

WELCOME

Addiction Medicine ECHO Clinic



The session will begin promptly at 12 pm.



Please mute the audio on your device.



Sessions take place Thursday on the 2^{cd} and 4th week of the month.



Please connect your camera.

Need technical assistance? Call [907.729.2622](tel:907.729.2622) or text your phone number into the chat.



ALASKA NATIVE
MEDICAL CENTER



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TRIBAL HEALTH
CONSORTIUM



Foundation for
Opioid Response Efforts

Recording

We will record the **didactic portion** of every session. After the session, the didactic portion of this clinic will be available on the ANTHC Addiction Medicine ECHO page.

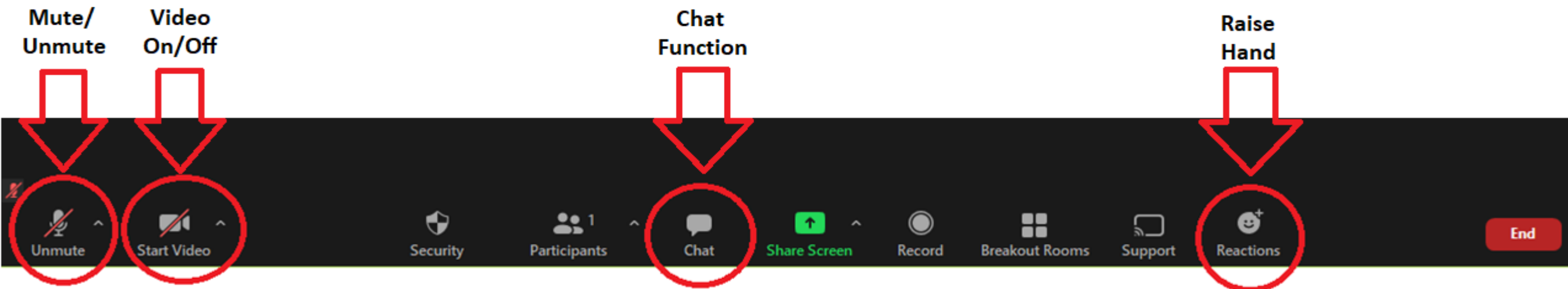
By participating in this clinic you are consenting to be recorded.

If you do not wish to be recorded, please email behavioralhealth@anthc.org at least one week prior to the ECHO Clinic you plan to attend.

Some Helpful Tips

- ▶ Please mute microphone when not speaking
- ▶ Use chat function
- ▶ Position webcam effectively
- ▶ Test both audio & video

Need technical assistance? Use the chat function or call 907-317-5209



ANTHC Clinical ECHO Series

Approved Provider Statements:



In support of improving patient care, Alaska Native Medical Center (ANMC) is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Contact Hours:

ANMC designates this activity for a maximum of 25 contact hours, including 12 total pharmacotherapeutics contact hours, commensurate with participation.

Financial Disclosures:

None of the presenters and planners for this educational activity have any relevant relationship(s) to disclose with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

Approved for 1 CHAP CE

Conflict of Interest Disclosures:

None of the presenters and planners for this educational activity have any relevant relationship(s) to disclose with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

Requirements for Successful Completion:

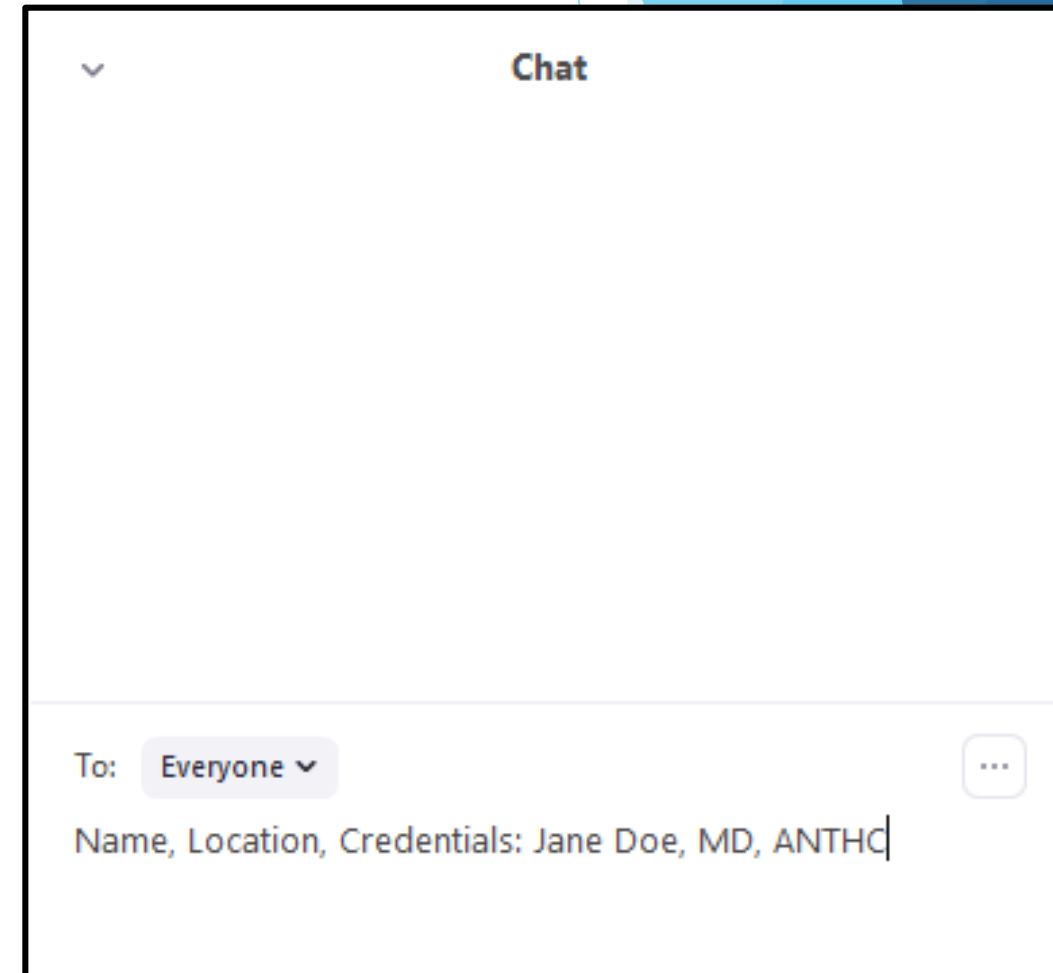
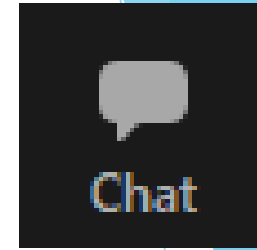
To receive CE credit be sure you are included in attendance record as directed by the facilitator/session moderator, and complete the course evaluation or post session survey via this link: <https://forms.gle/QhwCeGTf4zLNwpBX7>

For more information contact Jennifer Fielder at jfielder@anthc.org or (907) 729-1387

Introductions

Addiction Medicine ECHO

- Please introduce yourself in the chat :
 - Name
 - Location
 - Profession/Credentials
 - *Note:* The chat will be saved as our attendance record for continuing education credits.

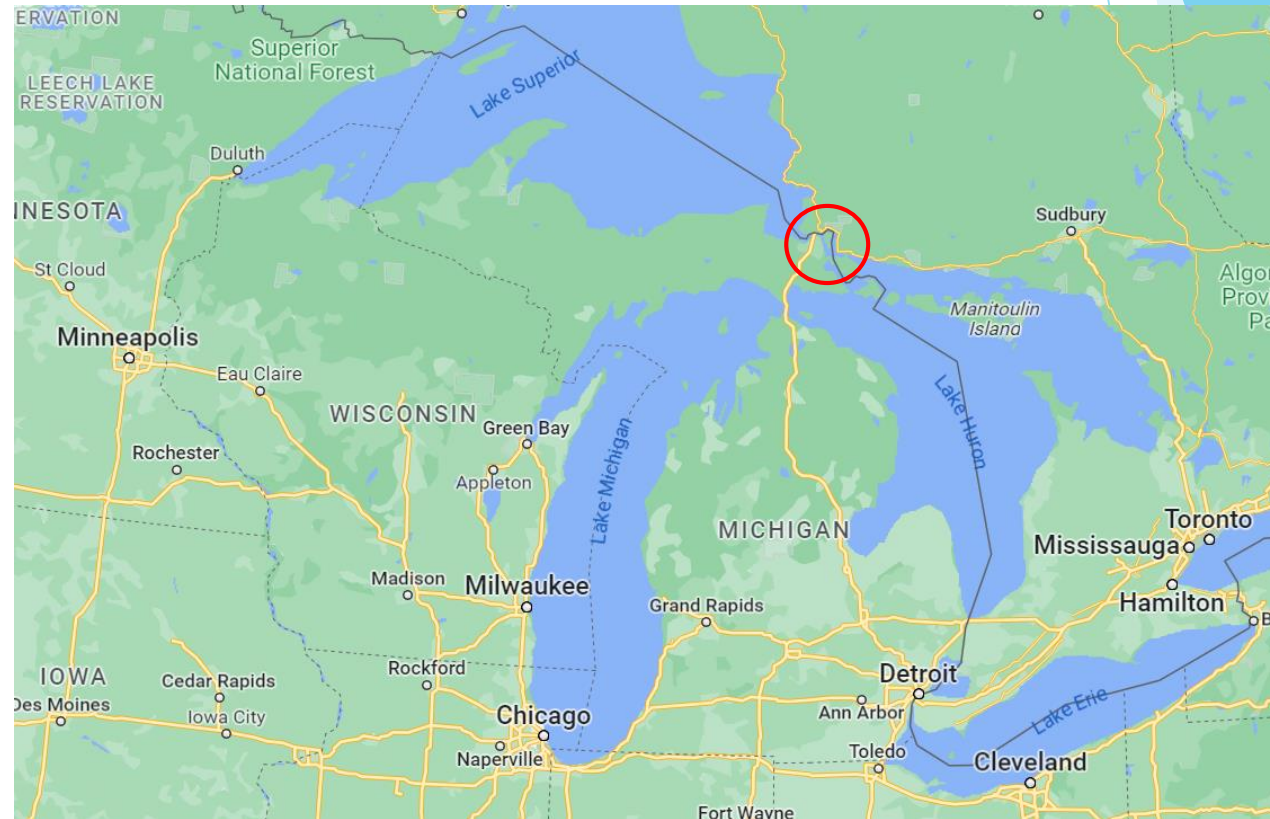


Visualizing the Connection Between Childhood Trauma & Adult Addiction: An Augmented Reality (AR) Application For Microsoft Hololens2

Timothy Collins, MPH, MS, MA

Alaska Native Epidemiology Center

Aanii, I'm Tim...



Conflict of Interest Disclosure

- ▶ The author indicates no conflicts of interest.

Objectives

- ▶ Participants will be able to describe how augmented reality (AR) technology can help patients understand the relationship between childhood trauma and increased risk of addiction (and other health outcomes) as an adult.
- ▶ Participants will understand the various applications of AR and how these may be able to be implemented or used as a resource in their practice.

What is Augmented Reality?

- ▶ Augmented Reality (AR) is the projection of three-dimensional digital models and information over real-world objects and views, generally with limited user interaction required.
- ▶ AR developed by ANTHC uses special glasses to project informational content into the user's environment. The user controls the scene with hand gestures and voice commands.



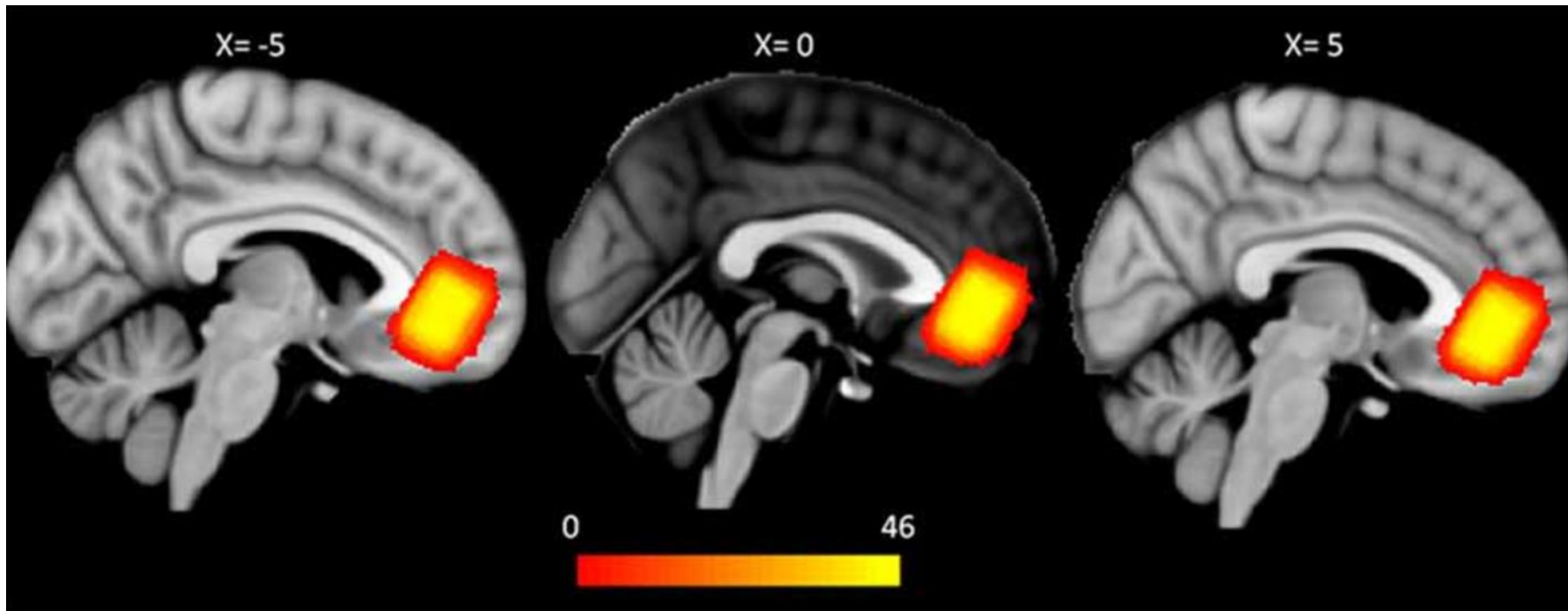
Photo: Alaska Native Epidemiology Center (2021)

Brain changes from childhood trauma are associated with increased risk of opioid and substance misuse in adulthood

- ▶ “Compared to participants with no ACEs, participants with ≥ 4 ACEs and 0–3 ACEs were 2.93... and 1.96... times more likely to be at risk for opioid misuse, respectively.”¹
- ▶ “...the ACE score was inversely associated with age of initiating opioid use... positively associated with recent injection drug use... and the likelihood of experiencing an overdose... in a graded dose response manner.”²
- ▶ “ACEs was positively associated with prescription opioid misuse across both samples. Respondents reporting three or more ACEs had increased odds of taking opioids more than prescribed, without a prescription, and for the feeling they cause. Our results support a strong link between ACEs and prescription opioid misuse.”³

1. Fortson, K., Rajbhandari-Thapa, J., Ingels, J., Thapa, K. & Dube, S.R. (2021) Adverse childhood experiences, risk of opioid misuse and its pathway among students at a public university, *Journal of American College Health*, DOI: 10.1080/07448481.2021.2002336
2. Stein MD, Conti MT, Kenney S, et al. Adverse childhood experience effects on opioid use initiation, injection drug use, and overdose among persons with opioid use disorder. *Drug Alcohol Depend.* 2017;179:325-329. doi:10.1016/j.drugalcdep.2017.07.007
3. Merrick MT, Ford DC, Haegerich TM, Simon T. Adverse Childhood Experiences Increase Risk for Prescription Opioid Misuse. *J Prim Prev.* 2020 Apr;41(2):139-152. doi: 10.1007/s10935-020-00578-0. PMID: 31989435.

Childhood trauma can change structures and functions of threat, memory, and reward systems



Kim D, Yoo JH, Park YW, Kim M, Shin DW and Jeong B (2019) Anatomical and Neurochemical Correlates of Parental Verbal Abuse: A Combined MRS—Diffusion MRI Study. *Front. Hum. Neurosci.* 13:12. doi: 10.3389/fnhum.2019.00012

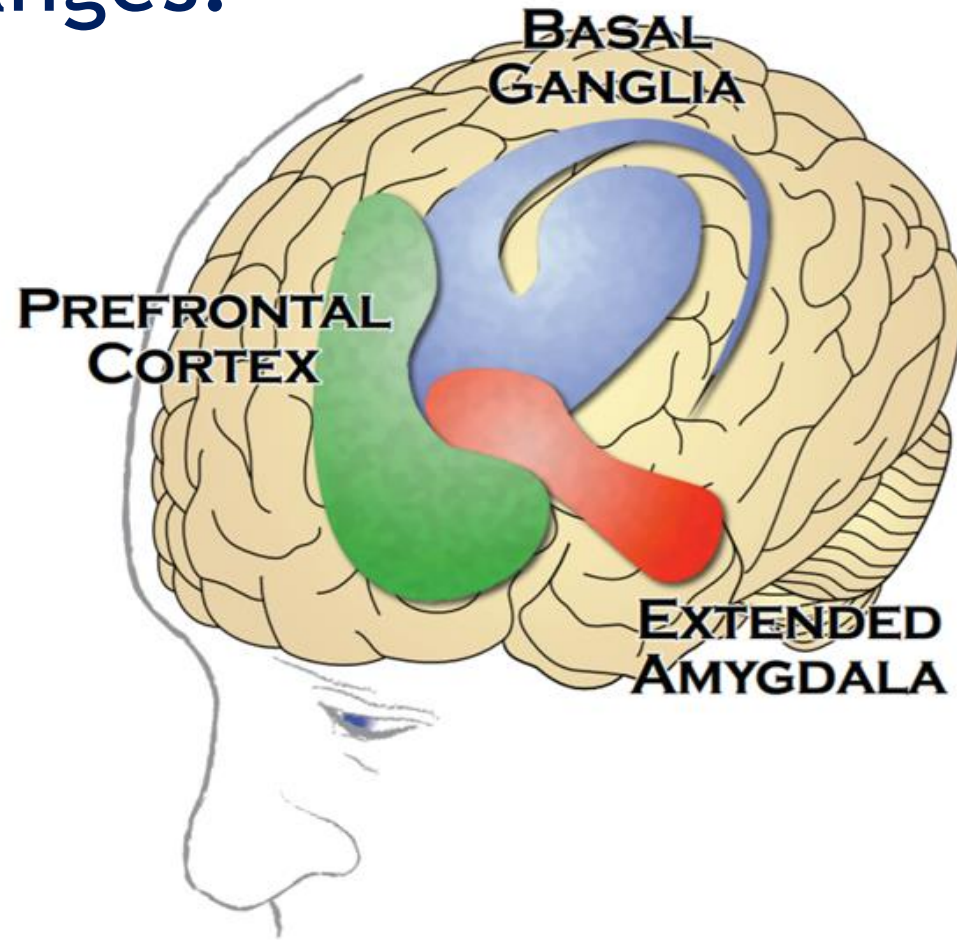
Childhood trauma can change structures and functions of the brain's threat, memory, and reward systems

Table 1

Brain structures affected by childhood trauma and related behavioral health conditions, concerns, outcomes

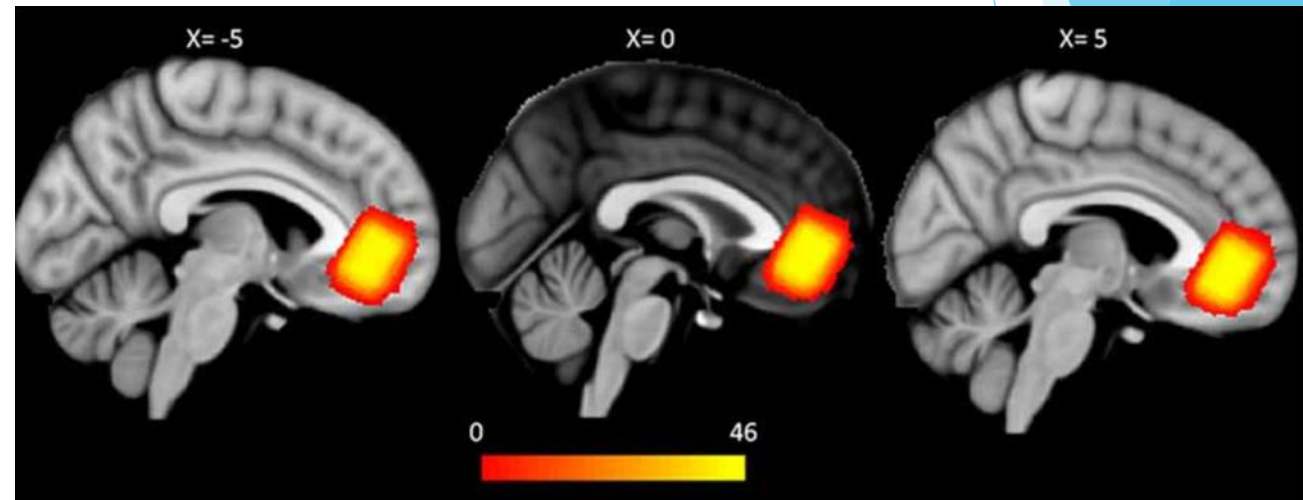
	PFC -	AMG -/+	HPC -	ACC -	VS +	HT -
1. Emotional regulation						
2. Depression						
3. Social relationships						
4. Hypervigilance						
5. Alcohol use disorder						
6. Opioid use disorder						
7. Nicotine dependence						
8. Diabetes						
9. Learning difficulties						
10. Incarceration						

Why use Augmented Reality to explain brain changes?



Childhood trauma and opioid use are associated with adult impaired spatial learning and cognition

- ▶ “We observed a significant effect of (childhood) trauma history on spatial/pattern learning.”¹
- ▶ “Physical neglect correlated with impaired spatial working memory and pattern recognition memory.”²
- ▶ “Decreased white matter FA in the prefrontal and temporal cortex was associated with decrements in performance on a spatial planning task and a visual learning and memory task in children who suffered early neglect.”³



(De Bellis, 2009)

1. Syal S, Ipser J, Phillips N, Thomas KG, van der Honk J, Stein DJ. (2014). The effect of childhood trauma on spatial cognition in adults: a possible role of sex. *Metab Brain Dis.* 2014 Jun;29(2):301-10. doi: 10.1007/s11011-014-9497-4. Epub 2014 Feb 21. PMID: 24553877.
2. Majer, M., Nater, U.M., Lin, J.M.S. *et al.* (2010). Association of childhood trauma with cognitive function in healthy adults: a pilot study. *BMC Neurol* **10**, 61 (2010).
3. De Bellis, M. D. *et al.* (2009). Neuropsychological Findings in Childhood Neglect and Their Relationships to Pediatric PTSD." *J Int Neuropsychological Soc* 15.6: 868–878.

Augmented Reality can enhance self-efficacy and the user's perception of control



■ Culture Camps

◆ Culture Camp, Culture Camp 2019, Shageluk, Youth

< Anvik Culture Camp 2019

> Chiefs Report Dec 2019

Augmented Reality can enhance self-efficacy and the user's perception of control



Image: Alaska Native Epidemiology Center (2023)

How can AR be used in Tribal Health?

- ▶ Facilitated discussion
- ▶ Staff training
- ▶ Brochures
- ▶ Posters
- ▶ Environmental health
- ▶ Home care



Photo: Alaska Native Tribal Health Consortium (2021)

AR in Tribal Health

- ▶ Facilitated discussion
- ▶ **Staff training**
- ▶ Brochures
- ▶ Posters
- ▶ Environmental health
- ▶ Home care



Media: Alaska Native Tribal Health Consortium (2023) | HoloPatient © GigXR <https://www.gigxr.com/holopatient>

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Photo: Alaska Native Tribal Health Consortium (2023)

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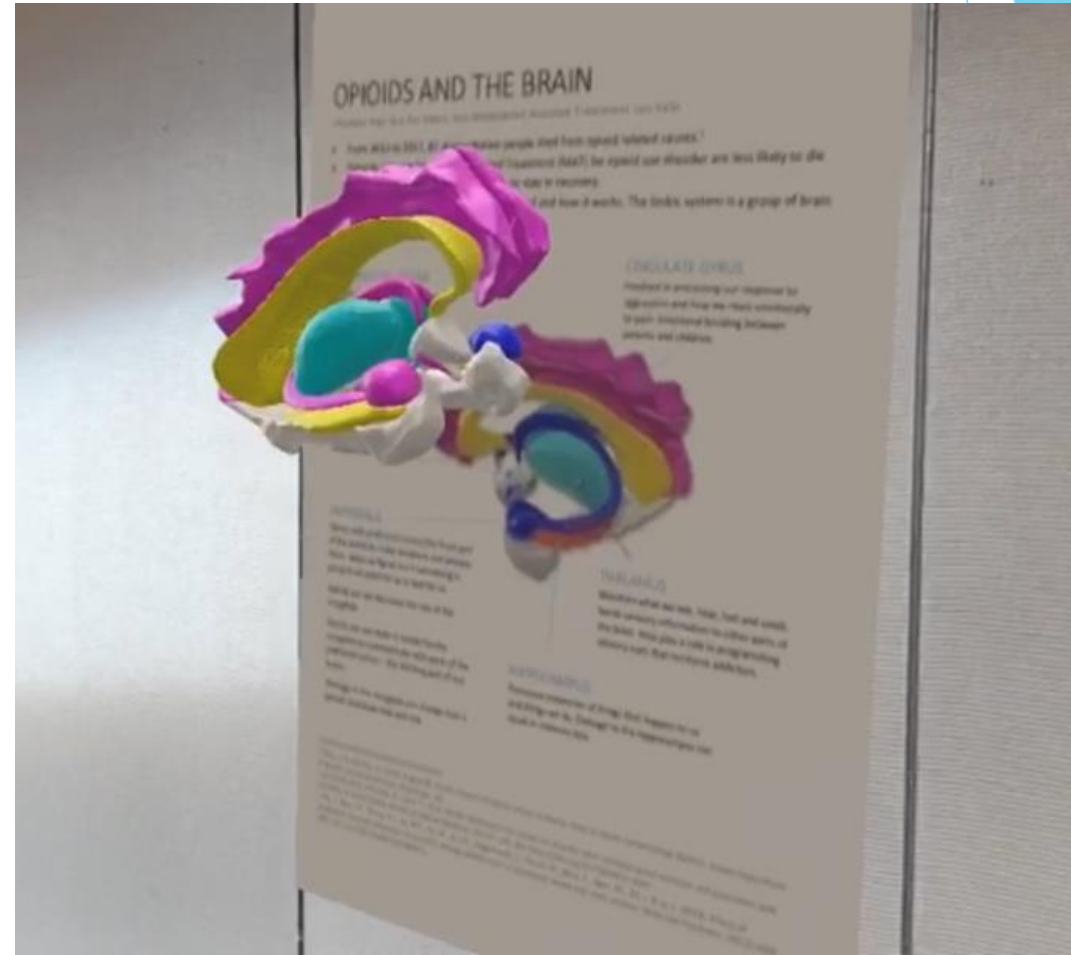


Photo: Alaska Native Tribal Health Consortium (2019)

AR in Tribal Health

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Photo: Alaska Native Tribal Health Consortium (2023)

AR in Tribal Health

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Photo: Alaska Native Tribal Health Consortium (2023)

AR in Tribal Health

- ▶ Facilitated discussion
- ▶ Staff training
- ▶ Brochures
- ▶ Posters
- ▶ Environmental health
- ▶ **Home care**



Photo: © Therapy Lens (2017) <http://www.therapylens.com/en/future-home-based-therapy/>

Holographic Patient App

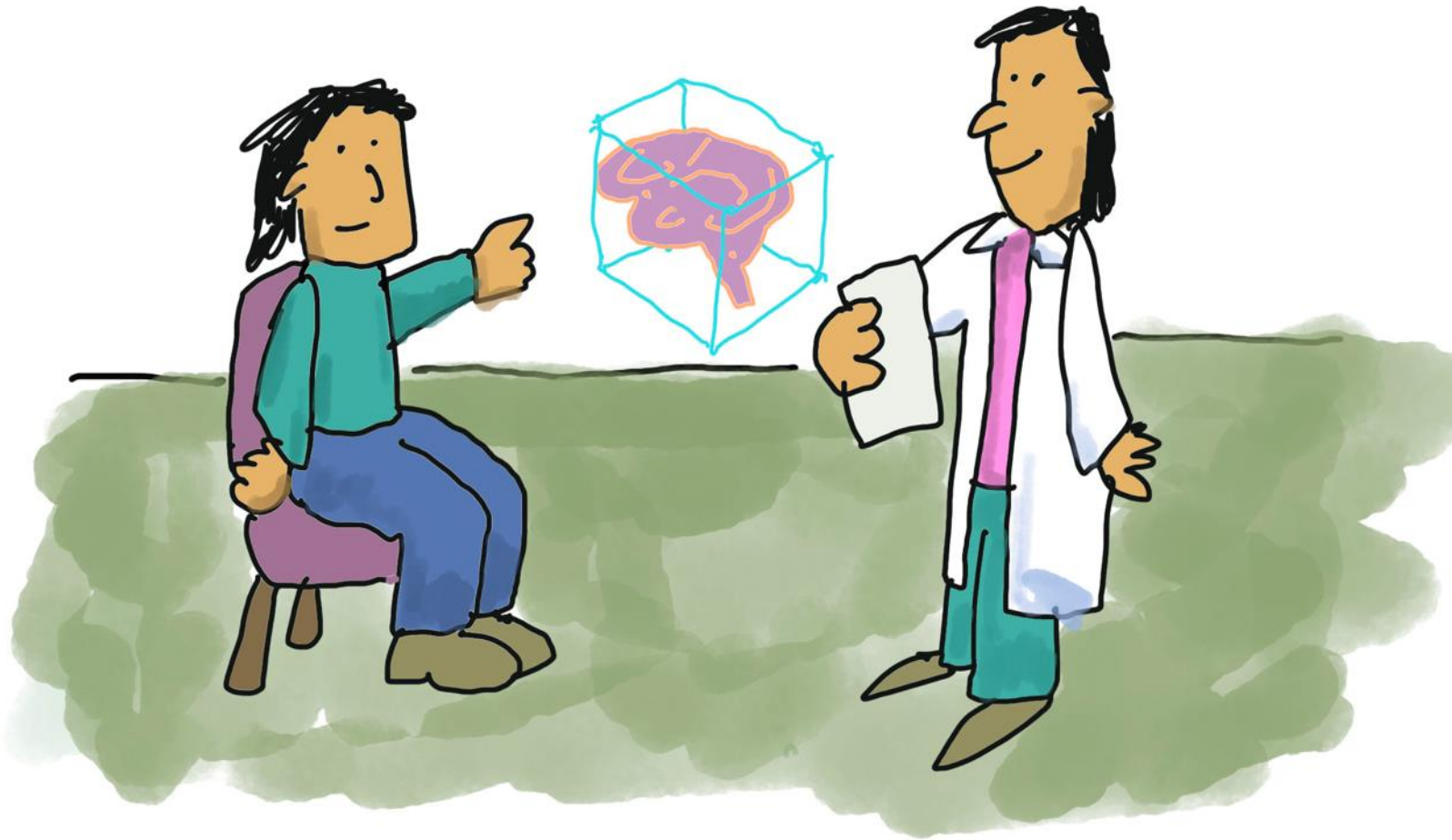


Image: Alaska Native Epidemiology Center (2023)

Quiz Time!

QUESTION 1. What are **the main advantages** of using Augmented Reality to explain effects of childhood trauma?

(Choose three)

- A. Easier to use than printed brochures
- B. Enhanced self-efficacy
- C. Better for the environment
- D. May help patients with impaired cognitive function
- E. Brings information into the patient's world
- F. Better recall than printed brochures

Quiz Time!

QUESTION 1. What are **three main advantages** of using Augmented Reality to explain effects of childhood trauma?

(Choose three)

- A. Easier to use than printed brochures
- B. Enhanced self-efficacy**
- C. Better for the environment
- D. May help patients with impaired cognitive function**
- E. Brings information into the patient's world**
- F. Better recall than printed brochures

Quiz Time!

QUESTION 2. How can Augmented Reality be used in behavioral health clinical practice setting?

(Choose all that apply)

- A. Staff training
- B. To treat behavioral health disorders
- C. Facilitated discussion
- D. Brochures
- E. Telehealth

Quiz Time!

QUESTION 2. How can Augmented Reality be used in behavioral health clinical practice setting?

(Choose all that apply)

- A. **Staff training**
- B. To treat behavioral health disorders
- C. **Facilitated discussion**
- D. **Brochures**
- E. Telehealth

Want to try out the Opioids and the Brain app?

Contact:

Mallika Kolachala, Public Health Program Specialist II

Behavioral Health Department

Alaska Native Tribal Health Consortium

4115 Ambassador Drive, Anchorage, AK 99508

mkolachala@anthc.org // www.anthc.org

ANTHC “Opioids and the Brain”

An interactive lesson on brain health, in Augmented Reality (AR)
Now available to Tribal Health Clinics and Organizations



The Alaska Native Tribal Health Consortium (ANTHC) has developed interactive holograms to help Alaska Native and American Indian patients understand how opioids can change brain structures and how a person makes decisions. Users wearing special glasses interact with brain models and story animations that are projected into real space. Tribal Health Organizations in Alaska have adopted the technology in a pilot phase, with positive response from patients.

Opioids and the Brain is being offered free of charge to Tribal Health Organizations and clinics, on a limited basis.

BACKGROUND: In 2017, Alaska’s governor declared the opioid crisis a statewide disaster. A needs assessment conducted by ANTHC the following year found that a lack of information about the brain effects of opioids, which can persist for years or even indefinitely, was a barrier to treatment for Alaska Native people. Patients were discouraged from getting treatment due to misconceptions about the effects of opioids. Patients were blaming themselves for the physiological effects of addiction.

OPIOID BRAIN APP: With input from doctors, counselors, and people in recovery across the state, ANTHC translated the essential neurobiology of opioid use into narrative and interactive models with a thematic approach appropriate for non-clinicians. Although brochures and online materials explaining the brain effects of substance use are available from state and federal agencies, these materials tend to be academic. The processes involved are difficult to show in two-dimensional drawings.

WHAT IT COVERS: Brain structures presented in the app include the amygdala, prefrontal cortex, hippocampus, thalamus, and the hypothalamus. ANTHC is expanding the app to cover adverse childhood experiences.

HOW ITS USED: The opioid app is used as an interactive, audiovisual brochure on brain health. Clinics and treatment centers use the app as a learning activity with patients, in conjunction with treatment programs. The app can be used as a shared experience, meaning a counselor or clinician wears lenses and sees and interacts with the same holograms, in real time, as another user. The app can also be used in kiosk mode, whereby only the opioid app can be accessed. It can be translated to other Alaska Native and American Indian languages.



HOW TO GET IT: Contact: Jackie Engebretson, Dir. of Behavioral Health (jengebretson@anthc.org; 907-317-4858) or Tim Collins, Senior Epidemiologist (twcollins@anthc.org; 907-729-7763). The app requires at least one Microsoft HoloLens2 headset.

This project is supported by the U.S. Centers for Disease Control and Prevention https://www.cdc.gov/nij/grants/funded/programs/success-story_13.html

Alaska Native Tribal Health Consortium
4000 Ambassador Drive, Anchorage, AK 99508
<https://www.anthc.org>



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Resources

- ▶ ANTHC HoloLens opioid app
- ▶ DATA, Chapter 1 - <https://youtu.be/H2an640UmRM>
- ▶ BRAIN STRUCTURES, Chapter 2 - <https://youtu.be/xcx159SG1X0>
- ▶ NEURO AND OPIOIDS, Chapters 3 and 4 - <https://youtu.be/wVKnvVvO-U4>
- ▶ CDC Highlights https://www.cdc.gov/injury/fundedprograms/success-story_1.html

Case Presentation

Project ECHO's goal is to protect patient privacy

- ▶ To help Project ECHO accomplish that goal, please only display or say information that doesn't identify a patient or that cannot be linked to a patient.
- ▶ **References: For a complete list of protected information under HIPAA, please visit www.hipaa.com**

Thank you for joining us today.
We appreciate your participation and hope
to see you at the **NEXT ECHO Session:**
April 27th, 2023 from 12pm -1 PM

You will be receiving a follow up survey that we hope you will complete to help us improve. If you are requesting continuing education credits, you will be required to complete the survey to receive your CMEs.

