Technology and Informatics in VA Mental Health: A Practical Survey of the Landscape

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Another note: The author has no conflicts of interest to disclose. There is no product or service discussed in these slides in which the author has a financial interest.
Overview of today’s presentation

• 7 observations about technology
• Technology and mental health – a quick survey of the landscape
• MH informatics in VA and OMHSP
• How can I use this information? A few implications and applications
Technology
7 Observations about Technology
7 observations about technology

• Technology is always advancing
Technology keeps advancing, and the pace is picking up.

7 observations about technology

• Technology is always advancing

• Technology is changing the way we do almost everything
What are your top priorities?
What are your top priorities?
What are your top priorities?
7 observations about technology

• Technology is always advancing
• Technology is changing the way we do almost everything
• Our adoption of new technologies follows a predictable pattern
The technology Adoption Curve

7 observations about technology

• Technology is always advancing
• Technology is changing the way we do almost everything
• Our adoption of new technologies follows a predictable pattern
• Technology shifts can be quantitative or qualitative
### Quantitative change in technology

<table>
<thead>
<tr>
<th>iPhone</th>
<th>Resolution</th>
<th>Megapixel</th>
<th>Aperture</th>
<th>Pixel Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Original iPhone 2007</strong></td>
<td>320×480</td>
<td>2 Megapixels</td>
<td>f2.8</td>
<td>163 ppi</td>
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<tr>
<td><strong>iPhone 4 2010</strong></td>
<td>640×960</td>
<td>5 Megapixels</td>
<td>f2.8</td>
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<tr>
<td><strong>iPhone 5s 2013</strong></td>
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<td>f2.2</td>
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<tr>
<td><strong>iPhone 7/7Plus/SE 2016</strong></td>
<td>1334×750/1920×1080/1136×640</td>
<td>12 Megapixels</td>
<td>f1.8 / f1.8 / f2.2</td>
<td>326 ppi / 401 ppi / 326 pp</td>
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<tr>
<td><strong>iPhone 11 Pro Max 2019</strong></td>
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Qualitative change in technology
• Technology is always advancing
• Technology is changing the way we do almost everything
• Our adoption of new technologies follows a predictable pattern
• Technology shifts can be quantitative or qualitative
• We like new technology to resemble old technology
We like our new technology to resemble our comfortable old technology
7 observations about technology

- Technology is always advancing
- Technology is changing the way we do almost everything
- Our adoption of new technologies follows a predictable pattern
- Technology shifts can be quantitative or qualitative
- We like new technology to resemble old technology
- As new technologies expand our capabilities, we also grow to rely on them more
7 observations about technology

• Technology is always advancing
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• As new technologies expand our capabilities, we also grow to rely on them more
• There’s a symbiotic growth relationship between emerging technologies and the purposes for which these technologies are developed
7 observations about healthcare technology

• Technology is always advancing in healthcare
• Technology is changing the way we do almost everything in healthcare
• Our adoption of new technologies follows a predictable pattern in healthcare
• Technology shifts in healthcare can be quantitative or qualitative
• We like new technology in healthcare to resemble old technology
• As new technologies expand our healthcare capabilities, we also grow to rely on them more
• There’s a symbiotic growth relationship between emerging healthcare technologies and the clinical purposes for which these technologies are developed
Technology and Mental Health: A Quick Survey of the Landscape
3 Categories of MH Tech

**Products that facilitate the delivery of care**  
(no real changes to care)

- Tools that make care more accessible, efficient, or convenient
- Tools that help with data collection or documentation of care
- Tools that support patient-provider communication about care

**Products that enhance the delivery of care**  
(changes to care)

- Tools that present clinical data and help inform care decisions
- Tools that help standardize care to enhance quality
- Tools that add new features to assessment and treatment
- Products for use by Veterans to enhance care (therapy adjuncts)

**Tech products that provide MH care**  
(new approach to care?)
Technology-Delivered Care?

The potential of Massive Open Online Interventions (MOOIs) and Digital Apothecaries to reduce health disparities worldwide (R. Munoz, 2021)

Chatbot Therapy Can Reduce Post-Op Opioid Use

Your Next New Best Friend Might Be a Robot

*Meet Xiaoice. She’s empathic, caring, and always available—just not human.*
Tech not central (could do without tech)

IMPORTANCE OF TECH TO MH SERVICE

Tech central (could not do without tech)
EHR – Documentation (templates, tools)
MH testing apps and platforms
Tele-mental health (remote care)

IMPORTANCE OF TECH TO MH SERVICE

Tech not central (could do without tech)
Tech central (could not do without tech)
MAP OF MH TECHNOLOGY GROUPS, BY USER AND CENTRALITY OF TECH TO MH SERVICE

Clinician

- EHR – Documentation (templates, tools)
- Clinical decision support tools
- MH testing apps and platforms
- Tele-mental health (remote care)
- Data repositories
- EHR - Clinical decision support (reminders, decision trees)

Veteran

- Asynchronous therapy platforms
- Wearable devices (BAN)
- Patient portals
- Continual live monitoring
- Self-directed care apps or courses
- Social media collaborative communities

Tech not central (could do without tech)

IMPORTANCE OF TECH TO MH SERVICE

Tech central (could not do without tech)
IMPORTANCE OF TECH TO MH SERVICE

MAP OF MH TECHNOLOGY GROUPS, BY USER AND CENTRALITY OF TECH TO MH SERVICE

Clinician

Primary User

Veteran

Tech not central (could do without tech)

Tech central (could not do without tech)
IMPORTANCE OF TECH TO MH SERVICE

(MAP OF SOME VA MH TECHNOLOGIES, BY USER AND CENTRALITY OF TECH TO MH SERVICE)

(C) = research

Clinician

VA REACH VET
All Veterans on this report may benefit from enhanced care
ReachVet predictive analytics tool

VA Secure Messaging
Virtual Reality-Assisted Treatments (R)

VA Online Scheduler
Veteran MH support network platform
Vet-facing mobile apps, web courses

MH Information System (MHIS)
MH Management System (MHMS)

CPRS Clinical Reminders / Cerner Recommendations

VA AI Tech Sprint project – Behavidence social media activity monitoring

CPR & Cerner Documentation Templates and Tools

VA/DoD CPGs
VVC

CPGs

SPPRITE Report
Suicide Prevention Population Risk Identification and Tracking for Exigencies

Virtual Care Manager

Multi-capability platforms (R)

My HealtheVet patient portal

VA Launchpad

VA Online Scheduler

VA Tech not central (could do without tech)

Tech central (could not do without tech)
GAPS IN THE VA MH TECHNOLOGY SPACE, BY USER AND CENTRALITY OF TECH TO MH SERVICE

Tech not central (could do without tech)

Clinician

PRIMARY USER

Tech central (could not do without tech)

Veteran

IMPORTANCE OF TECH TO MH SERVICE

- EHR-embedded real-time CDS tools
- Expansion of AI/ML applications in MH
- EHR interfaces with some tech tools
- Interoperability of tech tools
- Asynchronous psychotherapy platform
- Research on tech-enhanced and tech-delivered therapies
- Vet-facing Learning Management System
- Research on wearables, continuous live assessment
- One-stop patient portal
- Social media collaborative communities
Mental Health Informatics in VA
“Biomedical and health informatics [is a field that] applies principles of computer and information science to the advancement of life sciences research, health professions education, public health, and patient care. This multidisciplinary and integrative field focuses on health information technologies (HIT), and involves the computer, cognitive, and social sciences.”

- AMIA website
What is informatics?

“Biomedical and health informatics [is a field that] applies principles of computer and information science to the advancement of life sciences research, health professions education, public health, and patient care. This multidisciplinary and integrative field focuses on health information technologies (HIT), and involves the computer, cognitive, and social sciences.”

- AMIA website
What is informatics?
What is informatics?
What is informatics?
General model of applied informatics

Gather Data

Store Data

Process Data
*(convert data into information)*

Make Information Available
General model of applied informatics

- **Gather Data**
- **Store Data** (convert data into information)
- **Make Information Available**

MH Information System (MHIS)
MH Management System (MHMS)

Electronic MH Testing Tools

Mental Health Assistant v1.3

CPRS & Cerner Documentation
Templates and Tools

SPPRITE Report
Suicide Prevention Population Risk Identification and Tracking for Exigencies

VA REACH VET
All Veterans on this report may benefit from enhanced care
General model of applied informatics

Closely aligned with Measurement Based Care (MBC) Model

COLLECT

Gather Data

SHARE

Process Data (convert data into information)

ACT

Make Information Available
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Where does informatics live in VA?

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Key MH informatics partners at the National level

- VHA Office of Health Informatics (OHI)
  - Office of Connected Care (OCC)
  - Human Factors Engineering (HFE)
  - Business Architecture (BA)
  - Office of Nursing Informatics (ONI)
  - Knowledge-Based Systems (KBS)
- National Clinical Template Workgroup (NCTW)
- Offices of Information Technology
  - VHA OIT (funding requests and oversight)
  - VA OIT (project support and oversight)
- Contract IT product developers
- VHA Innovations Ecosystem

- EHRM Offices and Teams
  - EHRM Integration Office
  - VHA Functional Champion’s Office (FCO)
  - Cerner associates
  - VISN and VAMC MH teams
  - VISN and VAMC implementation teams
- VHA Privacy Office
- VHA Office Regulation, Appeals and Policy (10BRAP)
- CMHO group
- Field sites and MH teams
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**OMHSP**
- OMHSP – Informatics Section
- OMHSP – Evaluation Centers

**VISN**
- VISN Informatics Team

**FACILITY**
- VAMC Informatics Team
Where does informatics live within OMHSP?
Where do MH informatics products live within OMHSP?
How can I use this information?
A few implications and applications
A few implications for psychologists

• Need for discussions with Veterans of comfort with technology and of technical capabilities, infrastructure, and barriers

• Ongoing technology learning curves, for staff and Veterans, all the time

• Potential for tech/information overload, for both Veterans and clinicians

• Continued vigilance to data security and privacy

• Potential practice implications:
  • Licensure, state laws and rules, permitted practices
  • Patient insurance and reimbursement
  • Malpractice coverage
A few implications for the field of psychology

• Increasing focus on standardization (data standards, standard workflows etc.) and on interoperability of data, tools, and technologies. Will we adapt?
• Are remote and tech-enhanced approaches to assessment reliable and valid?
• Are remote and tech-enhanced approaches to treatment effective?
• Healthcare industry is unlikely to retreat much from remote provision of care.
• What opportunities may technology provide for qualitative advances in mental health care? What are the risks? How do we pursue opportunities without going too far?
5 ways to apply this information
5 ways to apply this information

• Keep an eye on the tools and trends
You can ride the waves, try to swim against them, or get out of the water.
5 ways to apply this information

• Keep an eye on the tools and trends
• Recognize and embrace your place in the adoption curve
Recognize and embrace the adoption curve

Adapted from G. Mirthini (2020). Technology Adoption Curve: 5 Stages of Adoption. Downloaded on 5/21/22 from https://whatfix.com/blog/technology-adoption-curve/
Recognize and embrace the adoption curve

**Tech Enthusiasts (2.5%)**
- Enthusiastic about new tech
- Love being on the cutting edge
- Comfortable with non-conformity
- Embrace risk/expect public failure
- Motivated by enthusiasm, promise

**Visionaries (13.5%)**
- OK with risk, but want some evidence
- Like being up to date, on top of trends, but care about their reputation
- Tend to test tools before committing
- OK with working through bugs
- Great beta testers
- Happy to spread the word
- Like guides, training

**Pragmatists (34%)**
- Interested, but want evidence first
- Look to case studies, real-life user stories, reports
- Scour reviews before committing
- Logical and practical about adoption
- Motivated by evidence of new tech solving a significant problem.

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Recognize and embrace the adoption curve

Conservatives (34%)

• Cautious, risk averse about new tech
• Need concrete, personal reason to adopt
• Not easily persuaded, tend to question need for change
• Delay adoption as long as possible
• Wait on proof, evidence of personal benefit

Skeptics (16%)

• Wary of new technology
• Strongly prefer the known status quo
• Easily frustrated by problems, quick to give up unless there’s visible personal benefit
• Motivated by compelling success stories from coworkers

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Recognize and embrace the adoption curve

Where are you on the adoption curve? How can you use your natural inclination to benefit the organization? Your Veterans?

SOME EXAMPLES:

Tech Enthusiast – seek opportunities to try products on the horizon, help agency learn from failures

Visionary – offer to beta test new products, serve as champion and trainer for solid ones

Pragmatist – help agency collect reviews, ranking, and evidence of benefit; help keep focus on making improvements

Conservative – help agency be explicit about reasons for change, ways risks will be addressed

Skeptic – push the organization to assemble compelling evidence of benefits
5 ways to apply this information

• Keep an eye on the tools and trends
• Recognize and embrace your place in the adoption curve
• Help all stakeholders stay focused on the mission
5 ways to apply this information

• Keep an eye on the tools and trends
• Recognize and embrace your place in the adoption curve
• Help all stakeholders stay focused on the mission
• Help channel technological momentum for good
5 ways to apply this information

• Keep an eye on the tools and trends
• Recognize and embrace your place in the adoption curve
• Help all stakeholders stay focused on the mission
• Help channel technological momentum for good
• Get involved in innovation and informatics
Where does informatics live in VA?

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