Use of Medical Services During a 2-Month Period in the Seattle-King County (Washington) Jail

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THE RIGHTS OF PERSONS incarcerated in this country's correctional facilities are issues constantly under question. The right to adequate medical care is almost always among these rights. Several recent reports have described the inadequacy of health services available to inmates (*1–4*). Major prison riots, such as those in Attica, N. Y. in 1972, and Santa Fe, N. Mex., in 1980, bring public attention to prisoners' rights for only brief periods. However, recent civil suits (*5*) brought by prisoners themselves against the agencies of correction are forcing a more sustained interest in the problem. Several sets of standards (*1,4,6*) have been formulated to define the services that will protect these rights. At the same time, from the local to the national level, a growing fiscal and social conservatism questions even the provision of such services. Because of these divergent forces, knowledge of conditions of health and the use of medical care by the incarcerated population is needed as a base for planning and financing these services.

An important first step in planning health services is the acquisition of basic clinical data, according to Goldsmith (*7*). Several investigators have documented such data. Engebretsen and Olson (*8*) recorded problems seen at sick call in a Dade County, Fla., jail with an all-male population. They observed that a substantial proportion (36 percent) of visits were for pychosocial problems. Derro studied both the health status on admission (*9*) and the use of care (*10*) by inmates of a minimum-security correction center in St. Paul, Minn. He noted a high utilization rate of medical care and a prevalence of seemingly minor complaints and of violence-related problems. Novick and associates summarized data from intake examination records of all incoming prisoners in the New York City jail system for 2 weeks in 1975 (*11*). Substance abuse and psychiatric problems were common among this population, as was new trauma.

We describe a study of the use of existing medical care in a large jail during 2 months in 1979. This jail is the major prison facility in the Seattle-King County, Wash., area and houses prisoners of both sexes. As is the case in many urban jails, the severity of criminal charges varies greatly. The inmate population includes felons and misdemeanants serving sentences, persons awaiting trial, and some whose main problems are psychiatric rather than criminal. The overcrowding, understaffing, high prisoner turnover, and the heterogeneity of the inmate population make the Seattle jail similar to most large urban jails in the United States. The use of medical care in this type of setting has not been documented in the medical literature, to our knowledge.

Setting

The Seattle-King County jail serves an urban population of 490,000 and a county population of 1,186,900. During the study period, the average daily census was 812 inmates. (By State standards, capacity for the jail is 350 to 400). There were 5,133 new bookings during that time, with an average of 84 new bookings per day. The jail is divided into three units. Unit 1 holds men serving felony sentences of up to 18 months.

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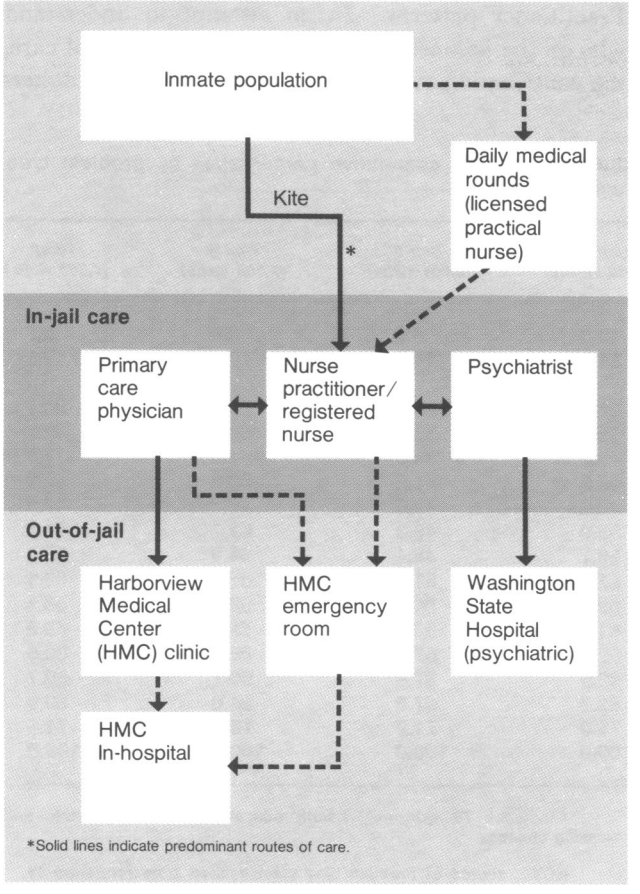
Unit 2 holds men awaiting trial or sentencing, or both, as well as those serving sentences for misdemeanors; the average stay is 3 days. Unit 3 holds all female prisoners. The average daily census was 521 for unit 1; 230 for unit 2; and 61 for unit 3. New bookings for each of the 3 units were 1,394, 3,097, and 642, respectively, for the 2 months of the study.

Health care facilities in the jail include a five-cell infirmary, five examining rooms, and one dental treatment room. Laboratory equipment is available for hematocrits, gram stains, and microurinalysis. During the study period, care was provided by three registered nurses and one licensed practical nurse during the day, four registered nurses in the evening, and two registered nurses through the night. Two full-time family nurse practitioners worked during the week. One physician worked from 8 am to 5 pm during the week and part time on weekends. A psychiatrist and a dentist each worked full time (40 hours) during the week.

A physician's standing orders empower nurses to treat a wide range of medical problems—including alcohol and drug withdrawal, gastrointestinal bleeding, and cellulitis. During evenings or weekends when no physician or nurse practitioner is available, a registered nurse transfers inmates with complications or emergency conditions to a local hospital.

Sources of medical care for inmates of Seattle-King County jail



The prisoners have various routes of access to care in the jail. Often access is through their written requests (kites), which are collected daily by the nursing staff. Medications are distributed by the nursing staff four times daily to prisoners in their cells. During this distribution, nurses identify other prisoners who need to be seen in the clinic. Prisoners can be referred for care by social workers and corrections officers (guards). Finally, the nursing staff reviews the booking slips of entering prisoners daily to identify persons who volunteer information about their medical problems. An estimated 50 percent of the clinic visits result from nurses' observation of prisoners during medication rounds; 40–45 percent result from prisoners' kites; and other routes account for 5–10 percent of the visits. Physical evaluations and examinations are delivered in the clinic, in cell-block conference rooms, or through the bars of a prisoner's cell. In summary, the nurses in this system provide most of the patient care. They refer patients to the nurse practitioners or medical practitioners when indicated (see chart).

Study Methods

Data on all health care delivered to inmates in jail and outside were collected from May 1 through June 30, 1979. Information on inhouse use of care was obtained from the jail clinic logs. For each patient visit, the name, age, primary problem, practitioner, and unit were recorded. Sex was distinguished by the unit number (women only in unit 3). The amount of medication delivered daily by the nursing staff was not tabulated.

Inmate visits outside the jail were documented in two steps. First, a list of inmates receiving care in facilities outside the jail was drawn from the guards' transfer log. A description of an inmate's diagnosis and treatment was then obtained from his or her chart in the jail clinic files and from his or her hospital chart. Dr. James LoGerfo, medical director of outpatient clinics at the Harborview Medical Center, provided access to the hospital charts. Approximately 12 percent of the visits listed in the transfer log could not be tracked to a visit recorded in a hospital chart, and these were therefore dropped from the inmate pool.

The emergency room log at Harborview was the second source of inmate visits outside the jail. From this log, inmates who received emergency care after arrest but preceding incarceration were identified. An example is injury suffered before or during arrest that required a visit to the emergency room for treatment before jail booking procedures. The jail booking slips of these in-

mates were then checked to ensure that they actually entered after their emergency room visit.

Recorded information for all inmate visits to Harborview includes date and time of arrest, date and time of visit, age, gender, criminal charge, diagnosis, treatment, and disposition. In-jail data were tabulated and analyzed by hand. Data from jail transfer visits were coded and keypunched for computer analysis.

Results

Rates and types of visits. During the study period, prisoners made 7,563 health care visits within the jail. Since admission examinations are not routine, they contribute little to this total number of visits. The reasons for the visits are shown in table 1 by primary problem; therefore, the number of problems shown is the same as the number of clinic visits. The problems were coded according to the International Classification of Health Problems in Primary Care (*12*). Unit 1, which made up 64.2 percent of the jail's average daily census, accounted for 53.6 percent of the visits. The average daily census for unit 2 was 28.3 percent, and it accounted for 26.5 percent of the visits. Unit 3 had an average daily census of 7.5 percent, and it accounted for 19.9 percent of the visits.

If visits for all inmates during the 2-month period are extrapolated, an annual visit rate per prisoner can be calculated. The annualized rates are 46.7 for unit 1, 52.2 for unit 2, and 148.4 for unit 3. These rates grossly exceed the 2.6 rate reported for men in the 1973 National Ambulatory Medical Care Survey (*13*) and the 7.7 rate reported by Derro (*10*) in a minimum-security correction center. Among a male population of long-term prisoners in a Midwest penitentiary, Twaddle (*14*) found an annual rate of 17.4 sick call visits per prisoner—35 percent of the rate seen in the Seattle-Kings County jail.

To assess the rate differences, the types of visits were compared with those of two other populations. The present study shows that among men, skin disease (10.5 percent), musculoskeletal disease (8.9 percent), and psychiatric visits (7.1 percent) predominated. In Derro's minimum-security population (*10*), injuries (15.4 percent), skin disease (14.7 percent), and musculoskeletal disease (11.5 percent) predominated; mental disorders accounted for 8.2 percent of the visits. The remaining categories showed reasonable similarities between the two populations. Although the total number of visits per unit of time was less in Derro's study, the types of problems seen were comparable. A study of family practice in Virginia (*15*) showed small percentages of visits by men for musculoskeletal (7.3 percent), skin (5.4 percent), and psychiatric (4.1 percent) problems.

Practitioner patterns. In an attempt to understand who on the jail medical staff delivers what kind of care, the contribution of the various staff in seeing prisoners

Table 1. Health care visits within the Seattle-King County jail during 2 months, cumulative percentages by problem type and jail unit [1]

Problem type	Unit 1 (4,053 visits)	Unit 2 (2,001 visits)	Unit 3 (1,509 visits)	Total (7,563 visits)
Skin diseases	10.9	9.8	6.6	9.7
Musculoskeletal and connective tissue disease	21.0	16.3	12.2	17.9
Mental disorders (excluding alcohol and drug abuse, suicide tendencies)	25.8	28.2	24.0	26.0
Digestive system disease (including teeth)	32.6	33.2	30.7	32.3
Teeth and supporting structure disease	40.2	34.8	34.3	37.5
Accidents, injuries, poisoning, or violence	45.8	41.2	36.3	42.6
Genitourinary system diseases	48.6	42.8	49.7	47.2
Respiratory system disease	53.9	46.3	52.1	51.4
Eye disease	56.7	48.1	54.9	53.9
Alcohol-related problems [2]	57.9	51.8	57.7	56.1
Nervous system disease	59.7	54.8	58.8	58.1
Circulatory system disease	61.8	56.9	59.5	59.9
Drug addiction related problems	62.4	57.5	60.3	60.5
Suicide [3]	62.5	57.8	60.7	60.7
Blood disease	62.7	57.9	61.0	60.9
Medical examination	71.0	71.9	74.2	71.6
Miscellaneous [4]	100.0	100.0	100.0	100.0

[1] Average daily censuses were 521 for unit 1, 230 for unit 2, and 61 for unit 3.

[2] Any alcohol-related problem including withdrawal. [3] Suicide attempt or gesture.

[4] Includes TB skin test, health education, laboratory work, and dressing change.

NOTE: source of problem type classification from reference 12.

Table 2. Patients transferred during a 2-month period to Harborview Medical Center (HMC) after and before incarceration at Seattle-King County jail, by problem type

Problem type	Transfers from jail to HMC				Seen first in emergency room and then sent to jail	
	Jail to clinic		Jail to emergency room		Emergency room to jail	
	Number	Percent	Number	Percent	Number	Percent
Trauma	21	26.9	31	65.9	30	68.2
Psychosocial	5	6.4	7	14.9	12	27.3
Psychiatric	2	2.6	1	2.1	5	11.4
Drug-related	0	0	0	0	1	2.3
Alcohol-related	1	1.3	0	0	5	11.4
Suicide-related	2	2.6	6	12.8	1	2.3
Medical	40	51.2	9	19.1	2	4.5
Cardiovascular	3	3.8	2	4.2	0	0
Respiratory	6	7.7	0	0	1	2.3
Gastrointestinal	6	7.7	2	4.2	0	0
Genitourinary	4	5.1	2	4.2	0	0
Neurologic	9	11.5	3	6.4	0	0
Musculoskeletal	5	11.5	0	0	0	0
Skin	3	3.8	0	0	1	2.3
Blood disease	1	1.3	0	0	0	0
Eye disease	3	3.8	0	0	0	0
Dental	12	15.4	0	0	0	0
Total	78	...	47	...	44	...

NOTE: Percentages are for total transfer group (for example, percentage of transfers from jail to HMC clinic of patients with a trauma-related diagnosis).

with problems was analyzed. The registered nurses recorded 70 percent of the problems, nurse practitioners 16 percent, the physician 8 percent, and the psychiatrist 6 percent. Visits to the dentist were not logged and therefore were not tabulated as encounters. The percentages mentioned were similar for the three jail units and for the kinds of problems, except for the 38 percent of the patients with psychiatric problems who were seen by the psychiatrist.

Transfers. When an inmate needs diagnostic or treatment facilities not available in the jail, when hospitalization is necessary, or when a medical problem needs immediate assessment or the care of a physician or nurse practitioner and none are on duty, the prisoner is transferred to a hospital. In addition, some prisoners need emergency care after arrest but before they enter jail. These visits are indicated by type in table 2. Because more than 90 percent of the patients transferred went to one hospital, Harborview, only those patients were traced. Transfers "to clinic" denote those made by a physician after evaluation.

Medical and dental problems accounted for 66.6 percent of the 78 transfers to the clinic. Of these, dental (15.4 percent) and neurological (11.5 percent) problems were seen most often. Trauma accounted for a majority of the transfers to both the hospital emergency room (65.9 percent) and to the jail following an initial visit to the emergency room (68.2 percent). Of all transfers from the jail to the hospital, medical problems accounted for 48.8 percent, trauma 41.6 percent, and psychosocial 9.6 percent.

To further analyze delivery of care in the jail, potentially preventable transfers were investigated. In part, one wonders if prisoners who were transferred to a hospital shortly after entering jail might have presented recognizable symptoms during the booking process. To examine this hypothesis, a 24-hour period was arbitrarily chosen as a cutoff between the time of booking into the jail and the time of transfer. In table 3, several features of the transfers within this period are examined. Of the 12 prisoner transfers during the first day of incarceration, 10 were made during hours when no physician or nurse practitioner was on duty. Six transfers were made within less than 8 hours of booking. Seven of the 12 transfers were made for trauma-related conditions, most of which likely existed before booking and could have been treated beforehand if adequate screening had been integrated into police and corrections protocol.

Finally, hospitalization occurring during the study period was examined. Seven people were hospitalized—

Table 3. Descriptive features of transfers of 12 patients to Harborview Medical Center within 24 hours of incarceration at Seattle-King County jail, by sex, age, and diagnosis

Sex, age, and diagnosis	Hour of transfer	Hours between incarceration and transfer	Place seen [1]
Male, age 31, blunt trauma, abdomen	11 pm	1	ER
Female, age 37, suicide gesture	8 pm	1	ER
Male, age 22, head trauma	3 am	3	ER
Male, age 32, head trauma	10 pm	3	ER
Male, age 33, head trauma	11 pm	8	ER
Male, age 37, pancreatitis	10 pm	8	ER
Male, age 56, chest trauma	3 am	15	ER
Male, age 30, suicide gesture	[2] 1 pm	19	ER
Male, age 33, thumb subluxation	3 pm	20	ER
Female, age 20, injured during arrest	10 pm	20	ER
Male, age 27, seizure	7 pm	21	ER
Male, age 49, seizure	12 noon	24	Clinic

[1] ER = emergency room.
[2] Transferred on Saturday; all other transfers took place between Monday and Friday.

four for psychiatric-related problems, two for medical problems, and one for an alcohol-related problem.

Discussion

The annualized visit rate for male prisoners in the Seattle-King County jail is 3 times greater than that in a Midwest penitentiary, more than 6 times that of male prisoners in a work-release center, and almost 20 times that of men in the general population. Female prisoners have an annualized rate that is three times greater than that of male prisoners. There were 7,732 visits (including transfers to Harborview) during the 2-month study period, or an average of 127 visits per day. Thus, approximately 15.6 percent of the total jail population received medical or psychiatric care each day.

However, this annualized rate is misleading in that it is based on the average daily census of the jail, while some prisoners may be in the jail less than 24 hours. In few cases does the rate represent visits per individual prisoner per year. In the 2-month period there were 5,133 new bookings. Each day the average turnover was more than 12 percent of the total jail population. We believe that this high turnover rate is a primary influence on the clinic visit rate. In any event, the turnover rate makes it difficult to compare this population with either a long-term prison population or the general population.

Among additional possible explanations for the high visit rate is that the populations in the Seattle jail and urban jails in general have little or no access to health care on the outside. For these people, the jail health services may be their only source of care.

Security and services in the jail are so organized that prisoners have no option for self-care. For example, over-the-counter preparations, bandages, and even Q-tips can be obtained only by a visit to the clinic. Thus, the visit rate may reflect the number of illness episodes more accurately than the quantity of medical conditions among the jail population. Second, certified illness is the only acceptable excuse from an otherwise routine and even boring agenda of jail activities. Third, hospital transfer is the only avenue available for leaving the jail. Finally, a visit to the clinic is largely a prisoner's only opportunity for contact with persons in the outside world. Use of health care is, in essence, one of the few forms of control prisoners are allowed over their lives.

One manifestation of the shortage of physicians and higher level practitioners in the jail is the finding that 70 percent of the clinic visits were recorded by registered nurses. Potential problems were circumvented by the availability of standing orders for nurses; these orders covered a wide range of medical conditions. The nurses were more often treating patients with medical conditions than triaging, changing dressings, and admitting to an infirmary bed for withdrawal seizures. Since the period of this study, the National Health Service Corps has financed additional physician and nurse practitioner hours in the jail.

A prisoner's first contact with corrections officers during booking offers an opportunity for quick evaluation of his or her state of health. Booking officers recognize and transfer most patients needing emergency care. Unfortunately, it is also true that less obvious maladies can go untreated for days before a prisoner can be seen in the clinic or identified in a cell. A prescreening form covering medical and psychiatric symptoms was devised concurrently with this study to facilitate early detection of prisoners needing health care.

Both the design and findings of this study have limitations. The principal data sources were clinic logs, jail medical charts, and hospital outpatient charts. For hospital transfers, the accuracy of diagnostic impressions was validated by a comparison of the diagnosis on the transfer order with the diagnosis on the hospital chart—both diagnoses were in fact the same for all inmates transferred. Lack of time and resources precluded cross-checking each diagnosis recorded in the

jail clinic logs against the appropriate jail chart diagnosis. Therefore, it is not certain how accurately the quantity and types of cases recorded in the clinic reflect the care actually delivered. Because the logs are the single source of verification of the care given, as well as of the time spent by various practitioners, it is assumed that a majority of the actual visits are recorded. Inaccuracies would be expected to produce error in the conservative direction, resulting in an underestimation of the total visits.

The selection of a primary problem for each clinic visit introduces other difficulties. The actual prevalences of alcohol and drug abuse, psychiatric disorders, and trauma are probably concealed in other diagnoses. Although alcohol abuse, for instance, may be etiological in many hepatic problems and seizures, its classification as gastrointestinal and nervous system disorders obscures its true magnitude. A truer prevalence may be seen in the study by Novick and associates (*11*), in which physical examinations were performed on all incoming prisoners in the New York City correction system during a 2-week period. Conditions were diagnosed for 54 percent of the prisoners. The 4 most common problems were drug abuse 16.3 percent, psychiatric disorder 12.7 percent, trauma 5.6 percent, and alcohol abuse 4.8 percent. The experience of the health workers in the jail, as well as our own, leads us to believe that these conditions are much more prevalent than our study revealed and are not amenable to solutions presently offered by medical or social services within the jail.

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SYNOPSIS

DEMERS, RAYMOND (University of Washington School of Medicine, Seattle) and WALSH, KEVIN: *Use of medical services during a 2-month period in the Seattle-King County (Washington) jail. Public Health Reports, Vol. 96, September–October 1981, pp. 452–457.*

Total health care utilization in the Seattle-King County jail over a 2-month period in spring 1979 was studied. The annualized visit rate for men was 48 per prisoner per year, 2.6 times the rate for men studied in a long-term prison and almost 20 times the rate for men studied in the general population. The annualized rate for female prisoners was three times that of male prisoners. For all prisoners, the most common problems seen were skin conditions (9.7 percent), musculoskeletal (8.3 percent), and psychiatric (8.2 percent). An examination of practitioners' patterns in providing care demonstrated the primary role of registered nurses, who saw 70 percent of the patients. During the study period, 125 transfers were made to a hospital; 48.8 percent were for medical problems, 41.6 percent for trauma, and 9.6 percent for psychosocial problems.