

OBJECTIVE Suicide is a major public health concern. Health systems have begun implementing clinical care pathways to address suicide risk among patients. While many systems use suicide risk assessments to stratify risk and inform care, there remains limited evidence. This study examines suicide attempt outcomes based on risk strata within the Henry Ford Zero Suicide Risk Assessment.

Table 1. Demographic Characteristics and Risk-Level of Individuals with Outpatient Behavioral Health Visits, 2021–2024

	# of Completed Risk Assessment		Level of Risk							
			Low		Moderate		High		Acute	
			n	% of row	n	% of row	n	% of row	n	% of row
Total	484,078		119,461	24.7	208,087	43.0	133,327	27.5	23,203	4.8
Age at visit										
18-29	111,544	23.0%	28,301	25.4	45,892	41.1	31,396	28.1	5,955	5.3
30-44	137,327	28.4%	33,744	24.6	59,092	43.0	38,205	27.8	6,286	4.6
45-64	163,240	33.7%	34,307	21.0	72,036	44.1	48,364	29.6	8,533	5.2
>=65	71,967	14.9%	23,109	32.1	31,067	43.2	15,362	21.3	2,429	3.4
Sex										
Male	134,369	27.8%	38,493	28.6	55,256	41.1	34,460	25.6	6,160	4.6
Female	349,709	72.2%	80,968	23.2	152,831	43.7	98,867	28.3	17,043	4.9
Race/Ethnicity										
White	286,252	59.1%	71,605	25.0	120,823	42.2	79,776	27.9	14,048	4.9
Black	132,681	27.4%	30,741	23.2	58,955	44.4	37,009	27.9	5,976	4.5
Hispanic	18,607	3.8%	4,217	22.7	8,527	45.8	4,932	26.5	931	5.0
Others	33,221	6.9%	9,425	28.4	14,190	42.7	8,000	24.1	1,606	4.8
Unknown	13,317	2.8%	3,473	26.1	5,592	42.0	3,610	27.1	642	4.8

Figure 1. Probability of suicide attempt over time by risk level among 484,078 risk assessments, 2021-2024

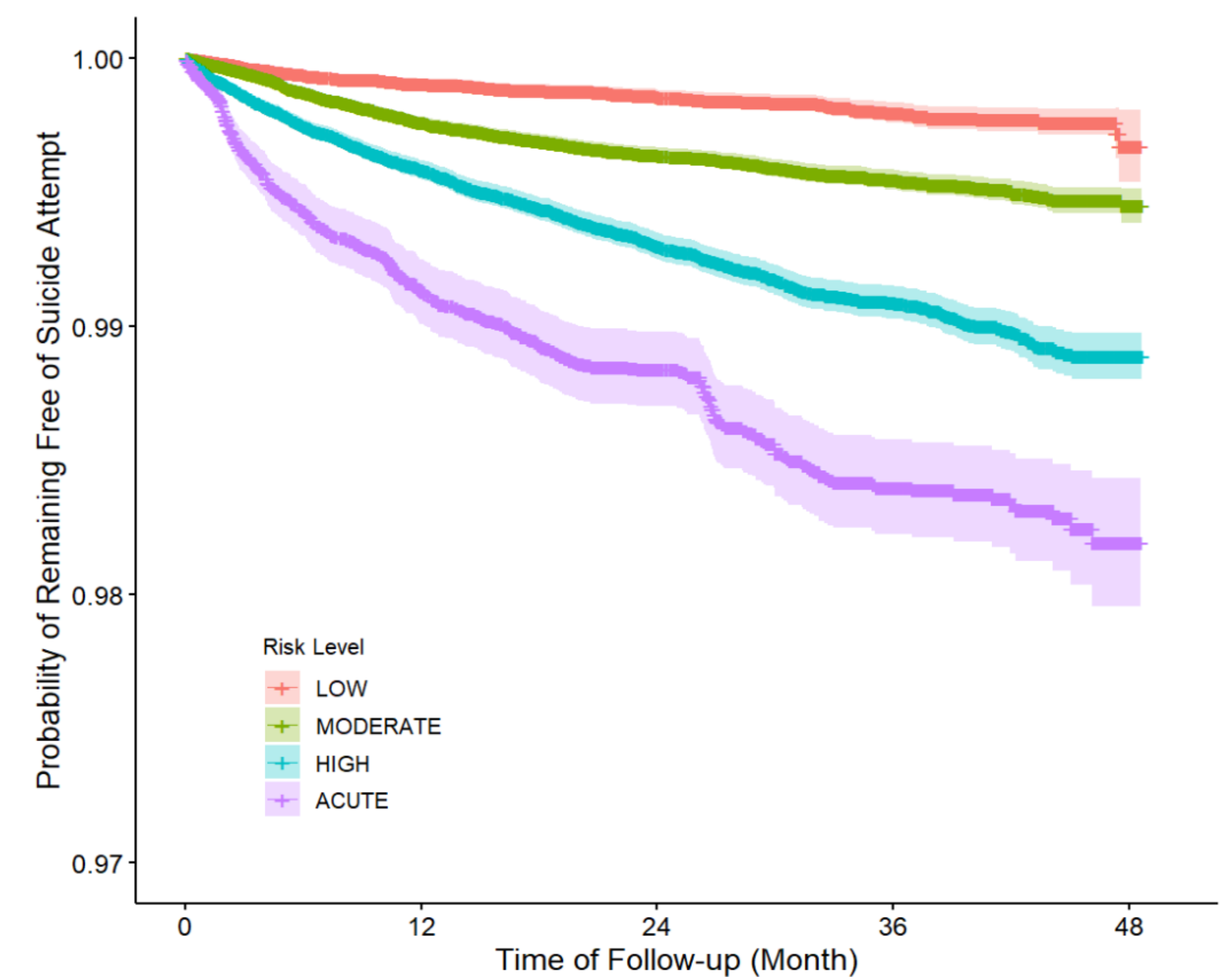


Table 2. Results of proportional hazards models for predicting risk of suicide attempt from partially conditional cox model

Risk Level	Model 1:		Model 2:		Model 3:	
	Risk Assessment only		Demographic Characteristics		Demographic Characteristics + Clinical Features	
	HR (95% CI)	p-value	aHR (95% CI)	p-value	aHR (95% CI)	p-value
Low		Ref.		Ref.		Ref.
Moderate	2.32 (1.47-3.66)	<.001	2.41 (1.53-3.80)	<.001	2.36 (1.50-3.70)	<.001
High	4.62 (2.82-7.56)	<.001	4.60 (2.79-7.60)	<.001	4.02 (2.42-6.65)	<.001
Acute	7.94 (4.43-14.30)	<.001	7.74 (4.27-14.10)	<.001	6.34 (3.43-11.70)	<.001

RESULTS

- 45,130 behavioral health patients contributed 484,078 suicide risk assessments during 2021 - 2024.
- Moderate risk was the most common classification (43.0%), followed by high (27.5%), low (24.7%), and acute (4.8%) risk.
- Younger adults (18–29 years) had the highest proportion of acute-risk assessments (5.3%), compared with adults aged ≥65 years (3.4%).
- In longitudinal survival models, suicide risk remained a strong predictor of subsequent suicide attempts ($p < 0.001$); individuals classified as acute risk had approximately 6 to 8 times higher risk of suicide attempt than those classified as low risk, with clear separation of cumulative incidence curves by risk level.

CONCLUSION

- The Henry Ford Zero Suicide Risk Assessment effectively stratified the risk of subsequent suicide attempts among patients receiving outpatient behavioral healthcare. These findings support the use of this evidence-based assessment tool to guide suicide prevention strategies, clinical decision-making, and risk-informed care.

METHODS

- Setting** A large integrated healthcare system in southeast Michigan (>2.5 million patients annually); behavioral health services (>200,000 patients/year).
- Study Population** Adults (≥18 years) with ≥1 clinician-administered suicide risk assessment during outpatient behavioral health visits (2021-2024); patients with prior suicide attempts were excluded.
- Exposure** Henry Ford Zero Suicide Risk Assessment administered at each outpatient visit; risk classified as Low, Moderate, High, or Acute.
- Outcome** Suicide attempt (intentional self-harm) identified using validated ICD-10 codes.
- Analysis** Longitudinal partly conditional survival models assessed associations between repeated time-varying risk assessments and subsequent suicide attempts, adjusting for demographic and clinical covariates.

Henry Ford Zero Suicide Risk Assessment Risk Levels and Factors

ACUTE RISK	MODERATE RISK
Severe depression (e.g. PHQ-9 >20)	Mild depression
Current mania	Current hypomania
Current psychosis	Drug use disorder within the last 5 years
Current intoxication with alcohol or substances	Moderate anxiety/panic
Suicidal plan	Suicidal ideation
Suicidal intent	History of suicide attempts (> than 1 year ago)
History of suicide attempt in the last 30 days	Family history of suicide
Hopelessness	Chronic severe pain
HIGH RISK	LOW RISK
Moderate depression	LGBTQ
History of suicide attempt in the last year	Armed Services: Veteran and active duty
Severe anhedonia	Current eating disorder
PHQ-9 Question #9 with response of 2 or 3	Traumatic Brain Injury within the last year
Alcohol abuse/substance abuse within the last month	Anxiety Disorder (not moderate or severe)
Severe anxiety/panic	Depressive disorder, in remission
Acute stressor; particularly real or perceived loss	Bipolar disorder, in remission
Impulsivity (particularly in teens and young adults)	Psychotic disorder, in remission
Chronic non-lethal self-injury	PHQ-9 Question #9 with response of 1
Global insomnia	Multiple chronic medical problems
Opiates abuse within the last year	Any other mental health or personality disorder
Inpatient psychiatric care in last year	
Mental Health ED visit within last 3 months	



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