Substantial use of primary health care by prisoners: epidemiological description and possible explanations

J M Feron, D Paulus, R Tonglet, V Lorant, D Pestiaux


The use of primary health care in the prison population is considerable compared with the general community. In the UK, prisoners consult their general practitioner (GP) three times more than a demographically equivalent population in the community.1 In France2 and Belgium, an average of 10% of the prisoner population are seen on each working day in general practice.3 According to European Council,4 prisoners should have full and unlimited access to a doctor or nurse as necessary. However, demand for health care often seems to outstrip the capacity of services.5 Access to services is only limited by GPs’ availability and medical consultations have therefore become very brief and deal only with the presenting complaint.6

In Belgium GPs play a central part in the delivery of primary care to prisoners. They see most prisoners’ health problems. GPs ensure a gate keeping role for access to a doctor or nurse as necessary. However, demand for health care often seems to outstrip the capacity of services.7 Access to services is only limited by GPs’ availability and medical consultations have therefore become very brief and deal only with the presenting complaint.8

The medical examination on arrival at the prison contains information on all health problems whether resolved or ongoing at the time of committal. The prevalence of these problems helps to formulate explanatory hypotheses (that is, influence of health status on use of services).

Scarcce research has attempted to give an epidemiological analysis of the use of primary care by prisoners, nor has any tried to explain the substantial demand for primary care in this population. It is widely accepted that the prevalence of mental health problems,9 drug misuse,10 and infectious diseases11,12 is high but its impact on use of primary health care is unknown.

The aim of this study is to describe the use of primary care services by the prisoner population and to attempt to explain the high demands so as to prioritise and plan services oriented to the specific needs of this population.13,14

METHODS

The study design was a retrospective cohort study of discharged prisoners. Sampling was done using the prison files. These are completely distinct from medical files. We identified all prisoners released from a Belgian prison from 1 September to 30 November 2002 (n = 3510) from the list of prison files. A systematic random selection was then carried out to obtain the sample size. Medical files were then retrieved.

The sample size was calculated to obtain a 5% precision (95% confidence intervals) for the prevalence of health problems on committal. Five hundreds and thirteen records were analysed, 475 for men and 38 for women. Table 1 describes the sample characteristics.

Analysis of GP contacts concerned the previous year of imprisonment. No less than a year to avoid seasonal effects, no more than a year because electronic records were...
introduced in Belgium in 1999. Earlier data might have been of lower quality and with an overrepresentation of long sentences. Only 73 prisoners from the sample (14%) were imprisoned for more than a year. A total of 182.2 patient years were analysed.

Health problems on committal (whether this was in the past year or not) and reasons for encounter in GP contacts were classified according to the International Classification for Primary Care.15 This classification is perfectly adapted to primary care setting where complaints do not always lead to a specific diagnosis.

We assessed the quality of textual notes in medical files by marking them from 0 to 2. A “0” score was given when only a date was recorded for the encounter. A “1” score was given when notes were incomprehensible. A “2” score was given when notes were clear.

Textual data were coded by one researcher, independent of the prison health service, and not by physicians themselves, to improve reliability.16 Coding was done using standardised criteria of ICPC. When only a treatment was specified in the contact, code 50 (procedure: medication) was used. In other cases the reason(s) for encounter was (were) coded using written notes. Code 50—that is, “medication” entails an actual contact with a doctor to start or prolong a drug treatment. It does not just consist in a form filling exercise. When, for example, a sleep disturbance was noted (followed by a psychoactive treatment or not), only code P06 sleep disturbance was attributed.

When difficulties occurred in coding, data were cross coded independently by another researcher to assess coding quality. Exel software was used to analyse data.

### Table 1  Sample characteristics

<table>
<thead>
<tr>
<th>Number of records = 513</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>Median</th>
<th>P25</th>
<th>P75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>34.10</td>
<td>18</td>
<td>73</td>
<td>33</td>
<td>26</td>
<td>40</td>
</tr>
<tr>
<td>Length of stay in prison (days)</td>
<td>232</td>
<td>1</td>
<td>5467</td>
<td>84</td>
<td>30</td>
<td>205</td>
</tr>
</tbody>
</table>

Excluding the examination on entry, prisoners consulted with their GP an average 17 times a year (95% CI 15.0 to 19.4). Compared with a sex and age equivalent population in the community,17 the incidence ratio was 3.8 (95% CI 3.3 to 4.2). Regarding quality of textual notes, 97% of files received a “2” score and so were of satisfactory quality for analysis.
Consistent with findings by Marshall (incidence ratio 3, also
standardised for age and sex) showing that the substantial
use of primary care services in prison is common in Europe.
There is however great individual variability in the use of
health services by prisoners.

Disregarding the many administrative procedures carried
out, most of the primary care services are used to deal with
psychological, respiratory, gastrointestinal, musculoskeletal,
and skin problems. Many contacts are motivated solely by
the request for medication. An important part of the reasons
for consultation are common problems that would mostly be
sorted out in the community by the patient, their family, or
through direct access to a pharmacy. The absence of access
to informal health services is one factor for the high demands
in prison.

Health status on committal plays a very important part
in the use of medical services. The most common reasons
for encounter (mental health, gastrointestinal, respiratory, den-
tal) are linked to the most common problems recorded on
entry (that is, addictions and associated diseases).

Together with the substantial pre-existing drug misuse
problems, the difficult experience of imprisonment is clearly
an issue. Psychoactive drugs are used both to alleviate the
prisoner’s suffering and to maintain the peace within the
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inmates, or lack of access to health care outside the prison for this socioeconomically deprived population.

Few data are available about primary care epidemiology in this specific population. This is, however, essential to analyse health demand and specific needs in this particular context. The weakness of a retrospective cohort study based on medical records is the inconstant quality of textual notes recorded. But 97% were of satisfactory quality for analysis. Furthermore, electronic files ensure that data are correctly dated, legible, and organised in a standardised fashion. Because examinations on entry are not standardised, these data are weaker. In particular, the prevalence of mental health problems at the time of committal (code P) might be underestimated in relation to the reality, through patient shyness or ignorance, or through doctor’s being rushed.

On the other hand, one strength of this study is its retrospective design increasing the truthfulness of data. Health care in prison settings suffers usually from suspicion about its quality, accessibility, and transparency. This retrospective data collection did not permit the doctors to have improved their note taking to give a better image of the health care (Hawthorne effect).

The most probable explanations suggested by the data for the substantial use of primary care in the prison setting are: health status on entry (high prevalence of pre-existing mental health problems), lack of access to informal health services (many contacts for common problems), stringent rules (many contacts for administrative procedures), mental health issues related to the difficulties of life in prison (psychoactive drug prescriptions, nervousness).

Such descriptive studies are often the starting point for other studies concerning the main health problems of a specific population. Identifying the main health problems is however a necessary first step. More research should be carried out to estimate both quantitatively and qualitatively the specific health needs of prisoners to better organise services to cater for these needs. As an illustration, our results show that mental health issues are the most common reason for encounter after the administrative procedures. The results might yet underestimate the importance of mental health problems because assessing potential somatisations (for example, for complaints of headache or abdominal pain) is often difficult. Prevalence of mental health issues in prisons is an acute problem in the UK and probably in other

<table>
<thead>
<tr>
<th>ICPC code</th>
<th>Title</th>
<th>Number</th>
<th>%</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>P19</td>
<td>Drug misuse</td>
<td>97</td>
<td>22.1</td>
<td>18.2 to 26.0</td>
</tr>
<tr>
<td>P15</td>
<td>Chronic alcohol misuse</td>
<td>21</td>
<td>4.8</td>
<td>2.8 to 6.8</td>
</tr>
<tr>
<td>D72</td>
<td>Viral hepatitis</td>
<td>19</td>
<td>4.3</td>
<td>2.4 to 6.2</td>
</tr>
<tr>
<td>R96</td>
<td>Asthma</td>
<td>17</td>
<td>3.9</td>
<td>2.1 to 5.7</td>
</tr>
<tr>
<td>D86</td>
<td>Peptic ulcer</td>
<td>13</td>
<td>3.0</td>
<td>1.4 to 4.5</td>
</tr>
<tr>
<td>A70</td>
<td>Tuberculosis</td>
<td>10</td>
<td>2.3</td>
<td>0.9 to 3.7</td>
</tr>
<tr>
<td>N88</td>
<td>Epilepsy</td>
<td>10</td>
<td>2.3</td>
<td>0.9 to 3.7</td>
</tr>
<tr>
<td>P76</td>
<td>Depressive disorder</td>
<td>10</td>
<td>2.3</td>
<td>0.9 to 3.7</td>
</tr>
<tr>
<td>P18</td>
<td>Medication misuse</td>
<td>8</td>
<td>1.8</td>
<td>0.6 to 3.1</td>
</tr>
<tr>
<td>R97</td>
<td>Allergic rhinitis</td>
<td>8</td>
<td>1.8</td>
<td>0.6 to 3.1</td>
</tr>
<tr>
<td>K86</td>
<td>Hypertension, uncomplicated</td>
<td>6</td>
<td>1.4</td>
<td>0.3 to 2.5</td>
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<tr>
<td>T90</td>
<td>Diabetes, non-insulin dependent</td>
<td>6</td>
<td>1.4</td>
<td>0.3 to 2.5</td>
</tr>
<tr>
<td>D03</td>
<td>Heartburn</td>
<td>5</td>
<td>1.1</td>
<td>0.1 to 2.1</td>
</tr>
<tr>
<td>K96</td>
<td>Haemorrhoids</td>
<td>5</td>
<td>1.1</td>
<td>0.1 to 2.1</td>
</tr>
<tr>
<td>N01</td>
<td>Headache</td>
<td>5</td>
<td>1.1</td>
<td>0.1 to 2.1</td>
</tr>
<tr>
<td>T92</td>
<td>Gout</td>
<td>5</td>
<td>1.1</td>
<td>0.1 to 2.1</td>
</tr>
<tr>
<td>A92</td>
<td>Allergy/allergic reaction</td>
<td>4</td>
<td>0.9</td>
<td>0.0 to 2.0</td>
</tr>
<tr>
<td>D02</td>
<td>Abdominal pain, epigastic</td>
<td>4</td>
<td>0.9</td>
<td>0.0 to 2.0</td>
</tr>
<tr>
<td>B90</td>
<td>HIV infection, AIDS</td>
<td>3</td>
<td>0.7</td>
<td>0.0 to 2.0</td>
</tr>
<tr>
<td>K75</td>
<td>Acute myocardial infarction</td>
<td>3</td>
<td>0.7</td>
<td>0.0 to 2.0</td>
</tr>
<tr>
<td>K90</td>
<td>Stroke/cerebrovascular accident</td>
<td>3</td>
<td>0.7</td>
<td>0.0 to 2.0</td>
</tr>
<tr>
<td>L86</td>
<td>Back syndrome with radiating pain</td>
<td>3</td>
<td>0.7</td>
<td>0.0 to 2.0</td>
</tr>
<tr>
<td>P77</td>
<td>Suicide/suicide attempt</td>
<td>3</td>
<td>0.7</td>
<td>0.0 to 2.0</td>
</tr>
<tr>
<td>S18</td>
<td>Laceration/cut</td>
<td>3</td>
<td>0.7</td>
<td>0.0 to 2.0</td>
</tr>
<tr>
<td>T89</td>
<td>Diabetes, insulin dependent</td>
<td>3</td>
<td>0.7</td>
<td>0.0 to 2.0</td>
</tr>
</tbody>
</table>
Western countries. Better education of nurses and GPs working in prisons on these issues could be a first step in catering for the specific needs of the prison population. Another step could be to reinforce the role of the prison nurse in dealing with common health problems.

This study contributes to the debate on the prison medicine, and especially on the tension between the obligation of access to medical care and the limits of health care services.

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REFERENCES


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