



Feasibility and Effectiveness of a Wraparound-Specific Electronic Health Record

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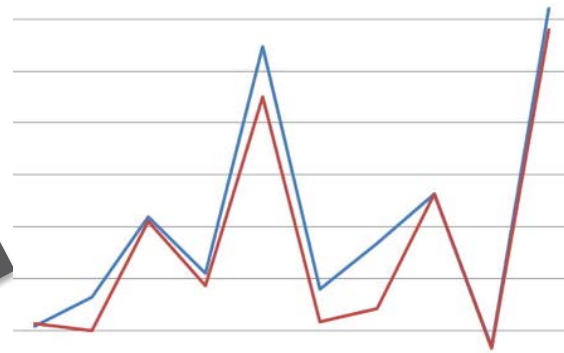
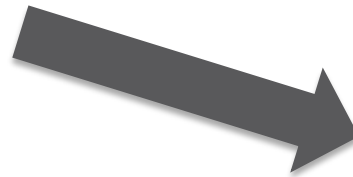
30th Annual Research & Policy Conference on Child, Adolescent and Young Adult
Behavioral Health

March 6, 2017

Acknowledgments

- FidelityEHR
 - Founder & CEO Kelly L. Hyde, PhD
 - Formerly *Social TecKnowledge*
 - Mission:
 - *“To support empowerment, engagement and healthy outcomes through innovations in technology for families and communities.”*
 - TMS-WrapLogic rebranded in January 2016
- This study funded by the National Institute of Mental Health (R42-MH95516; PI Bruns)

Research Hypothesis: Health Information Technology (HIT) can facilitate efficiency, fidelity, positive outcomes



NIMH Small Business Technology Transfer (STTR) Study

Three phases:

- ✓ **Phase 1:** Program elements of FidelityEHR
- ✓ **Phase 2:** User Experience Testing: Determine if FidelityEHR is feasible and usable
- ✓ **Phase 3:** Determine if transitioning from paper to FidelityEHR impacts Wraparound implementation by providers and outcomes for youth and families

FidelityEHR Highlighted Features

- Secure, web-based login
- User friendly interface
- Customizable Workflows
- High Fidelity Wraparound-based Plan of Care
- Contact/Progress Notes, Critical Incident Tracking
- Progress Monitoring plus Assessment Builder
- Secure Messaging and Scheduling
- Report Builder for program and system decision support
- CANS Builder, Algorithms, T-COM Reports

FidelityEHR Record Navigation and Workflow



Danielle Phillips
11 CANS Admin Demo

Menu



- Dashboard
- Youth
- Family
- Team
- Assessments
- Plan Of Care
- Contacts/Service Notes
- Critical Incidents
- Documents

Youth Name: Hughes, Heather
Case Number: 58999555
Organization Name: 11 CANS Admin Demo

Work Flow

Case Number:

TASKS	COMPLETED	LAST UPDATED
Referral		
Enter Referral Form Data		
Select Funding Stream		
Facilitator Assigned	✓	01/09/2017
Intake/Family Story		
Complete Family Interview		
Team		
Build Team		
Initial Team Meeting		
POC		
Create Plan of Care		
Complete Family Vision		
Complete I Strengths I		

Youth Record Dashboard

Facilitator Assignment

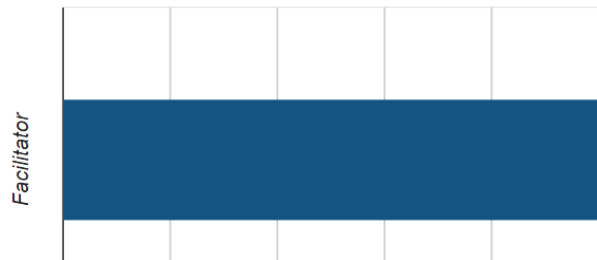
Facilitator Assignment - Key

This graph depicts the Facilitator assignment over time.

Each Facilitator assigned to work with the Youth will be shown as a colored bar on the graph

- Barbara Brody - 6.7

Facilitator Assignment



FidelityEHR Plan of Care

Youth Name: Hernandez, Esther

Version: Current (12/15/2015) ▾ (Only the Current Version can be Edited.)

5. Needs, Outcomes, Strategies

[+](#) ADD NEW

[+](#) ADD MULTIPLE

[☰](#) EXPAND ALL

<p>- Esther needs to better understand how to manage her anxiety in socially acceptable ways</p>	<p><u>Start Date - Desired Complete Date</u> 12/15/2015 - 12/31/2016</p>	<p>✎ 👁 ✕ EDIT REVIEW DELETE</p>
<p>Strategy Esther will attend Inner Life Skills classes 2x a week to increase emotional regulation skills in the classroom.</p>	<p>Formal No</p>	<p>+ ✕ ADD / EDIT DELETE</p>
<p>Tasks + ADD / EDIT</p> <p>No Tasks exist yet for this Strategy.</p>	<p>Formal</p> <p>Assigned To</p> <p>Due Date</p>	
<p>Strategy Esther will meet with counselor 2 times per week to treatment emphasizing safety</p>	<p>Formal Yes</p>	<p>+ ✕ ADD / EDIT DELETE</p>

- 1 Family Vision and Team Strengths
- 2 Crisis Plan
- 3 Team Mission
- 4 Assessments
- 5 Needs, Outcomes, Strategies**
- 6 Other Summary and Team Details
- 7 Admin Info Sheet
- 8 Care Coordinating Organization

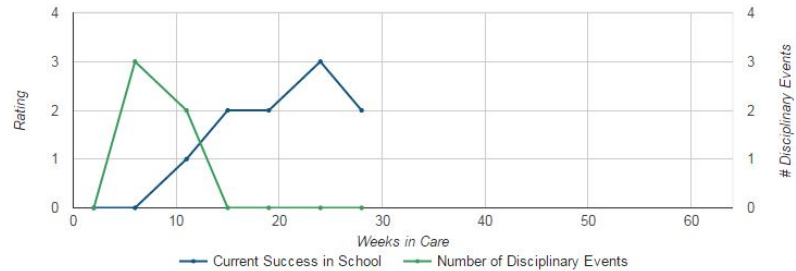
FidelityEHR Core Assessments

School Outcomes - Key

Current Success in School

- 3 - Significant Success
 - 2 - Some Success
 - 1 - Some problems
 - 0 - Significant problems
- [Print Report](#)

School Outcomes



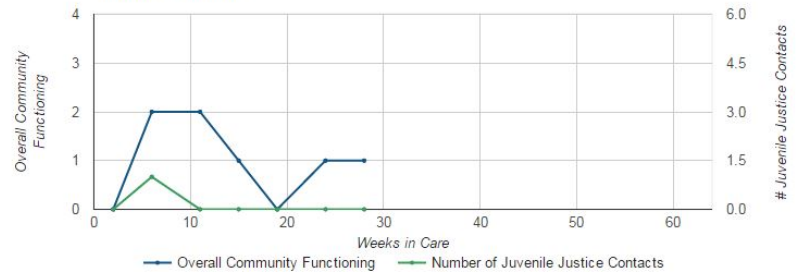
Community Outcomes

Community Outcomes - Key

Overall Community Functioning

- 3 - Yes, severe difficulties
 - 2 - Yes, definite difficulties
 - 1 - Yes, minor difficulties
 - 0 - None
- [Print Report](#)

Community Outcomes



Residential Outcomes

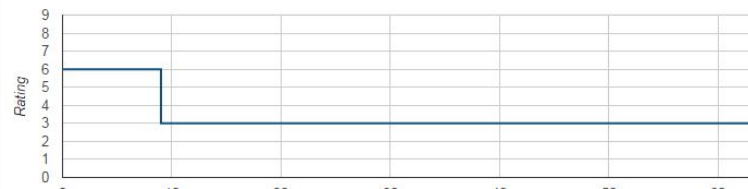
Residential Outcomes - Key

Level of Restrictiveness

- 7 - Homeless
- 6 - Residential / Treatment

lative / Friend
ing

Residential Outcomes



FidelityEHR CANS Assessment



Admin Admin
11 Fidelity EHR Demo Sandbox

Menu

- Dashboard
- Youth
- Family
- Team
- Assessments**
- Plan Of Care
- Contacts/Service Notes
- Critical Incidents
- Documents

Youth Name: Hernandez, Esther

Work Flow

Case Number: EH010101A

Organization Name: 11 Fidelity EHR Demo Sandbox

- Core Assessments
- Licensed Assessments**
- Custom Assessments
- Family Timeline
- Other Assessments

Licensed Assessments

Add

Assessments	Version	Instances	Date Added	Last Updated	Status	Actions Available
CANS	TMS (Default)		04/15/2016	06/27/2016	Completed	Edit Delete View/Print
CANS	TMS (Default)		02/15/2016	06/27/2016	Completed	Edit Delete View/Print
CANS	TMS (Default)		01/15/2016	06/27/2016	Completed	Edit Delete View/Print
CANS	TMS (Default)		12/15/2015	06/27/2016	Completed	Edit Delete View/Print

FidelityEHR CANS TCOM REPORTS

UPDATE RESULTS

Supervision: Caseload Progress Report

This report is designed to let Supervisors and clinicians quickly assess client progress over time. It is designed to display the total number of actionable needs across all entered assessments: Initials, Reassessments and Closing. Again, all items included in this report are dichotomized for action, as in the previous report. The number of actionable items across three domains (Behavioral and Emotional Needs, Functioning, and Risk Behaviors) is totaled. The graph is designed to display these results for all clients of a given clinician (filter by clinician).

Number <> ...

Domain = ...

Facilitator = Johnson, Joey

Date : Between(Calendar)

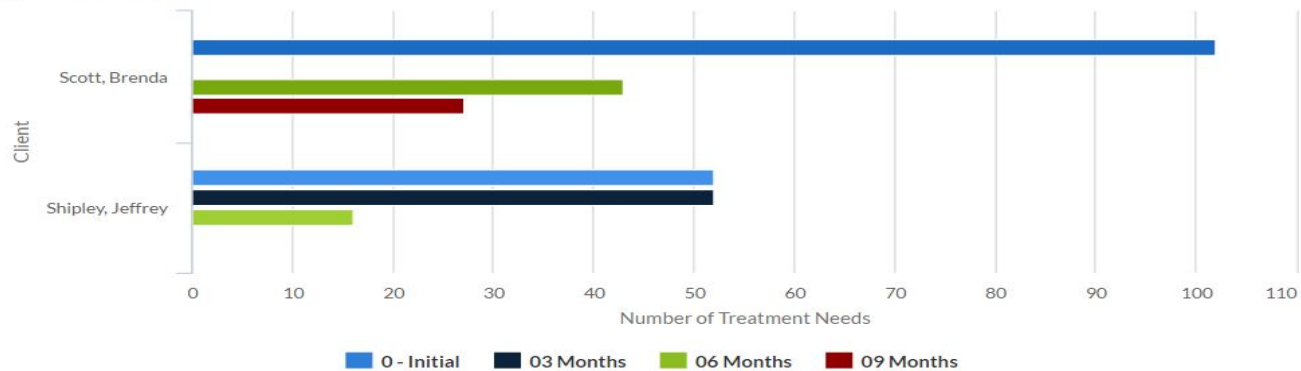
Supervisor = ...

Organization = ...

IsLatestVersion = ...

FromBaseline = ...

TypeAndPeriod = ...

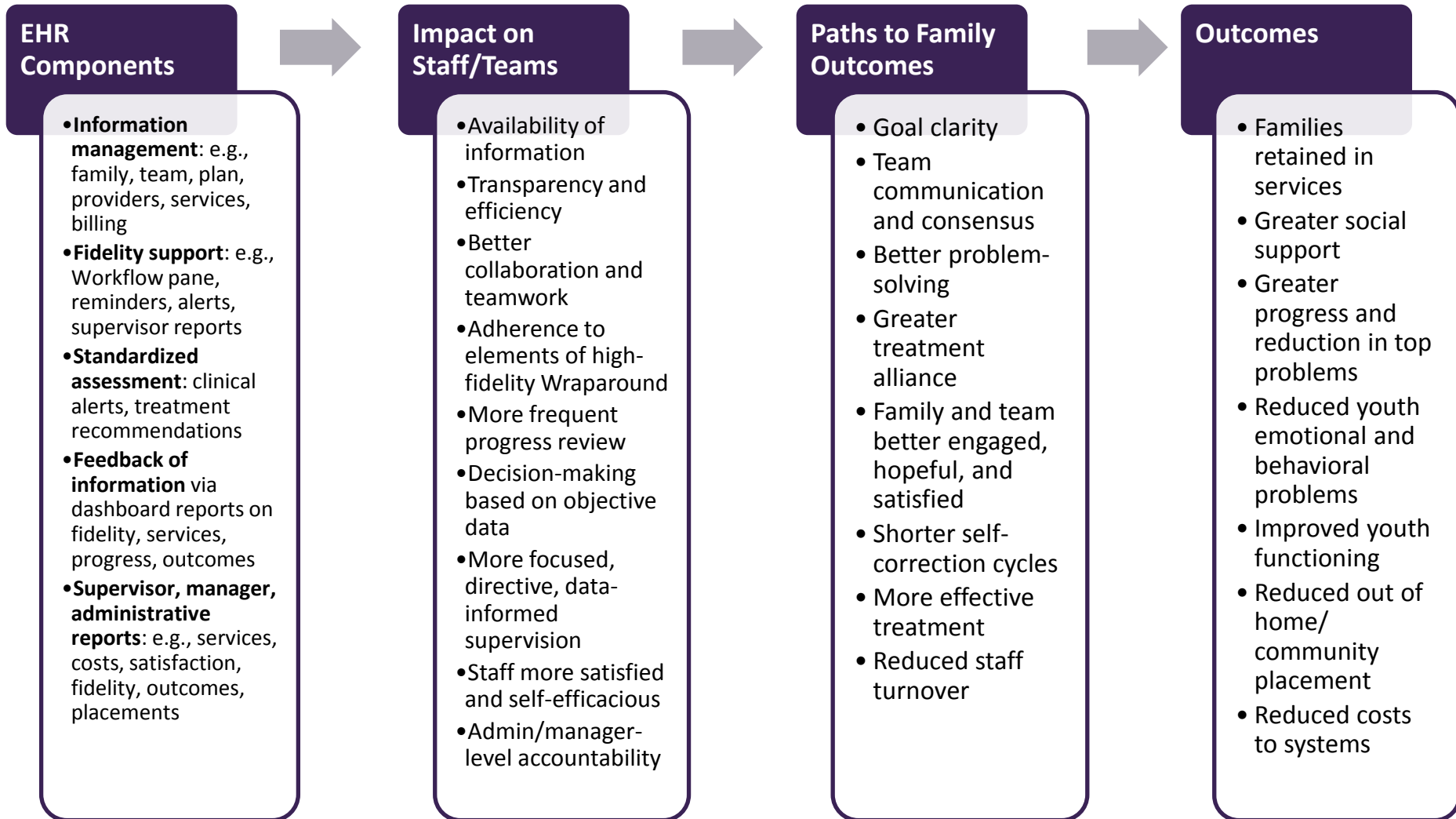


Research Aims

- Is FidelityEHR feasible, acceptable, and contextually appropriate in the “real world” of wraparound implementation?
- Comparing care coordinators randomly assigned to EHR vs. continued services as usual (SAU), how does FidelityEHR affect:
 - Wraparound supervision?
 - Wraparound practice?
 - Teamwork and Alliance?
 - Wraparound Fidelity?
 - Parent Satisfaction?



Theory of Positive Impact



Staff and family data were collected from two agencies

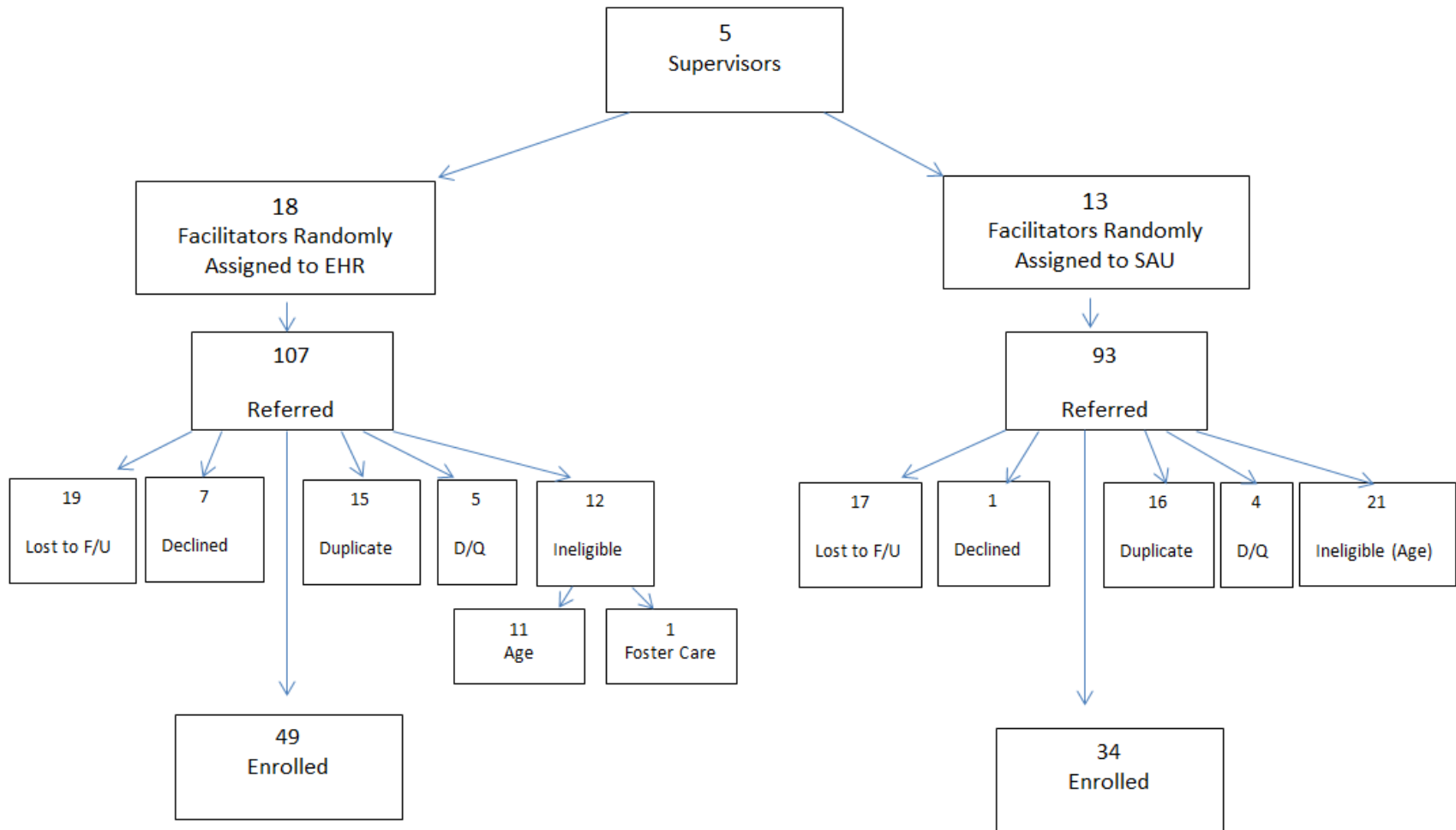
Site 1

- Wraparound organization in rural area in SE US
- Staff in study:
 - 3 Supervisors
 - 26 Facilitators

Site 2

- Agency providing multiple services including traditional Wraparound and other Wraparound-based treatment tracks in a mixed urban/rural region of a Midwestern state.
- Staff in study:
 - 2 Supervisors
 - 5 Facilitators

Study Flow (CONSORT Diagram)



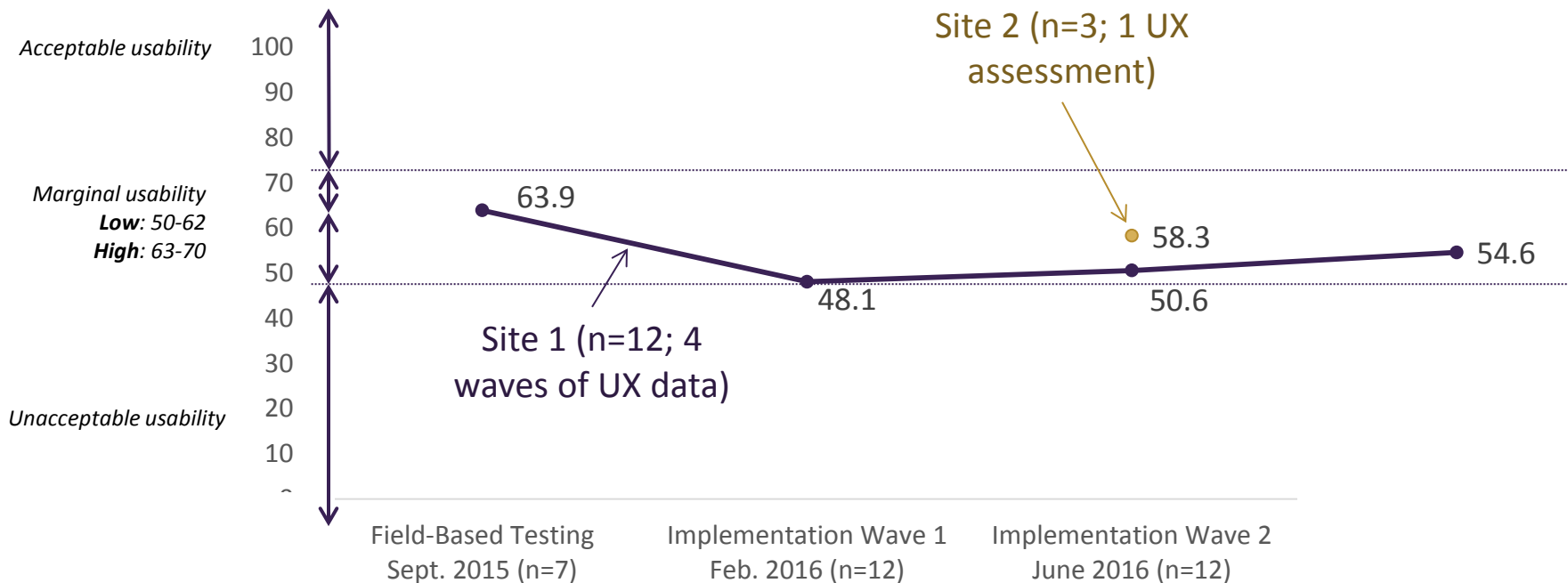
Facilitator Demographics

	EHR n = 18 (%)	SAU n = 13 (%)
Male	9 (39%)	2 (15%)
Female	11 (61%)	11 (85%)
White	12 (67%)	10 (77%)
African American	5 (28%)	2 (15%)
Hispanic	0	1 (8%)
Other	1 (6%)	0

RESULTS: Usability

EHR usability ratings in marginal range but slowly increased over time

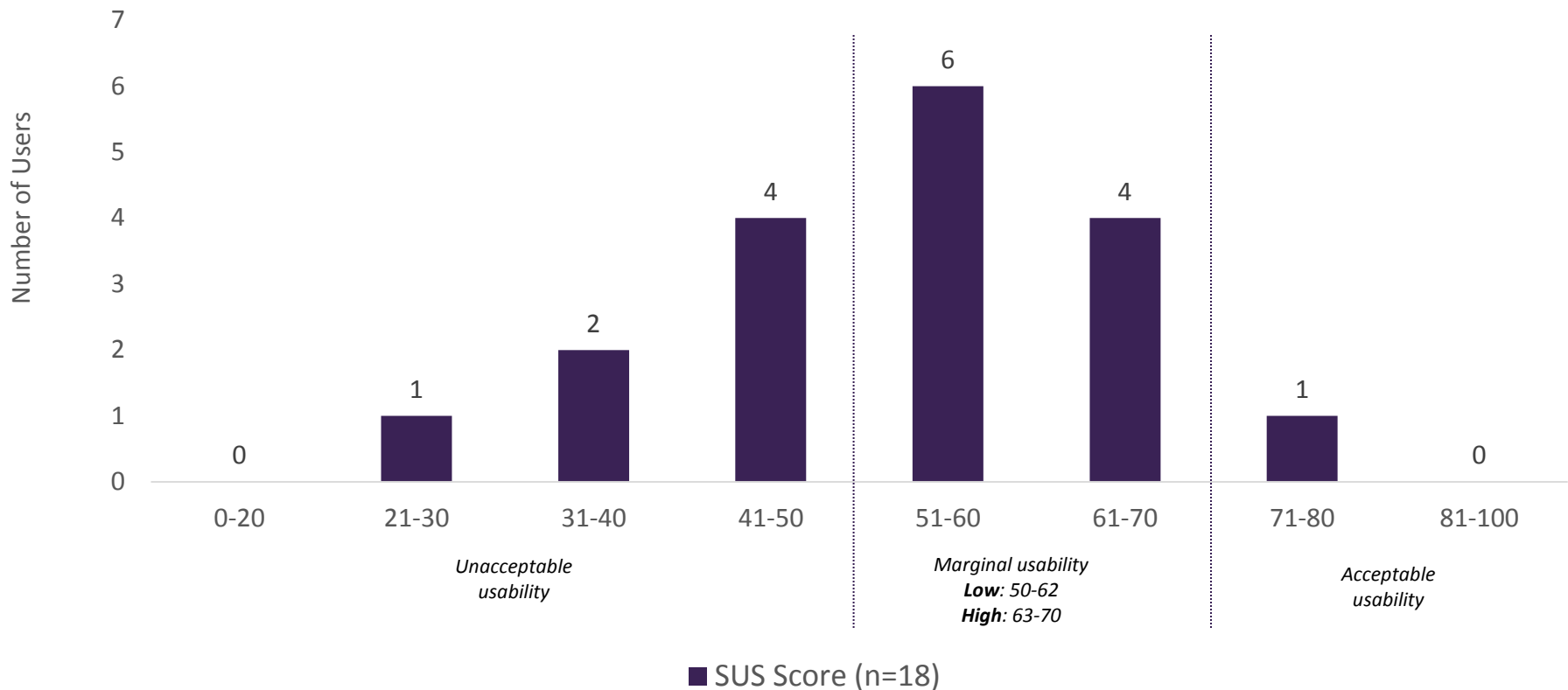
- The System Usability Scale (SUS) provides a quick and easy understanding of a user's subjective rating of a product's usability
- 12 facilitators completed the SUS over the course of one year (Site 1)
- 3 facilitators completed the SUS at 6 months only (Site 2)



The distribution of scores indicate a range of opinions on usability

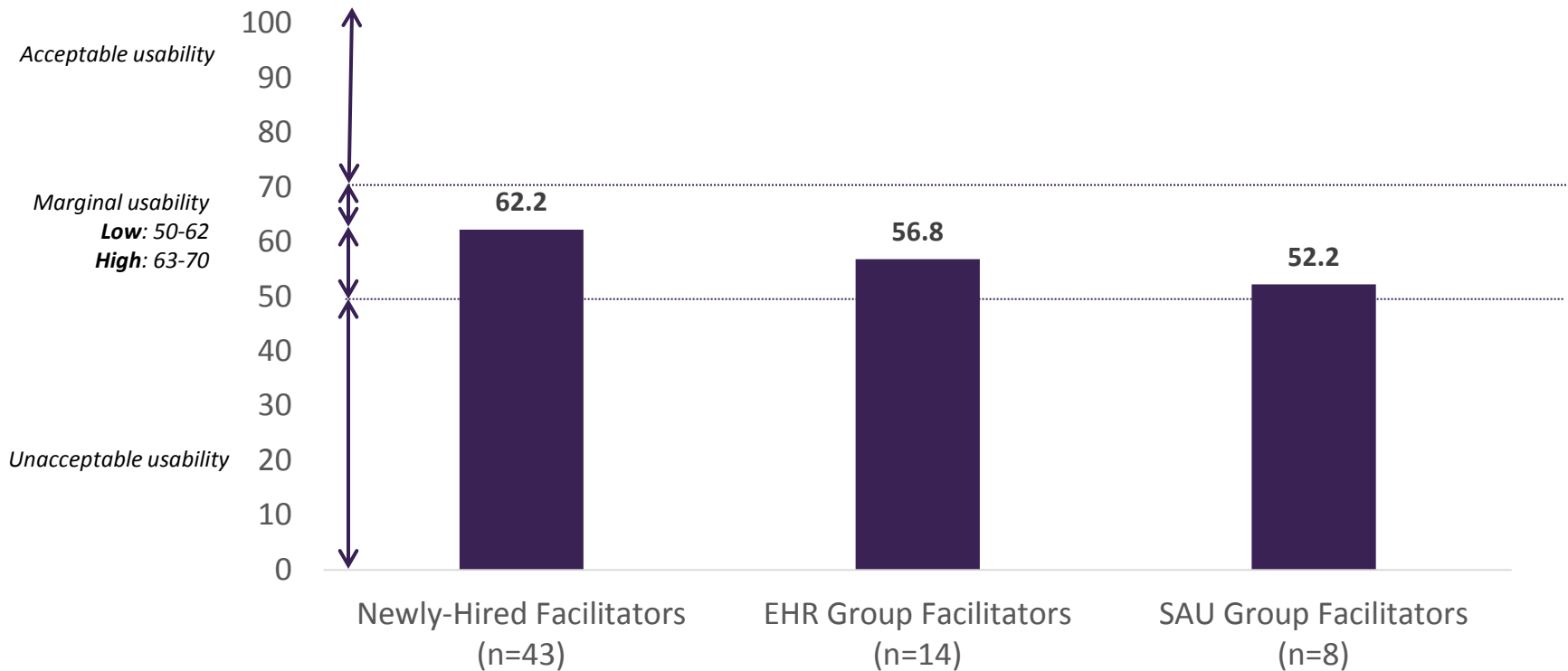
- The distribution indicates more than half of the users (61%) rated FidelityEHR with Marginal or Acceptable usability after 6 months of use

Distribution of SUS Scores for both agencies



Facilitators newly hired and trained on system report higher usability ratings

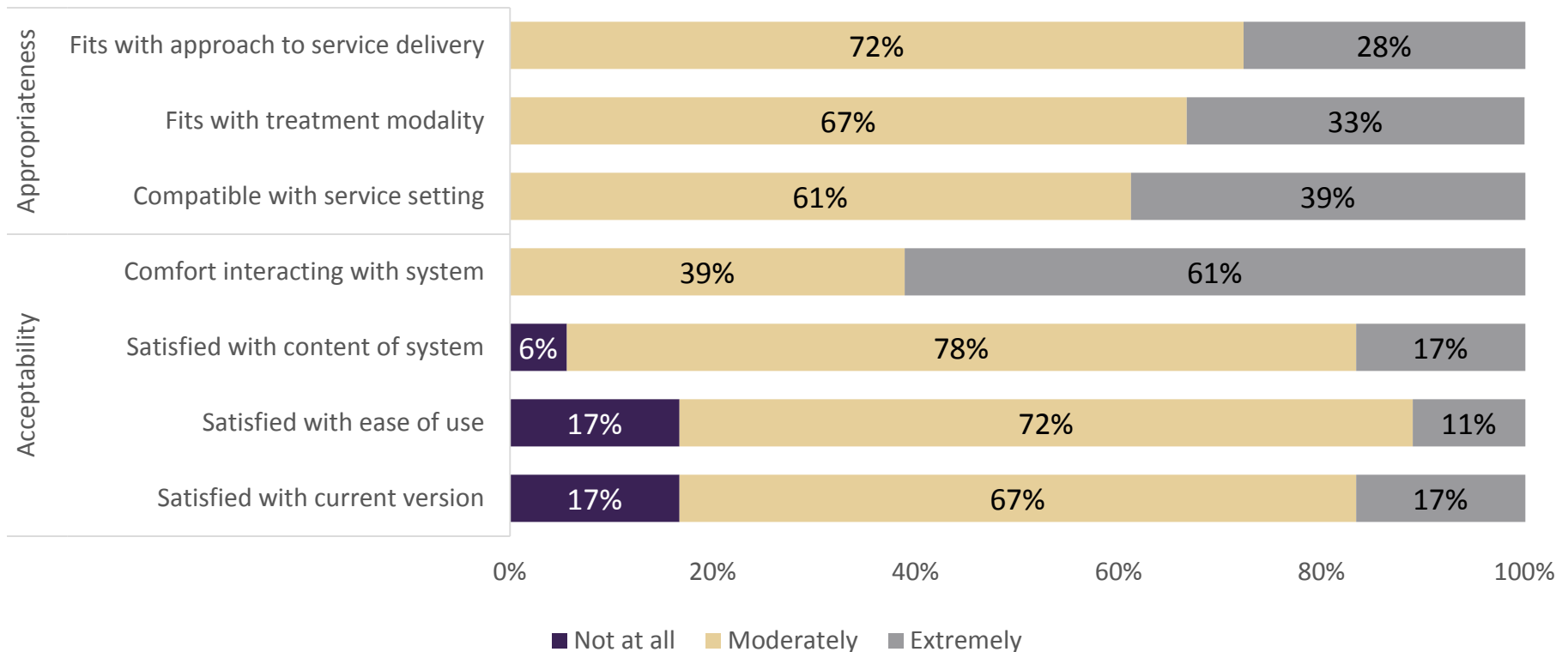
- Facilitators trained on FidelityEHR as part of their onboarding process report higher ratings for usability than facilitators in the research study



Staff report EHR aligns well with Wraparound service setting

- System Acceptability & Appropriateness scale (SAAS) gauges satisfaction, utility, and fit with service context of technology

Staff (n=18) rate the degree to which they agree with each item at 6 months



Qualitative feedback: Strengths of the system

- “Can quickly pull reports”
- “Can more easily make changes on the fly”
- “Better direction of where to go in supervision”
- “More aware of looking at needs and progress”
- “Great to be able to work remotely”
- “Families are better at understanding their outcomes”
- “Overall, love the system compared to the old one... Keeps us focused on particular needs & outcomes, more organized with monitoring”
- “Tasks flow from strategies which link to needs”
- “System is overall good... just need to work out kinks”

Qualitative feedback: Needs for system improvement

- “Contact logs take a lot of clicks... and we use it the most”
- “Team meeting reminders aren’t consistent”
- “Core assessments don’t all display in supervision”
- “Plan of Care is too long – can’t just print one page (e.g., assessments) ... need POC report builder”
- “Tedious to add and delete strategies”
- “Can’t sort contact logs by dates”

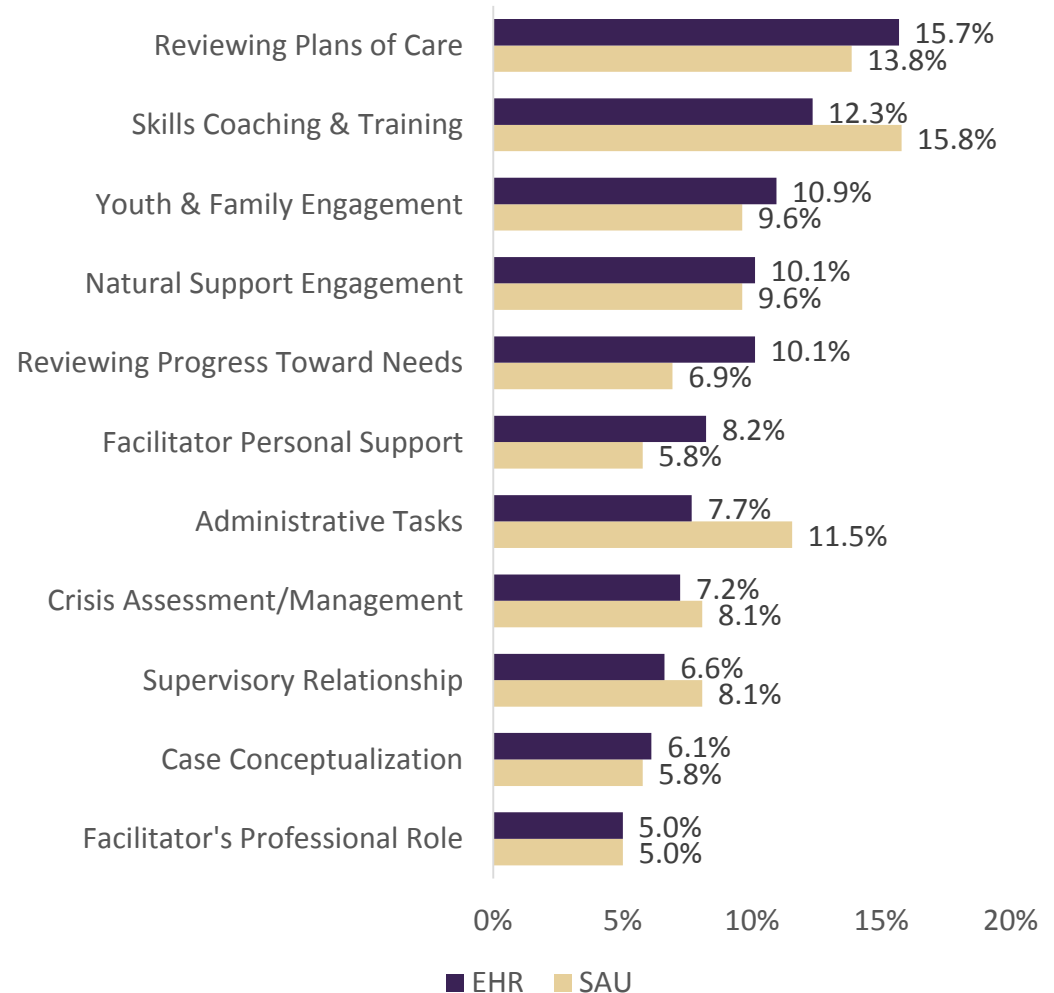
Qualitative feedback: Change is hard, and transition to EHR must be done strategically

- “First weeks were hard – challenging to have conflicting answers from supervisors... hard because things weren’t sorted out”
- “Hard to learn all at once – had a lot of workarounds”
- “Would have been better to have earlier trainings, and a better user’s manual”
- “Took a long time to transition... couldn’t breathe til March”
- “EHR was added to the CAFAS, Suicidal Ideation/BX assessment, assessments asking families at EVERY team meeting how they do and how they feel, Protective Risk Factors Survey, etc. there is too much... we are overwhelmed with requirements”
- “Starting to get the hang of it but study data will be impacted because we weren’t using the system to its maximum capacity ... just trying to get by”

RESULTS: Changes in Practice

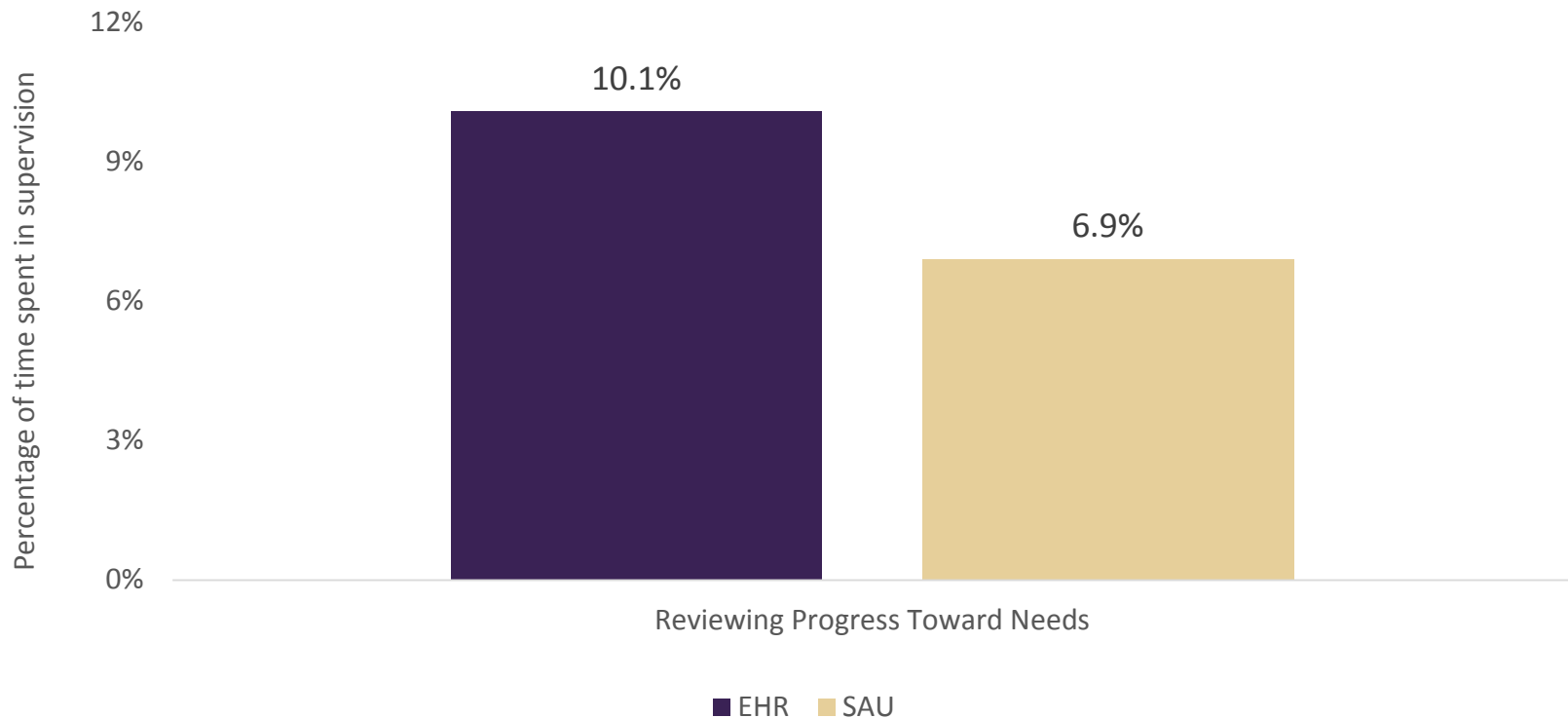
Supervisors report small differences in supervision activities by group

- After six months of FidelityEHR use, Wraparound Supervisors report how much time they spent on certain activities in supervision with Facilitators
- Reviewing Plans of Care and Skills Coaching & Training take up approximately one-third of supervision



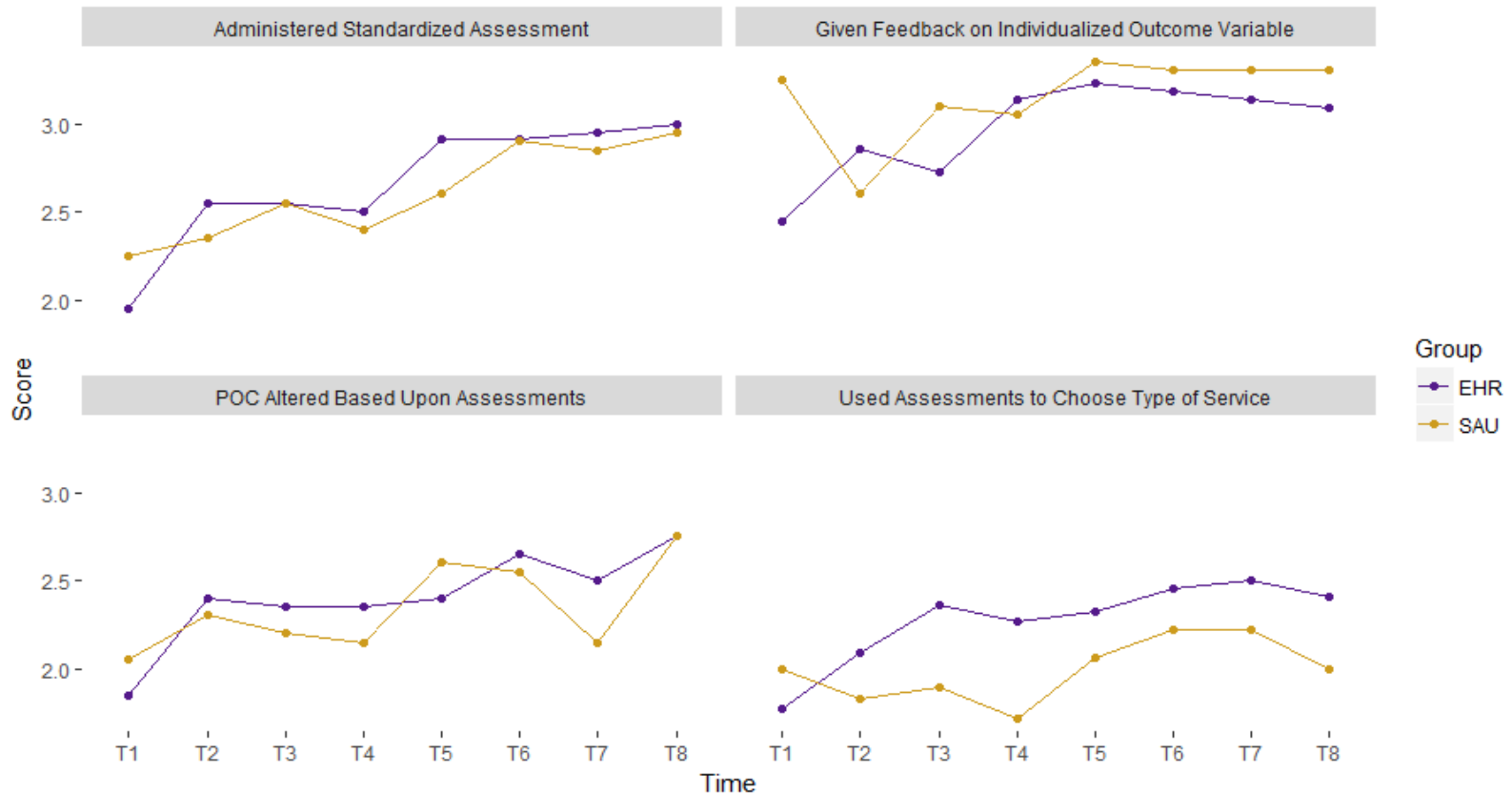
Supervisors report more time reviewing progress toward needs for EHR staff ($p < .01$)

- EHR group spends more time reviewing progress toward needs compared to the SAU group



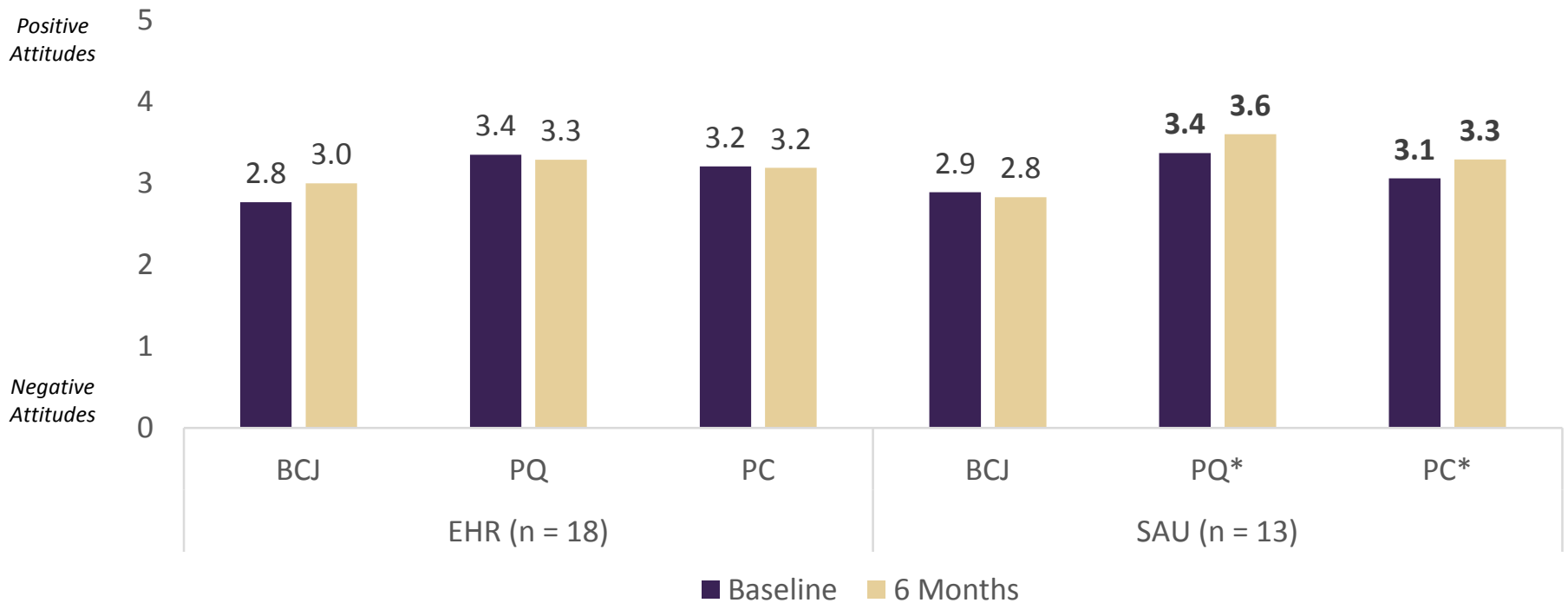
Facilitators report shifts in practice throughout the course of EHR use

- The Current Assessment Practice Evaluation – Revised (CAPER) was administered to facilitators on a biweekly basis for eight months to assess the degree to which their practice was influenced by reviewing assessment data



Attitudes toward standardized measures higher for SAU group at 6 months

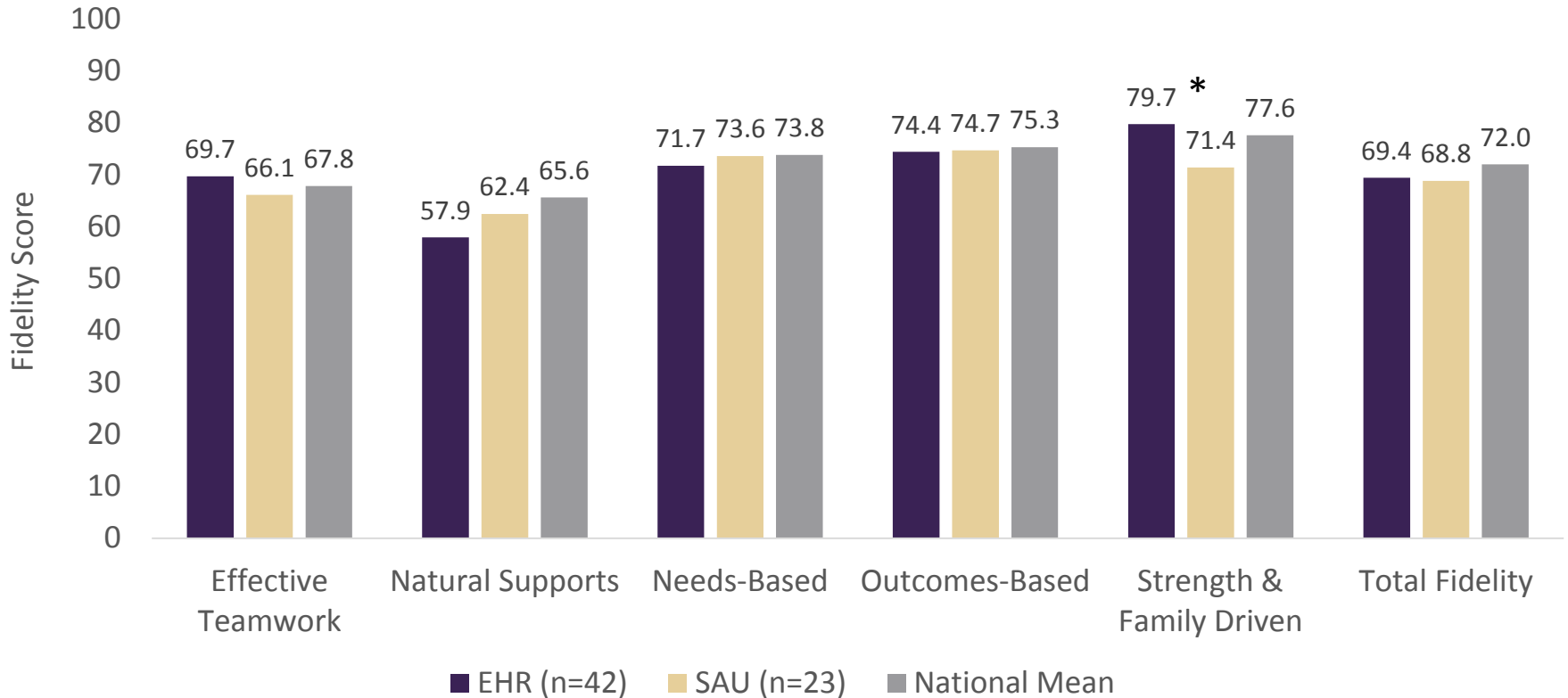
- At the 6-month follow-up, SAU facilitators reported improved attitudes toward the reliability and validity of standardized measures and had more positive opinions about using standardized measures compared to EHR group



* Indicates item is significantly different; $p < .05$

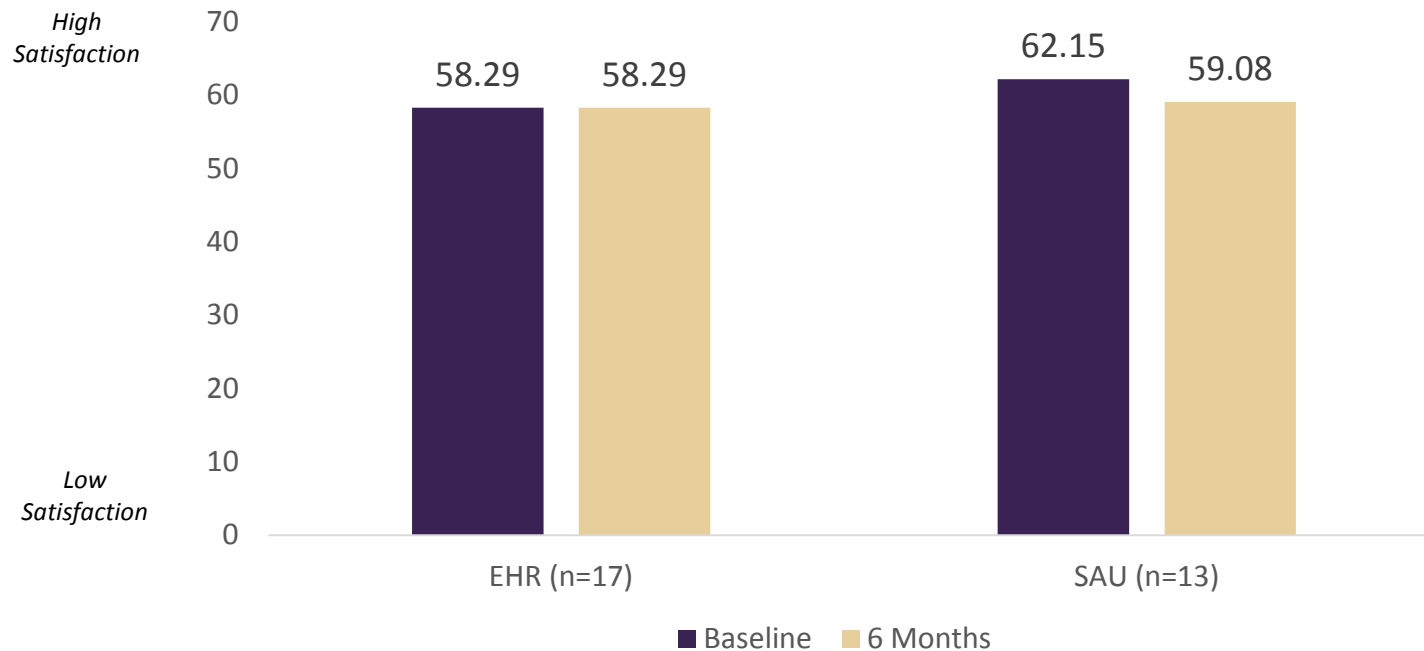
Fidelity to Wraparound

- Caregivers completed the WFI-EZ after four months of Wraparound services
- No difference found for total fidelity
- Marginal difference (*p=.1) in favor of EHR found for **Strength/Family Driven**



Facilitator satisfaction with Wraparound practice is high

- Clinician Satisfaction Index measured general feelings about using the Wraparound process
- Both groups report high job satisfaction; scores in SAU group declined slightly between baseline and six months

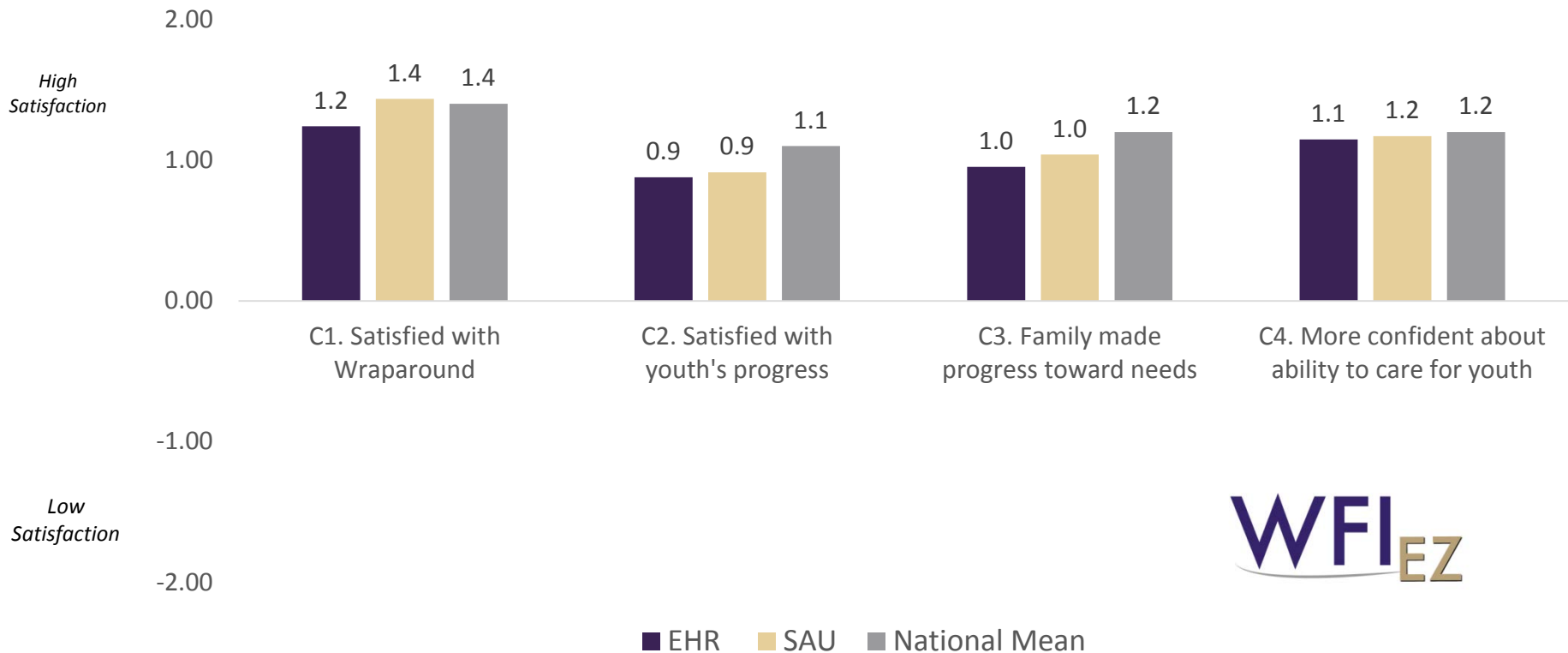


RESULTS:

Impact on Youth & Family Experiences

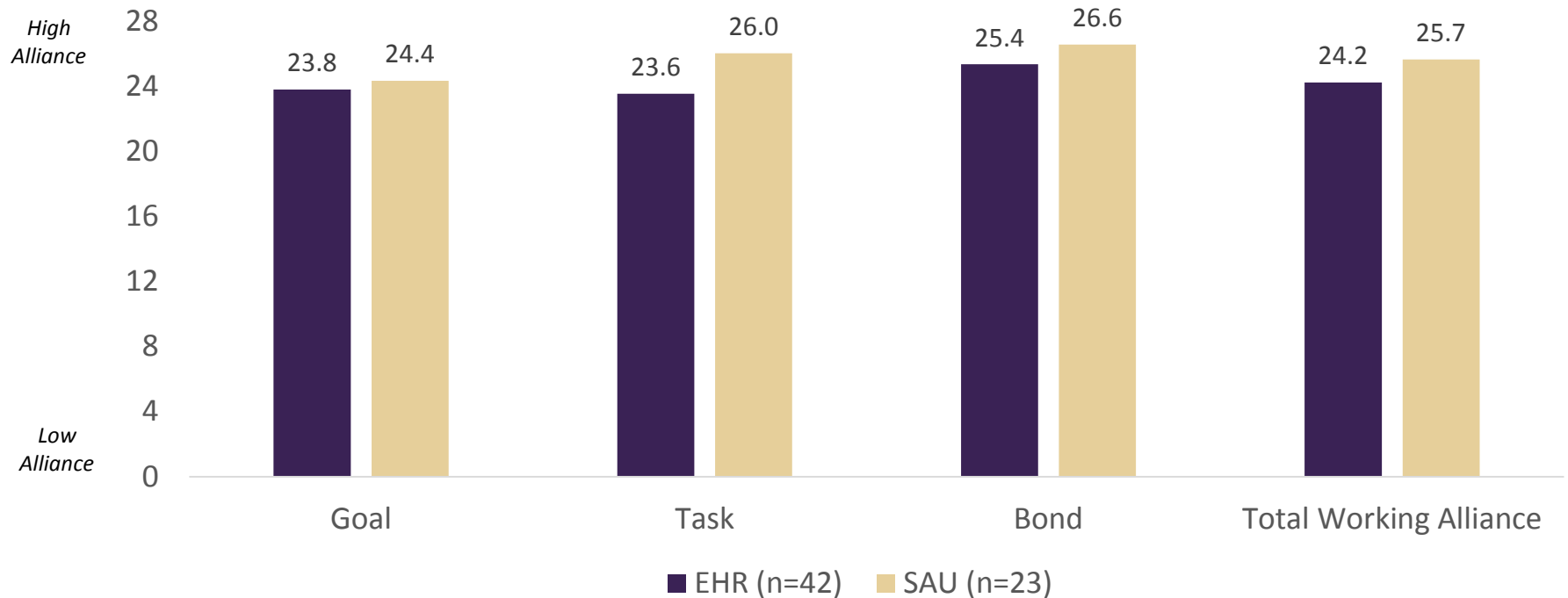
No significant differences in Caregiver Satisfaction

- Caregivers are generally satisfied with services



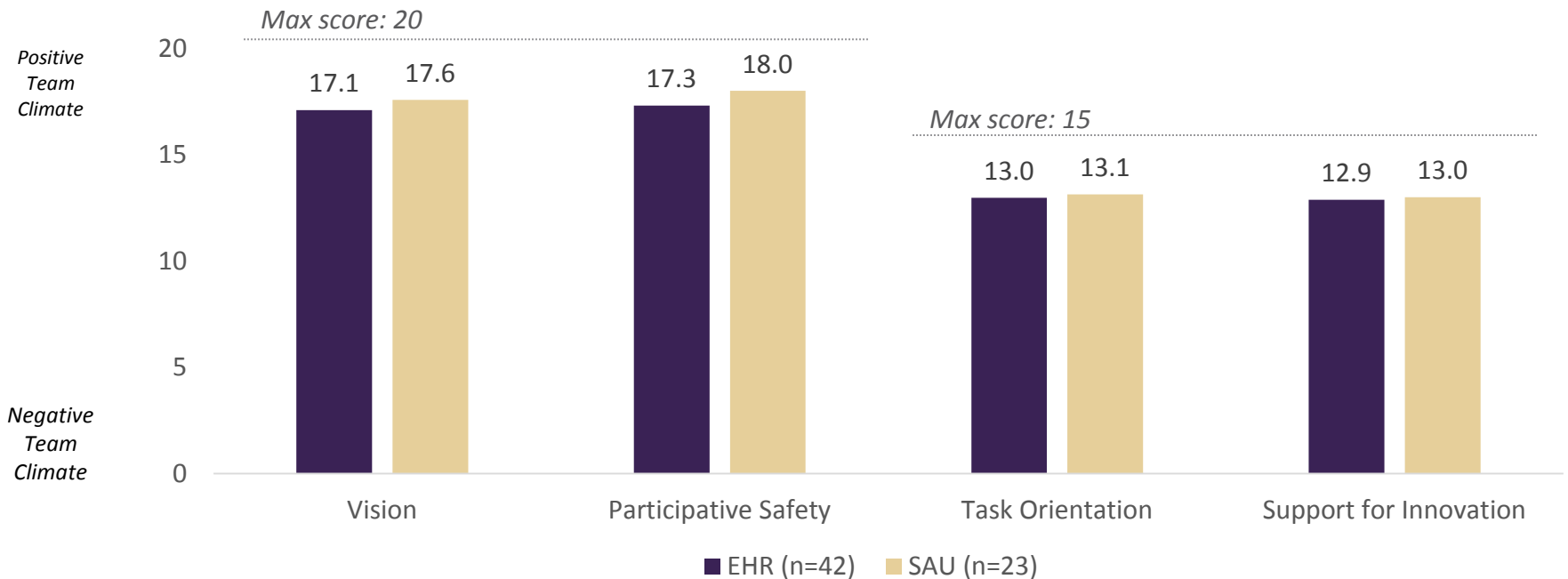
Caregivers in both groups report positive working alliance with facilitators

- Working Alliance Inventory (WAI) quantifies the degree to which team members work collaboratively and connect emotionally with items such as, “My Facilitator and I trust one another”



Caregivers report a positive team climate for both groups

- The Team Climate Inventory (TCI) assesses team interactions and performance with items such as, “We have a ‘we are in it together’ attitude”
- Both groups report positive team climate

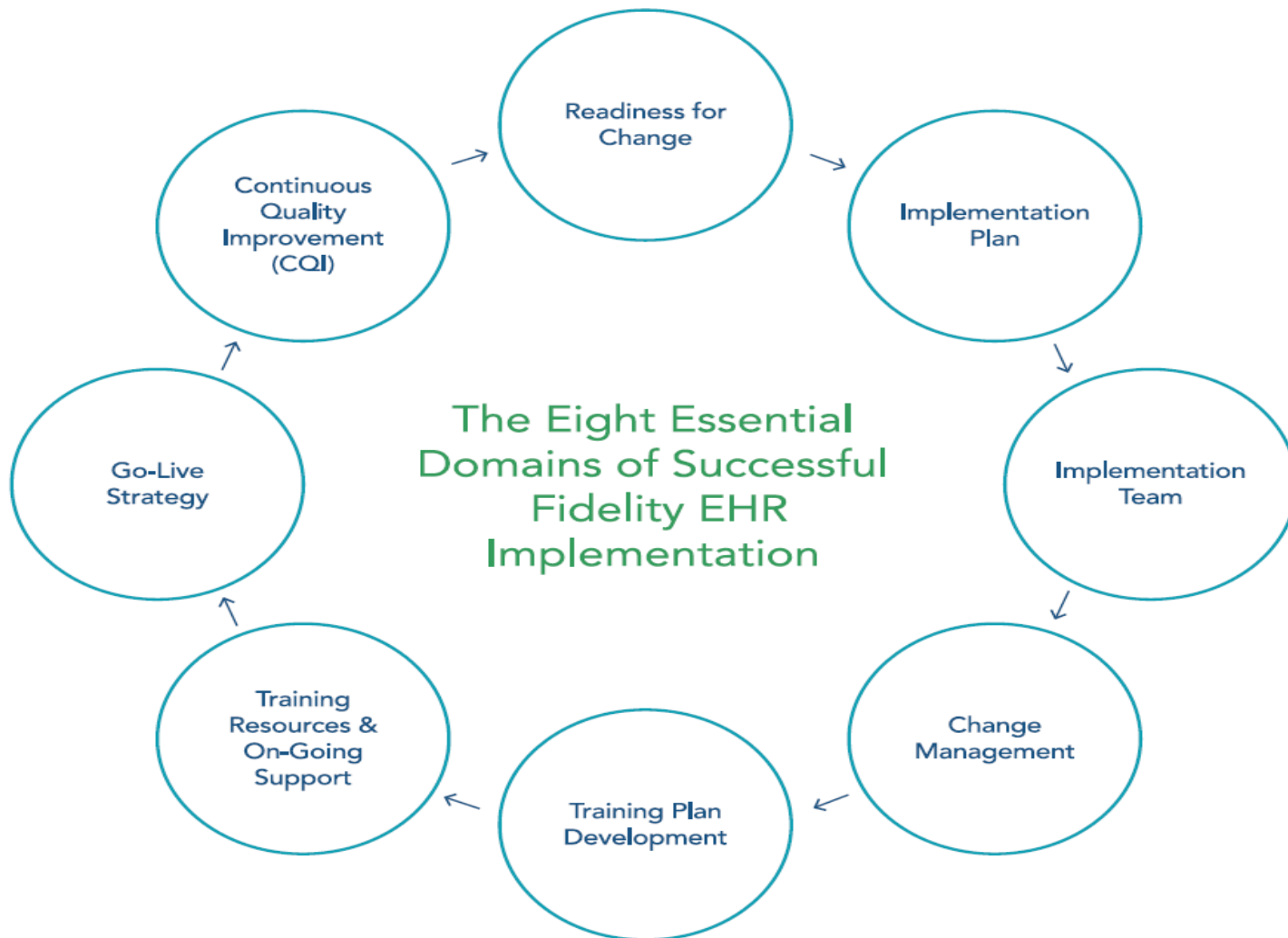


DISCUSSION & IMPLICATIONS

Successful EHR Implementation is becoming a science in and of itself

- Studies of successful EHR implementation have consistently recognized the importance of thoughtful planning and training in the implementation process:
 - Timing training to coincide with implementation
 - Targeting training to users' needs
 - Providing knowledgeable on-site support

Eight Domains of Successful EHR Implementation



Limitations Borne of Implementation and Study Challenges

- Rapid training and implementation cycles
- Staff-level randomization within supervisors/programs
 - Disruptions to routines
 - Supervisors having to supervise differently depending on staff
- System still being improved in response to feedback

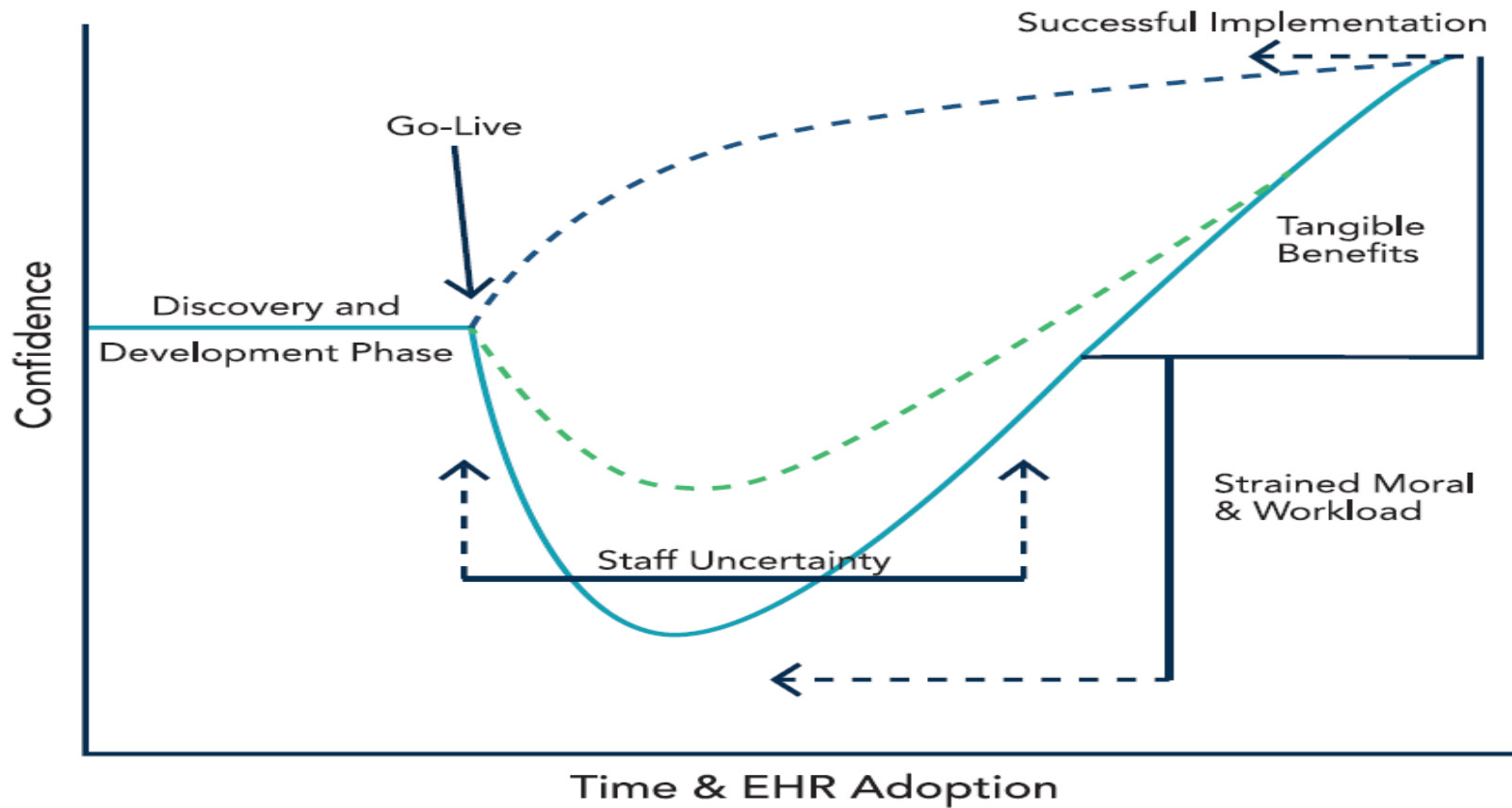
Discussion:

User Experiences

- Staff report EHR aligns with Wraparound service setting
- Marginal usability reported overall
- User opinions ranged from low to high
 - Typical patten of “eager adopters” vs “laggers”
 - Staff saw strengths of the EHR, but also experienced multiple “kinks” during study to be addressed by development team
- Usability scores increase over time
 - Those who experienced the software as “part of their job” or trained as part of onboarding were more satisfied
 - Those who had to “change practice” and/or do different things from their colleagues less satisfied

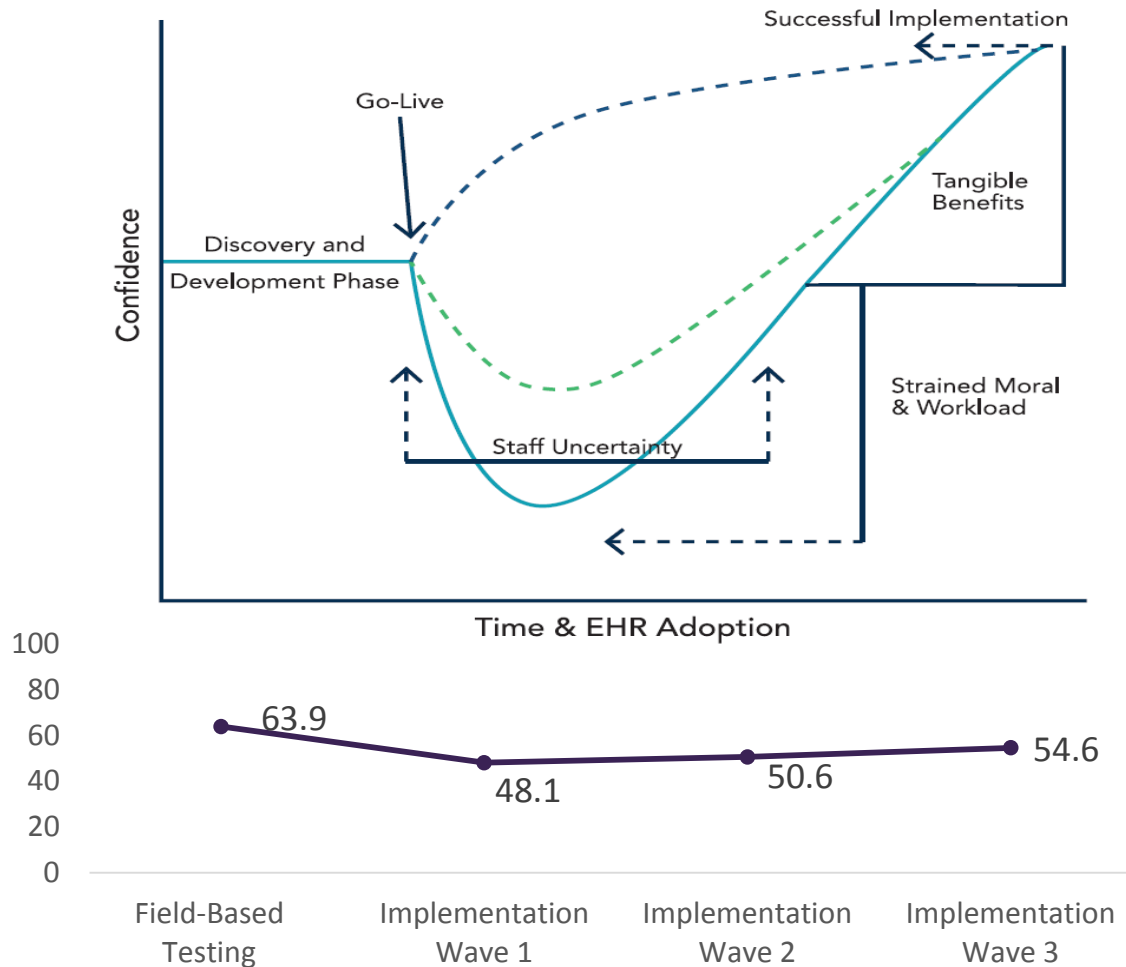
User confidence levels over time during EHR adoption

Confidence and Usability starts high, typically declines, then increases again



EHR Implementation Confidence and Adoption Similar to Usability Ratings Found in Study

User Confidence Levels During Fidelity EHR Implementation



Discussion:

Impact on Practice & Implementation

- Few significant findings:
 - EHR group spends more time reviewing progress toward needs compared to the SAU group
 - EHR group had marginally better fidelity in one area (Strengths and Family Driven)
 - Both groups demonstrated significantly improved use of assessment and feedback
 - Side effect of investment in EHR agency-wide in these sites?
 - SAU facilitators report more positive opinions about using standardized measures at 6 months

Implications

- Rigorous study provided opportunity for substantial improvements FidelityEHR System
 - Staff viewed system as appropriate to wraparound context, but change was hard and improvements were needed
- Modest but positive shifts in some proximal outcomes (supervision, use of data, fidelity) and lack of negative impact on satisfaction, teamwork, staff job satisfaction could be viewed favorably given the challenges
- Wraparound-specific EHR in wraparound worthy of continued development and research

Discussion:

Next Steps

- Complete analysis on youth and family outcomes
- More rigorous grant with:
 - Updated FidelityEHR system featuring revamped “responsive design”
 - More time / resources for implementation support
 - Longer follow-up



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