Using Evidence-Based Strategies to Reduce Motor Vehicle Injuries on the San Carlos Apache Reservation

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Introduction and Background

Motor vehicle injuries are a large public health burden for Americans Indians and Alaska Natives (AI/AN). In 2000, the overall motor vehicle injury death rate (age-adjusted) was 27.5 per 100,000 for American Indians/Alaska Natives versus 15.5 for US All Races. In Arizona, the rate was 76.8 for American Indians and 19.9 for All Races.[1] Motor vehicle injuries are an even more severe problem among members of the San Carlos Apache Tribe in eastern Arizona. In 2000, the motor vehicle injury death rate was 117 per 100,000 for American Indians who resided on the San Carlos Apache Reservation.[2]

The San Carlos (SC) Apache Indian Reservation is located in east central Arizona, 110 miles east of Phoenix. There are 10-12,000 tribal members residing on the reservation's 2,812 square miles. Tribal enterprises include a hotel and casino resort, convenience stores and gas stations, a telecommunications company, a construction aggregate supply company, and a saw mill. The unemployment rate in 2003 was 24.8%. There is an IHS hospital at San Carlos which serves primarily as an out-patient facility, and a satellite clinic about 30 miles east in Bylas, where there is also a police department sub-station. The SC tribal police department has 23 full-time officers. There are three full-time tribal judges.

The motor vehicle injury problem on the reservation is exacerbated by two factors: minimal occupant restraint use and alcohol consumption by drivers. In 2002, occupant restraint use on the reservation was 21% for drivers, 10% for adult passengers, and 0% for child car seats.[3] In comparison, the overall safety belt use rate for Indian country (excluding Navajo), was 55% and 81% for the United States overall.[4,5] A 1999 study of motor vehicle crashes (MVCs) on the reservation's four major roadways found that 24% of all crashes involved alcohol. Alcohol was involved in 50% of crashes with a fatality and 38% of all injury crashes.[7]

Evidence-based strategies refer to injury prevention interventions that research has proven to reduce injuries.[8-11] Table 1 summarizes the population-based interventions to reduce motor vehicle occupant injuries recommended by the US Task Force on Community Preventive Services.[12]

Table 1. Population-based interventions to reduce motor vehicle occupant injuries: Recommendations of the Task Force on Community Preventive Services[8]

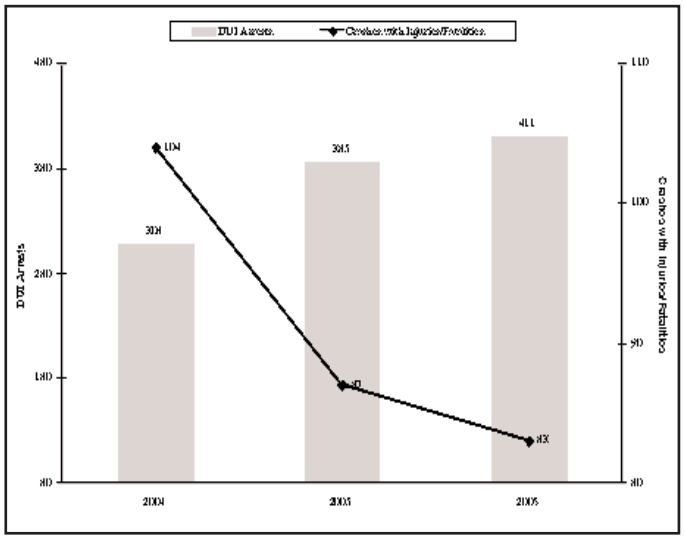
Use of Child Safety Seats
Child safety seat laws
Community-wide information and enhanced enforcement
Distribution and education campaigns
Incentive and education Programs
Use of Safety Belts
Safety belt laws
Primary enforcement laws
Enhanced enforcement
Reducing Alcohol- Impaired Driving
.08 blood alcohol concentration (BAC) laws
Lower BAC laws for young or inexperienced drivers
Minimum legal drinking age laws
Sobriety checkpoints
Intervention training programs for servers of alcoholic beverages
Mass media campaigns
School-based instructional programs

Methods

In December 2004, the San Carlos Police Department established a motor vehicle injury prevention program with funds from the Centers for Disease Control and Prevention (CDC). The Motor Vehicle Injury Prevention (MVIP) Program was funded for four years to implement evidence-based strategies to reduce motor vehicle-related injuries and deaths. It currently employes one full-time coordinator. The MVIP Program's interventions and programs were selected from *The Guide to Community Preventive Services*, a systematic review of community-based interventions.[12] Planned program activities included increased sobriety checkpoints, efforts to lower the legal limit to 0.08% blood alcohol concentration (BAC) for drivers on the reservation, and a public information media campaign.

In its first years of operation, the SC MVIP Program

Figure 1. Driving Under the Influence (DUI) arrests and crashes with injuries and/or fatalities on the San Carlos Apache Reservation, 2004-2006



focused on reducing alcohol-associated crashes. The program conducted sobriety checkpoints and implemented a comprehensive media campaign from 2005 through 2006. At a sobriety checkpoint, law enforcement officers systematically stop vehicles to assess drivers' level of alcohol or other drug impairment. Field sobriety and breathalyzer tests were utilized to assess alcohol impairment. The program reviewed sobriety checkpoint resources (manuals, policies, procedures, educational materials, media resources) from the Bureau of Indian Affairs Indian Highway Safety Program; Internet sites (e.g., the National Highway Traffic Administration website, *www.nhtsa.gov*); and by personal visits to other tribal and non-tribal police departments. Standard operating procedures were developed and approved for use by the SC Tribal Law and Order Committee. The locations, times of day, and days of the week for checkpoints were determined with anecdotal evidence and police crash reports. Sobriety checkpoints were conducted by the Police Department's DUI Task Force, which was instituted by the MVIP Program.

The comprehensive media campaign used both fee and non-fee based media. The media included the tribal newspaper and radio station, the local casino marquee, and public bulletin boards. Focus groups were held to develop specific and culturally appropriate messages. Messages were advertised more frequently during tribal and national holidays.

Approval for publication of this report was obtained from the San Carlos Apache Police Department.

Results

Between 2004 through 2006, there were 1,104 DUI arrests and 21 sobriety checkpoints involving 7,536 vehicles. An aggressive education and marketing campaign included 38 public service announcements and 21 community media events. These efforts were associated with a 33% increase in Driving Under the Influence (DUI) arrests, a 20% reduction in crashes involving injuries and/or fatalities (Figure 1), a 33% reduction in nighttime crashes, and 27% reduction in overall police-reported crashes. By contrast, driver, adult passenger, and child restraints – which were not specifically targeted for intervention in 2004 through 2006 — increased a very modest 8%, 6%, and 5%, respectively (Table 2).

Discussion/Conclusions

Sobriety checkpoints and a comprehensive anti-DUI media campaign are effective tools for use in American Indian communities. That the largest (33%) decline in motor-vehicle crashes occurred during night-time hours supports the conclusion that the DUI campaign contributed to decreased drinking and driving.

Our results are consistent with *The Guide to Community Preventive Services* findings that sobriety checkpoints can reduce injuries, deaths, and overall crashes. Several factors contributed to our program's success:

- Basing the MVIP Program in the Tribal Police Department
- Forming extensive partnerships
- Establishing a DUI Task Force
- Hiring a uniquely-qualified program coordinator
- Obtaining consistent funding
- Demonstrating community support
- Providing incentives to participating police officers

The establishment of the MVIP Program was a direct result of the foresight and commitment of the Tribal Police Department. The department's leaders recognized the need for a comprehensive prevention effort; the importance of reliable data collection for planning and evaluation; and the value of extensive partnerships. Having the MVIP Program housed in, and managed by, the police department led to tribal ownership of the program from its very inception.

Program partners included federal agencies (e.g., Indian Health Service, Centers for Disease Control and Prevention, Bureau of Indian Affairs), multiple law enforcement agencies (tribal, state, county, and city municipalities), a private-sector marketing firm, the non-profit Intertribal Council of Arizona (ITCA), and several tribal programs.

The DUI Task Force consisted of police officers, police department administrators (the chief of police and police captain), and the MVIP Program Coordinator. Having a designated Task Force allowed the department to focus enforcement resources on drinking and driving, improve communication with other police jurisdictions, create a strategic plan, and sustain the initiative over time .Long-term (four-years) financial support has enabled the program to carefully plan, implement, and evaluate the interventions. Major expenses included police officer overtime pay and equipment for the sobriety checkpoints.

The Program Coordinator is a San Carlos Apache tribal member with training in injury prevention and accounting, skill in using computers for desktop publishing and database searches, and experience as a tribal employee with SC law

Table 2. Summary of data related to the San Carlos Motor Vehicle Injury Prevention Program, 2004-2006.

Item	2004	2005	2006	*Change from 2004-2006*
Driving Under the Influence				
# of DUI* arrests	308	385	411	33.4 %
# of sobriety checkpoints	0	9	12	12
# vehicles stopped at DUI checkpoints	0	3,644	3,892	3,892
Media				
# of unpaid PSAs**, newspaper articles, local access channel	0	3	4	4
# of paid PSAs, newspaper articles, local access channel	0	11	20	20
# of community media events	0	9	12	12
Total crashes				
# of police-reported crashes	338	276	247	- 26.9%
# of crashes occurring in "daytime" (6 AM – 5:59 PM)	191	159	142	- 25.7 %
# of crashes occurring at "nighttime" (6 PM – 5:59 AM)	146	102	98	- 32.9 %
Crashes with injuries and/or fatalities				
# of crashes with injuries and/or fatalities	104	87	83	-20.2 %
# of fatal crashes	6	6	5	-16.6 %
Observed occupant restraint use (%)				
Drivers	13.2	20.9	20.8	7.6 %
Adult passengers	4.7	15.7	10.3	5.6 %
Children under 9 years	0	8.5	5.1	5.1 %

*Driving Under the Influence
**Public service announcements

enforcement and the Tribal Housing Authority. She has been able to bridge the disciplines of public health and law enforcement, and to work closely with community members, tribal agencies, and policy makers.

A survey in 2005 revealed extensive community support. Ninety-four percent of the respondents indicated it was "very important" to do something to reduce drinking and driving on the SC Apache Reservation, and 81% favored conducting sobriety checkpoints.

Our experience is consistent with factors associated with successful sobriety checkpoint programs nationally: an active local task force to manage checkpoints, available financial and human resources, an effective communication strategy, and support from the general public and officials to deter alcohol impaired driving.[13-16] Also of great value was the use of incentives to encourage participation by police officers in the DUI effort. Incentives included "home-cooked" meals before the checkpoints; awards (food, windbreakers, jackets) for exceptional performance; and an expense-paid trip to a national traffic safety conference for the officer with the most DUI arrests in a calendar year. The incentives were especially important in the face of a chronic shortage of police officers.

Conclusion

In May, 2007, the San Carlos Apache Tribal Council passed two important motor vehicle-related resolutions. The first lowers the presumption of alcohol impairment from a BAC of 0.10% to 0.08%. The second establishes a primary occupant restraint law for the SC Apache Reservation. Both these resolutions are expressions of a commitment to save lives and reduce injuries. They are also an expression of tribal sovereignty, in that the SC code will be a primary law while Arizona's adult occupant restraint law provides for only "secondary" enforcement (that is, seat belt citations can only be issued if a vehicle is stopped for some other violation).

The SC MVIP Program plans to increase its efforts to reduce alcohol-impaired driving by conducting sobriety checkpoints, increasing the frequency of BAC testing, and adopting uniform standards for coding on police reports. It will also seek to vigorously publicize and enforce the primary occupant restraint law.

The combination of police enforcement efforts, educating the public and stakeholders about the seriousness of motor vehicle crashes and methods of prevention, and advocating for needed policy change all greatly enhance the ability of tribe to

save lives and reduce suffering. We recommend these evidence-based strategies to other tribal communities seeking to reduce motor vehicle-related injuries and fatalities.

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