Workers' Compensation File as a Potential Source for Community Diagnosis

Bruce C. Perry, MD, MPH
Seattle, Washington

In providing comprehensive care, family physicians may utilize community diagnosis to analyze the needs of their local community. Existing data bases such as Medicaid and workers' compensation can provide an inexpensive source for community diagnosis. This paper compares the data from an in-depth survey of trauma in a rural community with the medical files of the Washington State workers' compensation insurance for the same time period. Only 45 percent of those patients claiming on-the-job injury when initially treated actually appear on medical claim files of workers' compensation. However, when comparing the categorical distributions for type, mechanism, and body part of injury, the two data sets are similar. Thus, workers' compensation files may potentially be useful as a source of data for community diagnosis.

Family physicians often address the problems of the entire community rather than just the problems of the individual patients seen in their offices. Residencies include community medicine in their curriculum to assist young family physicians to better serve their future communities. Community diagnosis, a systematic analysis of the health problems and resources of the community, provides an important cornerstone of community medicine. Using surveys, which are the basic tools of community diagnosis, family physicians can assess the needs of their community. Unfortunately, these studies are costly in terms of time and money, especially for the practicing physician. As an alternative to expensive surveys. Tapp suggests that physicians use the existing data sets, such as vital statistics, to arrive at a community list of needs, that is, a community problem list similar to the patient problem list.[1]

This paper analyzes whether an existing data set may effectively substitute for a community survey for the purposes of community diagnosis. It compares the State of Washington workers' compensation medical files with an in-depth study of trauma in a rural town.

Methods

This study compared the medical claim files of the State of Washington Department of Labor and Industries with the data from an intensive community based study of rural trauma.[2] In this community study, the practitioners of Tonasket, Washington, reported all encounters due to trauma seen in the clinic or emergency room during a three-month period. To ensure that all cases of injuries were fully ascertained, the investigators

From the Department of Family Medicine, School of Medicine, University of Washington, Seattle, Washington. At the time this paper was written, Dr. Perry was a Robert Wood Johnson Faculty Development Fellow, University of Washington, Seattle, Washington. Requests for reprints should be addressed to Dr. Bruce C. Perry, Department of Family Medicine RF-30, School of Medicine, University of Washington, Seattle, WA 98195.

0094-3509/82/010085-04$01.00

Table 1. Type of Injury

	Tonasket Trauma Study Job Related Injuries (n=145)			Washington State Labor and Industries Records (n=65)		
	No.	Percent	Rank	No.	Percent	Rank
Contusion	38	26.2	1	18	27.7	1
Sprain	32	22.1	2	13	20.0	2.5
Laceration	30	20.7	3	13	20.0	2.5
Foreign body eye/abrasion	28	19.3	4	12	18.5	4
Fracture	18	12.4	5	7	10.8	5
Other	12	8.3	6	0	0.0	8.5
Puncture	8	5.5	7	0	0.0	8.5
Burn	5	3.4	8	1	1.5	6.5
Closed head trauma	3	2.1	9	1	1.5	6.5

verified the study report forms against the clinic and emergency room encounter forms. Study variables included the age and sex of the patient, the cause of injury, the nature of the injury, and whether the patient reported the injury to be job related. During the three-month period, the six participating practitioners treated 485 cases of trauma of which 145 patients reported they were injured on the job.

The State of Washington Department of Labor and Industries, a state agency concerned with work related injuries and illnesses, maintains a computerized file of medical claims for job related injuries. This state agency, which administers the workers' compensation insurance, abstracts separate files for acute medical claims and subsequent long-term compensation. The claims are coded according to the USA Standard Z16.2 Injury Codes, a 13-digit code which details the nature, source, type, and body part of injury.

Two years after the completion of the Tonasket study, the two data bases were compared by collapsing the extensive coding system of the Labor and Industries files to the simpler coding system of the Tonasket study. Labor and Industries provided aggregate data from their medical files on all patients assigned to the Tonasket practitioners during the three-month period corresponding to the Tonasket trauma study. The general frequencies for type of injury, nature of injury, and body part injured were summarized for all providers.

Results

Sixty-five patients appeared on Department of Labor and Industry medical claim files. In the Tonasket study, 145 patients stated they were injured on the job; thus 45 percent of those persons stating at the time of first medical treatment that they were injured on the job actually appeared on workers' compensation medical claim files.

Tables 1, 2, and 3 display the frequencies of the type of injuries, body part injured, and mechanism of injury. The distributions and relative ranking across the categories are remarkably similar for type of injury and body part injured, though less similar for mechanism of injury.

The "other" categories for all three charts demonstrate the most difference, in part due to disparities in the two coding systems. For example, the workers' compensation files allow one code number for "multiple injuries," whereas the Tonasket study code allowed coding of each type and body part injured. Thus, the sum of the cases in the three tables by category does not equal 145, the number of participants in the Tonasket study.

Table 2. Part of Body Injured

	Tonasket Trauma Study Job Related Injuries (n=145)			Washington State Labor and Industries Record (n=65)		
	No.	Percent	Rank	No.	Percent	Rank
Leg	34	23.4	1	10	15.4	3
Hand	33	22.8	2	14	21.5	1
Eye	23	15.9	3	11	16.9	2
Other	20	13.8	4	5	7.7	6
Arm	17	11.7	5	7	10.8	4
Foot	15	10.2	6	4	6.2	7.5
Back	14	9.7	7	6	9.2	5
Face	11	7.6	8	1	1.5	10
Scalp	7	5.8	9	3	4.6	8
Chest	6	4.1	10	4	6.2	7.5
Abdomen	2	1.4	11	0	0.0	11.5
Neck	1	0.7	12	0	0.0	11.5

Table 3. Mechanism of Injury

	Tonasket Trauma Study Job Related Injuries (n=145)			Washington State Labor and Industries Record (n=65)		
	No.	Percent	Rank	No.	Percent	Rank
Fall	44	30.3	1	15	23.1	2
Struck by object	36	24.8	2	7	10.8	3
Hand tool injury	19	13.1	3	5	7.7	5
Other	14	9.7	4	20	32.5	1
Struck against object	12	8.3	5	8	12.3	4
Chainsaw	8	5.5	6	2	3.1	6.5
Burn, skin inflammation	5	3.4	7	2	3.1	6.5
Athletics	3	2.1	8	0	0.0	9.5
Vehicle	2	1.4	9	1	1.5	8
Horse	1	0.7	10	0	0.0	9.5

Discussion

Only 45 percent of the patients who stated that their injuries occurred on the job actually appeared on the medical files of the Department of Labor and Industries. The underreporting may be due to the following factors:

1. Not all occupations are covered by workers' compensation
2. Some employers may pay out-of-pocket the

medical costs of trivial injuries so as not to raise their premiums

3. The claim may not have been pursued by the employee or may have been invalidated by the employer, the physician, or the agency

4. Clerical error

The occupational distribution of residents of the county provides explanations for the underreporting. State labor statistics list the reported occupations of residents as 28 percent government, 24 percent trade, 20 percent construction and manufacturing, 19 percent services and other, and 9 percent agricultural.[3,4] The US Forest Service is a major employer, thus accounting for the large number of government employees. Federal employees have their own workers' compensation and therefore would not appear on Labor and Industries records.

Some underreporting is due to the large numbers of temporary farm workers in the area. Less than 10 percent of farm workers are owners or hired workers of 150 or more days' duration. The bulk of farm workers are family members, migrant workers, or seasonal workers such as students. Such workers may not be covered by workers' compensation. For example, in the Tonasket study, if a family member was injured while performing chores on the family farm, that case was recorded as an on-the-job injury. Such an injury would not appear on Labor and Industry files.

Thus, the 45 percent rate reflects a plethora of factors, not just the functioning of the Department of Labor and Industries. In spite of the discrepancies of reporting, similarities occur in the frequencies of mechanism of injury and body parts injured, and subsets of employees who appear on the workers' compensation roles appear to be representative of those persons treated by a physician for on-the-job injuries.

Both Medicaid files and workers' compensation files are government data banks maintained for the purposes of third party payment. Medicaid files have provided the data source for community diagnosis in two studies[5,6] in spite of documented inaccuracies.[7] Although the marked underreporting of on-the-job injuries in this study does limit the use of workers' compensation files for basic research, the similarity of frequencies in the categories in the type of injury and body part injured demonstrates that these files may be useful to the practicing physician in lieu of a community survey.

The implications of this study are limited by four factors. First, the Tonasket study did not record the occupation and the type of industrial employment of the injured, an important category of comparison if workers' compensation files are to be used for community diagnoses. Second, this study does not adequately evaluate the validity and accuracy of the Labor and Industry files because the comparison is based on aggregate information from both data sources. To validate the Labor and Industries files, a research project must compare the workers' compensation files with an accurate data source on a case-by-case basis. Third, neither data base appraises the severity of injury, an important measure in any trauma related injury. Fourth, while most states report year-end aggregate statistics for the entire state, these statistics are not subdivided by region, county, or city. States such as Washington with computerized systems can provide such information, but they do not do so routinely. Interest by community physicians can hasten the development of readily available statistics on community-specific job related injuries.

In summary, the workers' compensation files demonstrate potential as a source for community diagnosis despite significant underreporting. Further research into the validity of workers' compensation files would assist physicians interested in community diagnosis to determine if this data base will be useful to community physicians.

References

1. Tapp JW: Community diagnosis. In Kane RL (ed): The Challenge of Community Medicine. New York, Springer, 1974, pp 13-26

2. Perry BC, Chrisenger EW, Gordon MJ, et al: A practice-based study of trauma in a rural community. J Fam Pract 10:1039, 1980

3. State of Washington 1979 Pocket Data Book. Office of Financial Management, Olympia, Washington, December 1974, p 205

4. 1978 Census of agriculture, state and county data. In US Bureau of the Census (Suiteland, Md): Series AC78-A-47, vol 1, part 47. Washington, DC, Government Printing Office, 1981, p 287

5. Roghmann KJ: Use of Medicaid payment files for medical care research. Med Care 12:131, 1974

6. Federspiel CF, Ray WA, Schaffner W: Medicaid record as a valid data source: The Tennessee experience. Med Care 14:166, 1976

7. Berkanovic E: An appraisal of Medicaid records as a data source. Med Care 12:590, 1974