Welcome to the Opioid Settlement Technical Assistance Learning Series

Integrating Technology and Treatment for Perinatal Substance Use

June 12, 2024 | 12:00 p.m. – 1:30 p.m.

MDHHS
Michigan Department of Health & Human Services
GRETCHEN WHITMER, GOVERNOR | ELIZABETH HERTEL, DIRECTOR

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Welcome & Introduction of Presenter

Cara Poland, MD, M.Ed, FACP, DFASAM
Associate Professor
Department of Obstetrics, Gynecology and Reproductive Biology
College of Human Medicine
Michigan State University

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HOUSEKEEPING ITEMS

- This Zoom event will be recorded
- Participants will be on mute when presenters are speaking
- To ask a question, please use the chat
- Any follow-up questions or requests for the Technical Assistance Collaborative (TAC), please email:

  MDHHS-opioidsettlementhelp@michigan.gov
- Following this event, please complete the brief evaluation survey, a poll will be provided at the end

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Integrating Technology and Treatment for Perinatal Substance Use

Steven Ondersma, PhD
Clinical Psychologist and Professor
Charles Stewart Mott Department of Public Health Department of OBGYN
Michigan State University, College of Human Medicine

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Center for Health Policy and Health Services Research, HFHS
Department of OBGYN and Pediatrics and Human Development, MSU
School of Social Work, WSU

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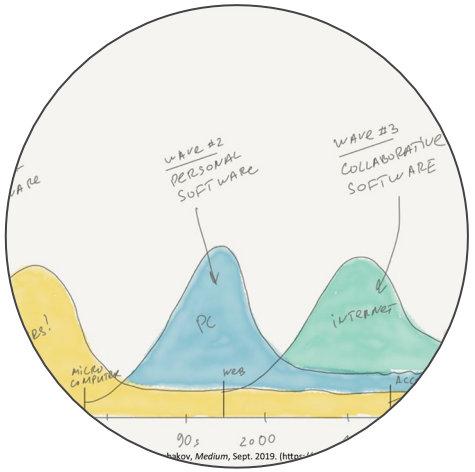
Integrating Technology and Treatment for Perinatal Substance Use

Amy M. Loree, PhD
Steven J. Ondersma, PhD

HENRY FORD HEALTH +
MICHIGAN STATE UNIVERSITY
Health Sciences

Overview



Why technology?

How technology can be a critical tool in addressing perinatal substance use

Core platform

The Computerized Intervention Authoring System (CIAS), v. 3.0

Studies, past & present

Integrating tech and treatment: Findings from prior studies and a review of what's ongoing

Discussion

Implications and the big picture

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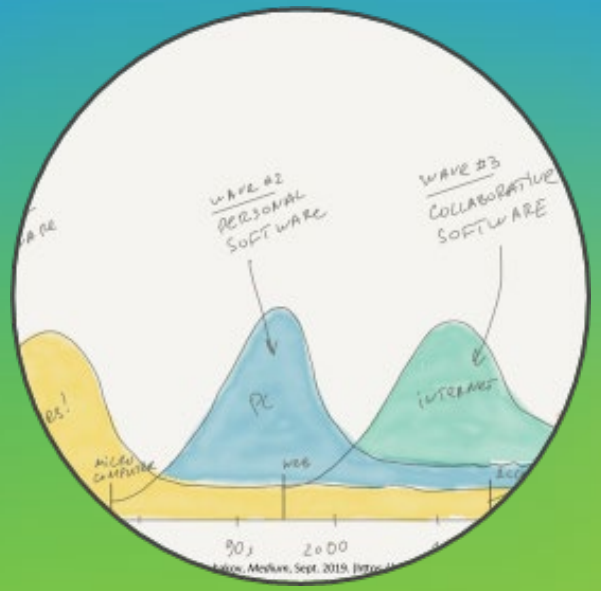
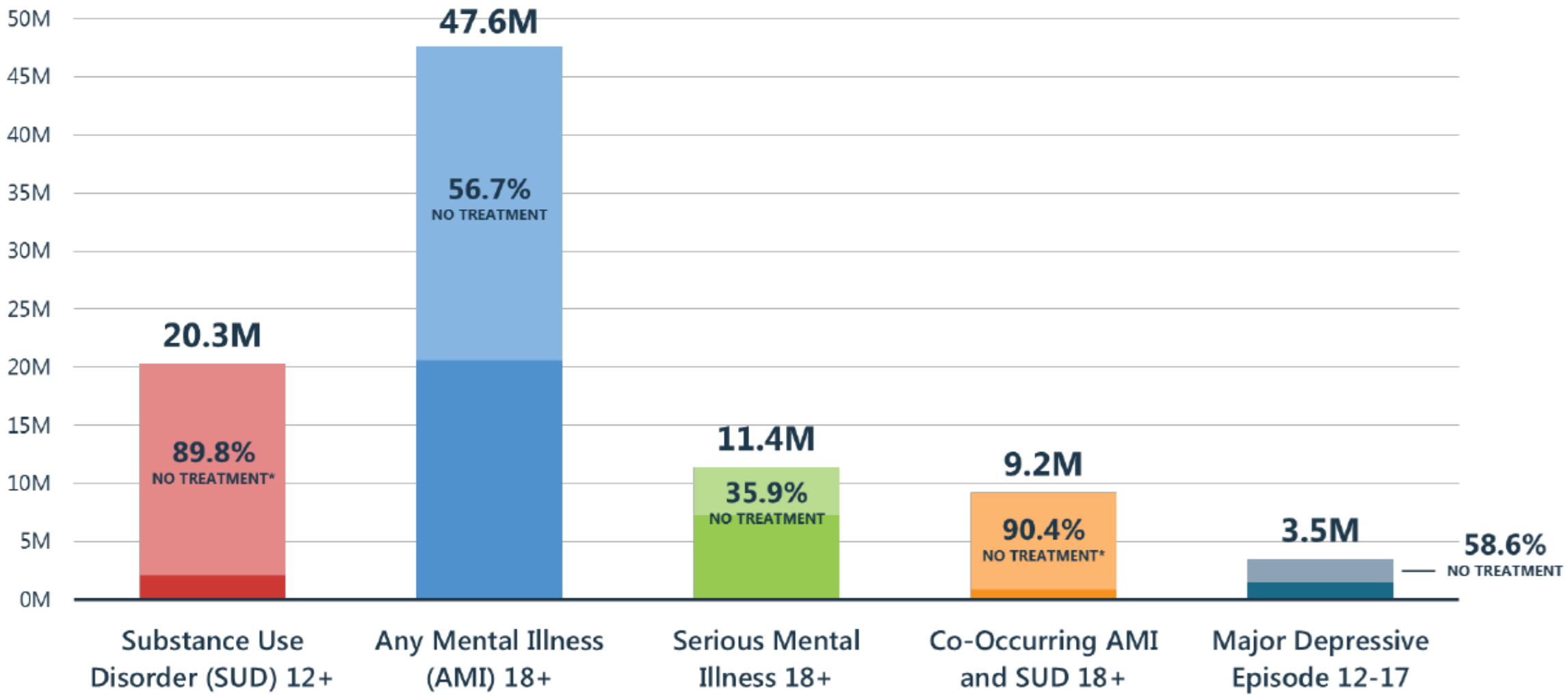
Part 1:
Why technology?



Despite Consequences and Disease Burden, Treatment Gaps Remain Vast

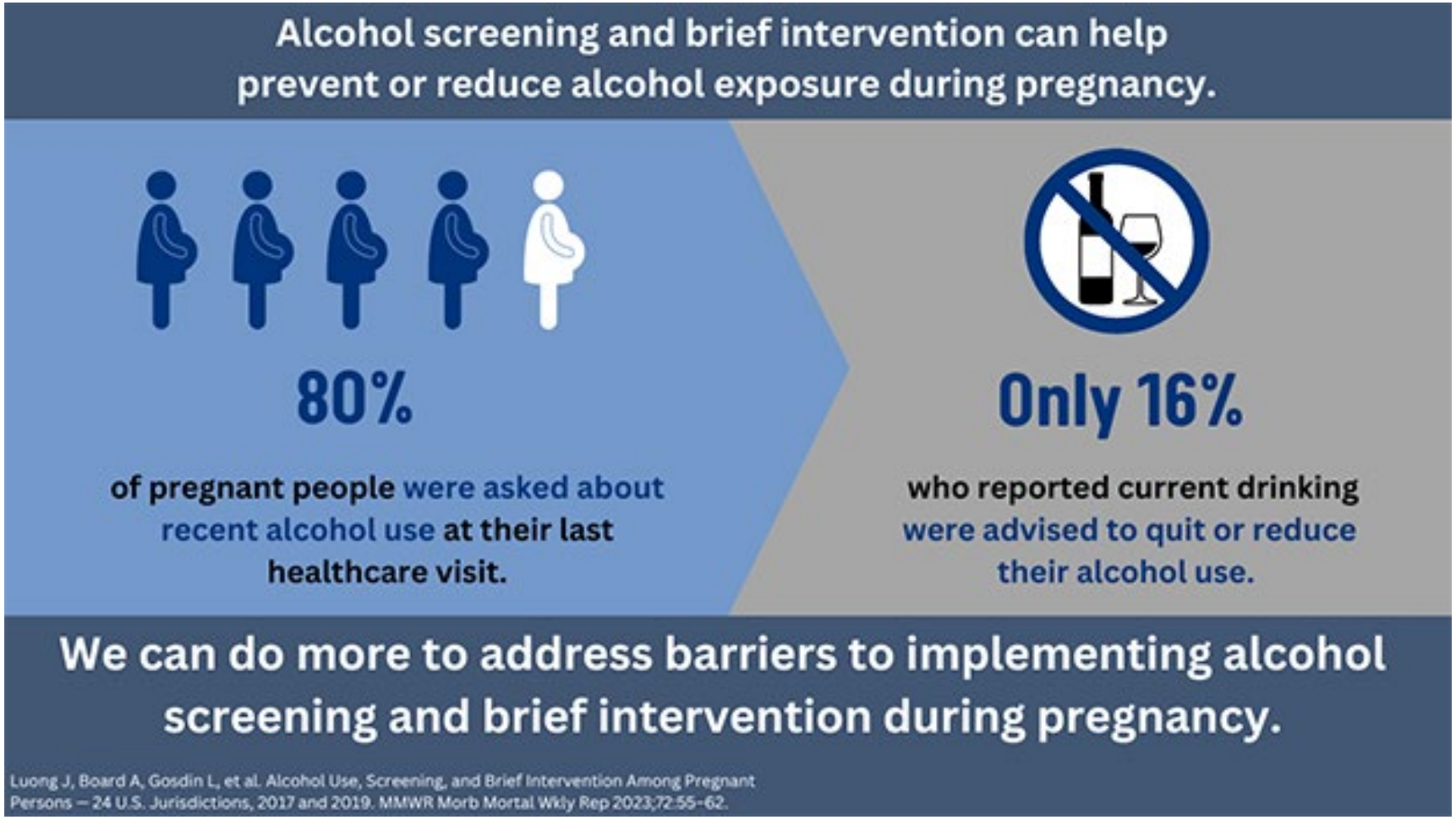
PAST YEAR, 2018 NSDUH, 12+



* No Treatment for SUD is defined as not receiving treatment at any location, such as a hospital (inpatient), rehabilitation facility (inpatient or outpatient), mental health center, emergency room, private doctor's office, self-help group, or prison/jail.

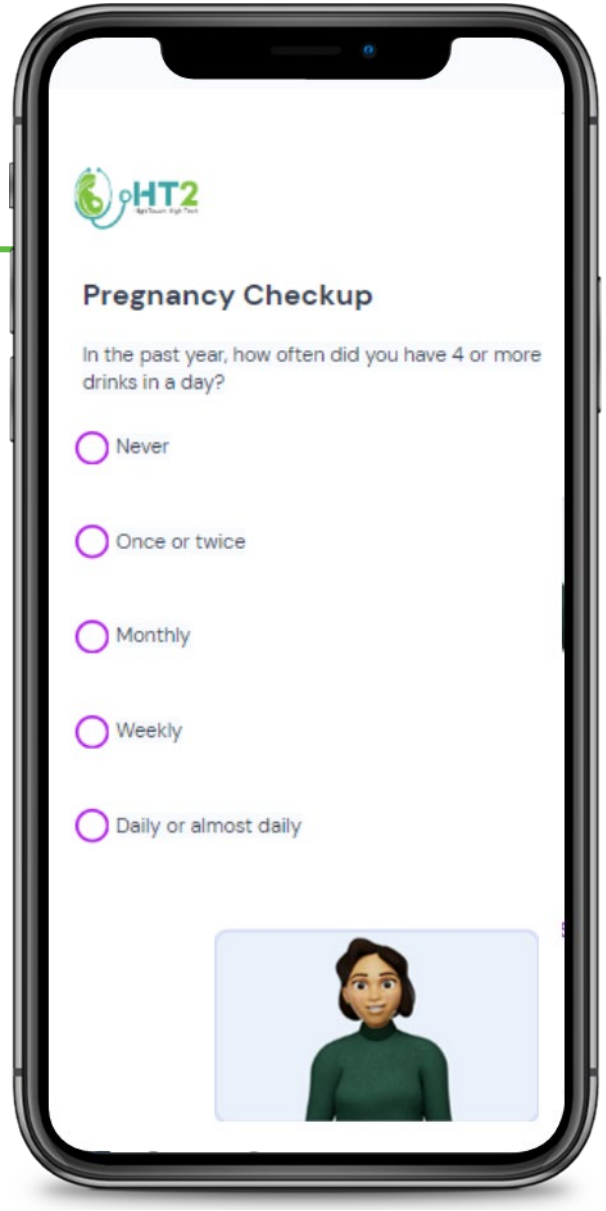
SAMHSA
Substance Abuse and Mental Health Services Administration

SBIRT penetration is lacking



Advantages of digital interventions in healthcare

- Technology excels at brief and engaging interventions that are acceptable to those who are not seeking treatment
- Technology can conduct screening, brief intervention, and referral in the waiting area or prior to appointments, with perfect fidelity and minimal training
- Summary reports and alerts can be immediately sent to providers
- Universal integration of technology can also serve as a low-burden practice-based research platform



Ongoing nudges vs. one-time fixes

Initial healthcare contact

- Identification
- Baseline tech intervention

Tailored text messaging

- Can be one- or two-way
- Initial consent, passive receipt
- Links to extended content

Patient portal content

- Epic MyChart, Cerner HealtheLife
- Personalized content

Repeat healthcare contact

- Updated screening/ intervention
- Leveraging EHR data
- Digital data and wearables

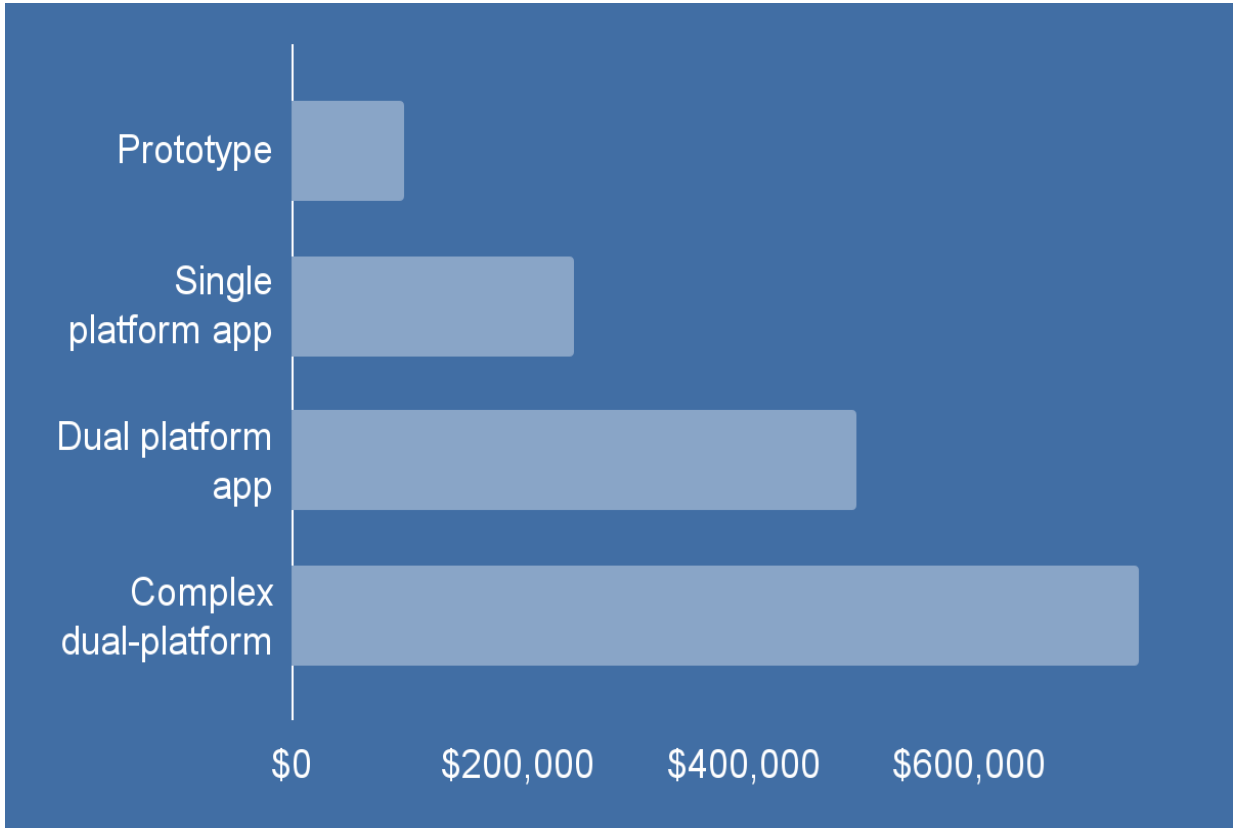
Part 2:

Core Platform: The Computerized Intervention Authoring System (CIAS 3.0)

(NIH/NIBIB EB028990; Ondersma, Broderick, Spiller, Kadri, Marcu, & Buis, 2019-2023; and HTD Health)

The digital health innovation and research bottleneck

- It can easily take two years to obtain funding and build a modest application, stifling innovation
- Technical and funding challenges mean community members cannot directly develop digital content
- Junior investigators often lack the funding or skills to contribute
- Once built, applications are difficult to edit, share, or maintain



From the website of a respected software development company, 3/2021

The no-code software revolution

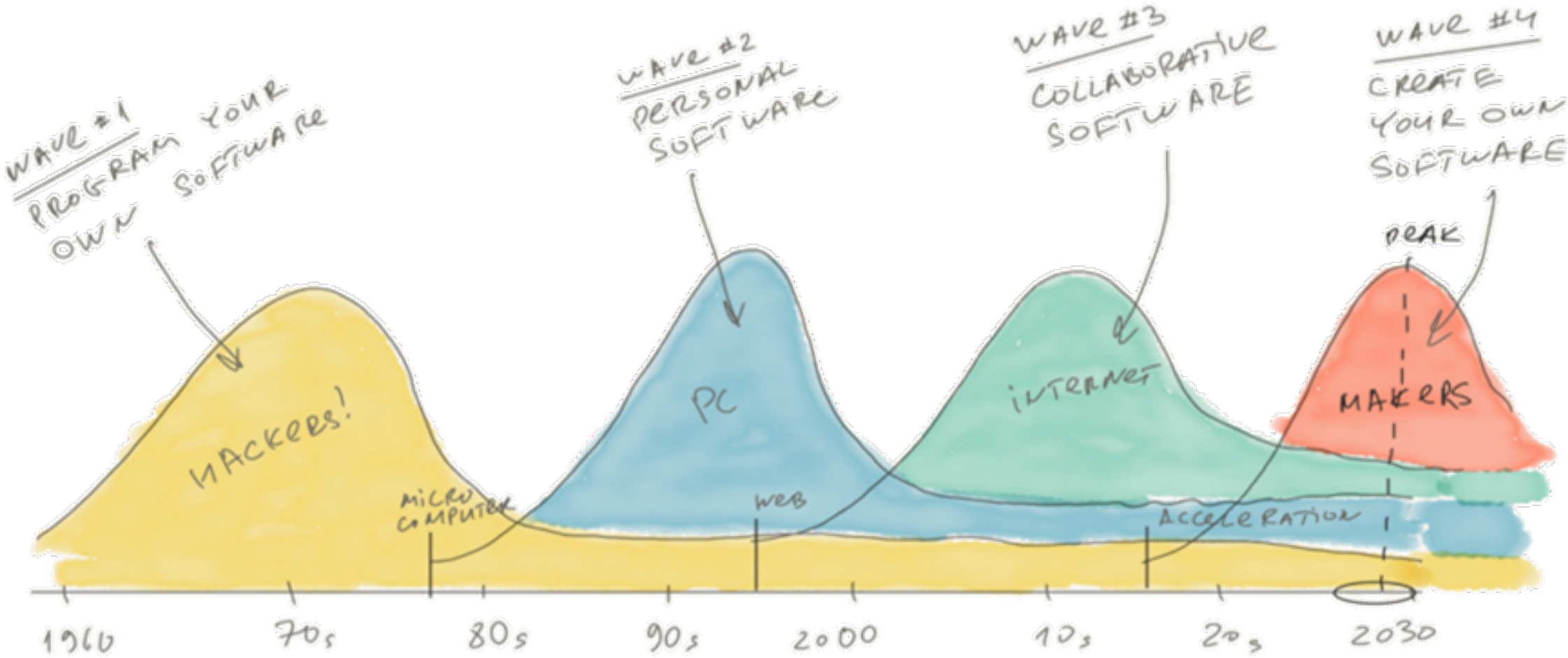
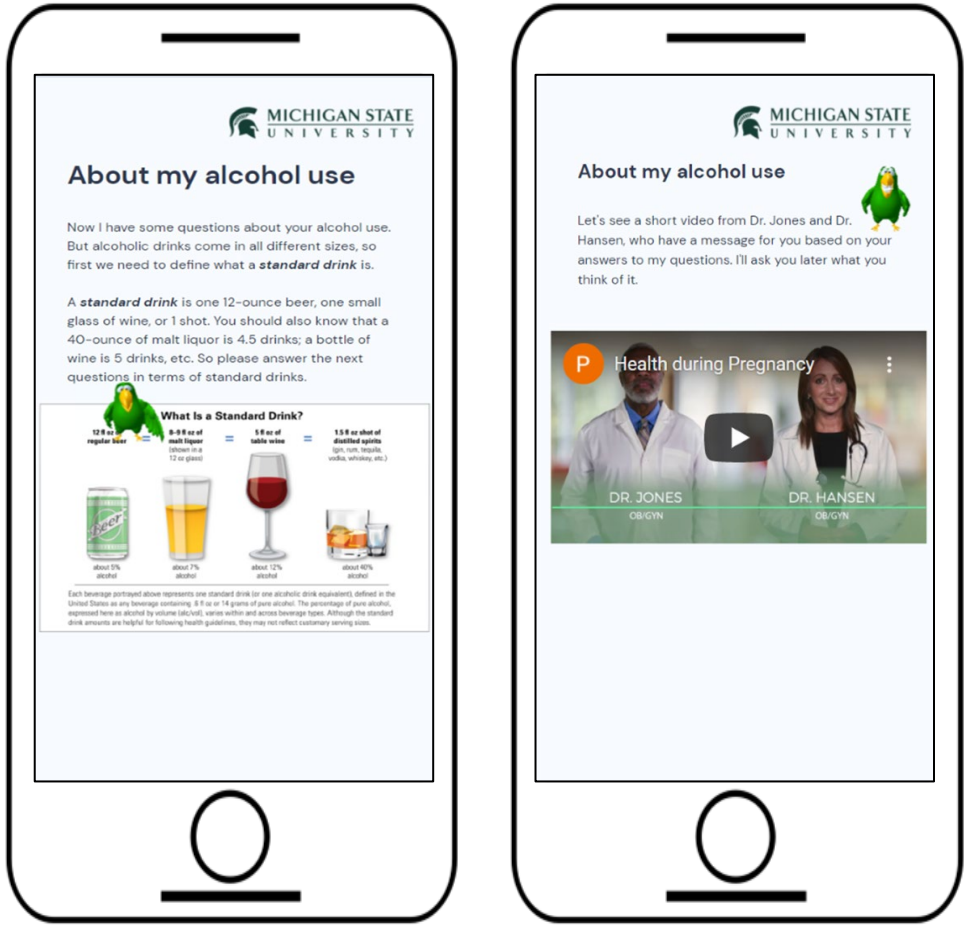


Image courtesy of Michael Dubakov, Medium, Sept. 2019
(https://medium.com/fibery/no - code - revolution - why - now - 2f2bd914cb05)

No-code intervention development with the Computerized Intervention Authoring System (CIAS) v.3.0



- CIAS 3.0 allows easy development of interactive mobile web apps without coding
- Open-source & non-commercial, with a user-centered design
- Optimized for collaboration & sharing
- Key features include:
- Animated talking narrator that can reflect, use the participant's first name, and provide personalized feedback, in 45 languages
- Tailored texting and report generation
- Easy use of branching, images, and video
- Instant translation into over 100 languages
- HIPAA compliant & WCAG 2.0 accessibility
- Integrated with Epic at one site

Part 3:
Studies, past and present

FASD prevention at HFH

CIAS for Henry Ford Health — targeted at providers, clinic staff, and administrators

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Grant Details

Overview

- Funded by the Centers for Disease Control and Prevention, National Center on Birth Defects and Developmental Disabilities
- Grant # NU84DD000001 (Loree & Ondersma)
- Funding period & NCE: 9/30/2018-9/29/2023

Goals

1. Design technology-based screening and brief intervention program (e-SBI)
2. Implement e-SBI at approximately 15 HFH Women's Health and Primary Care clinics
3. Evaluate implementation process and long-term sustainability

Implementing e -SBI in Women 's Health

- Initial buy-in from department and clinic leadership Flexible training options
- Flexible workflow
- Regular clinic staff meetings/huddles
- Invite feedback from all
- Quarterly newsletter

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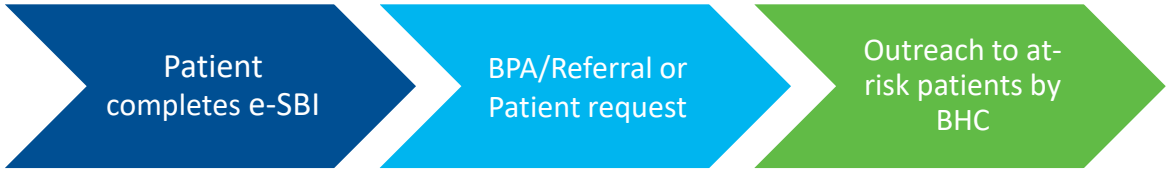
Implementing e-SBI in Women's Health

- Two options for completing e-SBI program:
  1. Patient completes program on their own device via link sent in MyChart message or QR code in patient flyer from OB AVS
  2. Patient completes program on iPads in clinic waiting rooms prior to scheduled appointment
- Targeting new/annual GYN and completed OB intake visits
- Patients referred for or who request follow-up receive telehealth-based outreach by a licensed behavioral health clinician, who will conduct additional assessment and provide additional services and/or referrals as needed



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e-SBI program and EHR tools

- e-SBI app has several important features:
  - Integrated with Epic, allowing patient answers to be reflected in searchable Epic fields, and summary reports to be readily available to providers
  - Accessed in-clinic via iPads or remotely via patient's own device
- Best Practice Advisory triggered by positive AUDIT-C screen
  - Includes talking points for provider
  - Direct referral button
- Referral available via e-SBI or Epic to dedicated behavioral health clinician

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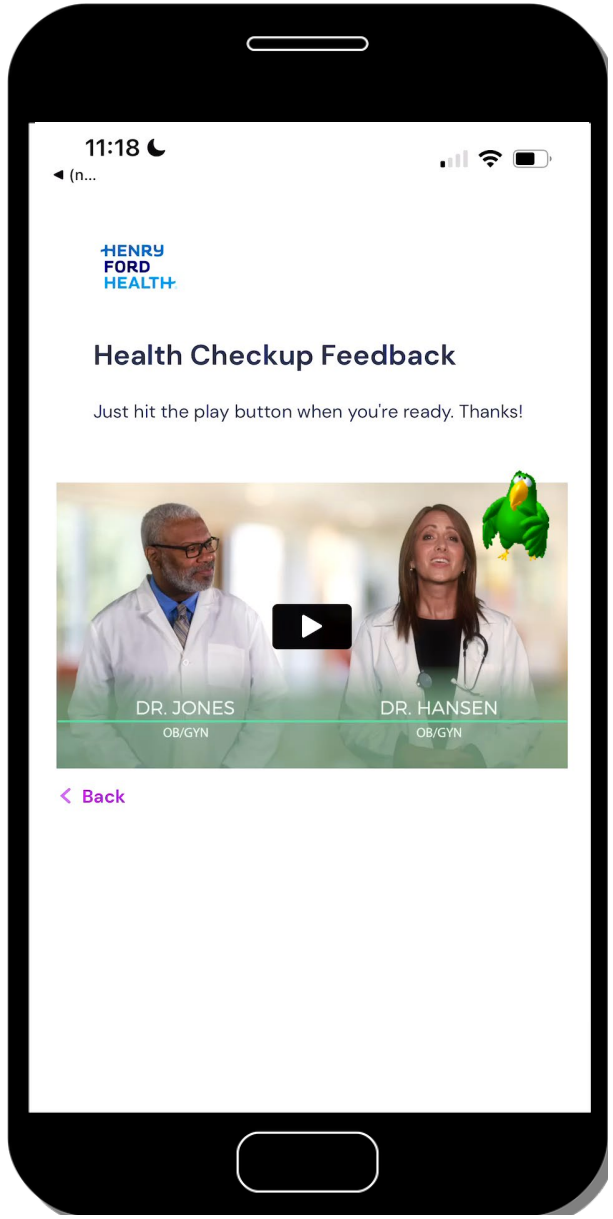
Demo



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Patient Flyer

My Health Check-In

HENRY FORD HEALTH

What is it?

My Health Check-In is a virtual program that helps you and your doctor work together to make sure you get the best possible health care. The program will ask questions about you, your health habits, and how you feel. It will give you feedback to help you be your healthiest.

Who qualifies?

Anyone between the ages of 18 and 45 years old with an upcoming appointment at a Women's Health Clinic.

How do I access it?

The first step is to go to the website and answer questions about your health. Your doctor or midwife may review the results with you at your next appointment.

1. Click the link below or scan the QR code.
   - https://tinyurl.com/myhealthcheckin-hfh

To scan the QR code:
1. Open the camera on your smartphone.
2. Place the QR directly in the center of the camera and the link should appear on the screen.
3. Click this link to go to the webpage.

2. This will send you to a webpage. To access the questions, you will need to fill out your:
   - Name, date of birth, and zip code
   or
   - Medical Record Number (MRN)
3. Once you fill out your information, you will see the questions. Answer the questions the best you can.

Questions?

Email us at sbitechmi@hfhs.org.

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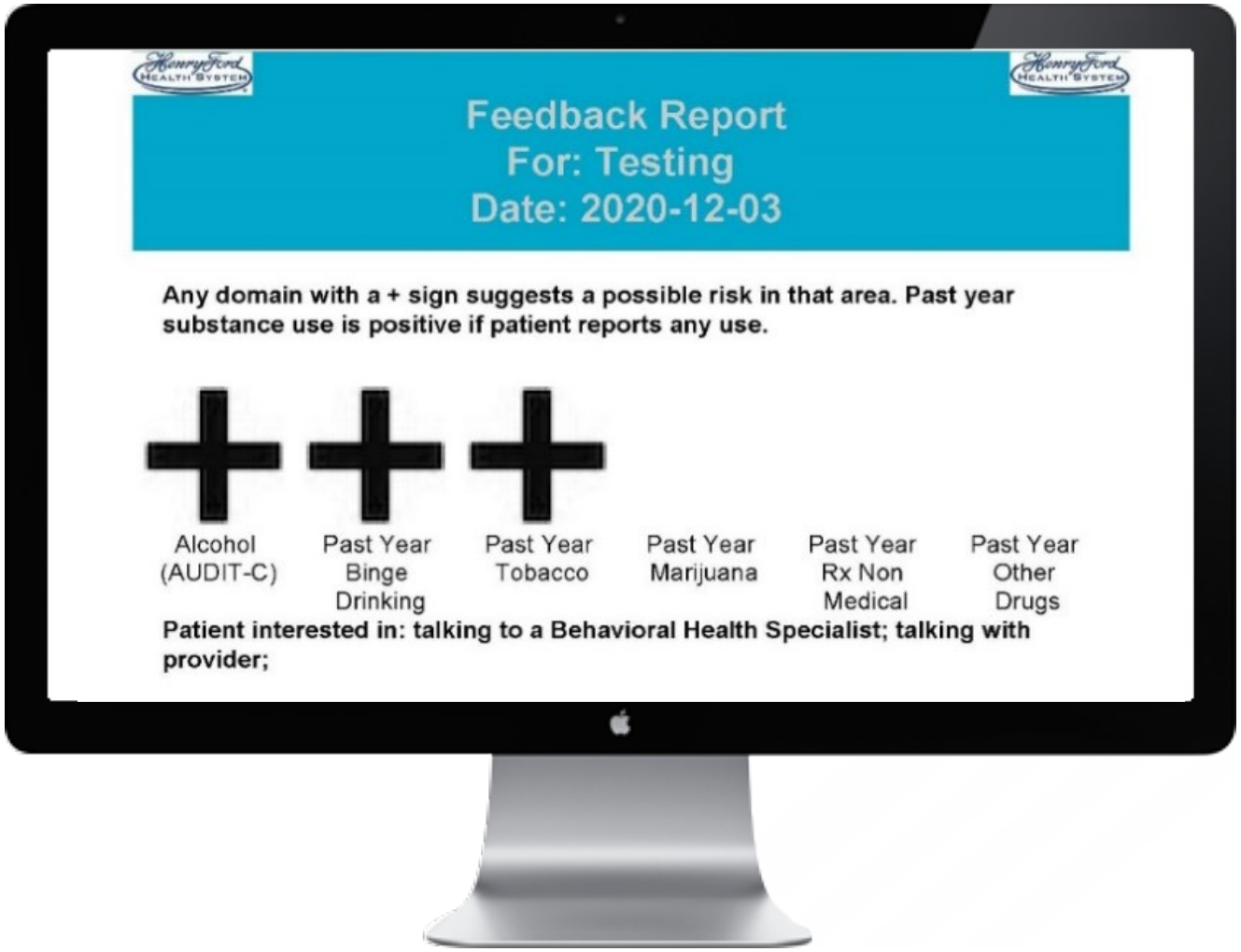
Screening Feedback Report



e- SBI Report accessible via the Notes tab in patient's EHR

Screening responses accessible in Screening tab

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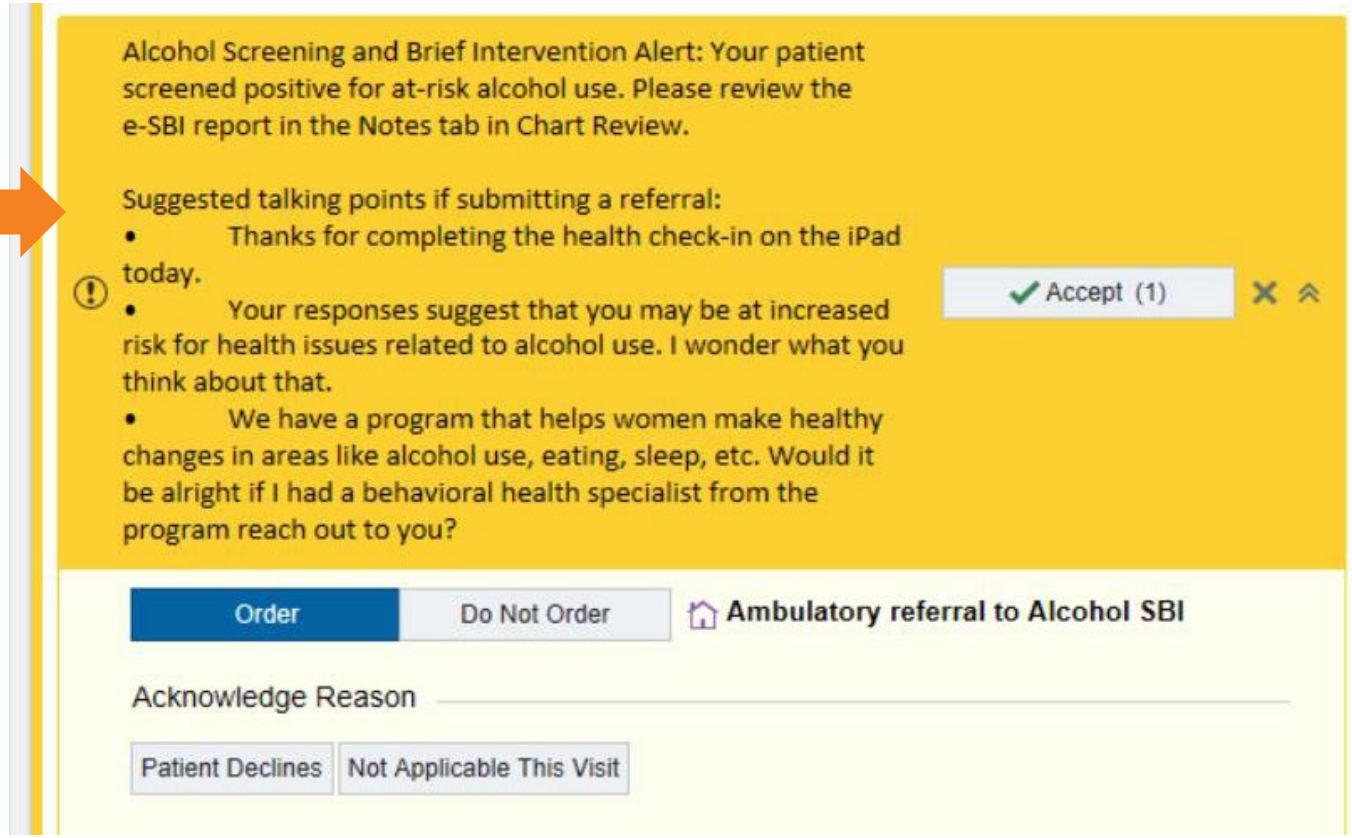
Best practice advisory

Includes suggested talking points for initiating a brief discussion about alcohol use with patient



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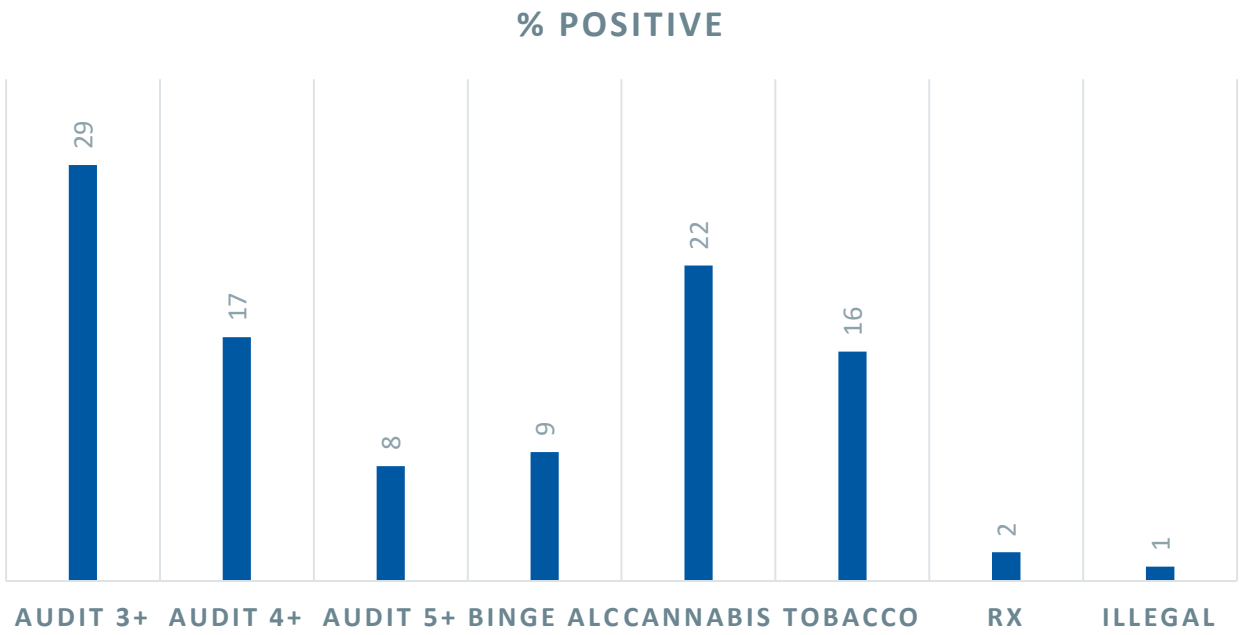
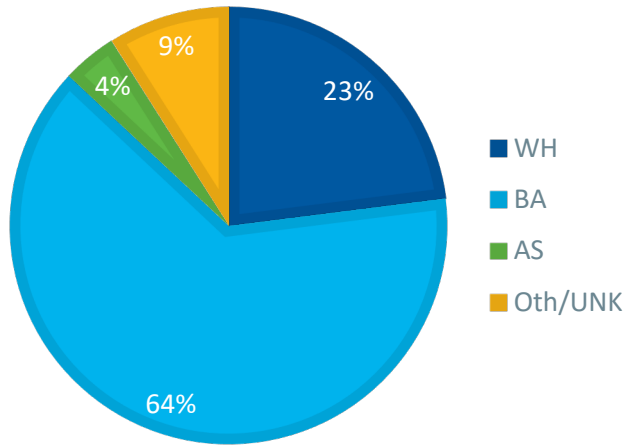
Usage

- Integrated the software in a total of 14 WH clinics within HFH
  - Reached a diverse sample of patients
  - 26% were OB patients; 74% were GYN patients
  - 95% found it "very easy" or "pretty easy" to use
  - Patients accessing e-SBI remotely were more likely to complete the BI (78.3% vs 59.7%)





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Findings from Prior Trials

Characteristics of clinical trials to date

15- minute e- intervention	• Motivational, during a healthcare visit, + messaging • No therapist involvement of any kind • Developed with iterative participant & staff feedback
Treatment as usual control	• Reflects current standard • Balances rigor with risk of influence
Pragmatic rigor	• Applied context, representative samples • Pre- registered, blinded, bio verification, intent to treat
Outcomes	• Acceptability • Primary outcome = abstinence, verified by UDS • Follow- up 3 to 6 months in most studies

Feasibility and acceptability

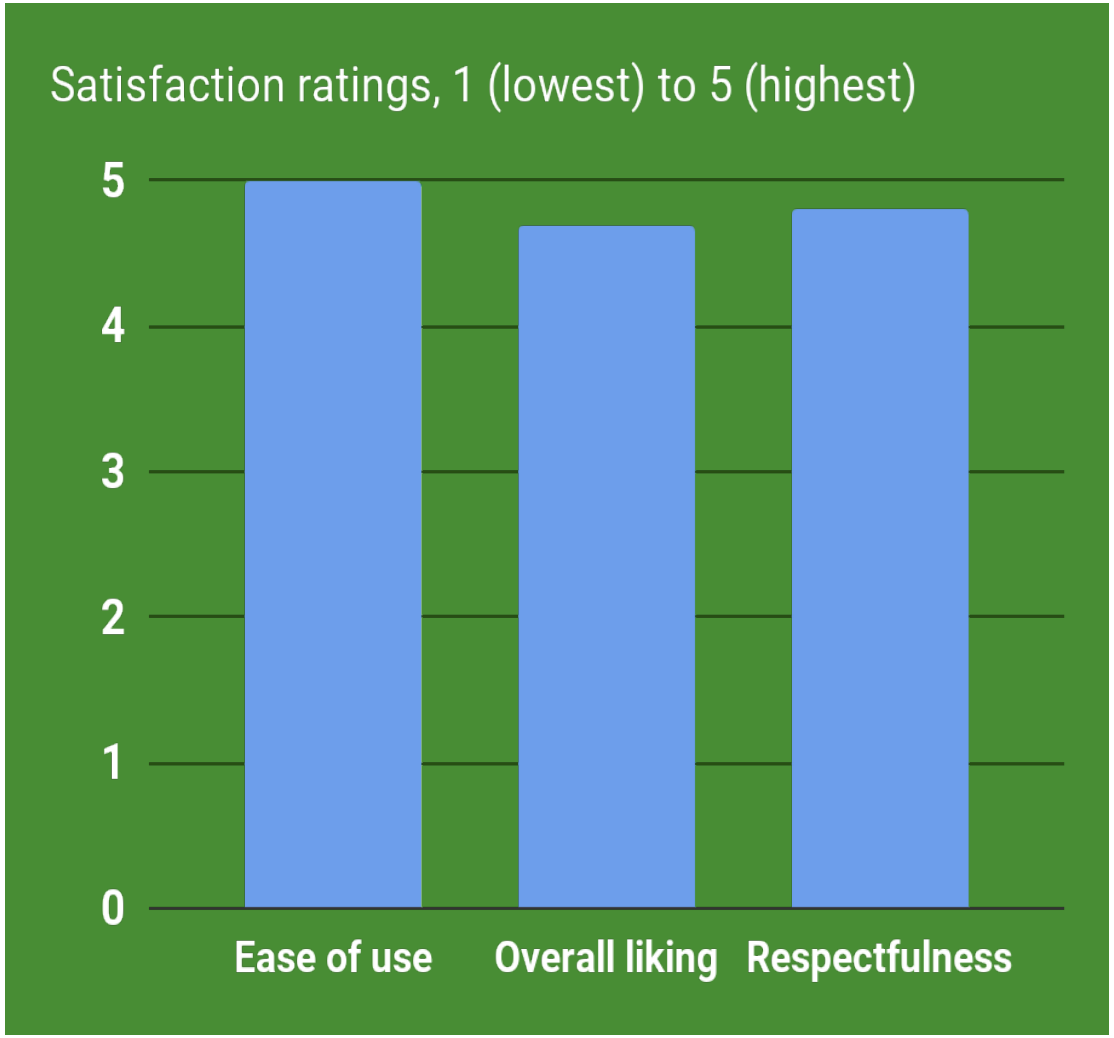
(Ondersma, Chase, Svikis, & Schuster, 2005; Ondersma, Svikis, & Schuster, 2007)

Overview

Feasibility and acceptability are key initial intervention measures, and are necessary preconditions for scalability.

Findings:

- Ratings for ease of use, likeability, and helpfulness are consistently high
- Most (61%) report that it made them more likely to change
- Most (56%) say they prefer the software to a person; 37% have no preference; and 7% would prefer their doctor or nurse



Replication of e-SBI with postpartum women

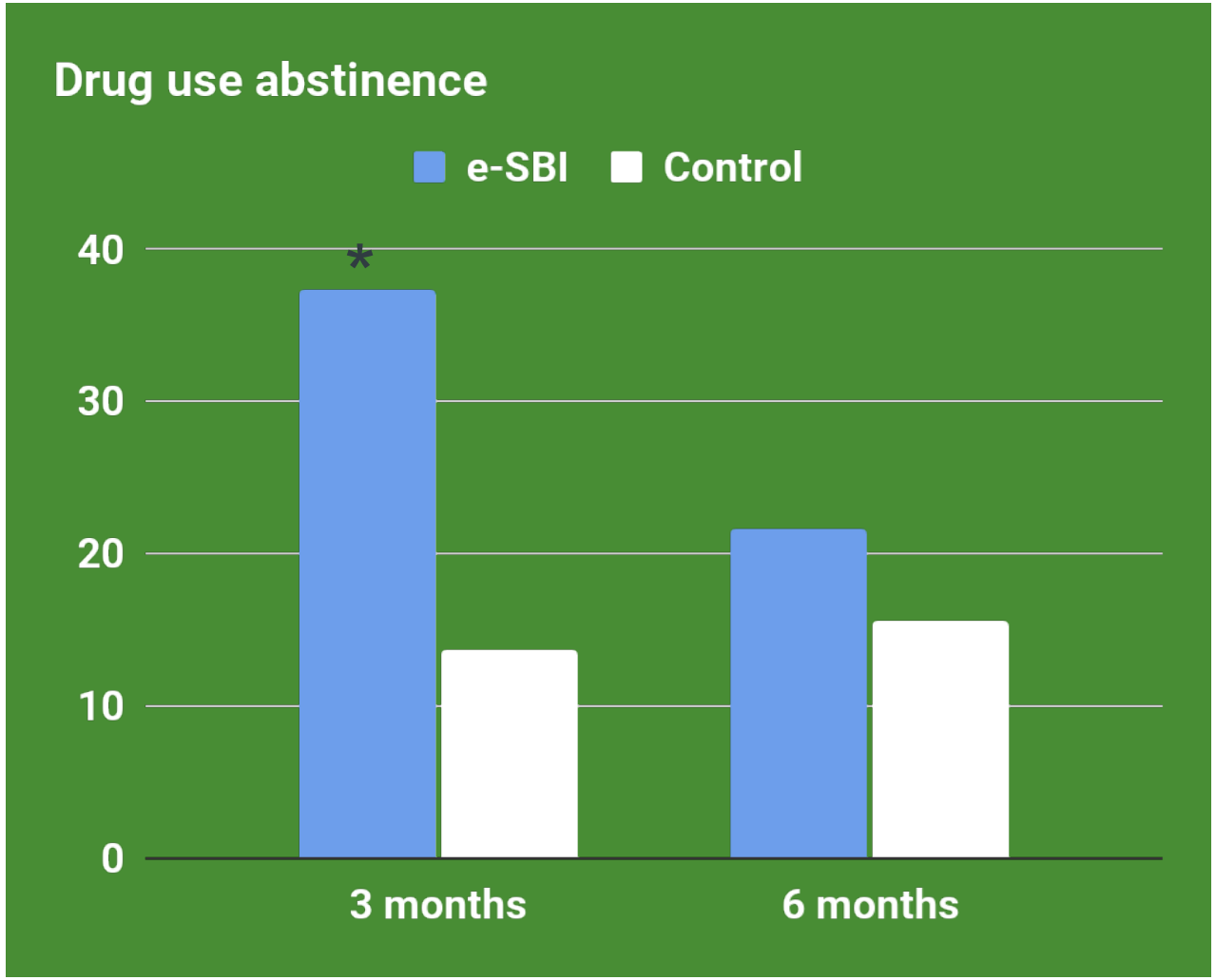
(Ondersma, Svikis, Thacker, Beatty, & Lockhart, 2014)

Overview

e-SBI for drug use among a new sample of 143 primarily African-American women recruited during postpartum hospitalization

Findings:

- Abstinence higher among e-SBI participants at 3 months (OR = 3.3, p = .01) but not 6 months (OR = 1.5, ns)
- As with other SBI studies, effects on drug use consequences were not observed



Tobacco use in pregnancy

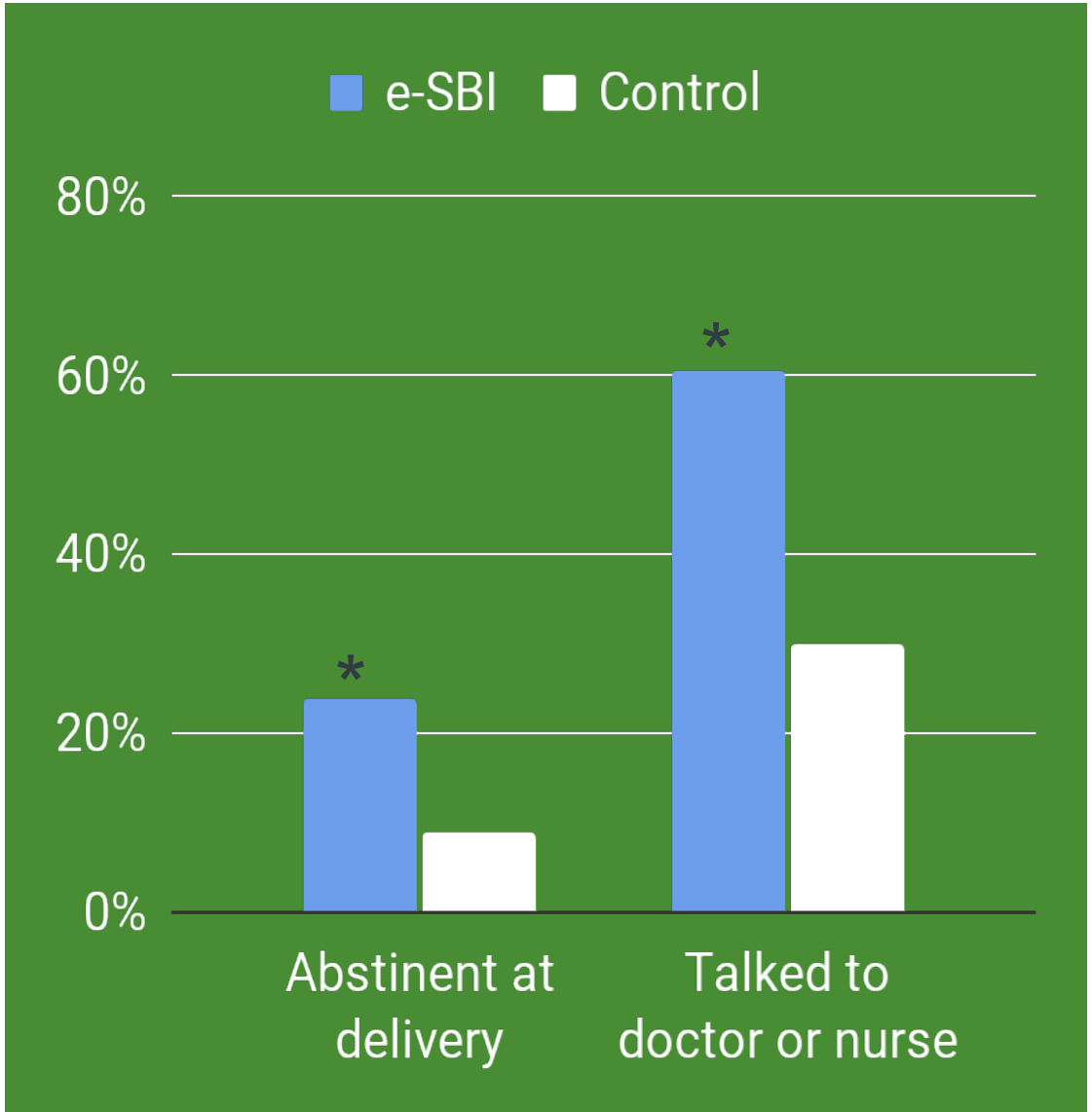
(Ondersma, Svikis, Lam, Connors-Burge, Ledgerwood, & Hopper, 2012)

Overview

e-SBI (5As) for tobacco use among 110 pregnant women recruited during routine prenatal care; outcomes measured at delivery

Findings:

- Abstinence higher among e-SBI participants (p = .02)
- e-SBI participants were also more likely to talk to their doctor or nurse about their smoking (p = .02)



Alcohol use in pregnancy

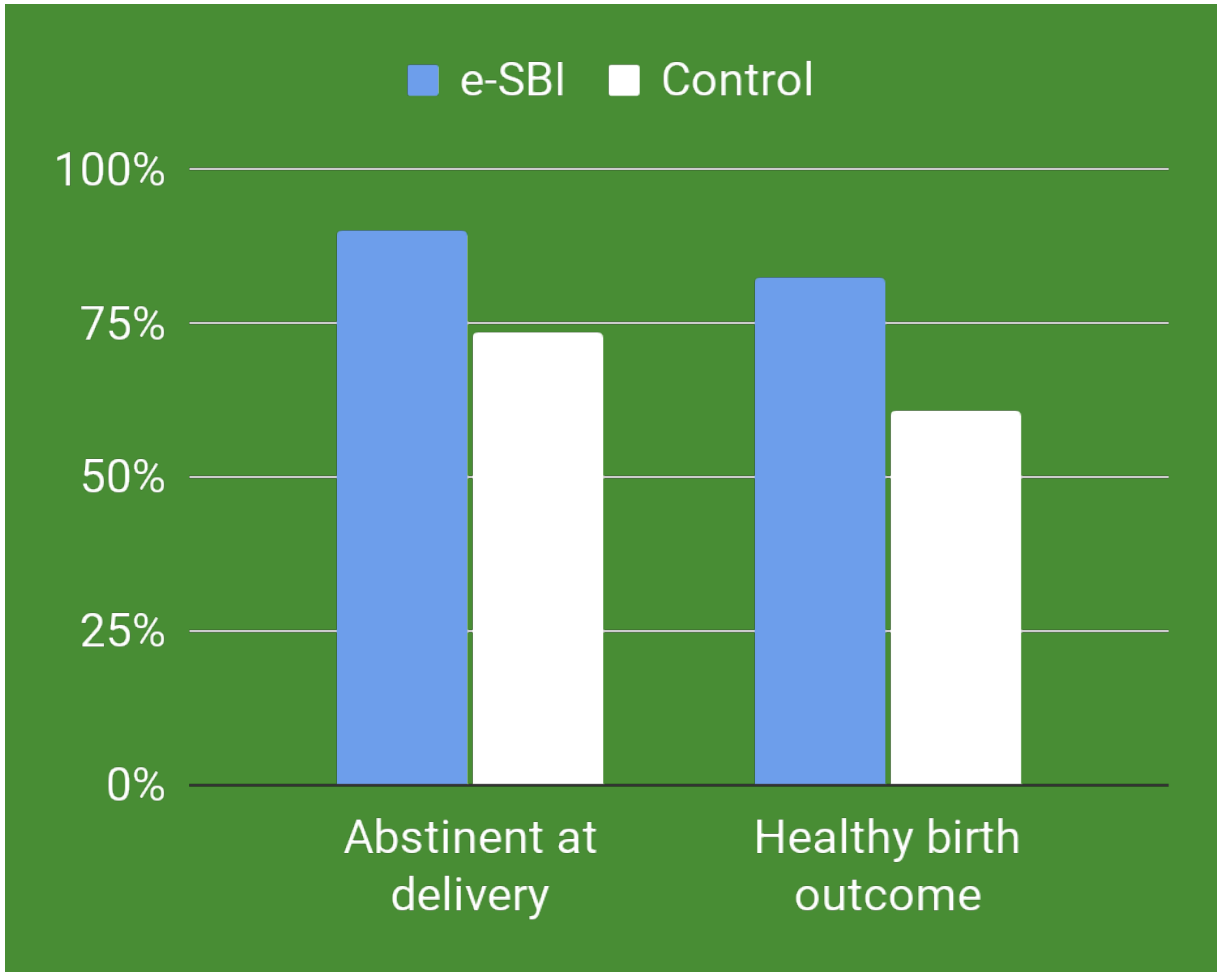
(Ondersma, Beatty, Svikis, Strickler, Tzilos, Chang, Divine, Taylor, & Sokol, 2015)

Overview

Pilot trial of e-SBI for alcohol use among 48 pregnant women recruited from routine prenatal care; follow-up at childbirth

Findings:

- As expected, there were no significant between-group differences
- Abstinence (OR = 3.4) and healthy birth outcome (live birth, normal birthweight, no intensive care; OR = 3.3) both support further study of this e-SBI (ongoing)



e-SBI vs. SBI among at-risk women

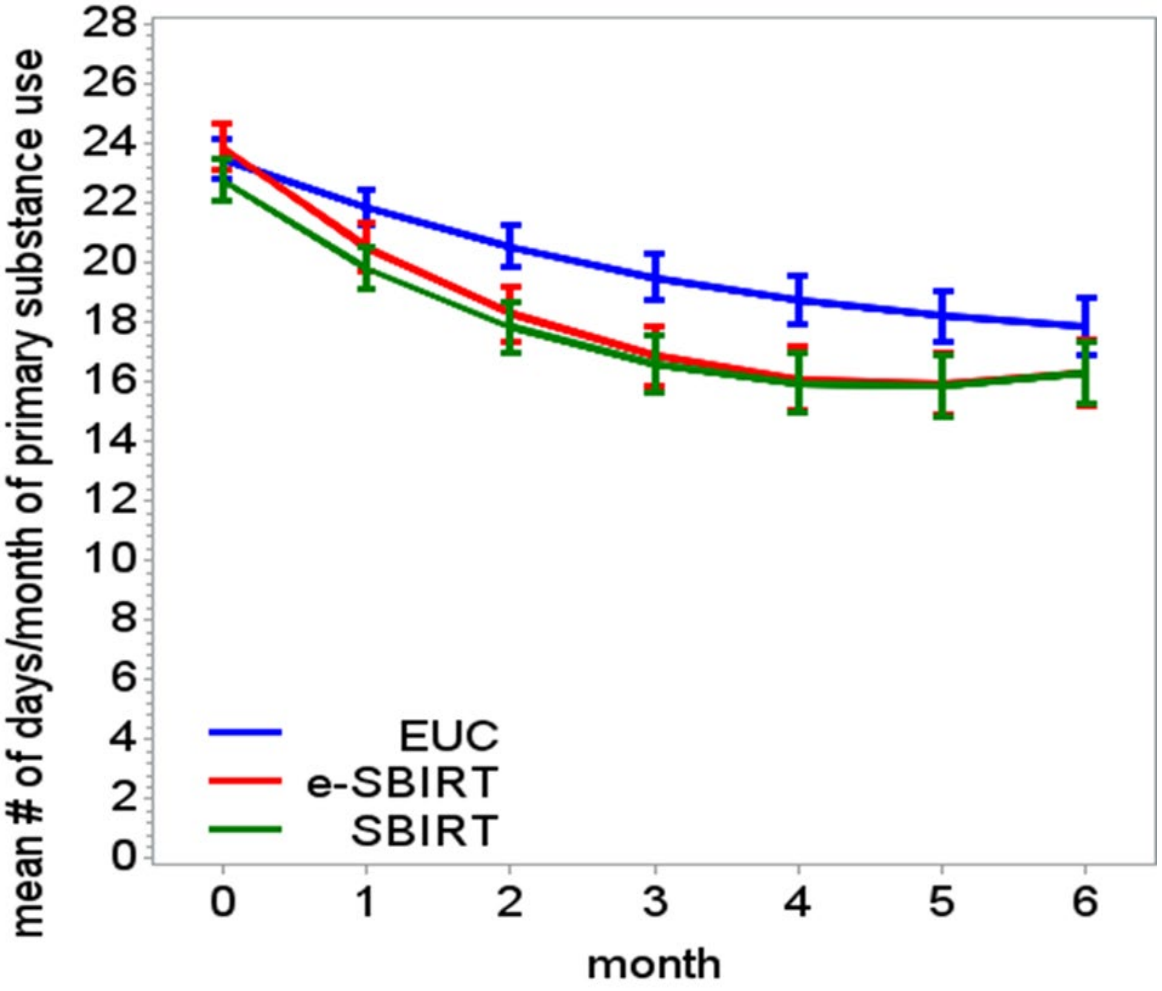
(Martino, Ondersma, Forray, Olmstead, Gilstad-Hayden, Howell, Kershaw, & Yonkers, 2018)

Overview

Person-delivered SBI vs. e-SBI vs. enhanced usual care among 439 women screening positive for unhealthy substance use during routine reproductive care (17% pregnant)

Findings:

- SBI and e-SBI both outperformed enhanced usual care, with steeper declines in substance-using days
- Effect sizes were in the small to moderate range
- NO effect on receipt of services



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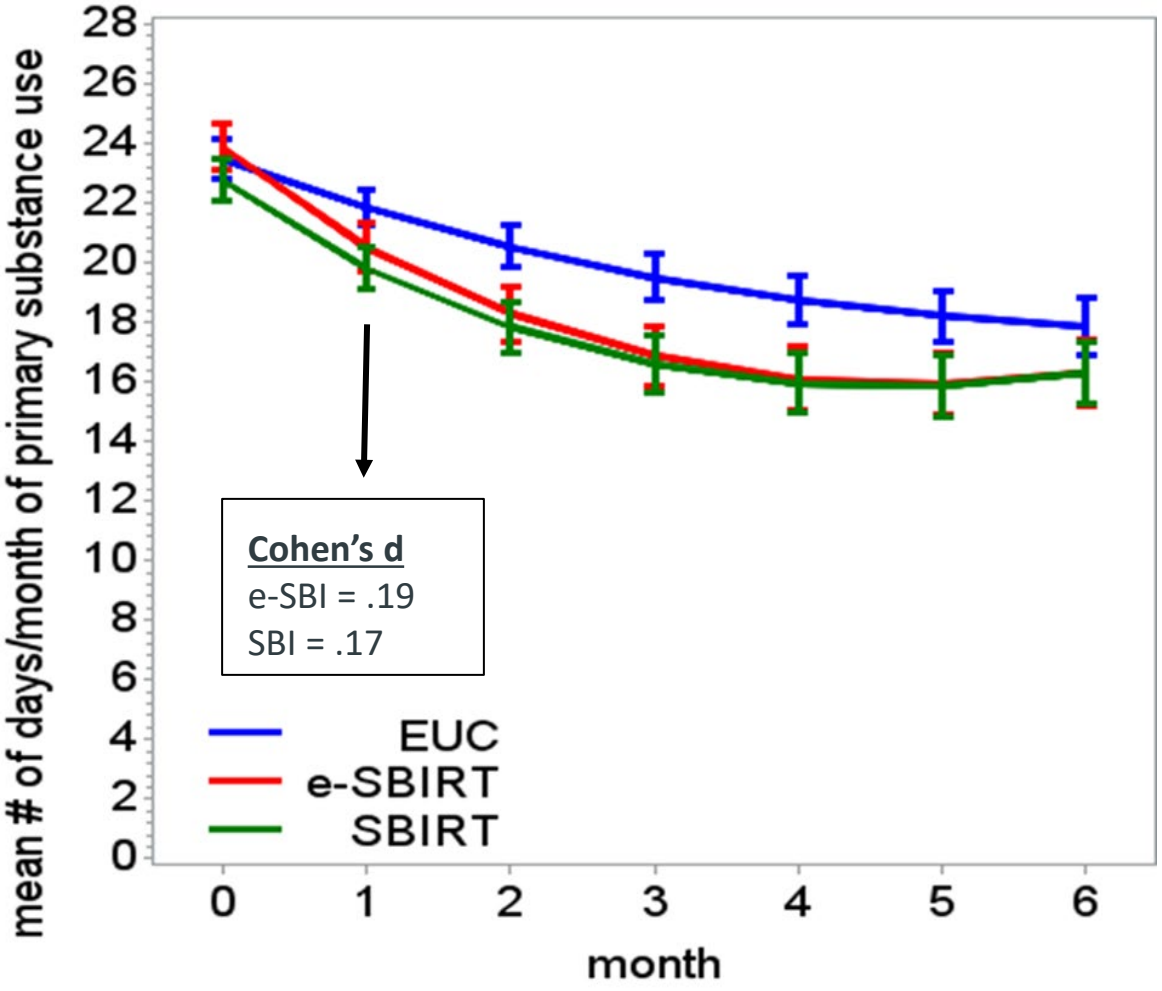

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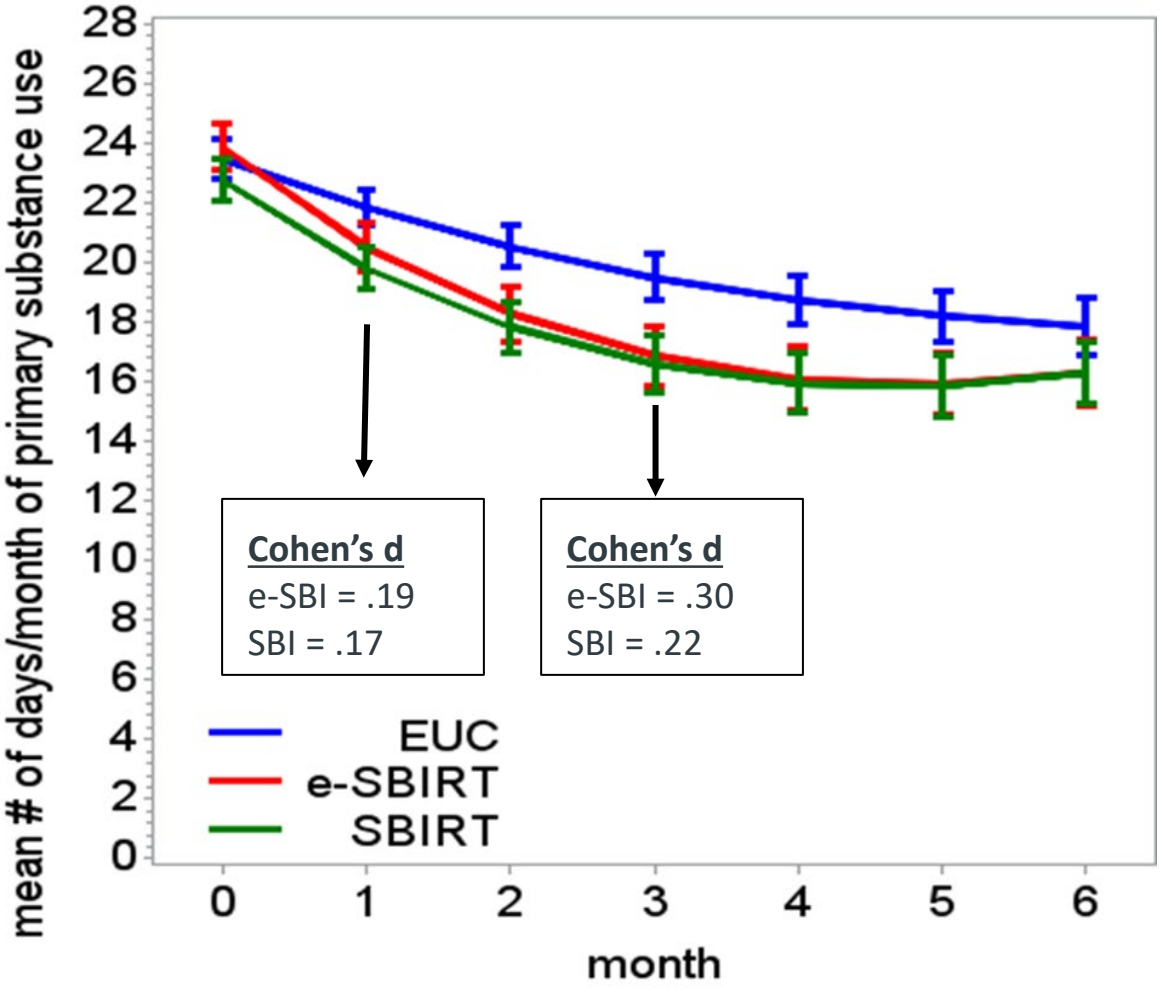

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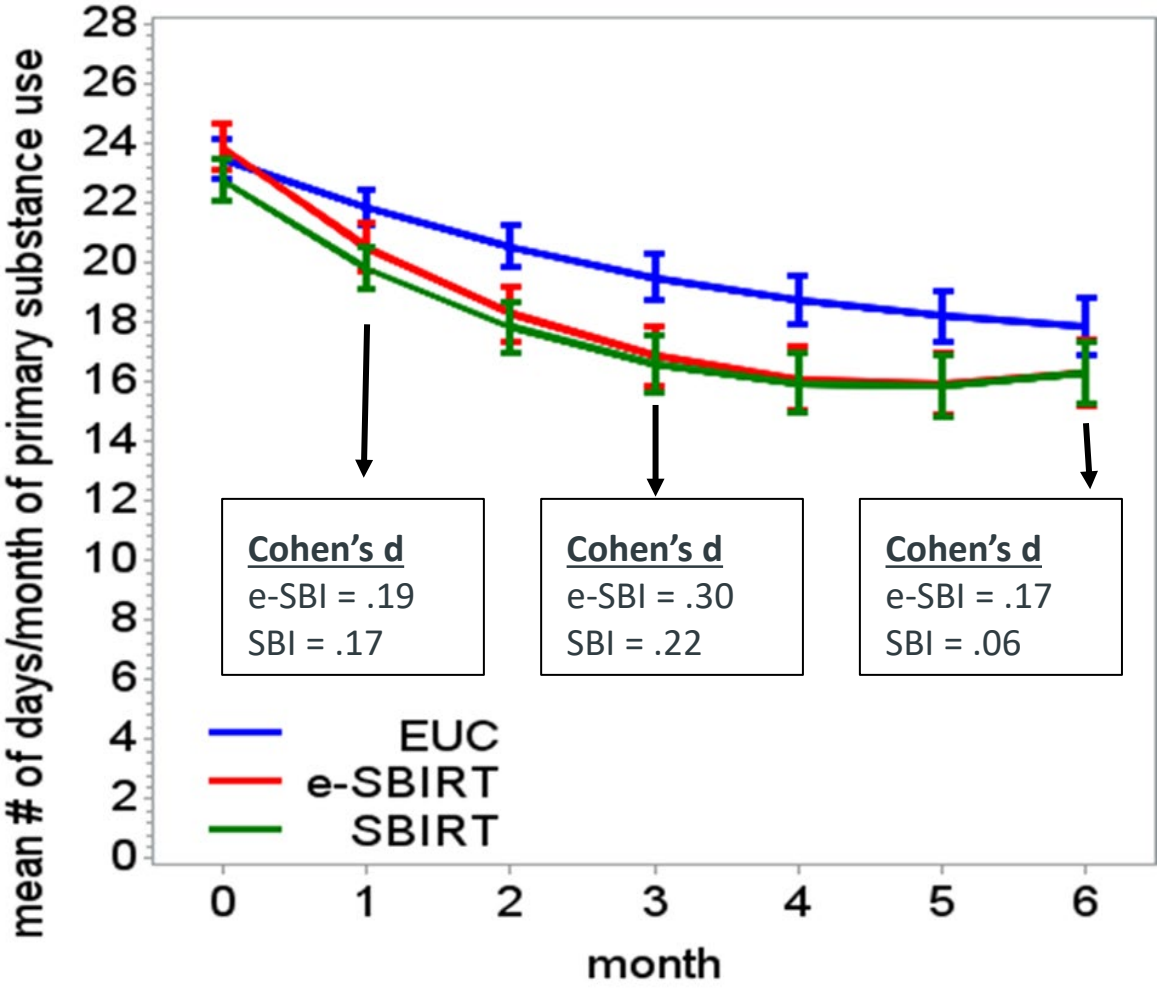


Cost effectiveness, e-SBI vs. SBI

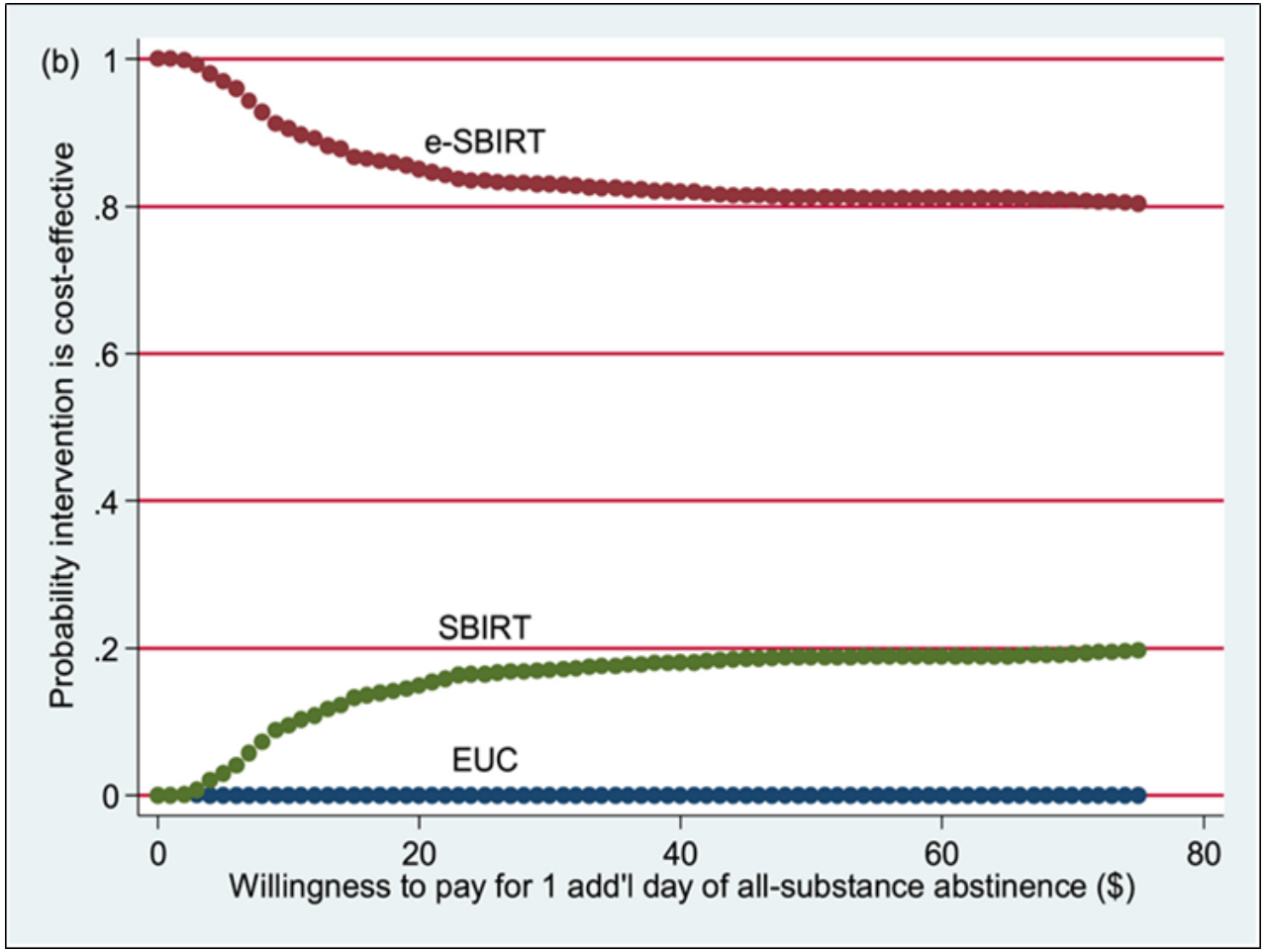
(Olmstead, Yonkers, Ondersma, Forray, Gilstad-Hayden, & Martino, 2019)

Overview

Cost-effectiveness is a critical consideration for long-term sustainability and use of limited resources

Findings:

- e-SBI had the same approximate cost as enhanced usual care (EUC)
- e-SBI showed greater cost-effectiveness from both the clinic and patient perspectives



Statewide Implementation

The statewide High-Touch, High-Tech Program (HT2)

Computer-Delivered Screening and Brief Intervention for Alcohol Use in Pregnancy: A Pilot Randomized Trial

Steven J. Ondersma, Jessica R. Beatty, Dace S. Svikis, Ronald C. Strickler, Golfo K. Tzilos, Grace Chang, George W. Divine, Andrew R. Taylor, and Robert J. Sokol

Computer-delivered screening and brief intervention (e-SBI) for postpartum drug use: A randomized trial☆

Steven J. Ondersma, Ph.D. [a,*], Dace S. Svikis, Ph.D. [b], Leroy R. Thacker, Ph.D. [b], Jessica R. Beatty, Ph.D. [a], Nancy Lockhart, R.N. [a]

[a] Wayne State University, Detroit, MI 48202, USA
[b] Virginia Commonwealth University, Richmond, VA 23284, USA

GYNECOLOGY

A randomized controlled trial of screening and brief interventions for substance misuse in reproductive health

Steve Martino, PhD; Steven J. Ondersma, PhD; Ariadna Forray, MD; Todd A. Olmstead, PhD; Kathryn Gilstad-Hayden, MS; Heather B. Howell, MSW; Trace Kershaw, PhD; Kimberly A. Yonkers, MD

Accuracy of five self-report screening instruments for substance use in pregnancy

Steven J. Ondersma[1], Grace Chang[2], Tiffany Blake-Lamb[3], Kathryn Gilstad-Hayden[4], John Orav[5], Jessica R. Beatty[1], Gregory L. Goyert[6] & Kimberly A. Yonkers[4,7]

Original Investigation

A Randomized Trial of Computer-Delivered Brief Intervention and Low-Intensity Contingency Management for Smoking During Pregnancy

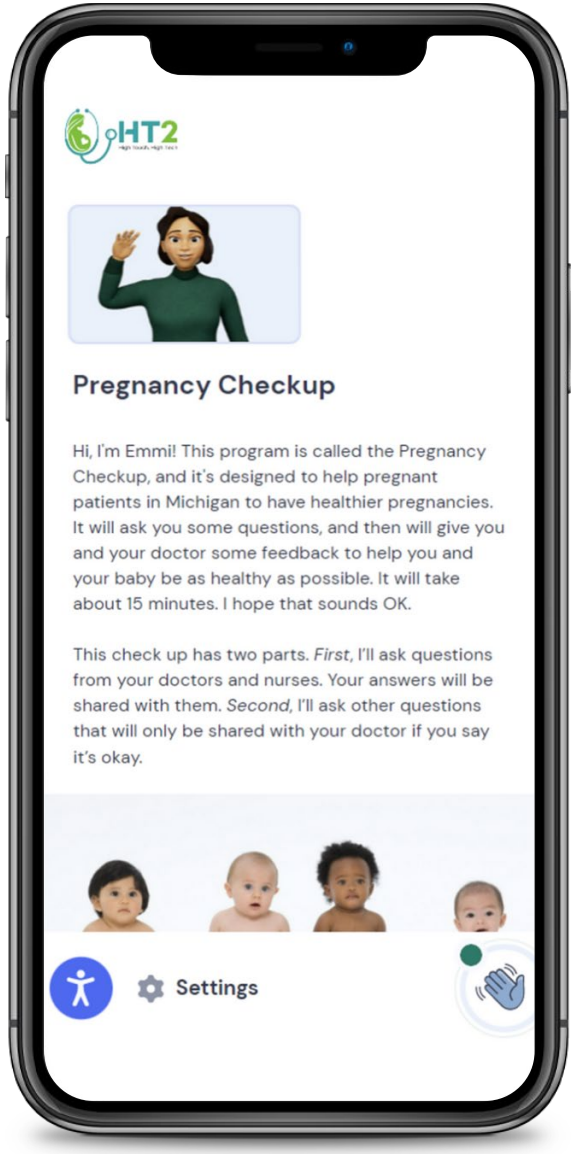
Steven J. Ondersma, Ph.D.,[1,2] Dace S. Svikis, Ph.D.,[3,4,5] Phebe K. Lam, Ph.D.,[6] Veronica S. Connors-Burge, M.Ed.,[6] David M. Ledgerwood, Ph.D.,[3] & John A. Hopper, MD[6]

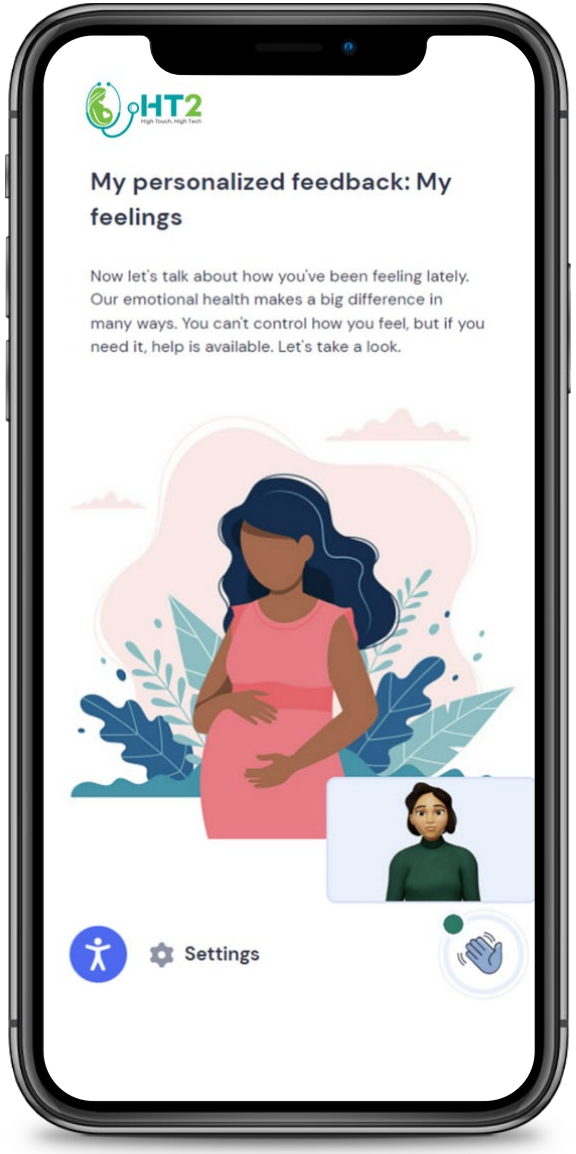
The HT2 Pregnancy Checkup App *(www.ht-2.org)*

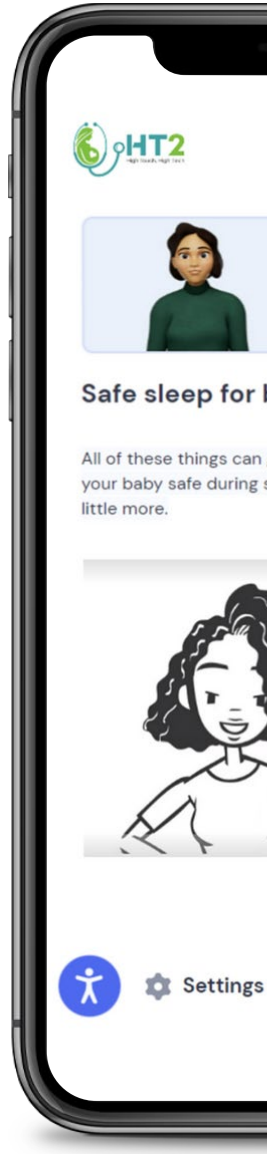
HT2
High Touch, High Tech

Key components of the approximately 10-minute checkup:

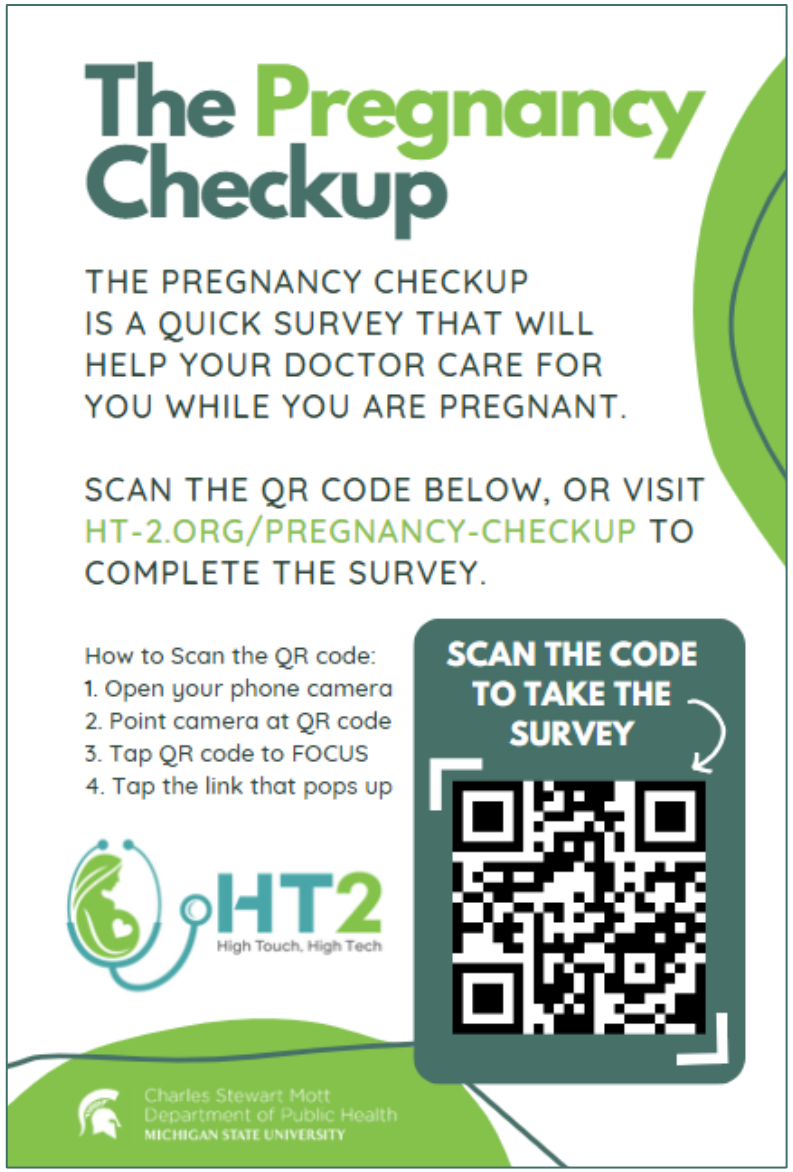
- Depression (EPDS or PHQ-9)
- Anxiety (GAD-2)
- Substance use (NIDA Quick Screen)
- PTSD (PTSD-5)
- Partner violence
- Social determinants of health
- Infant safe sleep
- Personalized motivational feedback
- Educational materials and referrals







Clinics can hang this flyer in their office or distribute it to patients before appointments.



Patients scan the QR code to complete the Mom's Checkup on their mobile device.

Clinics can administer the Pregnancy Checkup in 3 ways:

- Clinics can provide pregnant patients with an iPad or tablet in the waiting room
- Patients can access the Checkup through code on a flyer
- Clinics can include a link in a text message or email, prior to the appointment

HT2
High Touch, High Tech

RISK IDENTIFICATION

- Identifies risk in range of areas
- Use of tech facilitates disclosure

BRIEF INTERVENTION

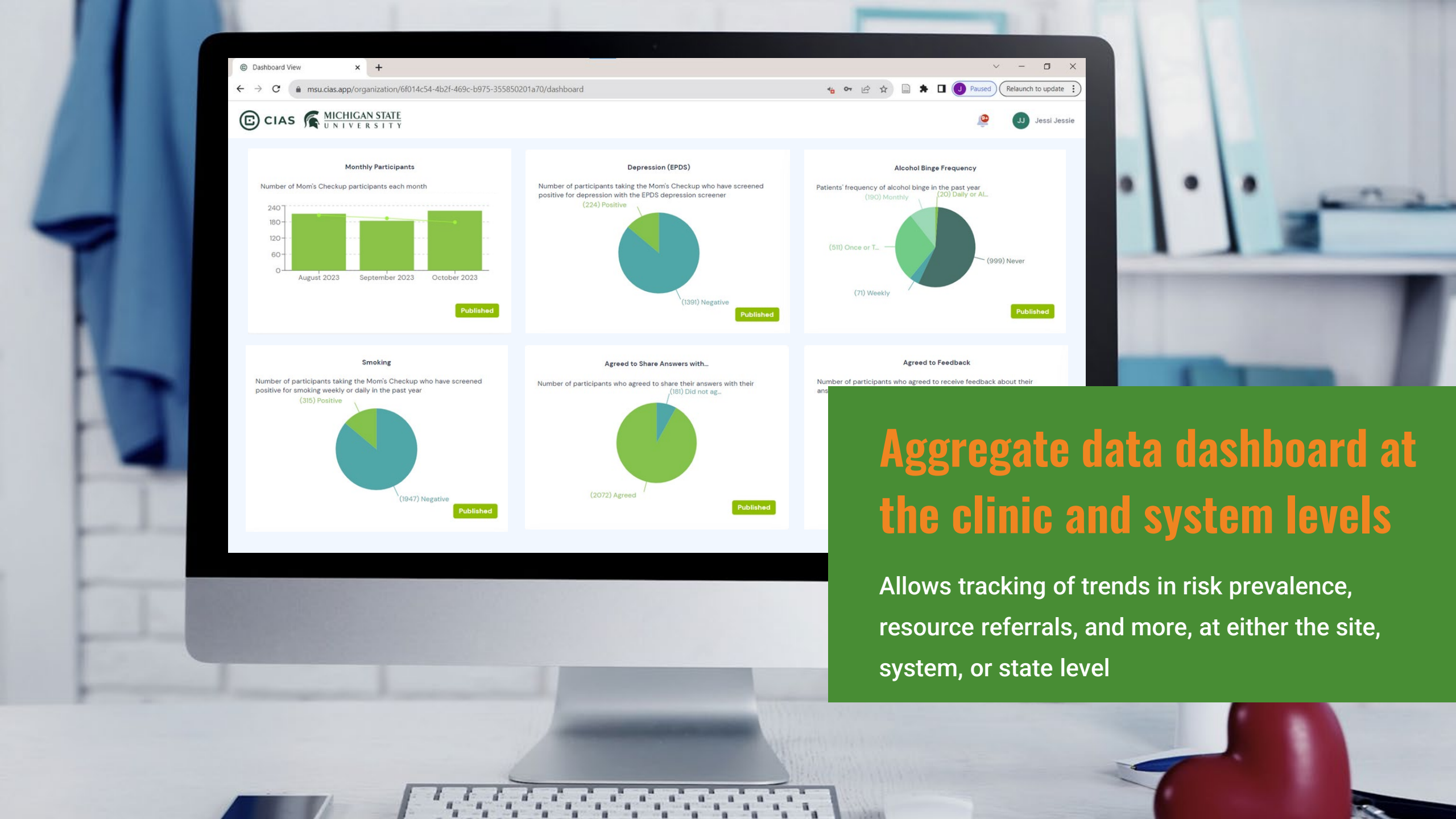
- Patients receive brief intervention tailored to individual responses

CONNECT TO LOCAL RESOURCES

- App recommends local resources
- Patients can sign up directly

INSTANT SUMMARY REPORT

- Summary report of responses sent to provider
- Secure email and fax are built-in; EHR integration is possible



Aggregate data dashboard at the clinic and system levels

Allows tracking of trends in risk prevalence, resource referrals, and more, at either the site, system, or state level

The MSU MIRACLE Center:

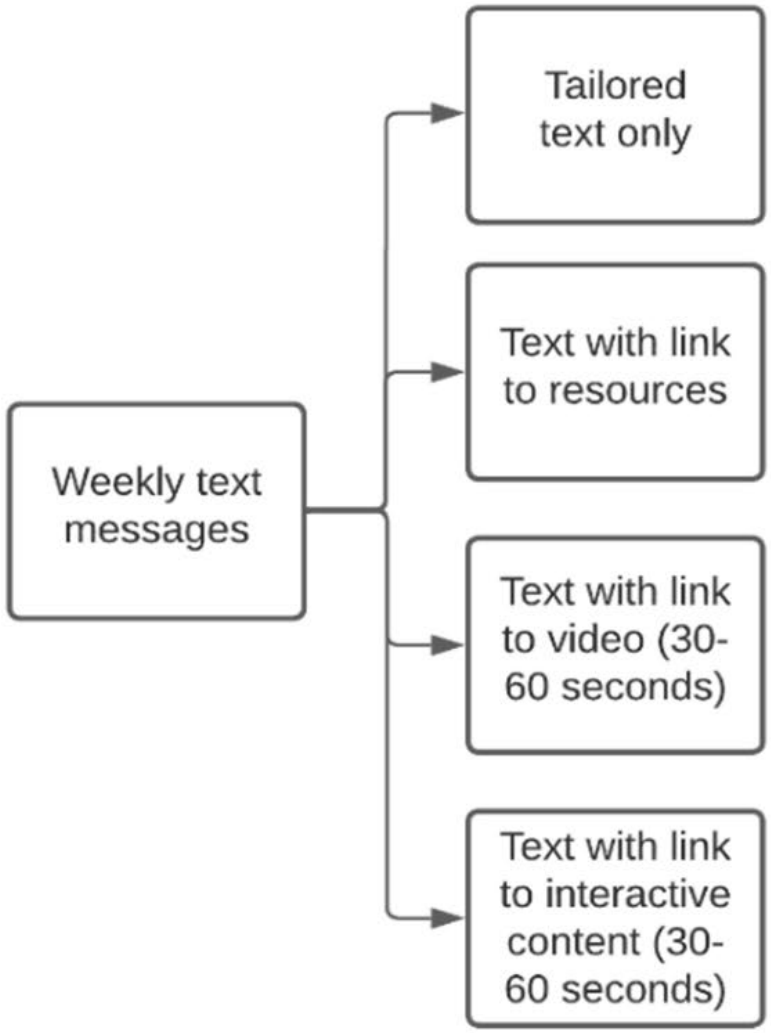
Preventing Maternal Morbidity and Mortality

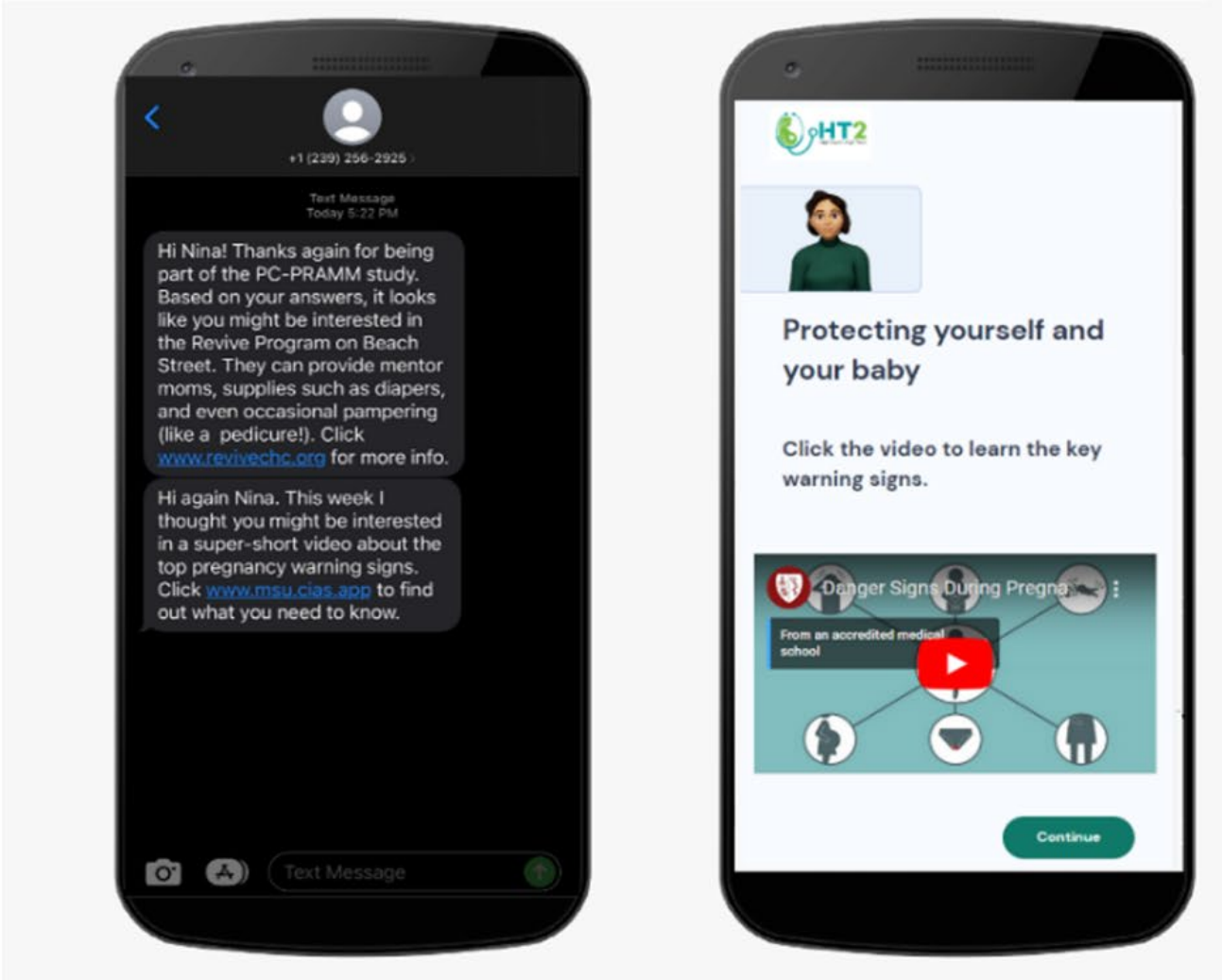
The PC-PRAMM (follows and builds on the PC)

	Risk factors targeted		Intervention element	Method
Individual	• Early warning sign awareness	→	• How to recognize early warning signs	• Baseline brief (5 minute) interactive session • Weekly text messages, half with links to additional interactive content and/or videos • CHW Live Chat • Interactive sessions and video
	• Provider inattention	→	• Resources for self-advocacy with providers	
	• Social determinants[1]	→	• Resource awareness, CHW live chat	
	• Substance use	→	• Brief interventions, active service connection	
	• Mental health	→	• Resource awareness, active service connection	
	• Partner violence	→	• Resource awareness & connection; safety plan	
	• Internalized racism (when present)	→	• Cognitive defusion (Hudson Banks et al., 2021)	
Support system	• Early warning sign awareness	→	• Sign recognition; patient advocacy resources	• Baseline brief (5 minute) interactive session • Biweekly text messages, half with links to additional interactive content and/or videos (30-60 seconds each)
	• Substance use	→	• How and why to support healthy behaviors	
	• Mental health, support, stress	→	• Promotion of empathic pregnancy support skills for family, father of baby, and/or friends	
Provider	• Implicit bias	→	• Disparities dashboard & digital micro-detailing	• Access to disparity dashboard ("Patient Support Report") • Biweekly text messages, half with links to additional interactive content and/or videos (30-60 seconds each)
	• Inattention to warning signs	→	• Digital micro-detailing on PRAMM	
	• Social determinants/service use	→	• Resource awareness, empathic referral skills	
Community	• Challenges accessing services	→	• Proactive outreach (with patient consent)	• Outreach and collaboration between study team and community agency staff
	• Lack of inter-agency coordination	→	• Regular communication and coordination	

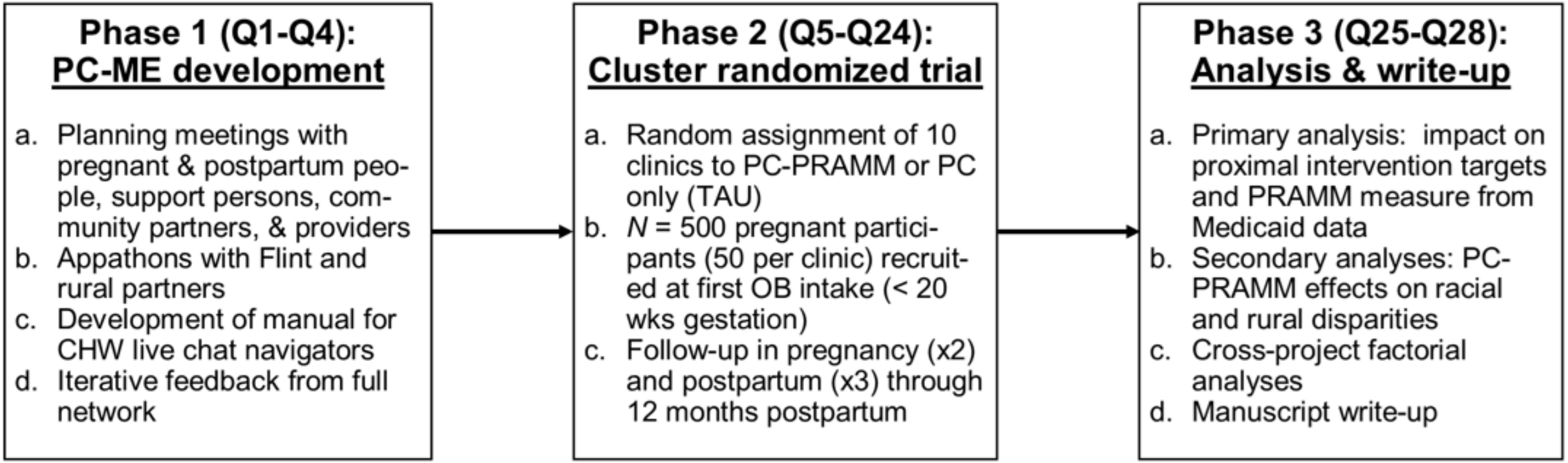
Note. The above content is in addition to the existing single-session Parent Checkup (PC) app focusing on substance use, mental health, and social determinants of health. [1]Housing, transportation, child care, access to care, etc.

The PC-PRAMM is SMS-centric but does much more





Overall study plan and timeline



Part 4:
Implications and the big picture

Integration of digital health to create a practice - based research platform

PATIENT CARE

Universal digital screening (e-PRO) and intervention can support patient care and learning systems

RECRUITMENT

Patients can be asked for consent to be contacted for future studies; screening data can allow pre-screening for eligibility

RESEARCH

Consistent and sustained recruitment can support multi-arm, multi-stage trials that in turn drive improved patient care

The power of group input

Crowd science

"...largely characterized by two important features: participation in a project is open to a wide base of potential contributors, and intermediate inputs such as data or problem solving algorithms are made openly available."

-- Franzoni & Sauermann, 2014

Collaboratory

"A computer - supported system that allows scientists to work with each other, facilities, and databases without regard to geographical location."

-- Finholt & Olson, 1997

HENRY FORD HEALTH + MICHIGAN STATE UNIVERSITY
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Thank you!
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Thank You!

For questions and to make requests to the Technical Assistance Collaborative, please email:

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