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Can an Electronic Health Record (EHR) Promote Implementation Quality and Fidelity in Children's Behavioral Health?

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FidelityEHR

4th Biennial Society for Implementation Research Collaboration

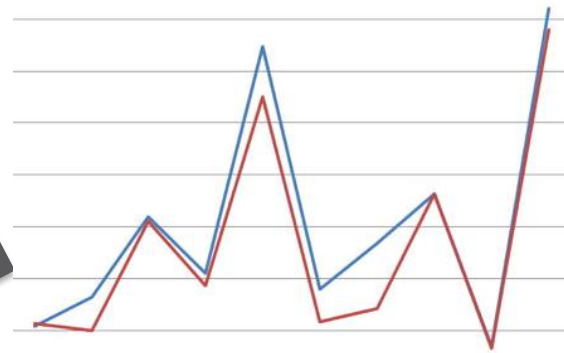
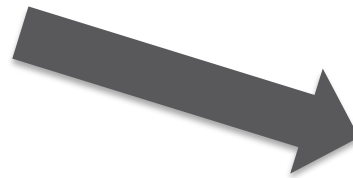
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Health Information Technologies (HIT) increasingly Function as Implementation Strategies

(Lyon & Lewis, 2016)

- Some subtypes of HIT support service quality monitoring and can be classified within “quality management” implementation strategies (Powell et al., 2012, 2015)
- HIT simultaneously function as practitioner-facing implementation strategies and client-facing intervention components.

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
- Contact/Progress Notes, Critical Incident Tracking
- Secure Messaging and Scheduling
- Report Builder for program and system decision support
- *High-Fidelity Wraparound-based Plan of Care*
 - *Including family vision, team mission, individualized needs statements, strategies linked to needs, etc*
- *Workflow pane customized to Wraparound Care Coordination*
- *Idiographic Progress Monitoring plus Standardized Assessment Builder*

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

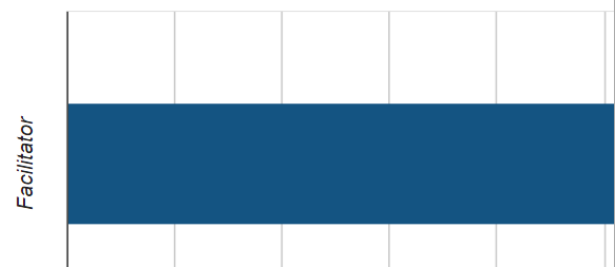
Facilitator Assignment - Key

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

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

- 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

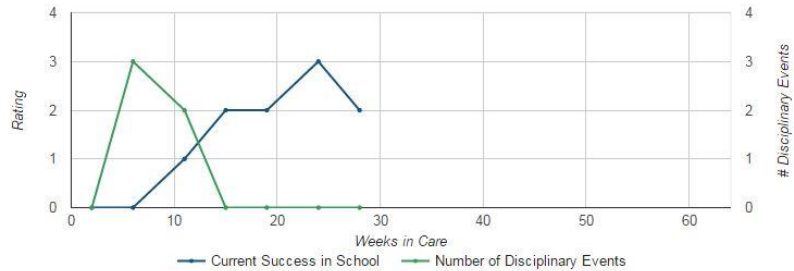
School Outcomes - Key

Current Success in School

- 3 - Significant Success
- 2 - Some Success
- 1 - Some problems
- 0 - Significant problems

[Print Report](#)

School Outcomes



Community Outcomes

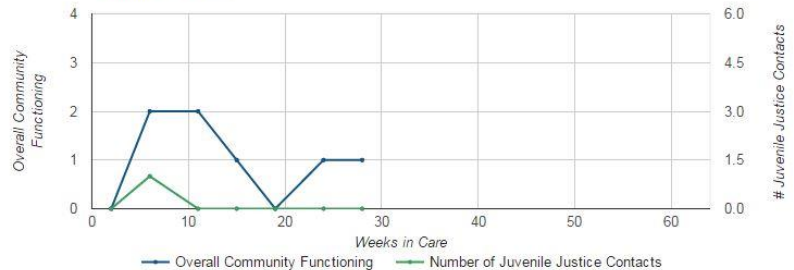
Community Outcomes - Key

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

ative / Friend
ing

Residential Outcomes



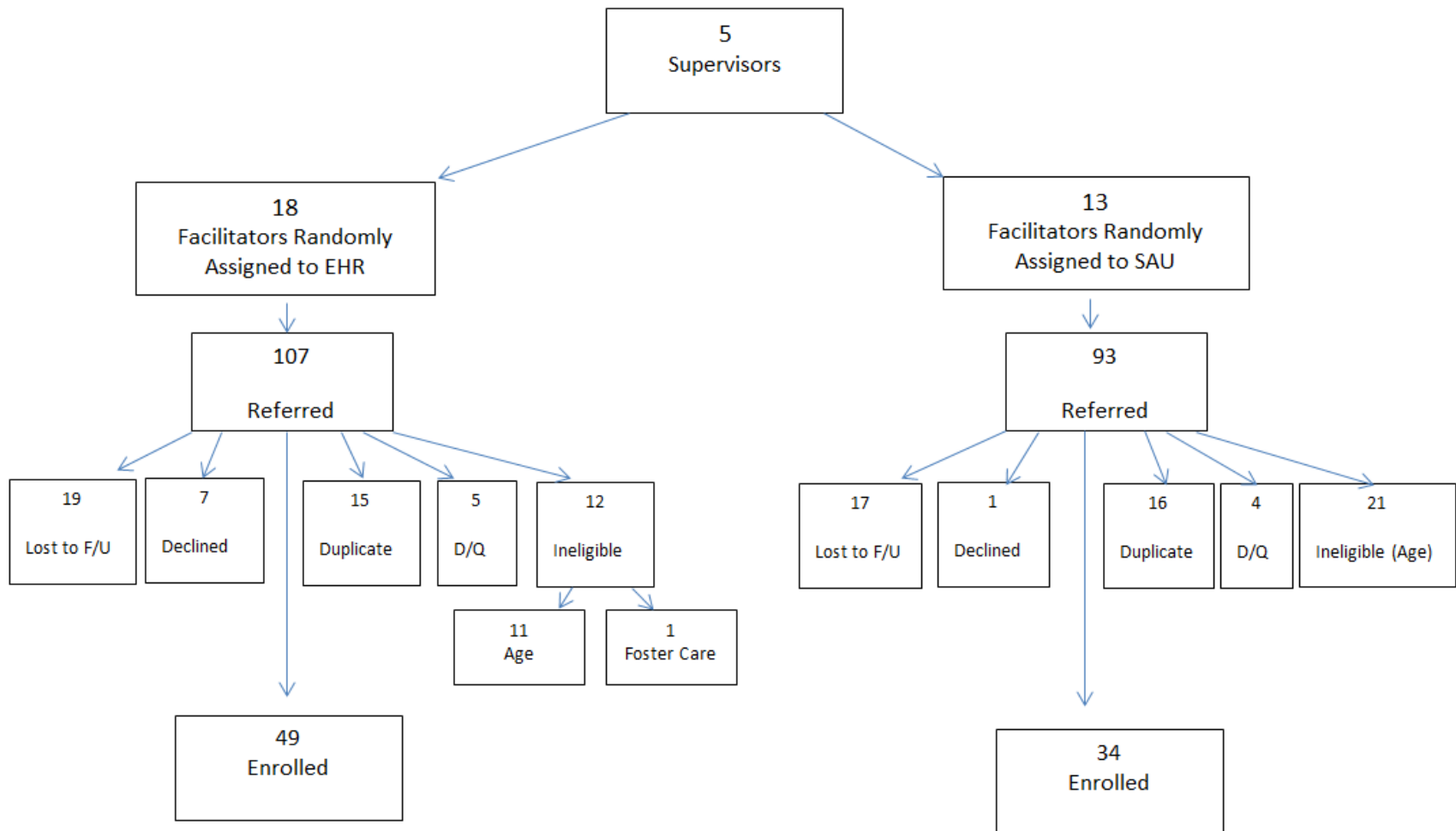
Research Aims

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



Study Flow (CONSORT Diagram)

Randomization at the Care Coordinator (Facilitator) level

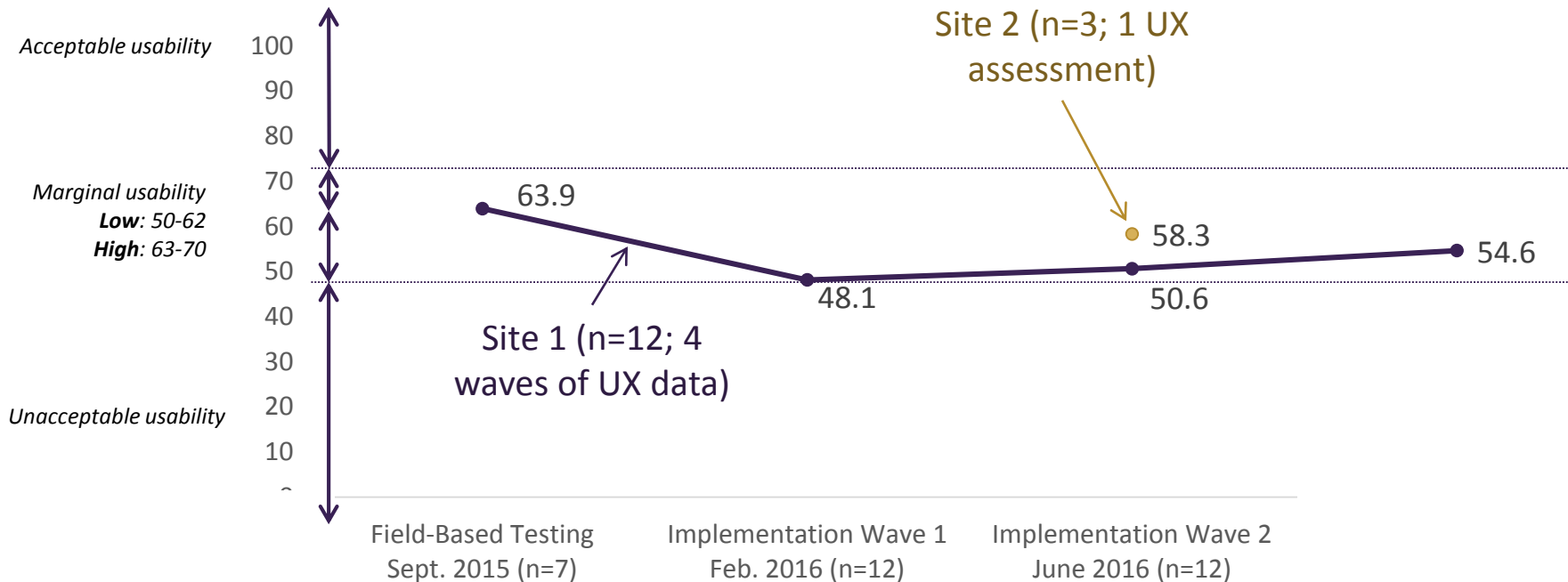


RESULTS:

User Experience and EHR Acceptability and Appropriateness

EHR usability ratings in marginal range but slowly increased over time

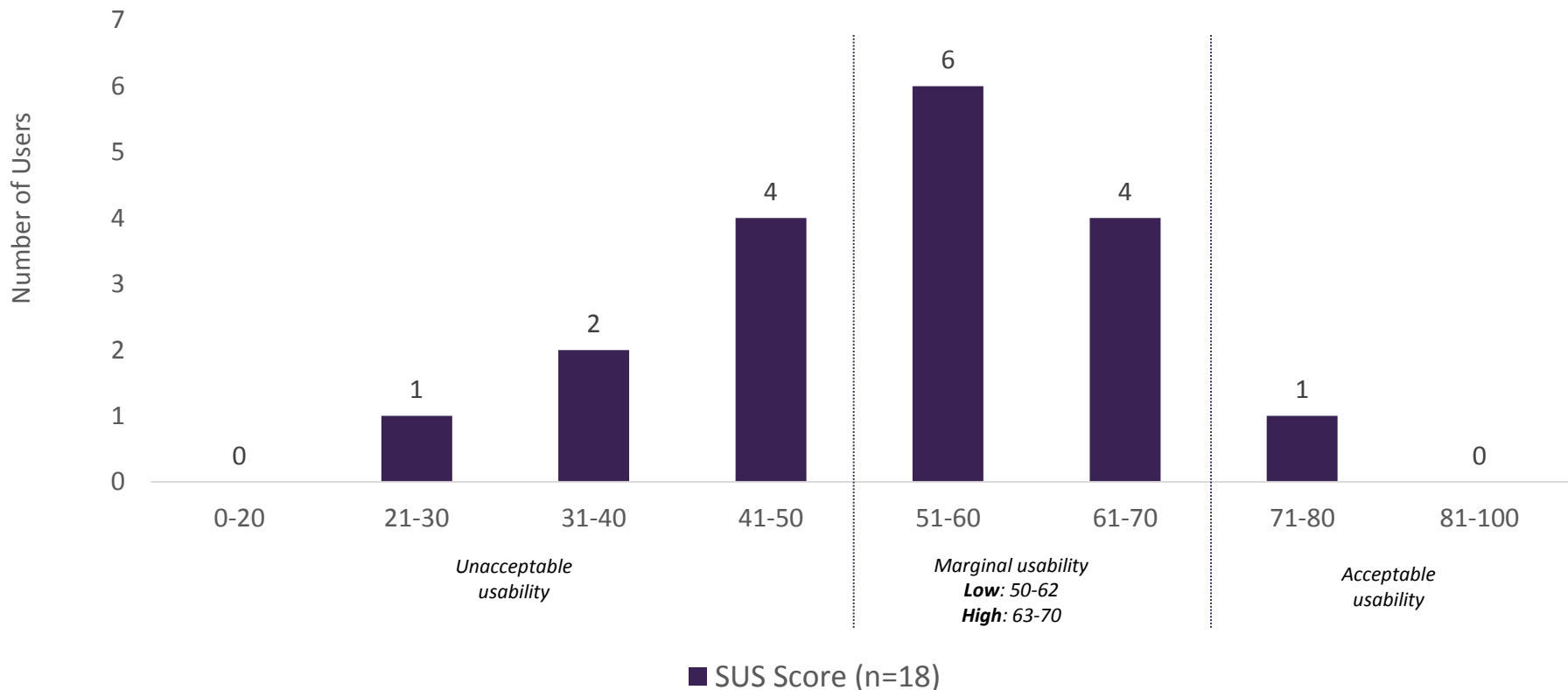
- The System Usability Scale (SUS) provides a quick and easy understanding of a user's subjective rating of a product's usability
- 12 facilitators completed the SUS over the course of one year (Site 1)
- 3 facilitators completed the SUS at 6 months only (Site 2)



The distribution of scores indicate a range of opinions on usability

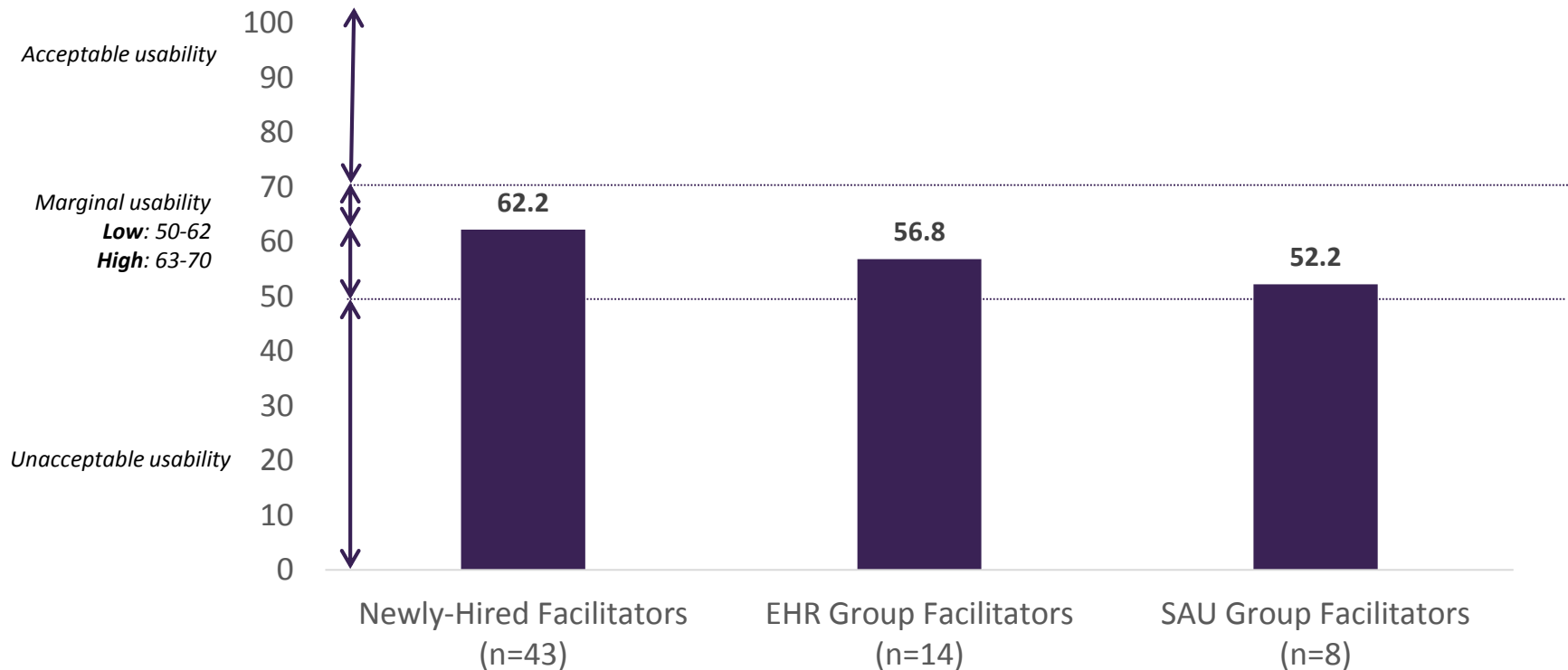
- The distribution indicates more than half of the users (61%) rated FidelityEHR with Marginal or Acceptable usability after 6 months of use

Distribution of SUS Scores for both agencies



Facilitators newly hired and trained on system report higher usability ratings

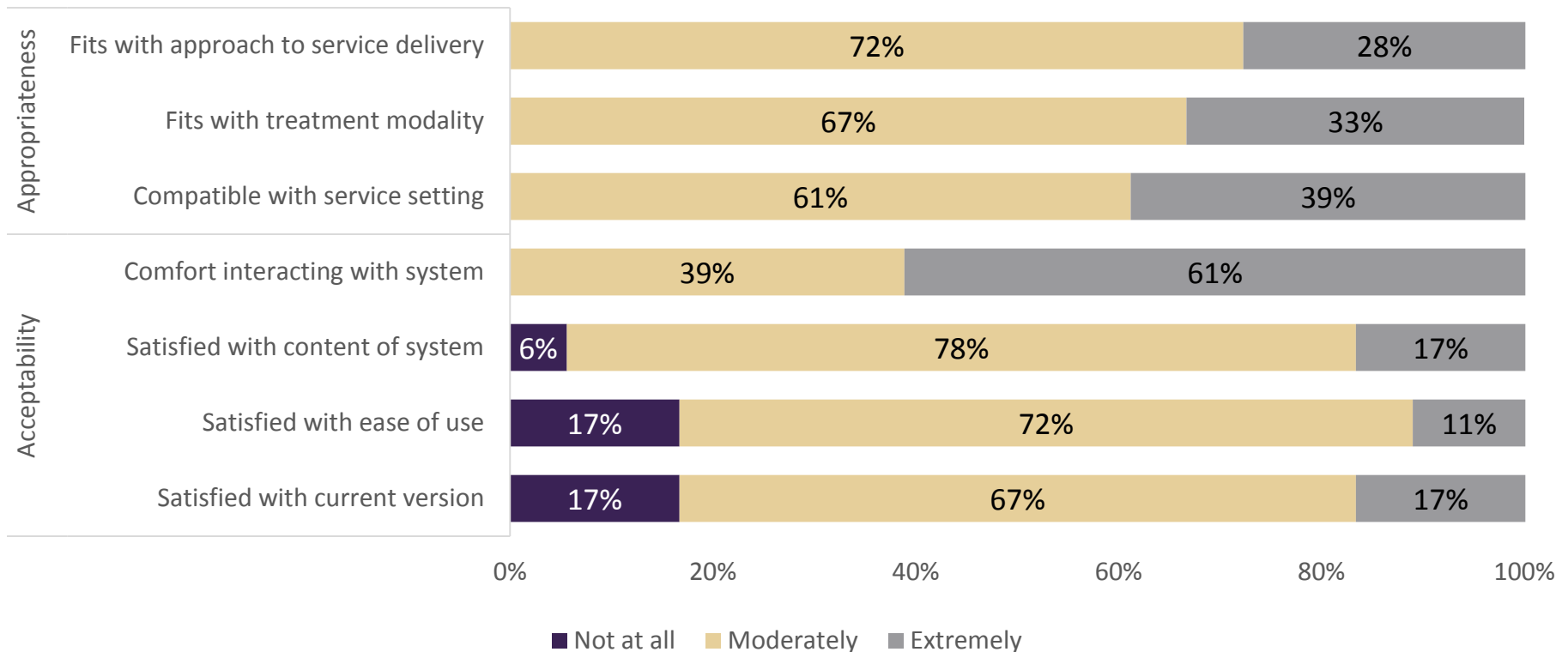
- Facilitators trained on FidelityEHR as part of their onboarding process report higher ratings for usability than facilitators in the research study



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: 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 EHR implementation must be done strategically

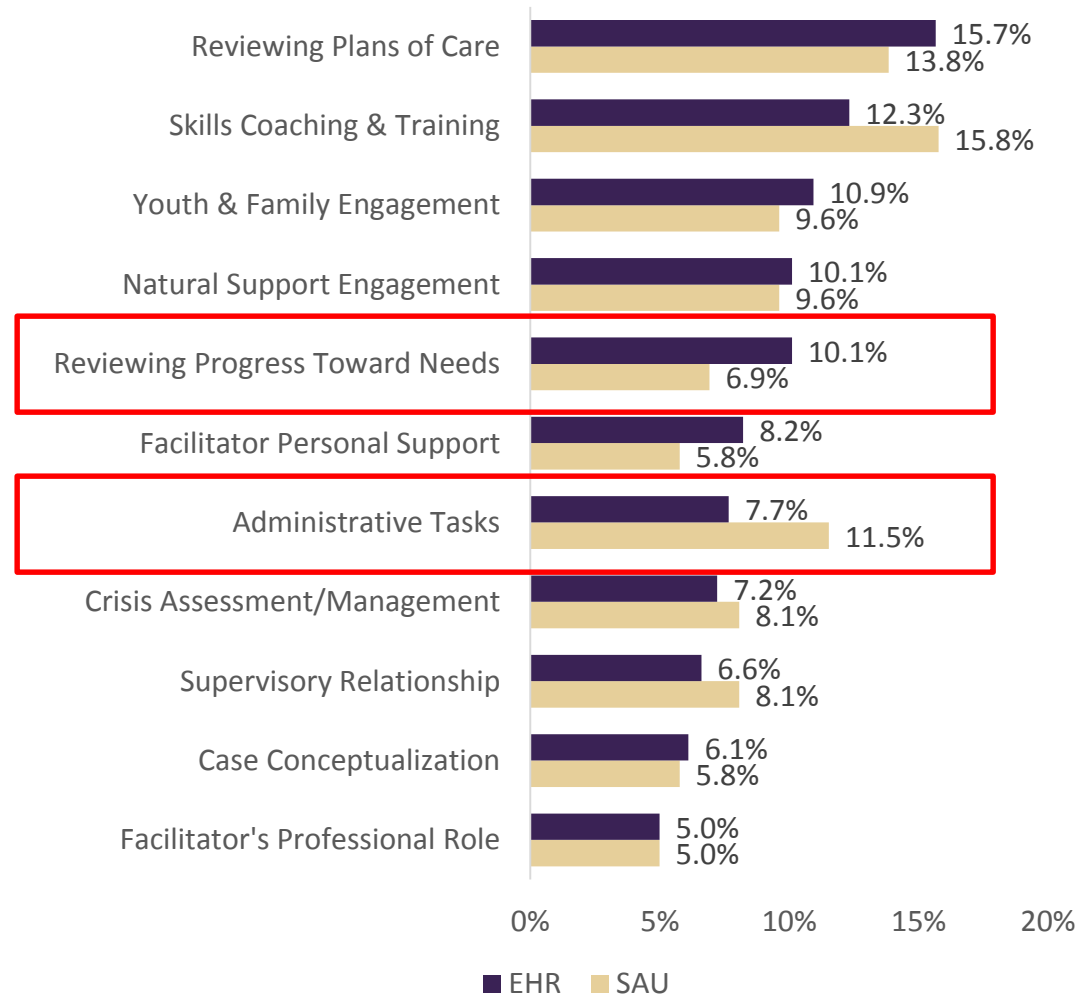
- “First weeks were hard – challenging to have conflicting answers from supervisors... hard because things weren’t sorted out”
- “Hard to learn all at once – had a lot of workarounds”
- “Would have been better to have earlier trainings, and a better user’s manual”
- “Took a long time to transition... couldn’t breathe til March”
- “Adding an EHR was too much... we were already 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

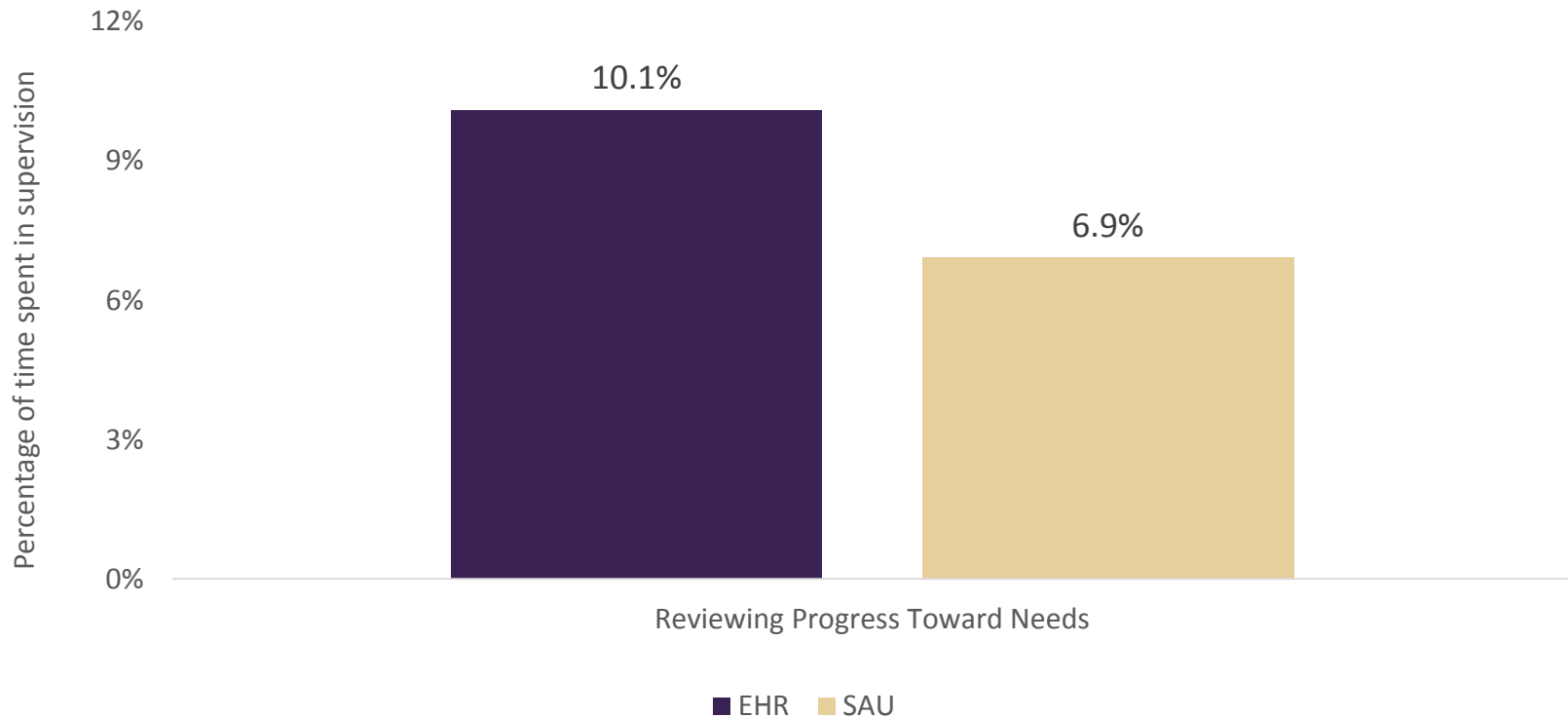
Supervisors report small differences in supervision activities by group

- 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



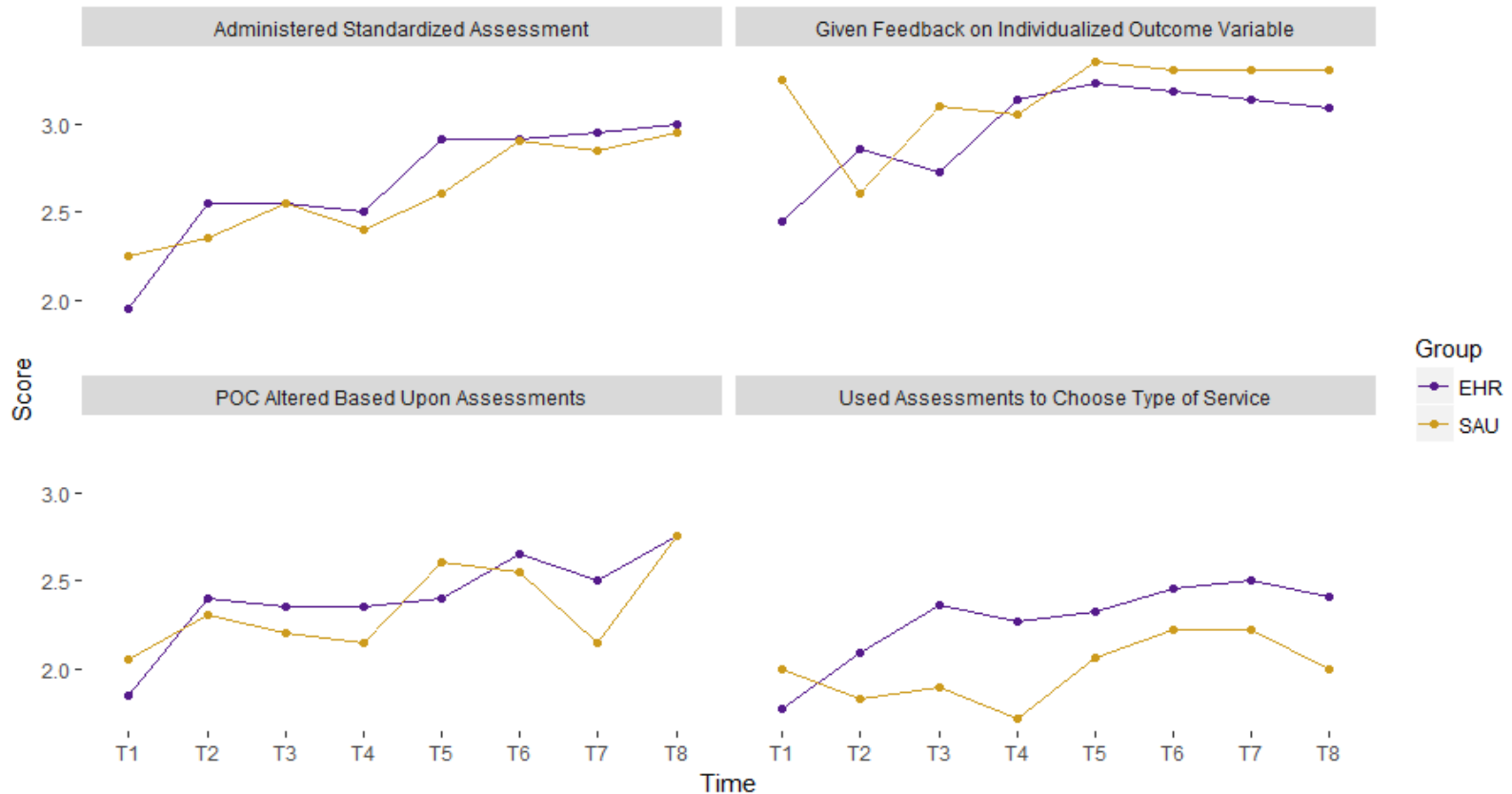
Supervisors report more time reviewing progress toward needs for EHR staff ($p < .01$)

- 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



No significant differences on...

- Fidelity
- Team Climate
- Working Alliance
 - *Though some trends in favor of SAU*
- Family Satisfaction
- Worker Satisfaction
- Youth Behavioral or Functional Outcomes

DISCUSSION & IMPLICATIONS

Limitations and Study Challenges

- Grant timeline required rapid training and implementation cycles
- Staff-level randomization within supervisors/ organizations caused disruptions to routines
 - Supervisors having to supervise differently depending on staff
 - Staff not able to all support one another
- System continued to be improved throughout study based on feedback

Findings:

User Experiences

- Staff report EHR aligns with Wraparound service setting
- Marginal usability reported overall
- User opinions ranged from low to high
 - Typical patter of “eager adopters” vs “laggers”
 - Staff saw strengths of the EHR, but also experienced multiple “kinks” during study to be addressed by development team

Findings:

User Experiences

- User experiences affected by study enrollment
 - Facilitators trained on EHR as “part of their job” and/or trained during onboarding more satisfied
 - Those who had to “change practice” and/or do different things from their colleagues less satisfied
- Usability scores increasing over time
 - System improvements in response to feedback
 - “On the job learning” made things easier

Findings:

Impact on Practice & Implementation

- Few significant findings:
 - EHR group spends more supervision time reviewing progress
 - EHR group spent less time on admin tasks in supervision
 - EHR group spent less time sending reminders
 - Both groups demonstrated significantly improved use of assessment and feedback
 - Side effect of investment in EHR agency-wide in these sites?

Implications

- Rigorous study provided opportunity for substantial improvements in FidelityEHR System
- Modest but positive shifts in some proximal outcomes (supervision, use of data, sending reminders)
- Lack of negative impact on satisfaction, teamwork, staff job satisfaction could be viewed favorably given the challenges
- Would be nice to know if an improved version was well-implemented if any additional proposed positive effects might emerge...

Questions for the BRiTE Brain Trust

- What have others found in HIT/EHR studies?
 - Does anyone like an EHR?
 - Is this a viable path to pursue for:
 - Improving care coordination practice?
 - Conducting a meaningful research agenda?
- Are other HIT applications a better bet?
 - “Patient registries”?
 - Measurement and feedback systems?

Questions for the BRiTE Brain Trust

- Publication outlets people are using?
 - Behavioral health or Tech?
 - Journal of Medical Internet Research?
 - JMIR-Behavioral Health?

Questions for the BRiTE Brain Trust

- Should we pursue a more rigorous study with:
 - Updated FidelityEHR system featuring revamped “responsive design”
 - More time / resources for implementation support
 - Longer follow-up
 - ?
- What are the grant opportunities?



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