagnosed with serious mental illness (SMI) and either diabetes, hypertension, cardiac disease, COPD, or chronic pain
- **Monitoring system:** Programmed with daily dialogues specific to the user's medical and psychiatric condition in outpatients

Pratt SI. Evaluation of a remote monitoring system in people with mental illness and medical co-morbidity. *Int J Integr Care*. 2012 Jun 15;12(Suppl1):e86. PMID: PMC3571159.



# RPM in Mental Health Treatment

- 70 community mental health center (CMHC) clients were randomly assigned to either immediately receive the remote monitoring system (n=37) for 6 months or to receive it after a 6-month wait (n=33).
- Service use, illness management and recovery, subjective and objective health, medical co-morbidity, disease management self-efficacy, and psychiatric symptoms were assessed at baseline and at 6 and 12 months.
- Satisfaction with the device was assessed after 6 months.
- Responses to daily dialogue questions were reviewed by a CMHC nurse care manager.

Pratt SI. Evaluation of a remote monitoring system in people with mental illness and medical co-morbidity. *Int J Integr Care*. 2012 Jun 15;12(Suppl1):e86. PMID: PMC3571159.

# RPM in Mental Health Treatment

- Results: **Significant reduction in diabetes and depression**
  - Adherence across all participants for 6 months was 71%.
  - Over half completed 89% or more of their sessions.
  - Satisfaction was high: 81% reported that they would be very willing to continue using the device.
- Participants who immediately received the device demonstrated greater improvement in overall psychiatric symptom severity compared to the waitlist group
- Physiologic monitoring:
- lower fasting glucose and lower use of urgent care visits.
  - 66% of diabetic participants had glucose >140 at baseline. After using the device for 3 months, 38% had a >20% reduction in glucose, and 14% reduced their glucose by >100. At 6 months, 50% had achieved a >20% reduction.
  - Mean glucose dropped from 209 at baseline to 128 at 6 months.

Pratt SI. Evaluation of a remote monitoring system in people with mental illness and medical co-morbidity. *Int J Integr Care*. 2012 Jun 15;12(Suppl1):e86. PMID: PMC3571159.

# Research: Feasibility of App for Psychiatry

- **Goal:** Test technical feasibility and adherence for use of phone app (ReMAP mobile application)
- ReMAP mobile application - developed University of Münster, Germany 2018
  - works in background mode
  - collects data passively
  - steps, distance walked, accelerometer and GPS location
  - Assessments of activity

# Research: Feasibility of App for Psychiatry

- Study:
  - Two week or one year monitoring
  - Once a week voice samples (a free report on his well-being during the last week using the device's and app)
  - Complete digital version of BDI (depression inventory) every two weeks
- Results:
  - Retention rate - 90.25% for two weeks and 33.09% for one year were
  - Average of 51.83 passive events per day. A
  - Average of 34.59 self-report events were transferred per user
  - The mean rate of days with passive data was higher and less heterogeneous in iOS (91.85%, SD=21.25) as compared to Android users (63.04%, SD=35.09).

# Research: Client Acceptance of RPM

- Community Health in a Virtual Environment (Co-HIVE) pilot trial (Australia)
  - model = community-dwelling patients with symptoms of depression can access virtual appointments and remote monitoring for the assessment and treatment of their condition
  - In addition to routine care
- **Goal:** Use qualitative methods to assess acceptability of RPM for patients with mod to severe depression (according to PHQ9)
- **Methods:** N=10 adults (>18yo to 65yo) completed interviews

Study groups for the Co-HIVE pilot RCT.

Study Group	Components of Intervention		
	Routine Care <sup>1</sup>	Remote Monitoring <sup>2</sup>	Virtual Health Coaching <sup>3</sup>
Control	✓		
Intervention	✓	✓	
Intervention Plus	✓	✓	✓

# Research: Client Acceptance of RPM

- **Results:** 5 themes: Personalized Care with Health Data, Improved Access to Mental Healthcare, Supportive Therapeutic Relationships, Self-Care and Responsibility, and Health Knowledge and Understanding.
  - more personalized care, improved health knowledge and understanding, and greater self-care
- **Personalized Care**
- *"It was really good to see that I think cause it just shows you in a visual form on your progress. And I think that was, you know, something new. I've had treatment for a very, very long time, and that was something new that hadn't seen before and that, you know, it was a good. It was a feel-good thing for me because there was a lot of areas where I saw improvement."*
- *"It was actually really nice cause before, it was kind of like people would say I was or it seemed like I was getting better, but I didn't feel like I was feeling any better. But then seeing, after answering all the questions and then seeing it in a graph how it did improve, like how my results did improve it made me reflect on it a bit more and how I was actually feeling."*

# Research: Client Acceptance of RPM

- **Virtual Care Options**
- *"Having the VCI [virtual check-ins] has not stopped me from doing my trips away for a break. This program will be the best thing for those living rural and remote, knowing that there is someone keeping an eye out on them, also allowing them to keep working if they are on the farm, like now with harvest time being busy, and not having to spend hours away."*
- **Self Care and Responsibility**
- *"I'm very visual, so if I see those numbers I can say, OK, you know, I've gotta improve my sleep or do my exercise. And also, you feel proud, you know, when it's a week where you've done really, really good and you talk about your steps and say, yeah, you did this amount of steps. It's, yeah, I think it's a really, it's a positive thing."*

# Other Considerations



**Weill Cornell Medicine**

## Cognitive Behavioral Therapy App Improves Anxiety in Young Adults

AUGUST 20, 2024

## Mental health apps may help those waiting for care, study finds

Depression, anxiety and suicide risk dropped when patients awaiting an initial psychiatric appointment used smartphone apps to get CBT, mindfulness or encouragement prompts

July 18, 2024 11:00 AM

Author | [Kara Gavin](#) >



**MICHIGAN MEDICINE**  
UNIVERSITY OF MICHIGAN

GENERAL MEDICINE

## Mobile Apps for Mental Health Are Effective in Reducing Depression, Anxiety

[Ron Goldberg](#) | September 13, 2024



# Other Considerations:

ANXIETY

## 7 Questions to Ask When Using Mental Health Apps

New research finds only 2% of wellness apps have research to back their claims.

Posted December 29, 2022 | Reviewed by Jessica Schrader

- All important for tribal health centers and communities!
- Privacy
- Autonomy
- Health equity and bias concerns

yahoo/finance

## The mental health app data privacy problem is getting worse

INNOVATION > HEALTHCARE

## Using A Mental Health App? New Study Says Your Data May Be Shared

Forbes

<https://telehealth.org/privacy-failures-research-into-mental-health-apps-part-ii/>

Hswen Y, Voelker R. New AI Tools Must Have Health Equity in Their DNA. *JAMA*. 2023;330(17):1604-1607.

AI and Clinical Practice

## AI, Health Care Quality, and Equity



# Recommendations

- Consider [Veterans Affairs options for mobile apps](#) or options from academic centers/research studies that are subject to more internal regulations
- Consider using Mindapps.org privacy and study features
- Provide informed consent about privacy and efficacy issues as you would medication or pharmacogenetic testing
- AHRQ: FASTER to Mental Health and Wellness framework comprises an initial and concluding set of administrative questions for agencies and providers

The image shows a screenshot of the VA Mobile website. The top navigation bar includes the VA logo, U.S. Department of Veterans Affairs, and links for VA App Store, Support, App Team Resources, About, and Connected Care Websites. The main heading is "Mental Health and Behavioral Therapy Apps" with a subtext: "Here you will find apps for Veterans to support their mental health and behavioral therapy needs. From helping you manage trauma symptoms to coping with anger, these mental health apps can provide you with the support you're looking for." Below this, three app cards are visible: "ACT Coach" (Practice lessons learned during), "AIMS for Anger Management" (Techniques to help you manage anger), and "Beyond MST" (Find coping tools and free resources). Below the app cards is a funnel diagram illustrating the AHRQ FASTER framework. The funnel is divided into three sections: "Section 1: Risks and Mitigation Strategies" (top, red), "Section 2: Function" (middle, blue), and "Section 3: Mental Health Features" (bottom, dark blue). To the right of the funnel are three corresponding labels: "Integrity and Risk Profile", "Functional and Technical Characteristics", and "Mental Health Features". Arrows indicate a flow from the app cards into the funnel and from the funnel back to the app cards.

# AHRQ Framework

	<b>Risks and Mitigation Strategies</b>	<b>App Integrity</b>	<b>Risk Assessment</b>	<b>Evidence</b>	<b>Linkage to Care</b>	<b>Access to Crisis Resources</b>
	<b>Function</b>	<b>Accessibility Features</b>	<b>App Info</b>	<b>Costs</b>	<b>Organizational Credibility</b>	<b>Evidence &amp; Clinical Foundation</b>
		<b>Privacy &amp; Security</b>	<b>Informed Consent</b>	<b>Cultural Competence</b>	<b>Usability</b>	<b>Remote Monitoring</b>
		<b>Access to Crisis Resources</b>	<b>Artificial Intelligence (AI)</b>			
	<b>Mental Health Features</b>	<b>Mental Health Features</b> (e.g., facilitating social interaction, motivation enhancement, planning/alternative strategies/planning for high-risk situations, screening, self-help, skill building, safety planning, and promoting sleep hygiene)				

Search Filters

- Cost +
- Features +
- Privacy +
- Supported Conditions +
- Treatment Approaches +

# App Library

Grid View Table View

Search by name, company, feature or platform

All Platforms

Not sure? Watch this short video!



## Serenity: Guided Me...

Olson Meditation and Mindful...

Android iOS Web

Multiple Associated Costs

Easy to follow guided meditations for mindfulness, sleep and relaxation! Install now and unlock your potential. Serenity: Guided



## Mind Care: Thought ...

Aliaksei Prazhenik

iOS

Multiple Associated Costs

Create your diary stories through guided journaling sessions. Just pick your mood and set activity which is most affected your



## Intellect: Create A B...

The Intellect Company

Android iOS

Multiple Associated Costs

If you feel less motivated, mentally burnt out, or want to be more productive, you've come to the right place. Intellect is a



## Bipolar Test

Inquiry Health LLC

Android iOS

Free to Download | Totally Free

Bipolar Disorder is a mental disorder that causes shifts in a person's mood, energy, and thoughts. People with bipolar

# Workflow Modifications

- Need to consider how to respond to urgent information
  - Ex: patient responds to PHQ9 question 9 (thoughts about harming or hurting yourself) with 'nearly every day'
    - Who is going to see this message?
    - How quickly is someone going to see this message?
    - Who is going to take responsibility for responding?
    - How should they assess urgency and respond?
  - Ex: workflow responses in this situation – have a designated RN or SW who receives all PHQ9 and assesses urgency, calls pt, follows suicide prevention protocol in clinic

## PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the **last 2 weeks**, how often have you been bothered by any of the following problems?  
(Use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

# Insurance Updates

**2019**

Insurance billing (CPT) codes for remote *physiologic* monitoring were added which reimburse clinicians for:

- 1) monitoring health conditions between visits
- 2) related expenses like setting up devices and educating patients

**2020**

Uptake of billing codes grows with COVID 19 pandemic

Billing codes adjusted to include devices that monitor the effects of cognitive behavioral therapy (CBT)

**2022**

Questions remain: 1) unclear documentation and billing requirements; 2) no rate set for device reimbursement for psychiatry



*Questions?*

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