

Introduction

- Suicide is the 2nd leading cause of death among youth in the United States
- 70% of youth who die by suicide are seen in primary care clinics in the year prior to their death
- Screening and safety planning for suicide is recommended in primary care, but significant challenges exist in addressing suicidal ideation in this setting including provider training, staff/provider time, and intervention feasibility in primary care
- This project sought to develop and implement a technology-based suicide safety plan in pediatric primary care as part of a quality improvement effort

Proposed Approach

- eSafety would leverage the Computerized Intervention Authoring System (CIAS) to deliver suicide safety plans
 - CIAS is a no-code, open-source web app with myriad native design features to deliver screening, assessment, education, and interventions
 - Features include voice-to-speech with an emotionally-expressive, animated narrator, branching logic, randomization, electronic health record integration, and seamless translation into ~100 languages
- The animated narrator would explain the rationale for safety planning to patients, how to navigate a suicidal crisis, and guide them through the development of a suicide safety plan
- The plan would be uploaded to their medical record and reviewed alongside a staff member during the visit

Phase 1 – Content and Workflow Design

- Interviews with patients aged 12-17 who endorsed suicidal ideation during a primary care visit and their caregiver/parent (n = 15)
- Interviews with pediatric primary care providers and staff (n = 11)
- Participants were asked about:
 - Suicide care provision at the health system
 - Suicide care needs
 - Perceived utility of eSafety
 - Barriers and facilitators of eSafety use
 - Parental involvement in eSafety
 - Content and interest in text message-based caring contacts
 - eSafety involvement in reducing barriers to care
 - Fit with health system priorities (providers/staff only)

Phase 2 – Beta Testing

- We asked 7 of the original 15 families to review our initial version of eSafety
- Families were guided through each screen in our beta version, asking what they liked and disliked, as well as suggestions for content more tailored to youth
- We also showed participants examples of text message-based caring contact and requested feedback on this approach

Phase 3 – Pilot Implementation

- After final changes were made to eSafety following Phase 2, we implemented eSafety in two pediatric primary care clinics
- Initial orientation was provided to each clinic
 - A 30-minute overview of safety planning, its purpose, and the goals of the project was provided to all clinic staff
 - A 30-minute discussion on workflow adaptations and implementation process was conducted with all providers and staff who would be involved in the delivery of eSafety
- We anticipated Plan->Do->Study->Act cycles for our project
 - Plan: develop a change plan
 - Do: test the plan
 - Study: observe/learn from implementation
 - Act: identify/implement modifications
 - Quarterly, we would provide feedback to clinics on their screening and completion rates, as well as referrals to behavioral health, completion of behavioral health visits, and changes in patient perceptions of coping with suicidal crises
 - These data reports would result in changing clinic workflow or processes to ensure youth were receiving safety plans when indicated

Phase 1 – Results

- Family suicide prevention needs/experiences
 - Caregivers and staff desired knowledge about local resources, particularly partial hospitalization and day treatment programs
 - Caregivers hoped to learn coping skills for their own stress
 - Caregivers noted they were unable to access care models about which they were aware
 - Youth highly desired a private way to disclose their thoughts about self-harm
- eSafety utility
 - Caregivers and youth noted privacy as the top quality of eSafety; youth could have a quiet place to collect and express their thoughts
 - That expression was thought to likely catalyze a conversion with their provider
 - All respondents expressed enthusiasm that an evidence-based approach would be delivered at the point of care
 - Youth and caregivers felt this approach increased the likelihood of behavioral health referral attendance
- eSafety barriers
 - Youth remained guarded about how providers would handle confidentiality
 - Youth and caregivers felt caregiver involvement would be a barrier
 - Staff noted time, space, and training as barriers to implementation
- Caring contacts
 - Youth and caregivers strongly supported text-based caring contacts

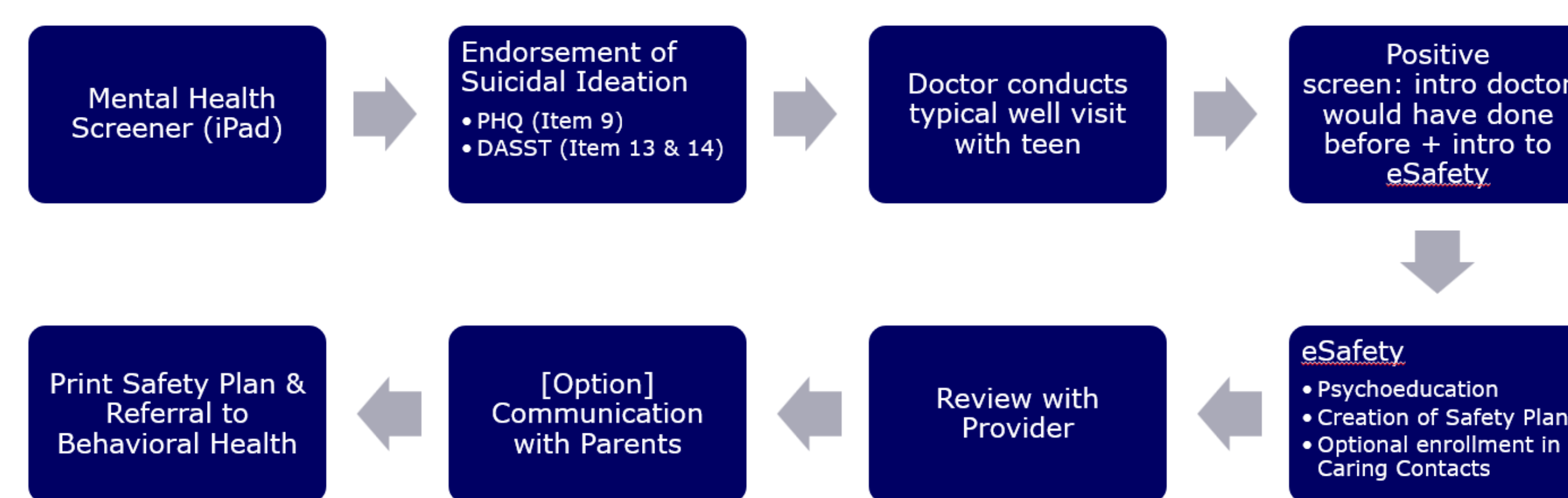
eSafety Programming

An initial draft of eSafety was created and given to 12 providers and scientists with expertise in suicide prevention

Phase 2 – Results

- Youth and caregivers expressed unanimous support for eSafety content
- Participants suggested providing “checkbox” suggestions for common triggers, helpful coping strategies, and categories of people and places for distraction
 - Each would be followed by an open text box where patients could indicate more personalized solutions for each step
- Youth and caregivers uniformly supported the narration, noting it was engaging and empathic
- Youth were able to describe the specific aspects of each step, indicating that our chosen narration was understandable, given the nuances of safety planning
- Participants were supportive of caring contact verbiage, stating the information was helpful and not overly pushy
- Youth suggested additional triggers and coping skills they thought were relevant to their peers
- Youth noted that confidentiality, where appropriate, would be paramount in delivering eSafety

Proposed Workflow



Phase 3 – Results

	Non-Pilot Clinics	Pilot Clinics (eSafety)
Completion of Safety Plans	8% of patients	42% of patients
Days to Complete Safety Plan	18.90 days (SD=16.48)	100% same day
Behavioral health treatment initiation rate (within 60 days)	14% of patients	20% of patients
Number of days to initiate behavioral health treatment	22 days	14 days

Phase 3 – Results

- 1,016 patients screened
 - 74 endorsed suicidality
 - 42% began same day safety plan (100% completed all steps of the plan)
 - Nearly all patients who did not receive a plan initially endorsed ideation on the iPad and later denied so when asked by their clinician
 - 46% enrolled in caring contacts

Significant increase in perceived ability to cope with suicidal ideation (t=2.64, p=0.01)

	Pre M (SD)	Post M (SD)
Acceptability of Intervention Measure	4.92 (0.28)	4.78 (0.48)
Appropriateness of Intervention Measure	4.92 (0.28)	4.84 (0.51)
Feasibility of Intervention Measure	5.00 (0.00)	4.66 (0.61)

- Staff qualitative feedback was positive
 - Solution for patients who are “in between”
 - Fits with workflow
- Teen qualitative feedback was also positive
 - Felt private
 - “I didn’t have to say anything out loud or be embarrassed or anything like that.”
- Quality measure ratings indicate eSafety plans are at a level comparable with published data on clinician-delivered plans
- Fidelity scores (below) range from 0 to 18 and combine completeness and quality, whereas the completeness score is unweighted by quality

	Literature M (SD)	eSafety M (SD)
Fidelity Score	3.25 (4.40)	12.97 (2.85)
Completeness Score	12.63 (3.18) & 16.17 (1.89)	13.74 (2.68)

Conclusions and Next Steps

- Conducting technology-based suicide safety plans appears feasible in pediatric primary care
- Youth are willing to complete plans and do so at high rates
 - When safety plans are not completed, over 85% of the time, this is due to patients denying suicidal ideation
- Providers are able to accommodate this approach into their workflow and report high satisfaction with addressing ideation among patients with mild to moderate risk for suicide attempts
- The project is limited by its implementation in only two clinics and the nature of quality improvement methods
- While it is possible some youth who deny ideation to their provider after endorsing ideation on the iPad made an error, many are likely reluctant to discuss suicide with their pediatrician; more work to understand this process and reach these youth is important
- Caregivers expressed a desire for their own intervention, consisting of coping skills and resources; a technology-based approach for this population should be created and tested

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