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## Hospitalization of Underage Drinkers in the United States Is Common and Costly

A new study of the prevalence of underage drinking highlights one of its significant consequences: hospitalization. Of the 40,000 youth aged 15 to 20 years who were hospitalized in 2008 and diagnosed with alcohol use disorder (AUD), 79% were intoxicated when they arrived at the hospital.

"Hospitalization for Underage Drinkers in the United States" was published in the June issue of *Journal of Adolescent Health* (2012;50[6]:648-50).

Terry D. Schneekloth, MD, and an author of the study, says, "Our primary aim was an assessment of the scope of a significant consequence of underage drinking—hospitalization. We examined discharge records to determine the youth who were discharged with an alcohol use disorder (AUD) diagnosis. The AUD diagnoses included alcohol intoxication, alcohol dependence syndrome, nondependent abuse of alcohol, and alcohol-induced mental disorders."

To determine the pervasiveness of the problem, Dr Schneekloth and a team of researchers at Mayo Clinic in Rochester, Minnesota, used the National Inpatient Sample (NIS), a database of hospital and inpatient stays, to evaluate the following:

- Characteristics of youth hospitalized for alcohol use
- Incidence of hospitalizations
- Hospitalization outcomes

"The hypothesis was that hospitalization of



Terry D. Schneekloth, MD

### Points to Remember

- Hospitalization of underage drinkers is common, especially in certain races and in certain geographic regions, and is associated with a substantial health care expenditure.
- When teenagers drink, they tend to drink excessively, putting them at risk for significant harmful consequences.
- Harmful alcohol use in adolescence is also a harbinger of alcohol abuse in adulthood.

underage drinkers is a significant issue," says Dr Schneekloth. "We learned that the problem is both common and costly—estimated at \$755 million in the year studied."

Using the NIS 2008 database, the most recent data available, the research team identified discharge records of individuals between 15 and 20 years of age who received a diagnosis of AUD. Hospitalization incidence rates were calculated on the basis of population estimates from the US Census Bureau. Characteristics of the hospitalizations included the following:

- Of 699,506 nonobstetric discharges of 15- to 20-year-olds, 39,619 (5.6%) had an AUD diagnosis with or without an injury diagnosis
- Only 25% were admitted following altercations and injuries, but they accounted for \$505 million of the \$755 million cost
- A total of 107 of these hospitalized youth died (0.27%). Their average age was 18.6 years, 82% were male, and 73% of the deaths

- occurred during a hospitalization for injuries
- The overall annual incidence of AUD hospitalization was 18.3 per 10,000 boys and 12.3 per 10,000 girls
- The average age of the youth with alcohol-related discharges was 18 years; 61% were male
- For adolescent boys and girls, the incidence of AUD-related hospitalization was highest in the Midwest (36.8%) and lowest in the West (17.7%). The incidence in the South was 20.9%
- In general, blacks had lower hospitalization rates than whites, and Hispanics and Asian/Pacific Islanders had the lowest rates
- The rates tended to be highest for Native Americans and other or mixed-race adolescents; however, the number of hospitalizations was relatively small, making estimates imprecise

### Underage Drinking Trends

Up to 71% of high school students report having consumed alcohol at least once, although

the prevalence of heavy drinking (more than 5 drinks in a row within the preceding 2 weeks) is lower (up to 23%). “When teenagers drink, they tend to drink excessively, putting them at risk for significant harmful consequences,” says Dr Schneekloth.

### Assessment at Mayo Clinic

In 2009, Mayo Clinic implemented an assessment plan for any hospitalized patient with an identified alcohol use problem. A social worker trained in substance abuse assessment provides the evaluation and refers the patient for further professional assessment and treatment when indicated.

Harmful alcohol use in adolescence is also a harbinger of alcohol abuse in adulthood. “We hope these findings may help target substance abuse prevention efforts toward geographic and demographic groups at greatest risk,” says Dr Schneekloth.

## Mayo Clinic Standardizes Psychosocial Evaluation Process for Patients Awaiting a Transplant



Sheila G. Jowsey, MD

Psychosocial evaluation is often used to identify candidates most likely to benefit from transplantation. At Mayo Clinic, however, a multisite, multidisciplinary team ensures that patients awaiting a transplant receive consistent evaluation, collaborative consultation, and treatment recommendations with trackable outcomes.

“Standardization of evaluation provides huge benefits,” says Sheila G. Jowsey, MD, with the Department of Psychiatry and Psychology at Mayo Clinic in Rochester, Minnesota. “It employs the collective wisdom of many providers to offer the best care for our patients, improves our ability to have patients move between Mayo sites, and helps us track outcomes using research-based approaches. It also allows us to repeat evaluative tests consistently to monitor change over time.”

### The Process

The multisite, multidisciplinary team includes social workers who assist patients in completing the evaluation forms that apply. “We choose the best combination of tools to ensure that the process won’t be burdensome for the patient,” says Dr Jowsey. “Team members can quickly single out the patients who need help.” A triaging mechanism streamlines the process of referring those patients to mental health professionals.

Mayo team members in Arizona, Florida, and

### Points to Remember

Mayo Clinic standardizes the evaluation of patients awaiting a transplant in Arizona, Florida, and Minnesota, allowing health care providers to offer the best care for patients by:

- Moving patients among Mayo sites seamlessly
- Tracking outcomes using research-based approaches
- Repeating evaluative tests consistently to monitor change over time
- Employing the collective wisdom of many specialists

Minnesota use the same screening instruments, including the following:

- Patient Health Questionnaire (PHQ-9) depression rating scale
- Generalized Anxiety Disorder (GAD-7) anxiety rating scale
- Alcohol Use Disorders Identification Test (AUDIT)
- Drug Abuse Screening Test (DAST-10)
- Fagerstrom Test for Nicotine Dependence
- Spitzer Uniscale
- Memory testing measures

- Transplant psychosocial suitability overall rating scale

### Future Applications

Teams at all 3 sites will collaborate to transition from a paper-based system to a patient self-entry system that uses a computer interface with data stored in a data system compliant

## Chair's Corner

**Mark A. Frye, MD**

In May 2012, the Mayo Clinic Department of Psychiatry and Psychology's integrated, comprehensive approach to patient care was on display in 2 very different venues.

At the American Psychiatric Association (APA) annual meeting in Philadelphia, Pennsylvania, Mayo health care providers presented scientific papers and participated in discussions related to the following topics:

- Evolution in treatment of patients with bipolar disorder and Mayo's Individualized Medicine Biobank for Bipolar Disorder
- Integration of behavioral medicine expertise into the primary care practice
- Assessment of suicidal behavior among adolescents

And on a gorgeous spring Saturday (that fell on both Mother's Day weekend and opening day of Minnesota's fishing season), nearly 500 clinicians, patients, and patients' families participated in *Windows into Mood: Stories of Depression and Mania*, a unique event that combined clinical lectures and discussions with theatrical performances reflecting personal stories of recovery. The program, held at the incredible Guthrie Theater in Minneapolis, Minnesota, allowed participants to explore current approaches to diagnosis, treatment intervention, and recovery for patients with mood disorders through an emphasis on patient stories.

Presentations at both events underscored the importance of the human element in effective treatment of patients with depression.

## Study Identifies Measures to Assess Risk of Suicidal Behavior in Children and Adolescents

Nearly 37,000 people died by suicide in the United States in 2009. Suicide was the tenth leading cause of death overall and the third leading cause of death for young persons aged 15 to 24 years, after accidents and homicide.

"Youth die by their own hands," says Timothy W. Lineberry, MD, with the Department of Psychiatry and Psychology at Mayo Clinic in Roches-

ter, Minnesota. "The impact of suicide and suicide attempts in child and adolescent populations is incalculable, yet there is a relative paucity of measures for assessing suicide risk. It's important to gain information about how to manage that risk and to target interventions." On May 8, Dr Lineberry presented the results of new research in the workshop "Assessment of Suicidal Behavior in

with the Health Insurance Portability and Accountability Act. "We have a battery of screening tools to use at the time of transplantation," says Dr Jowsey. "Several of them can be used repeatedly to track changes in important psychosocial factors. Ultimately, we intend to be able to compare patients using the same tools over time."

Blog posts, videos and photo coverage of Mayo's participation at the APA annual meeting are available at <http://newsblog.mayoclinic.org/2012/05/06/apa-latest-treatments-for-bipolar-disorder/>.

### Mayo's Board-Certified Psychologists

The Department of Psychiatry and Psychology at Mayo Clinic in Rochester, Minnesota, includes 24 board-certified psychologists. At Mayo Clinic in Florida, 7 of 7 psychologists are board-certified and in Arizona, 3 of 5. It is one of the largest such groups in a single institution in the United States. At Mayo, this department's specialties include clinical health psychology, clinical child and adolescent psychology, clinical neuropsychology, medical psychology, and rehabilitation psychology.

Although not legally required for clinical practice, board certification through the American Board of Professional Psychology provides peer and public recognition of demonstrated competence in 1 of 14 affiliated specialty areas. The certification process includes stringent credential review, peer-reviewed written examination, and oral examination conducted by board-certified psychologists.

The knowledge that psychologists are board certified in their areas of specialization assures health care providers and their patients that Mayo psychologists meet the high education, training, and experience requirements of their specialties.



Mark A. Frye, MD



Timothy W. Lineberry, MD

Medical Editor:

Barbara K. Bruce, PhD, LP

Mayo Clinic PsychUpdate is written for physicians and should be relied upon for medical education purposes only. It does not provide a complete overview of the topics covered and should not replace the independent judgment of a physician about the appropriateness or risks of a procedure for a given patient.

## Contact Us

Mayo Clinic welcomes inquiries and referrals, and a request to a specific physician is not required to refer a patient.

### Arizona

866-629-6362

### Florida

800-634-1417

### Minnesota

800-533-1564

## Resources

[mayoclinic.org/medicalprofs](http://mayoclinic.org/medicalprofs)

Clinical trials, CME, Grand Rounds, scientific videos, and online referrals



Children and Adolescents” at the American Psychiatric Association 2012 annual meeting in Philadelphia, Pennsylvania.

Dr Lineberry’s team first reviewed all available literature related to findings at Mayo Clinic and elsewhere. Of 401 publications evaluated, 17 met the study’s parameters for inclusion.

The team reported separate findings from clinical research using a structured assessment form previously validated in inpatient care, the Suicide Status Form (Jobes et al), to identify differences between how boys and girls look at suicide and suicide attempts and to clinically endorse those differences. “Boys and girls look at associations and factors such as hopelessness, anxiety, and self-hate—how they feel about themselves—very differently,” says Dr Lineberry. “If we want to intervene for kids, we need to know what factors play a role in their suicidal thoughts and attempts.”

Individual children and adolescents often do a better job of assessing their risk of suicide than their care providers do, Dr Lineberry’s team found. “Assessments should integrate feedback from the patient and parents, as well as the physician,” says Dr Lineberry. Yet, boys who committed suicide in 2009 outnumbered girls 3.7 to 1. Research reflects that many boys may not endorse being suicidal.

### No One Cause of Suicide, No One Type of Suicidal Person

“Suicide requires multiple things to go wrong at the same time,” says study coinvestigator Kathryn (Kate) M. Schak, MD, with the Department of Psychiatry and Psychology at Mayo Clinic in Minnesota. “Biological factors such as familial risk, predisposing factors such as major psychiatric syndromes, proximal factors such as feelings of hopelessness, and immediate triggers such as public humiliation and shame must all work in concert.”

This study confirms the lack of information about high-risk groups and the lack of guidance for evidence-based assessment. It identifies clinical challenges in particular populations. Study results also indicate that a standardized assessment tool, integrated into treatment consistently, will help provide insight to the factors that motivate boys and girls to attempt suicide.



Kathryn M. Schak, MD

Review official data for 2009 from the American Association of Suicidology at [www.suicidology.org/stats-and-tools/suicide-statistics](http://www.suicidology.org/stats-and-tools/suicide-statistics).

## Upcoming Courses

For more information or to register for courses, visit [www.mayo.edu/cme/psychiatry-and-psychology](http://www.mayo.edu/cme/psychiatry-and-psychology), call 800-323-2688 (toll free), or e-mail [cme@mayo.edu](mailto:cme@mayo.edu).

**Clinical Management of Borderline Personality Disorder**  
September 14, 2012  
Minneapolis, Minnesota

**Acute Care Psychiatry Clinical Review**  
October 18-20, 2012  
Chicago, Illinois

**National Network of Depression Centers Conference**  
November 7-9, 2012  
Rochester, Minnesota

## Positions Available

**Child Clinical Psychologist.** Mayo Clinic in Rochester, Minnesota, seeks an outstanding child clinical psychologist with expertise in the assessment and treatment of children with autism spectrum disorders. To learn more, visit [www.mayoclinic.org/physician-jobs/](http://www.mayoclinic.org/physician-jobs/) and access job posting number 192BR.

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4500 San Pablo Road | 200 First Street SW | 13400 East Shea Boulevard  
Jacksonville, FL 32224 | Rochester, MN 55905 | Scottsdale, AZ 85259

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