

The Kids are Not Alright: Missed Opportunities for Inpatient Adolescent Nicotine Screening



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INTRODUCTION

- **10.1% of high school students and 5.4% of middle school students reported current (past 30-day) use of any tobacco product** in the 2024 National Youth Tobacco Survey.
- Tobacco and nicotine screening guidelines exist for the outpatient setting, **however, adolescents have lower rates of outpatient appointment attendance** than younger age groups.
- Inpatient nicotine screening can identify adolescents **who want to quit** and **those at risk of withdrawal** during hospitalization, and link them with treatment services.
- **Yet, tobacco screening rates among hospitalized adolescents are low**, though this research is minimal.

OBJECTIVES

- **Primary:** Identify how many hospitalized adolescents have documentation of nicotine screening during inpatient stay.
- **Secondary:** Identify factors which affect the likelihood of being screened for nicotine use.

METHODS

- Retrospective cohort study of all inpatient admissions of patients 11 years of age and older at a large, free-standing children's hospital.
- Manual chart review for **“nicotine,” “vape,” “smoke,” “tobacco,” “NRT” and “cigar.”**
- Chi-square, t-test, and stepwise, multivariable logistic regression were used to identify factors associated with nicotine screening.

RESULTS

Inconsistencies in inpatient adolescent nicotine screening by **sex, age, race and admitting service** support the need for systematic screening and documentation.



Of 9624 adolescent hospitalizations, 5947 (62%) had documentation of nicotine screening.

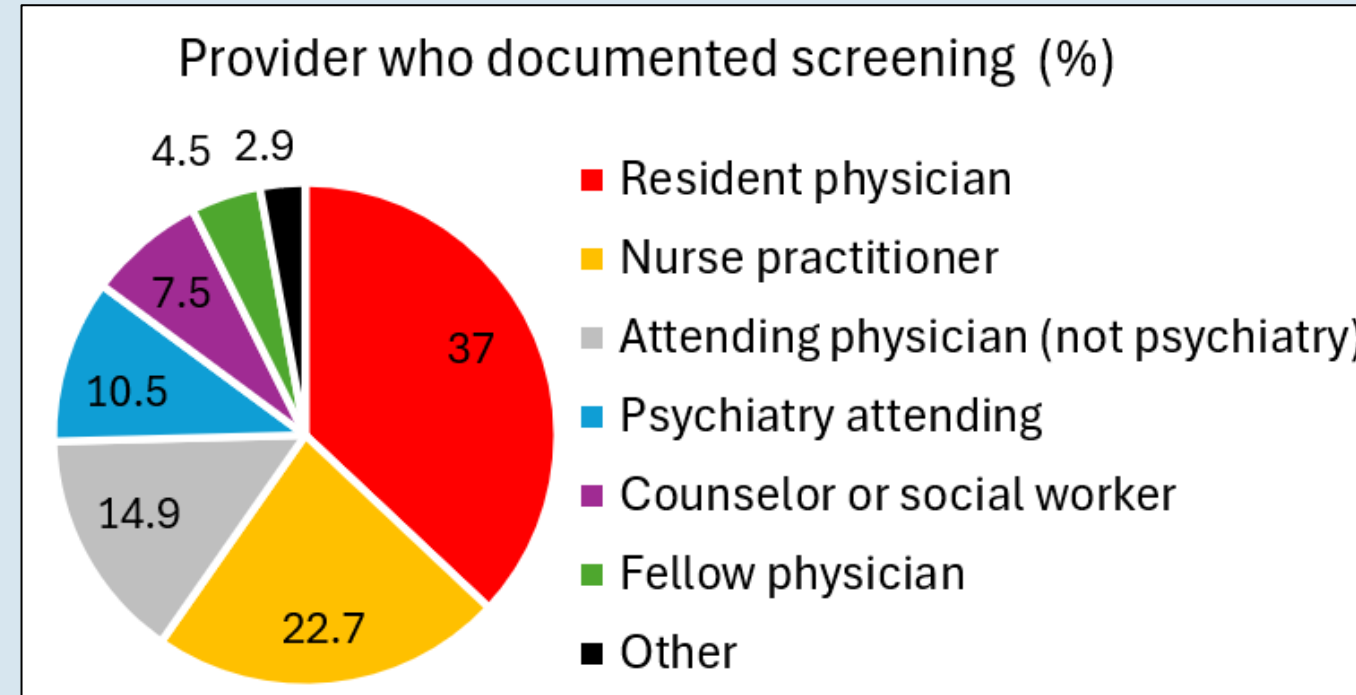
Variable	Screened for tobacco use?			
	All subjects, n = 9624	Yes, n = 5947	No, n = 3677	p-value
Age, average (years)	15.5	15.7	15.2	< 0.0001
Biologic sex, n (%)				< 0.0001
Female	5109 (53.2)	3342 (65.5)	1758 (34.5)	
Male	4495 (46.8)	2589 (57.6)	1900 (42.4)	
Race, n (%)				0.002
Asian	180 (1.9)	103 (56.9)	77 (43.1)	
Black	2137 (22.3)	1265 (59.2)	869 (40.8)	
Native American	17 (0.2)	12 (70.6)	5 (29.4)	
Multi-race	569 (5.9)	378 (66.6)	191 (33.4)	
White	6480 (67.5)	4050 (62.5)	2418 (37.5)	
Unknown	221 (2.3)	123 (55.7)	98 (44.3)	

Logistic regression predicting likelihood of nicotine screening			
Step	Variable	Wald Chi-Square	p-value
1	Admitting service	996.5	< .0001
2	Age	172.8	< .0001
3	Biologic sex	12.0	0.0005

Note: Wald Chi-Square measures the strength of a variable's association with the outcome. Race did not meet the 0.05 significance level for entry into the model.

Adjusted odds ratios for nicotine screening by service		
Admitting Service	Odds Ratio	95% Confidence Interval
Psychiatry	16.979	12.667 – 22.760
Surgery	1.385	1.180 – 1.626
PM&R	1.375	0.890 – 2.123
ICU	1.366	0.814 – 2.291
Adolescent medicine	1.304	0.923 – 1.844
Complex care	0.784	0.575 – 1.067
Pulmonology	0.741	0.583 – 0.941
Cardiology	0.680	0.510 – 0.906
ID	0.594	0.494 – 0.715
GI	0.585	0.473 – 0.723
Endocrinology	0.573	0.463 – 0.710
Rheumatology	0.507	0.285 – 0.903
Genetics	0.496	0.195 – 1.260
Nephrology	0.487	0.350 – 0.677
Hematology/Oncology	0.366	0.307 – 0.435
Neurology	0.172	0.120 – 0.245

Note: Odds ratios were calculated in comparison to the general hospitalist service. Results with confidence intervals that do not cross 1 are bolded.



CONCLUSIONS

- Nicotine screening was not documented in **38% of adolescent hospitalizations.**
- The screening rate in the current study was **higher than that reported in previous studies** of inpatient adolescents.
- **Older age and biologic female sex** were associated with increased likelihood of being screened.
- Native American and multiracial patients had the highest rates of screening in unadjusted analysis, however, **race was not a significant predictor in the adjusted logistic regression model.**
- **Patients admitted to psychiatry** had the highest odds of being screened compared to all other services.
- **Variability in frequency of nicotine screening by admitting service** may reflect differences in perceived dangers or inpatient relevance of nicotine use by different specialty providers.
- Future work should focus on building a **workflow for systematic nicotine screening and documentation for adolescents admitted to all hospital pediatric services.**

AUTHORS & DISCLOSURES

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