Impact of a newly opened prison on an accident and emergency department

S H Boyce, J Stevenson, I S Jamieson, S Campbell

Objective: To determine the impact of a newly opened prison on an accident and emergency (A&E) department.

Method: A new category B prison opened in April 1999, the first privately run prison in Scotland and the third largest in population. All prisoners referred to the A&E department for treatment were identified prospectively during the first year after the opening of the prison.

Results: 99 prisoners and four members of staff attended during the one year period. Ages ranged from 18–64 years with a mean age of 29.8 years. Presentations were as a result of deliberate self harm (22%), injury after violence (18%), sports injury (15%), surgical condition (15%), medical illness (13%), accidental injury (9%), ENT problem (2%), and miscellaneous (6%). Thirty seven prisoners (35.6%) were hepatitis B positive. The remaining prisoners were returned to the prison for further management by the prison medical and nursing team. Twelve prisoners re-attended a total of 37 times, ranging from twice to a maximum of eight visits. Some 42.3% of attendances were during “working hours” (09.00–17.00) and 57.7% attended “out of hours” (17.00–09.00). Twenty four referrals (23.1%) were deemed inappropriate by the prison medical team on retrospective review. Sixteen of these occurred “out of hours”. Forty one prisoners (39.4%) were known to have a history of injecting drug misuse. Including re-attenders, 59 presentations (56.7%) to the A&E department had a history of injecting drug misuse. Of these 41 prisoners, 11 (26.8%) were hepatitis C positive, with eight of these having a positive polymerase chain reaction test. No prisoners had HIV and only one prisoner was hepatitis B positive.

Conclusion: The opening of the prison resulted in only a slight increase in the workload of the A&E department. A significant proportion of prisoners were admitted to the hospital highlighting the practical and logistical problems of managing people restrained and in custody. Most cases can be safely referred back to the prison. Increased input is required from the prison medical team when dealing with deliberate self harm, frequent attenders, and “out of hours” referrals. All A&E staff must be aware of the increased risk of hepatitis C infection when dealing with a confined prison population.

RESULTS

Altogether 99 prisoners and four members of staff attended during the one year period. Ages ranged from 18–64 years with a mean age of 29.8 years. Presentations were as a result of deliberate self harm (22%), injury after violence (18%), sports injury (15%) (mainly from playing football), surgical condition (15%), medical illness (13%), accidental injury (9%), ENT problem (2%), and miscellaneous (6%) (fig 1).

Thirty seven prisoners (35.6%) were admitted to the hospital as an inpatient. Figure 2 illustrates the specialities involved.

METHOD

The study took place over a period of one year starting April 1999 in cooperation with the prison healthcare team. All patients referred to the A&E department for treatment were identified prospectively on attendance. Records of all prisoners attending were collected from the departments computerised database and analysed. The following data were extracted for each prison: time of attendance, age, reason for attending, diagnosis, and disposal. In consultation with the prison medical staff a history of drug misuse and hepatitis status for each prisoner was obtained retrospectively.
Management of prisoners.

The clinical conditions requiring admission to the medical and surgical units are outlined in tables 1 and 2 respectively. Further review at outpatient clinics was arranged for 15 prisoners. The remaining prisoners were treated and returned to the prison for further management by the prison medical and nursing team (fig 3).

Twelve prisoners re-attended a total of 37 times, ranging from twice to a maximum of eight visits by one person. Some 42.3% of attendances were during “working hours” (09.00–17.00) and 57.7% attended “out of hours” (17.00–09.00). Twenty four referrals (23.1%) were deemed inappropriate by the prison medical team on retrospective review. Sixteen of these were during the “out of hours” period.

Forty one prisoners (39.4%) were known to have a history of injecting drug misuse. Including re-attenders, 59 presentations (56.7%) to the A&E department had a history of injecting drug misuse. Of the 41 prisoners, 11 (26.8%) were hepatitis C positive, with eight of these having a positive polymerase chain reaction test. No prisoners had HIV and only one prisoner was hepatitis B positive.

DISCUSSION

HMP Kilmarnock is a category B prison housing remand cases, temporary young offenders pending transfer to other establishments, and prisoners on short-term and long term sentences. Inmates are aged 21 years and upwards, although remand prisoners are present from 16–21 years. The prison was financed by the private sector and is managed privately within the Scottish Prison Service Estate. While there are many prisons in England managed by the private sector within the English Prison Service Estate, HMP Kilmarnock is the first such venture in Scotland, however, after a recent review of the Scottish Prison Services Estate it is unlikely to be the last.

The prison holds the third largest population of prisoners in Scotland with 530 inmates, however, this can increase to a maximum of 650 prisoners through increased cell sharing if required. The prison medical service estimate that 80% of inmates have been involved in some form of drug misuse before admission. Thirty per cent of these involved heroin and 22% are injecting drug misusers.

Medical facilities at the prison consist of a 16 bedded hospital staffed by nurses 24 hours. Doctors are present 40 hours per week with 24 hour on-call cover. At the time of the study 10 local general practitioners, also acting police casualty surgeons, provided the “on-call” service out of hours. Facilities are present with the healthcare centre for routine dental treatment and general radiography, however, radiographers must be called from the hospital to provide this service only during normal working hours. A treatment room is present for minor procedures, for example, suturing and wound management. There are also consulting rooms available for specialist consultants from the hospital to review inmates as domiciliary visits.

The concept of prison healthcare in general is the subject of current debate, further subdivided by the private versus state prison issues, and is out with the remit of this paper. The population of a prison is not representative of the general population and is typically male, between the ages of 15–44 years, poorly educated, from the lower social classes. There may be a history of smoking, alcohol and drug misuse, mental disorder, and chronic disease. One recent study from the USA reported the disease profile of prison inmates in one state concluding that the prison population exhibited substantially higher prevalence rates of disease than those reported for the general population. Within the prison there exists a pool of chronic disease and drug misuse that can lead to significant morbidity and acute hospital presentations. In our study 37 prisoners were admitted to hospital wards, mostly medical and surgical. Many of these were with potentially life threatening conditions. This highlights a large group of prisoners that may present to A&E departments requiring immediate treatment and hospital admission.

Managing prisoners in A&E departments and hospital wards presents other problems. HMP Kilmarnock’s policy is that the prisoner must remain restrained to two prisoner officers at all times in the A&E department and throughout the course of the hospital admission period in the ward.
regardless of the prisoners category. Other prisoners, for example, low security open prisons, may send patients alone to hospital for treatment in other parts of the country. This means that a prisoner arriving in our A&E department will be restrained to two prison officers, even if they have committed a minor offence or are on remand. The use of restraints on prisoners in Scotland are governed by the Prison Rules Scotland Act (1984), which sets out the circumstances under which a prisoner may be restrained while undergoing medical treatment. Restraints can consist of simple handcuffs to longer “escort” chains (handcuffs attached by a length of chain to a prison officer). The presence of a restrained prisoner may alarm other patients or relatives within the hospital as their health and repeat attendances made up a substantial part of the workload, particularly outwith 0900–1700 hours, when staffing levels are at their lowest. Practical difficulties were encountered in supplying escorts to transport the prisoner on site for non-life threatening conditions before arranging transfer to A&E department and the prison over “problem patients” and review the prisoner on site for non-life threatening conditions. In conclusion, the perception that the opening of the prison would dramatically increase the departmental workload proved to be unfounded with only a slight increase occurring. However, this small group of patients placed significant demands on the A&E service. The presence of a prisoner and their behaviour tends to disrupt the normal running of the department. They were often manipulative, disruptive, time consuming, and presented “out of hours” when staffing levels were at their lowest. Practical difficulties were encountered in managing prisoners in restraints and with prison officers in close proximity the issue of medical confidentiality and the doctor/patient relationship is raised.

Increased input is required from the prison medical team when dealing with the problems of deliberate self harm in inmates, frequent attenders and the “out of hours” referrals to the department. Consultation, therefore, is required between the A&E department and the prison over “problem patients” and a management plan devised.

With the high presence of drug misusers within the penal system, all emergency personnel must be aware of the increased prevalence of HCV infection, which may be between 28-fold to 250-fold greater chance that a prisoner may be a HCV carrier compared with a member of the general public. All healthcare staff involved in the treatment of prisoners, including the emergency services personnel, must be aware of the increased possibility of contracting HCV infection when dealing with prisoners and exert extreme vigilance in their clinical procedures.
Contributors
Stephen Boyce was involved in the research, overall coordination, and writing of the paper. Iain Jamieson was involved in the research and writing of the paper. James Stevenson was involved in the research and writing of the paper specifically in relation to hepatitis C. Both Stephen Boyce and Iain Jamieson will act as guarantors for the paper.

Authors’ affiliations
S H Boyce, J Stevenson, Accident and Emergency Department, Crosshouse Hospital, Kilmarnock, Scotland
I S Jamieson, HMP Kilmarnock, Scotland
S Campbell, Department of Gastroenterology and Hepatology, Gartnavel General Hospital, Glasgow, Scotland

Funding: none.
Conflicts of interest: none.

REFERENCES
1 Hughes RA. Health, place and British prisons. Health Place 2000;6:57–62.
3 Levy M. Prison health services. Should be as good as those for the general community. BMJ 1997;315:1394–5.
4 Squires N. Promoting health in prisons. Requires more than a change in who purchases health services for prisoners. BMJ 1996;313:1161.