



User Testing to Refine an Electronic Behavioral Health Record for Wraparound: FidelityEHR

Eric J. Bruns, PhD | Alyssa N. Hook, BS

University of Washington Wraparound Evaluation & Research Team

Kelly L. Hyde, PhD | Kara Bergerson, M.Ed.

FidelityEHR

29th Annual Research & Policy Conference on Child, Adolescent and Young Adult Behavioral Health

March 15, 2016

Today's Presentation

- Overview & Acknowledgments
- Rationale and Functions of FidelityEHR
- Results of User Experience (UX) Testing
- Using of UX Feedback
- Discussion, Conclusions, and Next steps

Acknowledgments

- Research and commercialization funded by a National Institute of Mental Health STTR grant (Small Business Technology Transfer; R42 MH95516)
- Collaboration between FidelityEHR as the commercialization partner and the University of Washington as the research partner
- Informed by NWI, NWIC, and the Center for Innovation and Implementation at the University of Maryland School of Social Work

Who is FidelityEHR?

- Founder & CEO Dr. Kelly Hyde
- Formerly called *Social Tecknowledgy*
- TMS- Wrap Logic newly rebranded as **FidelityEHR** in January 2016
- Mission of the company is to improve outcomes for children and families through user-friendly technology

Why was FidelityEHR developed?

- To provide Wraparound and System Of Care sites with a high-quality, field-tested electronic behavioral health system (EBHIS) that supports fidelity to research-based Wraparound and care coordination models.



STTR Phase II

Commercialization Product

FidelityEHR Mission Statement:

To support empowerment, engagement and healthy outcomes through innovations in technology for families and communities.

STTR Phase II

Commercialization Purpose

- Stimulate technological innovation
- Foster technology transfer through cooperative research and development between small businesses and research institutions
- Increase private sector innovations derived from research and development

STTR Phase II Research Project

- Three phases:
 - **Phase 1: Development:** Program elements of FidelityEHR
 - **Phase 2: UX Testing:** Determine if FidelityEHR is feasible and user experience is positive
 - **Phase 3: Randomized Control Study:** Determine if FidelityEHR helps facilitate:
 - Better Wraparound implementation by providers and
 - Better outcomes for youth and families

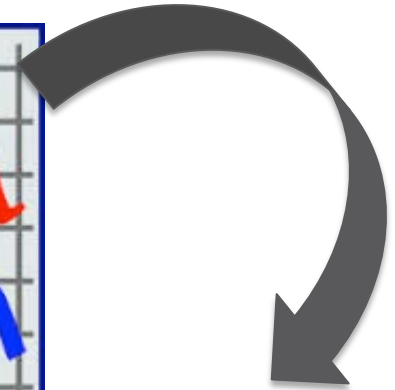
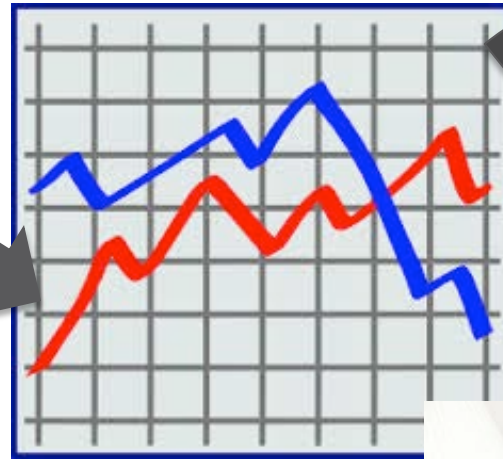
Wraparound

- Wraparound is the only defined, research-based care coordination process youth with serious emotional and behavioral disorders (SEBD) and their families
- Wraparound is implemented for over 100,000 youths annually, in nearly 1,000 programs across the U.S.
- Now considered “Evidence-Based”

Quality matters!

- **However**, Wraparound quality matters
- Wraparound implementation often falls short of ideals
 - Teams of people important to the family working together effectively
 - Natural supports on teams
 - Youth and families truly in the driver's seat
 - Clear needs statements
 - Strategies based on needs
 - Strategies based on strengths and culture of the family
 - Collecting and using objective data on progress
- **When implementation is poor, outcomes are poor**

Hypothesis: Electronic Health Records can facilitate efficiency, fidelity, positive outcomes



FidelityEHR manages and reports on key information on the Wraparound process



- **Individuals engaged in the process**
 - Youth and family members, team members, providers, natural and community supports, coordination of care
- **Key documentation**
 - Plans of care, strengths, needs, family stories, family history timeline, meeting and appointment times, meeting notes, contact histories, critical incidents, services and costs
- **Service processes**
 - Family satisfaction, fidelity, progress toward needs
- **Outcomes Monitoring and Feedback**
 - CANS data, youth and family support, residential status, educational environment and behavior, youth functioning
- **Provider network management and billing functions**

FidelityEHR Functionality

- Improve **teamwork** through:
 - Ease of data entry and management
 - Basic info is all in one place
 - Upload assessments and documents
 - Better communication
 - Internal emails, meeting reminders, team meeting notes
 - Ease of retrieval and access
 - By facilitator, family, and supervisor
 - Transparency
 - Everyone has access to same information

FidelityEHR Functionality

- Improve **fidelity**:
 - Workflow and records organized by critical Wraparound action steps
 - Standardized assessments and evaluations keeps you “outcome based”
 - Supervisors have real-time access to strategies, services, history, progress, satisfaction

FidelityEHR Functionality

- Improve **efficiency**:
 - Managing:
 - Workflow
 - Meeting schedules
 - Team information
 - Referral and billing information
 - Task follow-through
 - Auto-populate functions
 - Ease of retrieval for supervision, team meetings
 - Provides information mandated by MCOs

FidelityEHR Functionality

- Improve **outcomes** by:
 - Integrating **monitoring of progress and feedback**
 - Aid in decision making based on progress
 - Standardized assessment data readily available
 - “Supervision based on needs” (not crisis of the week)
 - Clinical alerts



Theory of Positive Impact

UX Testing Targets this part of the Theory

Come back next year to hear more about testing this part of the Theory

FidelityEHR Components

- **Information management:** e.g., family, team, plan, providers, services, billing
- **Fidelity support:** e.g., Workflow pane, reminders, alerts, supervisor reports
- **Standardized assessment:** clinical alerts, treatment recommendations
- **Feedback of information** via dashboard reports on fidelity, services, progress, outcomes
- **Supervisor, manager, administrative reports:** e.g., services, costs, satisfaction, fidelity, outcomes, placements



Impact on Staff/Teams

- Availability of information
- Transparency and efficiency
- Better collaboration and teamwork
- Adherence to elements of high-fidelity Wraparound
- Options and treatments based on evidence for effectiveness
- More frequent progress review
- Decision-making based on objective data
- More focused, directive, data-informed supervision
- Staff more satisfied and self-efficacious
- Admin/manager-level accountability



Paths to Family Outcomes

- Goal clarity
- Team communication and consensus
- Better problem-solving
- Greater treatment alliance
- Family and team better engaged, hopeful, and satisfied
- Fidelity to core Wraparound principles
- Shorter self-correction cycles
- More effective treatment
- Reduced staff turnover



Outcomes

- Families retained in services
- Greater social support
- Greater progress and reduction in top problems
- Reduced youth emotional and behavioral problems
- Improved youth functioning
- Reduced out of home/community placement
- Reduced costs to public systems/MCOs/providers

Stages of FidelityEHR User Experience (UX) Testing

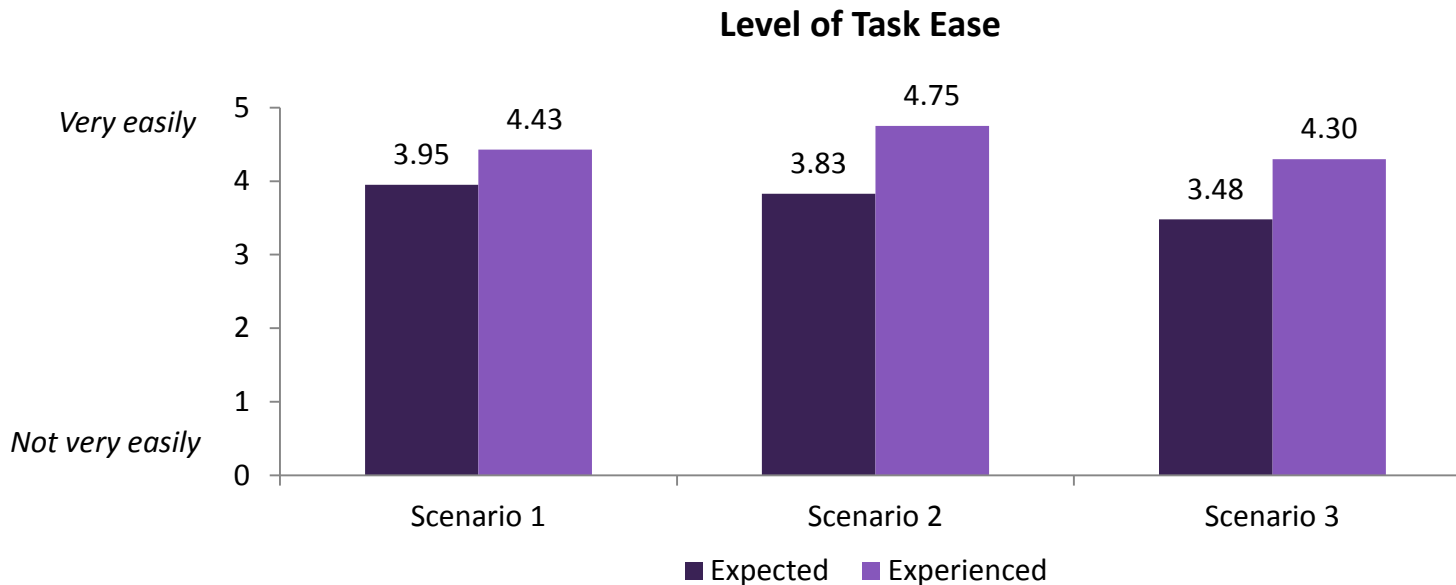
- Lab-based testing of prototype
- Initial field-based testing (“site 1”)
- Field-based testing of refined system with enhanced readiness promotion (“site 2”)

Overview of Measures

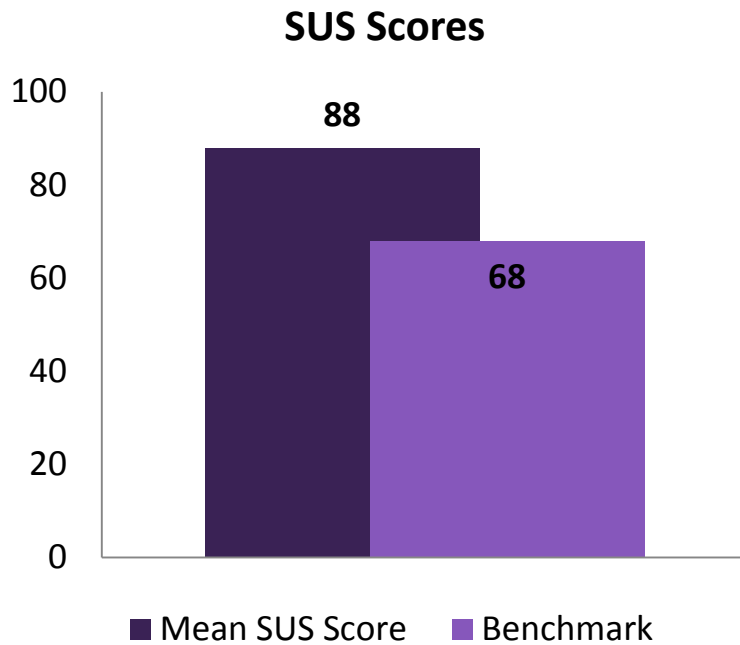
- Lab-based testing
 - System Usability Scale (SUS)
 - System Acceptability and Appropriateness Scale (SAAS)
 - Scenario-based “think aloud” procedure
 - Focus groups and debriefs
- Initial field-based testing
 - SUS, SAAS, focus groups
- Field-based testing of refined system with enhanced readiness
 - SUS, SAAS
 - User “click” patterns
 - Feedback in consultation calls

Results of Lab-Based Testing

- Users performed tasks grouped into three main “scenarios” in FidelityEHR.
- Users were asked “How easily do you expect to perform this task?” prior to performing each task, and “How easily were you able to perform this task?” upon completion.
- **Overall, users reported that tasks were easier to complete than anticipated.**



Results of Lab-Based Testing



User average of 88.33 on the SUS, well “above average” compared to national benchmarks

Users reported the most difficulty entering a new youth record when using the Referral Form and enrolling the youth (means= 3.33 and 3.67, respectively, out of 5)

Results of Lab-Based Testing

- **User Feedback:**

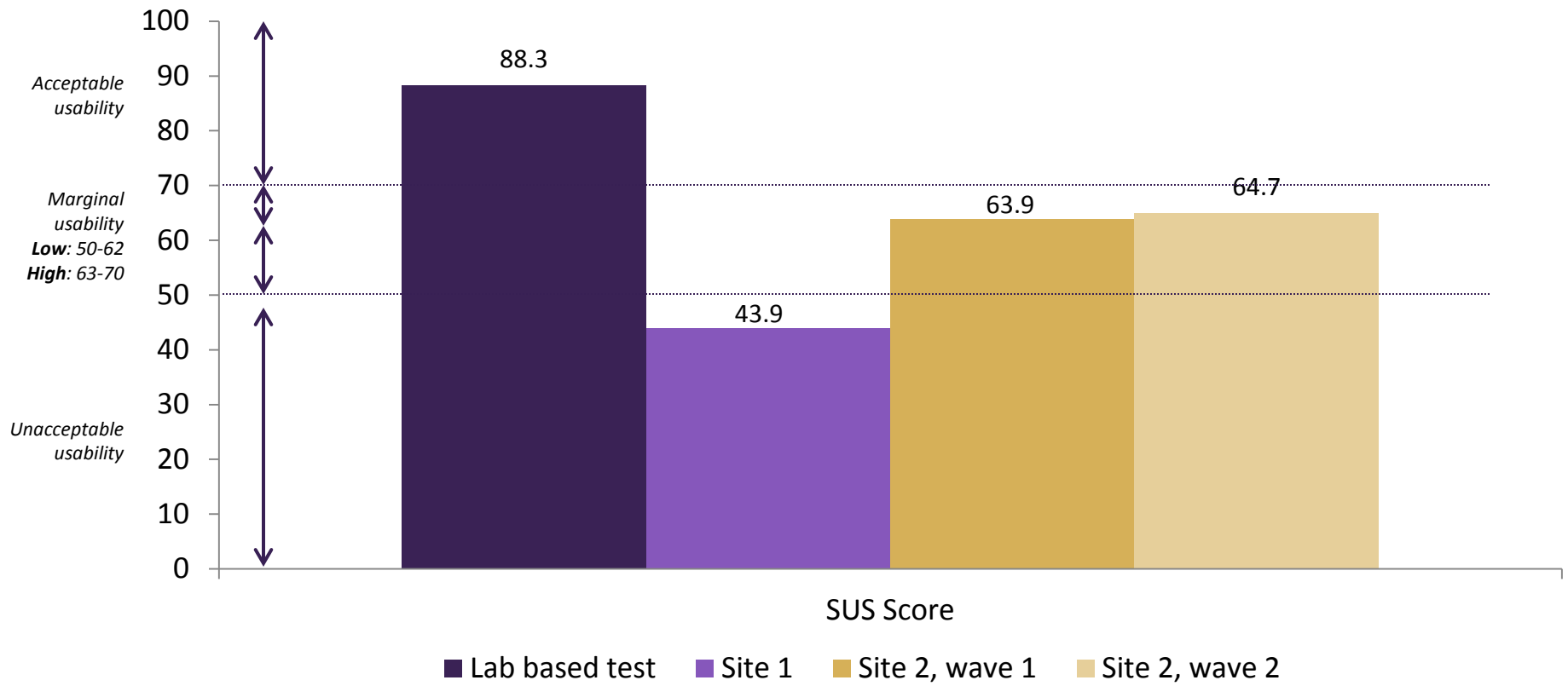
“Like that the information is all in one place.”

“Like that we can send reminders for team meetings through the system.”

“The graph visuals help us track progress over time.”

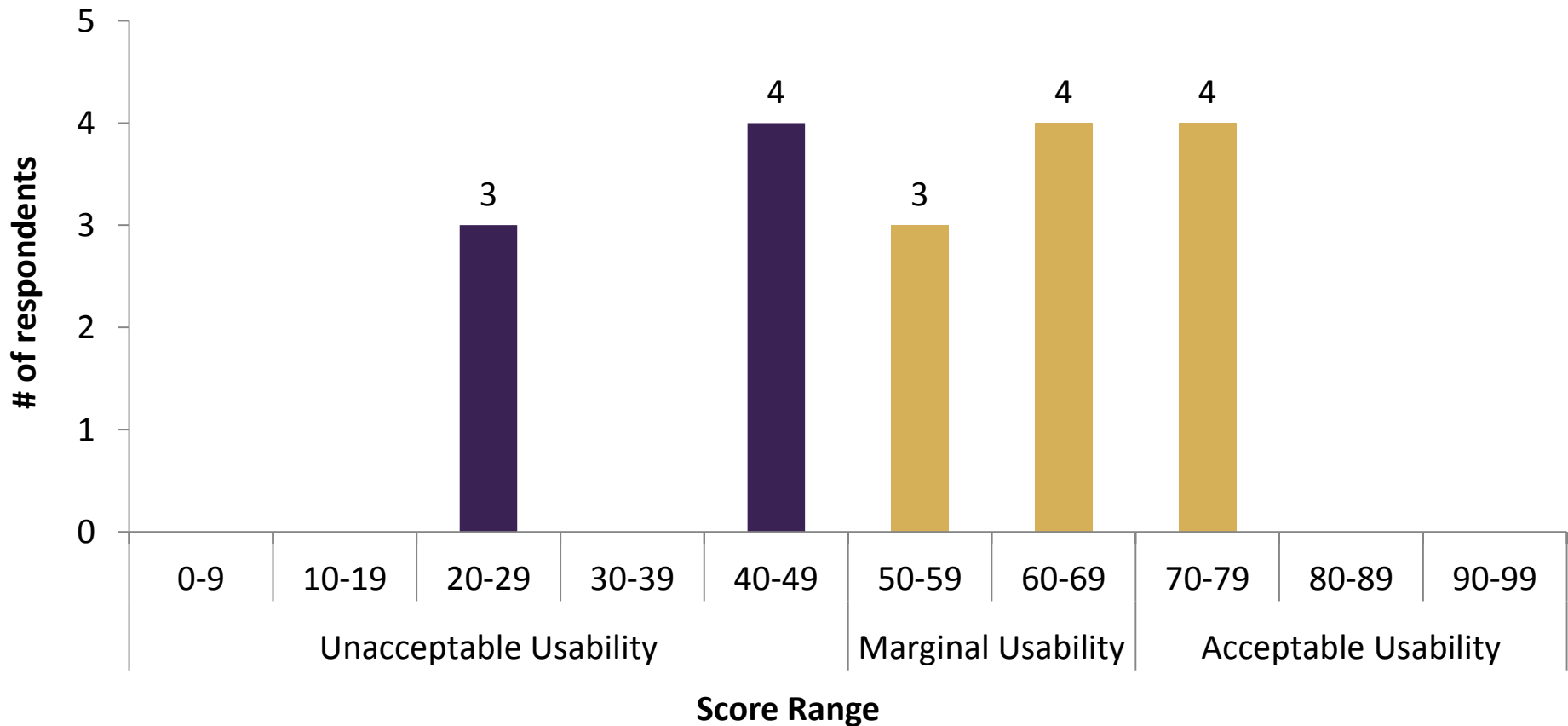
Results of Field-Based Testing

System Usability Scale (SUS) Scores



Results of Field-Based Testing Site 2

11 of 18 respondents scored FidelityEHR with “Marginal” or “Acceptable” usability



Results of Field-Based Testing



Users rated FidelityEHR as a compatible addition to their agency

- Relevance to client population (mean=3.5/5.0)
- Align with treatment modality (3.5/5.0)
- Fit with overall service delivery approach (3.4/5.0)

Training tools were unhelpful and did not contribute to expertise

- User Manual (1.8/5.0)
- Video training library (2.0/5.0)
- Technical assistance (2.2/5.0)

Results of Field-Based Testing

- **User Feedback Largely Positive:**
 - “I always use the Contact and Service Notes sections.”
 - “It’s been very easy to update the Plan of Care.”
 - “It’s really helpful to be able to log in remotely and type up notes after a meeting rather than going back to the office.”
 - 12 of 15 users reported the system “made their life better” in consultation calls

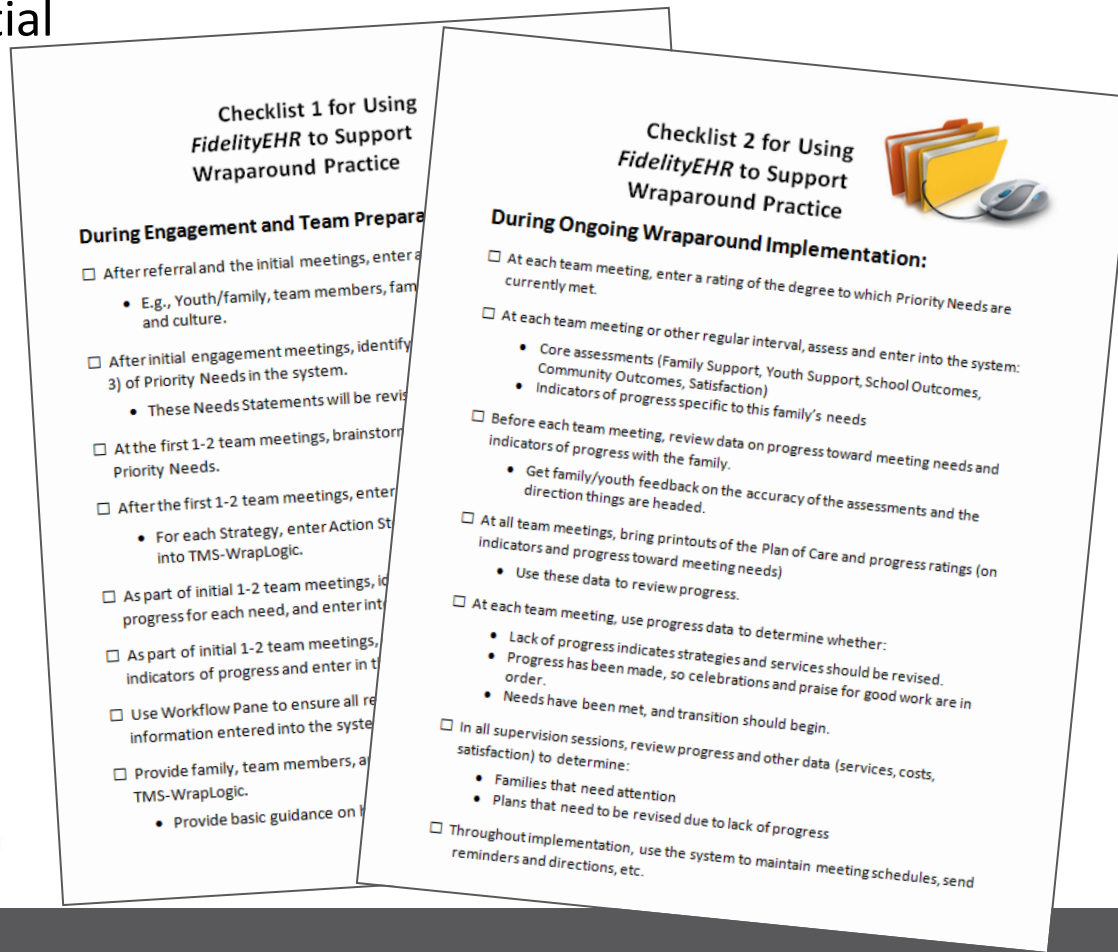
Data-informed System Improvement:

Recommendations Based on Qualitative Feedback

- Improve the training tutorial(s) and materials
- Streamline how to enter demographic information in one place
- Ensure all features of FidelityEHR have the auto-save functionality
- Make the Crisis Plan easier to read
- Improve the functionality of Adding/Editing Diagnoses
- Add a notification feature for new messages

Data-Informed Consultation: Supporting Wraparound Fidelity

- UW WERT and FidelityEHR support high-fidelity Wraparound with consultation calls and checklists to guide users and maximize FidelityEHR potential



Data-Informed Consultation: User Clicks in FidelityEHR

Percent of page clicks by task category, as a function of all clicks

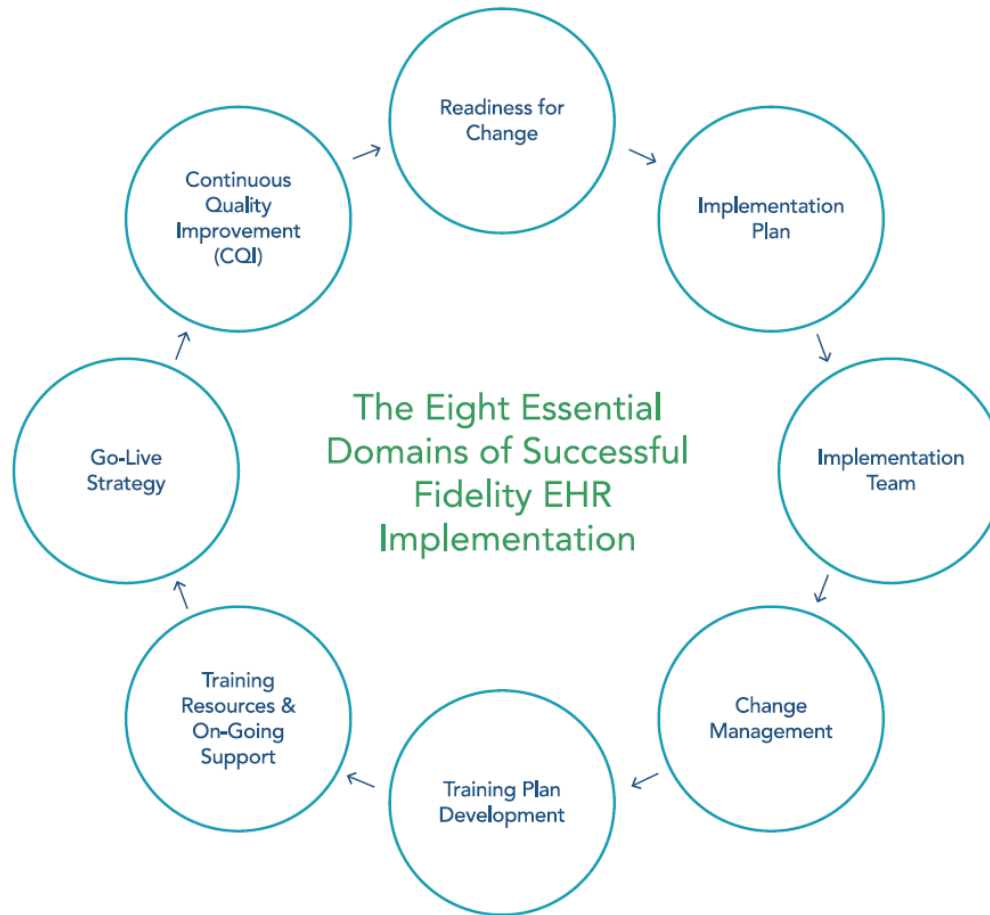
User Task Category	First month of use	Second month of use	% Change
Communicating with the Team	20.78%	40.53%	+95.0%
Core Assessments	0.30%	2.31%	+6.7%
Maintaining Service Notes	11.97%	14.95%	+24.9%
Managing Information	21.98%	1.20%	-94.5%
Updating & Developing the POC	36.84%	20.78%	-43.6%
User Settings	18.13%	20.23%	+11.6%

Data-Informed Consultation: User Clicks in FidelityEHR

Example report of clicks by user for one month by task category,
Compared to mean number of clicks for the site overall

User Task Category	Facilitator 1	Facilitator 2	Site Mean
Communicating with the Team	440	817	720
Core Assessments	35	26	29
Maintaining Service Notes	214	576	326
Managing Information	191	386	323
Updating & Developing the POC	489	377	597
User Settings	257	540	469

Utilizing User Feedback



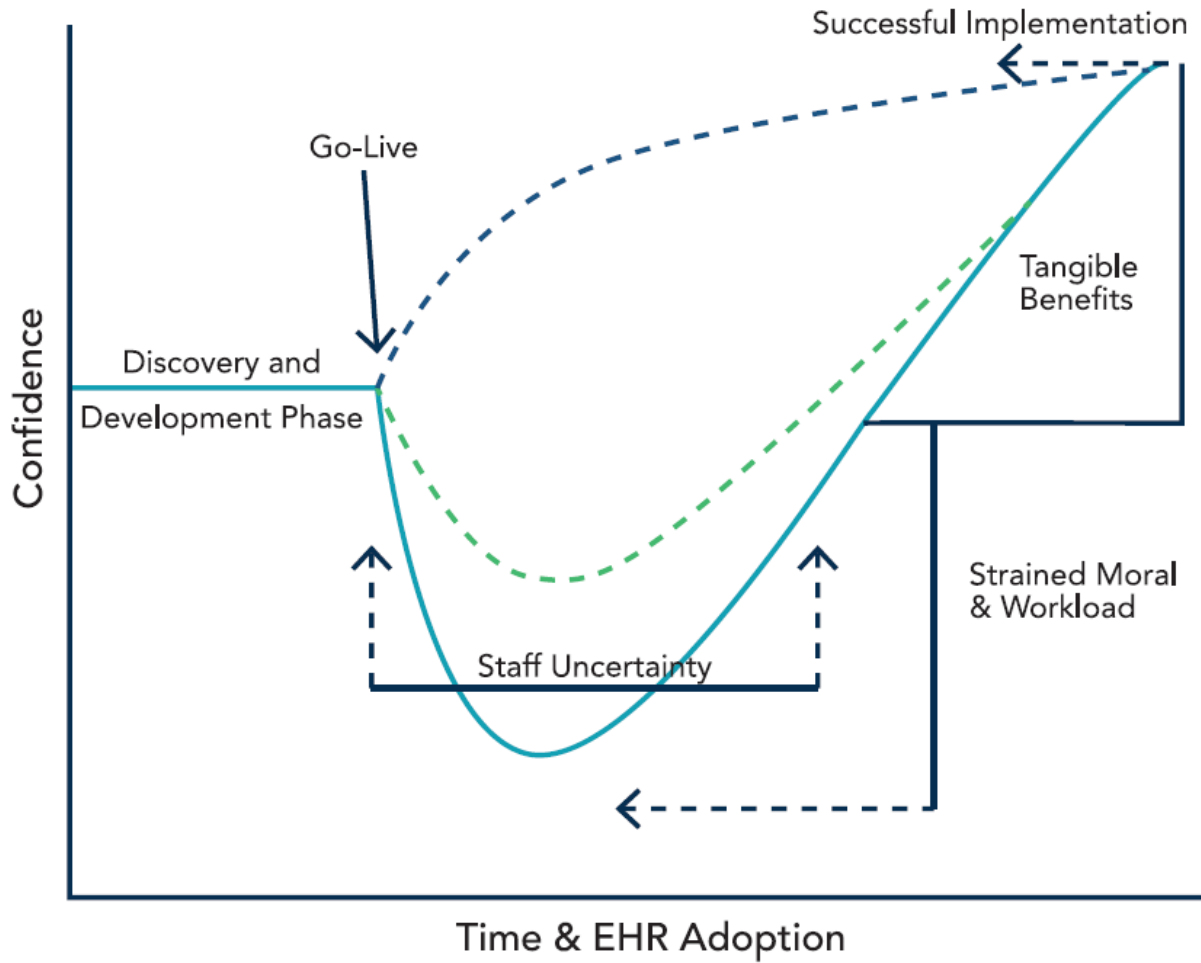
Utilizing User Feedback

Observations about User Training	Training Development
<ul style="list-style-type: none">• Usability likely related to Training more than system .• Improvement needed in training resources and structure of methods.	<ul style="list-style-type: none">• Assess User learning preferences• Utilize PowerPoint presentations• Demonstration in Software• Role-based practice scenarios• Team-based activities• User Videos and Manuals• Increase Structure of Training

Utilizing User Feedback (cont'd)

User Software Feedback	Software Development
<ul style="list-style-type: none">• System changes suggested to increase ease of use.• Develop more Wraparound-centered features.• User adoption of new POC process requires additional training.	<p>User feedback led system improvements:</p> <ul style="list-style-type: none">• Removed duplicate data entry• Implemented Auto-Save• Increased usability of ICD and DSM search and diagnostic add/edit fields• User friendly Search function for Youth Record and Service/Contact Notes• Family friendly POC and Crisis Plan Reports• Implemented Inbox and Client Portal messaging with notifications

User Confidence Levels During Fidelity EHR Implementation



Conclusion: Impact of User Testing on Software Development and Usefulness

- 1. Developed expertise in EHR implementation science and best practices in team-based training**
- 2. Improved training structure and support materials for on-site and ongoing team-based learning**
- 3. Strengthened Wraparound-centered software features**

The application of family-centered Wraparound practice principles applied to the crisis plan, client portal, and POC report
- 4. Implemented feedback to improve User Experience and Acceptability**

Lessons Learned from Research and Experience

- Findings emphasize importance of:
 - Assessment & procedures for development customization
 - Collaborative implementation planning
 - Initial workflow analysis
 - Comprehensive user- and site-specific training



For more information:

wrapeval@uw.edu

info@FidelityEHR.com

www.wrapinfo.org

www.FidelityEHR.com