Identifying factors influencing implementation of evidence-based practices for cancer prevention and control in community health centers (CHCs): Development of a multi-state CHC survey

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Disclosure – Daniela B. Friedman

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

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- 10 CPCRN sites are funded by the Centers for Disease Control and Prevention and the National Cancer Institute
- Focus is on Dissemination and Implementation (D&I) of evidence-based approaches (EBAs) and interventions (EBIs)

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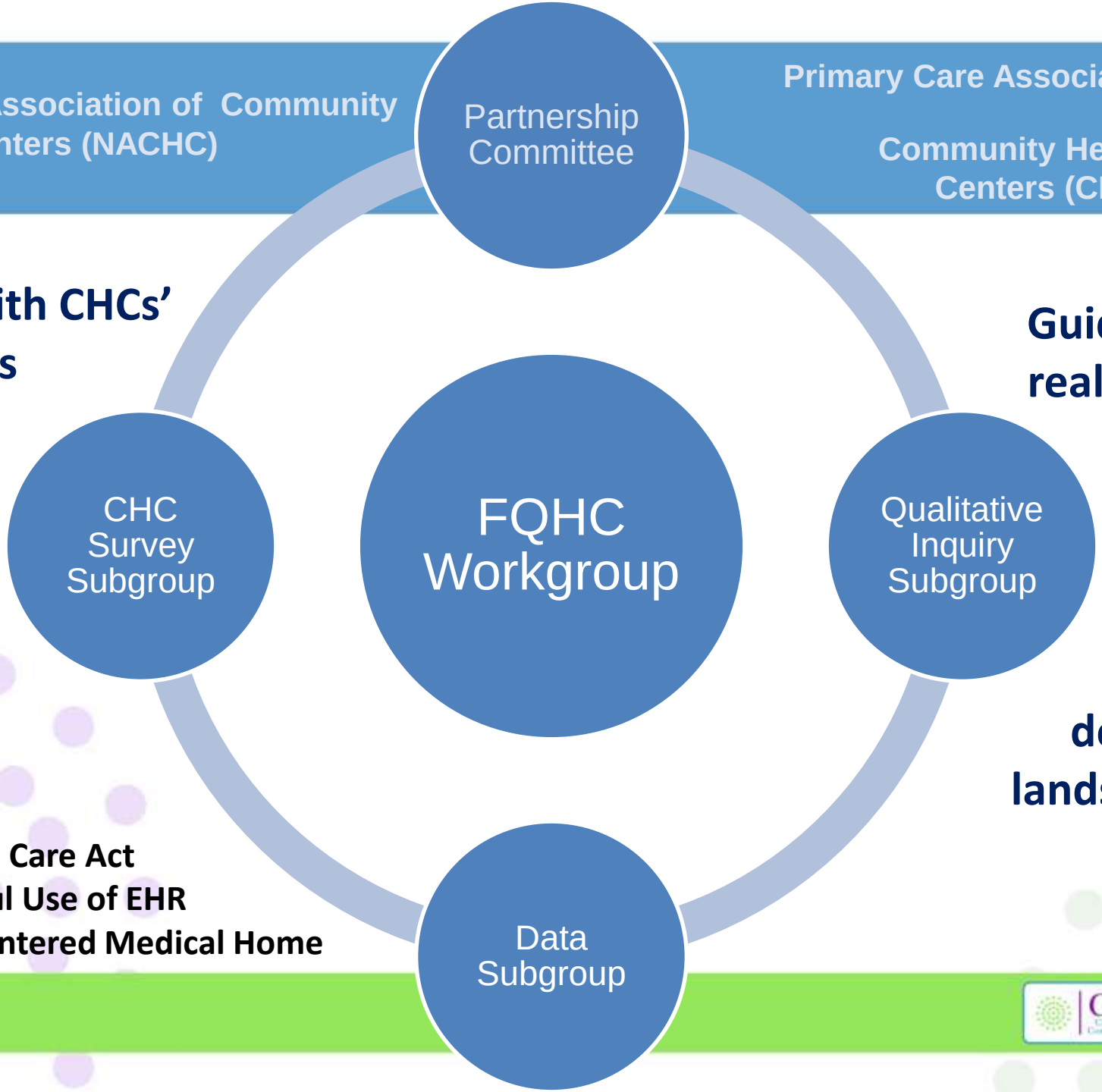
National Association of Community Health Centers (NACHC)

Primary Care Associations

Community Health Centers (CHCs)



Align with CHCs' missions

Guided by real world health policy & health care delivery landscapes

Affordable Care Act
Meaningful Use of EHR
Patient-Centered Medical Home

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Collaborating CPCRN Survey Sites

- Emory University*
- University of California Los Angeles*
- University of Colorado*
- University of North Carolina at Chapel Hill
- University of South Carolina*
- University of Texas Houston*
- University of Washington*
- Washington University at St. Louis*

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Goal of Cross-Site Survey

- To improve cancer control efforts at Community Health Centers (CHCs), the CPCRN engaged national, state, and local stakeholders to develop a comprehensive survey assessing factors associated with implementation of evidence-based practices (EBPs) for cancer control in CHCs.

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Key Partners

- National Association of Community Health Centers
- Primary Care Associations (PCAs)
- FQHCs

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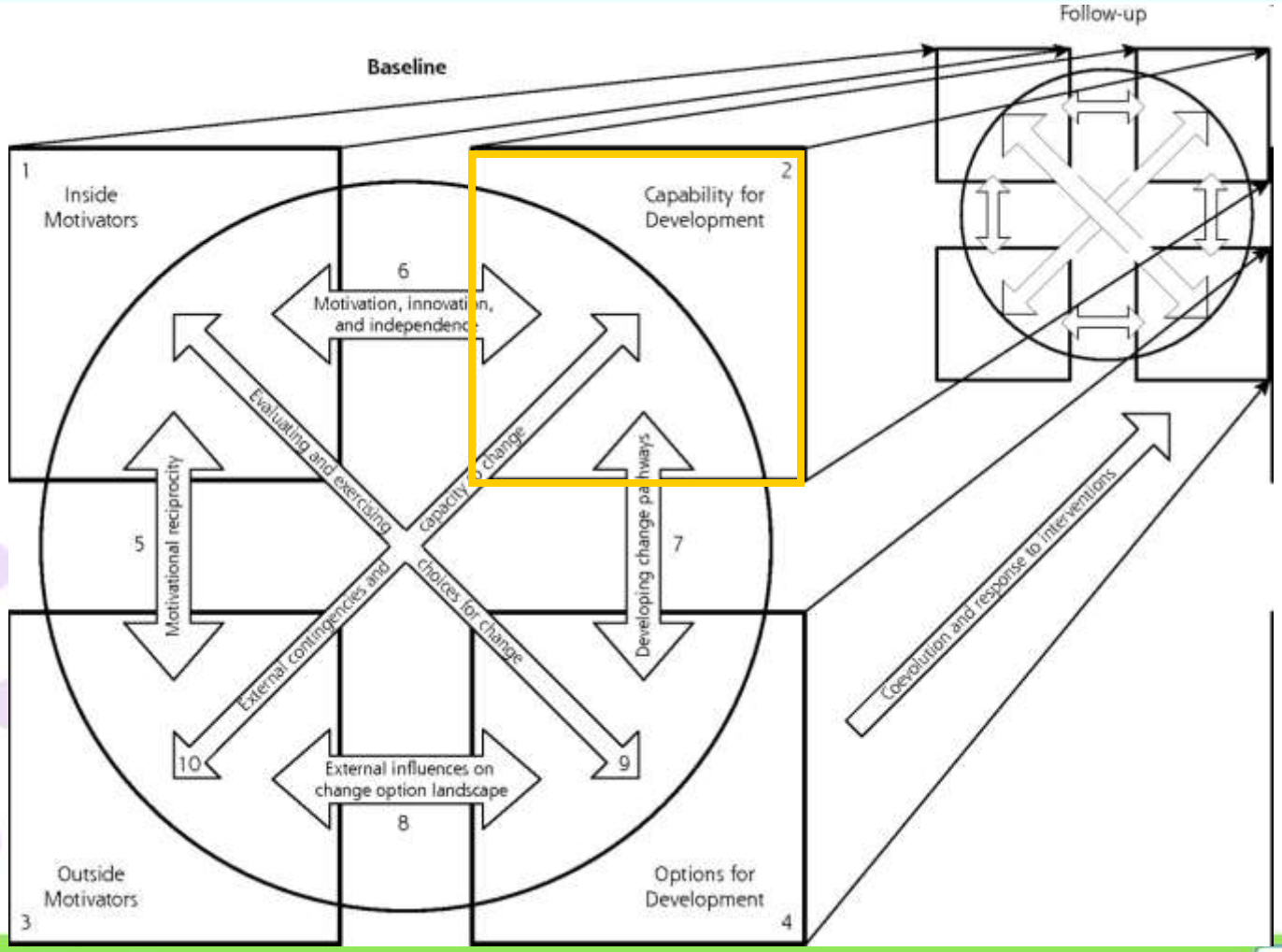
Multiple Recruitment Strategies

- Sites partnered with their state's PCAs; PCAs emailed their CHCs
- Sites recruited CHCs via email, telephone calls, or in-person meetings
- One site directly invited clinics to complete the survey via email and telephone calls.
- Introductory email with online survey link; 4 reminder emails; in-person meeting (one site)
- January - May 2013
- IRB approval at each site and coordinating center (UNC-CH)

Main CHC Survey

- Guided by:
  - Patient Centered Medical Home (PCMH)
  - Practice Change and Development (PCD) Model
  - Consolidated Framework for Implementation Research (CFIR)
- Practice Adaptive Reserve (PAR) Scale

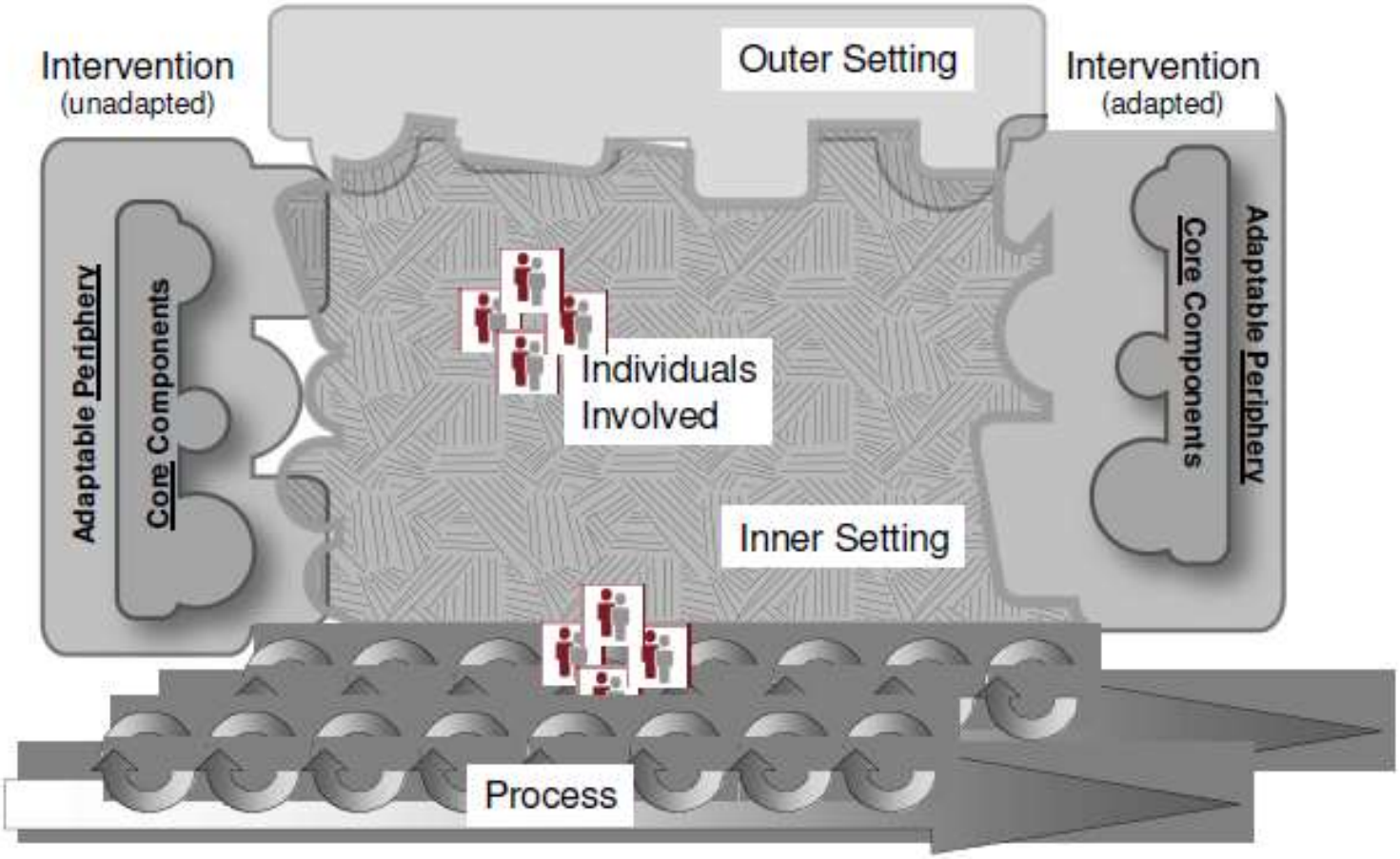
Practice Change and Development Model



Miller et al. Primary Care Practice Development: A Relationship-Centered Approach. Ann Fam Med 2010;8(Suppl 1):s68-s79.

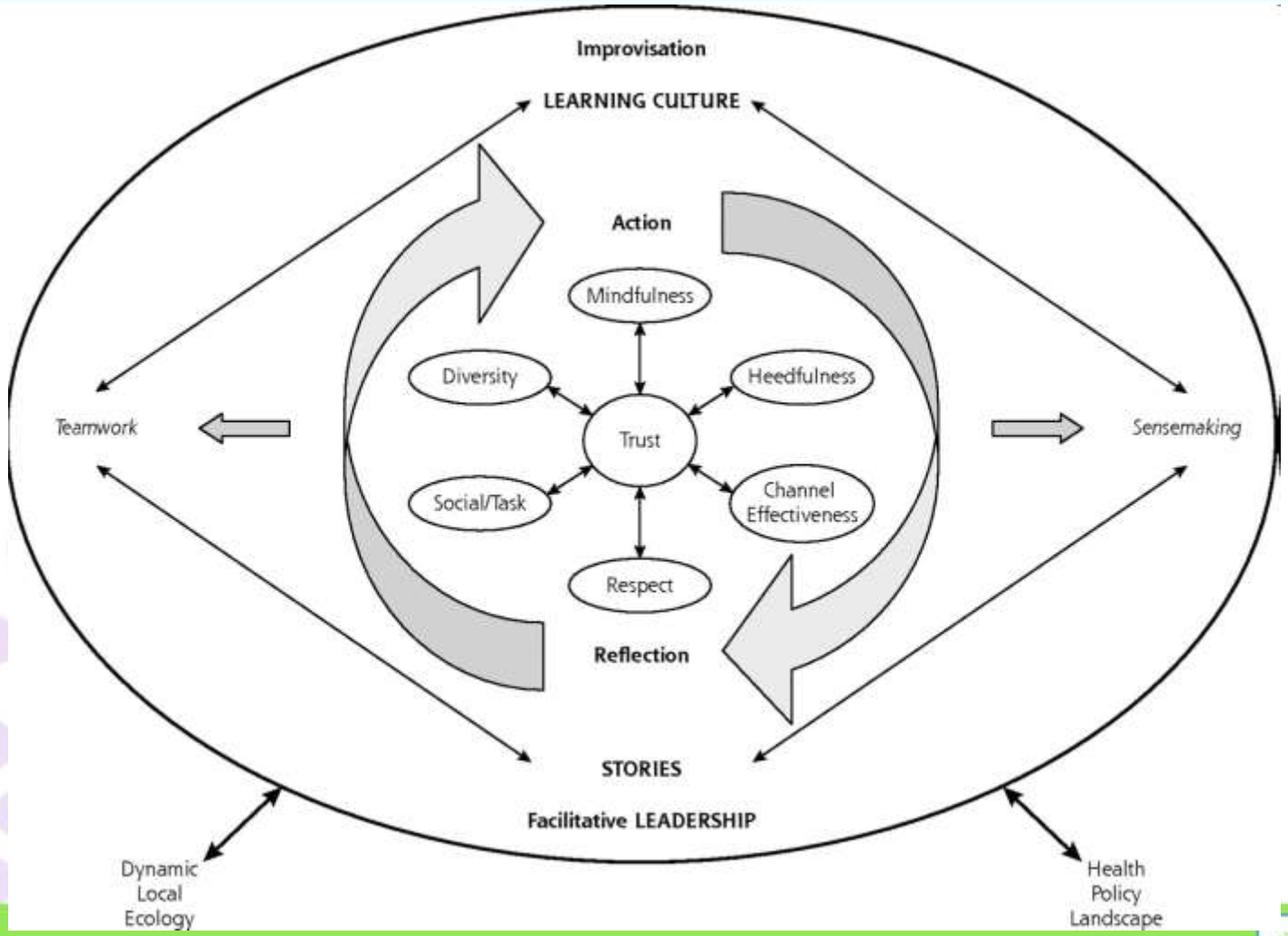
Figure 1: Major Domains of the CFIR

Damschroder L, et al. Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science* 2009;4:50.



Practice Adaptive Reserve

enhances resilience & facilitates adaptation and development



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Survey Development

- Measures developed based on Community Guide recommendations and PCMH model of best practices
- During annual CPCRN meeting, D&I experts selected key constructs from the CFIR to be assessed
- Literature review conducted to identify published measures related to CFIR constructs; adapted for survey
- Consensus on final items reached through workgroup discussions and consultations with stakeholders
- Pilot tests performed with clinic staff in 3 CHCs from 2 states

Main CHC Survey - Content

Sections:

A - **Clinician Questionnaire** – clinical practices section
23 item Practice Adaptive Reserve (PAR) Scale

B - **Primary colorectal cancer (CRC) screening modality recommended at clinic**

C - **4 Community Guide EBIs to increase CRC screening:**
Provider reminders, Patient reminders
One-on-one education, Provider assessment and feedback
EBI specific CFIR items

D - **8 CRC screening best practices** - PCMH standards
How often performed best practices in past month

E - **Demographics** - age, gender, race and ethnicity, languages spoken, number of hours/week and years worked at clinic

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Clinic Characteristics Survey - Content

- Characteristics of patients served
- Number of encounters
- Staffing - FTEs & shortages
- Electronic Health Records use
- Ease to generate information & accuracy of data
- CRC screening best practices
- Community Guide EBAs
- Provider reminder implementation
- Feedback on CRC screening performance measures
- CDC funding of CRC screening program
- CRC screening reporting to outside organization

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Table 1. Response rates by state

	California	Colorado	Georgia	Missouri	South Carolina	Texas	Washington
No. of clinics	6	21	5	1	10	15	18
No. of respondents	28	58	26	5	23	87	100
Range of respondents per clinic	3-10	1-7	4-6	5	1-8	3-9	2-10
Actual No. recruited	NA	NA	NA	10	NA	NA	154
Response rate^^	NA	NA	NA	50%	NA	NA	65%
Estimated No. recruited^	60	210	50	10	100	150	180
Estimated response rate^^^	47%	28%	52%	50%	23%	58%	56%

No = number

^ Estimated No. recruited is based on the quota established for the survey = 10 per clinic.

^^ No of respondents/ actual No. recruited

^^^ No. of participants/ estimated No. recruited

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Significance

- First large-scale, multi-state survey examining current levels of implementation of EBPs and PCMH best practices for cancer prevention and control
- First multi-state survey to examine determinants from the CFIR on implementation of evidence-based cancer control interventions in CHCs

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Adaptive Reserve at Community Health Centers: The Cancer Prevention and Control Research Network Multi-state Survey

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on behalf of the CPCRN FQHC Workgroup Investigators

Emory University
University of California Los Angeles
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Disclosure

Shin-Ping Tu

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

CPCRN CHC Survey

- **Convenience sample of CHC clinics from 7 states**
- **Completed May 30, 2013**
- **327 providers, nurses, MAs, QI/operations staff**

Primary CRC Screening Test promoted in CHCs	Frequency	Percent %
Colonoscopy	92	29.11
Fecal Occult Blood Test (FOBT) - at home	**144**	**45.57**
Fecal Immunochemical Test (FIT) - at home	**74**	**23.42**
Sigmoidoscopy	1	0.32
None	5	1.58
Total	316	100

Missing Frequencies =11

Clinic Characteristics Survey - Content

- Patients served
  - Uninsured, below poverty level, LEP, race/ethnicity
- Number of encounters
- Staffing - FTEs & shortages
- EHR
- Ease to generate information & accuracy of data
- PCMH best practices
- 8 Community Guide EBAs
- Provider reminder implementation
  - Pressures, incentives, alignment with QI
- Feedback on CRC screening
- CDC funding of CRC screening program
- CRC screening reporting to outside organization
  - Scores well – additional income/reimbursements/other rewards

CHC Clinic Characteristics

	Number of CHC Clinics (% Total)
Number patients served in 2012	
<5,000	17 (36%)
5,000-20,000	22 (47%)
>20,000-30,000	3 (6%)
>30,000	5 (11%)
Number of clinics in CHC	
1-2	19 (38%)
3-5	18 (36%)
6-10	7 (14%)
>10	6 (12%)
Percent of patients uninsured	
<20%	6 (13%)
20-50%	21 (47%)
>50-70%	10 (21%)
>70%	10 (21%)
Percent of patients with limited English proficiency	
<10%	18 (38%)
10-40%	11 (23%)
>40-60%	8 (17%)
>60%	10 (21%)

Respondents - CEO (6); CMO/Med Director (8); CNO/Nursing Director (3); COO/Clinic Operations Director (3); QI Director/Manager (11); Others (19)

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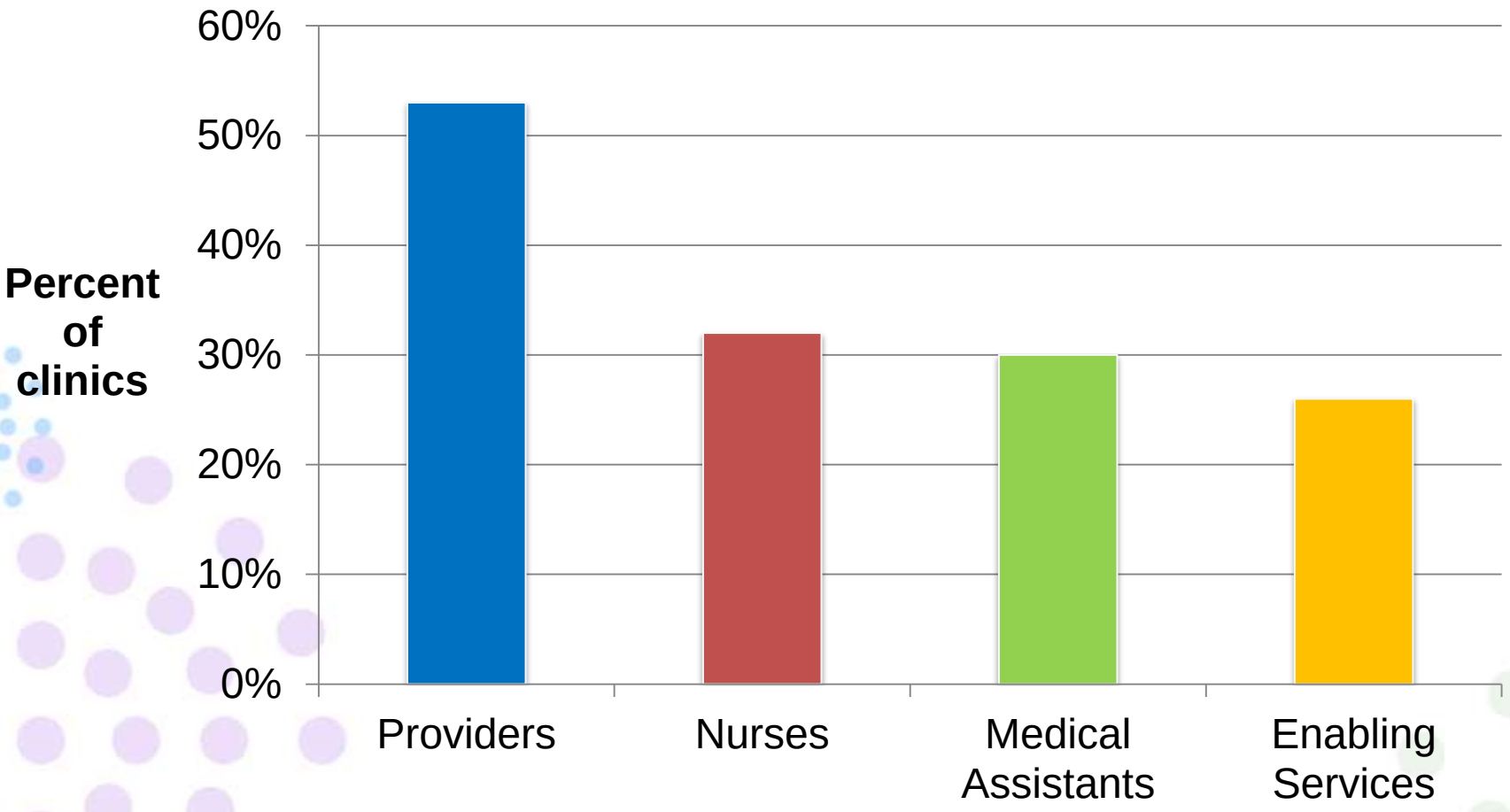
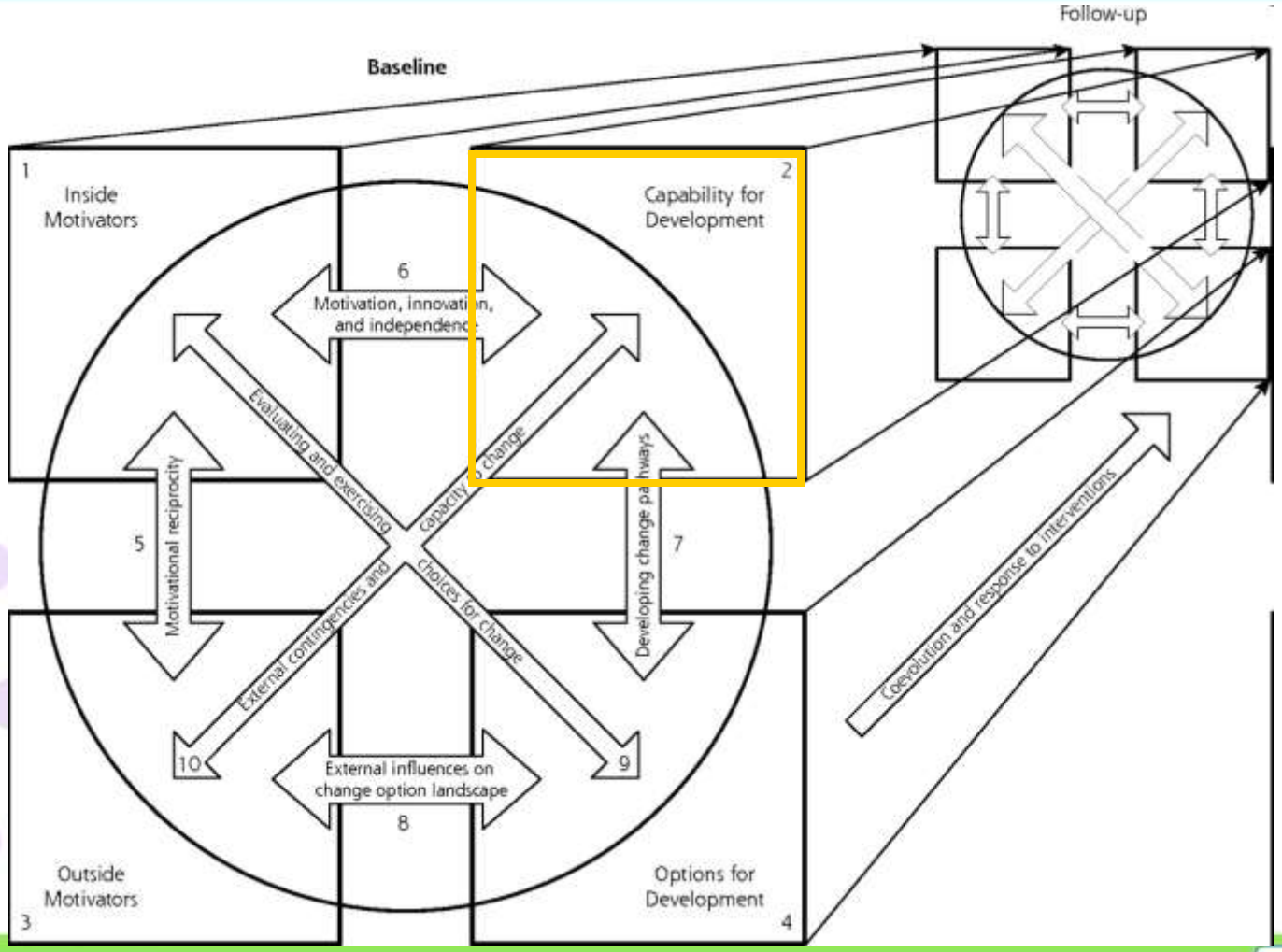
CHC Staffing Shortages



Practice Change and Development Model



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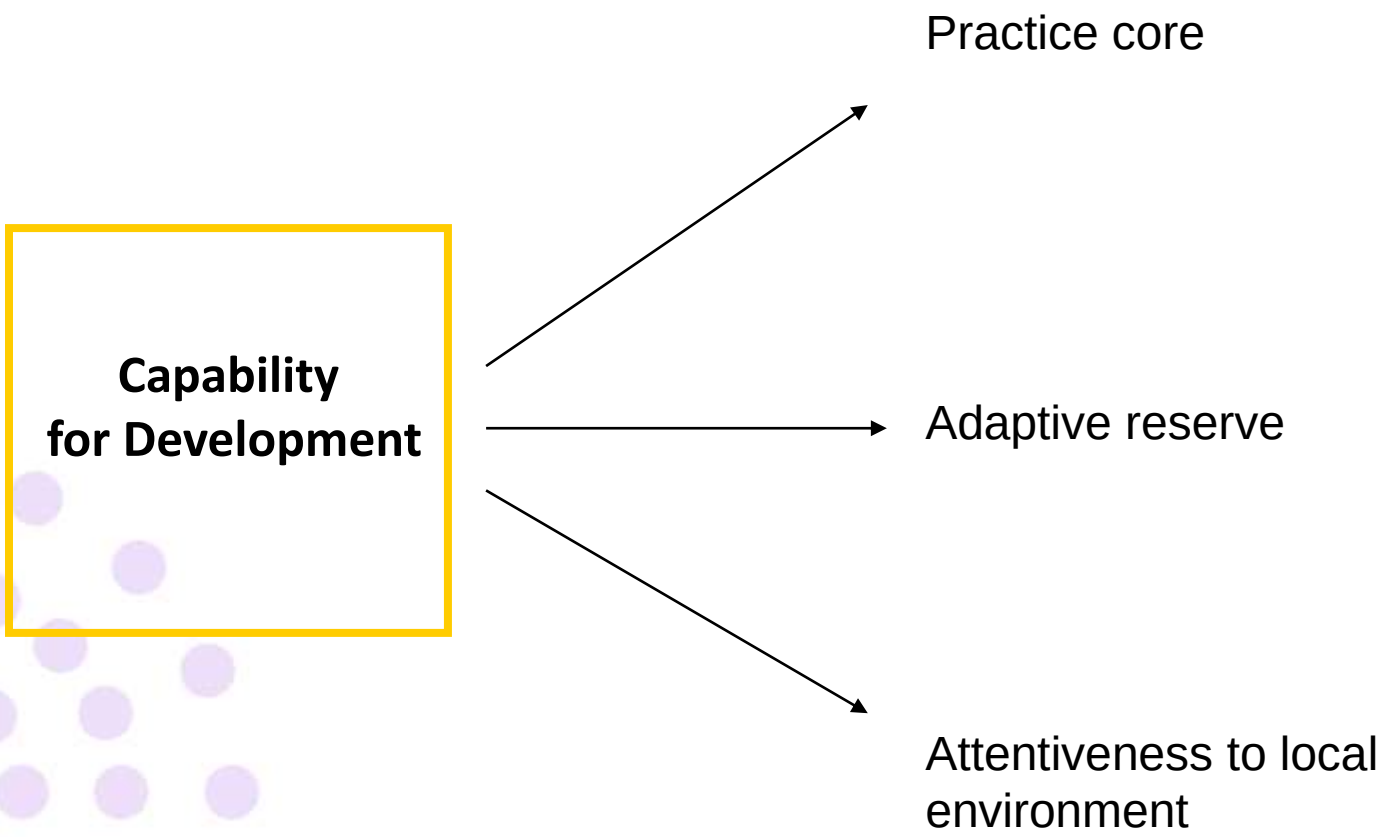
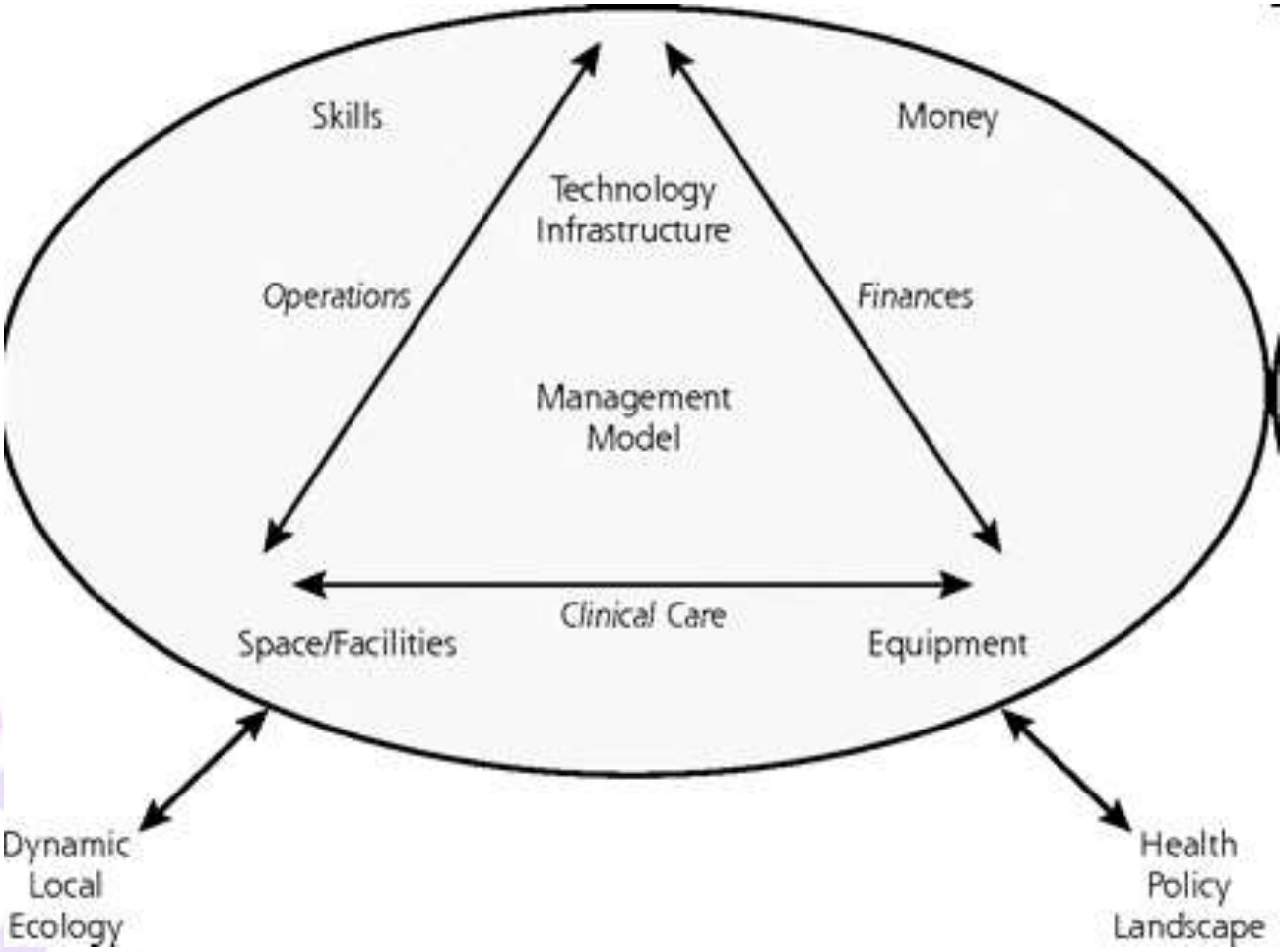


Robust Practice Core

consistent performance & delivery of reliable primary care



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Practice Adaptive Reserve

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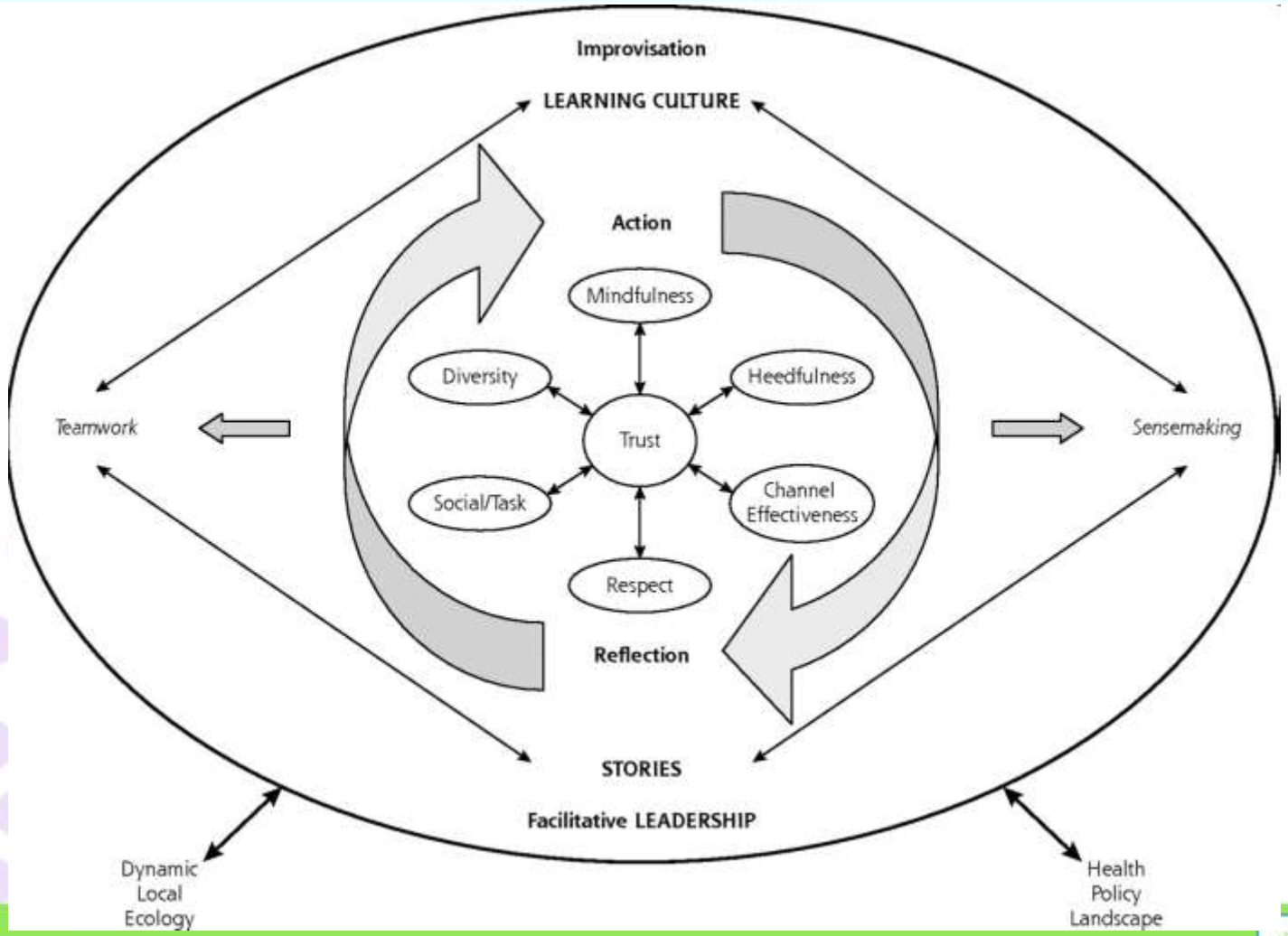

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Practice Adaptive Reserve Scores by State

State	N	Mean	SD	Min	Q1	Q2	Q3	Max
California	28	0.60	0.23	0.02	0.46	0.65	0.78	0.96
Colorado	52	0.66	0.18	0.26	0.52	0.66	0.78	1.00
Georgia	25	0.71	0.19	0.24	0.63	0.73	0.83	1.00
Missouri	4	0.65	0.06	0.58	0.61	0.65	0.69	0.73
S. Carolina	19	0.68	0.17	0.21	0.60	0.65	0.77	1.00
Texas	79	0.66	0.18	0.07	0.54	0.70	0.79	0.98
Washington	89	0.66	0.15	0.21	0.57	0.68	0.75	0.95
Combined	296	0.66	0.18	0.02	0.55	0.67	0.77	1.00

National Demonstration Project - Highly-motivated practices w/ significant capability for change

- Mean baseline PAR score 0.69 (s.d. 0.35)
- Post intervention PAR score increased to 0.74

Scores are scaled so as to range from 0.00 to 1.00; 1.00 = perfect score of agreement

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PCMH CRC Screening Best Practices (%)

	Never	Rarely	Occasionally	Usually	Always
Daily huddles, huddle sheets or checklists to go over scheduled patients who need CRC screening.	175 (59.1)	8 (2.7)	16 (5.4)	54 (18.3)	43 (14.5)
Standing CRC screening orders or orders prepared by nurses/medical assistants then signed by providers.	167 (56.4)	3 (1.0)	17 (5.7)	62 (21.0)	47 (15.9)
Tracking of patients who had CRC screening orders.	140 (47.3)	20 (6.8)	22 (7.4)	59 (19.9)	55 (18.6)
Tracking of patients who completed CRC screening tests.	129 (43.6)	15 (5.1)	23 (7.8)	64 (21.6)	65 (21.9)
Tracking of abnormal CRC screening tests.	104 (35.1)	12 (4.0)	13 (4.4)	68 (23.0)	99 (33.5)
Referrals for diagnostic work-up of abnormal CRC screening tests.	57 (19.3)	6 (2.0)	23 (7.8)	66 (22.3)	144 (48.6)
Tracking of diagnostic work-up completed by patients with abnormal CRC screening tests.	96 (32.4)	9 (3.1)	21 (7.1)	69 (23.3)	101 (34.1)
Referrals to specialists for patients with abnormal colonoscopies.	52 (17.5)	10 (3.4)	26 (8.8)	55 (18.6)	153 (51.7)

PAR and PCMH Best Practices Score

Respondent reported performing PCMH best practices “usually” or “always”

	Score of 0-5		Score of 6-8		Combined
PAR	n	%	n	%	n
0.00 – <0.60	70	74.5	24	**25.5**	94
0.60 – <0.80	85	59.0	59	**41.0**	144
0.80 – 1.00	24	41.4	34	**58.6**	58
Combined	179	60.5	117	39.5	296

Adjusted Regression Analysis PCMH Best Practices and PAR

PCMH Best Practices Mean Composite Score (0-32)

PAR	PCMH Best Practices (0-32)	
	Mean	95% CI
0.08 – 1.00	20.68	17.51, 23.86
0.60 - <0.80	15.84	13.31, 18.36
0.00 - <0.60	12.67	9.90, 15.44

Adjusted for state, age, job type, years worked at the clinic, hours worked each week

Differences b/t PCMH BP Mean Composite Scores all statistically significant:

0.08 - 1.00 vs. 0.06 - <0.80 (p = 0.0013)
0.08 - 1.00 vs. 0.00 - <0.60 (p = <0.0001)
0.06 - <0.80 vs. 0.00 - <0.60 (p = 0.0155)

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Adjusted Logistic Regression
Frequency of PCMH Best Practices and PAR Scores

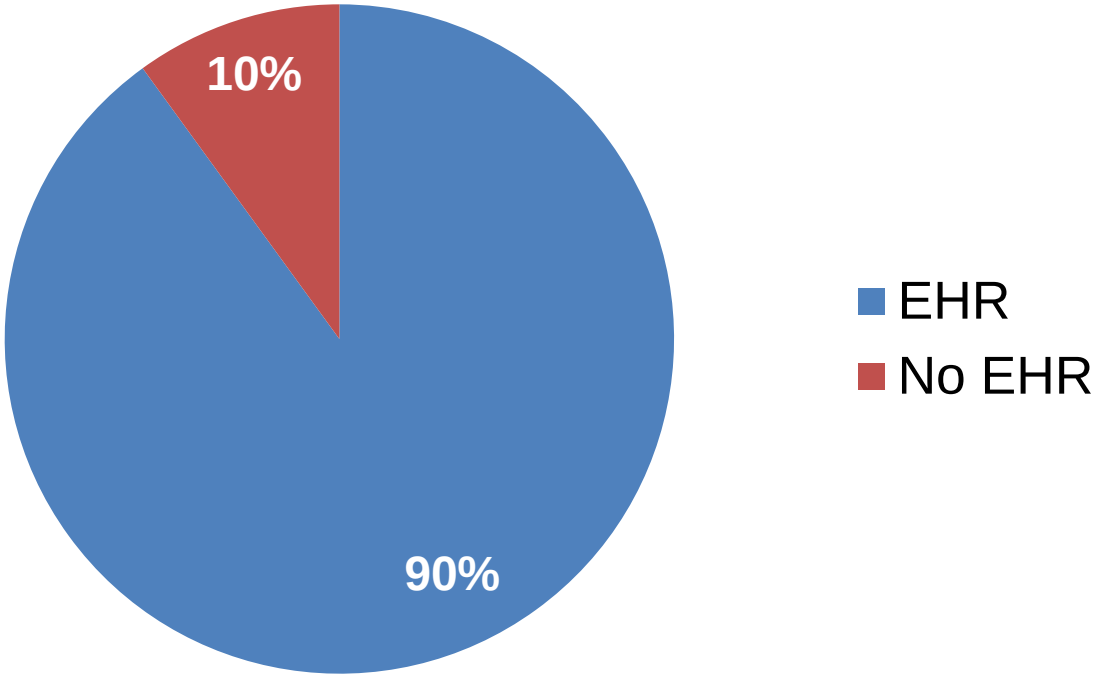
PCMH Best Practices Dichotomized Score (6-8 vs. 0-5)

Respondent reported performing PCMH best practices "usually" or "always"

PAR	Frequency of PCMH Best Practices (6-8 vs. 0-5)	
	OR	95% CI
0.08 – 1.00	**5.49**	2.31,13.06
0.60 - <0.80	**2.23**	1.11,4.47
0.00 - <0.60	**Referent**	

Adjusted for state, age, job type, years worked at the clinic, hours worked each week

Electronic Health Record Adoption

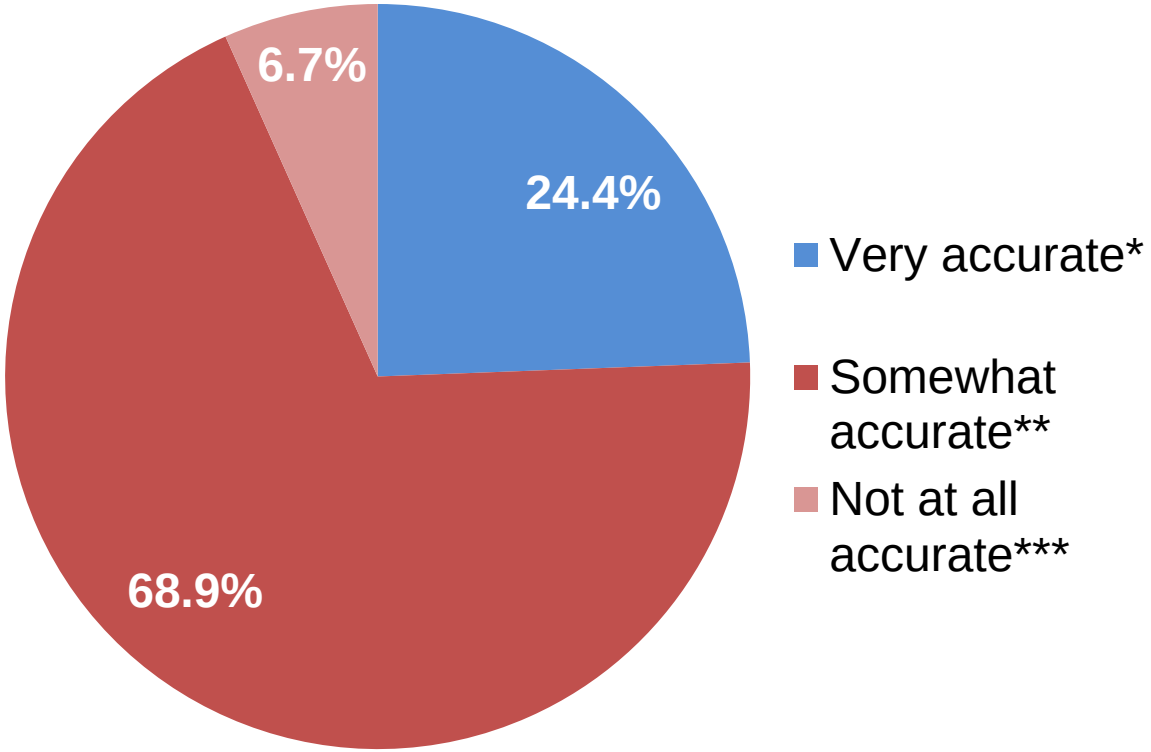


N=50

Electronic Health Record Functionality

	CHC clinics that use EHR data to (a)-(d)	CHC clinics that use EHR & can EASILY (a)-(d)
	Number (%) (n=43 to 45)	Number (%) (n=37 or 30)
(a) Create list of patient panels by provider	37 (84%)	30 (81%)
(b) Identify patients due or overdue for CRC screening	37 (82%)	**21 (57%)**
(c) Send reminders to patients when they are due for CRC screening	30 (70%)	**8 (27%)**
(d) Estimate CRC screening rates	37 (82%)	23 (62%)

Electronic Health Record Accuracy



*Primary source for reports or patient care decision
**Need a secondary audit or cross check with additional documentation
***Would not use for reports or patient care decision

Summary

- Large-scale, multi-state survey of CRC screening PCMH best practices
- Partner CHCs have significant staffing shortages
  - Providers, Nurses, MAs
- Positive associations of PAR with PCMH CRC screening best practices
- Limitations of EHR data
  - Functionality
  - Accuracy

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CHC contacts

Survey respondents

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Factors influencing implementation of evidence-based practices for cancer prevention and control in community health centers

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Shuting Liang, MPH, Shin-Ping Tu, MD MPH, Vicki M. Young, PhD,

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Presenter Disclosure

Michelle Carvalho

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

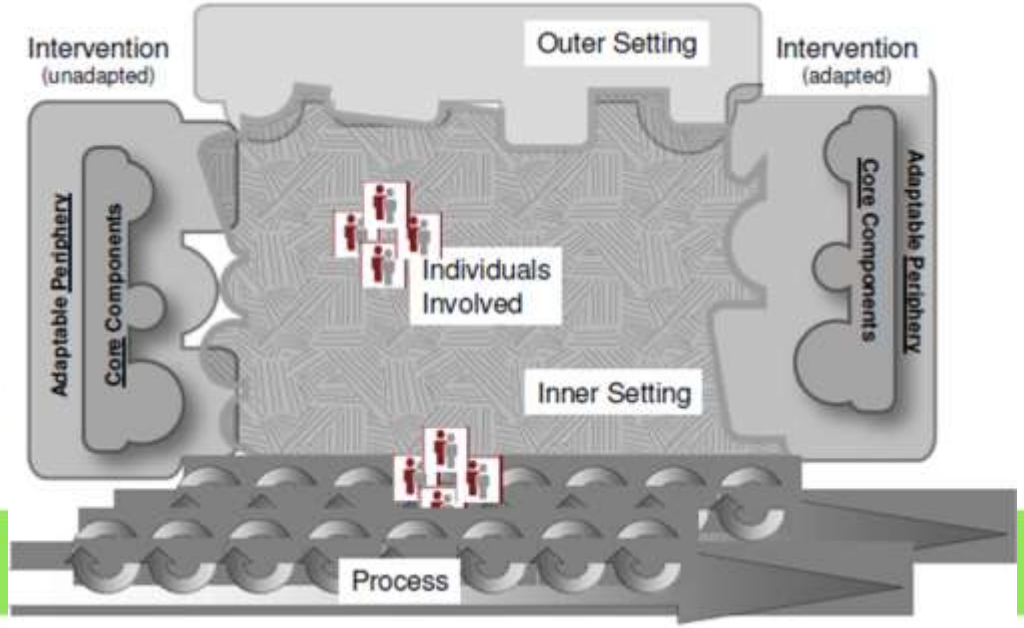
No relationships to disclose

Consolidated Framework for Implementation Research (CFIR)

Source:

Damschroder L, Aron D, Keith R, Kirsh S, Alexander J, Lowery J. Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science* 2009; 4:50.

Note: Authors from the VA and University of Michigan, SPH, Department of Health Management and Policy



Five CFIR Domains

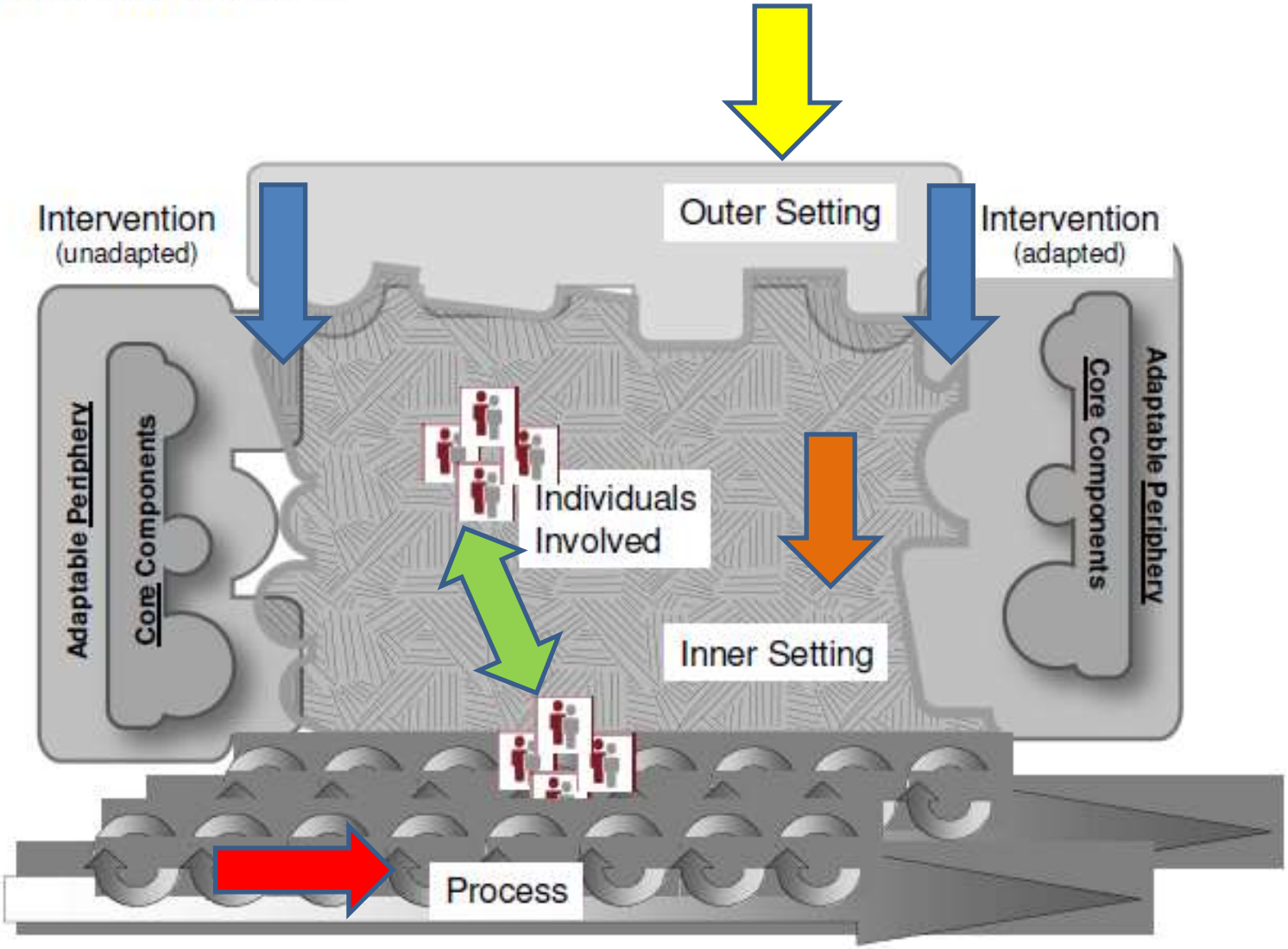
Consolidated Framework for Implementation Research:

"An overarching typology to promote implementation theory development"

Combines 19 conceptual models in 5 Domains:

- Intervention characteristics
- Outer setting
- Inner setting
- Characteristics of the individuals involved
- Process of implementation

Figure 1: Major Domains of the CFIR

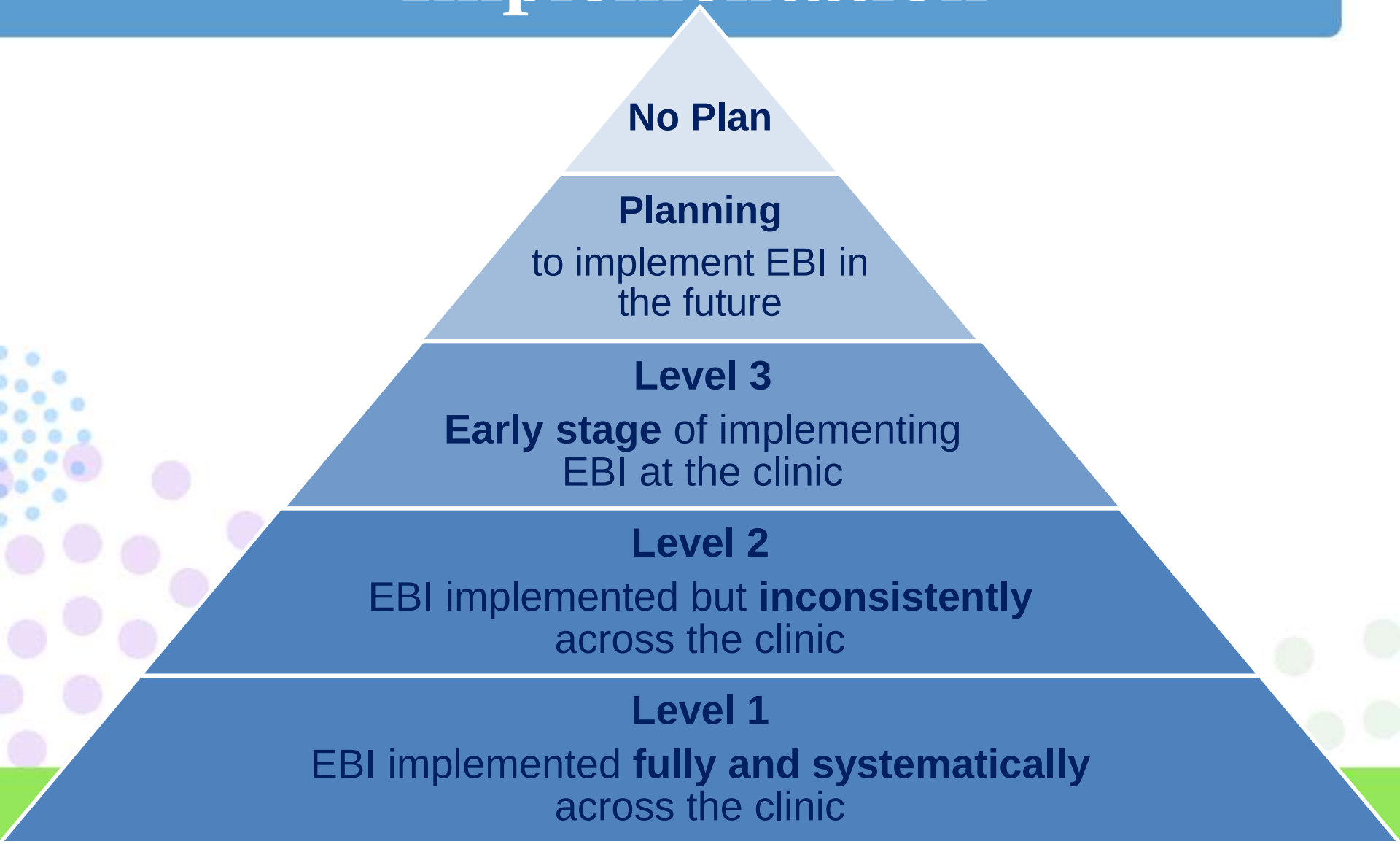


Uses of CFIR

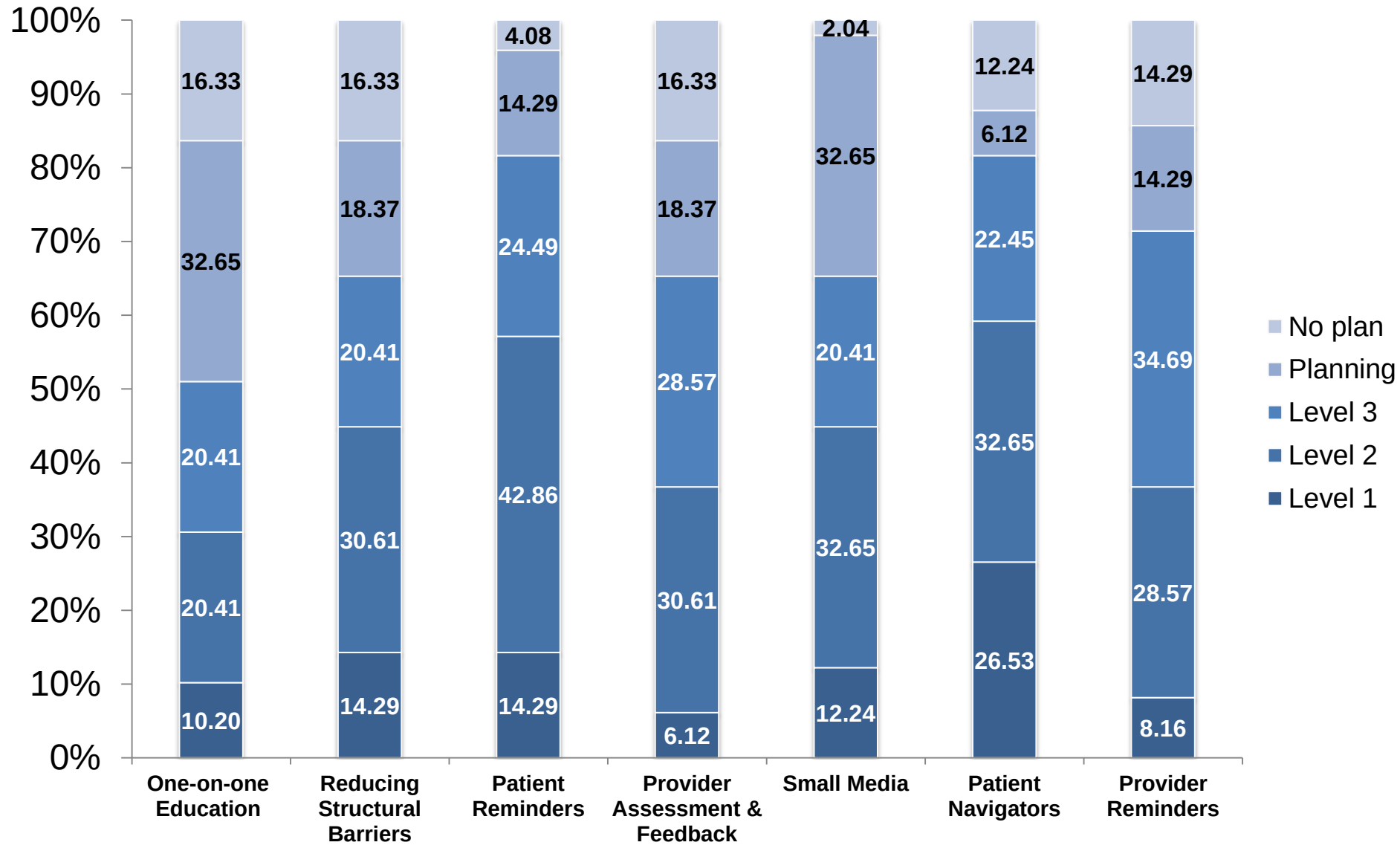
- Formative stage: capacity and needs assessment to identify barriers and facilitators to implementation
- Implementation stage: to track key implementation processes
- Outcome and impact stage: to explore what factors influenced implementation and how implementation influenced intervention performance

At macro level: to organize and synthesize findings across studies using common language and definitions

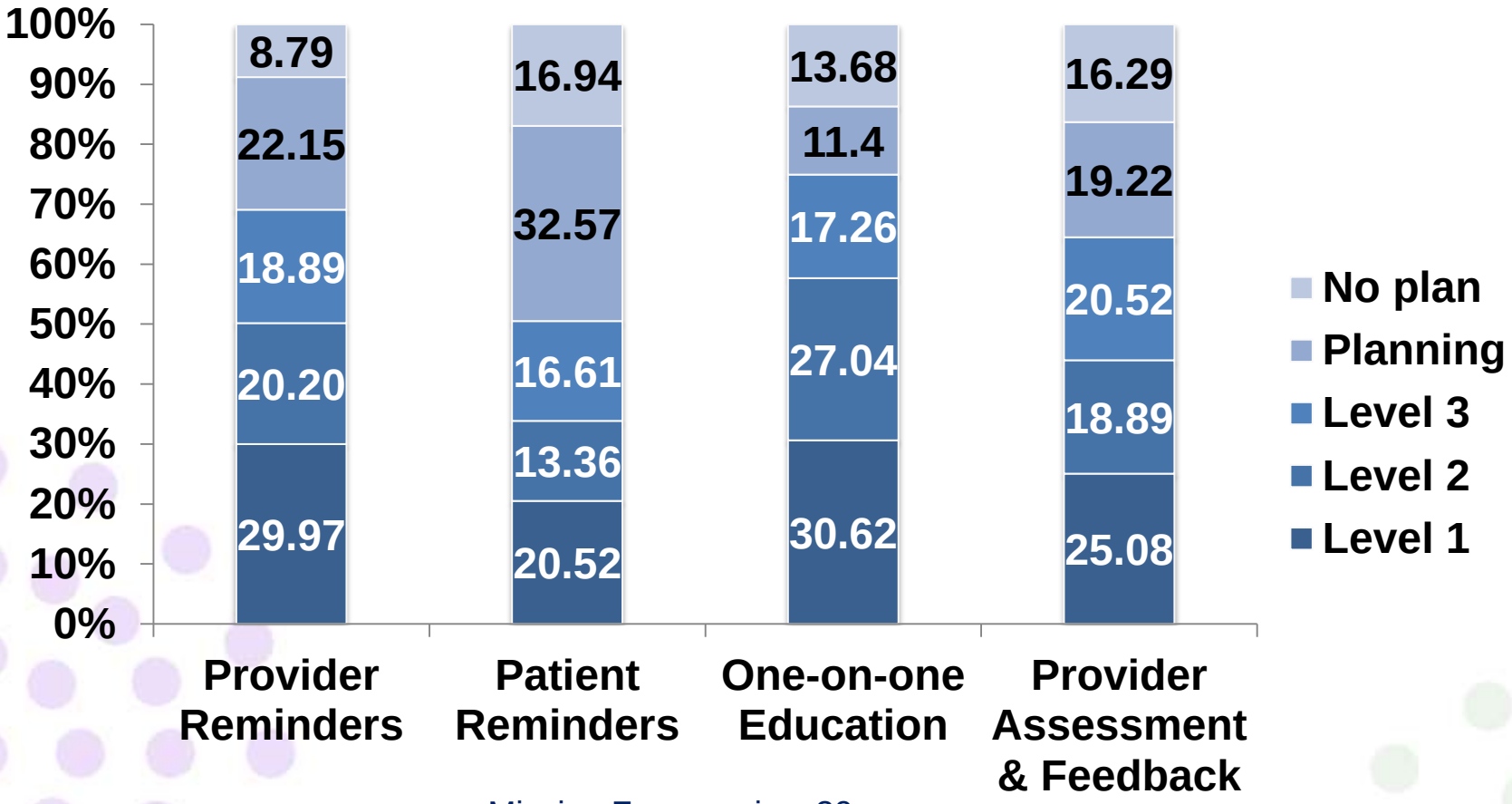
Levels of Community Guide EBA Implementation



Clinic Survey: Levels of Implementation of EBAs for Promoting CRC Screening



Main Survey: Levels of Implementation of EBAs for Promoting CRC Screening



Missing Frequencies: 20

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Factors Influencing Implementation: CFIR Constructs

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CFIR Organizational Factors Assessed in CHC Main Survey

General Factors

- **Inner Setting:**
  - Structural Characteristics—Resources
  - Culture- innovation, flexibility, & reflexivity,
  - Culture- stress & effort
  - Network & Communication (using PAR items)
  - Leadership (using PAR items)
- **Outer Setting:**
  - Patient needs & resources
- **Process:**
  - Executing
  - Reflecting & Evaluating
- **Individual Characteristics:**
  - Knowledge & Beliefs—Openness

EBA-specific Factors

- **Intervention Characteristics:**
  - Relative advantage
  - Complexity
- **Inner Setting:**
  - Compatibility
  - Implementation climate
  - Goals and feedback
  - Learning climate (using PAR items)
  - Structural characteristics—resources
- **Process:**
  - Engaging Champions
- **Individual Characteristics**
  - Knowledge and Beliefs—Appeal

Characteristics of Individuals

Constructs

- Knowledge & beliefs about the intervention
- Self-efficacy
- Individual stage of change
- Individual identification with the organization
- Other personal attributes

Interesting Points

- Individuals have agency-they make choices & wield power
- Little research on interplay between individuals and organizations
- Theory of Planned Behavior most often used to predict clinical behavior of health professionals

Blue font = Constructs measured in survey

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Intervention Characteristics

Constructs

- Intervention source
- Evidence strength & quality
- Relative advantage
- Adaptability
- Trialability
- Complexity
- Design quality and packaging
- Cost

Interesting Points

- Interventions typically a poor fit without adaptation
- Interventions have core components & adaptable periphery

EBA-Specific Predictor of Implementation (Provider Reminders)	Odds Ratio*	P-value
Relative advantage	1.95	0.0393

- *Associated with higher levels of provider reminder implementation
- Adjusted for education
- Number of respondents =296

Blue font = Constructs measured in survey

Inner Setting

Constructs

- Structural characteristics
- Networks & communication
- Culture
- Implementation climate
- Readiness for implementation

Interesting Points

- Includes structural, political and cultural contexts through which the implementation process will proceed
- Line between inner and outer will depend on the project/study (e.g., role of outlying clinics or loosely affiliated medical center)

Blue font = Constructs measured in survey

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Inner Setting

Predictors of Provider Reminders Implementation	Odds Ratio*	P-value
Structural Characteristics--Resources	3.63	0.0001
Culture--Innovation & Flexibility	3.59	0.0227
Compatibility (between EBA & clinic)[+]	2.18	0.0478
Communication	1.98	0.0109
Leadership	1.81	0.027

- *Associated with higher levels of provider reminder implementation
- [+]EBA-Specific question for Provider Reminders
- Adjusted for education, which is significantly correlated to the outcome
- Number of respondents =296

Outer Setting

Constructs

- Patient needs and resources
- Cosmopolitanism
- Peer pressure
- External policy & incentives

Interesting Points

- Includes economic, political and social context within which an organization resides
- Interface between inner and outer settings is dynamic
- Changes in the outer setting can influence implementation, often mediated through the inner setting

Blue font = Constructs measured in survey

Predictors of Provider Reminders Implementation	Odds Ratio*	P-value
Patient needs & resources	2.34	0.0348

Process of Implementation

Constructs

- Planning
- Engaging
- Executing
- Reflecting & evaluating

Blue font = Constructs measured in survey

Interesting Points

- Implementation requires an active change process
- Process may be inter-related sub-processes: planned or spontaneous, linear or nonlinear

Predictors of Provider Reminder Implementation	Odds Ratio*	P-value
Reflecting & Evaluating	2.28	0.0047

Significance

- This study is among the first to examine determinants from the Consolidated Framework for Implementation Research (CFIR) on implementation of evidence based cancer control interventions.
- This research can help practicioners to understand and design supporting structures (e.g. training, technical assistance) that help translate EBAs into public health and clinical practice.

Exploring Factors Influencing Implementation of Evidence-Based Approaches for Cancer Prevention and Control in FQHCs: A Qualitative Study

Lily (Shuting) Liang, MPH

on behalf of

Nicholas Woolf, PhD, Michelle C. Kegler, DrPH, Betsy Risendal, PhD, Vicki Young, PhD, Michelle Carvalho, MPH, Andrea Dwyer, MPH, Dayna Campbell, MS, Maria E. Fernandez, PhD and the CPCRN FQHC Qualitative Inquiry Subgroup (QIS)

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Disclosure

Shuting Liang

The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

QIS Research Questions

Primary Research Question:

- What factors influence the implementation of evidence-based approaches (EBAs) for cancer prevention and control in FQHCs?

Approach

- In-depth personal interviews and focus groups
- An adapted *Appreciative Inquiry* approach
- Open-ended questions broadly informed by the Consolidated Framework for Implementation Research (CFIR)

Data Collection—Interview Guide

- Part I: Example of successful practice changes
- Part II: Explore implementation of a specific evidence-based approach for cancer prevention and control (Example: Tobacco Cessation: Ask-Advise-Refer)
- Part III: Inner setting—organizational characteristics and readiness for implementation
- Part IV: Other domains of CFIR—intervention characteristics and outer settings

Data Collection—Partnerships & Recruitment

- Recruited and collected data with help of the Partnership Committee led by Dr. Vicki Young and partnerships with

NATIONAL ASSOCIATION OF Community Health Centers

colorado communityhealth network
quality care · quality investment

NCFH
National Center for Farmworker Health, Inc.

The Georgia Association For Primary Health Care

SOUTH CAROLINA PRIMARY HEALTH CARE ASSOCIATION

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Data Collection—Sample

- Sample: Chief Executive Officers, Medical Directors, Chief Operation Officers, Quality Improvement managers, frontline project managers, etc. of FQHCs

- Recruited from email invites and in-person invitations

Participants' Profile

- 59 FQHC leaders: 29 CMOs, 4 CEOs, 9 COOs, 4 QI managers, other including nursing directors, vice presidents, etc.

- Participants represent FQHCs in 14 states and Washington, D.C.

Analytic Strategy

CFIR-based Coding

- Segmented data into “meaning units”
- Coded data using pre-existing codes developed based on the CFIR
- Calculated frequency distribution of coded quotations

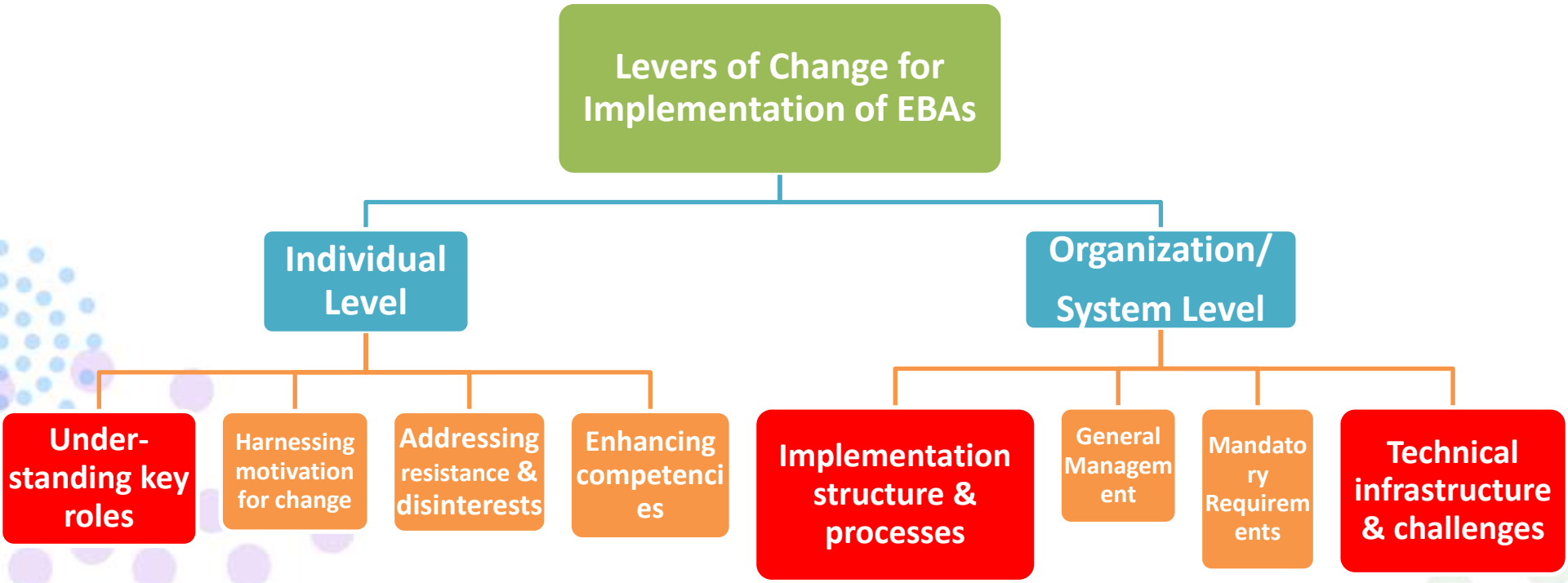
Data-driven Coding

- Identified barriers and facilitators to implementation of cancer control practices or practice changes based on respondents’ descriptions of successful and unsuccessful efforts

Thematic Analysis

- Barriers and facilitators were conceptually clustered to identify a small set of sub-themes
- Sub-themes are clustered to identify a smaller set of themes that comprise the main factors that influence implementation

Overview of Findings



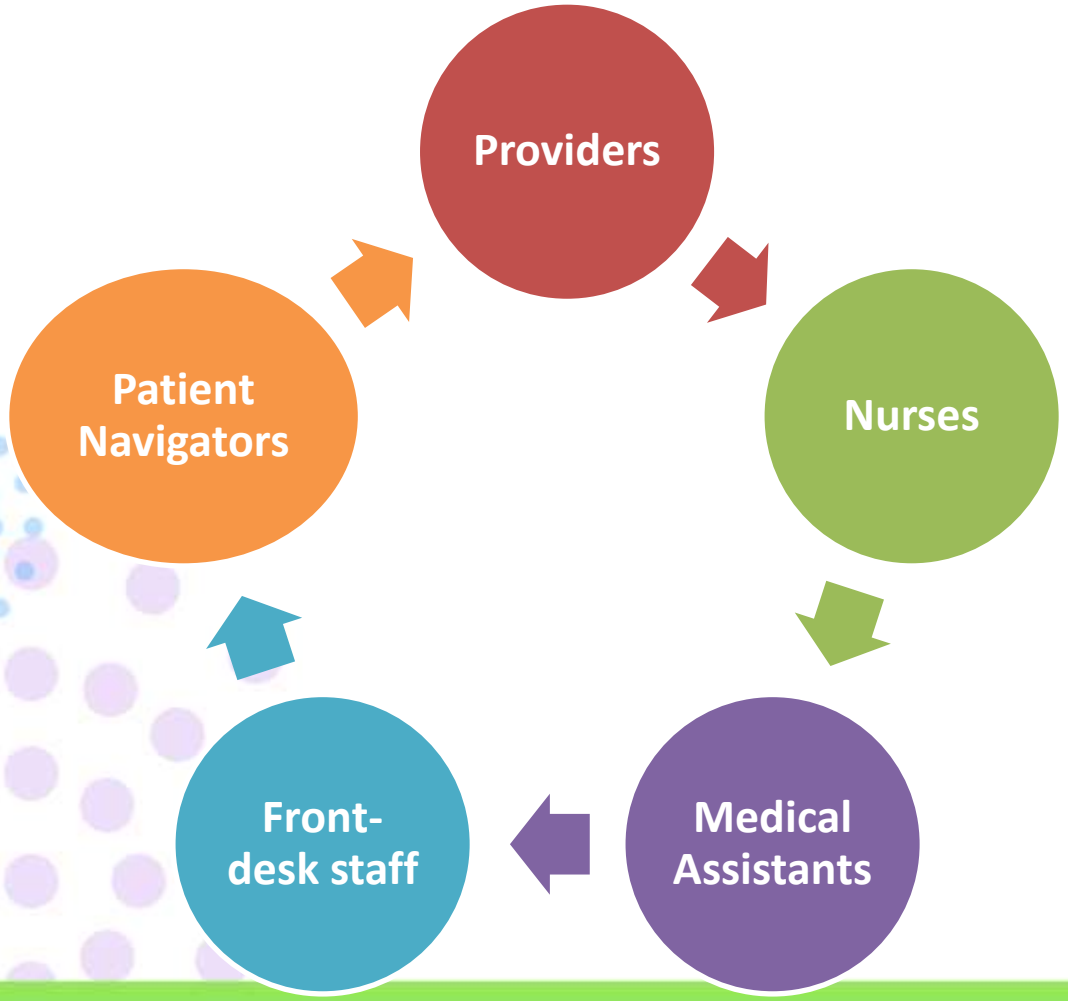
Individual Level: Understanding Key Roles

- Leaders
- Champions
- Designated implementers (front-line)
- “QI person” (Quality Improvement managers/coordinators)

Understanding Key Roles—Leaders

"The fish rocks from the head down. So if you do not have leadership at the top, no matter what you try to do from the bottom up, you're going to hit a wall, and you're either going to have to have perseverance or you're going to go away……"

Understanding Key Roles—Designated Implementers



"There has to be…a small group of people who actually do the job that you're talking about. ..don't just go to the doctors; go to the front desk, medical assistants, community health workers, and ask them, 'How can we get this assessment done? Who can do it? Who can do what?' Then once you have that done, set up your training using that work model or those ideas. You set up the training, and then the training has to be repeated…."

Organizational Level: Implementation Structure & Processes

Prioritization

- Set organizational priorities
- Focus on one change at a time; do not move onto the next one until one is fully incorporated in the routine

"Too much change……they get excited about breast cancer and next month they get excited about colon cancer, and the clinicians just get barraged, you know."

"I think there's got to be some responsibility at high levels in the organization to pick a few things and stick with them ….stay with them until they become bread and butter…"

Integrating EBAs into Quality Improvement Process

- Organic, dynamic, complex and various Quality Improvement (QI) processes exist in FQHCs
- QI plays a significant role in the organization's overall functioning
- QI committees are often in charge of decision making and the overall workflow
- Any new practice (including EBAs for cancer control) needs to be integrated into the QI process

Integrating EBAs into Quality Improvement Process (Cont.)

"I think we're going to be at 100% successful in the implementation of the tobacco cessation program, because I believe that the multidisciplinary component of QI brings all involved in terms of implementation……once the decision has been agreed upon to implement, …..and….begin to evaluate that process in terms of "how does it look?" and bring it back to QI."

Creating Change-Supportive Structure

- Change-supportive structure requires:

  1) Availability of time for staff

  2) Internal resources leveraged for a particular change

  3) Top-down support from the administrative

Creating Change-Supportive Structure (Cont.)

"I think it's because of the history and experience the organization has with quality improvement……it's the kind of thing when I say, "Gee, I'd like to see us do this," and there were folks who said, "Great! Let's mock it up. Let's do it. Let's PDSA (Plan, Do, Study Act) it." And there was a structure to do that in."

Technical Infrastructure & Challenges

Benefits of EMR

- Access to patient data
- Tracking performances & clinical measures
- Enhancing accountability
- Reminder & alerting system improves outcomes

Challenges of EMR

- Documentation on EMR is time-consuming
- Lack of connectivity with other EMR systems
- Inability to customize to particular practice needs
- Lack of appropriate reminding system for cancer screening

Current Solutions to Technical Challenges

- When EMR doesn't fit the needs of the health center, they create a paper form that must be touched by every part of the center for each patient visit
- When transitioning to EMR, add check boxes in current paper forms to remind providers and staff to do the "ask" and follow-ups.

"We worked with the people who-you know-work with us around the IT support people, and they couldn't figure out how to make it happen for us, and I was very opposed to having a piece of paper to do it, but we developed a piece of paper. It's called our yellow sheet. So the yellow sheet has served an enormous number of purposes, and it's become such an important part of our process……"

Summary of Findings

- Obtaining buy-in from all key players and enhancing their competencies for implementation are pre-requisites for successful implementation of any EBAs that require practice changes

- Successful implementation involves prioritizing efforts related to EBAs, integrating EBAs into routine Quality Improvement process, and creating a change-supportive structure

My Own Health Report:

Helping FQHCs to meet PCMH standards

Sarah Krasny, BA, BS

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University of Texas Health Science Center at Houston

on behalf of Bijal Balasubramanian, MBBS, PhD; María Fernández, PhD; Shuting, Liang, MPH

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Sarah Krasny has no relationships to disclose

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Prevention Research Centers

My Own Health Report Tool

Patient fills out tool

MRN: _____

Patient Health Update

Check the box next to your answer.

Q1. Over the past ***7 days***:
a. How many times did you eat **fast food meals** or **snacks**?

less than 1 time ☐ 1-3 times ☐ 4 or more times ☑

b. How many servings of ***fruits/vegetables*** did you eat each day?

5 or more ☐ 3-4 servings ☑ 2 or less ☑

c. How many ***soda*** and ***sugar sweetened drinks*** (regular, not diet) did you drink each day?

Less than 1 ☐ 1-2 drinks ☑ 3 or more ☑

Database of text messages and triggers

Summary report for patient

Action Plan

Summary report for patient

Data stored in database

Research analysis

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Study Design

- Paired, cluster (practice-level) randomized pragmatic trial, delayed intervention
- 9 pairs of diverse primary care practices
  - PBRN & FQHC
  - Race/Ethnicity
  - Payer mix
  - Age
  - Language
  - Geographic setting

What Are We Testing?

- Can primary care clinics systematically collect patient-reported measures?

- Does the use of MOHR lead to increased patient-provider communication and goal-setting discussions around health behaviors and mental health?

Why Patient-Reported Measures?

- The IOM defines patient-centered care as, "providing care that is respectful of and responsive to individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions."

- How can care be patient-centered if patient-reported measures, goals and concerns are not collected in a systematic and comprehensive way through the Electronic Health Record?

Patient-Reported Measures

Domain	Final Measure (Source)
1. Overall Health Status	1 item: BRFSS Questionnaire
2. Eating Patterns	3 items: Modified from Starting the Conversation (STC) [Adapted from Paxton AE et al. *Am J Prev Med* 2011;40(1):67-71]
3. Physical Activity	2 items: The Exercise Vital Sign [Sallis R. *Br J Sports Med* 2011;45(6):473-474]
4. Stress	1 item: Distress Thermometer [Roth AJ, et al. *Cancer* 1998;15(82):1904-1908]
5. Anxiety and Depression	4 items: Patient Health Questionnaire—Depression & Anxiety (PHQ-4) [Kroenke K, et al. *Psychosomatics* 2009;50(6):613-621]
6. Sleep	2 items: a. Adapted from BRFSS b. Neuro-QOL [Item PQSLP04]
7. Smoking/Tobacco Use	2 items: Tobacco Use Screener [Adapted from YRBSS Questionnaire]
8. Risky Drinking	1 item: Alcohol Use Screener [Smith et al. *J Gen Int Med* 2009;24(7):783-788]
9. Substance Abuse	1 item: NIDA Quick Screen [Smith PC et al. *Arch Int Med* 2010;170(13):1155-1160]
10. Demographics	9 items: Sex, date of birth, race, ethnicity, English fluency, occupation, household income, marital status, education, address, insurance status, veteran's status. Multiple sources including: Census Bureau, IOM, and *National Health Interview Survey (NHIS)*

My Own Health Report

	Recommended Score	Your Score	Level of Concern	Ready to Change?	Want to Discuss?
Overall Health Rating Reason: I am working too hard at my job.	Good to Excellent	**Poor**	A Lot	✔	✔
Body Mass Index	20-25	**27.7**	Some		
Health Behaviors					
Fruit/Vegetable Intake	5+/day	**Less than 2/day**	A Lot	✔	✔
Fast Food Intake	Less than 1 time/week	**1-3 times/week**	Some	✔	✔
Soda/Sugary Beverage Intake	Less than 1/day	**1 to 2/day**	Some		
Physical Activity Participation	150+ minutes/week	**175 minutes/week**	None		
Sleep	Never/rarely sleepy	**Often sleepy**	Some		
Alcohol Intake	Never	**Never**	None		
Tobacco use	No	**Yes**	A Lot		
Illegal Drug/Prescription Use	Never misuse	**Never misused**	None		
Mental Health					
Stress	Less than 5	**8**	A Lot	✔ ☆	✔
Anxiety/Worry	Not at all/rarely	**Not at all/rarely**	None		
Depression	Not at all/rarely	**Not at all/rarely**	None		

☆ = Most important to you

Keep up the GOOD Work!

- You are meeting or exceeding the physical activity recommendations for health.
- You said there are few days you feel nervous, anxious, on edge or unable to stop or control worrying.
- You said there are few days you feel down, depressed, hopeless or have little interest or pleasure.
- You never drink too much alcohol.
- You do not use illegal drugs or prescription medications for non-prescribed reasons.

Recommendations to Improve Your Health

Medium Priority

- Excess weight can lead to a number of health problems. Increase physical activity and/or limit the unhealthy food you eat to reduce your weight.
- Decrease your fast food meals or snacks to less than one per week.
- Decrease the number of soda or sugary drinks you drink to less than 1 per day.
- Try to get 7-8 hours of sleep each night.

High Priority

- Increase fruits and vegetables to 5 or more servings per day.
- You reported feeling stressed often. Discuss ways to reduce your stress.
- Discuss options for decreasing or quitting tobacco use.

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My Own Health Report

Notes/Things to Discuss During My Appointment

Health Goals

The best goals to set are those that are **specific, measurable, achievable, realistic, and timely** and focus on the **who, what, where, when and how** you will achieve them in order to be able to measure your success. List 1-3 goals you have to try to improve your health based on your health update.

Example Goal:

What will you do? Decrease fast food by eating out 2-3 less times per week.
How will you do it? Pack a lunch to bring to work 2 times per week and cook dinner one more time a week.
By when? Gradually work up to this over the next 3 weeks by decreasing fast food meals by one per week until I reach 3.

Goal #1:

What will you do?

How will you do it?

By when?

Goal #2:

What will you do?

How will you do it?

By when?

Goal #3:

What will you do?

How will you do it?

By when?

Follow-up Plan

When:

How:

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Synergies between MOHR and PCMH

- Systematic collection of patient-centered data
- Meaningful use of information technology
- Goal-oriented: enhance the quality of patient care
- Practical and actionable measures

Patient-Centered Medical Home

Element C: Comprehensive Health Assessment			4 points
To understand the health risks and information needs of patients/ families, the practice conducts and documents a comprehensive health assessment that includes:	Yes	No	NA
1. Documentation of age- and gender-appropriate immunizations and screenings	☐	☐	
2. Family/social/cultural characteristics	■	☐	
3. Communication needs	☐	☐	
4. Medical history of patient and family	☐	☐	
5. Advance care planning (NA for pediatric practices)	☐	☐	☐
6. Behaviors affecting health	■	☐	
7. Patient and family mental health/substance abuse	■	☐	
8. Developmental screening using a standardized tool (NA for adult-only practices)	☐	☐	☐
9. Depression screening for adults and adolescents using a standardized tool.	■	☐	

Patient-Centered Medical Home

Element A: Implement Evidence-Based Guidelines		**4 points**
The practice implements evidence-based guidelines through point-of-care reminders for patients with:	**Yes**	**No**
1. The first important condition+	☐	☐
2. The second important condition	☐	☐
3. The third condition, related to unhealthy behaviors or mental health or substance abuse.	■	☐

Element B: Identify High-Risk Patients		**3 points**
To identify high-risk or complex patients, the practice:	**Yes**	**No**
1. Establishes criteria and a systematic process to identify high-risk or complex patients	■	☐
2. Determines the percentage of high-risk or complex patients in its population.	■	☐

Patient-Centered Medical Home

50 PCMH 3: Plan and Manage Care

Element C: Care Management *MUST-PASS*			**4 points**
The care team performs the following for at least 75 percent of the patients identified in Elements A and B.	**Yes**	**No**	**Enter Percent**
1. Conducts pre-visit preparations	☐	☐	
2. Collaborates with the patient/family to develop an individual care plan, including treatment goals that are reviewed and updated at each relevant visit	■	☐	
3. Gives the patient/family a written plan of care	■	☐	
4. Assesses and addresses barriers when the patient has not met treatment goals	■	☐	
5. Gives the patient/family a clinical summary at each relevant visit	☐	☐	
6. Identifies patients/families who might benefit from additional care management support	■	☐	
7. Follows up with patients/families who have not kept important appointments	☐	☐	

Patient-Centered Medical Home

PCMH 4: Provide Self-Care Support and Community Resources 57

Element A: Support Self-Care Process *MUST-PASS*	**6 points**		
The practice conducts activities to support patients/families in self-management:	**Yes**	**No**	**Enter Percent**
1. Provides educational resources or refers at least 50 percent of patients/families to educational resources to assist in self-management	■	☐	
2. Uses an EHR to identify patient-specific education resources and provide them to more than 10 percent of patients, if appropriate++	☐	☐	
3. Develops and documents self-management plans and goals in collaboration with at least 50 percent of patients/families	☐	☐	
4. Documents self-management abilities for at least 50 percent of patients/families	☐	☐	
5. Provides self-management tools to record self-care results for at least 50 percent of patients/families	■	☐	
6. Counsels at least 50 percent of patients/families to adopt healthy behaviors	■	☐	

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Patient-Centered Medical Home

60 PCMH 4: Provide Self-Care Support and Community Resources

Element B: Provide Referrals to Community Resources	3 points	
The practice supports patients/families that need access to community resources:	Yes	No
1. Maintains a current resource list on five topics or key community service areas of importance to the patient population	■	☐
2. Tracks referrals provided to patients/families	☐	☐
3. Arranges or provides treatment for mental health and substance abuse disorders	■	☐
4. Offers opportunities for health education programs (such as group classes and peer support.)	☐	☐

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Context around implementation

- Research process issues
  - MOHR data collected by phone, mail, in clinic?
  - Informed consent necessary?
- Clinic-level
  - Were there local champions?
  - Concerns about staff time/overload
  - Robust system of referral to community resources?
- Patient-level
  - literacy, educational level, age, tech savvy, no shows/cancellations

Discussion

- How do you think these data could be useful to you?