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## Supplemental Materials

Supplemental Materials Details: Additional Description of the Think Tank and Organizations Involved in the Think Tank, Think Tank Member Survey, Educational Initiatives, and Examining Linkage to Care Outcomes

### Additional Description of the Think Tank and Organizations Involved in the Think Tank

Description of One Mind Think Tank Meeting and Manuscript Development

We followed up an initial email invitation with small group telephone discussions to gauge level of interest and to develop an agenda for the Think Tank meeting. We originally organized a 2 day in-person meeting to be held in Dallas, but moved to a series of virtual presentations and discussions because of the COVID-19 pandemic. At the completion of the meetings, the co-chairs selected a lead author to summarize the presentations and discussions in a manuscript, which was subsequently edited in an iterative process with input from all of the Think Tank members.

### Description of One Mind Think Tank Members

The Youth Mental Health Think Tank consisted of 32 members who were invited based on recommendations from the One Mind Scientific Advisory Board and from leadership at One Mind and the Meadows Mental Health Policy Institute. Most members were mid- and senior- career level psychiatrists and psychologists with academic affiliations throughout the U.S. Other members were experts with lived experience, and/or knowledge in health policy, social work, and digital outreach. A majority were women (65%) and 2 were from racial or ethnic minority populations. Ages ranged from 18 years to 65+. Representatives from the American Psychological Association, the National Alliance of Mental Illness, and the National Institute of Mental Health participated in the Think Tank.

## Description of One Mind and Meadows Mental Health Policy Institute

One Mind and the Meadows Mental Health Policy Institute are nonprofit organizations that accelerate mental health research and advocacy (<u>https://onemind.org/, https://mmhpi.org/</u>). They joined together to support the Youth Mental Health Think Tank because of their mutual interest in promoting science-informed policies and programs that increase access to effective and efficient mental health care.

### **Think Tank Member Survey**

Following the Think Tank meetings, members completed a survey assessing agreement with a number of the proposals outlined above (Table S4 for a complete list of survey items and response agreement). Of the Think Tank members completing the survey (n=12), 75% agreed the project should be focused on youth in the United States, rather than creating a global initiative. 85% of responders agreed on modifying an existing screening tool. Furthermore, 92% agreed on implementing an initial single screening tool for multiple settings (e.g., schools, community, online, and clinical settings). The majority (67%) of responders indicated that item-response theory should be employed in the creation of the screener. Regarding screener content, 47% of responders disagreed with not including suicidality items, 41% had no opinion, and only 17% agreed with not including items measuring suicidality. Most (92%) agreed that the screener should be inclusive of individuals aged 10-24-years-old. The survey indicated that 92% of responders also agreed that a screening tool should not be implemented without follow-up.

#### **Education Initiatives**

An important part of a linkage to care program will be mental health education initiatives. Effective implementation will require educating schools and healthcare providers about early signs of, and reducing stigma regarding, psychopathology, for example, through programs organized through NAMI (also see<sup>1,2</sup>; psychosisscreening.org). Education initiatives can help members of the community, including health care workers and educators, reduce stigma and address experiences of discrimination. These efforts should also include addressing the importance of changing the culture of who is responsible for screening or detection in general for early signs of mental illness, including discussing the importance of including health care providers, educators, and community leaders, among others. Education initiatives could be the foundation for initiating a collaborative network of providers and supportive networks in the community, as well as a platform for increasing acceptance of screening efforts. It will be important to make all initiatives, including community education initiatives, accessible to protect against omission of members of 'harder to reach' or traditionally under-represented communities.<sup>3</sup> In addition to developing this collaborative network; otherwise, it will quickly become outdated.

### Outcomes

### What has worked?

How do we measure success? Evaluating community-based screening and linkage to care programs will require data on key outcomes. There are a number of existing large-scale initiatives (see Table S3) and population studies that provide data on several outcomes, including annual incidence of serious mental illness in the U.S. For example, several collaborative networks have or will inform our understanding of how interventions affect outcomes, including the NIMH and SAMHSA partnership on EPINET,<sup>4</sup> the new Accelerating Medicines Partnership, a public-private partnership that aims to improve success in developing early-stage interventions for individuals who are at risk of developing psychosis. Furthermore, studies such as the ABCD study with multiple time points beginning in middle childhood<sup>5</sup> will assist in furthering our understanding of assessments strategies, as well as the prevalence of mental health concerns as they emerge in childhood and adolescence.

### What is needed?

There are several gaps in the evaluation of mental health screening and linkage approaches. There is currently a lack of consensus on key data needed to evaluate the impact of early identification programs for youth mental health across multiple parameters. Several key metrics may include annual incidence of serious mental illness from childhood into early adulthood stratified across gender and race/ethnicity, better understanding who is getting into appropriate care, rate and costs of hospital admissions, rate of the remission of symptoms, rate of the recovery of function, and health care utilization and costs.

Based on numerous studies demonstrating better prognosis with earlier interventions,<sup>6</sup> one key metric would be the duration of illness.<sup>7,8</sup> Duration of untreated illness is typically defined as the time elapsed between the onset of an illness and the first adequate treatment.<sup>9</sup> Much of the extant literature has focused on reducing duration of untreated psychosis, however, we are extending the concept to include duration of any untreated mental illness. One important potential implication of reducing duration of untreated illness is that timely access to care may result in improved engagement in the care process. Thus, we view it as important to both better understand average duration of untreated illness in a large general population sample and to begin efforts to reduce duration of untreated illness. However, we need to understand the average duration of untreated illness across psychopathology domains in general population samples in order to begin to better understand the scope of the duration of untreated illness crisis and how to reduce duration of untreated illness through a screening and linkage to care process. Furthermore, duration of illness measurement would need precise operationalization and assessment instruments, which do not currently exist. As previously mentioned, duration of untreated illness is important, but other key health metrics are also needed, including measuring both the benefits to individuals and the cost-effectiveness of a screening and linkage to care approach. It will be important to reach a consensus on minimum outcomes and success metrics affording evaluation of the feasibility and utility of various regional screening and linkage to care programs for mental illness in youth.

## **Supplemental References**

- 1. Wasserman D, Hoven CW, Wasserman C, et al. School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. *Lancet (London, England)*. 2015;385(9977):1536-1544.
- 2. Meyer MS, Rosenthal A, Bolden KA, et al. Psychosis screening in schools: Considerations and implementation strategies. *Early Intervention in Psychiatry*. 2020;14(1):130-136.
- 3. Montanaro E, Feldstein Ewing SW, Bryan AD. What Works? An Empirical Perspective on How to Retain Youth in Longitudinal Human Immunodeficiency Virus (HIV) and Substance Risk Reduction Studies. *Substance abuse*. 2015;36(4):493-499.
- 4. Heinssen R. Early Psychosis Intervention Network (EPINET): a learning healthcare system for early serious mental illness. *Bethesda, MD, National Institute of Mental Health.* 2015.
- 5. Karcher NR, Barch DM. The ABCD study: understanding the development of risk for mental and physical health outcomes. *Neuropsychopharmacology*. 2020:1-13.
- 6. Primavera D, Bandecchi C, Lepori T, Sanna L, Nicotra E, Carpiniello B. Does duration of untreated psychosis predict very long term outcome of schizophrenic disorders? results of a retrospective study. *Ann Gen Psychiatry*. 2012;11(1):21.
- 7. Penttilä M, Jääskeläinen E, Hirvonen N, Isohanni M, Miettunen J. Duration of untreated psychosis as predictor of long-term outcome in schizophrenia: systematic review and meta-analysis. *The British Journal of Psychiatry*. 2014;205(2):88-94.
- 8. Wyatt R, Green M, Tuma A. Long-term morbidity associated with delayed treatment of first admission schizophrenic patients: a re-analysis of the Camarillo State Hospital data. *Psychological Medicine*. 1997;27(2):261-268.
- 9. Murru A, Carpiniello B. Duration of untreated illness as a key to early intervention in schizophrenia: A review. *Neuroscience letters*. 2018;669:59-67.
- 10. Bertolote J, McGorry P. Early intervention and recovery for young people with early psychosis: consensus statement. *The British Journal of Psychiatry*. 2005;187(S48):s116-s119.
- 11. Savill M, Gosdin M, Patel P, Melnikow J, Loewy R, Niendam T. How do early psychosis services define and operationalize the duration of untreated psychosis? *The journal of behavioral health services & research.* 2019;46(3):497-508.
- 12. Husky MM, Sheridan M, McGuire L, Olfson M. Mental health screening and follow-up care in public high schools. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2011;50(9):881-891.
- 13. Posner K, Brown GK, Stanley B, et al. The Columbia-Suicide Severity Rating Scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. *Am J Psychiatry*. 2011;168(12):1266-1277.
- 14. Jellinek MS, Murphy JM, Little M, Pagano ME, Comer DM, Kelleher KJ. Use of the Pediatric Symptom Checklist to screen for psychosocial problems in pediatric primary care: a national feasibility study. *Archives of Pediatrics & Adolescent Medicine*. 1999;153(3):254-260.
- 15. Murphy JM, Bergmann P, Chiang C, et al. The PSC-17: subscale scores, reliability, and factor structure in a new national sample. *Pediatrics*. 2016;138(3).
- 16. Richardson LP, McCauley E, Grossman DC, et al. Evaluation of the Patient Health Questionnaire-9 Item for detecting major depression among adolescents. *Pediatrics*. 2010;126(6):1117-1123.
- 17. Hacker K, Arsenault L, Franco I, et al. Referral and follow-up after mental health screening in commercially insured adolescents. *Journal of Adolescent Health*. 2014;55(1):17-23.
- 18. Kennedy L, Johnson KA, Cheng J, Woodberry KA. A Public Health Perspective on Screening for Psychosis Within General Practice Clinics. *Frontiers in psychiatry*. 2020;10:1025.
- 19. Kane JM, Robinson DG, Schooler NR, et al. Comprehensive Versus Usual Community Care for First-Episode Psychosis: 2-Year Outcomes From the NIMH RAISE Early Treatment Program. *Am J Psychiatry*. 2016;173(4):362-372.
- 20. Birnbaum ML, Garrett C, Baumel A, et al. Using digital media advertising in early psychosis intervention. *Psychiatric Services*. 2017;68(11):1144-1149.
- 21. Grupp-Phelan J, Stevens J, Boyd S, et al. Effect of a Motivational Interviewing–Based Intervention on Initiation of Mental Health Treatment and Mental Health After an Emergency Department Visit Among Suicidal Adolescents: A Randomized Clinical Trial. *JAMA network open.* 2019;2(12):e1917941-e1917941.

Screening Resource and Study Citation/Website	Number of Administered Screeners	Sample Ages	Measure(s) Used	Diagnostic Domains Assessed	Findings
Mental Health America ( <u>https://screening.mhanational.org/scr</u> <u>eening-tools</u> )	5,000,000	11+	PHQ; PQ-B; SWED; PC- PTSD; PSC	depression; anxiety; psychosis; bipolar; eating disorder; PTSD; alcohol and substance use; attention problems	Mental Health America uses screens to provide annual reports of mental health in America ( <u>https://www.mhanational.org/issues/state-mental-health-america</u> )
Teen Screen <sup>b</sup>	2,000+ primary care providers	11-18	PSC-Y, PHQ- 9, CRAFFT	depression; anxiety; suicidality; attention problems; alcohol and substance use	19.6% of screened students were identified as at risk, 73.6% of whom were not receiving any treatment. See eFigure 1 for additional details, including percentages of students who accepted referrals following screening and received at least one mental health visit. <sup>12</sup>
The Lighthouse Project/ Columbia Suicide Severity Rating Scale (CSSRS)		12-24	Columbia Suicide Severity Rating Scale	suicidality	Evidence the measure is a suitable assessment of suicidality in clinical (and research) settings <sup>13</sup> ( <u>https://cssrs.columbia.edu/wp-</u> <u>content/uploads/CSSRS_Supporting-</u> Evidence Book 2019-12-12.pdf)
PSC	21,065	4-15	PSC	Overall psychosocial dysfunction, attention, behavior, and depression & anxiety problems	13% of school-age children reported psychosocial dysfunction; children with a history of mental health treatment were 5x more likely to have high PSC scores <sup>14</sup>
PSC-17	80,680	4-15	PSC-17	Overall psychosocial dysfunction, attention, behavior, and depression & anxiety problems	12% of school-age children reported psychosocial dysfunction; rates of attention and internalizing problems very similar to those found in national study 15 years earlier <sup>15</sup>
PHQ-9/AdoleSCent Health Study	4,000	13-17	PHQ-9	depression	Adolescent PHQ-9 scores showed similar sensitivity and specificity as in adult populations <sup>16</sup>
MassHealth Children's Behavioral Health Initiative (CBHI)/McPAP ( <u>https://www.mass.gov/childrens-</u> behavioral-health-initiative-cbhi)	390,383+	Birth-21	PSC, Youth- PSC, PQ-16 (among others)	depression; anxiety; general psychopathology	57% of children screening positive received post- screening behavioral health services compared with 22% of children screening negative <sup>17</sup>
https://www.psychosisscreening.org/		Unspeci fied	PQ-16, PQ-B (among others)	psychosis	The creators of this initiative <sup>18</sup> distilled information about early psychosis screening in this pdf: https://www.psychosisscreening.org/uploads/1/2/3/9/12 3971055/bidmc_psychosis_pcp_booklet_final.pdf

Table S1. Examples of Previous and/or Current Nation-wide Screening Efforts in the United States<sup>a</sup>

Abbreviations. PHQ=Patient Health Questionnaire; PQ-B=Prodromal Questionnaire-Brief; SWED= Stanford-Washington University Eating Disorder Screen; PC-PTSD=Primary Care-Posttraumatic Stress Disorder; PSC=Pediatric Symptom Checklist; PSC-Y= Pediatric Symptom Checklist-Youth; PHQ-9=Patient Health Questionnaire-9 item version; CRAFFT=substance use-related risk and problems (Car, Relax, Alone, Forget, Friends, Trouble); PQ-16=Prodromal Questionnaire-16. <sup>a</sup>Note, this table is meant to provide examples of screening efforts that are implemented nation-wide and is not intended to serve as an exhaustive list of all screening efforts. <sup>b</sup>The Teen Screen is still in use (e.g., https://tnvoices.org/youth-screen/).

Study/Group	Ages	Population	Available Resources	Outcome Measure	Findings and Information
Early Psychosis Intervention Network (EPINET)	12-25	Clinical high risk and first episode psychosis	Coordinated Specialty Care (CSC) clinic treatment for 2+ years	Dependent on CSC, includes symptom reduction	Participants in an EPINET group stayed in treatment longer than the standard community care group; longer duration of untreated psychosis was associated with worse outcome. <sup>19</sup> Other programs for clinical high risk and early psychosis include: Community Programs for Outreach and Intervention with Youth and Young Adults at Clinical High Risk for Psychosis, RAISE Connection Program
Child <i>Psychiatry</i> Access Network	Birth-21	Children in the United States experiencing symptoms	Live case consultation for pediatricians and primary care providers	Increased linkage to care	https://www.nncpap.org/new-page-1; https://www.mcpap.com/About/ReportsNPublications.aspx
Washington's Mental Health Referral Service for Children and Teens	Under 17	Washington families seeking outpatient providers	Youth are connected to outpatient providers with availability and accept the youth's insurance	Increased linkage to care: aim to connect with families within 48 hours	After receiving referral recommendations, survey indicates 60% of families have scheduled or attended an appointment in two weeks or less <u>https://www.seattlechildrens.org/globalassets/documents/clinics/wamhrs/wa-mhrs-family-flyer-english.pdf</u>
Strong 365	12-25	First episode psychosis	Online screening and education; online clinician and peer consultation; links to resources	Contacting early treatment program	Results show Google search result ads can be utilized to engage individuals in help-seeking; 1% of participants contacted an early treatment program <sup>20</sup>
Mental Health America	11+	Anyone experiencing symptoms	Online tools and education; links to resources	Employment; health status; quality of life	The creators of this initiative summarized policy implications and next steps in this document: <u>https://www.mhanational.org/events/mental-health-treatment-</u> study-designs-outcomes-policy-implications-and-next-steps
MassHealth Children's Behavioral Health Initiative	Birth-21	Children in Massachusetts experiencing symptoms	Outpatient mental health care; emergency services	Increase access to behavioral health services	Results from the initiative showed increases in behavioral health treatment utilization. For more information, including data and reports, see: <u>https://www.mass.gov/cbhi-data-and-reports</u>
Suicidal Teens Accessing Treatment After an Emergency Department Visit	12-17	Adolescents elevated in suicidality during nonpsychiatric	Motivational interviewing, limited case management services	Outpatient treatment initiation; reduced suicide attempts	STAT-ED, compared to treatment as usual, was associated with increased treatment initiation and attendance. <sup>21</sup>

Table S2. Examples of Nationwide Linkage to Care Programs in the United States<sup>a</sup>

(STAT-ED)	emergency		
	department visit		

<sup>a</sup>Note, this table is meant to provide examples of linkage to care efforts that are implemented nation-wide and is not intended to serve as an exhaustive list of all linkage to care efforts in youth. There are a number of additional examples (e.g., Perfect Depression Model) of functioning programs in adults.

Domain	Step	Additional Details
Both	1. Further develop collaborative network	<ul> <li>Engage an expanded network in discussions, focusing on additional considerations for screening and linkage to care. Meetings should be expanded to increase diversity of attendants and increase representation from: <ol> <li>Researchers with expertise in areas with limited representation in the original think tank meetings (e.g., bipolar disorder, substance use)</li> <li>Clinicians from diverse backgrounds and settings</li> <li>Creators of previous mental health toolkits</li> <li>Leadership in education and care systems</li> <li>Community members from diverse backgrounds</li> <li>Health &amp; mental health policy makers &amp; payers</li> </ol> </li> </ul>
Screening <sup>a</sup>	2. Develop and validate a comprehensive first-stage screener	<ol> <li>Steps in this process may include:         <ol> <li>Identify potential items for inclusion in the adapted screener.</li></ol></li></ol>

Table S3. Immediate Next Steps for the Screening and Linkage to Care Initiative

Linkage	3. Organize available	1. Resources will include mental health toolkits (Table S3 available online), educational materials, available online
to Care	online resources	evidence-based therapies.
		2. Work with local, state, and national leadership to address needs for online resources.
		Identify local leaders to support implementation in specific areas where appropriate resources are available.

<sup>a</sup>This is not intended to be a comprehensive list of all steps for a developing a screening measure. It is likely that additional analyses and/or steps will be required based on an expanded collaborative network and initial pilot findings.

Table S4. Examples of Currently Availab	Sie Online Mental Health Toolkits	
Name of Toolkit and/or Toolkit	Target Population(s)	Toolkit Website
Organization		
Primary Care Settings		
American Academy of Pediatrics	Clinicians, other health care providers	https://www.aap.org/en-us/advocacy-and-policy/aap-health- initiatives/Mental-Health/Pages/Addressing-Mental-Health-Concerns- in-Primary-Care-A-Clinicians-Toolkit.aspx
Collaborative Mental Health Care	Healthcare providers working with children and youth in collaborative care settings	http://www.shared-care.ca/toolkits
Massachusetts Child Psychiatry Access Program	Healthcare providers	https://www.mcpap.com/Provider/ScreeningNToolkits.aspx
Mental Health Resource Toolkit	Healthcare providers	https://www.cincinnatichildrens.org/about/mentalhealthtools
Mental Health Screening and Assessment Tools for Primary Care	Clinicians	https://www.aap.org/en-us/advocacy-and-policy/aap-health- initiatives/Mental-Health/Documents/MH_ScreeningChart.pdf
Critical Crossroads	Hospital emergency department healthcare providers	https://www.hrsa.gov/sites/default/files/hrsa/critical-crossroads/critical- crossroads-tool.pdf
Bright Futures	Healthcare providers	https://brightfutures.aap.org/materials-and-tools/tool-and-resource- kit/Pages/default.aspx
Innowell Platform	Clinicians	https://www.innowell.org
Schools		
American Occupational Therapy	Occupational therapy practitioners working with children	https://www.aota.org/Practice/Children-
Association	and youth in school and community settings	Youth/Mental%20Health/School-Mental-Health.aspx
K-12 Toolkit for Mental Health Promotion and Suicide Prevention	California Public School Districts and Charter Schools serving students in 7th – 12th grades	https://www.heardalliance.org/help-toolkit/
Mental Health Colorado	Community advocates, schools, and local leaders in school districts across Colorado	https://www.mentalhealthcolorado.org/wp- content/uploads/2018/04/School_Mental_Health_Toolkit_PrintReady_ HiRes_Final.pdf
Mental Health Toolkit for Schools	School and college staff	https://www.annafreud.org/schools-and-colleges/resources/mental- health-toolkit-for-schools/
Student Tool Kit MHA of Greater Houston	Elementary, middle, and high school students	https://mhahouston.org/student-toolkit/
Tyler Clementi Foundation	Middle and high school student, instructors, and administrators	https://tylerclementi.org/resources-for-middle-and-high-schools/
Signs of Suicide	Middle and high school students	https://www.mindwise.org/sos-sample/
Sources of Strength	Elementary, middle, and high school students	https://sourcesofstrength.org/adult-advisors/resources/campaign- materials/
SAMHSA Preventing Suicide	High school staff	https://store.samhsa.gov/product/Preventing-Suicide-A-Toolkit-for- High-Schools/SMA12-4669

Table S4. Examples of Currently Available Online Mental Health Toolkits<sup>a</sup>

		1
<b>Community Settings and Beyond</b>		
Children's Hospital Colorado	Youth-serving professionals	https://www.childrenscolorado.org/4adca8/globalassets/community/yo
		uth-action-board-school-toolkit.pdf
Shine Initiative	Parents and caregivers of children and young adults	https://www.shineinitiative.org/wp-content/uploads/2019/09/Toolkit-
		Website.Final .pdf
Suicide Prevention Resource	Providers in the child and youth mental health sector	https://www.sprc.org/resources-programs/walking-talk-toolkit-
Center		engaging-youth-mental-health
Mental Health America	Anyone with symptoms of mental illness or wishing to	https://mhanational.org/sites/default/files/Full%202020%20May%20Is
	enhance mental health	%20Mental%20Health%20Month%20Toolkit%203.30.pdf
Teen Mental Health	Health professionals, parents, adolescents and young	https://teenmentalhealth.org/toolbox/
	adults, educators, and support networks	
Say it Out Loud	Group facilitators serving faith-based or community	https://www.nami.org/NAMInet/Say-It-Out-Loud
-	youth groups	
Ask Suicide-Screening Questions	Health professionals, school staff, juvenile detention	https://www.nimh.nih.gov/research/research-conducted-at-nimh/asq-
(ASQ) Toolkit	center staff	toolkit-materials/

<sup>a</sup> Mental health concerns. Note, this table is meant to provide examples of currently available toolkits and is not intended to serve as an exhaustive list of all currently available toolkits.

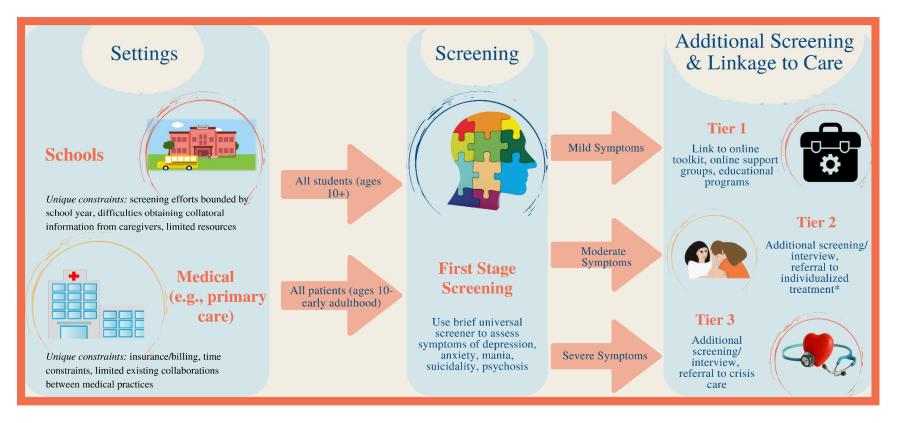
Table S5. Survey Items and Response Agreement

Concept or Principle	Agree (%)	No Opinion (%)	Disagree (%)
1. The lack of a brief, but comprehensive screening tool for youth mental health is a critical gap and a barrier to early intervention in the U.S.A.	85	15	
2. It is more efficient to modify an existing screening tool rather than starting de novo.	85	15	
3. The tool should screen for the risk of serious mental illness, including depression, anxiety, and psychosis, but <u>not</u> for suicidality.	17	41	42
4. The screening tool should target ages $10 - 24$ years (at least as a start).	92	8	
5. The tool should have normative values by age groups.	92	8	
6. The screening tool should have cut-off values for "no or low indicators", "moderate indicators", and "high indicators" for additional mental health assessment.	92	8	
7. The screening tool should be tested in and applicable for use with racially and culturally diverse populations relevant to the demographics of the U.S.A.	92	8	
<ol> <li>A single screening tool should be useful in multiple settings in the U.S.A., e.g. schools, primary and secondary clinics, other community settings, and online (acknowledging the potential need for some minor modifications by setting).</li> </ol>	92	8	
9. A single universal screening tool should include a youth and a parents' or caretakers' assessment.	83	17	
10. An initial universal screening tool should take less than $5 - 10$ minutes.	84	8	8
11. A single universal screening tool should employ IRT and be designed for an electronic device (primarily), and paper (secondarily).	67	25	8
12. The tool should <b>not</b> be disseminated without accompanying guidance on how to administer it and follow- up on the responses.	92	8	
13. A single screening tool is preferable to multiple assessment tools, acknowledging that additional testing with other tools may be needed later depending on the scores.	82	18	
14. The tool should be in the public domain, or if a commercial product, it should have open-source documentation.	65	25	8
15. We should limit the scope of the initial project to youth in the U.S.A., rather than addressing global youth mental health.	75	17	8
16. We should find or collect baseline data about the current <b>extent</b> of youth mental health screening in the U.S. as a reference for evaluating the impact of our project later.	68	32	
17. We should find or collect data about the current duration of untreated serious mental illness and/or utilization of services in the U.S. as a reference for evaluating the impact of a universal youth mental health screening tool later.	83	8	8

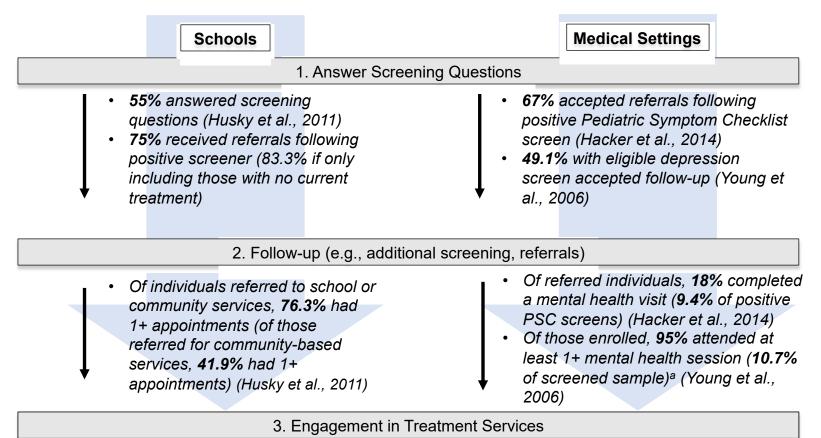
# **Supplemental Figure Captions**

*Figure S1.* Example of potential staged assessment and linkage to care approach in school and medical settings. In this proposed model, youth in school and medical settings would complete a first stage brief screener to assess a range of psychopathology symptoms. Based on responses to this screener, youth endorsing mild psychopathology symptoms would be linked to Tier 1-level care, including psychoeducation. Youth endorsing moderate psychopathology symptoms would be linked to Tier 2-level care, including recommendations for additional screening, and individual, family, or other therapies, as indicated and available. Youth endorsing severe psychopathology symptoms would be linked to Tier 3-level care and receive immediate assessment of risk and potential linkage to crisis care. Several common barriers for the scalability of a screening and linkage to care initiative will include the need for training, resources, and monitoring outcomes [see Settings panel in figure for unique constraints for each setting].

\*For psychosis spectrum symptoms, further assessment is warranted prior to specialty care referrals to minimize risk of stigma, misattribution, and delays to appropriate care.



*Figure S2*. Examples of implemented screening to linkage to care pipelines in detailed in previous research. The pipelines show that significant attrition exists at both the linking screening to follow-up as well as the follow-up to engagement in treatment services arms of the pipelines.



<sup>a</sup>Note, participants in the study were ineligible for treatment due to several reasons, including screener scores being too low (62.2% of screened sample) or too high (7.1% of screened sample). 34.8% of sample with eligible screeners completed at least 1 session.

Appendix. Think Tank Agendas

### Youth Mental Health Think Tank Agenda 2020 Video Conferences

### Video Conference #1

3:00 Welcome - Brandon Staglin

3:05 Why Convene a "Think Tank"? Deanna Barch, Washington University

3:30 Lessons Learned from Past and Current Programs - Carrie Bearden, UCLA, Moderator

- Twenty years of the PSC in clinical use; after 4,000,000 forms what have we learned? Michael Murphy, Harvard University
- Issues in implementing screening Larry Wissow, University Washington
- Considerations and preliminary model for psychosis risk screening in primary care Kristin Woodberry, Maine Medical Center Research Institute

4:45 Closing comments - Deanna Barch

### Video Conference #2

1:00 Summary of Conference #1 - Carrie Bearden, UCLA

1:10 Lessons Learned from Past and Current Programs (cont.) - Raquel Gur, University of Pennsylvania, Moderator

- Mental Health Screening in Schools Steve Adelsheim, Stanford University and Judith Dauberman, Stanford University
- Screening in Primary Care: How a Child Psychiatry Access Network Can Help Roshni Koli, Dell Medical Center
- From Broad to Narrow: Screening for Psychosis Risk Jason Schiffman, University of Maryland
- Identification and Prevention of Depression in Community Settings Jami Young, Children's Hospital of Philadelphia

2:50 Closing comments – Deanna Barch

Video Conference #3

### 4:00 Summary of Conference #2 - Raquel Gur, University of Pennsylvania

- 4:10 Lessons Learned from Past and Current Programs (cont.) Carrie Bearden, UCLA, Moderator
  - Psychosis screening in schools Tara Niendam, UC Davis and Jacqueline Rodriguez, Sacramento City Unified School District
  - I am Not a Monster Cecilia McGough, Students With Psychosis
  - Screening and Care Pathways: Suicide and Self-Harm Joan Asarnow, UCLA
  - Screening for psychosis and validation in a children's hospital network Raquel Gur and Monica Calkins, University of Pennsylvania

5:50 Closing comments – Deanna Barch

### Video Conference #4

### 2:00 Summary of Video Conference #3 - Carrie Bearden, UCLA

2:10 Networks and Tools - Raquel Gur, University of Pennsylvania, Moderator

- The ABCD Study Nicole Karcher, Washington University
- Early Psychosis Care: National Landscape and Opportunities Bob Heinssen, NIMH
- Learning from Lived Experience Carlos Larrauri, NAMI
- Using Digital Media Advertising to Reduce the Duration of Untreated Psychosis Chantel Garrett, Strong 365

3:50 Next Steps – Deanna Barch

### Video Conference #5

3:00 Where do we go from here? - Brandon Staglin, One Mind

3:05 PM Think Tank Manuscript - Nicole Karcher and Deanna Barch, Washington University

- 3:30 PM Proposal Idea Rachel Loewy, University of California, San Francisco
- 3:50 PM Other Ideas / Aha Moments, etc.? All Think Tank Participants
- 4:55 PM Thank you Brandon Staglin, One Mind