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THE **TeleBehavioral Health Summit**
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The Undiscovered Country: The Future of
Tele-Behavioral Health Post COVID

Jay H Shore, MD, MPH



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Health Summit**

Learning objectives

Upon completion of this activity, attendees should be able to:



Discuss the state of the field of telemental health and technology prior to the COVID pandemic



Understand the impacts of COVID on behavioral health care including administrative, regulatory and clinical landscapes



Recognize the future implications of practice after the COVID emergency and beyond

Disclosures

I am solely responsible for the content of this presentation. It does not represent an official position, policy, endorsement, or opinion of any of the organizations with which I am involved.

Dr. Shore is Chief Medical Officer of AccessCare Services which provides Telemental health services in Colorado and Alaska and receives royalties from American Psychiatric Press and Springer Press.

TeleMental Health Journey and Experiences

• Current Roles

- Professor and Vice Chair of Innovations (Technology, Therapeutics, and Transformation), Department of Psychiatry Anschutz Medical Campus
- Population Specialist (Rural Native Veteran focus), VA's Office of Rural Health Veterans Rural Health Resource Center-Salt Lake City
- Chief Medical Officer, AccessCare (Telemental Health Service for underserved communities)

• Past Roles

- Behavioral Health Portfolio Manager (2006-2013), Telemedicine and Advanced Technology Research Center (TATRC) US Army Medical Command, Fort Detrick, MD
- Former Board Member and Chair of Telemental Health SIG, American Telemedicine Association
- Founding Chair of Telepsychiatry Committee, American Psychiatric Association

A stage with red curtains and a marquee. The marquee is a curved structure with two rows of glowing lights. The background is a white gradient.

Tele-Behavioral Health: A play in 3 Acts

- ACT I: The Hurricane
- ACT II: The Plague
- ACT III: The Undiscovered Country



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www.SkylineScenes.com

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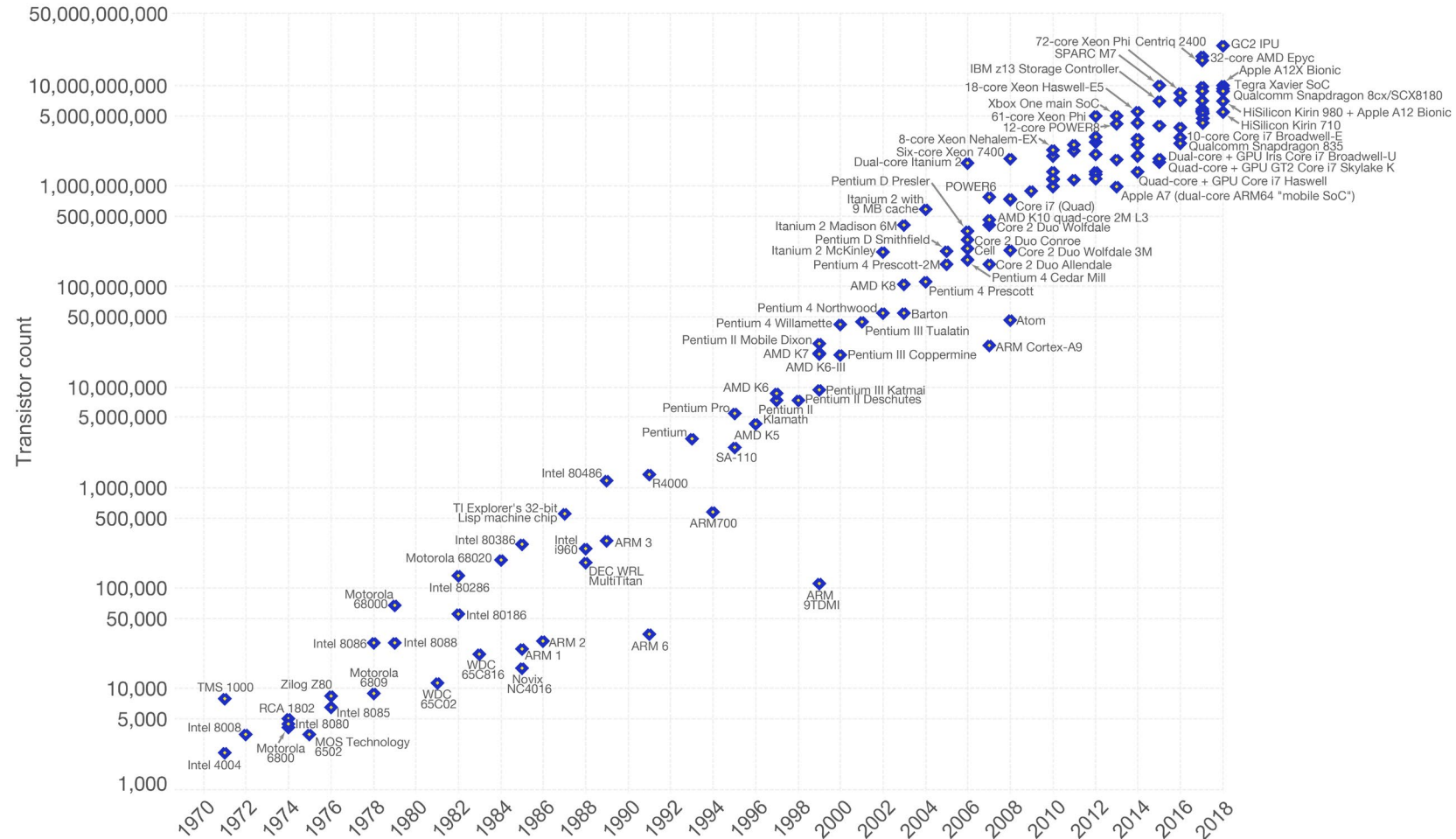




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Moore's Law – The number of transistors on integrated circuit chips (1971-2018)

Moore's law describes the empirical regularity that the number of transistors on integrated circuits doubles approximately every two years. This advancement is important as other aspects of technological progress – such as processing speed or the price of electronic products – are linked to Moore's law.



Data source: Wikipedia (https://en.wikipedia.org/wiki/Transistor_count)
The data visualization is available at [OurWorldinData.org](https://www.ourworldindata.org). There you find more visualizations and research on this topic.

Licensed under CC-BY-SA by the author Max Roser.





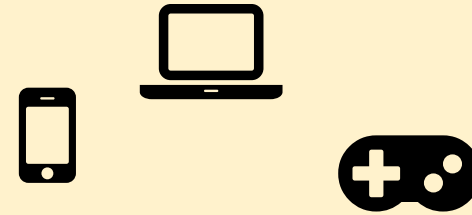
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Digital Natives VS. Digital IMMIGRANTS



DIGITAL IMMIGRANTS

- Use Internet for information second rather than first
- Print out email
- Share computer content in-person
- Learn slowly, step-by-step, one thing at a time



DIGITAL NATIVES

- Parallel processing & multitasking
- Prefer graphics & visuals
- Instant gratification & rewards
- Prefer to be networked
- Learn with information fast, presented in a random fashion



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Based on Mark Prensky's "Digital Natives, Digital Immigrants." [http://www.marcprensky.com/writing/Prensky%20-](http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf)

[%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf](http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf). Accessed 12/30/2016.

UW Medicine | Harborview Medical Center | Behavioral Health Institute

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RADIO NEWS 25 Cents
 April 1924
 Over 200 Illustrations
 Edited by H. GERNSBACK

THE RADIO DOCTOR—*Maybe!*

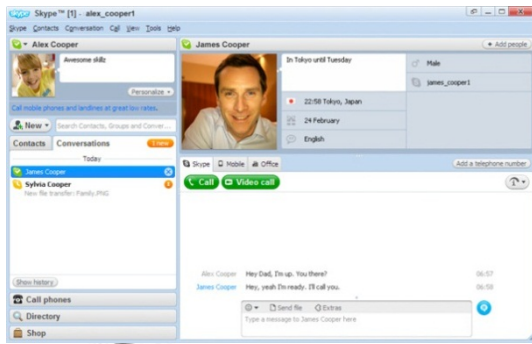
IN THIS ISSUE:
 Sir Oliver Lodge, F.R.S.
 Dr. J. A. Fleming, F.R.S.
 F. W. Dunnington and
 F. H. Engel of
 Cornell University
 Edward S. Pyle
 Raymond Foote

THE 100% RADIO MAGAZINE

ORIGINAL DRAWING BY THE EDITOR, 1924. REPRODUCED FROM...

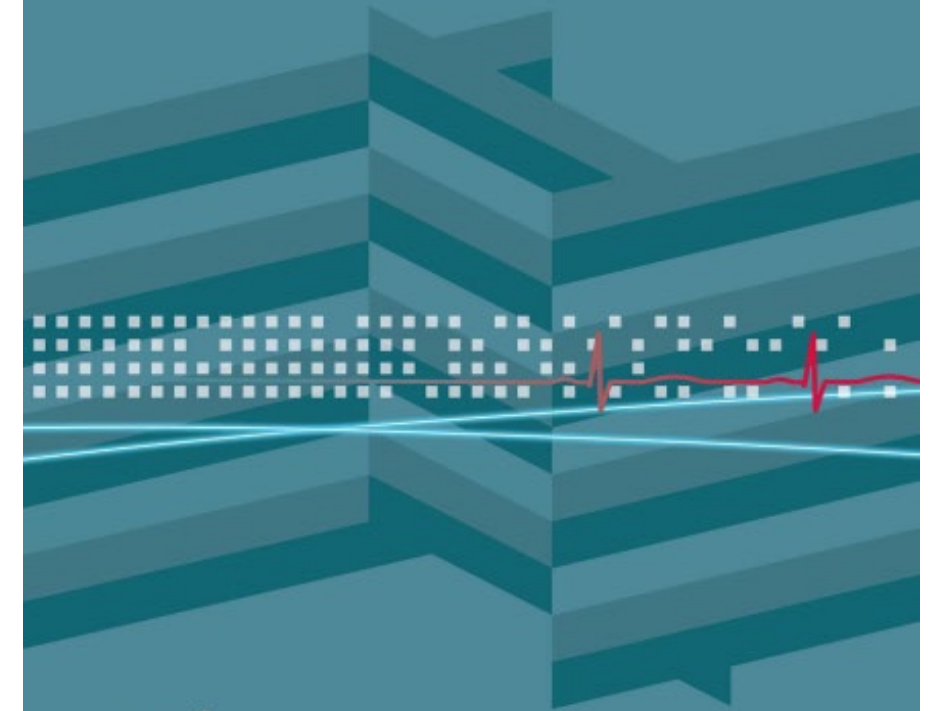


*Telepsych photos from UNMC Archives, Special Collections Department, McGoogan Library of Medicine, University of Nebraska Medical Center, Omaha, Nebraska



Practice Guidelines for Videoconferencing-Based Telemental Health

August 2009



ATA American Telemedicine Association
Quality Healthcare Through Telecommunications Technology



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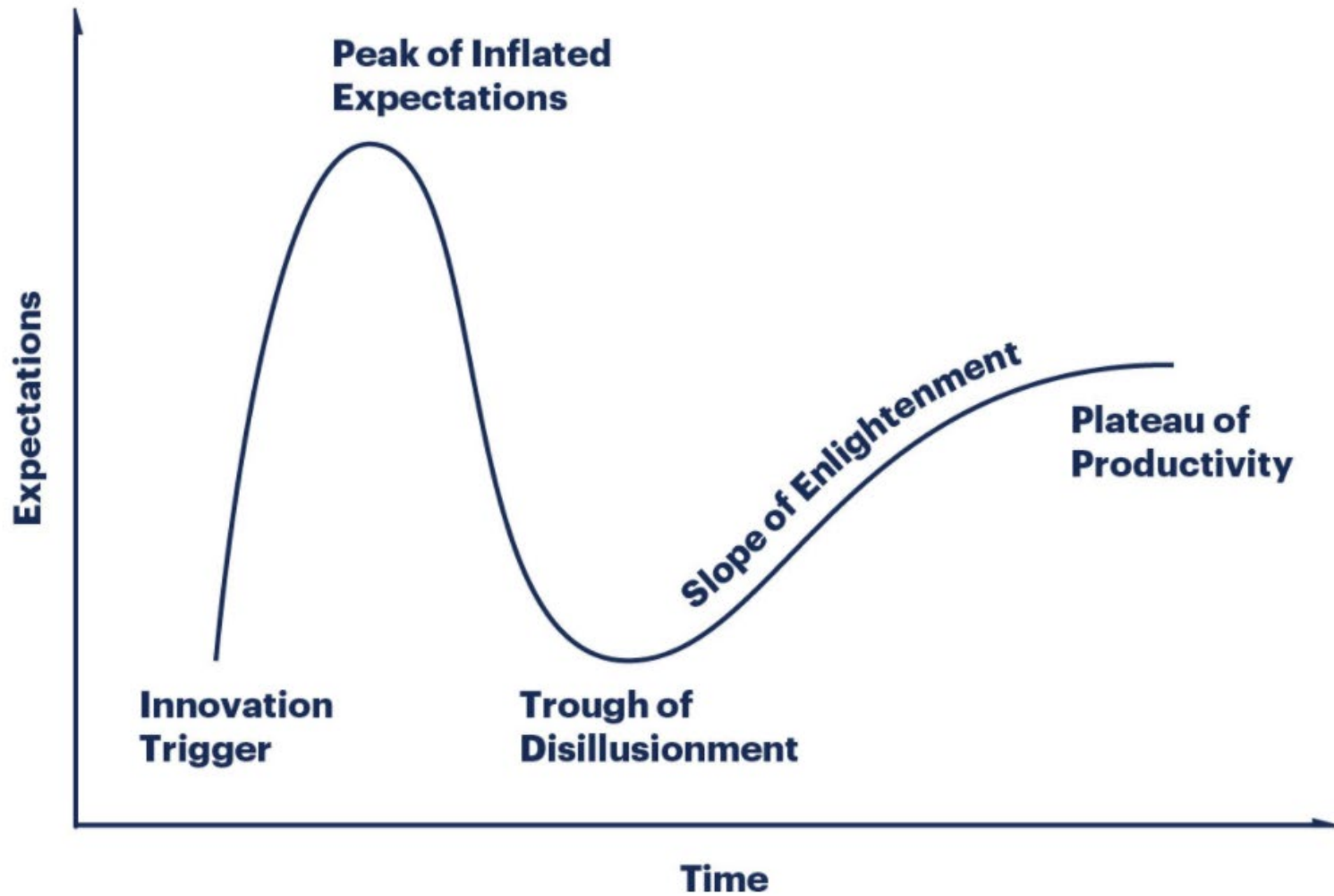
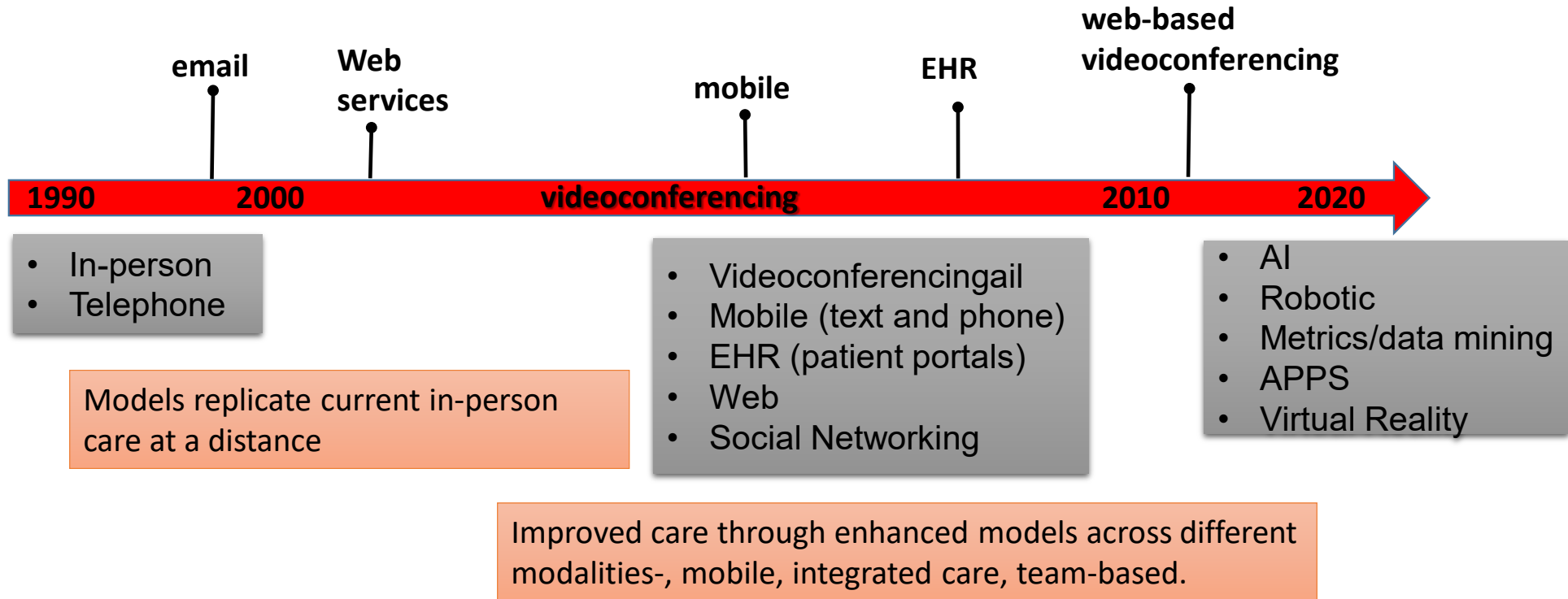


FIGURE 1: EVOLUTION OF TELEPSYCHIATRY PRACTICE MODELS



Shore, J. H. (2019). Best Practices in Tele-Teaming: Managing Virtual Teams in the Delivery of Care in Telepsychiatry. *Current psychiatry reports*, 21(8), 77.

HYBRID CARE

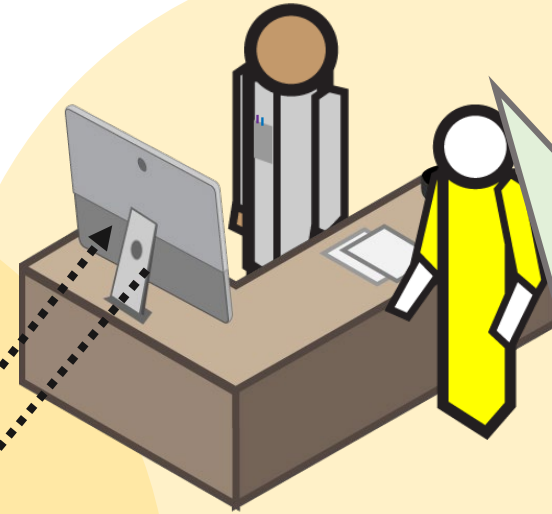
VIRTUAL SPACE

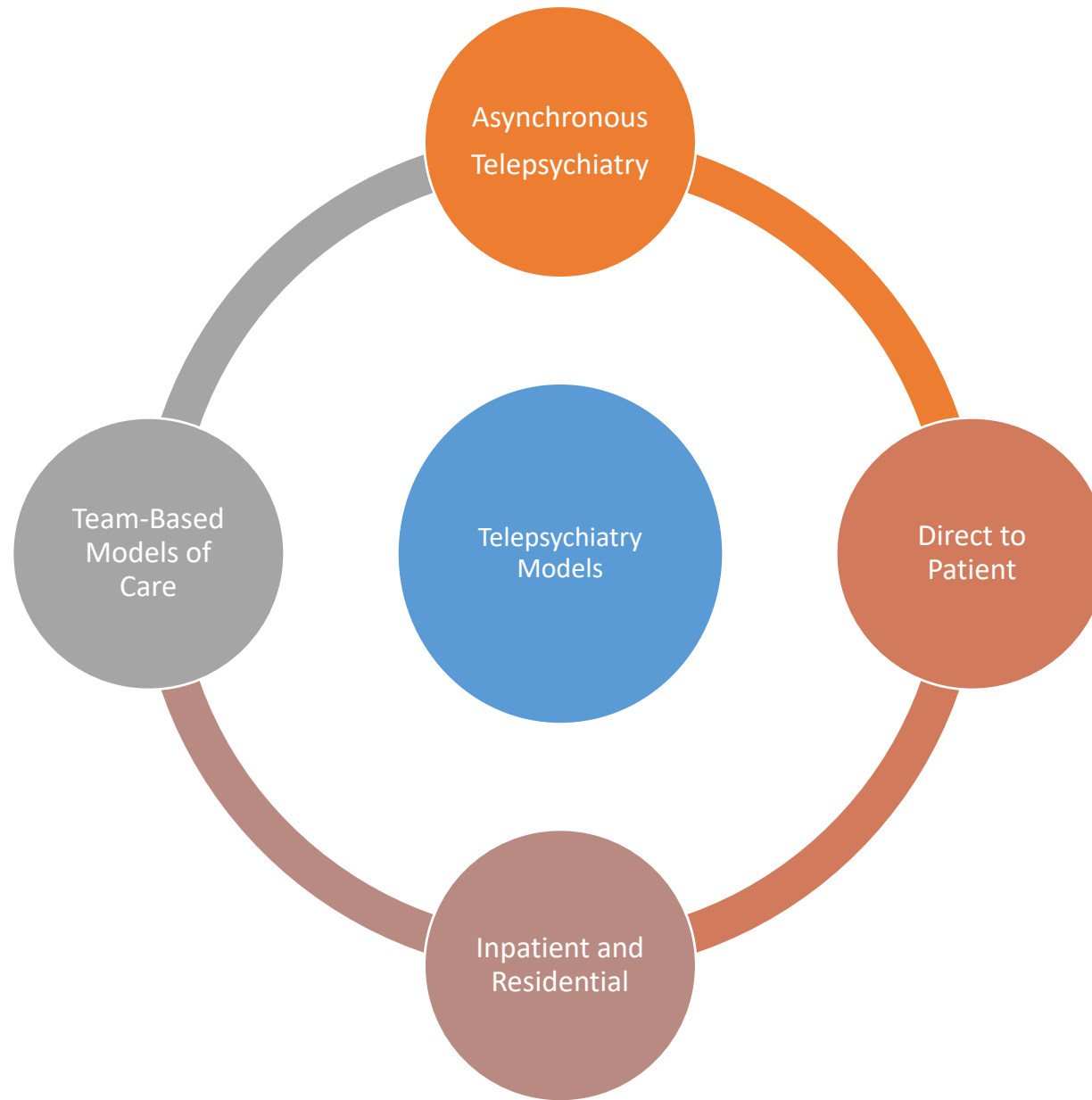
- Advantage for those with avoidant behavior, PTSD, and anxiety
- Convenient & immediate
- Provider can observe patient in their environment
- Indirect & off-hours care opportunities
- Modalities include videoconferencing, e-mail, text messaging & telephony



PHYSICAL SPACE

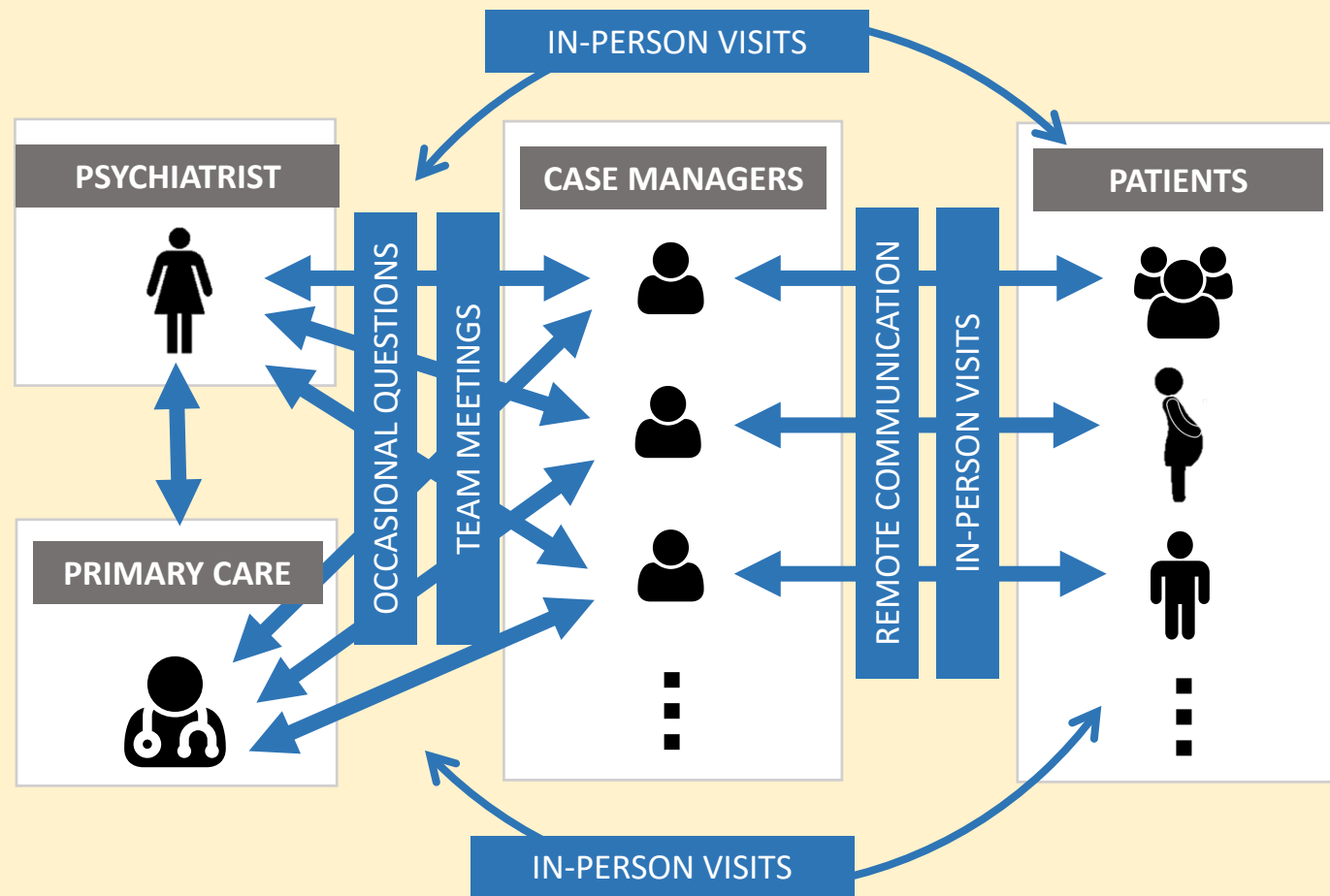
- Traditional in-person gold standard
- Immediacy & trust in interpersonal interaction
- Physical boundaries can be set for therapeutic frame
- Ample research and practice guidelines available for healthcare in the physical space





POPULATION HEALTH and COLLABORATIVE CARE

Population management is a form of indirect (or asynchronous) care. A **psychiatrist** manages **case managers (or coordinators or navigators)** who interact with patients, gather collateral, process paperwork, and help patients navigate a complex health system.

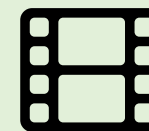


REMOTE COMMUNICATION TECHNOLOGIES

Psychiatrists, primary care providers, case managers, and patients can interact at a distance using these HIPAA-compliant methods.



Messaging apps
Questionnaire apps
Medication adherence apps



Videoconferencing
Video & audio messaging



E-mail
Post office mail



Patient web portals
Internet-delivered therapy
Internet-delivered education



Fax
Telephone & voicemail



Asynchronous Telepsychiatry

- In a series of initial studies, “store-and-forward” telepsychiatry was shown to be reliable, feasible, and effective in providing psychiatric support using a stepped-care.

Yellowlees P, Burke Parish M, González Á, Chan, S, Hilty D, Iosif A, McCarron R, Odor A, Scher L, Sciolla, A, Shore J, Xiong G, Shore, J: Asynchronous telepsychiatry: a component of stepped integrated care. *Telemed J E Health* 2018; 24:375–378

Telepsychiatry in an Alaska Native Residential Treatment Program



- Since 2007, the University of Colorado Centers for American Indian and Alaska Native Health (CAIANH) team-based telepsychiatry at a residential substance abuse treatment center serving the Alaska Native community in Anchorage, Alaska.
- 103 patients telepsychiatry services vs. matched control group.
 - Telepsychiatry group showed significantly higher rates of treatment complexity stayed in treatment longer, had AMA discharges, more likely to complete treatment

Table 3. Predictors of an Increased Length of Stay Among Patients Receiving Behavioral Health Services

CHARACTERISTIC	ESTIMATE	SE	P
Received telepsychiatry	43.82	10.11	<0.0001
Age	1.16	0.4517	0.0108

Results are from a linear regression. Saturated model included: received telepsychiatry, cocaine abuse, opiate abuse, stimulant abuse, age, gender, legal problems, employment, homeless, lost custody of children, depression, PTSD, bipolar, other behavioral health condition, chronic medical condition, and sequelae.
SE, standard error.

Table 4. Predictors of Treatment Completion Among Patients Receiving Behavioral Health Services

CHARACTERISTIC	OR	95% CI	P
Received telepsychiatry	1.993	1.116–3.559	0.0198
Age	1.052	1.024–1.082	0.0002

Results are from a logistic regression. Saturated model included: received telepsychiatry, cocaine abuse, opiate abuse, stimulant abuse, age, gender, legal problems, employment, homeless, lost custody of children, depression, PTSD, bipolar, other behavioral health condition, chronic medical condition, and sequelae.
CI, confidence interval; OR, odds ratio.

Legha, R. K., Moore, L., Ling, R., Novins, D., & Shore, J. (2019). Telepsychiatry in an Alaska Native residential substance abuse treatment program. *Telemedicine and e-Health*.

Critical Health Care trends and Risks impacting psychiatry pre-COVID

- Mental Health and Psychiatry workforce needs
- Value based payment reform
- Health Care Consolidation
- Burnout
- Healthcare disparities and social determinants of health

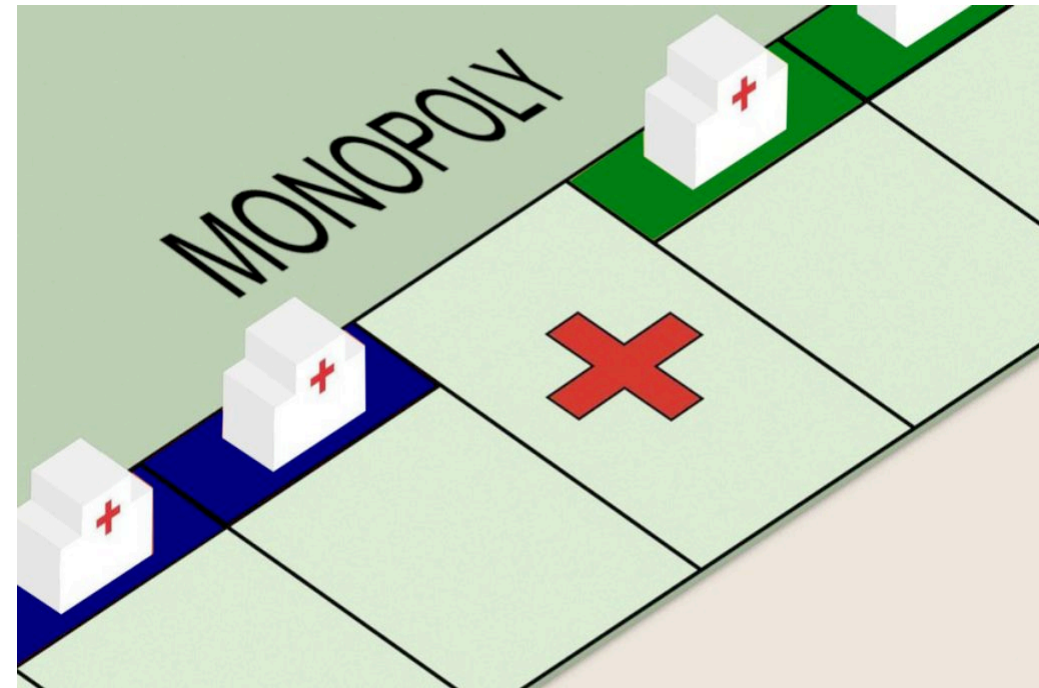


Image <https://thecapitolist.com/state-lawmakers-embrace-trump-agenda-break-up-health-care-monopolies>

TeleBehavioral Health During COVID

“It was the best of times it was the worst of times”





... there's no question of heroism in all this. It's a matter of common decency. That's an idea which may make some people smile, but the only means of righting a plague is, common decency.

“What do you mean by ‘common decency’?” Rambert's tone was grave.

I don't know what it means for other people. But in my case I know that it consists in doing my job.

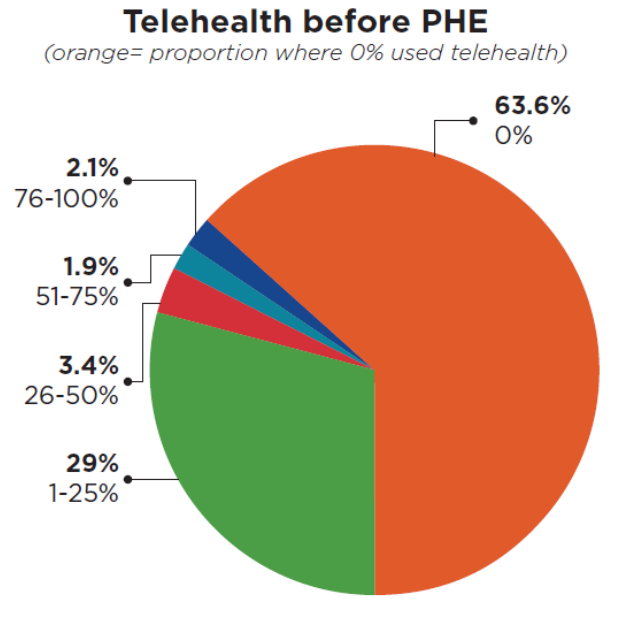
-Albert Camus the Plague

United states March 2020: supersonic change

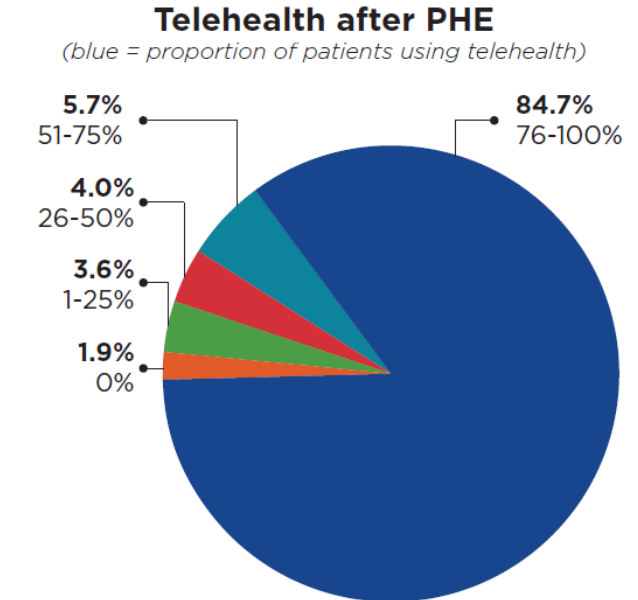
1. Pervasive deployment of telehealth and telepsychiatry
 - Video-conferencing and enabling technologies
2. Rapid virtualization of operation
 - Collection of technologies and systems

Psychiatrists Use of Telepsychiatry During COVID-19 Public Health Emergency

Policy Recommendations



- 64% not using telehealth prior to emergency
- 84% doing more than 75% of case load after emergency
- Decrease in no shows
- High rates of satisfaction
- Less than 25% with reported had to use phone only (no video)



<https://www.psychiatry.org/news-room/apa-blogs/apa-blog/2020/06/apa-member-survey-highlights-benefits-of-telehealth-use-during-pandemic>





The Promise of telepsychiatry to Support health care equity

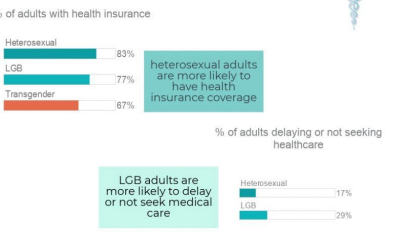
Increase Access Care
Leverage Models for Team-Based Care and Population Health
Move care into the Community
Customize Care to Patient
Embed and link to wider resources to address Social Determinants



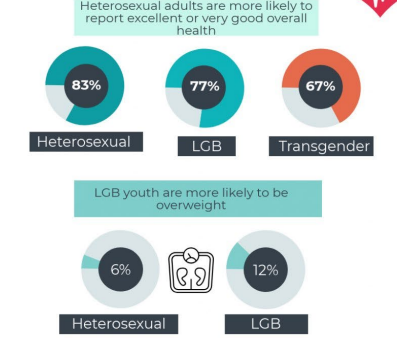
Come ride COVID the Regulatory Rollercoaster

AREA	Pre-COVID	COVID	Post-COVID
State Licensure	<ul style="list-style-type: none"> Licensed where patient is located (with some federal exemptions) 	<ul style="list-style-type: none"> State by state exemptions Site of practice issues 	Reverted
Federal Regulations of Prescription of Controlled Substances (Ryan Haight Act)	<ul style="list-style-type: none"> In-person exam required 	<ul style="list-style-type: none"> In-person exam requirement waived 	Reverted
Billing and Re-imburement for Telepsychiatry	<ul style="list-style-type: none"> Limits on billing (codes type, provider type, location, technology) 	<ul style="list-style-type: none"> Additional codes Additional locations Phone visits Additional provider types 	Expansion from Pre-Covid
HIPPA Compliant Technology	<ul style="list-style-type: none"> Technology must be HIPPA complaint 	<ul style="list-style-type: none"> Enforcement currently at “discretion” 	Reverted
Trainee Supervision	<ul style="list-style-type: none"> In person with some rural exemptions 	<ul style="list-style-type: none"> virtual 	Reverted

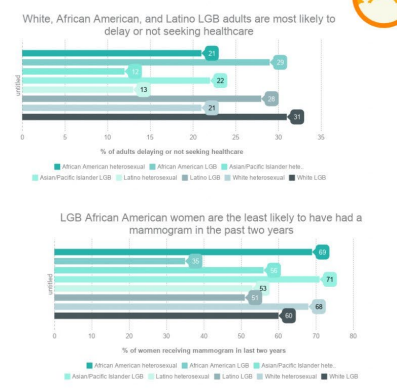
1. Access to healthcare and health insurance



2. Impact of societal biases on physical health and well-being



3. LGB health disparities by race and ethnicity

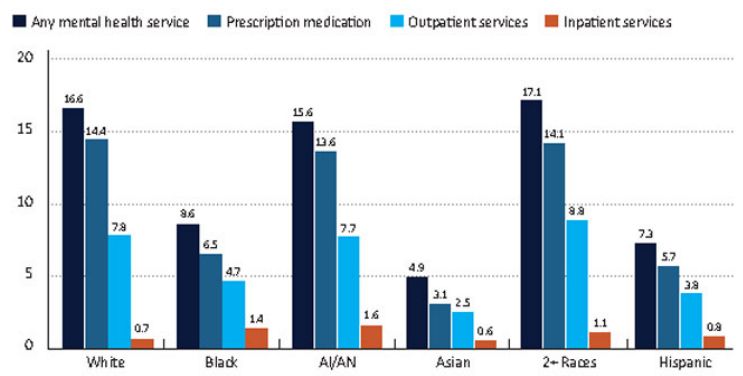


Sources:
www.healthypeople.gov
www.lgbthealtheducation.org
www.cdc.gov

Inmate Slide:m
<http://mhinjustice.weebly.co>

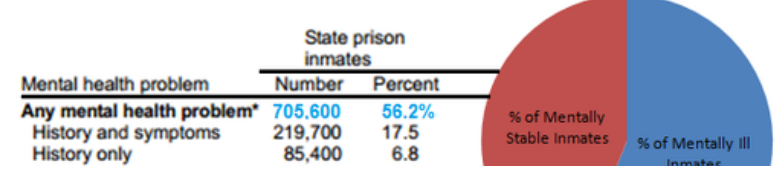
Figure 3. Use of mental health services is relatively low among blacks, Asians and Hispanics.

Annual average percent use by adults of mental health services, by race/ethnicity and service type, 2008-2012



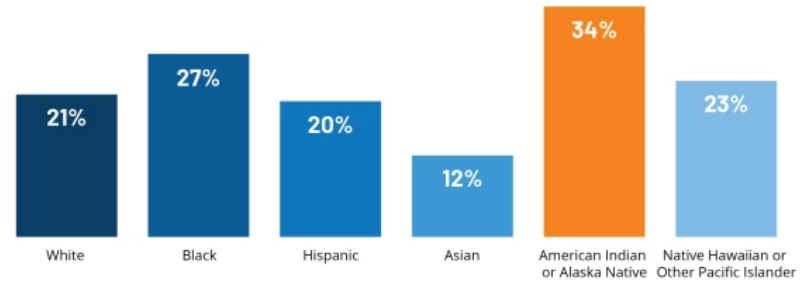
Note: AI/AN = American Indian/Alaska Native
Source: Substance Abuse and Mental Health Services Administration, 2015.

Numbers and Percentages of Inmates with and without Mental Health Problems in State Prisons



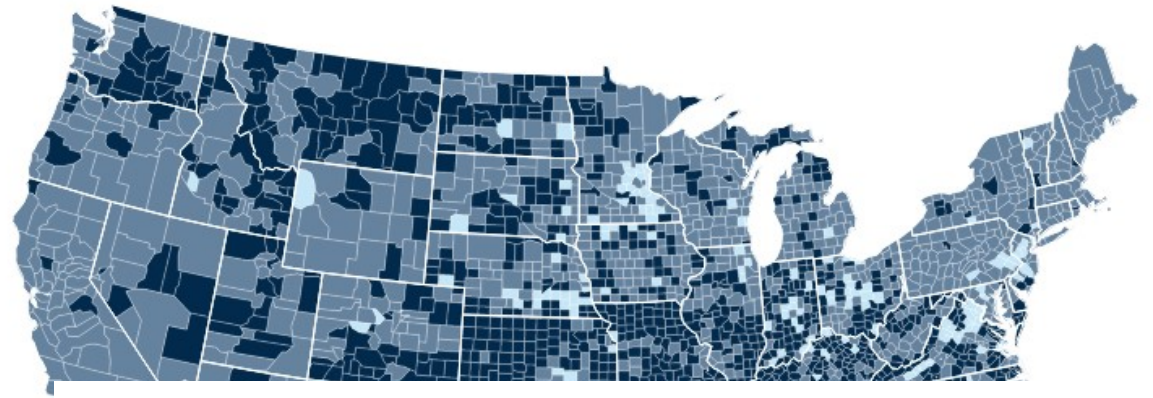
American Indians and Alaska Natives Have a Higher Risk of Serious Illness if Infected with the Coronavirus

Share of Adults Ages 18-64 at Higher Risk, by Race/Ethnicity:



HPSA, Rural Health Information Hub

Health Professional Shortage Areas: Primary Care, by County - 2019



ENVIRONMENTAL

- Air pollution
- Drinking water violations

EDUCATION

- High school graduation
- Some college
- Disconnected youth

HOUSING

- Severe housing issue
- Home ownership
- Rental homes

TRANSPORTATION

- Public transit options
- Reliable transportation
- Use of public transit

Social, Economic, Environmental, Ecological, & Cultural Factors can contribute to

DRIVERS & DETERMINANTS OF HEALTH

HEALTH CARE

- PCP ratio
- Dentist ratio
- Mental health ratio

FOOD & NUTRITION

- Food insecurity
- Food Access

VIOLENCE

- Homicide
- Firearm fatalities
- Violent crime

POVERTY

- Unemployment
- Percent below poverty line
- Median household income

<http://pulse.ncpolicywatch.org/2020/04/14/experts-covid-19-pandemic-highlights-ncs-existing-health-disparities-health-care-weaknesses/>

The Digital Divide

- Broadband Access
- Technology
- Tech Literacy
- Tech Support



COVID Induced Innovations



A black and white photograph of a desolate landscape. In the foreground, several dead, skeletal trees with bare, intricate branches stand prominently. The ground is rocky and uneven. In the background, a vast, hazy valley stretches out, with distant mountains visible under a cloudy sky. The overall mood is one of isolation and abandonment.

The Undiscovered Country

COVIDs Continued Challenges



Regulatory Issues



“ZOOM”/Digital/fatigue



Isolation, Connection Loneliness



Workforce

Burnout

Remote work



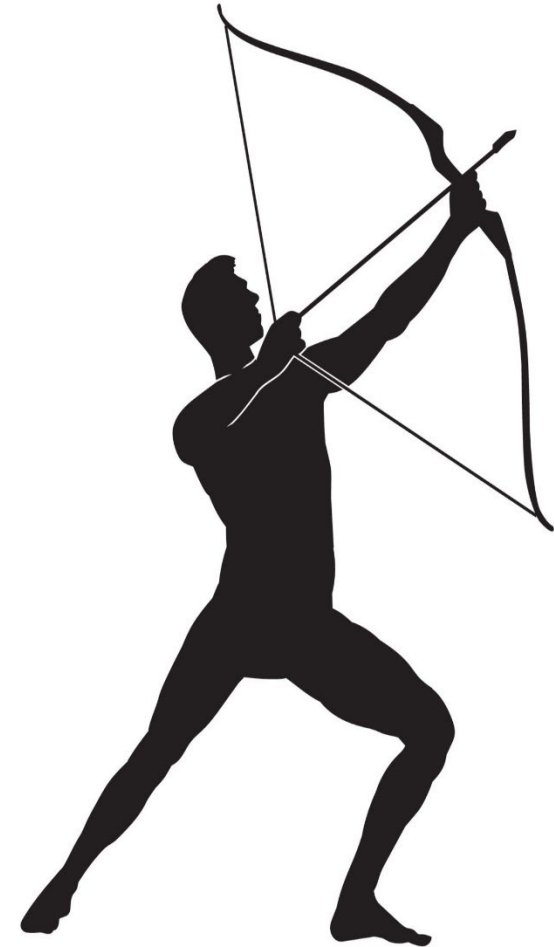
AI: Neither Artificial nor Intelligent?

- 2023 Dawn of a new era?
- Sharp divide between expectations/vision vs current use and function
- AI Anxiety

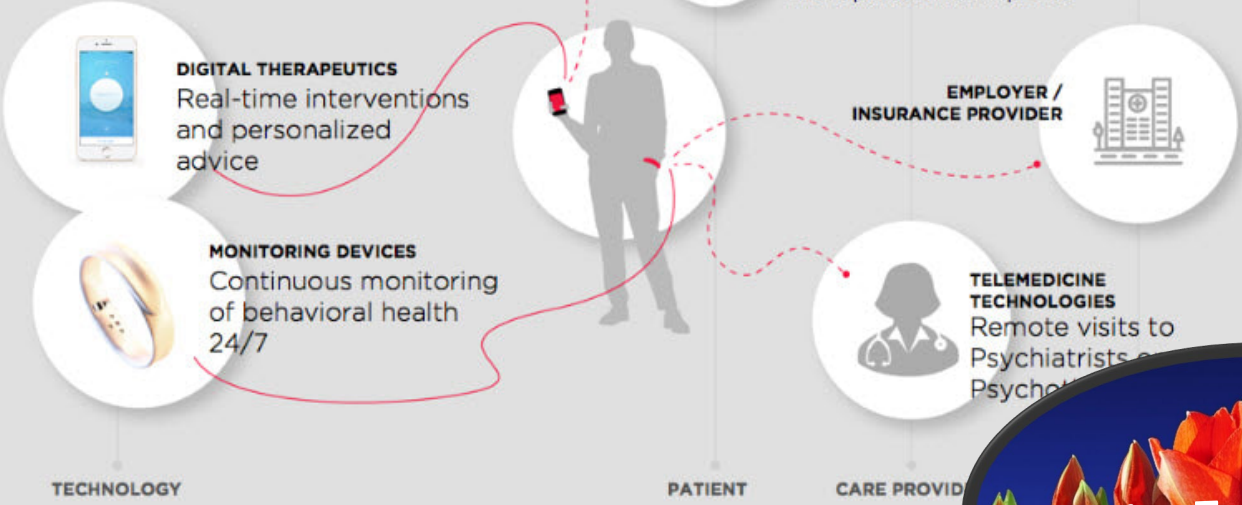


Machine Learning and Telehealth Potential

- Smart EHR
- Documentation Assistance
- Logistic Coordination
- Translation
- Body Language Translation
- Care Coordination
- Treatment Execution



AUGMENTED MENTAL HEALTH



<https://towardsdatascience.com/predicting-future-medical-diagnoses-with-rnns-using-fast-ai-api-from-scratch-ecf78aaf56a2>

<https://www.augmentedmentalhealth.com/blog/manifesto-for-augmented-mental-health>



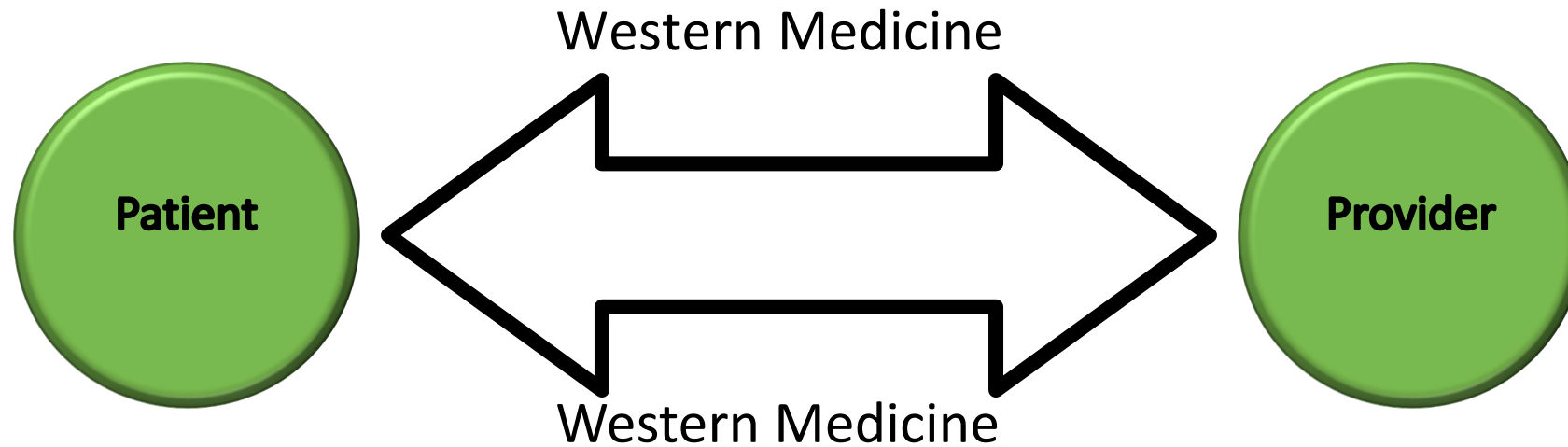
TACTICAL FLEXIBILITY

You use different moves when you're fighting half a dozen people than when you only have to be worrying about one.

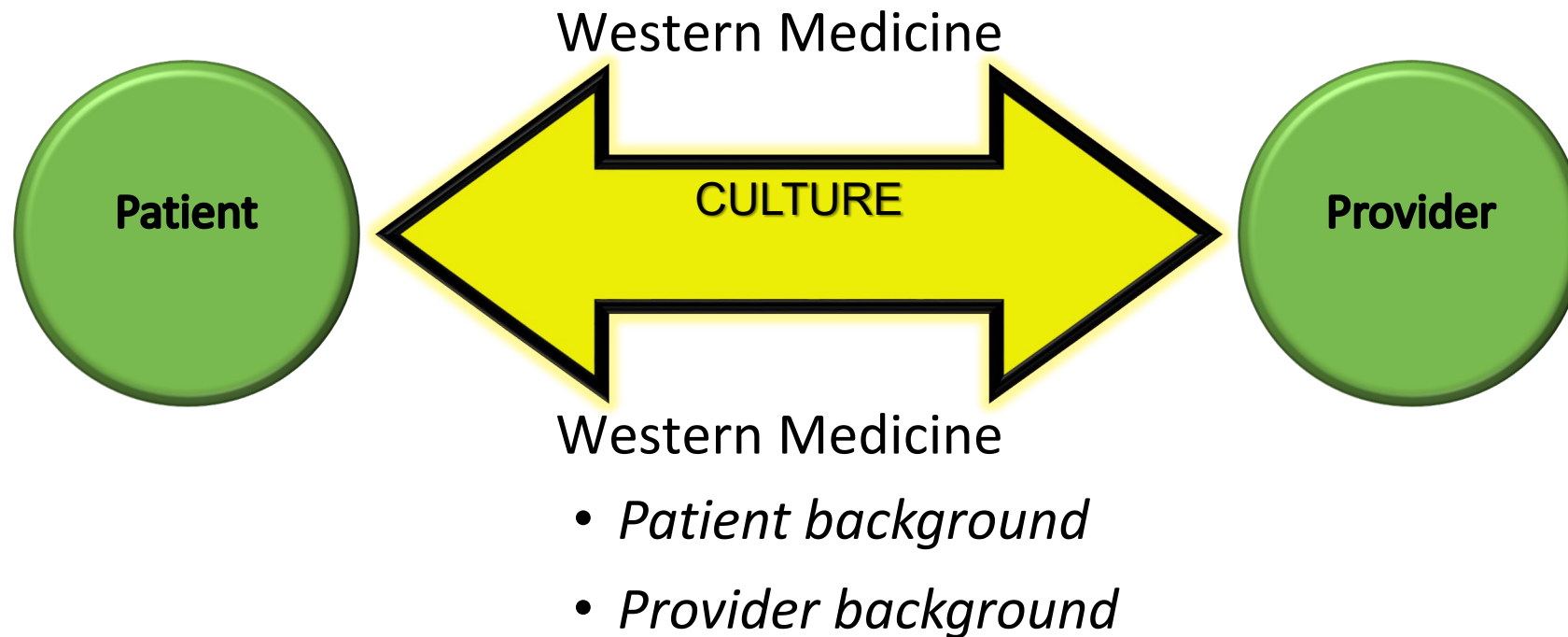


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Cultural Framework for Assessment of Mental Health Technologies



Cultural Framework for Assessment of Mental Health Technologies

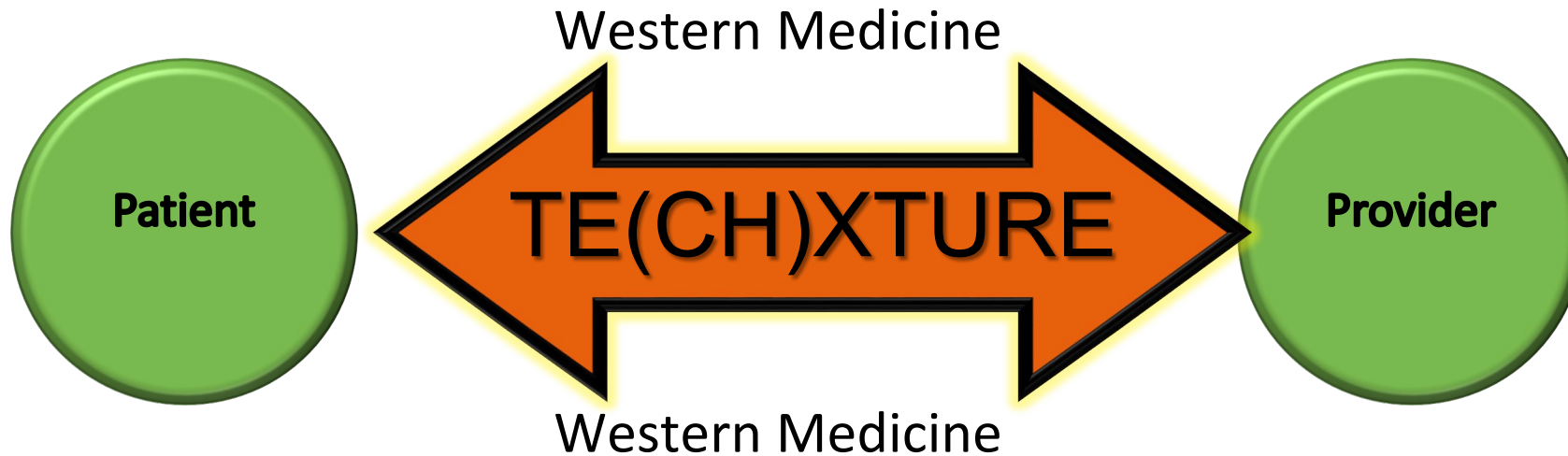


Cultural Framework for Assessment of Mental Health Technologies



- *Western Technology*
- *User Adaptation*

Cultural Framework for Assessment of Mental Health Technologies



- *Patient background*
- *User Adaptation*

- *Western Technology*
- *Provider background*

Table. Progressive 3-Step Framework's Key Considerations by Common Technologies

Medium	Key Considerations		
	Administrative	Operational	Clinical
Email or text messages	Compliance with Health Insurance Portability and Accessiblity Act-mandated security and encryption of communication	Rules around timing of response and communication (eg, accounting for delays); documentation of email and text communication (eg, if, where, and how these become part of the medical record)	Awareness of differences in email vs in-person communication style and meaning of text-based and symbol-based communication (eg, emojis); management of virtual disinhibition
Videoconferencing	Jurisdictional issues associated with licensure, standard of care, malpractice, and prescribing	Creating telepsychiatry services tailored to patient settings while attending to administrative considerations specific to those settings; creating sufficient emergency protocols for patient environment	Adapting clinical style to patient and patient setting; managing virtual space, awareness of virtual disinhibition, rapport, and distraction, especially in patient's home or office environment; clinician awareness of resources, cultural issues, and environmental factors affecting patients in remote environments with which clinicians may not have familiarity
Web-based patient portals	Security and encryption; who can access a portal and how users are identified	Rules of interaction, taking into account the function or purpose of the portal, which should be clearly communicated between clinician and patient (eg, communication vs treatment facilitation, such as electronic health record portal vs web-based therapy platform); roles of users and who has access (eg, clinicians, ancillary staff)	Timing of communication (eg, delays); clarity around what content is addressed vs not addressed on portal
Social networks	Ownership and sharing of data from networks (eg, public vs private vs professional networks)	Who has access to information (eg, clinicians, patients, contacts on network, network administrators); settings on devices for what the networks can access (eg, telephone address book, contacts)	Professional boundaries, segmentation of professional vs personal social networking; professional reputation management

Shore, J. H. (2020). Managing Virtual Hybrid Psychiatrist-Patient Relationships in a Digital World. JAMA psychiatry, 77(5), 541-542





COURAGE

Do one brave thing today... then run like heck



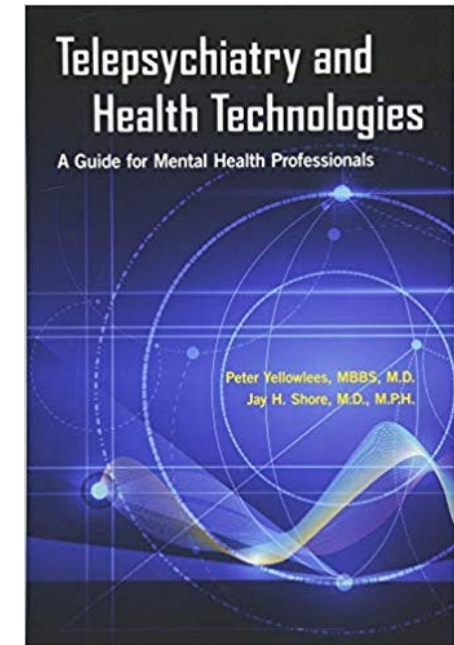
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**It always seems impossible until it
is done –*Nelson Mandela***

Key resources/REFERENCES

- APA Telepsychiatry Toolkit:
<https://www.psychiatry.org/psychiatrists/practice/telepsychiatry>
- Shore, J. H. (2020). Managing Virtual Hybrid Psychiatrist-Patient Relationships in a Digital World. *JAMA psychiatry*, 77(5), 541-542
- Shore, J. H., Schneck, C. D., & Mishkind, M. C. (2020). Telepsychiatry and the Coronavirus Disease 2019 Pandemic—Current and Future Outcomes of the Rapid Virtualization of Psychiatric Care. *JAMA psychiatry*.
- Yellowlees, Shore Telepsychiatry and Health Technologies: A Guide for Mental Health Professionals, APPI Press, 2018.



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