



Alcohol intoxication among students presenting to a university hospital emergency department using code-based medical records

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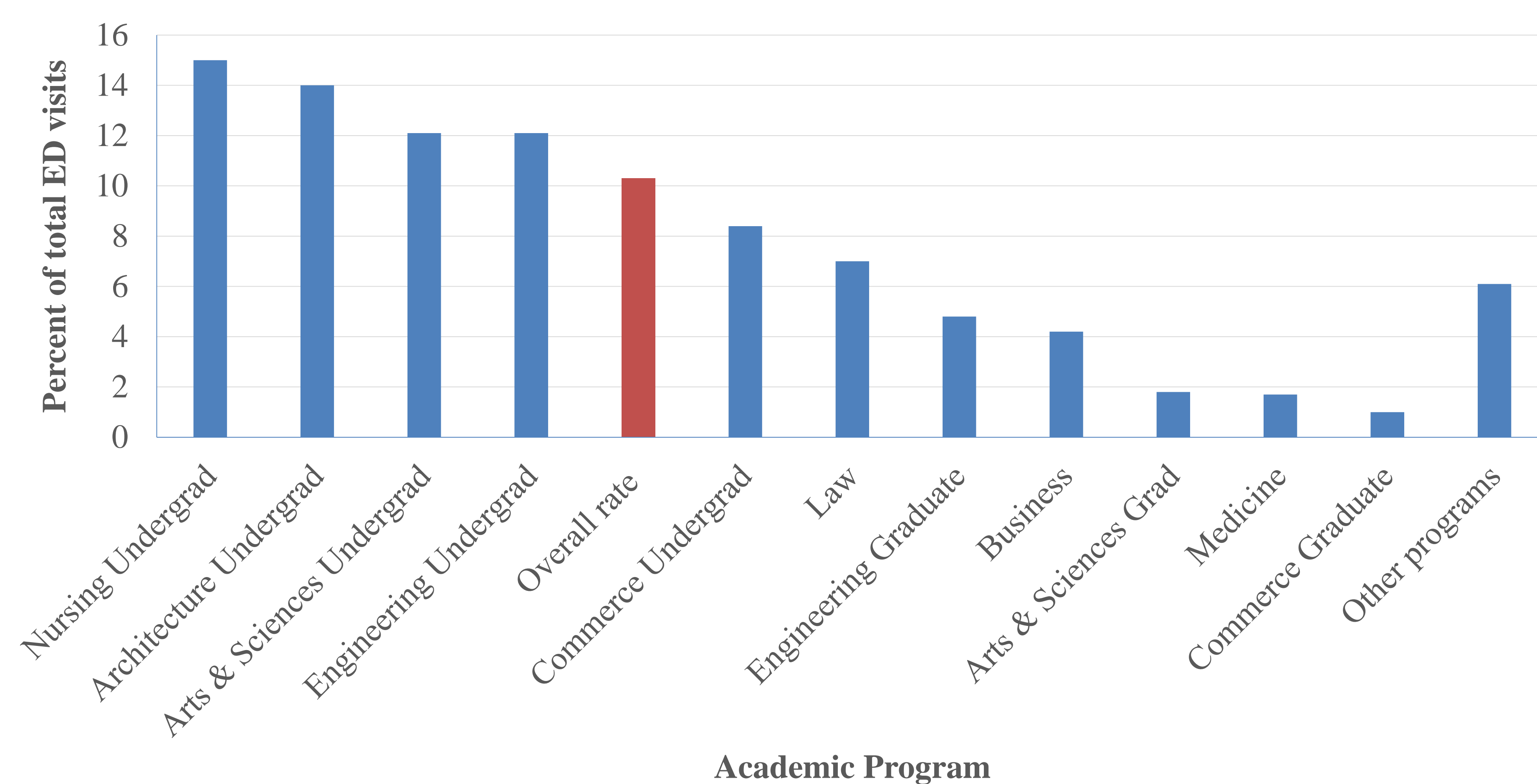
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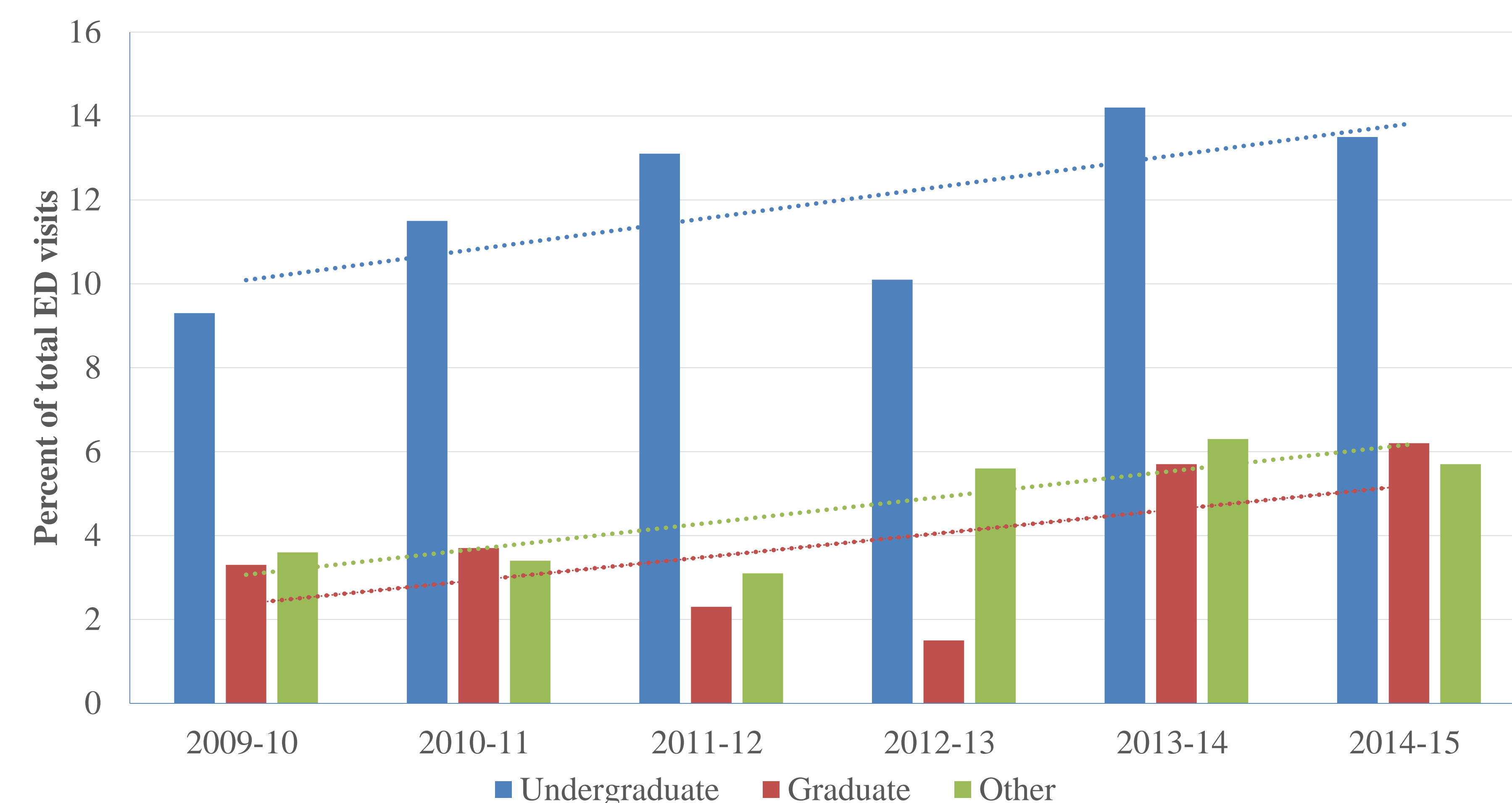
Introduction

- Alcohol misuse continues to be a significant health problem among college students with alcohol intoxication being the most severe form
- Most previous studies were based on self-report surveys that are subject to recall bias and cultural barriers in obtaining accurate responses about student alcohol use
- Few studies have examined the epidemiology of student alcohol intoxication presenting to the hospital emergency departments (EDs)
- EDs are in a unique position to provide objective clinical data from physician diagnoses
- This study examined demographic trends in alcohol intoxication and related health consequences among students presenting to an ED affiliated with a major public hospital in the US

Rate of alcohol intoxication by academic program



Trend in alcohol intoxication by ethnicity



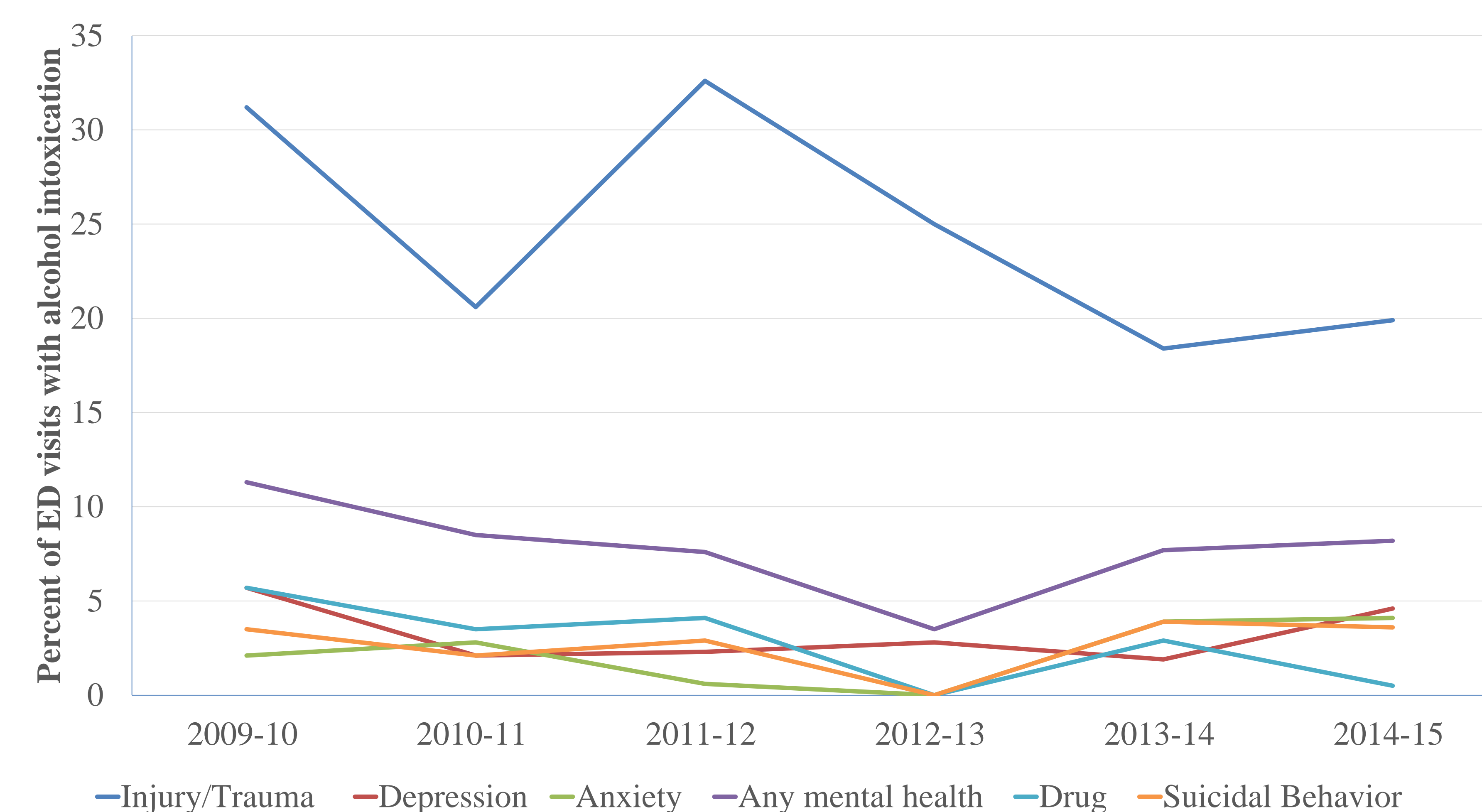
Data source and data analysis

The ED electronic medical records from academic years 2010 to 2015 were queried for student visits. Their records were linked to the university's student admission datasets. Student ED visits with alcohol intoxication were identified based on ICD-9 codes. Student characteristics and trends in the rate of alcohol intoxication and co-occurring consequences per 100 ED student visits were analyzed. A medical chart review of 100 patients randomly selected from each of the first and last years of the study period evaluated the completeness of code-based recording of alcohol-related ED visits.

Overall trend alcohol intoxication



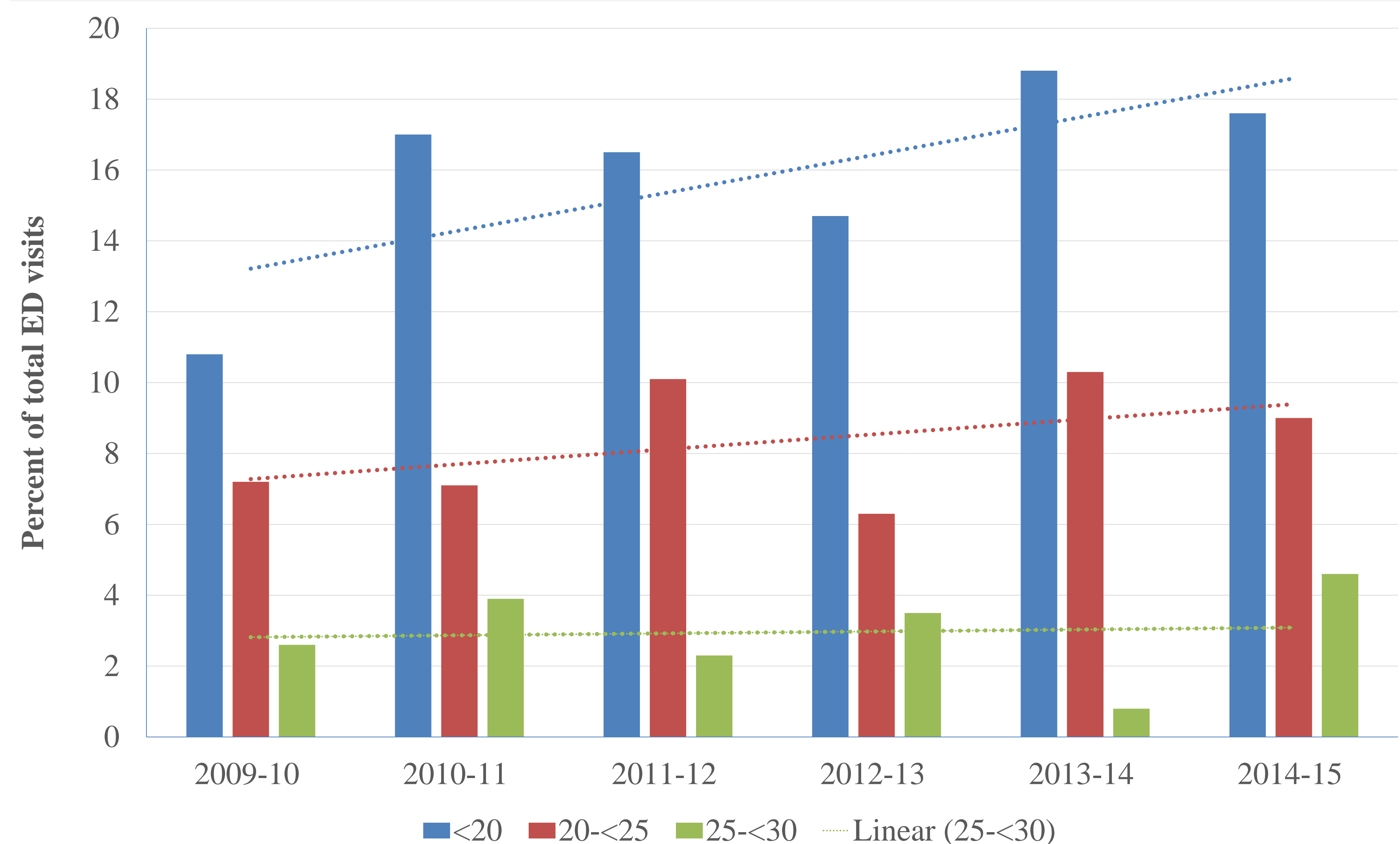
Trend in key co-occurring conditions



Key findings

- During the study period, there were **9,616** student visits (48% males) to ED with **1,001** (10.4%) visits due to alcohol intoxication
- Two thirds of ED visits with alcohol intoxication had a co-occurring diagnosis with injuries (24%) being the most common condition
- The rate of alcohol intoxication varied greatly by student demographics and campus-related factors
- The rate varied significantly by academic programs from 1% among commerce graduate students to 15% among nursing undergraduate students
- The rate of alcohol intoxication increased significantly by 55.7% from 7.9% in 2009-10 to 12.3% in 2014-15 ($p < 0.01$) with a greater increase among students aged <20 (from 10.8% to 17.6%, $p < 0.001$).
- In the 2009-2010 academic year, only 8 out of 15 (53%) visits with alcohol intoxication were coded, while in 2014-2015, 13 out of 17 (76.4%) were coded.

Trend in alcohol intoxication by age group



Discussion and conclusion

- There was a significantly linear increase in both the number and rate of recorded alcohol intoxication with a larger increase found among female students, students below 20 year of age, Asian students, and athletic students
- There was a declining trend in percent of injuries suggesting that compared to past years, more student ED visits with alcohol intoxication were actually given a diagnostic code for that condition and/or more intoxicated students without an injury were presenting to the ED
- Linking patient ED records with student administrative data can provide a valuable, low-cost, and sustainable data source to measure and monitor the trends in students' risky drinking behavior
- Completeness of code-based recording of alcohol intoxication can be improved with reviews of free text clinical narratives and/or improved diagnostic coding to adequately measure the true burden.
- Early identification and medical evaluation of students who engage in high-risk drinking for timely referral and treatment are also important in order to avoid disastrous health consequences