

Suicidality in Individuals with Autism Spectrum Disorder

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Objectives

- To describe the impact of co-occurring mental health conditions on autistic individuals
- To review current data on suicide in autistic individuals
- To discuss individual and systems level interventions to address suicidality in this group



Case Example 1 – ‘Tony’

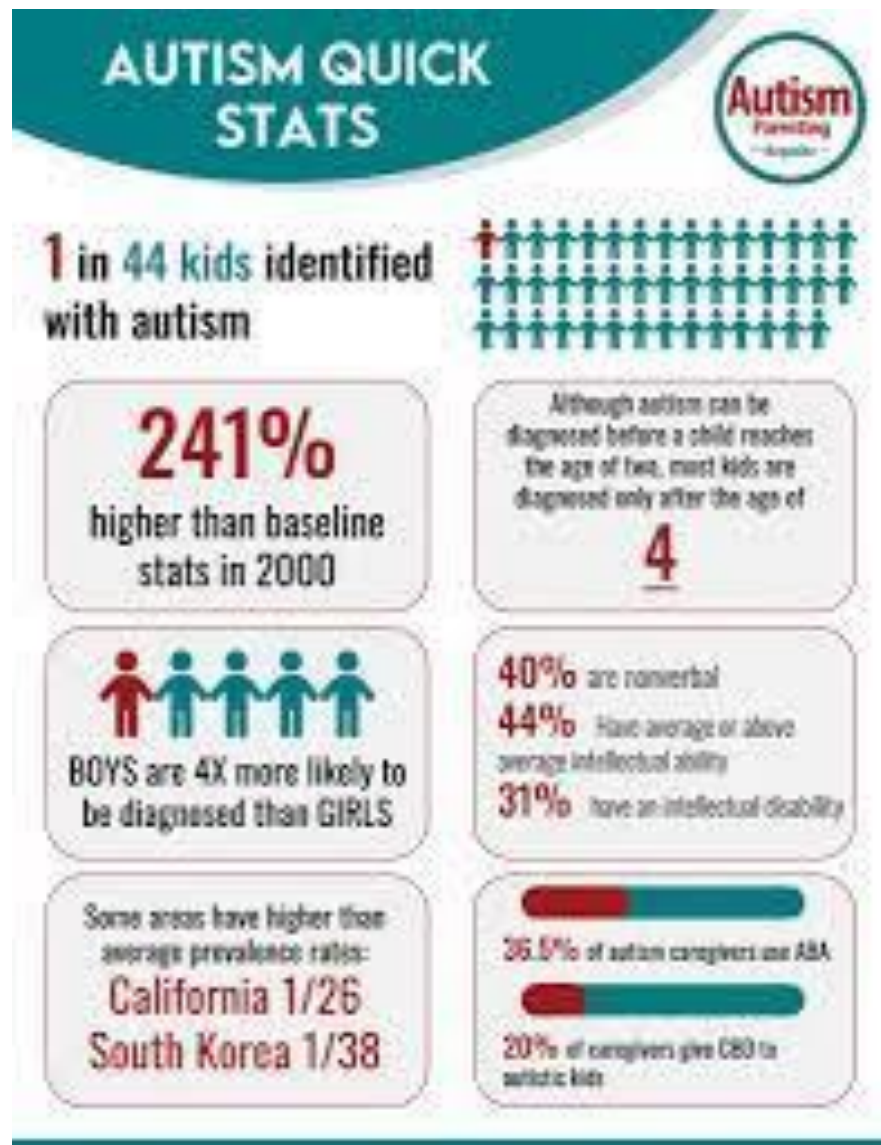
- 25 year old male, diagnosed with ASD at 3 yo, ADHD at 5 years, anxiety at 8 yo
- Public school with special education supports
- Never had any close friends, some connections through online video games
- Depressed at 15 years old, intermittent suicidal ideation, dislikes therapy, multiple antidepressants
- Some community college, string of odd jobs, currently unemployed, living at home
- Wrote a suicide note saying how unhappy and hopeless he felt. He locked himself in his car, started the engine of the car and put down the garage door.



Case Example 2 – ‘Jan’

- 15 year old female, presented to the emergency room following active suicidal ideation with a plan to overdose on pills
- Noted to have longstanding social difficulties, anxiety, rigidity, emotion dysregulation
- Exhausted and discouraged by always trying hard to fit in (camouflaging)
- Never had a psychiatric evaluation until her arrival to the emergency room
- Admitted for inpatient psychiatric hospitalization and referred to an autism center for evaluation upon discharge





- Underrecognition in females
- > 50% adults with ASD live with family
- 5% married
- 20% employed
- High rates of polypharmacy
- Barriers to accessing high quality care



Population-based sample

TABLE 1

Prevalence of *DSM-IV* Disorders

Disorder	3-Mo Point Prevalence/100	95% CI
Any disorder	70.8	58.2–83.4
Any main disorder ^a	62.8	49.8–75.9
Any emotional disorder ^b	44.4	30.2–58.7
Any anxiety or phobic disorders ^c	41.9	26.8–57.0
Generalized anxiety disorder	13.4	0–27.4
Separation anxiety disorder	0.5	0–1.6
Panic disorder	10.1	0–24.8
Agoraphobia	7.9	3.0–12.9
Social anxiety disorder	29.2	13.2–45.1
Simple phobia	8.5	2.8–14.1
Obsessive-compulsive disorder	8.2	3.2–13.1
Any depressive disorder	1.4	0–3.0
Major depressive disorder	0.9	0–2.3
Dysthymic disorder	0.5	0–1.4
Oppositional or conduct disorder	30.0	14.9–45.0
Oppositional defiant disorder	28.1	13.9–42.2
Conduct disorder	3.2	0–7.1
Attention-deficit/hyperactivity disorder	28.2	13.3–43.0

Clinic-based sample

- 95% of youth have 3 or more psychiatric disorders
- 74% have 5 or more disorders



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Suicide is the

2nd

Leading cause of death among youth 10-34

90% of those who die by suicide
have an underlying mental illness



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Suicidal ideation and suicide plans or attempts in adults with Asperger's syndrome attending a specialist diagnostic clinic: a clinical cohort study



Sarah Cassidy, Paul Bradley, Janine Robinson, Carrie Allison, Meghan McHugh, Simon Baron-Cohen

- United Kingdom
- Retrospective analysis of clinic survey data
- Newly diagnosed Asperger's Syndrome
- 374 adults, mean age 31 years
- Pre-visit self-report questionnaire of lifetime experiences
- 66% reported suicidal ideation
- 35% reported suicidal plans or attempts
- Depression was a major risk factor for suicidality



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Population-Based Longitudinal Studies

Study	Sample	Findings
Chen et al., 2017 (Taiwan)	ASD vs No ASD Up to 30 years	<ul style="list-style-type: none">• Suicide attempts: 3.9% ASD vs 0.7%• Predictors: Psych disorders, ASD
Culpin et al., 2018 (United Kingdom)	ASD vs No ASD High vs. Low ASD traits Up to age 16 years	<ul style="list-style-type: none">• ASD did not predict suicidality• Social communication problems predicted suicidality and depression mediated this risk
Kolves et al., 2021 (Denmark)	ASD versus No ASD 10 to 40+ years	<ul style="list-style-type: none">• Suicide attempts/completion – 3x higher in ASD vs no ASD• Higher risk in women and those with psych disorders.




Suicide Prevalence in Autistic Adolescents

- Mikami et al - 12.8% of adolescents who attempted suicide had ASD, and within this group, male subjects were significantly more likely to attempt suicide.
- Mayes et al. (2013) – suicide-related behavior in the ASD group was 28 times higher than in typically developing group
- Means are more lethal - hanging, gunshot, jumping off a bridge, strangling with a garden hose


Brief Report

Suicide Leap of an 11-Year-Old Girl with Autism Spectrum Disorder

Yuki Takahashi, MD¹, Katsunaka Mikami, MD, PhD¹ ,
Fumiaki Akama, MD, PhD¹, Yuichi Onishi, MD¹,
Kenji Yamamoto, MD, PhD¹,
and Hideo Matsumoto, MD, PhD¹

Abstract

Autism Spectrum Disorder (ASD) has been linked with risk of suicide, and several cases of suicide attempts by adolescents with ASD have been reported. However, there is scant research on therapeutic approaches to prevent suicide re-attempts by children with ASD who have already attempted suicide. We report our experience of

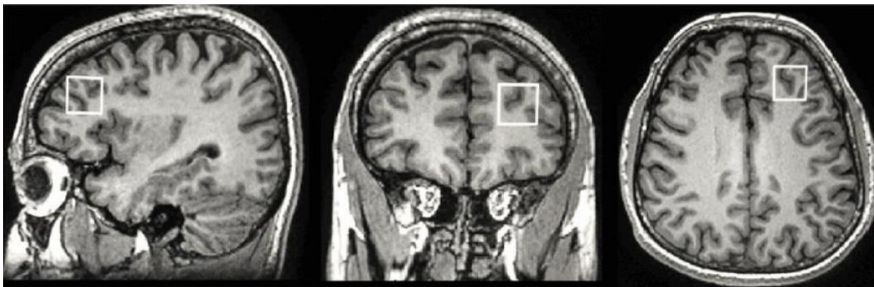
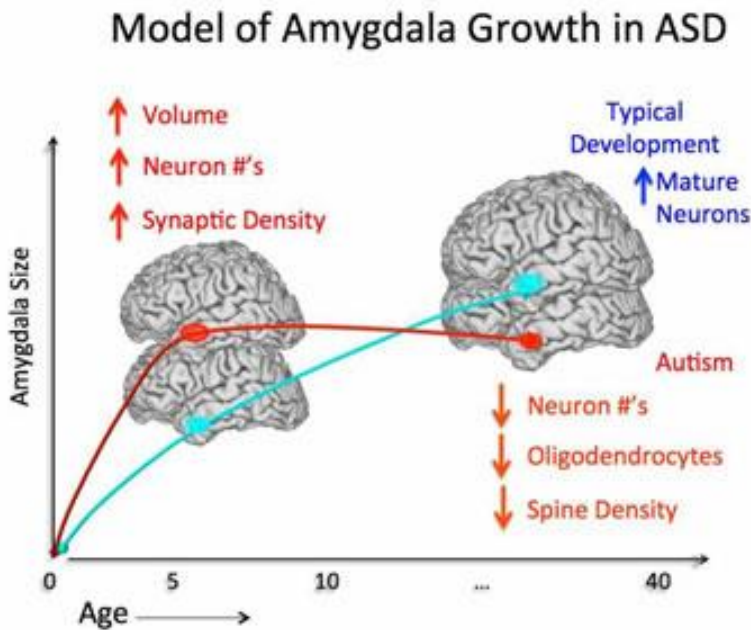
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Genetic/Neurobiological (preliminary)

Table 1

Gene overlap in autism spectrum disorder (ASD) and suicidal behavior (SB)

Gene Symbol	Relevant Gene Function	Significant in Gene Set Enrichment Analyses
<i>CTNND2</i>	brain and eye development, neuronal development, maintenance of dendritic spines and synapses	Y
<i>GRIA1</i>	neurotransmission in brain, synaptic plasticity	Y
<i>GRIN2B</i>	brain development and synaptic plasticity	Y
<i>GRIP1</i>	development of neurons	Y
<i>MACROD2</i>	physiological role in the central nervous system during brain development	N
<i>PTEN</i>	regulates cell division, embryonic development	Y
<i>SLC6A1</i>	uptake of neurotransmitters	Y
<i>SRSF11</i>	pre-mRNA processing in neurons	N



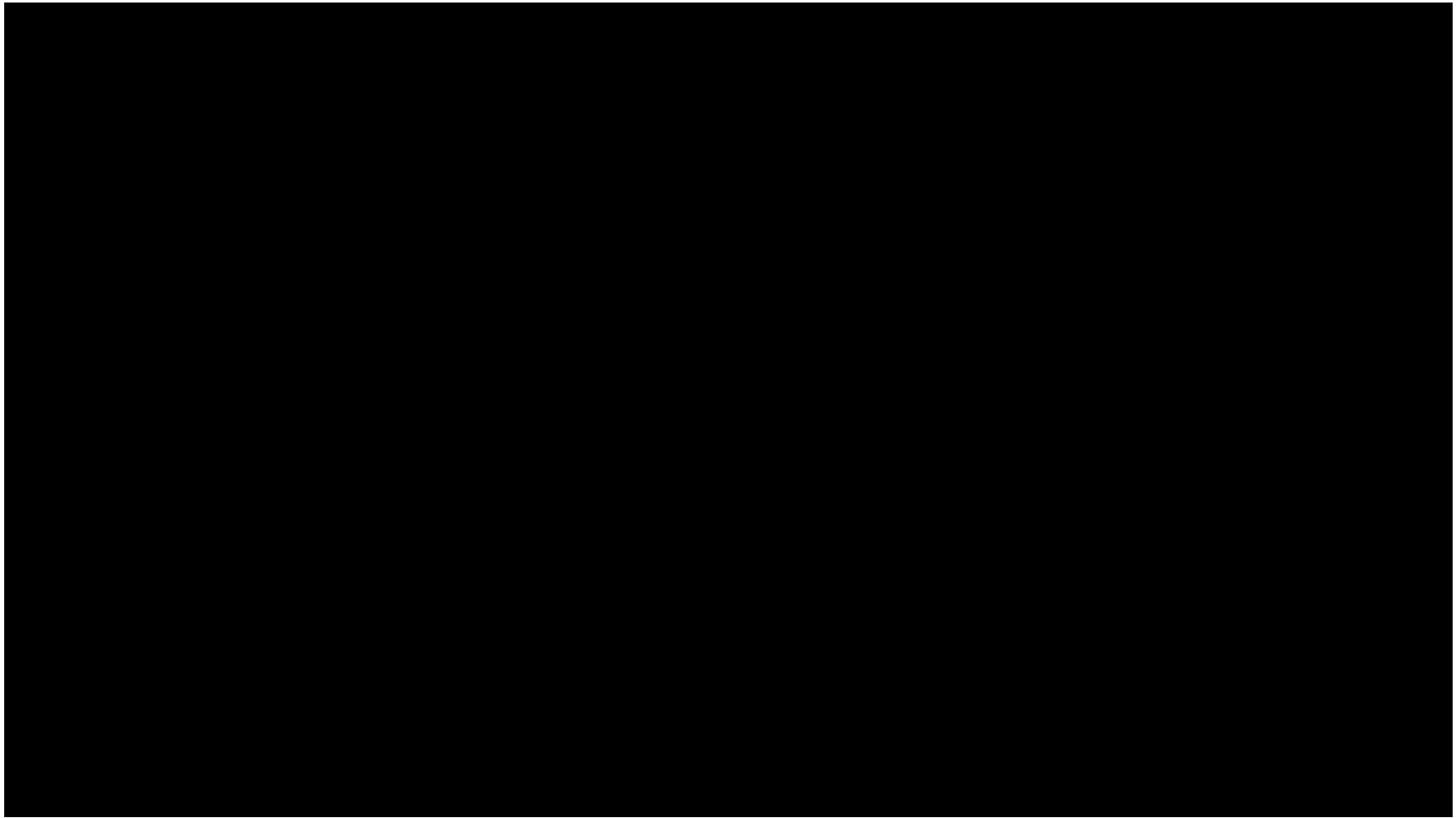
Contributing Factors

- Psychiatric – depression, adjustment disorder, anxiety, ADHD, psychosis
- Psychosocial – trauma, isolation, unemployment
- ASD characteristics – rigidity, perseveration, alexithymia, dysregulation
- Psychological – low self-esteem, awareness of ASD



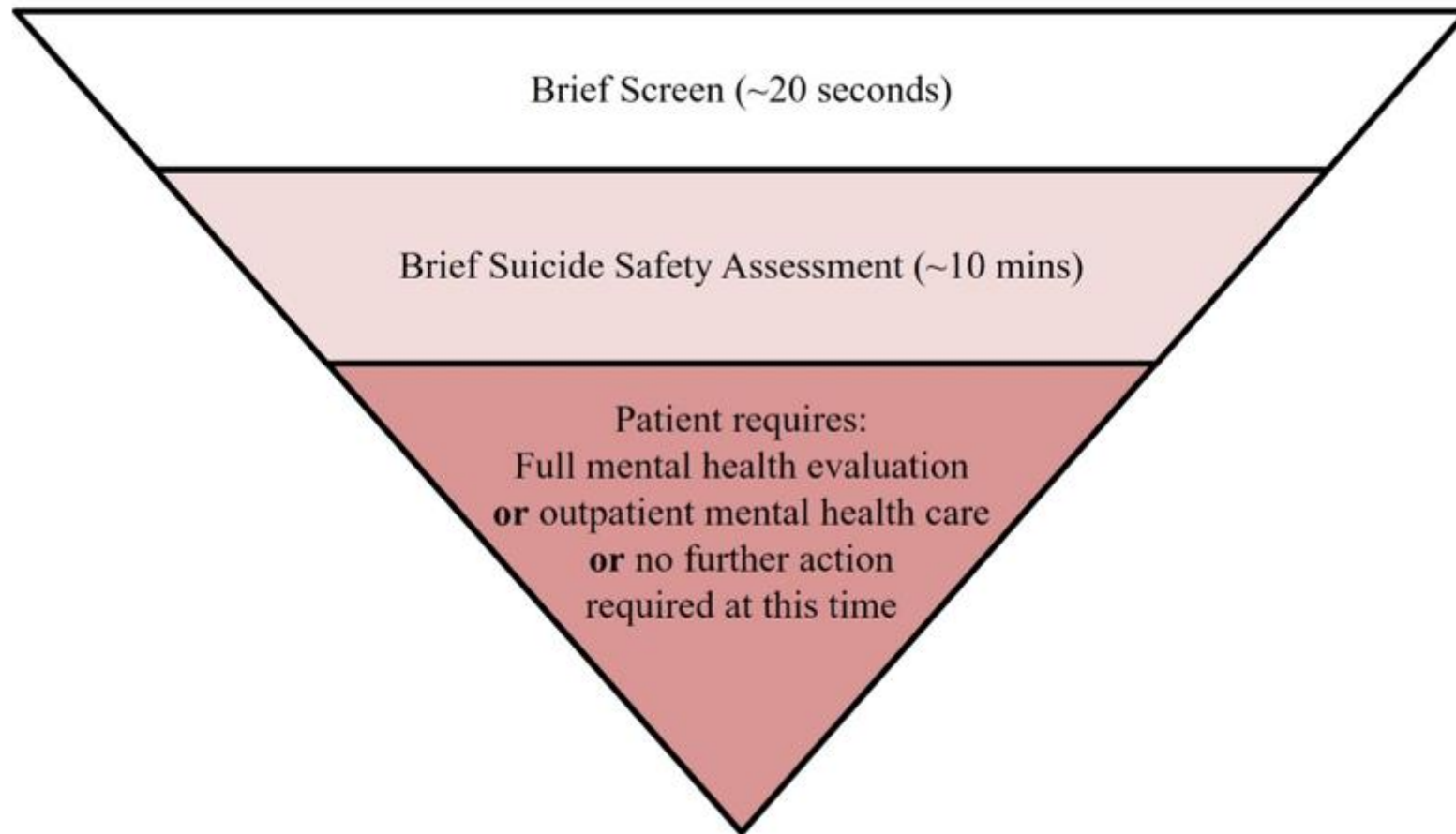
Camouflaging






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Suicide Screening





Mental Health Clinicians' Screening and Intervention Practices to Reduce Suicide Risk in Autistic Adolescents and Adults

Shari Jager-Hyman¹  · Brenna B. Maddox¹ · Samantha R. Crabbe¹ · David S. Mandell¹

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Abstract

Autistic individuals experience elevated risk for suicide ideation, attempts, and deaths. Little is known about how clinicians assess risk or intervene with suicidal autistic individuals. We surveyed 121 clinicians about use of suicide prevention practices with autistic and non-autistic clients. Clinicians reported greater self-efficacy in screening for suicide risk among non-autistic clients ($p=0.01$). There were no statistically significant differences in whether they used standardized screening measures or in their reported normative pressure or attitudes towards screening. Clinicians reported similar rates of use of Safety Planning, an evidence-based suicide-prevention strategy, across groups, but greater acceptability for non-autistic clients ($p<0.001$). These findings have implications for strategies to increase clinicians' adoption of these tools for autistic individuals.

Keywords Suicide · Autism spectrum disorder · Screening · Safety planning intervention





- In the past few weeks, have you wished you were dead?
- In the past few weeks, have you felt that you or your family would be better off if you were dead?
- In the past week, have you had thoughts about killing yourself?
- Have you tried to kill yourself? How and when?
- If yes to any of the above - Are you having thoughts of killing yourself now?

<https://www.nimh.nih.gov/research/research-conducted-at-nimh/asq-toolkit-materials/index.shtml>

Validation studies in neurotypical children - sensitivity between 96.7% and 96.9%,
specificity between 87.6% and 91.1%,



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Suicide Risk Screening in Pediatric Outpatient Neurodevelopmental Disabilities Clinics

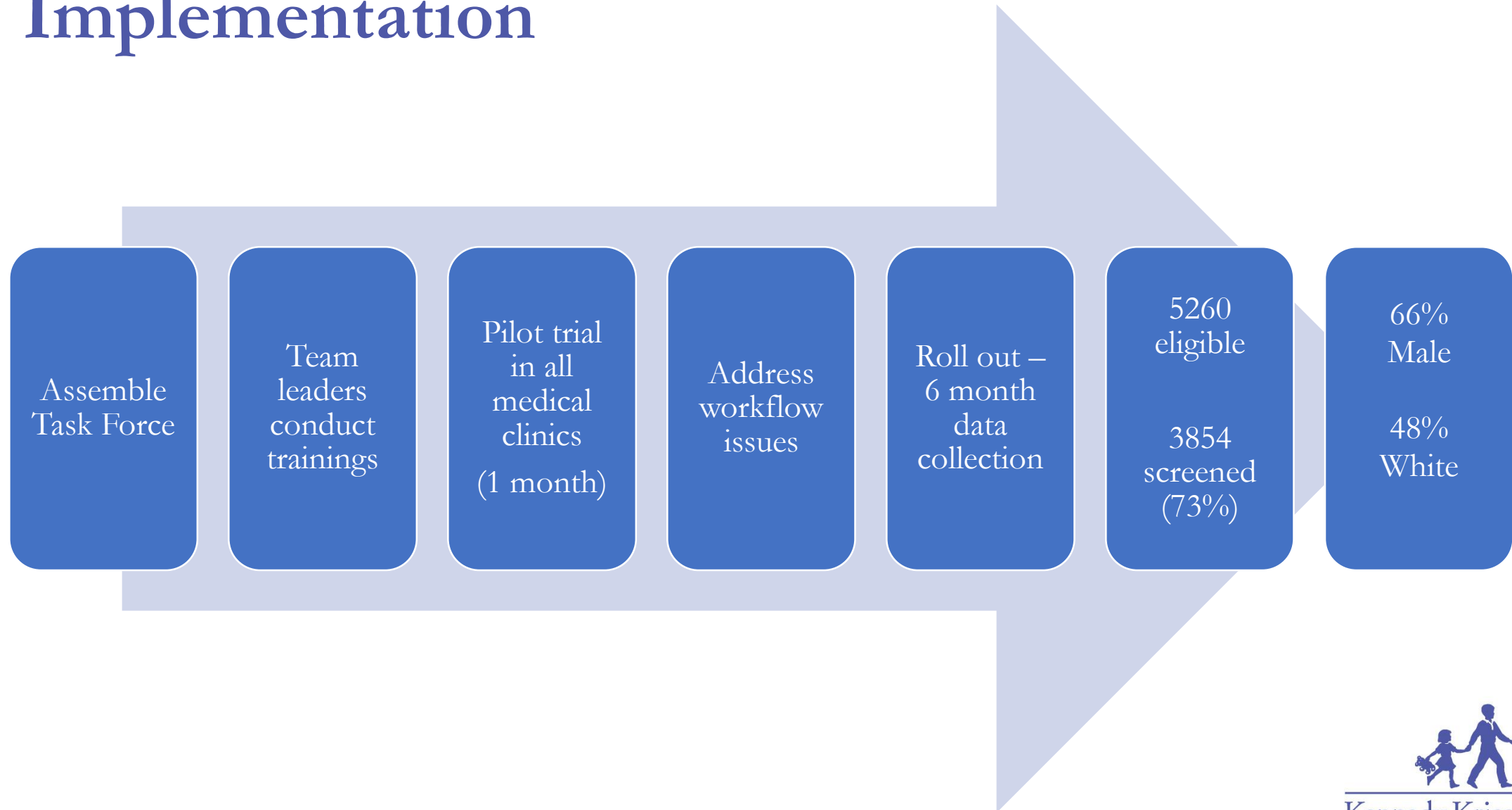
Suzanne Rybczynski, MD,*† Taylor C. Ryan, MS,‡§ Holly C. Wilcox, PhD,‡||
Kathryn Van Eck, PhD,*|| Mary Cwik, PhD,‡ Roma A. Vasa, MD,*|| Robert L. Findling, MD, MBA,*||¶
Keith Slifer, PhD,*|| Daniel Kleiner, PsyD,*|| Paul H. Lipkin, MD*†

ABSTRACT: *Objective:* The purpose of this study was to describe the implementation of universal suicide risk screening in pediatric neurodevelopmental disabilities (NDD) medical clinics, analyze demographic and clinical characteristics of eligible patients, describe outcomes of positive screenings, and describe factors that influenced participation in screenings. *Methods:* A suicide risk screening protocol was developed and implemented for medical clinic patients aged 8 to 18 years. Registered nurses screened patients using the “Ask Suicide-Screening Questions” tool during triage. Positive screenings were referred for further assessment and mental health management. Demographics and clinical data were extracted from medical records using retrospective chart reviews. *Results:* During the 6-month study period, 2961 individual patients presented for 5260 screening eligible patient visits. In total, 3854 (73.3%) screenings were completed with 261 (6.8%) positive screenings noted. Screenings were declined in 1406 (26.7%) visits. Parents of children with



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Implementation



Kennedy Krieger Suicide Screening Data

Table 1. Response to Suicide Screening by Clinics

Clinic	Total Eligible Visits	Completed	Positive	Declined
	n (% of Total Eligible)	n (% Eligible in Each Clinic)	n (% of Screened in Each Clinic)	n (% of Total Eligible)
All clinics	5260	3854 (73.3)	261 (6.8)	1406 (26.7)
Developmental pediatrics	1764 (33.5)	1443 (81.8)	78 (5.4)	321 (18.2)
Autism and related disorders	996 (18.9)	699 (70.2)	84 (12.0)	297 (29.8)
Neurology	635 (12.1)	416 (65.5)	29 (7.0)	219 (34.5)
Traumatic stress	423 (8)	421 (99.5)	17 (4.0)	2 (0.5)
Concussion	281 (5.3)	262 (93.2)	19 (7.3)	19 (6.8)
Cerebral palsy	191 (3.6)	56 (29.3)	0 (0)	135 (70.7)
Chronic pain	178 (3.4)	160 (89.9)	17 (10.6)	18 (10.1)



Johns Hopkins Pediatric Emergency Department

- Universal screening for all children who present to the emergency department
- Nurses administer the ASQ
- Compare responses at registration to responses on the ASQ
- Preliminary evidence – More cases of suicidality picked up by the ASQ in the ASD versus control group



Strategies to Mitigate Suicide Risk in Autism

- Addressing risk factors
 - Aggressive treatment of psychiatric comorbidities
 - Bullying prevention
 - Increasing psychosocial connections
- Current studies
 - Comparative trial of safety planning interventions (Hyman-Jager/Maddox, US)
 - Dialectical behavior therapy trial (Huntjens, Netherlands)



Therapeutic Approaches

Ask questions
directly but allow
for time to
processing

Listen deeply to
struggles/identify
triggering factors

Ask about
adjustment to
autism and
masking

Educate parents
and schools about
mental health in
autism

Train professionals
across all
disciplines

Job and social
programs



Questions

How can we assess developmental understanding of suicidality in ASD?

How do we differentiate between true suicidality versus self-injurious behaviors?

What interventions will be effective in reducing suicidality across a range of developmental levels?

Can we link genetic/biological markers with psychosocial factors to predict suicide risk?



Summary

- Individuals with ASD are at high risk for psychiatric disorders and suicidality.
- Research is needed to understand how suicidality evolves and how we can treat it.
- It is important to build psychosocial interventions for adolescents and adults.



Thank you for your attention.

