

# Behavioral Health Institute (BHI)

## Training, Workforce and Policy Innovation Center

### TeleBehavioral Health 401 Training Series

Behavioral Health Telehealth Resource

Website: <https://bhinstitute.uw.edu>

Email: [bhinstitute@uw.edu](mailto:bhinstitute@uw.edu)

July 21, 2023

# Behavioral Health Institute (BHI)

## Training, Workforce and Policy Innovation Center

The Behavioral Health Institute is a Center of Excellence where innovation, research and clinical practice come together to improve mental health and addiction treatment.

BHI established initial priority programs which include:

- Improving care for youth and young adults with early psychosis
- Behavioral Health Urgent Care Walk in Clinic
- Behavioral Health Training, Workforce and Policy Innovation Center
- Expanded Digital and Telehealth Services

# Speaker Disclosures

None of the series speakers have any relevant conflicts of interest to disclose.

# Planner disclosures

The following series planners and team have no relevant conflicts of interest to disclose:

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# DISCLAIMER

Please be aware that policy changes may take place after the original date of this presentation.

Any information provided in today's talk is not to be regarded as legal advice. Today's talk is purely for informational purposes.

Please consult with legal counsel, billing & coding experts, and compliance professionals, as well as current legislative and regulatory sources, for accurate and up-to-date information.

We gratefully acknowledge the support from



# TeleBehavioral Health Technologies: Now and Around the Corner

**technocracy** /tek'nɒkrəsi/  
an elite of technical experts.  
- DERIVATIVES **technocrat** n.  
**cratically** adv.  
**technology** ● n. (pl. **-ies**) the  
knowledge for practical pur

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**Webinar Series**

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# Who is TTAC?

- TTAC is federally funded resource center made available through the Office for the Advancement of Telehealth (OAT)
- TTAC provides Technology Assessment services to the 12 regional TRCs as well as the other national TRC.

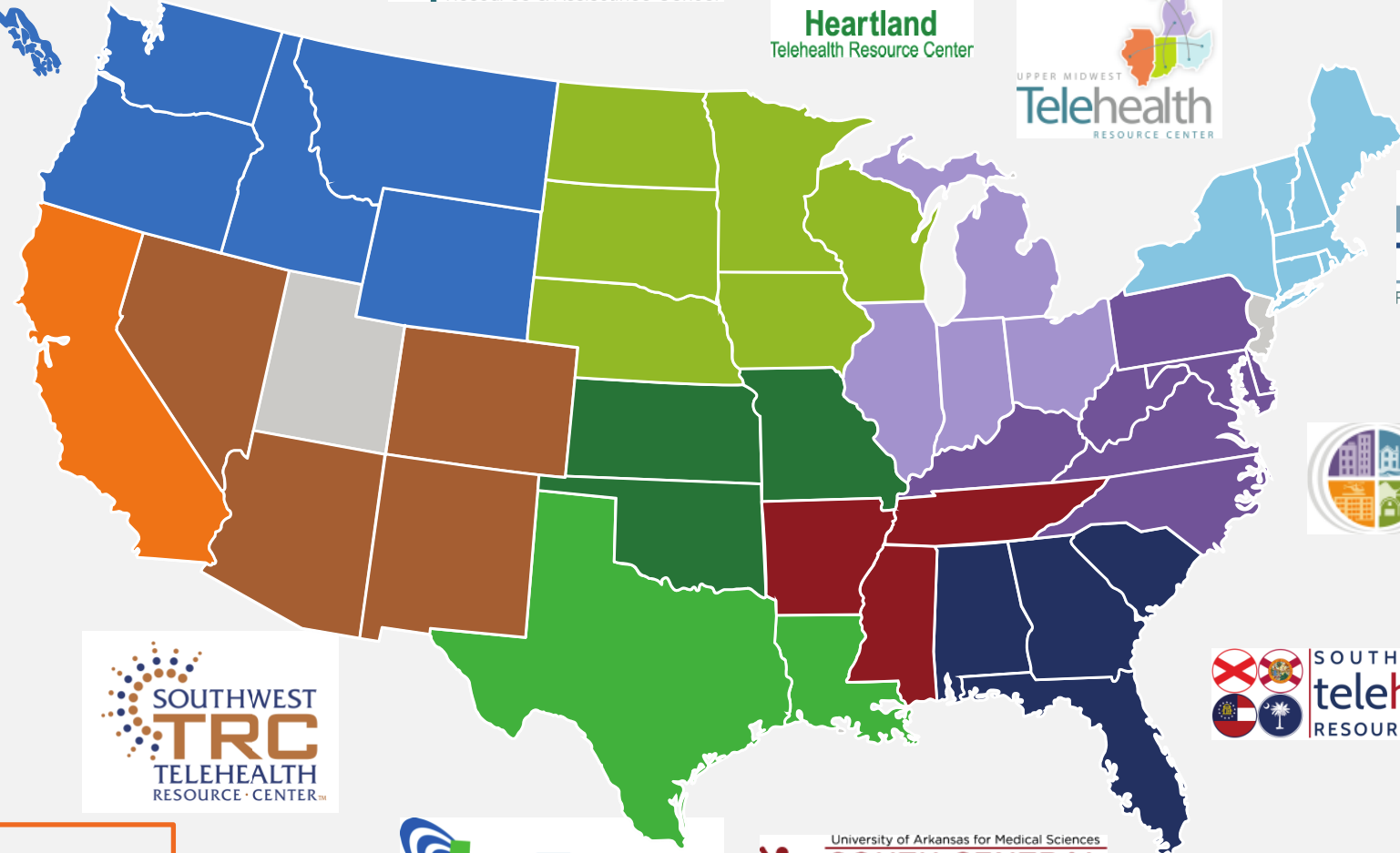
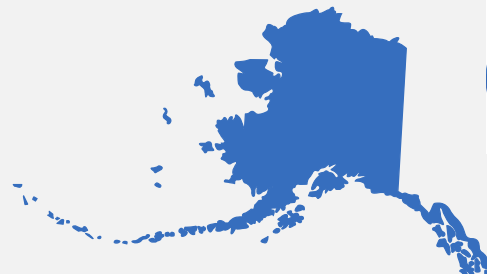


# National Consortium of Telehealth Resource Centers

Our website hosts many resources. If you can't find what you're looking for, contact your regional TRC:

[www.TelehealthResourceCenter.org](http://www.TelehealthResourceCenter.org)





# What does TTAC do?



“A particular set of skills...”



# Learning Objectives

1. Describe types of technology being used to deliver general and more advanced behavioral health telemedicine.
2. Provide examples of emerging technologies that will impact behavioral health Telemedicine in the near future.
3. Describe technology adoption challenges that impact telebehavioral health adoption.

# Overview

- **TeleBehavioral Health Technologies**
  - **Current- Now**
    - **Video Conferencing**
    - **Apps**
  - **Emerging- Around the Corner**
    - **Artificial Intelligence/Machine Learning**
    - **Augmented and Virtual Reality**
- **Adoption Challenges**

# Video Conferencing Platforms

- **Telemedicine Specific vs General Videoconferencing**
- **Browser Based vs Application**
- **Integration into Electronic Health Record**
- **Additional Functionality:**
  - Scheduling/Billing
  - Digital Forms and Resource Libraries
  - Chat/Messaging
- **Encryption**
- **Business Associates Agreement**



zoom



# Video Conferencing Hardware- Video Solutions

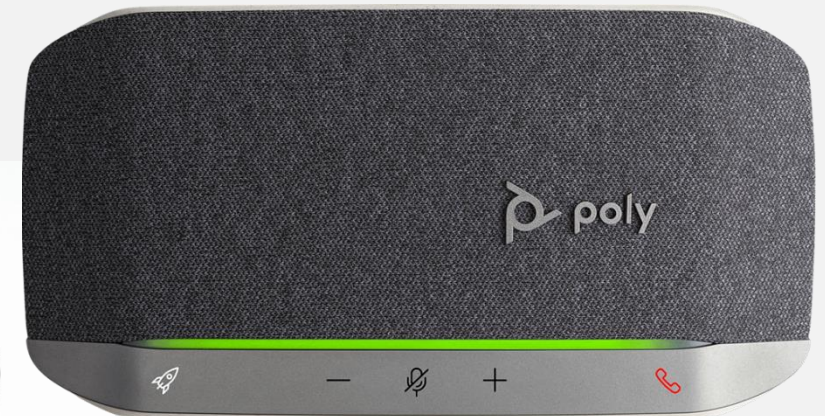
- “Plug and Play” USB devices
- Integrated Audio and Video
- Digital pan in large image
- Active Speaker Tracking
- PTZ solutions price/features



# Video Conferencing Hardware- Audio Solutions

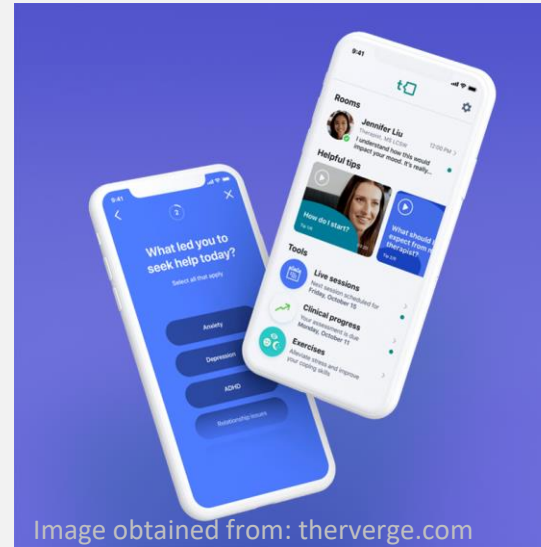
## Common Audio Solutions:

- **Headsets**
  - USB
  - Wired/Wireless
- **Speaker Pods**
  - Noise Cancelling
  - USB
  - **Bluetooth**
  - **Battery Powered**



# TeleBehavioral Health Mobile Apps

- **Behavioral Health Specific vs General Telemedicine**
  - Wellness Apps
  - Digital Therapeutics
  - Live Therapy Apps
  - Asynchronous Chat/Messaging
- **Multi-Platform**
  - IOS, Android, Windows, etc.
- **Provider Decision Support Tools**

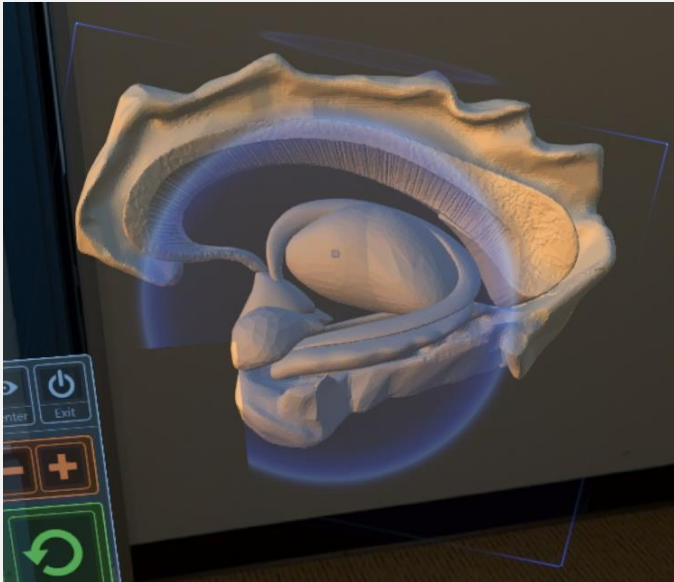


Vendor Comparison Resource:  
<https://telementalhealthcomparisons.com/>



# Augmented and Virtual Reality (AR/VR)

- Virtual Reality- Creates a digital artificial environment for user to interact in/with
- Augmented Reality- Creates a digital layer of information over what the user sees



[https://www.cdc.gov/injury/fundedprograms/success-story\\_1.html](https://www.cdc.gov/injury/fundedprograms/success-story_1.html)

# Artificial Intelligence and Machine Learning

## Now:

- **Diabetic Retinopathy**
- **Business Analytics and Automation**
- **ECG analysis**

## Soon:

- **Screening Social Media for Depression Markers**
- **Biometric and Intake Screening assessments**

## Depression Screening in Humans With AI and Deep Learning Techniques

Mudasir Ahmad Wani, Mohammad A. ELAffendi<sup>✉</sup>, Kashish Ara Shakil, Ali Shariq Imran<sup>✉</sup>, Senior Member, IEEE, and Ahmed A. Abd El-Latif<sup>✉</sup>, Senior Member, IEEE

**Abstract**—Social media platforms have been widely used as a communication tool where most of the population expresses their feelings and shares life experiences. Along with general information about the public, these platforms hold an ample amount of content related to depressed users and thus can generate sensitive social signals indicating if a person is suffering from some serious issues, such as self-harm, suicidal thoughts, or intention for an unlawful act. Early depression detection using advanced natural language processing (NLP) deep machine learning techniques is a challenging task. In this paper, we propose a combined datasets. Out of 24 experiments for Word2Vec LSTM and Word2Vec (CNN + LSTM) models, we achieved the accuracy of 99.02% and 99.01%, respectively, and recorded as best results outperforming all the existing approaches on performance measures such as recall, precision, accuracy, and F1-score. The Word2Vec-based features have been proved optimal features for detecting depression symptoms on Facebook corpus (FC) and YouTube corpus (YC) by achieving an accuracy of 95.02% (with CNN) and 99.15% (with CNN + LSTM), respectively.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8575242/>

<https://tinyurl.com/2j4j56ny>

## Using AI to Support Healthcare Amid a Mental Health Provider Shortage

AI tools cannot replace mental health providers, but they may be able to help close gaps and address dips in care quality by supporting the existing workforce.

<https://healthitanalytics.com/features/using-ai-to-support-healthcare-amid-a-mental-health-provider-shortage#:~:text=The%20AI%20tool%20is%20designed,at%2Dhome%20follow%2Dup.>

# Barriers to Adoption

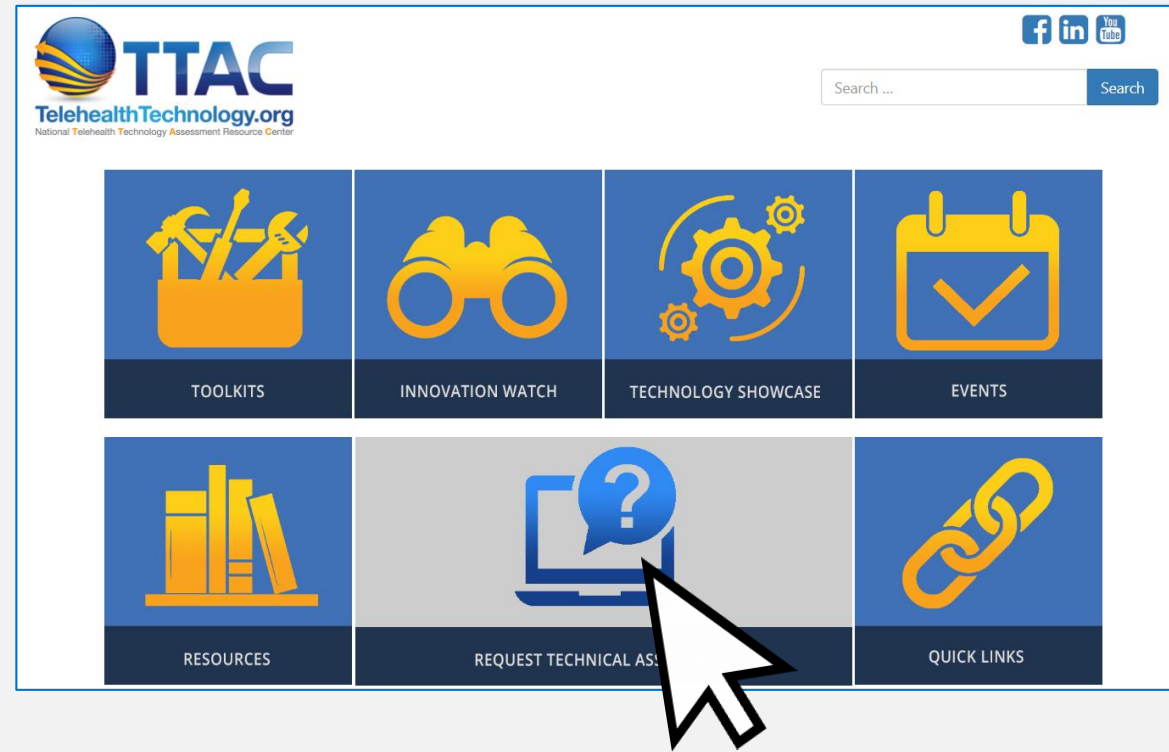
- Health Information Groups (IT) are often underfunded and overtasked
- Variances in scope and quality of State Based HIE efforts
- Vendor Credibility and Trust
- Silo-ed Workforces and Experiences (Primary Care and Behavioral Health)
- Connectivity and Access issues (Patients)
  - Devices
  - Broadband



# Have Questions???

1 [www.telehealthtechnology.org](http://www.telehealthtechnology.org)

2



3

Ask us your technology questions.

# Thank You



Contact Us:

[www.telehealthtechnology.org](http://www.telehealthtechnology.org)

1-844-242-0075

# Additional Free Resources for Washington State Behavioral Health Providers

## EDUCATIONAL SERIES:

- UW Traumatic Brain Injury – Behavioral Health ECHO
- UW Psychiatry & Addictions Case Conference ECHO
- UW TelePain series

## PROVIDER CONSULTATION LINES

- UW Pain & Opioid Provider Consultation Hotline
- Psychiatry Consultation Line
- Partnership Access Line (pediatric psychiatry)
- Perinatal Psychiatry Consultation Line

