

Cost of Treating Injuries at the Tuba City Indian Medical Center, FY 1994.

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All Indian Health Service facilities face the problem of high injury rates. In fiscal year 1994, injuries accounted for approximately nine percent of the admissions and 30 percent of the emergency room visits at the Tuba City Indian Medical Center. A number of these encounters required intensive clinical intervention to save the patient's life or limb. Because of such treatment, many quickly regained their health. My study is about injuries in our service unit during fiscal year 1994, the important things I discovered while doing my research, and my proposal towards finding solutions to these preventable problems.

The total number of inpatients treated at our facility or transferred to trauma centers are readily available. What is, however, seldom mentioned in the reported statistics is the number of cases that are treated in our emergency room and released. The purpose of this study is to convey this information to the attention of the Service Unit and the community.

Today, many of our health programs require reliable data to receive funding for the coming year. Without this information many safety programs remain-under funded or are cut from the budget because of the inability to prove their need. More accurate information, including the treatment cost and numbers, is needed in order for others to comprehend the problem. I hope this information will alert our community regarding the number of injuries and their cost estimates, and serve as a wake-up call for those in the Indian Health Service to correct the lack of knowledge regarding cost of treatment.¹

METHODS

The study represents all patients who were treated for injuries in our facility during the 1994 fiscal year. The information was abstracted from multiple sources: inpatient clinical records, a computer printout generated by the Patient Care Component of the Resource Patient Management System software, the daily census worksheet from the emergency department and the Office of Environmental Health injury statistics. The Office of Environmental Health statistics were used only to obtain the number of fatalities for each category. None of their injury data was used in my study. This was done to prevent any "double counting" of patients.

Patients who were transferred to other facilities for treatment are not included in this study. The numbers of fatalities have been included in Table One to show the magnitude of injuries within the Service Unit.

These emergency room visits and admissions were identified for the study by the assignment of the E-code: environmental events, circumstances and conditions as the cause of the injury, poisoning, or other adverse effects found in the International Classification of Diseases, Volume IX. This supplemental classification of the injury is added by medical records personnel after analyzing the medical record. The injuries were then assigned to the categories used by the Office of Environmental Health. Three other sources are available to determine an average cost per ER visit and a daily inpatient stay: The Arizona Hospital Association, The America Academy of Science and Indian Health Service contract-care statistics were used to determine the figures used in my calculations.^{2,3}

RESULTS

The results of the study are summarized in Table One below. This is the first year another category (falls) has surpassed motor vehicle crashes as the leading cause of injury in our service unit and the Navajo Area as well. It's doubtful, however, that the focus on reducing motor vehicle crashes will be de-emphasized in favor of fall prevention programs. Other data sources indicate the number of motor vehicle crashes per 100,000 continues to decline; however, the need to reduce this cause of injury will not diminish.

These 360 admissions and 6,600 emergency room visits are costly. Published cost by the Indian Health Service cites the average daily cost of treatment is \$585. This figure is very low compared to other sources.

The costs are quantifiable enough to show the extent to which injuries drain a service unit's resources and why the cost of injuries must be considered in the budgetary process. Table 2 is the cost estimation of injuries in our service unit (FY94).

TABLE 1. TCIMC Injury Statistics (FY94)

<u>Category</u>	<u>Admits</u>	<u>Out-patient visits</u>	<u>Fatalities</u>	<u>Total</u>
MVC	60	377	10	447
Falls	68	1257	1	1,326
Assaults	45	547	7	593
Suicide	35	39	2	76
Burn/Fire	8	93	1	102
Poisoning	4	17	0	21
Drowning	0	0	0	0
Other	140	4,330	3	4,473
TOTAL	360	6,660	24	7,044

TABLE 2. Estimated Cost of Injuries, FY94

Emergency Room Visits
6660 visits @ \$400* = \$2,640,000

Admissions
1227 Patient Days @ \$1461** = \$1,792,647

Estimated Total Cost for Treatment of Injuries:
\$4,432,647

* Average national cost of emergency room visit, National Academy of Science

** Average daily cost of hospitalization, Arizona Hospital Association

DISCUSSION

What measures can be taken by the Service Unit to reduce the total injuries and how can an additional prevention specialist be best utilized? I believe three important steps must be done. First, we must have a uniform system throughout the IHS that can determine the cost of injuries. Second, an injury prevention specialist should be assigned to each Service Unit. Lastly and the most important step is to involve our community in injury prevention activities. As injury data becomes more easily obtainable from the RPMS software, the role of the prevention specialist should change from the Service Unit environment to the community.

To determine the cost of injuries we must know how much is spent on treatment. For example, what are the costs of salaries, drugs, medical supplies, housekeeping, maintenance, etc., for the emergency department. If these figures were available, one could better estimate the average cost of injuries. More sophisticated accounting systems can break the figures down even further to pinpoint the average amount spent to fix a fractured leg. Likewise, the same accounting principles can be used for the cost of inpatient care.

Even with a more refined accounting system in place, we would not collect the 4.5 million reported in Table 2. Our business office estimates only 60 percent of the Service Unit's registered population has Medicaid, Medicare or private health insurance. This means 1.8 million would never be billed. Moreover, we receive only \$500 a day for Medicaid patients (about half of bill charges for private insurance) and Medicare patients are paid on a DRG basis, not on a scheduled-payment system. To be sure, this further complicates any estimation of cost.

The Indian Health Service estimates that it cost approximately \$585 a day to treat a patient in their facilities. I have not seen any figures for outpatient treatment. Without any other data, it would be difficult to argue with these figures. However, the injuries that I have noted in my study may not fit the norm.

Specifically, the majority of injuries involve less than a two-day stay in an inpatient setting. One could assume that the cases cost around twelve hundred dollars for treatment if the IHS costs figures are used. These figures may not be correct due to the nature of the patient's diagnosis. A number of these patients required surgical intervention for their injuries. The total cost quickly escalates when one adds up the cost necessary to treat the injuries. For example, the scheduled fee for an open reduction of a fractured tibia alone is approximately \$2400.

My point is that the IHS does not have any methods to calculate the cost of treating our patients. The accounting methods currently being used have no cost centers that could determine an average figure for each patient. As costs mount each year, we need a way to justify additional personnel, equipment and facilities to treat our growing population. Those facilities that demonstrate efficiency in treatment should be rewarded for their efforts, using the Resources Allocation Model method of distributing funds, comparable to the Veterans Administration's budgeting process.

CONCLUSION

The most glaring problem I have learned in my research is that there are no methods to calculate the cost of the injuries or illnesses that are treated in the Indian Health Services facilities. Without sound data, one can only estimate the average cost of injuries. We have the capability of creating an accounting system in the Indian Health Service that will give us all the cost data we are capable of absorbing. However, this innovation may be years away. Meanwhile, we as healthcare professionals must develop alternative methods to combat the problems of injuries in our communities.

My final thoughts on my study include the recommendation for a full-time community injury prevention person or persons. Our community needs individual(s) to shout from the street corners the dangers of not wearing a seat belt, not using an infant car seat, and ignoring violent behavior. The results of this action will be to reduce the injuries and deaths in our community, and to provide a safer environment. Only preventing or reducing the number of injuries will ultimately reduce the cost of injuries for the Service Unit.⁴

REFERENCES

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