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Background

- Suicide is the 2nd leading cause of death in teens and young adults.[1]
- Most prior studies of suicide risk focus on patients seen in the Emergency Department (ED).[2,3]
- In 2018, we implemented a hospital-wide program to screen all teens seeking care at our children's hospital for suicide risk. Adolescents (>12yo) were screened using the ASQ (Ask Suicide Screening Questions).
- Screening took place once/week during inpatient (IP) stays, monthly in outpatient (OP) and urgent care (UC) clinics, and at every ED visit.
- The goal of collecting this data was to identify individuals at high-risk and to determine whether high-risk patients clustered in certain clinics or care settings.

Methods

- Data on suicide risk assessment results, demographics, and settings for medical encounters occurring between February 2019 and January 2020 was retrieved from the deidentified data repository.
- Positive suicide risk was defined as answering "yes" to any item on the ASQ and "Acute risk" was defined as answering "yes" to the added question of "Are you having thoughts of killing yourself right now."
- Frequency counts and percentages were used to summarize data on prevalence of suicide risk across medical settings. Generalized linear mixed models (GLMM) were used to evaluate the association of suicide risk with child age, sex, and race.

Results

- Out of the 101,732 screenings completed, positive risk was identified at 11,460 (11.3%) encounters and acute risk was identified at 734 (0.7%) encounters.
- Overall rates of positive risk (positives/total screened) were highest in IP (741/3968 or 18.6%) and overall rates of acute positive risk (acute positives/total screened) were highest in the ED (552/17641 or 3.1%).
- Among OP clinics, both the rates of positive (138/384 or 40.2%), and acute positive risk (6/384 or 1.7%), were highest in the Child Abuse Clinic.
- Rates of suicide risk were observed to be higher with increasing patient age (OR = 1.03; 95% CI: 1.01 - 1.04, z = 3.88, p < 0.001), female sex (OR, 1.89; 95% CI: 1.76 - 2.03, z = 17.06, p < 0.001),and White race (relative to Black/African American; OR = 1.67, 85% CI = 1.56-1.79, z = 14.6, p < 0.001).

LOCATION	Positive screens/total screens in each location
Urgent Care	1,159/13,205 **(8.8%)**
Outpatient Clinics	6,380/66,900 **(9.5%)**
Emergency Department	3,180/17,641 **(18.0%)**
Inpatient	741/3,968 **(18.6%)**

Table 1. Locations with highest rates of positive screens

CLINIC	Positive screens/total screens in each location
Pain management	99/641 **(15.4%)**
Weight management	95/615 **(15.4%)**
Sleep	109/618 **(17.6%)**
Teen primary care	805/4572 **(17.6%)**
Adolescent specialty	290/1166 **(24.9%)**
Child abuse and neglect	138/343 **(40.2%)**

Table 2. Clinics with highest rates of positive screens

Conclusions

- Only a small fraction (0.7%) of pediatric patients are at "acute" risk that may require 1:1 observation, psychiatric hospitalization, etc.
- The elevated overall suicide risk rate (11.3%) may have been due to multiple positive screens during a given encounter (e.g., inpatient stay), patients being admitted to IP due to the lack of a separate psychiatry unit, higher than national average youth suicide rates in Kansas and Missouri[4], and the design of the ASQ which counts past suicide attempts as "positive" regardless of current acute risk.
- Universal suicide-risk screening is possible in a tertiary care setting but requires significant education and planning to adequately address patient needs. Pediatric hospitals may consider starting screening by allocating resources for areas that serve patients with the highest risk.
- Screening programs could anticipate higher rates of positive screens in teens who are older, white, and female, as well as among teens in certain specialty populations.

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