

# Association Between Week of the Month and Hospitalization for Substance Abuse

Charles Maynard, Ph.D.

Gary B. Cox, Ph.D.

Deaths from substance abuse and external causes such as suicide, homicide, or accidents are more likely to occur during the first week of the month than during the last week of the preceding month (1). This report examines whether hospitalizations among patients with a diagnosis of substance abuse in Washington State are also likely to occur more often during the first week of the month.

The study used computerized hospital discharge records from the state's Community Hospital Abstract Reporting System for 1996. Hospitalization for substance abuse was defined by a series of *ICD-9* diagnostic codes used by Phillips and associates (1). Washington State hospital records include a principal diagnosis and eight secondary diagnoses, all of which were used to determine the presence of substance abuse. We calculated the ratio (R) of the number of hospitalizations during the first seven days of the month to the number in the last seven days of the preceding month multiplied by 100, and we also determined 95 percent confidence intervals (CI) using the method described by Gardner and Altman (2). Because patients receiving Medicaid are likely to re-

ceive disability payments, analyses were performed separately by Medicaid and substance abuse status.

Of the 523,672 hospital discharges in Washington State in 1996, a total of 117,222, or 22 percent, had substance abuse diagnoses. As expected, more hospitalizations with substance abuse occurred during the first week of the month than in the last week of the preceding month ( $R=103.5$ , 95% CI=101.7 to 105.4). For all other diagnoses, hospitalizations in the two time periods were similar ( $R=100.4$ , 95% CI=99.4 to 101.3).

Figure 1 shows that when a substance abuse diagnosis was present and Medicaid was the primary payer, more hospitalizations occurred during the first week of the month compared with hospitalizations in which a substance abuse diagnosis was absent. A substance abuse diagnosis was related to a higher R value when Medicaid was the payer, but it was not sta-

tistically different from that for non-Medicaid payers.

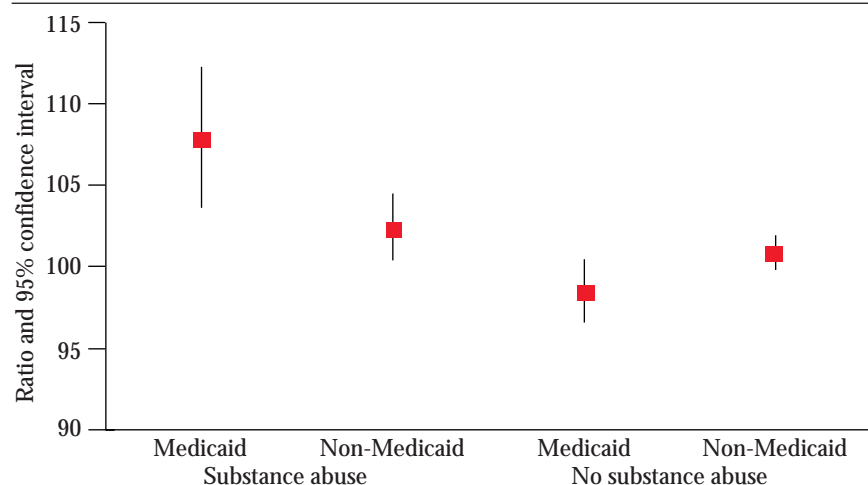
The first week of the month can be stressful, as rent or mortgage payments are due and individuals receive retirement or benefit checks. Increased hospitalization for substance abuse during the first week of the month is most likely associated with many factors, including the receipt of benefit checks. Hospitals and other publicly funded providers of substance abuse services may want to consider these results in their planning and budgeting. ♦

## References

1. Phillips DP, Christenfeld N, Ryan NM: An increase in the number of deaths in the United States in the first week of the month: an association with substance abuse and other causes of death. *New England Journal of Medicine* 341:93-98, 1999
2. Gardner MJ, Altman DG (eds): *Statistics With Confidence*. London, British Medical Journal, 1989

**Figure 1**

Ratio of hospital admissions in Washington State during the first week of the month to the number in the last week of the preceding month, by Medicaid payer status and presence or absence of a substance abuse diagnosis



**Dr. Maynard** is research associate professor in the department of health services at the University of Washington and a health services research investigator with the Department of Veterans Affairs in Seattle. **Dr. Cox** is a senior research scientist with the Alcohol and Drug Abuse Institute at the University of Washington. Address correspondence to **Dr. Maynard** at the Alcohol and Drug Abuse Institute, 1107 N.E. 45th Street, Room 205, Seattle, Washington 98105 (e-mail, cmaynard@u.washington.edu). **Harold Alan Pincus, M.D.**, and **Terri L. Tanielian, M.A.**, are coeditors of this column.