TRENDS IN RATES OF HOSPITALIZATION WITH A DIAGNOSIS OF SUBSTANCE ABUSE AMONG REPRODUCTIVE-AGE WOMEN, 1998 TO 2003

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Methods. Data were obtained from the Healthcare Cost and Utilization Project Nationwide Inpatient Sample. Hospitalizations with a diagnosis of substance abuse were categorized into subgroups by age, primary expected payer, substance-specific diagnoses, concomitance, and hospital location. Trends in hospitalization rates per 100,000 women aged 15–44 were tested using a weighted least-squares method.

Results. From 1998–2003, there was no change in the overall rate of hospitalization with a diagnosis of substance abuse among women aged 15–44. Alcohol abuse was the most common substance-specific diagnosis. The rate of hospitalization with a diagnosis of cocaine abuse decreased 22%; for a diagnosis of cannabis abuse, the rate increased 35%. The rate of hospitalization with a diagnosis of amphetamine abuse doubled from 1998–2003. Among women aged 15–24, the rate of hospitalization with a diagnosis of substance abuse increased 23%.

Conclusion. Although we did not observe a change in the overall rate of substance-abuse hospitalization among reproductive-age women, there were dramatic changes in the rate of substance-specific diagnoses. These data may be used to quantify emerging trends in substance abuse and promote the use of hospital-based interventions.

The American Psychiatric Association (2000, p. 191) defines substance abuse as a “maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances.” Although substance abuse is more common among men than women, its medical, social, and economic consequences are often more severe for women (Greenfield, Manwani, & Nargiso, 2003). Substance abuse is associated with factors that are harmful to women, including unplanned pregnancies, trauma, violence, and the transmission of infectious diseases owing to needle sharing and high-risk sexual behaviors (Greenfield et al., 2003; Naimi, Lipscomb, Brewer, & Gilbert, 2003; Martin, Beaumont, & Kupper, 2003; Santelli, Robin, Brener, & Lowry, 2001). Because substance abuse among women is highest during peak childbearing years (Baker, 2001), research to document medical care associated with substance abuse among reproductive-age women is warranted.

The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.

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Substance abuse has been associated with increased use of health care services, including both inpatient hospitalization and emergency medical care (Cherpitel, 2003; French, McGearry, Chitwood, & McCoy 2000). The lifetime prevalence of substance use disorders among persons admitted to general hospitals is higher than what is observed in the general population and estimated to be >15% (Weintraub et al., 2001). In addition, in US community hospitals in 2000, alcohol and drug rehabilitation/detoxification was 1 of the top 10 in-hospital procedures for nonobstetric hospital stays of women aged 18–44 years (Jiang et al., 2002). Thus, short-term community hospitals are an important source of medical care and treatment for substance abuse among reproductive-age women. Hospitalization may be an immediate consequence of substance abuse, or it may result from other health conditions that develop from or are complicated by substance abuse.

Hospital discharge data may be useful in identifying emergent trends in substance abuse. A study of inpatient care for behavioral health in US community hospitals revealed a nonsignificant decline in the population-adjusted rate of alcohol- and substance-related discharges from 1988–1997 (Bao & Sturm, 2001). This study did not look at gender-specific alcohol- and substance-related discharges, however, or whether trends varied by characteristics of the hospitalizations. We examined the rate of hospitalization with a diagnosis of substance abuse among women of reproductive age (15–44 years) from 1998–2003 to describe one facet of health care utilization associated with substance abuse among this vulnerable population. In addition, to better understand changes over the period of interest, we examined whether trends differed by characteristics of the hospitalization (e.g., age group, substance-specific diagnoses).

Methods

Hospital discharge data were obtained from the Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS). The NIS is a research database produced annually through a partnership between the Agency for Healthcare Research and Quality (AHRQ) and public and private, state-level data collection organizations to provide national estimates of inpatient care in the United States (Steiner, Elixhauser, & Schnaier, 2002). It is the largest collection of all-payer data on inpatient care in the United States and provides demographic and diagnostic/procedural data as well as information on facilities.

Using a stratified, probability design, the NIS is constructed to approximate a 20% sample of all US community hospitals as defined by the American Hospital Association (AHA). The AHA defines community hospitals as all nonfederal short-term (average length of stay < 30 days) general and specialty hospitals whose facilities are open to the public. The sampling frame consists of state-specific hospital discharge data provided to HCUP. The number of participating states has varied from year to year, with the latest release of NIS in 2003 containing data from 37 states. Overall in 2003, participating states covered 90.8% of the US population and the NIS sampling frame comprised 77.8% of all US hospitals. Core data elements are recoded into a consistent format that undergoes checks for internal consistency. Hospitals are selected based on 5 parameters for stratification: rural/urban location, bed size, geographic region, teaching status, and ownership. The NIS includes all inpatient data from sampled institutions and annually includes >900 hospitals and roughly 7 million discharge records that, when weighted, provide reliable national estimates of inpatient care (Steiner et al., 2002).

The Centers for Disease Control and Prevention determined that this project did not require human subject research review because of the use of de-identified information in a publicly available administrative dataset. The unit of analysis is the hospitalization, not the individual person. Analysis was conducted on hospitalizations of women age 15–44, excluding discharges with a pregnancy-related diagnosis, using NIS data from 1998–2003. Patterns of substance abuse among women of reproductive age differ by pregnancy status (Substance Abuse and Mental Health Services Administration [SAMHSA], 2005), and substance abuse during pregnancy increases the risk of obstetric complications (Greenfield et al., 2003); therefore, hospitalizations with a pregnancy-related diagnosis require separate analysis.

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes were used to identify hospitalizations with a diagnosis of substance abuse (US Public Health Service and Health Care Financing Administration, 1980). A hospitalization with a diagnosis of substance abuse was defined by a discharge record with any primary or secondary diagnosis ICD-9-CM code of 291, 292, or 303–305, excluding tobacco use disorder (ICD-9-CM code 305.1). The health consequences of tobacco use are mostly chronic diseases resulting from long periods of use and are often studied separately from the health consequences of alcohol and illicit drug abuse.

Hospitalizations with a diagnosis of substance abuse were separated into subgroups by age (15–24, 25–34, and 35–44 years), primary expected payer (publicly funded insurance [Medicaid/Medicare], private insurance [e.g., a health maintenance organization], or other [including self-pay and no charge]), substance-specific diagnoses, concomitance (single
versus polysubstance-specific diagnoses), and hospital location (urban versus rural). HCUP classifies hospitals in metropolitan statistical areas as urban and considers others to be rural.

The NIS allows up to 15 diagnostic codes per record, and thus some hospitalizations contributed to ≥1 substance-specific diagnostic group. Some substance-specific diagnostic groups are compound specific, such as alcohol abuse, whereas others are less distinct. For example, hospitalizations with a diagnosis of amphetamine abuse may include abuse of methylene dioxyamphetamine (MDMA/ecstasy) or methamphetamines. Diagnostic codes that did not specify a substance class were categorized as other substances of abuse. This category includes nonprescribed use of medical drugs and abuse of inhalants. Hospitalizations with ≥1 substance-specific diagnosis and those with diagnoses that denote combinations of substance abuse (ICD-9-CM codes 304.7 and 304.8) were categorized as hospitalizations with polysubstance-specific diagnoses; all others were categorized as specific to a single substance. A small proportion (1.5%) of hospitalizations with a diagnosis of substance abuse from 1998–2003 included the diagnostic code for drug psychoses (ICD-9-CM code 292), but not an additional substance-specific code; these were excluded from the analysis for substance-specific diagnoses and comorbidity. A detailed categorization scheme is available in Appendix 1.

SUDAAN version 9 (Research Triangle Institute, NC) was used to analyze the data to account for the complex survey design and produce accurate standard errors. Programming and data results were confirmed by 2 independent researchers. Discharges per 100,000 women aged 15–44 years were calculated by dividing estimated total discharges by the appropriate age-specific population estimates from the Census Bureau (www.census.gov/popest/estimates.php). The percent difference and percent change in hospitalization rates from 1998–2003 were calculated. Linear trends over the study period were tested using a method of weighted least-squares, with the weights calculated as the inverse of the standard error of the rate and year as the independent variable (Gillum, Graves, & Jean, 1996). The slope of each regression line was tested using a 2-sided z-test, and the resultant p value is reported. The statistical significance of the slope of each regression line indicates whether the trend is consistent over the study period, but this method is unable to capture significant variations between years in the discharge rate. The coefficient of determination (r²) is reported as a measure of goodness of fit of the linear model (Korn & Graubard, 1999). For ease of presentation, figures displaying the discharge rates for substance-specific diagnoses accounting for <10% of substance-abuse diagnoses are shown separately from more common diagnoses.

Results

Between 1998 and 2003, there were an estimated 2,065,004 nonobstetric hospitalizations with a diagnosis of substance abuse among women aged 15–44 years, accounting for 11.2% of the hospitalizations for this group (unweighted sample size 416,190 hospitalizations). The rate of hospitalization with a diagnosis of substance abuse among reproductive-age women did not change substantially between 1998 and 2003 (Table 1).

Alcohol abuse was the most common substance-specific diagnosis (Table 1). The rate of hospitalization with a diagnosis of alcohol abuse declined 14.5% over the study period (trend p value < .05) from 309.4 per 100,000 women age 15–44 in 1998 to 264.6 per 100,000 women age 15–44 in 2003 (Figure 1). The rate of hospitalization with a diagnosis of cocaine abuse declined 22.3% and the rate of hospitalization with a diagnosis of hallucinogen abuse declined 28.9% (trend p value < .05 and < .01, respectively; Table 1; Figure 2). The rate of hospitalization with a diagnosis of amphetamine abuse doubled from 1998–2003 (trend p value < .001; Table 1). Other hospitalization rates that increased significantly during the study period were those with diagnoses of cannabis abuse (35.0%, trend p value < .001), sedative abuse (32.4%, trend p value < .01), antidepressant abuse (58.1%, trend p value < .01), and abuse of substances classified as other (32.0%, trend p value < .001; Table 1). The majority of hospitalizations with a diagnosis of substance abuse (63.3%) documented only 1 substance-specific diagnosis. There was no significant change in the rate of hospitalization with single substance-specific diagnosis or the rate of hospitalization with polysubstance-specific diagnoses.

The rate of hospitalization with a diagnosis of substance abuse was highest among women aged 35–44 (Table 1; Figure 3). The rate of hospitalizations with a diagnosis of substance abuse among women age 15–24 increased significantly (trend p value < .01) from 245.2 per 100,000 women age 15–24 in 1998 to 300.9 per 100,000 women age 15–24 in 2003. The rate of hospitalization with a diagnosis of substance abuse was higher for those located in urban areas (Table 1). The rate of rural hospitalizations with a diagnosis of substance abuse increased 13.2% from 62.1 per 100,000 women age 15–44 in 1998 to 70.35 per 100,000 women age 15–44 in 2003; however, the trend was not significant. Publicly funded insurance was the primary expected payer for the greatest proportion of hospitalizations with a diagnosis of substance abuse among women of
## Table 1. Rate of hospitalization with a diagnosis of substance abuse among reproductive-age women (15–44) from 1998 to 2003

|                      | 1998       | 1999       | 2000       | 2001       | 2002       | 2003       | % Difference | % Change | p Value of Trend Test | p<sup>2</sup>  
|----------------------|------------|------------|------------|------------|------------|------------|--------------|----------|----------------------|-------------  
| Substance abuse, overall | 579.57 (30.81) | 552.47 (25.27) | 538.19 (21.89) | 573.75 (25.73) | 557.54 (24.21) | 570.98 (25.92) | −8.59 | −1.48 | .8259 | 0.02  
| By substance-specific diagnosis† |            |            |            |            |            |            |              |         |                       |               
| Alcohol*             | 309.37 (16.35) | 297.79 (12.31) | 287.43 (11.65) | 300.18 (14.34) | 278.05 (12.29) | 264.61 (11.65) | −44.76 | −14.47 | .0131 | 0.80  
| Cocaine*             | 174.78 (13.60) | 156.57 (12.03) | 129.23 (7.99) | 134.11 (8.60) | 133.84 (8.15) | 135.77 (9.46) | −39.01 | −22.32 | .0340 | 0.39  
| Opioid               | 141.60 (15.91) | 135.51 (15.48) | 115.87 (10.40) | 129.56 (12.55) | 128.10 (11.62) | 125.54 (11.57) | −16.06 | −11.34 | .6241 | 0.10  
| Cannabis***          | 64.62 (3.87)  | 64.35 (3.75)  | 68.65 (3.96)  | 79.03 (4.87)  | 76.94 (4.19)  | 87.21 (5.25)  | 22.60 | 34.97 | <.0001 | 0.88  
| Other***             | 75.21 (4.18)  | 75.35 (3.63)  | 81.29 (3.86)  | 89.80 (4.50)  | 91.93 (4.48)  | 99.23 (4.46)  | 24.03 | 31.95 | <.0001 | 0.76  
| Amphetamine***       | 16.20 (1.61)  | 15.50 (1.28)  | 22.17 (1.80)  | 25.99 (2.80)  | 23.20 (1.90)  | 33.65 (3.88)  | 17.46 | 107.78 | <.0001 | 0.89  
| Sedative**           | 16.32 (1.33)  | 16.01 (1.19)  | 17.19 (1.35)  | 18.88 (1.34)  | 19.35 (1.83)  | 21.60 (1.99)  | 5.28 | 32.38 | .0054 | 0.89  
| Hallucinogen**       | 1.81 (0.20)   | 1.78 (0.22)   | 2.20 (0.32)   | 2.29 (0.33)   | 1.34 (0.14)   | 1.29 (0.19)   | −0.52 | −28.89 | .0061 | 0.48  
| Antidepressant**     | 0.63 (0.11)   | 0.56 (0.07)   | 0.52 (0.08)   | 0.75 (0.09)   | 0.83 (0.13)   | 1.00 (0.12)   | 0.37 | 58.13 | .0015 | 0.66  
| By age (in years)    |            |            |            |            |            |            |              |         |                       |               
| 15–24**             | 245.17 (13.80) | 231.28 (12.92) | 237.49 (12.40) | 281.00 (19.19) | 266.48 (18.09) | 300.86 (18.56) | 55.70 | 22.72 | .0025 | 0.65  
| 25–34               | 601.06 (36.10) | 544.16 (29.24) | 565.37 (28.09) | 573.42 (29.48) | 566.89 (29.01) | 573.75 (29.21) | −27.31 | −4.54 | .9840 | 0.00  
| 35–44               | 832.14 (43.66) | 822.03 (36.34) | 768.55 (33.81) | 826.17 (38.82) | 805.66 (36.90) | 811.83 (39.26) | −20.31 | −2.44 | .8415 | 0.02  
| By concomitance      |            |            |            |            |            |            |              |         |                       |               
| Single substance-specific diagnosis | 353.62 (15.18) | 341.06 (12.53) | 346.71 (12.24) | 360.71 (13.45) | 359.40 (13.62) | 370.87 (14.99) | 17.25 | 4.88 | .1645 | 0.62  
| Polysubstance-specific diagnoses | 218.02 (17.43) | 203.83 (14.45) | 183.19 (10.79) | 204.30 (13.86) | 189.35 (11.47) | 190.62 (12.14) | −27.40 | −12.57 | .2983 | 0.26  
| By hospital location |            |            |            |            |            |            |              |         |                       |               
| Urban                | 516.38 (30.28) | 486.22 (24.59) | 477.07 (21.28) | 510.69 (25.18) | 491.48 (23.65) | 500.57 (24.87) | −15.81 | −3.06 | .9522 | 0.00  
| Rural                | 62.12 (5.70)  | 66.24 (5.84)  | 60.93 (5.16)  | 63.06 (5.33)  | 66.06 (5.18)  | 70.35 (7.33)  | 8.22 | 13.24 | .4654 | 0.35  
| By primary expected payer |            |            |            |            |            |            |              |         |                       |               
| Public               | 276.74 (20.07) | 271.75 (17.19) | 250.70 (14.99) | 274.83 (17.25) | 268.18 (15.07) | 269.40 (15.65) | −7.34 | −2.65 | .9840 | 0.00  
| Private              | 159.31 (9.64) | 152.70 (7.66) | 163.59 (8.23) | 180.00 (10.68) | 166.57 (9.48) | 170.58 (9.40) | 11.28 | 7.08 | .1141 | 0.48  
| Other                | 138.96 (10.09) | 124.97 (8.44) | 121.81 (7.85) | 116.79 (7.37) | 121.45 (7.76) | 129.52 (9.00) | −9.44 | −6.80 | .4715 | 0.14  

†Rates per 100,000 women age 15–44; standard error in parentheses.  
‡Detailed discharge diagnosis classification scheme is shown in Appendix 1.  
§Trends were tested by weighted least-squares; *significant trend p < .05; **significant trend p < .01; ***significant trend p < .001.  
<sup>2</sup>Coefficient of determination as a test of goodness of fit of linear model.
reproductive age (Table 1). There were no significant changes by primary expected payer over the study period.

Discussion

The rate of hospitalizations for substance abuse in US community hospitals may be influenced by the services covered by insurance, the availability of outpatient services, and the medical sequela of abused substances. It has been generally assumed that the introduction of managed care in the United States would cause a significant decline in hospitalization for substance abuse because of a shift to less costly outpatient services. Although these data limit our ability to disentangle factors that influence trends in hospitalizations, our finding that approximately 1 in 10 nonobstetric hospitalizations among reproductive-age women included a diagnosis of substance abuse indicates the continued role of community hospitals as a significant source of health care services for substance abuse.

Although nationally representative surveys using self-reports have noted an increase in binge drinking among reproductive-age women (Naimi, Brewer, et al., 2003), we found a decline in the rate of hospitalization with a diagnosis of alcohol abuse. This decline may be due to greater use of outpatient care or to more frequent use nonmedical methods to address alcohol abuse, such as Alcoholics Anonymous. In addition, alcohol is commonly abused in conjunction with other substances (Staines, Magura, Foote, Deluca, & Kosanek, 2001), and it may not be coded when illicit drug abuse is apparent. Regardless, the burden of hospitalizations with a diagnosis of alcohol abuse among reproductive-age women remains high compared with other substance-specific diagnoses; interventions to reduce alcohol-related morbidity among reproductive-age women are needed.

Changing perceptions about the harmful effects of illicit drugs may be influencing trends in substance abuse and subsequently substance-specific diagnoses, particularly for abuse of cocaine, hallucinogens, and cannabis (Sloboda, 2002). The increasing potency of cannabis products may be contributing to greater medical consequences that require hospitalization (ElSolhy et al., 2000). The increasing trend we found in the rate of hospitalization with a diagnosis of “other substances of abuse” may be related to documented increases in the abuse of substances for which ICD-9-CM coding has not yet been developed, such as inhalants or pain relievers such as oxycodone (SAMHSA, 2004a). Nonmedical use of prescription drugs, which may also be included in diagnoses involving abuse of sedatives and antidepressants, exceeds all illegal drug use except for marijuana (SAMHSA, 2004a). Women have greater exposure to prescription drugs with abuse potential than men.
(Simoni-Wastila, 2000), highlighting the need to document morbidity associated with the misuse of these medications.

An emerging trend of interest is the rapid increase in diagnoses of amphetamine abuse. Although we observed a rise in the rate of hospitalization with a diagnosis of amphetamine abuse, we could not determine which drug was driving this increase. There have been increases in the reported use of stimulant drugs used at night clubs such as MDMA/ecstasy and methamphetamine (Centers for Disease Control and Prevention, 1995; Yacoubian, 2003). Because of an increase in the prescribing of drugs for attention deficit hyperactivity disorder in the adult population, there is also potential for increasing abuse of these amphetamine-containing substances (http://msnbc.msn.com/id/9349317). More detailed analyses beyond the scope of this dataset are needed to determine whether increases in the use of amphetamines are an indication that some cocaine users are switching to less costly stimulants or that a new cohort of stimulant users is emerging. Although we found that the rate of diagnoses for abuse of amphetamines among reproductive-age women is rising rapidly, it remains low when compared to diagnoses involving other substances.

Our finding of an increase in hospitalizations among the youngest group of women might be explained by decreases in the age of initiating substance use or by the medical effects and potency of the substances more commonly abused in younger age groups (SAMHSA, 2004a). Although not statistically significant, the increase in the rate of rural hospitalizations that we found may indicate an increase in the services available in rural areas or emerging trends in substance abuse there (National Institute on Drug Abuse, 1997).

During the study period, nonobstetric hospitalizations among women aged 15–44 with a diagnosis of substance abuse were more likely to have the primary expected payer listed as publicly funded or other as compared with nonobstetric hospitalizations among women aged 15–44 without a diagnosis of substance abuse (data not shown). From 1991–2001, private insurance payments for substance abuse services dropped and the share of spending for substance abuse treatment by publicly funded insurance increased to represent the largest payer of care (Mark et al., 2005). Accordingly, we expected to see a decline in the rate of privately insured hospitalizations in our study, but instead we observed no change. We should note, however, that although we examined all hospitalizations that included a diagnosis of substance abuse, we were not able to ascertain whether substance abuse was the primary reason for hospital admission. Although managed care may influence the rate of hospitalizations with a diagnosis of substance abuse in which treatment for this abuse is actually received in the hospital setting, it is difficult to limit the treatment of common medical conditions associ-
ated with substance abuse, such as trauma-related injuries and infectious diseases. Finally, although the expected payer for services is noted for each hospitalization, we were unable to determine by which mechanism actual payment for services rendered occurred.

This is a conservative measure of hospitalizations with a diagnosis of substance abuse among women aged 15–44 in community hospitals. Because of confidentiality laws, some data sources that contribute data to the NIS restrict discharge records that indicate specific medical conditions, such as behavioral health (including chemical dependency or psychiatric care) and HIV/AIDS. Only 1 participating state (Iowa) prohibited the release of behavioral health discharges (beginning in 2001), and 2 participating states (Pennsylvania and Texas) requested the reset of patient ages to specified midpoints for discharges involving substance abuse.

Low detection rates of substance abuse in hospital admissions may underestimate the rate of hospitalizations with a diagnosis of substance abuse among women aged 15–44 in community hospitals. Because of confidentiality laws, some data sources that contribute data to the NIS restrict discharge records that indicate specific medical conditions, such as behavioral health (including chemical dependency or psychiatric care) and HIV/AIDS. Only 1 participating state (Iowa) prohibited the release of behavioral health discharges (beginning in 2001), and 2 participating states (Pennsylvania and Texas) requested the reset of patient ages to specified midpoints for discharges involving substance abuse.

The NIS does not include data from alcoholism/chemical dependency treatment facilities, long-term institutions, or psychiatric hospitals, where comorbidity for substance abuse is high (RachBeisel, Scott, & Dixon, 1999). The SAMHSA monitors substance abuse-related emergency department (ED) episodes and admissions to substance-abuse treatment centers that report to state administrative data systems. In 2002, almost half of drug-related ED episodes resulted in admission to the hospital (SAMHSA, 2003). Substance-specific trends, in particular increases in ED episodes associated with marijuana, amphetamine, and nonmedical use of licit drugs, mirrored our results (SAMHSA, 2003). From 1992–2002, marijuana and stimulant (primarily methamphetamines) treatment admissions increased whereas cocaine and alcohol treatment admissions decreased, similar to our findings in this study (SAMHSA, 2004b).

In conclusion, this report provides meaningful data about trends in the rate of hospitalizations with substance abuse among reproductive-age women from 1998–2003. The most dramatic changes were observed among substance-specific diagnosis groups; these data may be used by policymakers to develop strategies to combat emerging trends of substance abuse. Inpatient substance abuse rehabilitation decreased from 1992–1997 and most persons who received detoxification did not also receive rehabilitation services (Mark, Dilonardo, Chalk, & Coffey, 2002). It is not clear how many persons who have a diagnosis of substance abuse receive ongoing treatment outside the hospital setting, and more work is needed on the interaction between treatment setting and insurance coverage. Researchers have found women to be more likely than

![Figure 3. Rate of hospitalizations with a diagnosis of substance abuse per 100,000 women age 15–44, by age group.](image)
men to be at a relatively high level of readiness to change substance use behaviors during a hospital admission (Pollini, O’Toole, Ford, & Bigelow, 2006). Brief interventions to address substance abuse in the hospital setting have proven effective, and hospitalization may serve as an event to promote changes in behavior (Dunn & Ostafin, 2005).

References


Appendix 1: Classification of Hospitalizations with a Diagnosis of Substance Abuse* by Substance-Specific Diagnosis

**ICD-9-CM Codes 291, 303, and 305.0**

**Alcohol abuse.** Includes alcoholic psychoses, alcohol dependence syndrome, and nondependent alcohol abuse.

**ICD-9-CM Codes 304.2 and 305.6**

**Cocaine abuse.** Includes dependent and nondependent abuse of cocaine and crack cocaine.

**ICD-9-CM Codes 304.0, 304.7, and 305.5**

**Opioid abuse.** Includes dependent and nondependent abuse of heroin, meperidine, methadone, morphine, opium, opium alkaloids and their derivatives, synthetics with morphine-like effects, and combinations of opioid-type drugs with any other drug.

**ICD-9-CM Codes 304.3 and 305.2**

**Cannabis abuse.** Includes dependent and nondependent abuse of hashish, hemp, and marijuana.

**ICD-9-CM Codes 304.6, 304.8, 304.9, and 305.9**

**Other substances of abuse.** Includes dependent and nondependent abuse of other specified drugs (glue sniffing, absinthe addiction), combinations of drugs excluding opioid-type drugs, unspecified drugs, and nonprescribed use of drugs or patent medicines.

**ICD-9-CM Codes 304.4, 305.7**

**Amphetamine abuse.** Includes dependent and nondependent abuse of amphetamines (including dexamphetamine, methylene dioxyamphetamine [MDMA/ecstasy], methamphetamine) and other psychostimulants.

**ICD-9-CM Codes 304.1, 305.4**

**Sedative abuse.** Includes dependent and nondependent abuse of barbiturates and similarly acting sedatives, tranquilizers, and hypnotics.

**ICD-9-CM Codes 304.5, 305.3**

**Hallucinogen abuse.** Includes dependent and nondependent abuse of dimethyltryptamine (DMT), mescaline, lysergic acid diethylamide (LSD), and derivatives.

**ICD-9-CM Code 305.8**

**Antidepressant abuse.** Includes nondependent abuse of antidepressants.

*Note:* Hospitalizations with an ICD-9-CM diagnostic code of 292 (drug psychoses) only were not classified by substance-specific diagnosis.

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