BeatPain Utah

Partnering with Community Health Centers Within a Socio-Technical Framework

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Outline

- Background and design of the BeatPain trial

- Role of IT within equity-focused implementation framework for community health center – academic partnerships

- Social considerations in the integration of new IT work flows and procedures

- Technical considerations of IT implementation for BeatPain and additional community health center – academic partnerships

Acknowledgements

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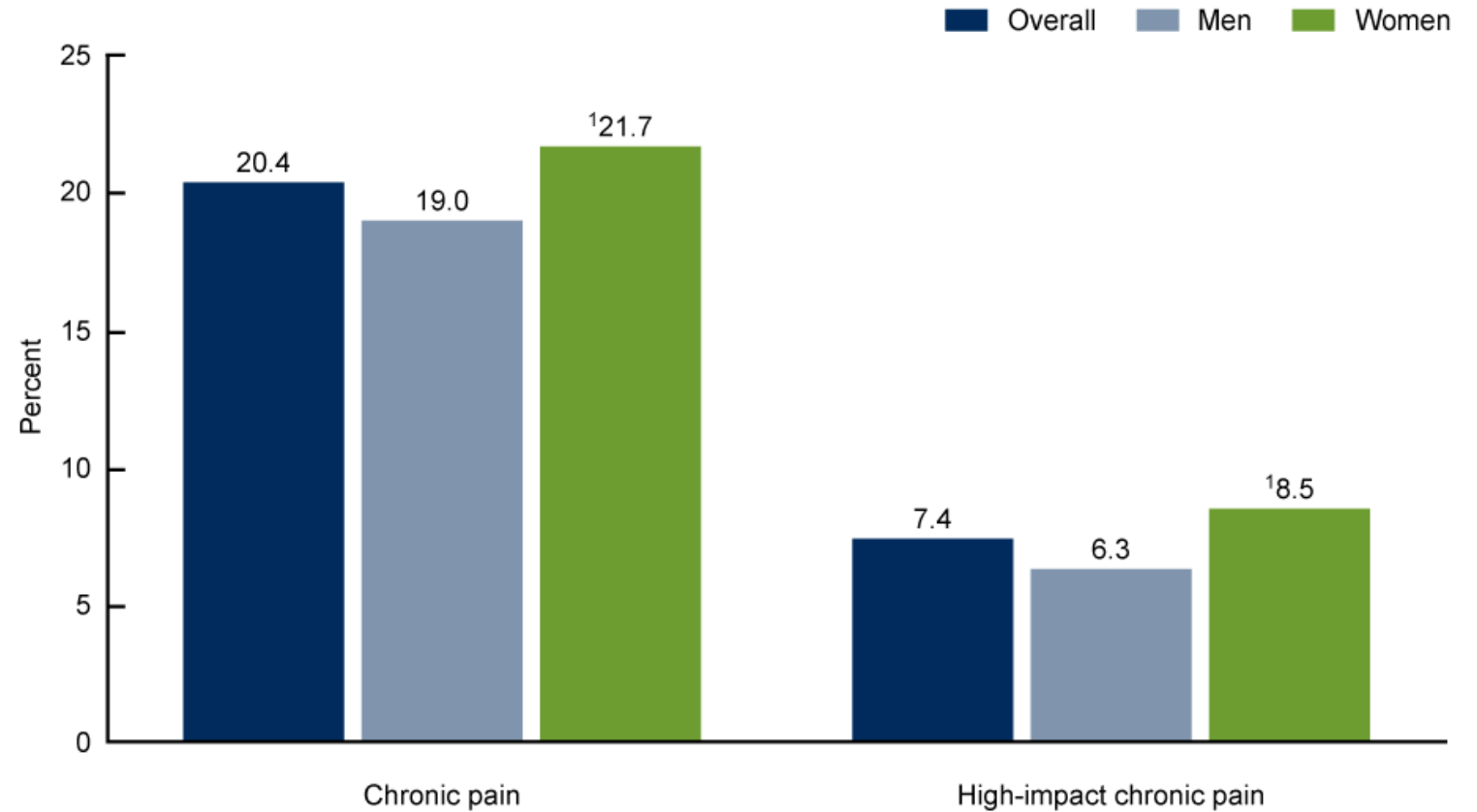- Cynthia DeFrancesco
  Physical Therapists

Duke University
- Adam Goode
  Physical Therapy

Pain in America

MORE PEOPLE LIVE WITH **CHRONIC PAIN** THAN CANCER, HEART DISEASE, AND DIABETES, COMBINED

14.7M 25.4M 30.3M 116M

	Overall	Men	Women
Chronic pain	20.4	19.0	[1]21.7
High-impact chronic pain	7.4	6.3	[1]8.5
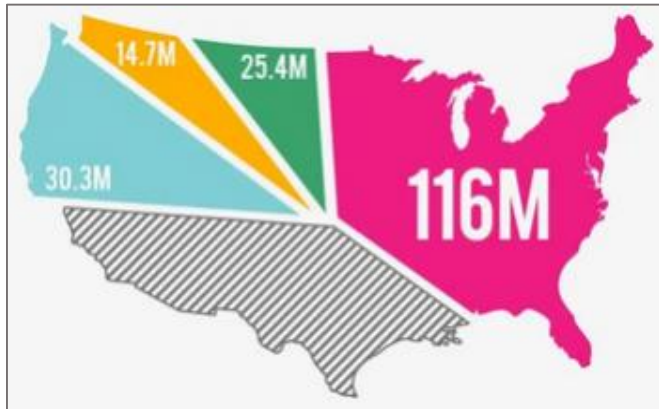
Chronic pain is defined as pain that lasts for more than 3 months. High-impact chronic pain is pain that frequently interferes with life and daily activities.

Percentage of respondents indicating chronic pain interferes with ability to pay for basic needs
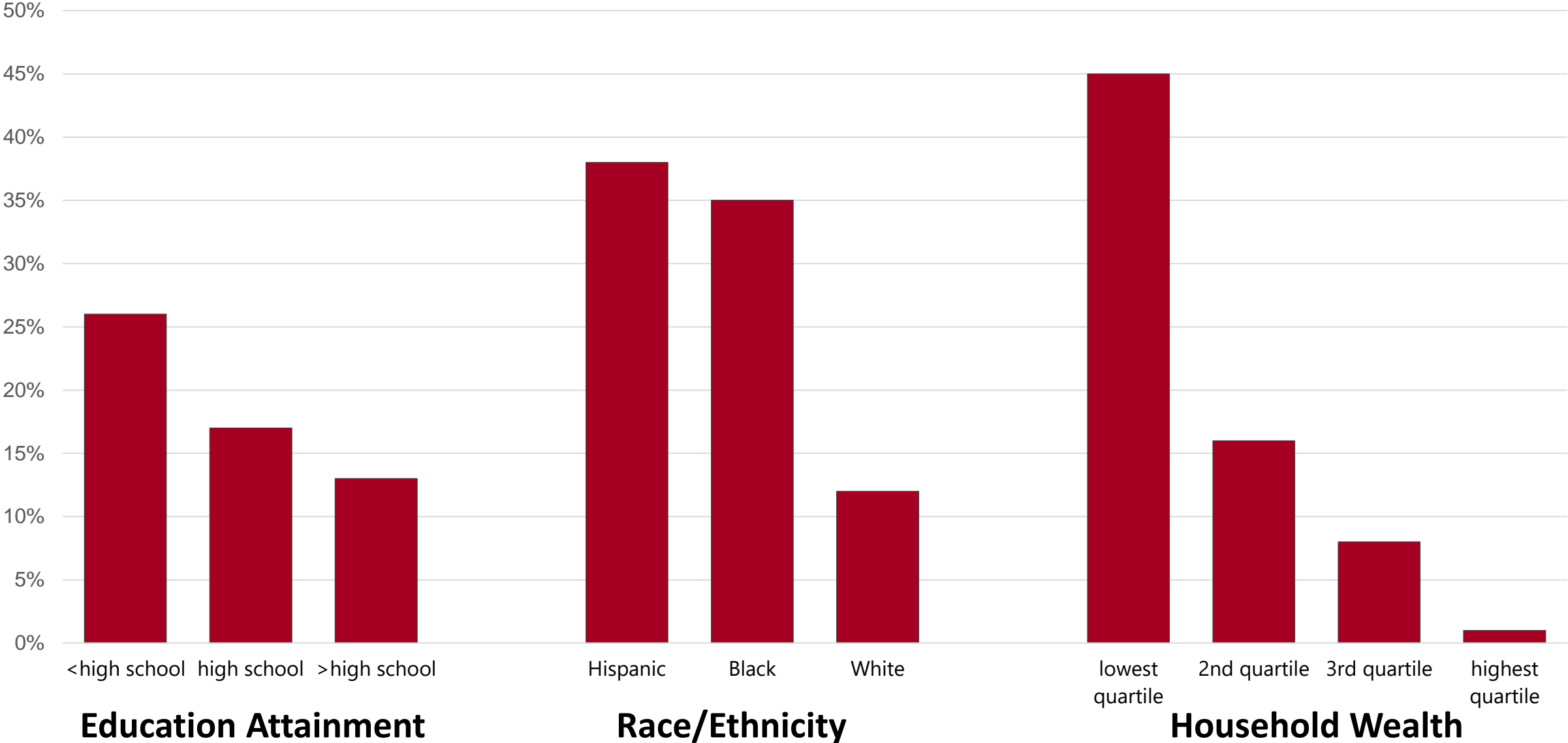
Education Attainment

Race/Ethnicity

Household Wealth

Disparities in Back Pain Management

Practice guidelines support first-line management with nonpharmacologic care, yet…

Persons in low-income communities have a **63% higher odds** of receiving a prescription opioid for a new back pain diagnosis

Persons in rural communities have a **87% higher odds** of receiving a prescription opioid

Utah has 6th highest rate of opioid prescribing for new back pain consultations

Use of nonpharmacologic pain treatments are lower in rural versus non-rural settings, lower for persons of Hispanic/Latino ethnicity

Raad, et al. Opioid Prescriptions for New Low Back Pain: Trends and Variability by State. *J Am Board Fam Med*. 2020;33:136-142.
García MC, et al. Morbidity Mortality Weekly Report. January 18, 2019, 68(2);25–30
Lee B, et al Substitution of Nonpharmacologic Therapy With Opioid Prescribing for Pain During the COVID-19 Pandemic. *JAMA Netw Open*. 2021;4(12):e2138453

Disparities in Pain Clinical Research

Clinical research can exacerbate disparities in pain management:

- Clinical trials typically based in urban, academic medical centers

- Clinical trial populations typically under-represent diverse participants

- Community engagement in research is often overlooked

- Disparities may be attributed to individual-level behaviors instead of structural, systemic factors

- Addressing structural barriers stops at access

Pragmatic trials have the potential to reduce disparities by making participation in research more accessible and by evaluating, using rigorous methods for evidence generation, interventions targeting downstream effects of ... [disparities].

Dember L, The Potential for Pragmatic Trials to Reduce Racial and Ethnic Disparities in Kidney Disease *JASN* 2022:33(9):1649-51

Community Health Centers

HRSA Health Center Program

NATIONALLY		UTAH
1 in 5	Residents of Rural Communities	1 in 2
67%	At or Below the Federal Poverty Level	66%
20%	Uninsured	45%
37%	Hispanic/Latino Ethnicity	49%
24%	Communicate in a Language Other Than English	37%
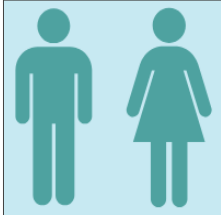
*Between 2011 and 2021, the number of patients served by FQHCs increased 50%

Goal: Improve back pain management for persons with chronic back pain in Utah Community Health Centers through accessible and effective nonpharmacologic care.
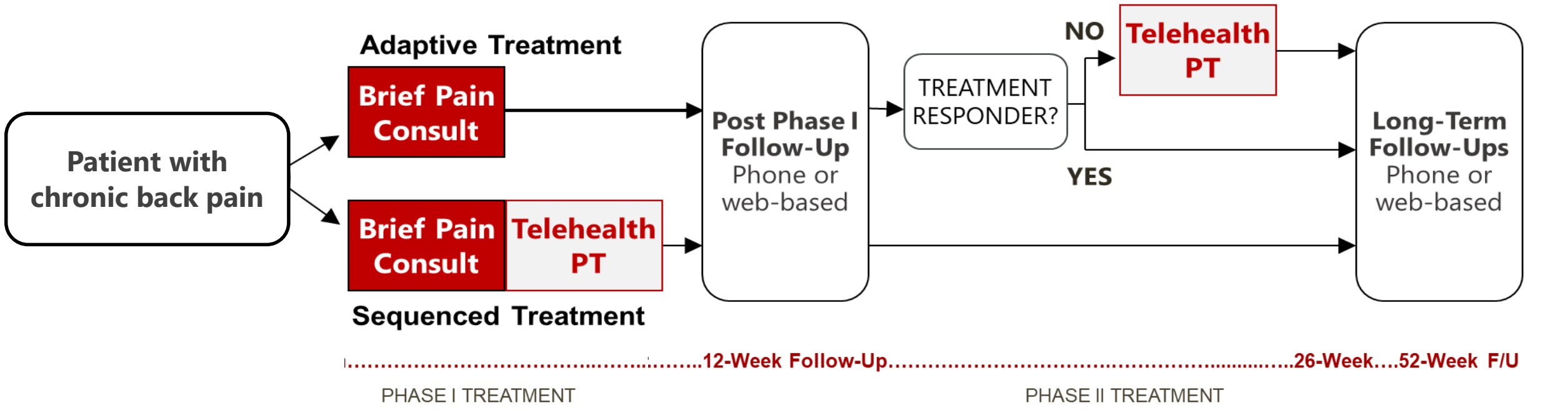
PHASE I TREATMENT ....12-Week Follow-Up..26-Week....52-Week F/U   PHASE II TREATMENT

AIMS*:*

1. Compare the effectiveness of brief pain teleconsult with or without telehealth PT
2. Compare the effectiveness of telehealth PT as a first-line vs. a stepped care strategy
3. Examine results of Aims 1 & 2 in pre-defined patient sub-groups
4. Explore implementation outcomes (acceptability, adoption, feasibility and fidelity).
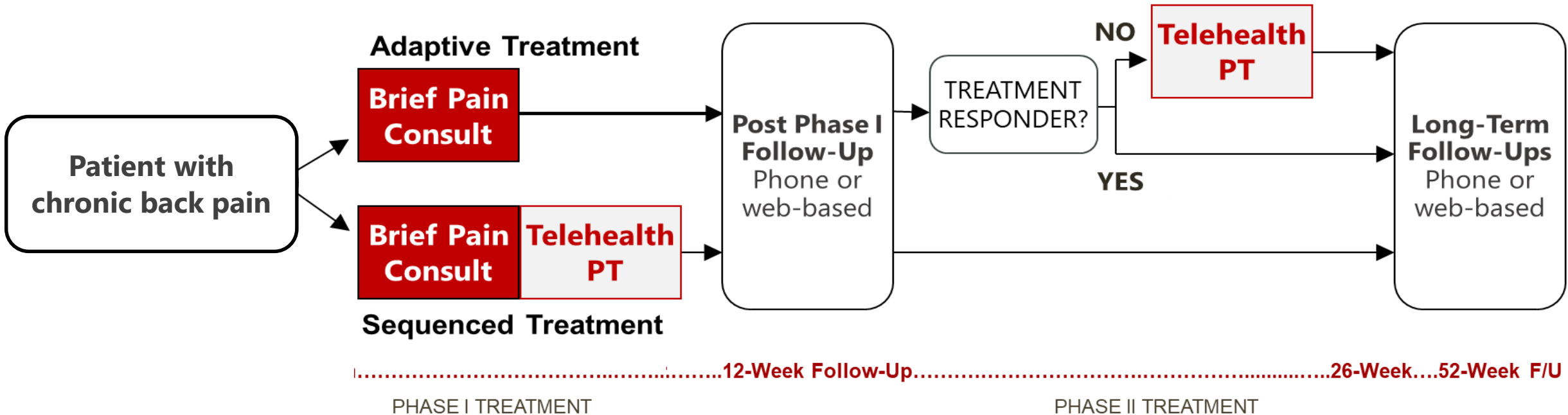
Interventions

Brief Pain Consult

- Two sessions provided in ~1 week

- Focused on education to reduce maladaptive pain beliefs, encourage physical activity

- Grounded in a motivation and problem-solving approach (MAPS).

Telehealth Physical Therapy

- 10 weekly sessions

- Provided in Phase I or Phase II (non-responders) for participants

- Builds on BPC intervention, additional goal setting, exercise instruction and active pain coping strategies for self-management

14 Utah health centers operate 60 clinics and provide care to more than 167,000 people annually
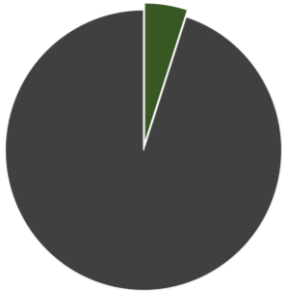
1 of every **20** Utahns

1 of every **4** uninsured Utahns

1 of every **3** Utahns living in poverty

49% Hispanic/ Latino Ethnicity
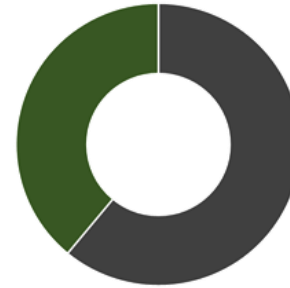
37% communicate in a language other than English

45% Uninsured
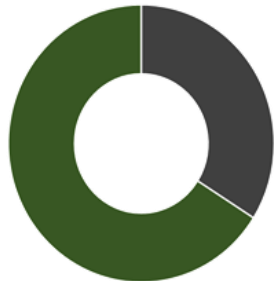
66% at or below the Federal poverty level

7% agricultural workers
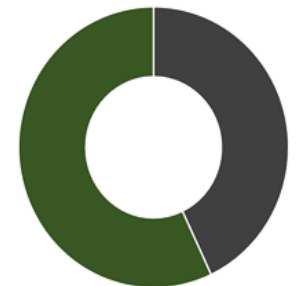
47% of clinics are located in rural/ frontier counties

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We provide Training and Technical Assistance...

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Access to comprehensive services

Performance Improvement

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Peer Learning Groups

Transformation of Care

...and reduce barriers to healthcare.

Health Promotion

Community Engagement & Development

Public Education

Policy Analysis

Equity-Focused Implementation
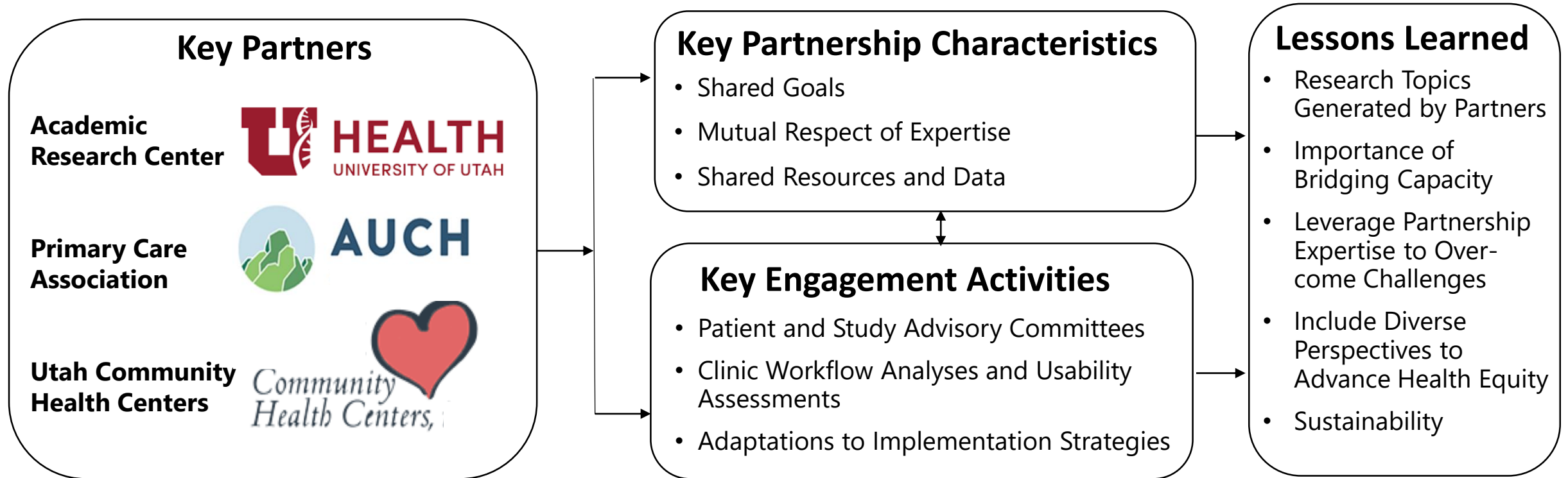
Community-Engaged Dissemination & Implementation (CEDI) Framework

Schlechter CR, Del Fiol G, Lam CY, Fernandez ME, Greene T, Yack M, et al. Application of community - engaged dissemination and implementation science to improve health equity. *Prev Med Rep*. 2021;24:101620.

Key CEDI Methods

- Clinical workflow and usability analyses from a sociotechnical perspective
    - ❑ Manage HIT considerations to connect with patients
    - ❑ Understand how people interact with IT troubleshoot technical issues.

- Adaptations to decentralize research and clinical procedures

- Efforts to implement new procedures with clinic staff and patients informed by implementation mapping

Implementation of IT solutions should consider the interplay between social and technical constructs in order to integrate the insight and workflows of clinicians with technology and equipment.

EXTERNAL ENVIRONMENT
Concerned with outside influences

Concerned with attributes of people values, attitudes, norms, roles, responsibilities, relationships, reward and engagement structures

Social System

Concerned with hardware, software processes, tasks, work flows, and technologies

Technical System

FROM: Mathews SC, Pronovost PJ. The need for systems integration in health care. *JAMA*. 2011;305(5):934-5

Responses tracked

Text Outreach

Re-Contact

EHR evaluates eligibility criteria

EHR

eReferral

Feedback

Decentralizing methods in PCTs

CENTRALIZED

DE-CENTRALIZED

Research
Services
Providers
Patients

Research
Econsent
Electronic data capture

Patients

Providers
eReferral
Telehealth

Services
mHealth resources
Secure Messaging
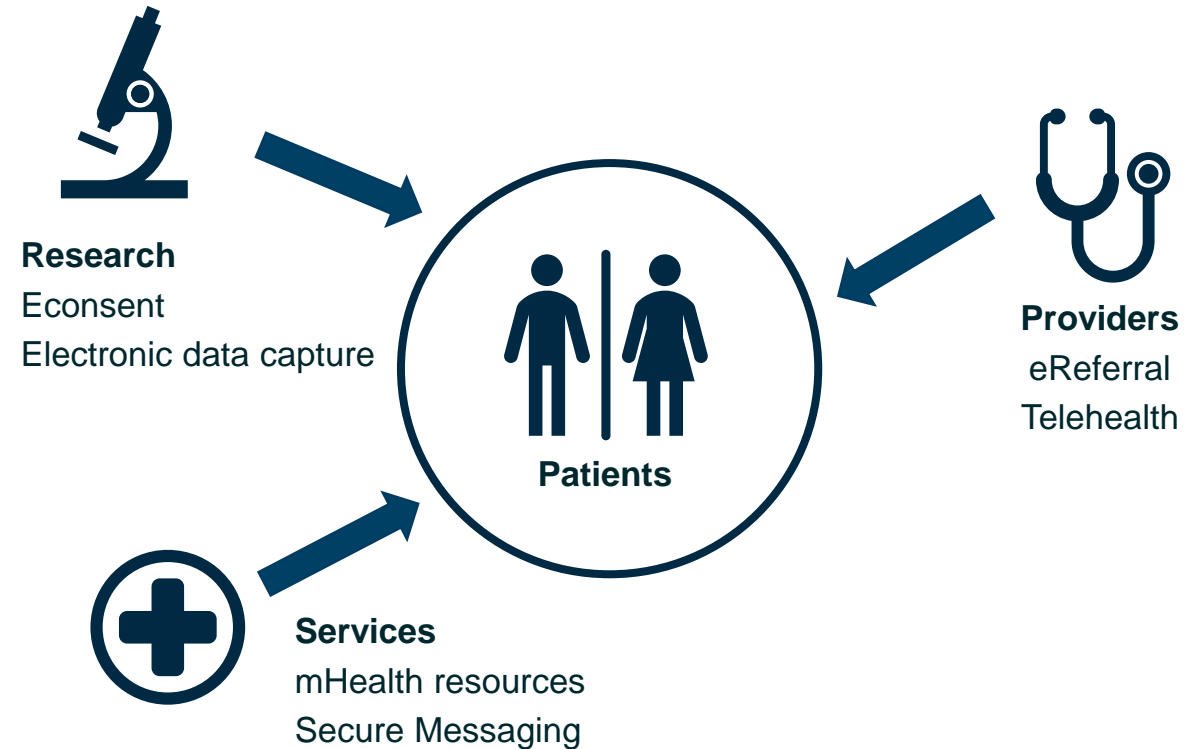
FROM: Banks MA. Core Concept: In the wake of COVID-19, decentralized clinical trials move to center stage. Proc Natl Acad Sci U S A. 2021;118(47):e2119097118

"At present, evidence for the advantages of decentralized clinical trials, including health equity–related benefits, consists primarily of anecdotal reports, uncontrolled studies, and expert opinion"

Potential Pitfalls:

- Reliant on technology

- Lowering barriers to participation will primarily benefit those already likely to participate in clinical trial research

- Do not address barriers related to research awareness or mistrust of health systems or academic institutions

Implementation Mapping

A systematic process for developing strategies to improve the implementation of EBIs in real-world settings.

IMPLEMENTATION MAPPING				
STEP 1	**STEP 2**	**STEP 3**	**STEP 4**	**STEP 5**
Needs Assessment	**Identify Performance Objectives/ Determinants**	**Select Implementation Strategies**	**Produce Implementation Materials**	**Define Implementation Outcomes**
WHO? Identify Implementers and Understand Needs & Assets	*WHAT and WHY?* Determine Who Needs to do What for Change to Happen	*HOW?* Choose and Operationalize Implementation Strategies for all Implementers		*IS IT WORKING?* Evaluate Outcomes
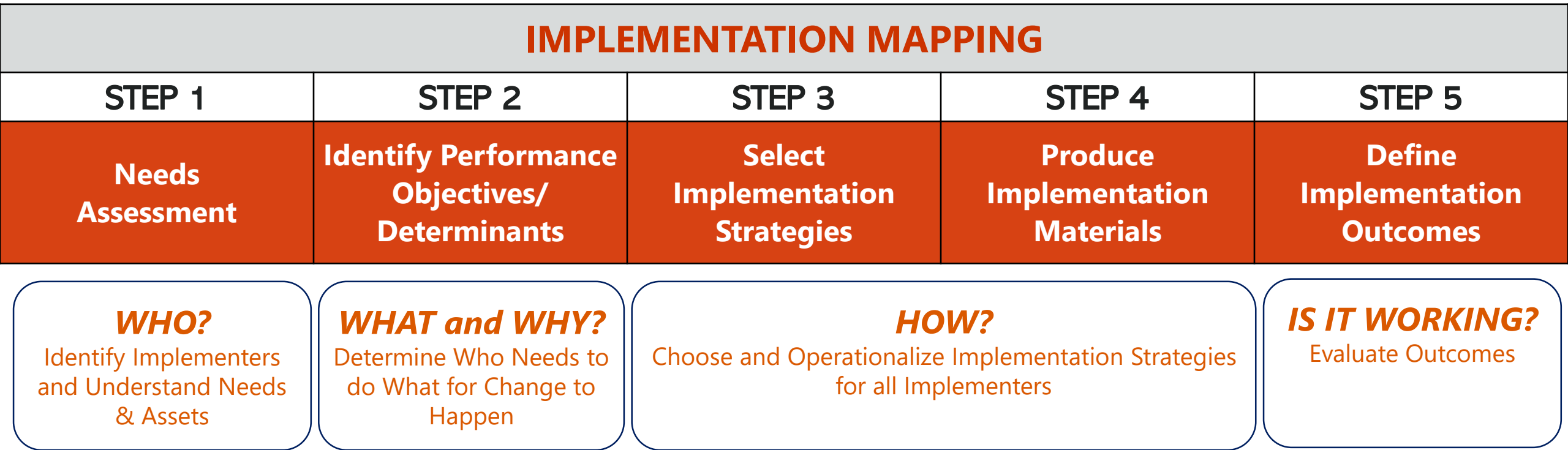
FROM: Fernandez M, et al. Implementation mapping: using intervention mapping to develop implementation strategies. *Front Public Health.* 2019;7:158.
Walker TJ, et al Using Implementation Mapping to develop and test an implementation strategy for active learning to promote physical activity in children: a feasibility study using a hybrid type 2 design. *Imp Sci Commun.* 2022;3:26

Implementation Mapping

A systematic process for developing strategies to improve the implementation of EBIs in real-world settings.

	Potential Barrier	Implementation Strategies	Lessons Learned
Providers	• Clinic staffing and patient volumes require minimal disruptions to work flows	• Have an in-clinic and population health strategy to offer participation to patients	• Adoption of in-clinic referrals varies considerably among providers
	• In-clinic EHR systems differ in capabilities and performance	• Provide initial and ongoing training to place e-referrals	• Consistent interface with providers to identify and troubleshoot IT issues
Patients	• Access challenges extend well beyond geography	• Flexible scheduling, adapting PT protocols for audio-only delivery, shorter sessions	• Respect for participants' time, being flexible, builds trust
	• Patients' pain beliefs and coping preferences may be mismatched to evidence-based principles	• PT protocols provided with principles of motivation-and-problem solving (MAPS)	• MAPS helps build intrinsic motivation and self-efficacy for active coping

EHRs AND THE DIGITAL DIVIDE

- Universal Electronic Health Record (EHR) adoption, **but…**

- Evidence of a digital divide
    - Rural settings 40% less likely to implement advanced functions and patient engagement features[1]
    - Little capacity for EHR optimization[2]

[1]Adler-Milstein J, et al. Electronic health record adoption in US hospitals: the emergence of a digital "advanced use" divide. JAMIA. 2017;24(6):1142-8.

[2]Mack D, et al. Disparities in Primary Care EHR Adoption Rates. J Health Care Poor Underserved. 2016;27(1):327-38.

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OPPORTUNITIES FOR REDUCING INEQUITIES

- With help, low resource settings
  can adopt advanced HIT[1]

- Increased adoption of telehealth[2]

- Universal adoption of mobile phones
  - 96% of low SES have at least a text and voice phone[3]

[1]Ryan AM et al. Small physician practices in New York needed sustained help to realize gains in quality from use of electronic health records. Health Aff (Millwood) 2013;32:53-62.

[2]Hirko KA et al. Telehealth in Response to the Covid-19 Pandemic: Implications for Rural Health Disparities. J Am Med Inform Assoc. 2020 Jun 26:ocaa156.
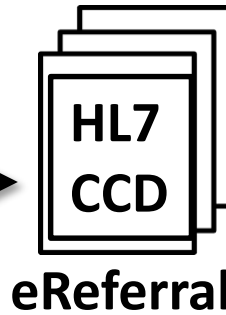
[3]PEW Research Center. Mobile Fact Sheet 2019.

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POPULATION-LEVEL APPROACH
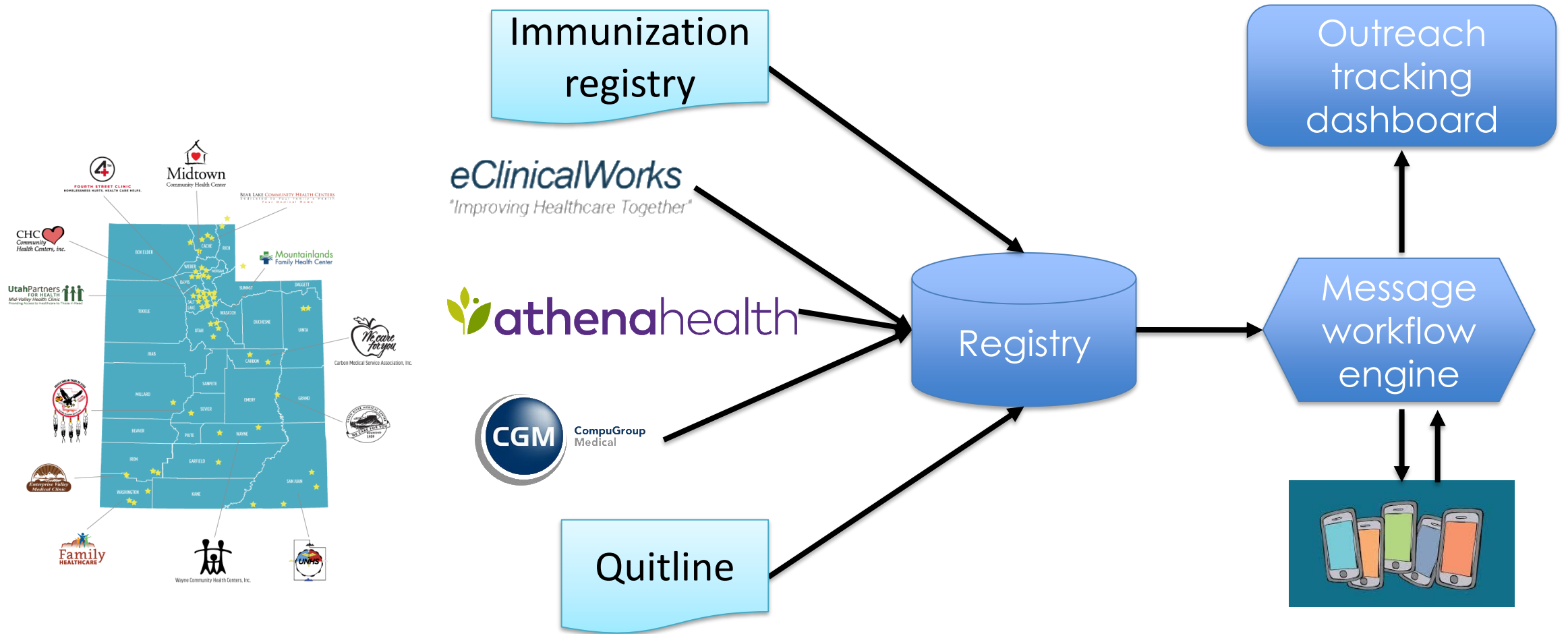
TOBACCO CESSATION – QUITSMART TRIAL

Implementation Science

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Study protocol | Open Access | Published: 30 January 2020

QuitSMART Utah: an implementation study protocol for a cluster-randomized, multi-level Sequential Multiple Assignment Randomized Trial to increase Reach and Impact of tobacco cessation treatment in Community Health Centers

Maria E. Fernandez, Chelsey R. Schlechter ✉, Guilherme Del Fiol, Bryan Gibson, Kensaku Kawamoto, Tracey Siaperas, Alan Pruhs, Tom Greene, Inbal Nahum-Shani, Sandra Schulthies, Marci Nelson, Claudia Bohner, Heidi Kramer, Damian Borbolla, Sharon Austin, Charlene Weir, Timothy W. Walker, Cho Y. Lam & David W. Wetter
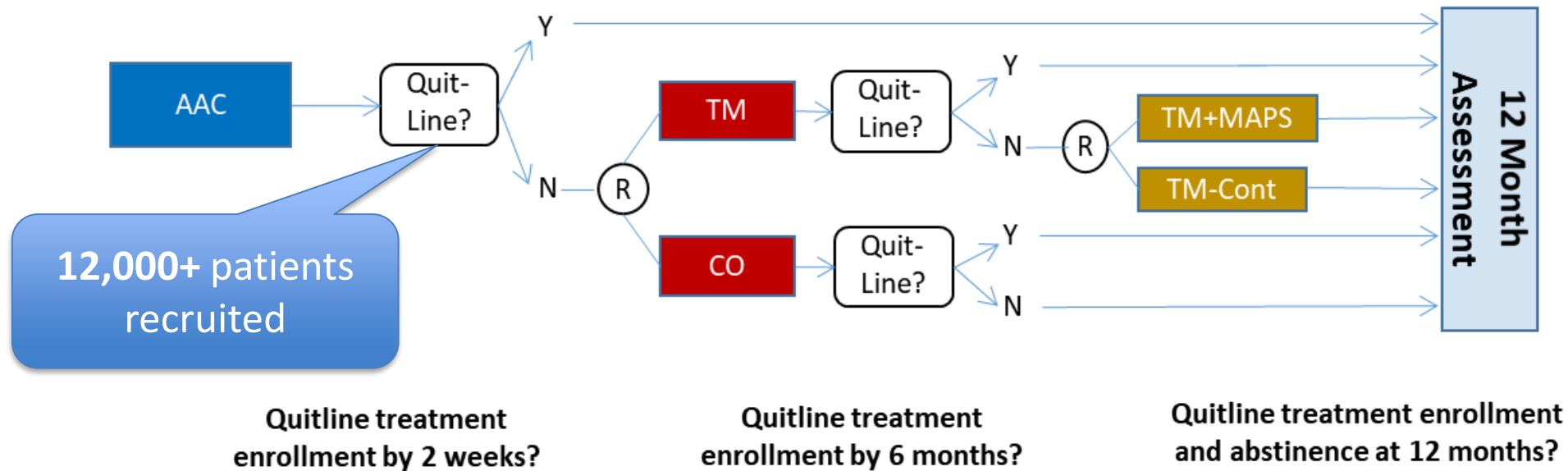
Abstract

Background

Tobacco use remains the leading cause of death and disability in the USA and is disproportionately concentrated among low socioeconomic status (SES) populations. Community Health Centers (CHCs) are a key venue for reaching low SES populations with evidence-based tobacco cessation treatment such as Quitlines. Electronic health record (EHR)-based interventions at the point-of-care, text messaging (TM), and phone counseling have the potential to increase Quitline reach and are feasible to implement within CHCs. However, there is a lack of data to inform how, when, and in what combination these

- Informatics interventions to **Connect** patients to **QuitLine**:
  - **EHR screening** and **e-referral**: Ask-Advice-Connect
  - Repeated offers via **text messaging**
  - **Motivational interview** call

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SMART: SEQUENTIAL MULTIPLE ASSIGNMENT RANDOMIZED TRIAL

12,000+ patients recruited

Quitline treatment enrollment by 2 weeks?

Quitline treatment enrollment by 6 months?

Quitline treatment enrollment and abstinence at 12 months?

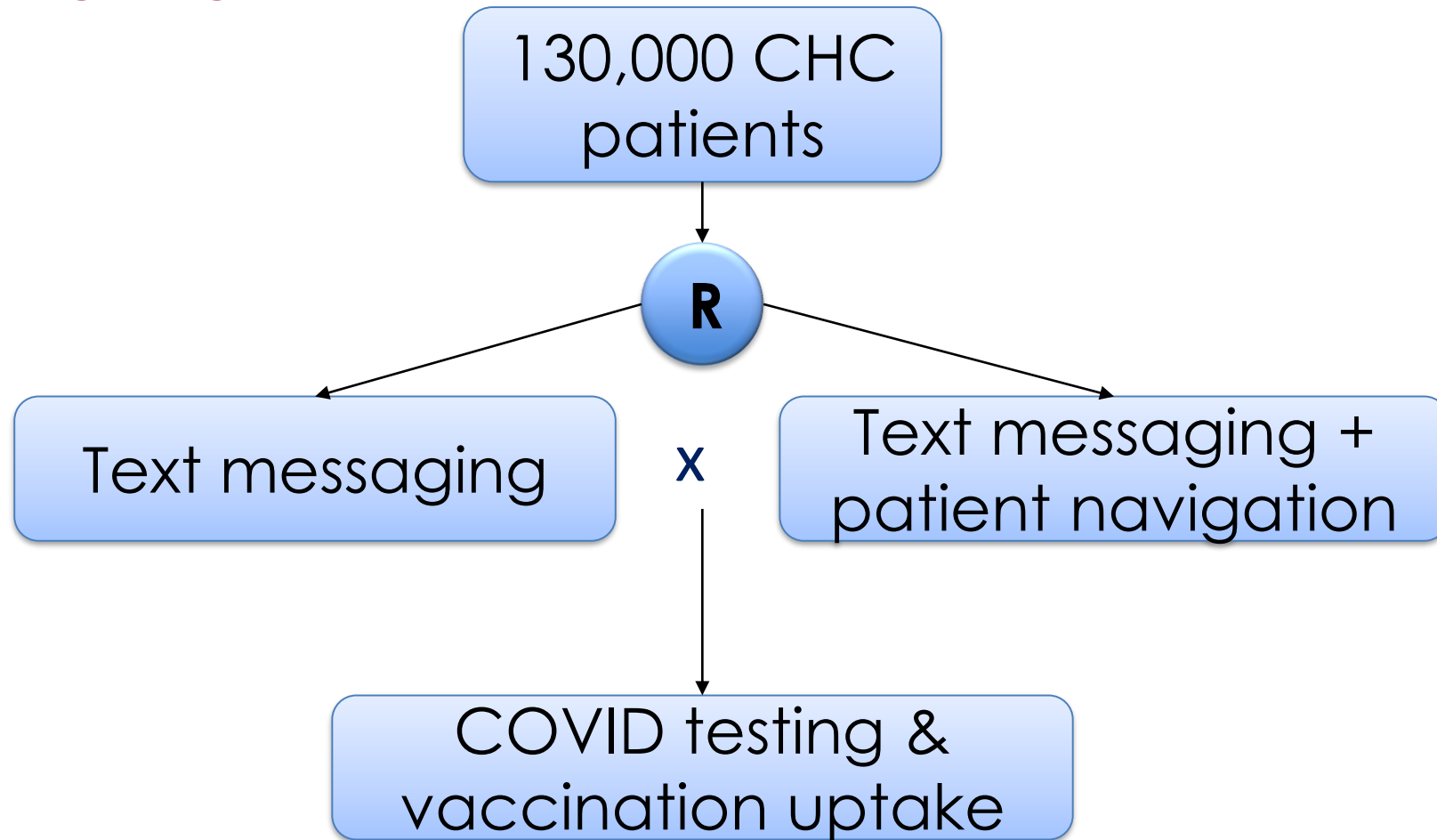**Clinic-Level ACC: Phase 1**
- Ask, Advise, Connect

Patient-Level Randomization: Phase 2 (4:1 ratio)
- TM = Text Messaging
- CO = Connect Only

Patient-Level Randomization: Phase 3
- TM+MAPS = Text Messaging Continued + Navigation
- TM-Cont = Text Messaging Continued

TEXT MESSAGE - VACCINATION

Hello Anna, Midtown Clinic knows COVID-19 vaccines are safe and effective. 16,780 adults in Ogden have already received the vaccine. Vaccines are playing a key role in lowering cases, hospitalization and death.

Would you like to schedule a Covid-19 vaccine? Reply: YES or NO. STOP to opt-out.

YES

To schedule your COVID-19 vaccine please call Midtown Clinic at 801-334-0031 or visit midtownchc.org.

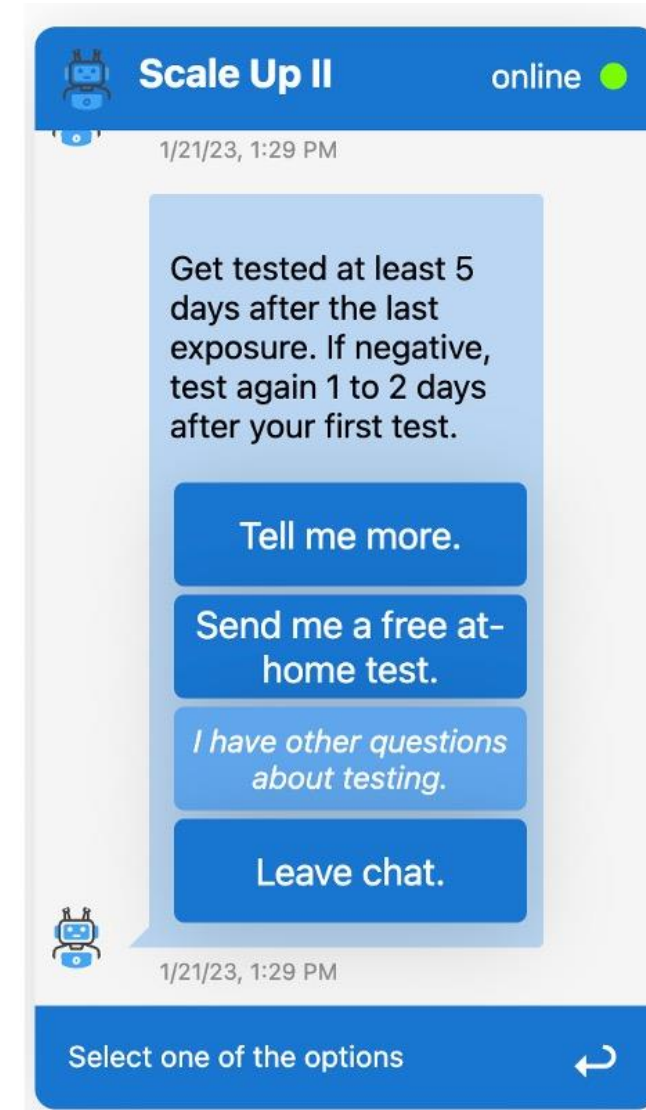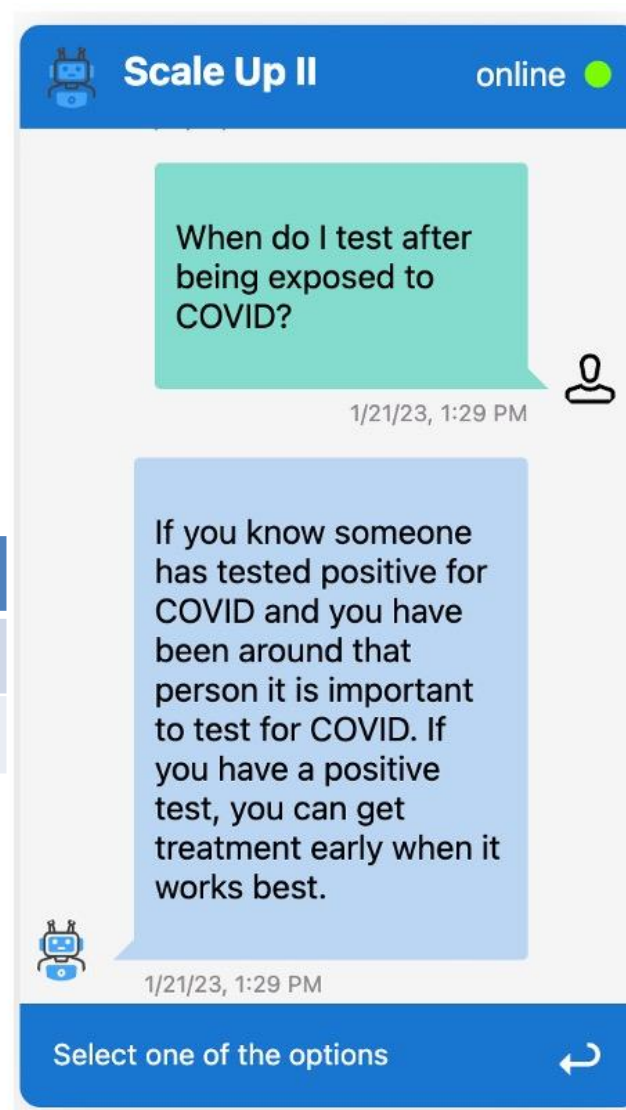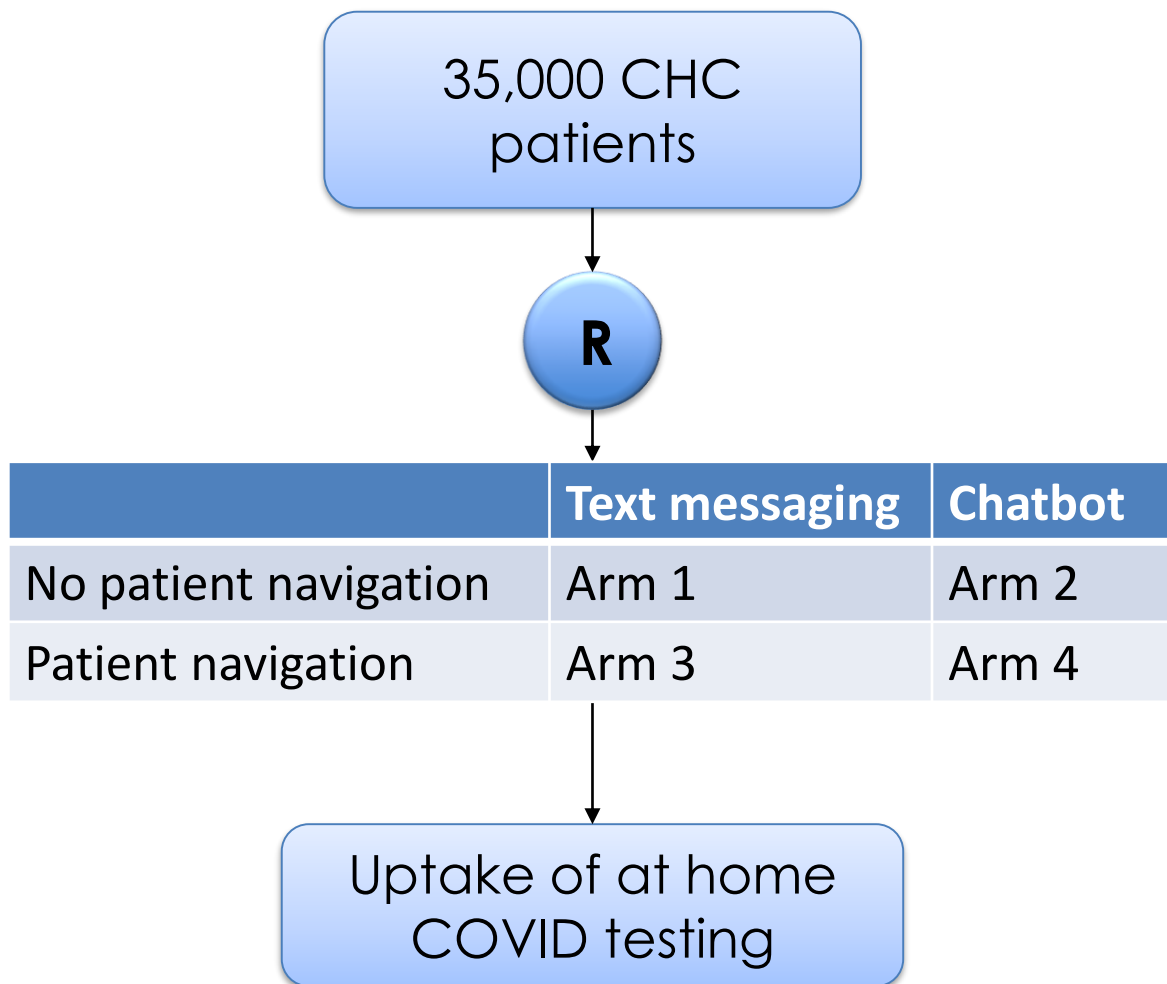# SCALE UP UTAH – PRELIMINARY RESULTS

99,839 patients from 7 CHCs

227 text messaging campaigns (vaccination and testing),
37 unique message flows, **2** languages

32,236 (32%) patients engaged

1,849 (20%) out of **9,400** patients connected with patient navigators

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SCALE UP II

	Text messaging	Chatbot
No patient navigation	Arm 1	Arm 2
Patient navigation	Arm 3	Arm 4

35,000 CHC patients

R

Uptake of at home COVID testing

Scale Up II online

When do I test after being exposed to COVID?
1/21/23, 1:29 PM

If you know someone has tested positive for COVID and you have been around that person it is important to test for COVID. If you have a positive test, you can get treatment early when it works best.
1/21/23, 1:29 PM

Select one of the options

Scale Up II online
1/21/23, 1:29 PM

Get tested at least 5 days after the last exposure. If negative, test again 1 to 2 days after your first test.

Tell me more.

Send me a free at-home test.

I have other questions about testing.

Leave chat.
1/21/23, 1:29 PM

Select one of the options

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UPCOMING TRIALS

- Promoting enrollment in online diabetes prevention program
- Shared decision-making for lung cancer screening
- Telehealth-based psychotherapy for cancer survivors

SUMMARY

- Promising opportunities
  - Universal EHR adoption
  - Data analytics: target cohorts
  - Low tech patient engagement (text messaging, chatbots)
  - "At home" - digital and non-digital
- Approaches intentionally designed to promote **health equity** and ensure **sustainability**