

Descriptive Study of Assault Injuries on the San Carlos Apache Reservation. Kenny R. Hicks, Class of 1994.

We often associate violence with drive-by shootings, gang warfare, random homicides, and drug deals gone bad in urban-America. However, the epidemic of violence has spread into rural-America, including the San Carlos Apache Indian Reservation (SCAR). Analysis of injury data from the SCAR for 1980-1989 indicates that assault was the leading cause of injury hospitalization and the second leading cause of injury death. The objective of this study was to better describe the problem of assault injuries on the San Carlos Apache Reservation.

Methods

All severe assault injuries occurring on the SCAR during 1991-1993 were studied. A severe injury was defined as an injury resulting in one or more days of hospitalization or a fatality. An assault was defined as an injury purposely inflicted by another person(s) with intent to injure or kill. Injuries due to legal intervention and operations of war were not included.

Cases were identified by reviewing the San Carlos Indian Hospital (SCIH) emergency room (ER) log. Death certificates were reviewed to identify fatal assault injury cases occurring on the SCAR among tribal members that may not have been triaged through the ER. Nonfatal cases not triaged through the ER were not identified. However, it is assumed that this number is relatively small because the SCIH is the primary health care facility for tribal members and the only facility on the Reservation with an ER. Ambulance services are provided by the tribally operated San Carlos Emergency Medical Services (SCEMS). Law enforcement is provided by the tribally operated San Carlos Police Department (SCPD).

Eighty potential cases were identified from the initial ER Log review. This list of potential cases included suspected assault injuries and cases for which the purpose of visit was not identified. The medical chart for each case was reviewed to determine severity and to verify whether or not the purpose of the visit was related to an assault. Twenty cases did not qualify for the study because the definition of severe assault injury was not met or because the intentionality of the injury was undetermined. Sixty (60) cases were identified for this study.

A standardized data collection form was developed for this study. The primary data source was the SCIH medical chart of the victim. Additional data were collected from SCPD incident reports, behavioral health patient charts, and IHS social service patient charts. Contract Health records were reviewed to collect cost of treatment estimates for those cases provided treatment by a non-IHS facility.

The Active Indian User Population for the San Carlos Service Unit for each year of study was used as the denominator when assault injury rates were calculated. This population estimate was the only available data that provided a breakdown of population per SCAR community (or district). The Active Indian User Population is a count of American Indian and Alaskan Natives eligible for Indian Health Service (IHS) services who have used those services at least once during the last three-year period. The possibility of under representation is noted for residents who did not use the SCIH within the last three years but who were reservation residents. The San Carlos Tribal Council passed a resolution approving this study. All patient information was kept strictly confidential as mandated by the Privacy Act of 1974.

Results

Of the 60 severe assault injury cases identified, 2 cases were fatal and 58 resulted in hospitalization of one day or more. The total length of stay (LOS) in the hospital for all cases ranged from 1 to 18 days, totaling 221 days. The mean (average) LOS was 3.8 days per case. For 72% of the cases a weapon was involved. With regards to the victim, alcohol was involved in 82% of the cases.

From this study, it was learned that severe assault injuries occurring on the SCAR typically involve a San Carlos Apache male victim, 20-39 years old who is under the influence of alcohol. The assault usually occurs on the weekend during winter months between the hours of 1800 and 0500. Often the assault will occur in a community of the 7-Mile District, typically in a residence or varied outdoor location. The offender is usually known to the victim. The offender will most likely use a blunt object, sharp instrument, or fist/foot as a weapon. The circumstances of the assault involve an attack or fight. Approximately 85% of the cases will be investigated by the SCPD. The estimated cost for providing initial medical treatment per case will average \$7,000 to \$9,000.

Male victims represented 80% (48) of the cases, while females accounted for 20% (12) of the cases. There were noticeable differences in the assault injury trends among female victims compared to all cases. The 25-29 year old female age group accounted for 41.7% (5) of all female victims. Fifty percent (6) of the female victims were assaulted by a family member or intimate other. Half of the assaults among women were domestic violence assaults. Half of the

assaults among women did not involve a weapon (with the exception of fist or foot). The mean LOS among female victims was approximately 1.75 days less than the mean for all cases.

Victim age ranged between 0 (less than one year) and 61 years. The mean age was 30.85 years. Sixty-three percent (38) of the victims were aged between 20 and 39 years. Both fatalities were between 20 and 39 years. All victims were Native American.

Domestic violence occurring on a Sunday accounted for 44.4% of all domestic violence cases. Forty-two (71.2%) of the assaults occurred between 1800 and 0500 hours. Only 3 (5%) of the assaults occurred between 0600 and 1100 hours. Most assaults occurred either in a residence (45%) or an outdoor location (38%). 70% (19) of assaults in the residence involved an offender who was either an acquaintance or family member/intimate other of the victim.

Twenty-nine (48%) of the assaults cases involved a single offender. Sixteen (27%) of the cases involved multiple offenders. For 25% of the cases, the number of offenders was unknown. In 45% (27) of the cases the offender and victim did not live in the same house. Of these cases, the offender was most often identified as an acquaintance (44%) or stranger (41%). Also noteworthy, the number of multiple-offender involvement was much higher (48%) among cases in which the offender and victim did not live in the same house than multiple-offender involvement among all cases. For 6.7% (4) of the cases, the offender and victim did not live in the same house. For 48% (29), it was unknown whether or not they lived in the same house.

In 27% (16) of the cases the offender was an acquaintance of the victim, a family member or intimate other in 20% (12), and a stranger in 18% (11). The proportion of unarmed assaults when the offender was an acquaintance was quite low (6.3%) compared to all cases. Eleven (69%) acquaintance assaults occurred in a residence. For family member/intimate other assaults, there were interesting trends in comparison to all cases. The ratio of male-female victims was 1:1, compared to 4:1 for all cases. For 50% (6) of the family member/intimate other cases the offender was a spouse or mate (gender not withstanding). In 75% (9) of the family member/intimate other cases the assault was described as domestic violence. Half of the family member/intimate other assaults occurred in the victim residence (3) or another residence (3). There were no cases in which multiple offenders were involved.

For cases involving offenders identified as a stranger, all victims were male. Most of these assaults (90%) occurred between 1800 and 0500 hours. Nine (81.8%) of the stranger assaults were attacks. A higher proportion of stranger assaults occurred outdoors (54.5%) than those indoors (27.3%). A high proportion of the stranger assaults involved multiple offenders (72.7%).

Attacks accounted for the highest proportion of assaults at 31.7% (19). Fights accounted for 21.7% (13). Domestic violence accounted for 15% (9). For 47.4% (9) of the attacks the offender was a stranger. Multiple offenders were involved in 52.6% (10) of the attacks. In 52.6% (10) of the attacks, a blunt object was used as a weapon. Twelve (63.2%) of the attacks occurred outdoors. Fights also had a relatively high proportion of multiple offender involvement (46.2%) in comparison to all types of assaults. For 46% (6) of the fights, the offender was an acquaintance. Eight (61.5%) of the fights occurred in a residence.

Domestic violence accounted for 15% of all assaults. Female victims accounted for 66.7% (6) of domestic violence assaults. The offender was a spouse or mate in 66.7% (6) of domestic violence cases. Most of the cases occurred in a residence (55.6%) on a Saturday (22.2%) or Sunday (44.4%).

A blunt object was used as a weapon in 38.3% (23) of the assaults. Sharp instruments (including knives) were used in 30% (18) of the assaults. Twelve (20%) of the cases were unarmed assaults in which fist/foot was coded as the weapon. Males were the victims of 94.4% (17) of the assaults involving a sharp instrument. Eleven (61.1%) cases involving a sharp instrument occurred in a residence. For unarmed assaults, the ratio of male-female victims was 1:1. Many (33.3%) of the unarmed assaults were fights.

It is not the policy of the SCIH to routinely collect measurements of blood alcohol on assault victims. Few victims received quantified blood alcohol measurements when treated at a facility other than SCIH. For these reasons, only a subjective assessment of alcohol involvement on the part of the victim was used. Forty-nine (81.7%) of the assaults involved a victim under the influence of alcohol. Of these 18.4% (9) were victims under the legal drinking age (21 years). Among all assault cases, 15% were victims under the influence of alcohol and under the legal drinking age.

Hospitalizations accounted for 96.7% (58) of the assault cases. There were two (3.3%) fatalities, both coded with an LOS of zero days. Both fatalities involved male victims who were assaulted with a sharp instrument. Both fatalities occurred in a residence (one in victim's residence, one in offender's residence). One fatality occurred on a Saturday and one on a Sunday. Information was limited for one fatality assault because of an unavailable police report.

E-codes classify the environmental events, circumstances, and conditions that cause injury. E-codes E960.0 - E968.9 were considered assaults. N-codes classify the nature or diagnosis of injury. E-codes and N-codes are normally coded by the hospital data entry staff. For those cases in which an E-code or N-code was not recorded in

the medical chart, I coded the injury. Many cases may involve multiple E-codes and N-codes due to multiple causes and natures of injury. Twenty-five (41.7%) of the assaults were coded E968.2, "Striking by blunt or thrown object." Eighteen (30%) were coded E966.0, "Assault by cutting and piercing instrument." Eleven (18.3%) were coded E960.0, "Unarmed fight or brawl." Because definitions of type of assault and weapon used in this report differ from those of E-codes, there may be some contradiction in their distribution. Sixteen (26.7%) assault injuries were coded in the 870-879 category, "Open wound of head, neck, and trunk." Ten (16.7%) were coded in the 800-804 category, "Fracture of the skull (including facial bones)." Nine (15%) were coded in the 850-854 category, "Intracranial injury, excluding those with skull fracture."

Information was available to calculate the estimated costs of initial medical care for 72.4% (42) of the cases resulting in hospitalization. Initial medical treatment was considered to be the medical transport to the SCIH ER; SCIH ER treatment; transport from the ER to another hospital (where applicable); and all other treatment through the date of discharge. Total estimated costs of initial medical care per patient included the costs of transport to the ER, ER treatment, transports to other hospitals, and inpatient treatment costs.

All on-reservation medical transport via ground was provided by the SCEMS. SCEMS incurs an average estimated cost of \$360 per call to service. Cases in which the patient arrived at the ER by other means (SCPD, private vehicle, walked) were considered to cost \$0.00. Treatment at the SCIH ER was estimated to cost \$117 per patient⁵. Cases in which the patient was admitted to an IHS hospital were estimated to cost \$585 per day. In the absence of actual costs, air transport from the SCIH ER were estimated at \$1,650. When available, actual costs were used for cases involving contract health care (air transport, non-IHS facility treatment).

The estimated mean total cost for a patient at a non-IHS hospital (\$9,673) was over four times that of a patient at an IHS hospital (\$2,260). This difference is attributed to the conservative, and likely unrealistic, estimates for determining medical care costs through federal funding. It is believed the mean estimated total cost for all cases and for those treated at a non-IHS facility are more realistic estimates of costs incurred. Using these two estimates, the total cost of care for the 60 severe assault injuries was in the dollar range of \$405,060 and \$580,380. Such costs undoubtedly impact the SCIH budget and the availability of funds for elective services.

Except for one fatality, all cases were triaged through the SCIH ER. Of interest was the degree of involvement of referral services with assault patients. For each case, the indication of involvement of the SCPD, Behavioral Health (BH) Services, and Social Service (SS) in the medical chart was recorded. Files of the referral service were reviewed to cross-reference involvement. For 46.7% (28) of the cases, the medical chart indicated SCPD involvement. When reviewing SCPD files, the SCPD was involved with 85% (51) of the cases. For 6.7% (4) of the cases, the medical chart indicated BH involvement. When reviewing BH files, the BH was involved with 8.3% (5) of the cases. For 20% (12) of the cases, the medical chart indicated SS involvement. When reviewing SS files, the SS was involved with 3.3% (2) of the cases.

Discussion

Prior to conducting this study there was speculation from local health care, law enforcement, and social service programs that there was a high proportion of cases of domestic violence, child abuse, and elderly abuse. In general, these types of assaults receive a lot of attention in the local and national media. To the contrary, most assault victims were young adult males who had been attacked or in a fight. Cases of child abuse and elderly abuse were proportionately low. Cases of domestic violence were important, but not as high as speculated. The high proportion of fights and attacks among males cannot be disputed. However, the low proportion of domestic violence, child abuse, and elderly abuse may be misrepresented due to the under reporting or misclassification of such assaults.

This study looked only at severe assault injuries. Assaults resulting in ER treatment and release were not studied. The severe assaults are likely only the "tip of the iceberg" of the types of injury problems identified in this study. The high proportion of assaults occurring during winter months and low proportion during summer months were unexpected. There are two possible explanations for this seasonal distribution of assault cases. (1) The summer months of May to August are considered the forest fire season. During the fire season, approximately 600 tribal members (mostly males) are employed as fire fighters. Many of the temporary fire fighters are among the 20-39 year age group that contributes to most of the assault victims. Fire fighting assignments last a maximum of 21 days and are usually located off the Reservation, often out of state. More than one assignment is allowed in a season provided there is a five-day break between every 21 days of fire fighting. This seasonal employment results in a large number of otherwise unemployed males being temporarily away from the home environment and the Reservation. Many of these normally unemployed fire fighters are potential victims and offenders of assault. It can be assumed that, during the summer months, the fewer potential victims and offenders, the lower incident of assault injuries. When the fire fighters do return, their economic status is temporarily elevated which may also contribute to a reduced

incidence of assault injuries. (2) During the winter there is considerably less to do (i.e., recreational activities) than in the summer. In the winter these individuals are at home, unemployed and possibly bored and frustrated, possibly contributing to more assaults occurring in winter months.

As previously reported, only the subjective determination of the involvement of alcohol on the part of the victim was available. As expected, a high proportion of assaults were alcohol involved. Interestingly, the incidence of victims under the legal drinking age was relatively high.

The medical chart was designated as the primary data source. PD, BH, and SS files were identified as supplemental data sources. The discrepancies between the documented involvement of the services according to the medical chart and the involvement documented in the referral services files were interesting. The greatest discrepancy was that of PD involvement. I offer the following three reasons why the medical chart might indicate less PD involvement than what actually took place. (1) Hospital staff were aware of PD involvement but did not document it in the chart. (2) Hospital staff did not request PD services. (3) Hospital staff were unaware of PD involvement.

Reviews of both the medical chart and the BH chart indicate BH services are rarely utilized in assault injury cases. A similar conclusion can be made of SS referrals. Of the three referral services, the discrepancy in SS involvement was the only one in which there was a higher indication of involvement according to the medical chart than to the SS file. This may be due to a patient refusing SS consult upon discharge from the hospital or the patient receiving SS consult but the documentation was not made or was misfiled.

Recommendations

1. Because of the concern that domestic violence, child abuse, and elderly abuse cases may go unidentified or misclassified, the expertise of medical staff to identify such cases should be evaluated. Medical staff should receive routine training related to the identification of domestic violence, child abuse, and elderly abuse. Such training should be offered to IHS physicians, contract physicians, and nurses.
2. The hospital should develop a protocol for documentation of referral services for victims of assault. The protocol should identify under what circumstances the SCPD should be contacted, particularly those which are required by local and federal law. The protocol should identify under what circumstances BH and SS referrals should be made and when the consult should be conducted (before or after discharge). When developing the protocol, input should be requested of the health care providers, SCPD, social services, and behavioral health.
3. Much of the causative information was not documented in the medical chart. The hospital (physicians, social services, behavioral health) must determine who is responsible for gathering the information. Improved documentation of the causative factors will greatly enhance our ability to prevent assault injuries.
4. Future studies could examine why communities differ in their assault rates, especially with regard to environmental and socio-economic factors: the presence of street lighting, type of homes, number of persons residing in the home, employment status of the victim and offender, marital status, and prior history of intentional injuries.
5. Perhaps the higher proportion of assaults in the winter may be due to increased time in the home, frustration, and boredom associated with seasonal unemployment and few available recreational activities. Efforts to increase employment and extracurricular activities may reduce the incidence of assault injuries.
6. While the effectiveness of providing information related to assault injury to community residents is unknown, perhaps health education programs can use the contributing factors described in this report to develop targeted messages to address alcohol consumption, spousal abuse, and anger management. They could be timed to precede the times of the year where particular assault injuries are more likely to occur.
7. The use of alcohol by assault victims was very high and alcohol involvement by offenders was presumably also high. Addressing alcohol problems in the community may have the simultaneous effect of reducing the incidence of assault injuries. A better description of the under-age drinking problem (such as where the drinking occurs, how and where alcohol is obtained) might provide a better idea of where and how to address the problem.
8. Researchers should develop interviewing and other techniques to gather offender-specific information.
9. Perhaps the SCPD can explore new concepts in law enforcement, such as community policing. It is hoped that this study and the description of the importance of the assault problem on the SCIR could be used as justification for additional resources, such as funding for SCPD staffing.