

VA



U.S. Department of Veterans Affairs

Veterans Health Administration

Can Implementing a Whole Health System Facilitate Uptake of CIH for Chronic Pain? It Depends!

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Center for Healthcare Organization
and Implementation Research

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Data

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Disclosure: The views expressed in this presentation are those of myself and do not necessarily represent the views of the Department of Veterans Affairs

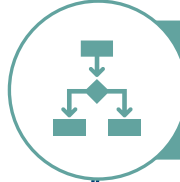
Agenda



Background



Conceptual Framing



Study Design



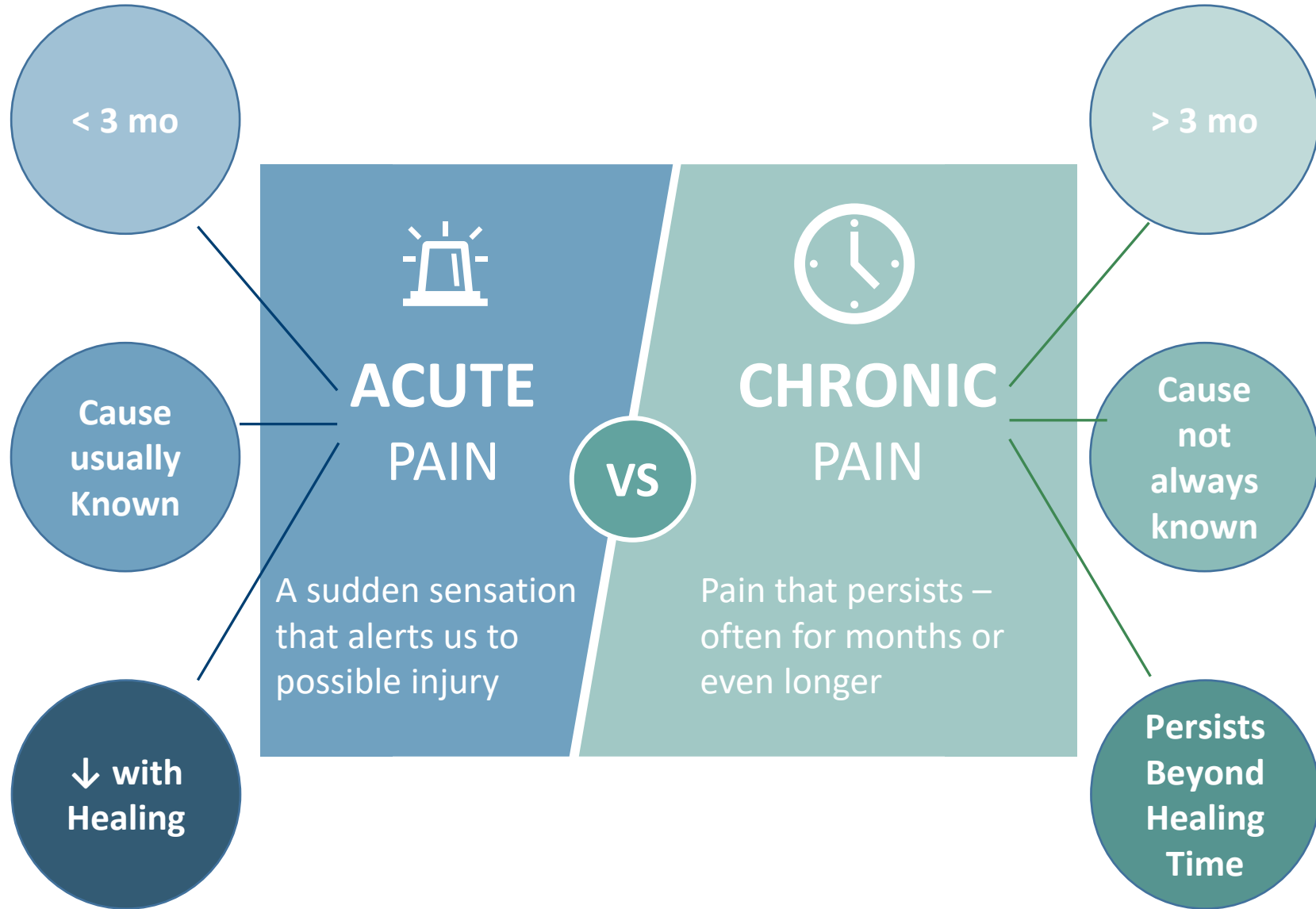
Methods & Results



Discussion & Implications

Background & Setting

Chronic Pain



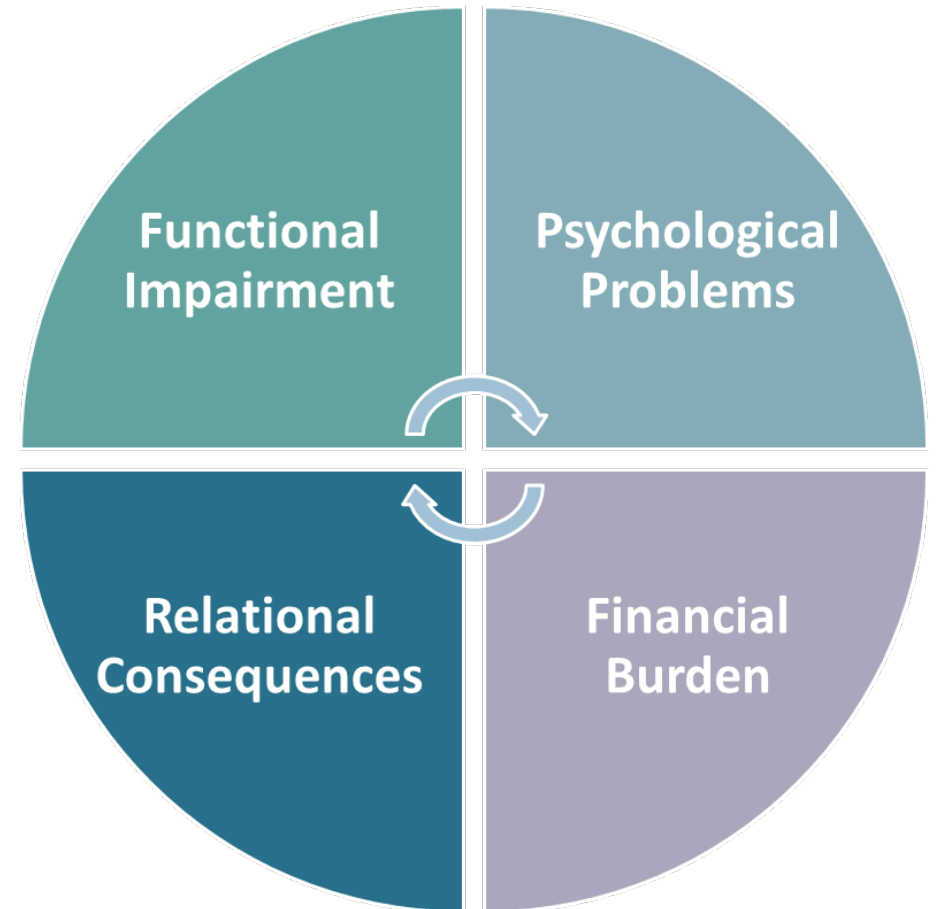
Chronic Pain

High Prevalence

~65.6% of Military Veterans
>5 million w/ musculoskeletal pain

Wide-Spread Effects

Opioid Dependence,
Overdose, Death
Suicide risk factor
\$650 billion annually



Chronic Pain

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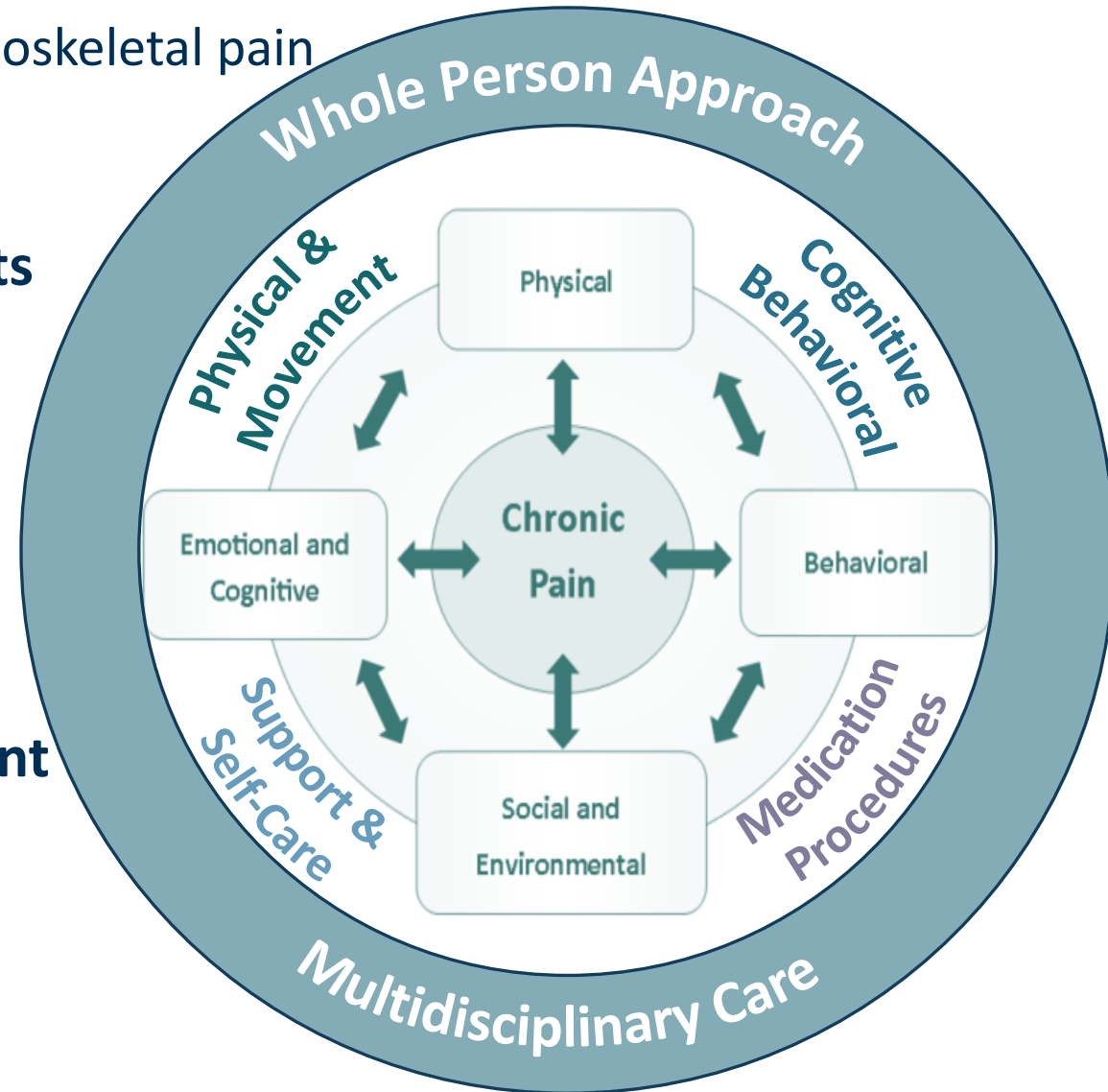
Suicide risk factor

\$650 billion annually

Preferred Treatment

Nonpharmacologic,
Multidisciplinary

Approach to Care



VA Implementing the Whole Health System of Care

VA's Whole Health System

VA's Whole Health System

- What matters to you?
- Person-centered communication + services to support well-being
- Nine evidence-based complementary and integrative health (CIH) therapies
- Comprehensive Addiction & Recovery Act
- Invested >\$220 million; incorporated into policy; large-scale transformation
- **Early Goal:** Better pain management; ↓opioids



Manual Therapies

Chiropractic
Acupuncture
Massage



Movement Therapies

Yoga
Tai Chi
Qigong



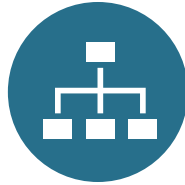
Cognitive Therapies

Meditation
Biofeedback
Guided Imagery
Clinical Hypnosis



Multilevel barriers to use

Known Implementation Challenges



System: Policy, funding, insurance



Organization: Leadership, resources,
infrastructure, access



Intraorganizational: Poor coordination,
fragmentation, practice silos



Patient-Provider Relationship: Distrust,
poor rapport, disagreement



Individual: Attitudes, knowledge, buy-in

**Overarching
Research Question**

How do factors at multiple levels of healthcare organizations influence CIH use among patients with chronic musculoskeletal pain in a WHS context?

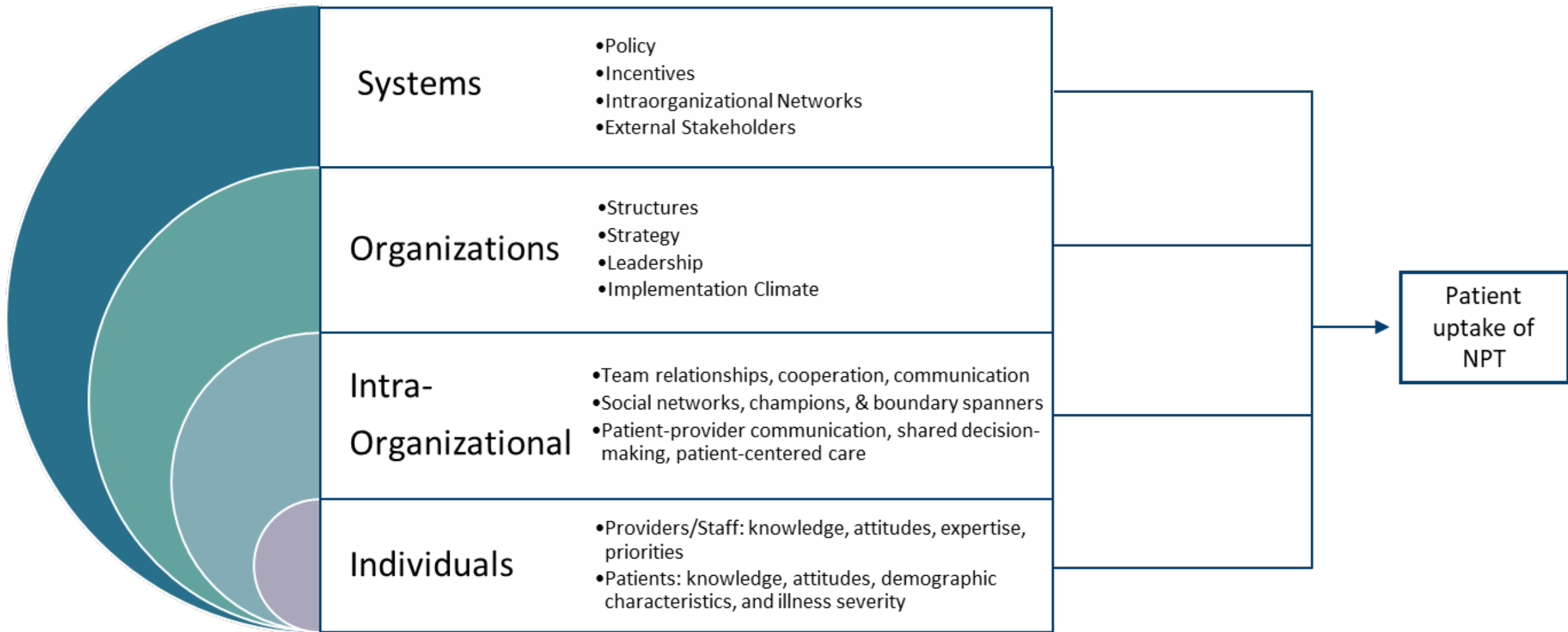
Conceptual Framing

Conceptual Framing

Change requires attention at multiple levels

**Policy does not lead to change by itself
without attention to actors and context**

**Change can be facilitated through
relationships and social processes**



Study Overview

Multilevel Explanatory Mixed Methods

Study Design

Aim 1: Effect of organizational and patient factors on CIH use

Quantitative Database Study

18 Sites
335,033 patients



Aim 2: Contextual differences in high vs low CIH-utilizing sites

Qualitative Multiple Case Study

2 High Sites
2 Low Sites



Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites

Qualitative Chart Reviews

4 Sites
60 patients, 15 per site

Aim 1: Methods & Results

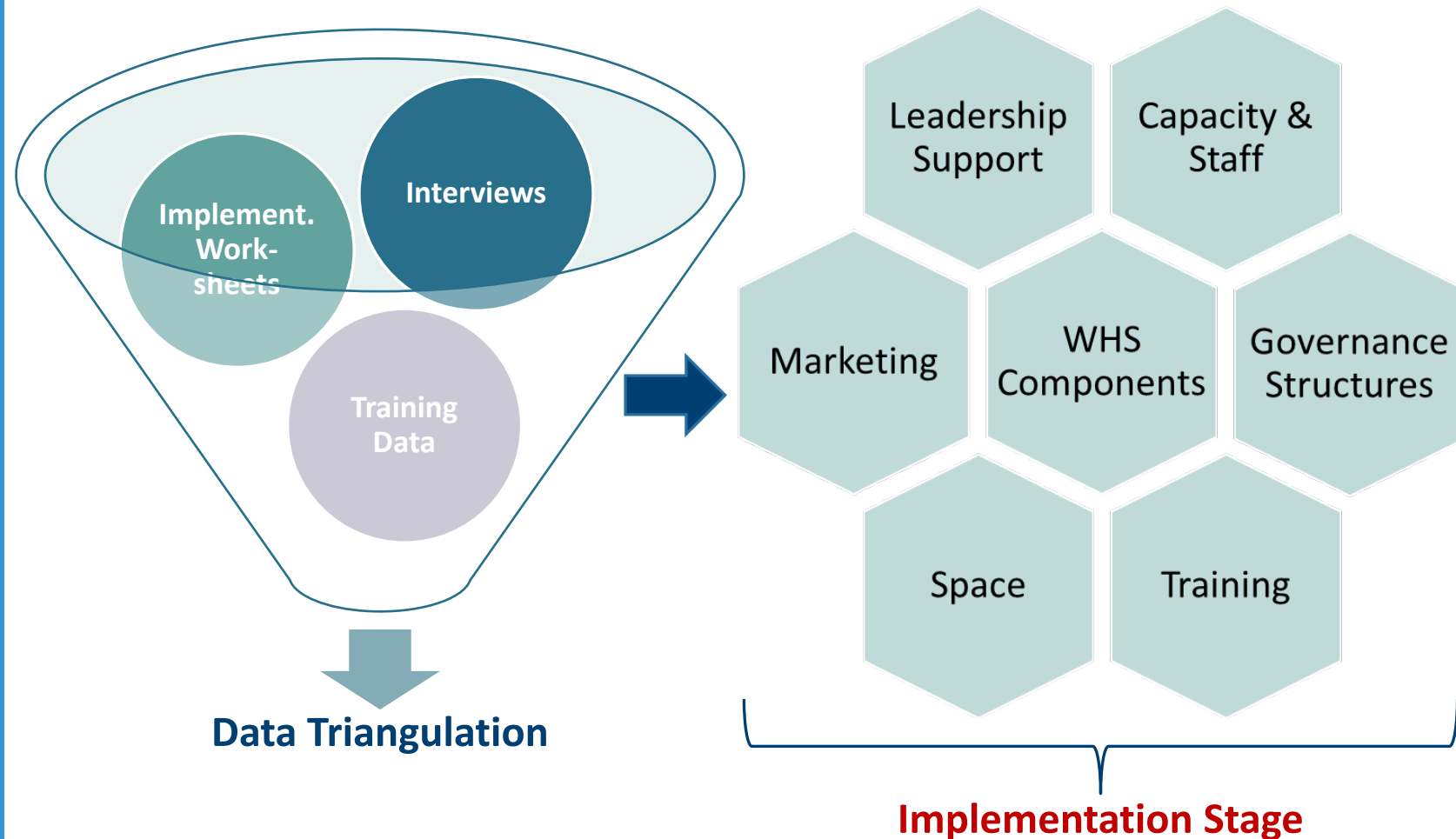
***Objective:** Examine whether organizational factors explain variation in Tier 1 CIH use among patients with chronic pain receiving care in Whole Health Systems*

Aim 1: Effect of organizational and patient factors on CIH use

Implementation Stage:

EPCC Implementation Team (lead: Justeen Hyde) collected and triangulated data across multiple dimensions

Aim 1: Measures & Analyses

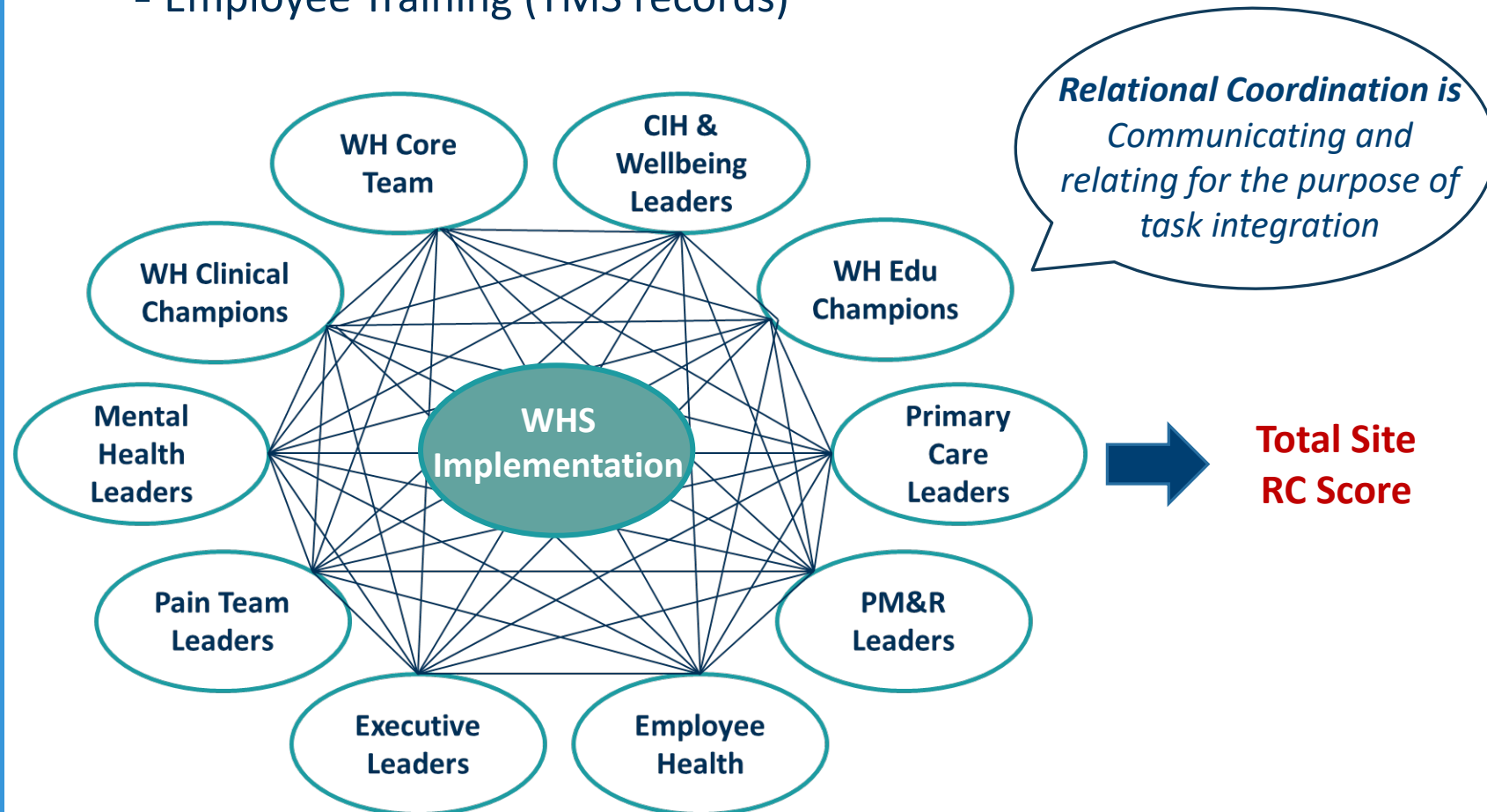


Aim 1: Effect of organizational and patient factors on CIH use

Implementation Climate:

- Relational Coordination (RC) among Key Leaders (Survey, 65%)
- Employee use of WH with patients (AES module)
- Employee Training (TMS records)

Aim 1: Measures & Analyses

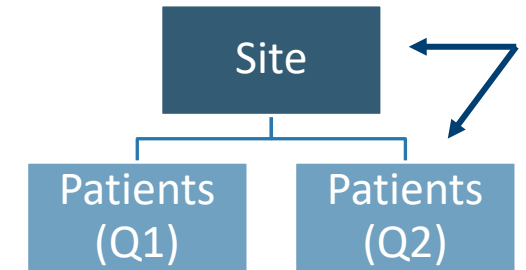


Aim 1: Effect of organizational and patient factors on CIH use

Mixed Effects Regression Models:

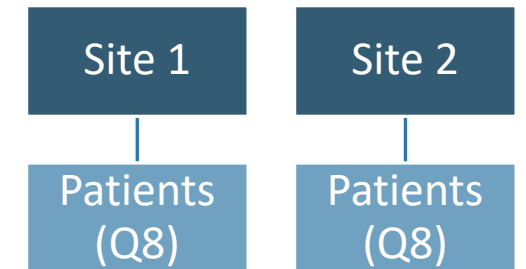
1. WHS Implementation Stage (all quarters)

- Composite Measure: Org Support, Infrastructure, WHS Spread



2. Implementation Climate (Q8 only)

- Relational Coordination (RC) among Key Leaders (Survey, 65%)
- Staff use of WH in practice (AES)
- Staff formally WH trained



- Controlled for site and patient clinical and demographic characteristics

- **Outcome: Any use of List 1 CIH therapies or Chiropractic Care**

Aim 1: Measures & Analyses

Aim 1: Effect of organizational and patient factors on CIH use

Bottom Line Up Front

More patients used NPT when:

↑ WHS Implementation Stage

↑ Relational Coordination

And less NPT when:

Black

Hispanic/Latinx

Male

Rural-dwelling

Aim 1: Results

Aim 1: Effect of organizational and patient factors on CIH use

Aim 1: Results

Demographics		%	Clinical Characteristics		%
Male		86.80	Multiple types of msk pain	56.33	
Female		13.20	Back pain only	11.11	
White		67.19	Limb, extremity, joint pain only	20.51	
Black		25.29	Congestive Heart Failure	8.32	
Asian		0.71	Cardiac arrhythmias	15.17	
Hispanic/Latinx		6.93	Hypertension	58.81	
Married		51.91	Chronic pulmonary disease	19.16	
Divorced		26.54	Diabetes	27.96	
Urban		70.95	Obesity	22.91	
Rural		26.54	Depression	38.43	
		Mean	Alcohol abuse disorder	11.72	
Age in years		60.2	Drug abuse disorder	8.99	
Miles from primary care		14.93		Mean	
Service connection (disability)		70%	NRS score	7	

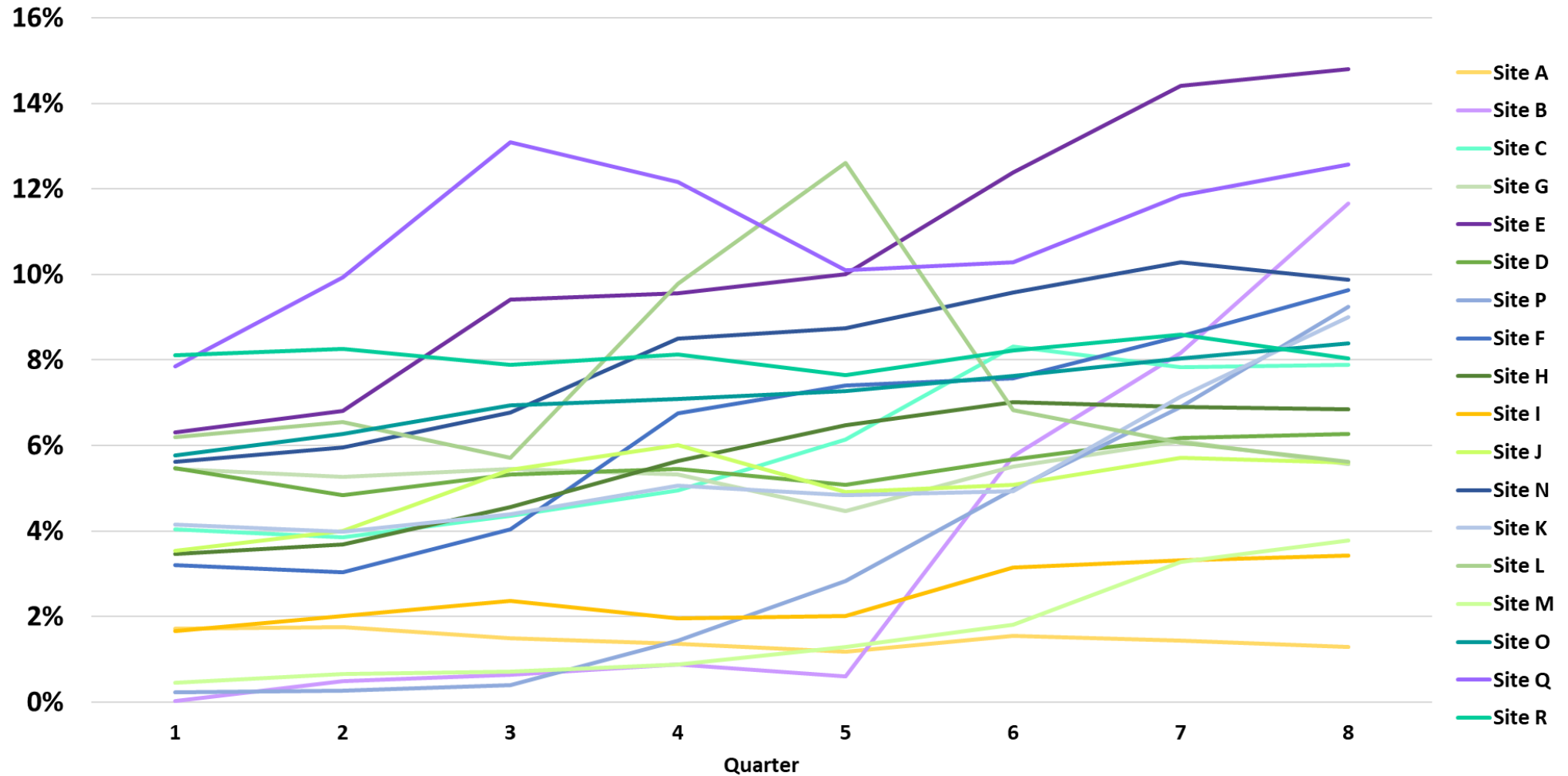
Aim 1: Effect of organizational and patient factors on CIH use

Aim 1: Results

Site Characteristic	%	Site Characteristic	%
Region		Complexity	
<i>Northeast</i>	11%	<i>1a</i>	61%
<i>Mid-Atlantic</i>	22%	<i>1b</i>	11%
<i>South</i>	22%	<i>1c</i>	5%
<i>Midwest</i>	22%	<i>2</i>	6%
<i>West</i>	22%	<i>3</i>	17%

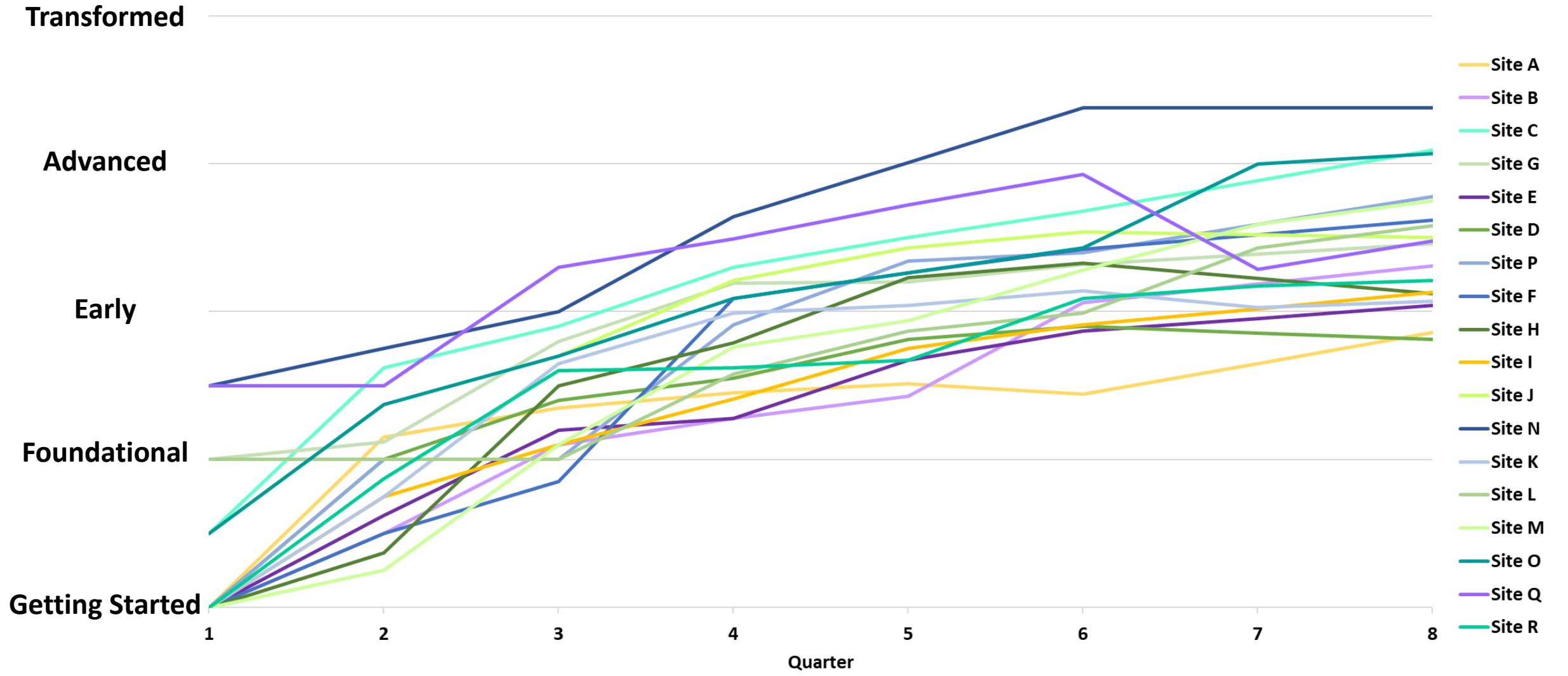
Site Characteristic (Q8)	Mean	Range
Total number of staff	2999	744 – 4935
Total active patients	28,838	7,295 – 58,597
Relational coordination (1-5 scale)	3.09	2.60 – 3.52
Employee engagement (0-1 scale)	0.19	0.10 – 0.27
Employees w/ formal WH training	9.74%	2.60% – 3.52%

Patients w/ Chronic Pain using CIH in 18 Sites, FY2018-2019



Patients had 5.21% probability of using any Tier 1 CIH in any quarter

Whole Health Implementation Progress in 18 Sites, FY2018-2019



Aim 1: Effect of organizational and patient factors on CIH use

Aim 1: Results Patient-Level Effects

Demographics	Any Tier 1 CIH Use	Clinical Characteristics	Any Tier 1 CIH Use
Age	-.0074***	Back pain only	ref
Male	ref	Limb, extremity, joint only	-.7453***
Female	.3339***	Neck pain only	-.1624***
White	ref	Fibromyalgia	-.4754***
Black	-.3077***	Multiple types of msk pain	1.0122***
Asian	.4148***	Congestive Heart Failure	-.1321***
Hispanic/Latinx	-.0354**	Cardiac arrhythmias	.0295*
Married	ref	Hypertension	-.1399***
Divorced	.0322***	Chronic pulmonary disease	-.0638***
Never married	.1153***	Obesity	.2270***
Urban	ref	Depression	.1190***
Rural	-.2167***	Alcohol abuse disorder	.1411***
Highly rural	-.1411***	Drug abuse disorder	.1547***

* $p < .05$, ** $p < .01$, *** $p < .001$; Logistic regression coefficients shown above.

Aim 1: Effect of organizational and patient factors on CIH use

Site Characteristic (controlling for patient characteristics)	Regression Co-Efficient
Complexity	NS
Geographic Region	NS
Total Patients	NS
Implementation Stage	
Getting Started	ref
Foundational	.009***
Early	.033***
Advanced	.045***
Variation explained by between-site differences	
Variation explained by between-site differences	.0005
Variation explained by within-site differences	
Variation explained by within-site differences	.0472
Intraclass Coefficient (ICC)	.012

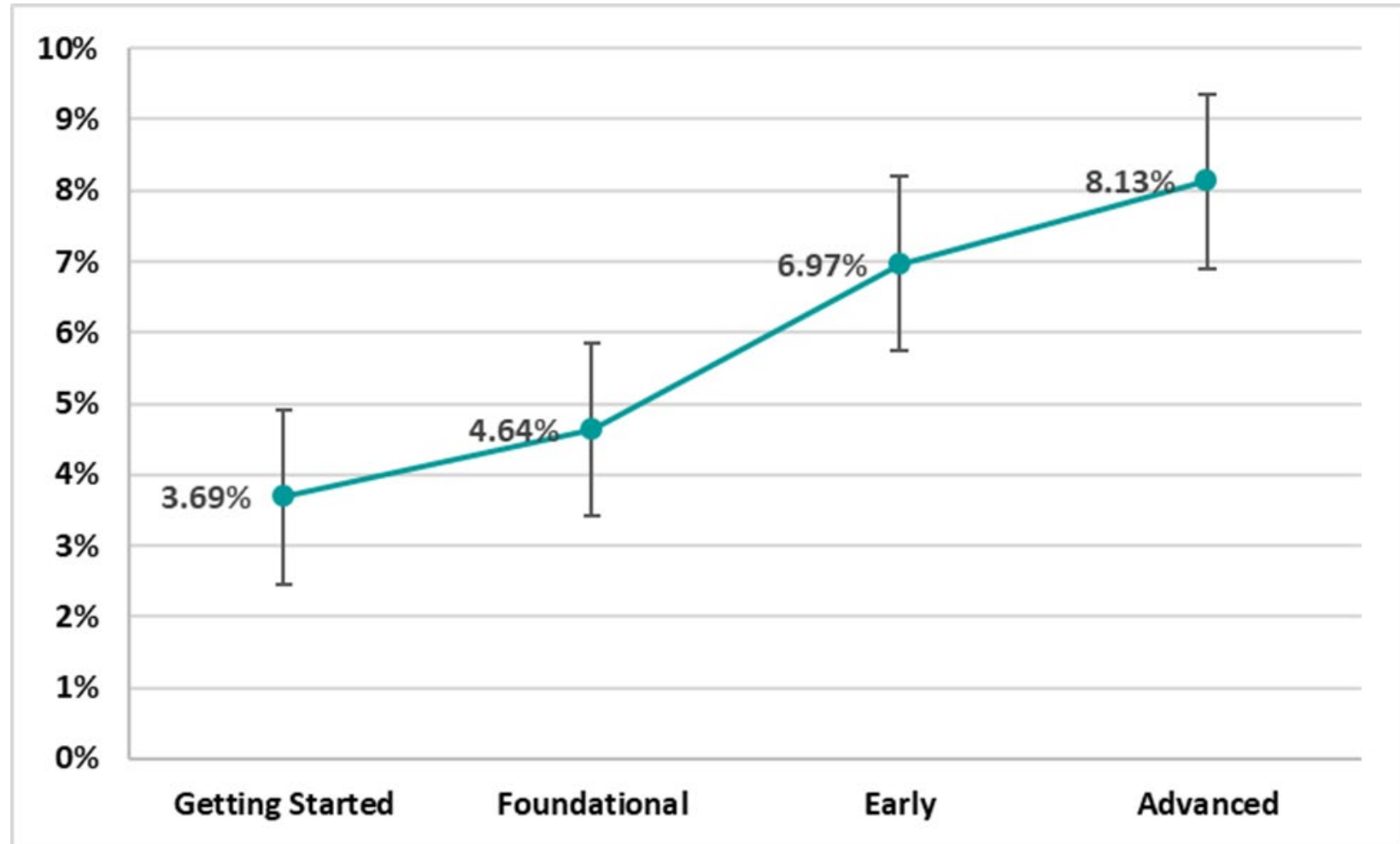
* $p < .05$, ** $p < .01$, *** $p < .001$

Mixed effects regression model; coefficient represents marginal effects, controlling for patient-level effects

Aim 1a: Results

Aim 1: Effect of organizational and patient factors on CIH use

Aim 1a: Results



Implementation Stage: Included organizational support, infrastructure, WHS spread

Aim 1: Effect of organizational and patient factors on CIH use

Aim 1: Results

Site Characteristic (controlling for patient characteristics)	Any Tier 1 CIH Use
Complexity	NS
Total patients	.0000001**
Total employees	NS
Implementation Stage	.0302***
Relational Coordination (WHS, exec, clin svc leaders)	.0455*
WH engagement among employees (AES)	NS
Percent of employees formally trained in WH	NS
Variation explained by between-site differences	
	.0005
Variation explained by within-site differences	
	.0458
Intraclass Coefficient (ICC)	
	.011

4.55% increase
over mean
(6.86%) → 66%
relative increase

* $p < .05$, ** $p < .01$, *** $p < .001$; Mixed effects regression model; coefficient represents marginal effects; see dissertation for regional and patient effects

Aim 2: Methods & Results

***Objective:** Compare how high and low utilizing sites addressed chronic pain and integrated CIH within the context of Whole Health System implementation*

Multilevel Explanatory Mixed Methods

Aim 1: Effect of organizational and patient factors on CIH use

Quantitative Database Study

18 Sites
335,033 patients



Aim 2: Contextual differences in high vs low CIH-utilizing sites

Qualitative Multiple Case Study

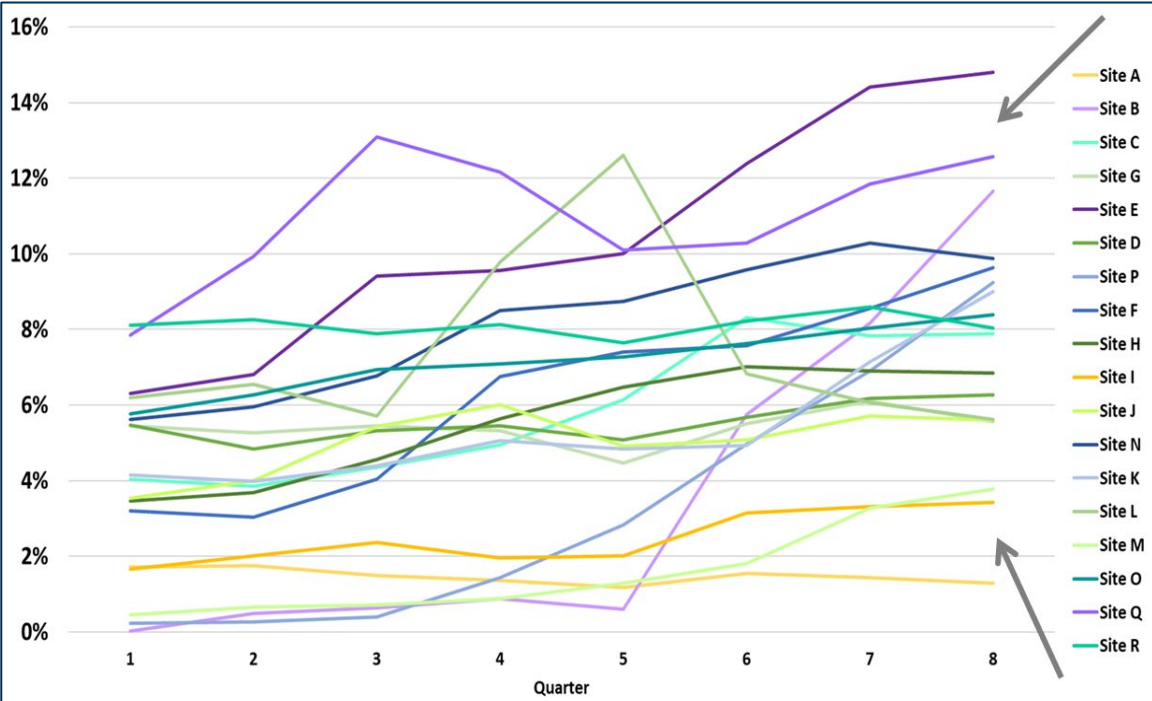
2 High Sites
2 Low Sites



Aim 2

Aim 2: Contextual differences in high vs low CIH-utilizing sites

Sites: 2 high & 2 low CIH-utilizing sites from 18 Flagships



Aim 2: Methods

Aim 2: Contextual differences in high vs low CIH-utilizing sites

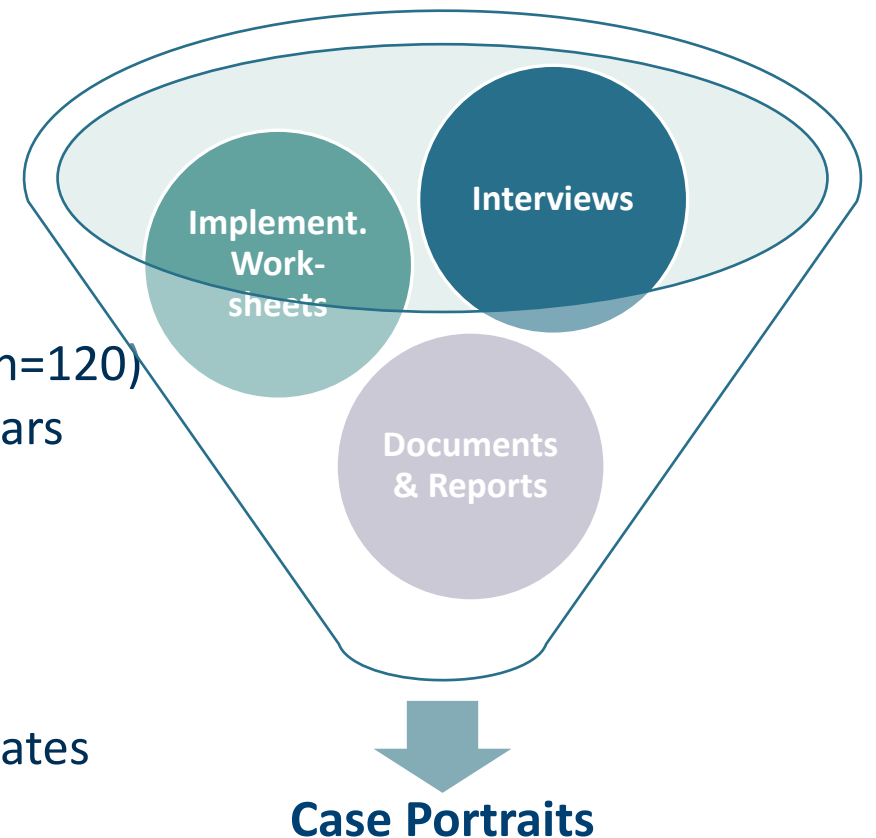
Sites: 2 high & 2 low
CIH-utilizing sites
from 18 Flagships

Secondary Data

- Multiple qualitative sources (n=120)
- Repeated collection over 2 years during WHS implementation

Directed Content Analysis

- Triangulated data into templates
- A priori and emergent codes
- Focus: organizational context, structures, and approach over time
- Final site portraits, compared high and low sites



Aim 2: Methods

Aim 2: Contextual differences in high vs low CIH-utilizing sites

Bottom Line Up Front

All high and low sites had NPT services

But differed in:

Spread, dedicated FTE, and access processes

Implementation Foci & Approach

Leadership Engagement & Support

Culture Change

Aim 2: Results

Aim 2: Results

Aim 2: Contextual differences in high vs low CIH-utilizing sites

Infrastructure: All sites started with established integrative medicine programs and List 1 CIH therapies

High Utilizing Sites	Low Utilizing Sites
<p>Infrastructure: Wide-spread & integrated; easy access; dedicated resources</p>	<p>Infrastructure: Limited spread; gatekeeping for access; under-resourced</p>
<p>Wide-spread CIH/WHS offerings at both main site and tertiary clinics</p>	<p>Variable CIH/WHS offerings at main site</p>
<p>Employees w/ dedicated FTEs</p>	<p>Collateral duty employees; volunteers; free community services</p>
<p>CIH integrated with WHS, pain, and PC</p>	<p>Integrated w/ MH & some specialties; siloed from pain, & PC</p>
<p>WHS designed around chronic pain, opioid reduction, and culture change</p>	<p>Targeted highest need patients with MH or chronic diseases other than pain</p>
<p>Multiple approaches to link patients to CIH/WHS services</p>	<p>Single entry points; restricted access; gatekeeping and bottlenecks</p>

Aim 2: Contextual differences in high vs low CIH-utilizing sites

Infrastructure (Continued)

High Utilizing Sites

Low Utilizing Sites

Permanent employees with dedicated time; identified early; little turnover

Acting, collateral duty employees; identified early but shifted positions

Formalized steering committee w/ subgroups; QI & sustainment focus

Informal committee; dissolved; information dissemination focus

WH-aligned services accessible to all patients

WH orientation required before access to other WH-aligned services

WH coaches hired and integrated into primary care + outreach/classes

WH coaches planned but slow hiring and not integrated into primary care

Dedicated space, community contracts, limited tertiary clinic space

Mixed experience w/ space; encountered bureaucratic barriers

Aim 2: Results

Aim 2: Contextual differences in high vs low CIH-utilizing sites

Foci & Approach

High Utilizing Sites

Low Utilizing Sites

Foci: Chronic pain/opioids

Approach: Vision + SMART goals + plans; iterative refinement; data driven

Aligned strategy with vision, goals, hospital priorities

SMART goals and clear plans to achieve

Iterative refinement, data-driven, business-minded

Engage employees early and throughout; use incentives

Change culture

Foci: MH or other chronic diseases

Approach: Vision + unrealistic goals; haphazard and reactive

Vision but no clear strategy; competed with hospital priorities

Unrealistic goals didn't match plans for how to achieve

Haphazard; reactive

Held back engaging employees; built in gatekeeping to engagement

Avoided disrupting culture

Aim 2: Results

Aim 2: Contextual differences in high vs low CIH-utilizing sites

Leadership

High Utilizing Sites

Low Utilizing Sites

Leadership: WH prioritized w/
incentives

Leadership: Crises/turnover; need
proof

WH identified as a site priority

Turnover and crises

Developed incentives

WH not a priority; skepticism

Positive messaged WH

Required site to demonstrate value
before allocating resources

Mixed experience w/ resource
allocation and navigating barriers

Created barriers

Aim 2: Results

Aim 2: Contextual differences in high vs low CIH-utilizing sites

Culture Change

High Utilizing Sites

Low Utilizing Sites

Culture Change: Early engagement;
multi-pronged training

Culture Change: Diffusion via
champions; held back training

Prioritized and incentivized training

High goals but lacked support

Multipronged approach to capacity
building w/ tailored and repeat trainings

Approach was diffusion via exposure
and champions

Iterative refinement to address
knowledge gaps

Intentionally held back training in
clinical services

Dedicated and permanent WH education
staff

No time for education staff due to
competing needs

Wide-spread communication strategies
targeting patients and employees

Multiple communication approaches
but slow to start

Public affairs rep on steering committee

Mixed engagement w/ public affairs

Aim 2: Results

Aim 3: Methods & Results

Objective: Characterize how patients with chronic musculoskeletal pain initially reached Tier 1 CIH therapies in different site contexts

Multilevel Explanatory Mixed Methods

Aim 3

Aim 1: Effect of organizational and patient factors on CIH use

Quantitative Database Study

18 Sites
335,033 patients



Aim 2: Contextual differences in high vs low CIH-utilizing sites

Qualitative Multiple Case Study

2 High Sites
2 Low Sites



Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites

Qualitative Chart Reviews

4 Sites
60 patients, 15 per site

Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites

Setting: Aim 2 sites (2 high; 2 low CIH-utilizing sites)

Patients: Patients first using CIH in Q8 (n=60)

Data: Free-text notes entered from 10/1/2017 to 09/30/2019 (n=12,000 pages of notes); search terms to identify CIH/WH

Aim 3: Methods

CIH/WH Category	Search Terms
Acupuncture	Acupuncture Acup BFA Battlefield Acupressure
Whole Health Coaching	Whole Health Coach Coach WHC

Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites

Abstraction & Coding

- Encounter date, type, provider
- CIH/WH Type mentioned
- Incorporation into tx rec

Summative Content Analysis

- Developed timelines to 1st CIH use
- Categorized into pathways
- Compared high vs low sites

Aim 3: Methods

Study ID	Date CIH or WH mentioned in Note	Type of Provider/Staff writing note	Type of Contact	Type of CIH/WH mentioned	Included as part of treatment plan?	Use of CIH/WH encouraged by Provider?	Patient Interest in CIH/WH?
Q03	4/16/2019	Physician	Primary Care: Routine Visit	Whole Health Massage Acupuncture Meditation Chiropractic	Yes	Yes	Yes
Q03	4/26/2019	Psychiatrist	Mental Health: Routine Med Management Visit	- mindfulness	No	Yes	n/a
Q03	7/16/2019	Physician	Primary Care: Routine Visit	Whole Health (general)	No	n/a	Yes
Q03	7/19/2019	Psychiatrist	Mental Health: Routine Med Management Visit	Mindfulness	No	Yes	N/A
Q03	8/1/2019	WH Coach	Whole Health: Orientation	BFA, PHI, Whole Health	Y	Yes	Yes
Q03	8/22/2019	WH Coach	Whole Health: PHI	Whole Health Coaching, BFA, Mindfulness,	Y	Yes	Yes
Q03	9/9/2019	Nurse Practitioner	Tier 1 CIH: Battlefield Acupuncture	Battlefield Acupuncture, BFA	Y	Yes	Yes

Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites

Abstraction & Coding

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Summative Content Analysis

- Developed timelines to 1st CIH use
- Categorized into pathways
- Compared high vs low sites

Aim 3: Methods



Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites

Aim 3: Results

Most Common

Clinical Care

Direct Referral

Whole Health: Pain

Whole Health: Non-Pain

Mental Health Therapy

Less Common

Navigating Denials

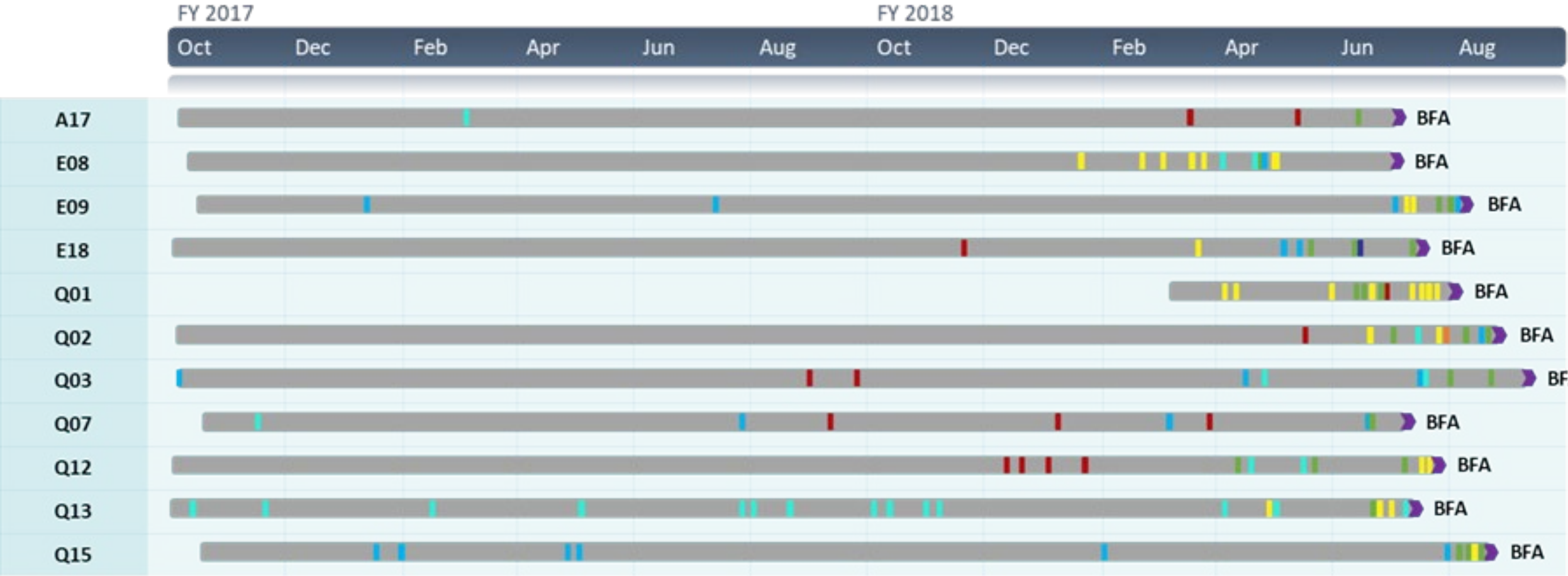
Engaged in CIH Pre-Dx

Transition from Non-VA

Unclear: No CIH in Notes

Unclear: No Discussion
Prior to Use

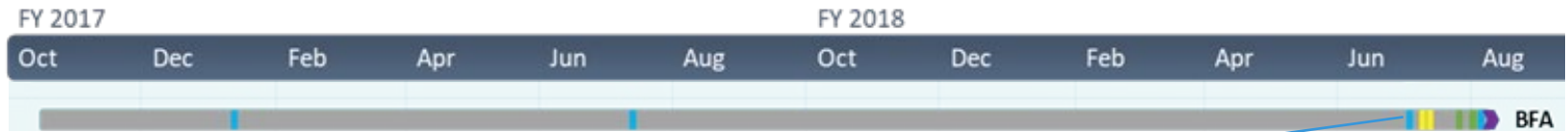
Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites



Legend: Type of Appointment

- Primary Care
- Urgent/Emergency Care
- Non-Tier 1 CIH
- Specialty Care
- VA MOVE! Program
- Non-VA CIH
- Mental Health
- WH Program/Coach
- Tier 1 CIH
- Inpatient Care
- Outreach for CIH/WH

Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites

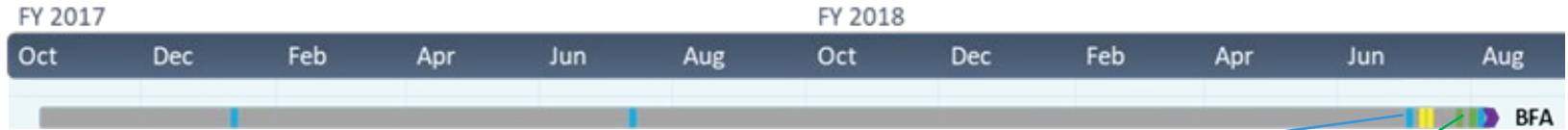


Primary Care Visit (7/19)

*“(Plan) Back pain: update x-rays, discussed and agreeable to Whole Health consult... declines acupuncture and chiro
(After xray): “Patient is agreeable to Whole Health, consult placed”*

NPT Uptake

Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites



Primary Care Visit (7/19)

“(Plan) Back pain: update x-rays, discussed and agreeable to Whole Health consult... acupuncture and (After xray): “Patient to Whole Health, con

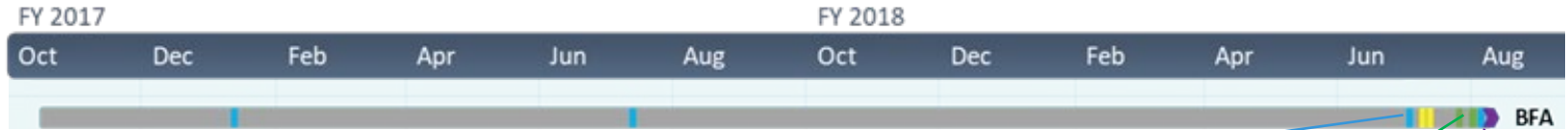
Whole Health Orientation (7/19)

WH Coaching Session (8/19)

“SMART Goal: To strengthen my mind and body...increase my mobility. I have weaned down from 18 medications to 3. I will participate in BFA for pain relief.”

NPT Uptake

Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites



Primary Care Visit (7/19)

“(Plan) Back pain: update x-rays, discussed and agreeable to Whole Health consult... acupuncture and (After xray): “Patient to Whole Health, con

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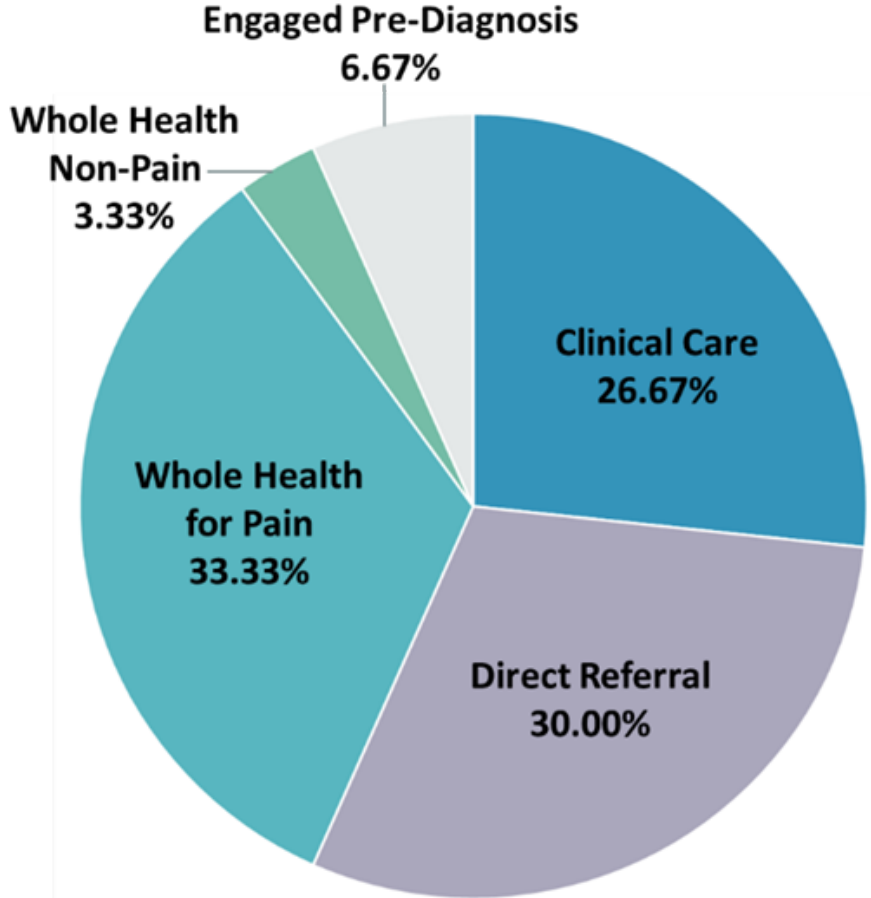
Initial BFA Visit (8/19)

“Treatment given includes Battlefield Acupuncture with additional complementary and integrative approaches”

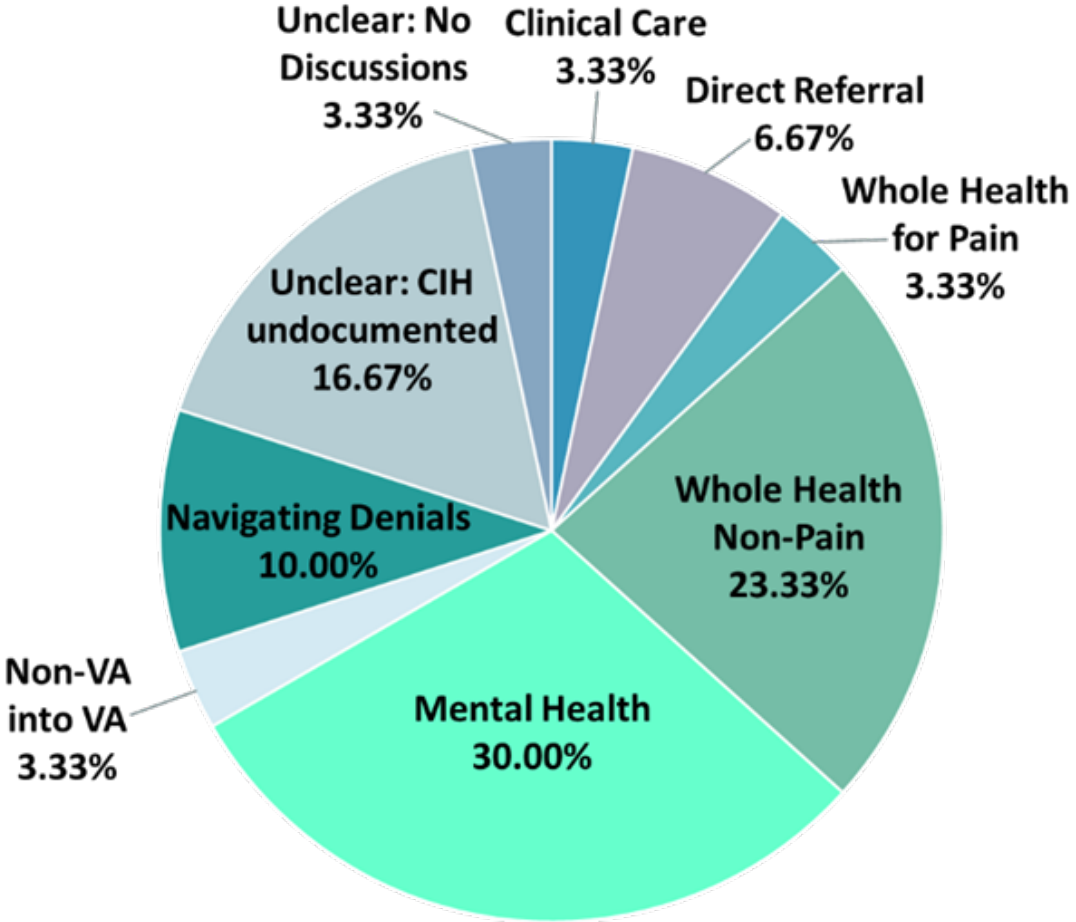
NPT Uptake

Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites

High Utilizing Sites



Low Utilizing Sites



NPT Uptake

Aim 3: Patient adoption of CIH in high vs low CIH-utilizing sites



Patient Preferences & Past Experiences

“He is interested in non-opioid pain interventions. (WH) was reviewed... and he enthusiastically endorsed it. So ordered.” (PCP, Q-07)



Outreach, Education, Offering (or not)

“Receptive to other (CIH) modalities for pain including PT, pain psychology, relaxation, acup, etc. (Plan: renewed opioids)” (PharmD, M-10)



Templates to Prompt Offering & Access Barriers

“I’ve tried to renew acupuncture (for) my patients but they were denied. Only gets one a year. Please let patient know he can call WH.” (PCP, M-14)

Study Limitations

Limitations

Design

Natural experiment/non-experimental design

Secondary data

Limited generalizability

Aim 1: Database Study

Quarterly cohort design

Limited climate measures available = cross-sectional analysis

Aim 2: Multiple Case Study

Interviews with only WH core team members

Limited data re: coordination

Limited generalizability

Aim 3: Chart Reviews

Clinical notes may not accurately reflect encounter

Reliance on only notes for data

Small sample/excluded non-users

Discussion & Implications

Discussion

To move the needle...



WHS implementation had **clear effects on CIH uptake** among patients with chronic pain

To have an effect, implementation had to **move beyond only putting the components** of the WHS model into place

When **relational coordination** was strong **among leaders** of key services, sites were able to develop a WHS that facilitated uptake

At the highest CIH-utilizing sites, **addressing chronic pain was evident** through **structures, processes, and priorities**, while they simultaneously worked to transform culture broadly

Pathways into CIH **reflected site priorities** and barriers, with numerous pathways arising when straightforward options were not available

WH **coaches played a key role** in connecting patients to CIH

Discussion

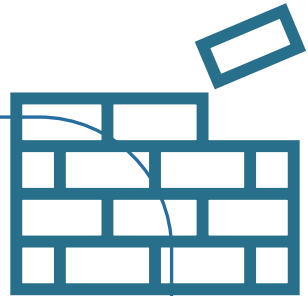
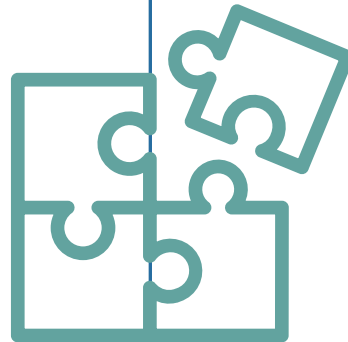
To move the needle...



How the WHS is designed & implemented matters

Attention to the *whole*, not just the parts

Alignment across parts to work together towards a common goal



Discussion

Implications



Policy

Necessary but insufficient alone
Metrics need to be more than check-the-box
Need to address *how* in addition to what



Practice

Systems lens to implement WHS & transform culture
Communication-based interventions
Integrating WH Coaches



Research

Move from reductionistic approaches → whole
Cultural transformation as part of imp sci.
Value of multilevel mixed-methods research

Thank you!

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