Published in final edited form as:

J Adolesc Health. 2014 March ; 54(3): 357–359. doi:10.1016/j.jadohealth.2013.11.015.

Emergency Department Utilization among American Indian Adolescents who made a Suicide Attempt: A Screening Opportunity

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Abstract

Purpose—Reservation-based American Indian adolescents are at significant risk for suicide.

Preventive approaches have not focused on medical service utilization patterns on reservations, which are typically limited to one local emergency department (ED). Patterns of ED utilization prior to suicide attempt were evaluated to identify opportunities for screening and intervention.

Methods—Cross-sectional study of Apache adolescents (aged 13-19) who attempted suicide and consented to medical chart review. Lifetime presenting complaints for Indian Health Service ED visits prior to the index suicide attempt were extracted and coded.

Results—1424 ED visits from 72 Apache adolescents were extracted (median lifetime visits, $n=18$). In the year before attempt, 82% ($n=59$) of participants had an ED visit for any reason and 26% ($n=19$) for a psychiatric reason, including suicidal thoughts or self-harm.

Conclusion—Service utilization data suggest EDs are critical locations for reservation-based suicide prevention. Suicide screening for all ED patients could increase early identification and treatment of this at-risk group.

Keywords

Suicide; screening; emergency department; American Indian

Reservation-based American Indian (AI) adolescents have suicide rates 4-15 times that of national samples (1). AI adolescents experience notable health care disparities, including decreased access to well-child visits (2) and mental health treatment (3), as well as increased visits to emergency departments (EDs) (4) and injury-related hospitalization and death (5). On reservations, the ED is often the primary source of medical care. Consequently, screening in ED settings may be a critical strategy to increase identification of individuals at

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Implications and Contributions: Suicide is a significant concern among American Indian youth. In a sample of American Indian adolescents who attempted suicide, the majority had been to the emergency department in the year before the suicide attempt. Emergency departments are well-positioned to screen and intervene with reservation-based American Indian youth.

risk for suicide and decrease suicide attempts and deaths (6, 7). However, there are no known studies on ED utilization among AI adolescents at risk for suicide.

The current study is the first of its kind to investigate reservation-based ED utilization in a sample of AI adolescents who attempted suicide. Patterns of ED utilization in the time before suicide attempt were explored to illuminate specific opportunities for screening and early identification.

Methods

Study Procedures

Participants were White Mountain Apaches (Apache) aged 13-19 who made a suicide attempt within the past 3 months. Participants were identified by the tribally mandated Apache Suicide Surveillance and Prevention System (1, 8) and consented to a series of studies examining suicide risk factors and brief intervention approaches (Cwik, in review). Participants (aged 18 to 19) or a legal guardian (for participants aged 13 to 17) consented to an Indian Health Service (IHS) medical record review; 22/94 (23%) of those approached declined participation. Apache Research Assistants used a form created by the study team to extract medical record data including ED presenting complaints and dates of service. The study protocols were approved by relevant tribal, Indian Health Services, and University research review boards.

Data Analysis

The first three ED visit presenting complaints were coded using the diagnosis grouping system developed by the Pediatric Emergency Care Applied Research Network Core Data Project, based on ICD-9 codes (9). Imprecise or invalid complaints (40/1582, 3%), as well as patients leaving against medical advice (118/1582, 7%), were excluded from final analysis. Codes occurring in less than 20 ED visits in the total sample coded as "Other." E-codes, which designate external causes of injury, were included as "Psychiatric" when the visit was for deliberate self-harm; all other E-codes were coded as "Trauma." All visits with a "Psychiatric" code were further coded for suicidal ideation or self-harm. ED visits before, but not including, the date of the index suicide attempt were analyzed using univariate statistics in IBM SPSS 21.

Results

Medical records for 72 participants were analyzed. 60% were female with a mean age of 16.7 years (SD: 0.9). 1424 ED visits were coded. Lifetime ED visits per participant ranged from 2 to 52 (median: 18). The Table displays frequency of presenting complaints in each category by year prior to index attempt (designated by first complaint in the medical record). Most common primary presenting complaints in the year prior to index attempt were Trauma (28%, $n = 47$), Ears, Nose and Throat (ENT) (21%, $n = 35$) and Psychiatric (8%, $n = 14$). These presenting complaints were common across all time periods, with the exception of early childhood.

The Figure presents the frequency of ED visits across the five years prior to index attempt. Two categories of ED visits are plotted using linear interpolation: 1) Psychiatric visits, which included visits for self-harm; and 2) All other ED visits.

In the year before the index suicide attempt, 82% (59/72) of participants had an ED visit for any reason with no significant difference by gender ($X^2 = .02$, $p = .88$). 34 participants (41%) had an ED visit with "Trauma" and 19 (26%) had an ED visit with "Psychiatry"

coded in the first three presenting concerns in this time period. Suicidal thoughts or self-harm were coded for five of these participants (7%, 4/5 were female).

Discussion

Data from Apache adolescent medical records indicate substantial contact (82%) with the local ED in the year before a suicide attempt. In comparison, according to the National Health Interview Survey, just 22% of AI/Alaska Native youth (under 18) made an ED visit in 2011 (10) and 65% of Apache children (aged 9 to 17) made an ED visit in 2012 (IHS, personal communication). Therefore, Apache adolescents who make suicide attempts appear to be a population with increased ED utilization, particularly in the year preceding a suicide attempt. Trauma and injury-related ED visits were the most common presenting complaints during this time period.

Results suggest that screening AI adolescent patients in ED settings may proactively identify those at risk for future suicidal behavior. Implementation considerations include appropriate patient selection, the availability of validated screening instruments and training of non-mental health personnel. The majority of ED visits in the five years before suicide attempt were for non-psychiatric reasons and few were for suicidal thoughts or behavior. Screening all adolescent patients, regardless of complaint, could have substantially increased identification in this sample. The sensitivity and specificity of the screening instrument would impact resulting burden on ED resources, highlighting the need for appropriate screening instruments for reservation-based AI adolescents.

Limitations to this study include small sample size, absence of a control group and imprecision in coding of presenting complaints (118, 7% of the codes were invalid and distinctions between suicide attempts and non-suicidal self-injury could not be made). Psychiatric presenting complaints could also have been underestimated by medical staff without extensive psychiatric training. These limitations are outweighed by the exclusively AI sample within a population experiencing significant suicide burden and healthcare disparities, and who are rarely the focus of ED research. Additionally, the majority of lifetime service use was captured since there are no other primary care facilities on the Apache reservation.

The 2012 National Strategy for Suicide Prevention advocates early identification and management of suicidal patients in ED settings (6). Future directions should include prospective investigation of ED utilization among AI adolescents who have attempted suicide with a non-attempter comparison group. AI reservation-based populations may benefit from further research to develop and evaluate appropriate ED-based suicide screening instruments and brief interventions.

Acknowledgments

We are grateful for grant support from the following: the Native American Research Centers in Health Initiative/ National Institute of General Medical Science (U26IHS300013/03), the Substance Abuse & Mental Health Services Administration (4SM057835-03 and U79SM059250) and MACRO International (Subcontract/Enhanced Evaluation, 35126-8S-1137).

We respectfully acknowledge the White Mountain Apache youth, families, and community members for their courage in addressing suicidal behavior and their innovation in pioneering surveillance strategies. We are grateful to the White Mountain Apache Health Board and Tribal Council for their historic commitment to research and their critical review of this research project and manuscript. We would like to thank Dr. Marc Traeger in the Indian Health Service for his assistance with this analysis. The opinions expressed are those of the authors and do not necessarily reflect the views of the Indian Health Service. We would like to acknowledge Madison Anderson with her assistance with data entry on this project. Finally, we acknowledge our Apache research assistants for their tireless efforts and dedication to help people in their community.

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Figure.
Frequency of ED Visit in the Year Prior to Index Suicide Attempt by Primary Presenting Complaint

Table**ED Visit Primary Presenting Complaint by Year Prior to Index Suicide Attempt**

Presenting Complaint, N (%)	Total	<1	1-5	5-10	10+
ENT, Dental and Mouth	404(28)	35(21)	83(23)	70(26)	216(35)
Trauma	324(23)	47(28)	105(29)	84(31)	88(14)
Gastrointestinal	109(8)	7(4)	17(5)	17(6)	68(11)
Respiratory	106(7)	2(1)	10(3)	7(3)	87(14)
Dermatologic	96(7)	13(8)	35(10)	22(8)	26(4)
Psychiatric	40(3)	14(8)	23(6)	2(1)	1(<1)
Systemic States	86(6)	4(2)	10(3)	19(7)	53(9)
Urinary Tract	30(2)	3(2)	6(2)	13(5)	8(1)
Musculoskeletal	24(2)	6(4)	15(4)	2(1)	1(<1)
Diseases of Eye	20(1)	5(3)	9(2)	1(<1)	5(1)
Other *	185(13)	33(20)	54(15)	34(14)	61(10)
Total	1424	169	367	274	614

* "Other" category included presenting complaints that occurred in less than 20 visits and included: Toxicologic Emergencies, Genital and Reproductive Diseases, Fluid and Electrolyte Disorders, Hematologic Diseases, Allergic, Immunologic and Rheumatologic Diseases, Neurologic Diseases, Child Abuse, Circulation and Cardiovascular Diseases, Endocrine, Metabolic and Nutritional Diseases.