

# Augmented Reality Technology Engages Opioid Use Disorder Patients in Their Treatment

## INTRODUCTION

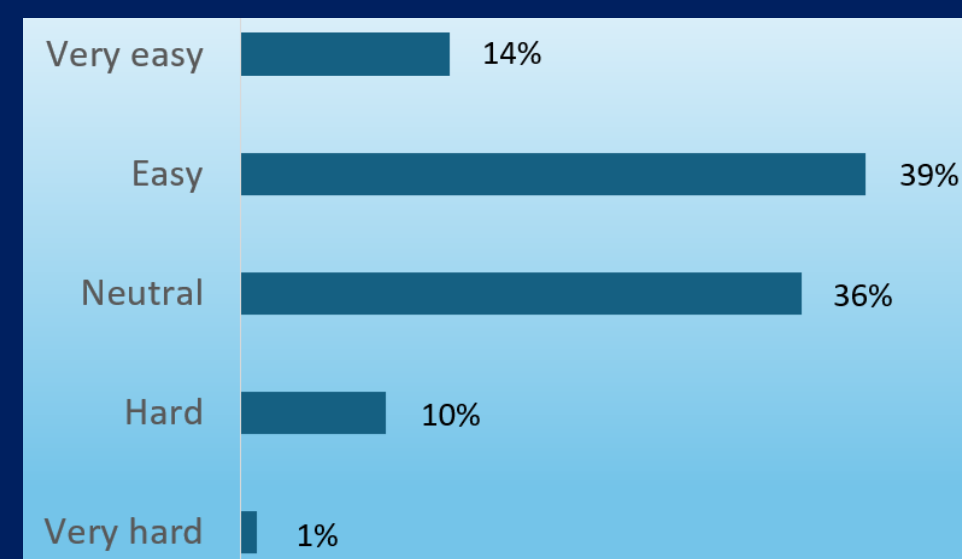
- Opioid overdose rates for American Indian/Alaska Native (AI/AN) people are one of the highest in the nation
- Medications for Addiction Treatment (MAT) reduces illicit use and overdose death, but treatment retention rates are as low as 39%
- Early engagement in treatment increases the odds of 6-month treatment retention
- Extended reality technology, such as the Microsoft HoloLens2 headset, has been shown to increase engagement, learning, and information retention in other fields, but has not been studied in the substance use disorder population

## METHODS

- An informational Opioids and the Brain application was developed on the HoloLens2 augmented reality (AR) platform to educate the viewer on how opioid use affects the brain
- Holographic models of the brain and various learning situations were depicted utilizing common indigenous environmental aspects
- From 5/5/22-5/5/24, all AI/AN opioid use disorder patients presenting to our outpatient MAT program were included in the pilot project
- 73 total participants viewed the approximately 15-minute interactive application
- Afterwards, a 7-question survey was administered to evaluate its acceptability and effectiveness

## SURVEY RESULTS

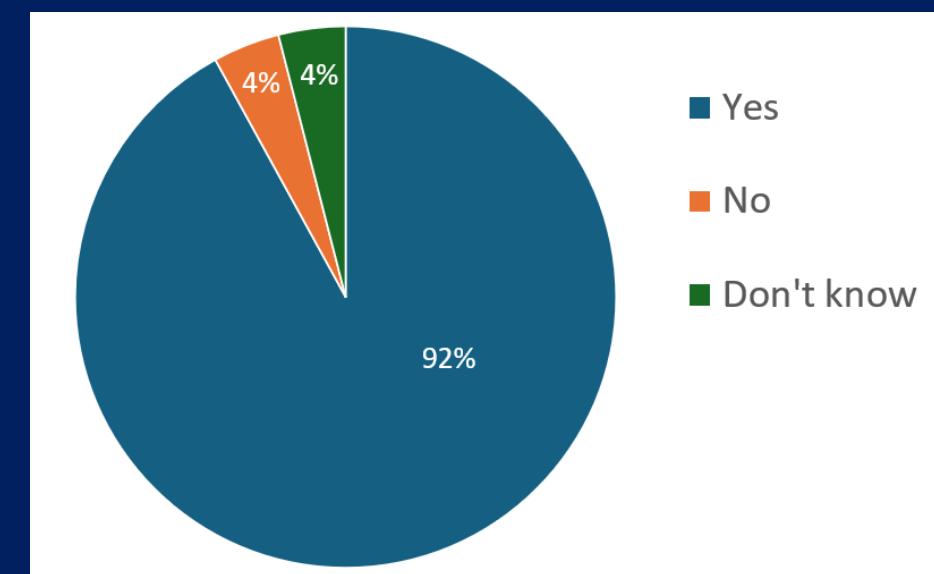
How easy or hard was it for you to use the HoloLens?



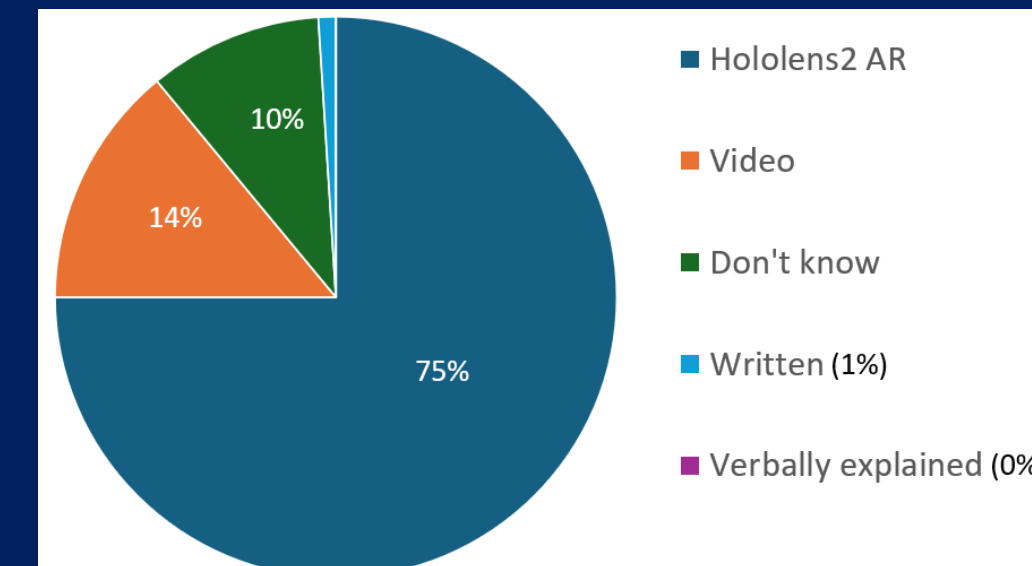
How did viewing the HoloLens improve, if at all, your understanding of your addiction?



Do you feel it was worth your time to view the presentations?



Would you prefer to get this information by a different method?



Selected open-ended comments about HoloLens2 AR likes

How it uses real life situations that I can relate to and showed me how opioids have affected my brain.

I liked the interacting with the lessons.

The graphics. The virtual learning makes you understand more clearly.

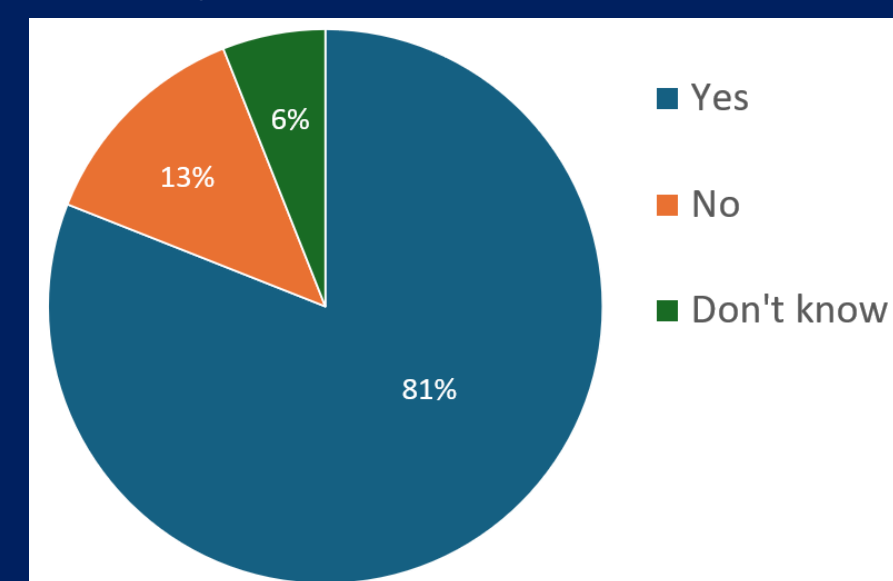
Selected open-ended comments about HoloLens2 AR dislikes

The clicking ... it was challenging to get it just right, but at the end, I got it.

Having to figure out using my hand as the pointer, but once I did, it was pretty easy.

The using my hand as a cursor, it's hard for people with hand disabilities.

Would you be interested in seeing other addiction-related presentations in this format?



## CONCLUSIONS

- The HoloLens2 AR device, with its Opioids and the Brain app content, was found to be:
  - ✓ well-accepted
  - ✓ enhanced understanding of addiction
  - ✓ perceived to be worthwhile by the participants
  - ✓ the preferred method of learning for most individuals
- Four out of five participants voiced interest in viewing other addiction modules with the same technology
- Adding AI/AN cultural elements may have helped to make the content feel more familiar and welcoming to this population
- Limitations include a lack of control for individual variances that may have affected response to the technology and that participation was limited to the AI/AN population at our Alaska-based treatment facility
- Future studies may evaluate treatment retention rates with varying degrees of AR technology utilization

## AUTHORS & DISCLOSURES

Melodie K. Isgro, MD, FASAM – Addiction Medicine physician, Southcentral Foundation; Millennium Health dinner presentations attendee  
 Tim W. Collins, MPH, MS, MA – Senior Epidemiologist, Alaska Native Tribal Health Consortium; Nothing to disclose  
 Mallika Kolachala, MPH – Public Health Program Specialist II, Behavioral Health, Alaska Native Tribal Consortium; Nothing to disclose

## REFERENCES

Williams AR, Mauro CM, Feng T, Wilson A, Cruz A, Olfson M, Crystal S, Samples H, Chiodo L. Performance Measurement for Opioid Use Disorder Medication Treatment and Care Retention. Am J Psychiatry. 2023 Jun 1;180(6):454-457. doi: 10.1176/appi.ajp.20220456. Epub 2022 Oct 26. PMID: 36285405; PMCID: PMC10130230.

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