

## **The Effects of the Legalization of Sunday Alcohol Sales on Protective Custody Admissions to the Gallup Alcohol Crisis Center (Na'nizhoozhi Center). Mark D. Miller, Class of 1995.**

**Objective** - To investigate changes in protective custody admissions to the Na'nizhoozhi Center (NCI) during periods of Sunday Alcohol Sales July - October 15, 1995.

**Design** - A study comparing protective custody admissions for times in which Sunday alcohol sales were legal (July - October 15, 1995) *versus* times of prohibited Sunday alcohol sales (1993-1995).

**Setting** - Gallup Alcohol Crisis Center or Na'nizhoozhi Center (NCI)

**Main Outcome Measure** - Change in admission numbers to NCI during the time in which Sunday alcohol sales were legal in Gallup, New Mexico.

**Results** - Increases in Sunday protective custody arrest were noted during times of Sunday alcohol sales. The mean admissions for Sundays increased from 19.4 to 30.19 ( $p=.004$ ).

**Conclusions** - There was a significant increase in admissions on Sunday during times of Sunday liquor sales. This suggests that Sunday liquor sales had a negative effect on the community of Gallup. Due to the short time period in which Sunday alcohol sales were legal, it was difficult to analyze the impact of Sunday sales on alcohol-related injuries.

### **Introduction**

Injuries are the second leading cause of death for Native Americans in IHS Service Areas, comprising 15.1% of total deaths.(1) In McKinley County, New Mexico, injuries are also the second leading cause of death.(2) In relation to injury, alcohol appears to be a contributing factor. At the Gallup Indian Medical Center, 50% of all injury hospital admissions are alcohol-related.(3) A study by Kilgus in 1993 found that those arrested for protective custody in Gallup were 7 times more likely to be injured than a control group of medical center patients.(4)

In years past, Gallup and McKinley County have had some of the highest injury rates in the United States. A study conducted by NIAAA found that McKinley County had the highest composite of alcohol-related problem indicators of all counties surveyed in the U.S. In this time period McKinley County's rates of cirrhosis of the liver were 3 times higher, alcohol-related motor vehicle crashes 7 times higher, and chronic alcoholism rates 19 times higher than the national averages.(5)

McKinley County has a population of 64,000 with 71% Native American.(4) Gallup serves as a major trade area for Indian jewelry, art and rugs and borders the Navajo and Zuni Indian Reservations. While sales of alcohol are illegal on these surrounding reservations, Gallup has over 60 licensed establishments that sell alcohol. Because of the large amount of trade, the city often attracts more than 100,000 people on weekends. For many years the City of Gallup has had the reputation of being "Drunk City USA" because of its large number public intoxicants.

The Gallup police formed a protective custody unit in 1973. The police would pick-up public intoxicants and place them in jail overnight (protective custody), then release them back on the street the next morning. There was no treatment or counseling provided, only shelter from the cold and elements. In October, 1992, the city changed its approach in the handling of protective custody arrest by housing them at the Na'nizhoozhi Center, Inc. NCI began providing alcohol detoxification and treatment for Gallup protective custody arrest. This resulted in a decrease in protective custody arrest 34,000 per year in the 1980's to 20,500 in 1995. Progress has been made in handling protective custody arrest.

Sunday alcohol sales have been prohibited since 1982 in Gallup and McKinley County. But in 1995, HB 176 was signed by the Governor legalizing Sunday alcohol sales statewide and over-riding the local law prohibiting Sunday alcohol sales. Sunday sales of alcohol became legal on July 01, 1995 but soon after legalization a petition drive was started and on October 17th, 1995, Gallup citizens voted once again to prohibit Sunday sales.

I hypothesized that protective custody admissions would increase on Sundays due to the increased availability of alcohol.

### **Methods**

To determine the effect of Sunday alcohol sales I analyzed daily admission records at the Na'nizhoozhi Center from 1993 to 1995 comparing the period in which Sunday sales were legal to the period in which they were prohibited.

Admission data was collected by reviewing daily logs at NCI for the months May-December 1993 to 1995. The daily logs were separated into shifts 1-3 with shift 1 being 8 am - 4 pm, shift 2 being 4 pm -12 and shift 3 from 12 - 8 am. A field data collection form was developed which included date, day of week, admissions for shifts 1,2, and 3 and daily admission total. A questionnaire and computer data base was developed using Epi Info Version 6.0. All data gathered from the field questionnaire was entered in the Epi Info computer program and analyzed.

Daily counts of admissions began with shift 1 at 8 am and ended the next day with shift 3 at 8 am. This arrangement was used because the effects for alcohol sales for any given day result in protective custody admissions not only for that day but into the early morning hours of the next day. The third shift from 12-8 am covered for this effect.

Daily means were calculated for periods of legalization, then compared to daily means of times when sales were prohibited. The ANOVA Test was used to determine if significant differences existed between daily means of periods of legalization and prohibition. A p-value of less than .05 was considered significant.

### **Results**

The Sunday mean number of admissions was higher during the time of Sunday liquor sales. The mean number of admissions increased from 19.4 to 30.19 ( $p = .004$ ). Tuesday showed a slight increase in mean admission from 51.49 to 60.4 ( $p = .035$ ). Other days of the week showed slight decreases in daily admission during legalization but the changes were not statistically significant, p values ranged from ( $p = .62 - .89$ ).

No differences were found when the mean of all days of the week were compared for legalization vs. prohibition 56.66 to 56.01 ( $p = .81$ ). The largest increase for Sunday admissions occurred during shift 2.

### **Discussion**

The most important finding of this study was the increase in Sunday mean protective custody admissions from 19.4 to 30.2. The increased availability of alcohol on Sundays clearly affected protective custody admissions. Although a noted effect was seen on Sunday, there appeared to be no significant increase in daily admissions. Tuesday admissions increased but no explanation could be determined for this change.

As expected, shift 2 showed the most increase from all 3 shifts. Alcohol sales begin at 12 noon and shift 2 runs from 4 pm till 12 midnight. Generally more protective custody arrests are made during this shift.

Because of the short time in which Sunday sales were legalized, it was not possible to determine long-term effects of the legalization. There is a great deal of controversy about Sunday alcohol sales. Some argue that prohibiting sales of alcohol on Sundays will encourage intoxicants to drink other, more dangerous alcohol-based products such as mouthwash and hair spray. Others argue that the sale mouthwash and hair spray should be controlled by the retailers, for example, by screening customers. Another argument against prohibition is that individuals will travel to the neighboring state of Arizona where Sunday sales are legal, creating a hazard due to increased drunk-drivers. The counter-argument is that drunk-driving enforcement activities should be increased on these known stretches of road to combat the problem. Some say that it's their right as free citizens to purchase alcohol when they want it. The issue was presented to the citizens of Gallup in October, 1995. They voted overwhelmingly to prohibit Sunday alcohol sales.

Binge drinking is the most common type of drinking observed for the protective custody population. When Sunday sales were illegal many people that came into town for the weekend would leave on Sundays because alcohol was not available. Some argue that the availability of alcohol sales on Sunday would contribute to binge drinkers lapsing into

a chronic drinking behavior. If more individuals become chronic alcoholics and the number of street intoxicants increase, it could result in more injuries occurring over a longer period of time.

There is no doubt that those arrested for protective custody are a high-risk population. Kilgus's study found that those placed in Gallup protective custody were 7 times more likely to be injured than for a randomly selected control group of medical center patients.(4) This raises a question: Does increasing availability of alcohol for one day affect injuries rates or increase long-term health problems for the general population? Some studies have indicated that motor vehicle crashes do increase after expanding alcohol sales.

In Australia, two studies were conducted in Perth and Brisbane following the legalization of Sunday alcohol sales. The researchers analyzed motor vehicle crash data for a period before legalization and after. Both studies showed increases in the amount of traffic crashes after legalization.(6,7)

Although the vote in October of 1995 prohibited Sunday alcohol sales, they remain legal in McKinley County. The closest Sunday liquor outlet to Gallup is approximately 15 miles south of Gallup. There are currently 8 liquor outlets in the county that sell on Sundays. If Sunday sales remain legal in the County for an extended period of time, a future study looking at motor vehicle crash data might show effects such as those observed in Brisbane and Perth, Australia. In future studies involving the protective custody population, a time-series analysis should be considered. Other studies that focus on drinking and driving arrests, assaults and domestic violence would be worthy of investigation.

This study had several limitations and confounding factors. Although there was a significant increase in admissions on Sundays, there was not an overall increase in total daily admissions. In relation to this, protective custody admissions have been on the decline since NCI began its operation. Further statistical analysis should be conducted taking into consideration the decline in admissions. One of the possible confounders was that Sunday sales remained legal in the county after prohibition in the city. Since the establishments having legal sales on Sunday are located several miles outside the city limits, it would seem that the population of street intoxicants would relocate to those areas, decreasing their chances of being picked-up by protective custody officers which would lower admissions on Sunday. But it is not totally understood how this factor affects Sunday admissions.

Through interviews with the NCI staff, another potential confounder was identified. Due to a budget shortfall, individuals residing in out-of-state locations were not transported home, but were released on the street of Gallup from July-September, 1995. This would be expected to cause an increase in admissions on all days of the week. However, my analysis showed that Sunday was the only day to experience a large increase in protective custody admissions.

### **Conclusion**

Admissions rose during the time of legal Sunday liquor sales suggesting that Sunday liquor sales has a negative impact on the Gallup community. The increased availability of alcohol through Sunday alcohol sales has shown to increase motor vehicle crashes in other studies. With Gallup and McKinley being an area that ranks among the highest in the nation for alcohol motor-vehicle crashes and other alcohol-related problems, increasing the availability of alcohol does not seem to be a good way of solving the problem.(4,5) When considering changes to liquor laws, legislators should use extreme caution and consider the long-term impact to the communities. Future study is needed to determine the long-term effects of legalizing Sunday alcohol sales.

**References**

1. Regional Differences in Indian Health, US Department of Health and Human Services, Public Health Service, Indian Health Service, Division of Program Statistics, 1995.
2. New Mexico Health Statistics - Selected Health Statistics - Annual Report, New Mexico Department of Health, Public Health Division, Bureau of Vital Records & Health Statistics, 1993.
3. 1995 Injury Report, Severe Injury Surveillance System, Gallup Indian Medical Center.
4. Kilgus, Duane: A Retrospective Case Control Study on Protective Custody in Gallup, New Mexico, 1993. Unpublished.
5. National Institute on Alcoholism and Alcohol Abuse (NIAAA), U.S. Epidemiological County Problem Indicators, 1975 -1985.
6. Smith, Ian D: Impact on traffic safety of the introduction of Sunday alcohol sales in Perth, Western Australia. *Journal of Studies on Alcohol* 39: 1302-1304, 1978.
7. Smith, Ian D: Effect on traffic accidents of introducing Sunday alcohol sales in Brisbane, Australia. *The International Journal of Addictions*, 23(10), 1019-1099, 1988.