

**A survey of primary and specialised healthcare provision to prisons in England and Wales.**

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### **Summary**

#### **Background**

Prison healthcare in England, including primary care, is now incorporated into the National Health Service: the impetus for the change in part due to concern about standards of healthcare within prisons. The demographic characteristics and health status of patients within prisons are relatively well understood, as are the problems faced by healthcare professionals. Less is known about current healthcare provision.

#### **Aims**

To describe the organisation of primary healthcare and specialised services in prisons and compare services available to different types of prison.

#### **Method**

A piloted questionnaire was sent to the governors of all prisons in England and Wales for completion by the healthcare manager.

#### **Findings**

Completed questionnaires were received from 122 (89%) of 138 prisons. The survey showed a low use of information technology (IT). Problems were reported with the recruitment and retention of general nurses in more than fifty percent of prisons. Prisoners in category A/B (higher security) prisons had available to them a greater range of healthcare services compared to non category A/B prisons. The results suggest that provision of services for chronic diseases and improvements in IT are needed. Problems with the recruitment and retention of general nurses need addressing. The reasons why lower security prisoners are receiving a narrower range of specialised healthcare services compared to higher security prisoners need justifying.

#### **Introduction**

Since April 2006 healthcare services in prisons in England and Wales have become part of the National Health Service (NHS) with general practitioners (GPs) responsible for medical primary care services. The delivery of healthcare, training for GPs and research in this setting are now therefore explicitly part of general practice as a discipline.

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The move to mainstream or normalise care in prisons follows concerns about poor provision of care in prisons (Reed and Lyne 1997). Policy documents relating to primary care provision within prisons stress two related themes: that patients within prisons should receive the equivalent level of care available outside and that primary care trusts (PCTs) should commission services within prisons (Department of Health and HM Prison Service 2002; Department of Health and Home Office 2007).

The prison population is currently about 80,261, of which 4,370 are female and 12,777 on remand (National Offender Management Service 2007). Patients in prison are predominately male, young (White, Park et al. 1999) and from areas of high deprivation (Singleton, Meltzer et al. 1998). Although comparisons with similar groups outside prison are not straightforward, patients inside prison are reported to have: high consultation rates (Twaddle 1976), a high prevalence of chronic diseases such as asthma (Butler, Kariminia et al. 2004) and hypertension (Olubodun 1996) greater prevalence of diseases resulting from illegal drug use such as hepatitis B and C (Butler, Dolan et al. 1997; Maher, Chant et al. 2004; Boutwell, Allen et al. 2005) and a higher prevalence of mental health problems (Butler, Allnut et al. 2005). Older patients have relatively poorer health compared to same aged groups outside prison and the prison system is not designed to accommodate their needs (Docherty 2007). Young offenders have greater physical and psychosocial problems compared to non-offenders of the same age (Macdonald 2006). Female patients also have relatively poor health and distinctive health needs (Harris, Hek et al. 2007). Patients themselves report difficulties accessing outside care, deficiencies in medical care within prisons and fears about dying in prison (Pettinari 1996). They feel less reassured during consultations than patients outside prisons (Martin, Russell et al. 1991).

Difficulties faced by healthcare staff have also been well described. These include problems concerning truthfulness in consultations (Pettinari 1996) and working in an organisation where healthcare is not the main priority (Department of Health 1999). There is a high turnover of patients (White, Park et al. 1999) and currently, of sentenced prisoners, 5,500 are serving sentences of six months or less (National Offender Management Service 2007). Other problems include deficiencies in care provision outside (Birmingham 2003), professional isolation (Department of Health and HM Prison Service 2001) and specific problems such as hunger strikes and dirty protests (smearing of faeces) (Gray, Pearce et al. 2006). The daily routine work of doctors within prisons includes the need to quickly assess

large numbers of people newly admitted to prisons, including drug withdrawal symptoms (Marteau and Farrell 2005).

Less is known about patterns of healthcare organisation within prisons, particularly primary care services. We undertook on behalf of the Department of Health to audit healthcare provision to prisons and to collect data about the types of prison. Our aims were to describe the nature of services within prisons and to determine what services are associated with which types of prison.

### **Methods**

A postal survey was conducted in all 138 prisons in England and Wales, including adult and young offender institutions. The survey questionnaire was based on a questionnaire previously used to investigate the quality of care among general practices in England (Campbell, Hann et al. 2001), modified to be applicable for prisons by the primary care research interest group of the national Prison Health Research Network. The questionnaire gathered information about the number and types of primary healthcare staff serving prisons and the organisation of care for five common chronic diseases – diabetes, heart disease, asthma, hepatitis and anxiety/depression – and was piloted for acceptability and clarity by healthcare managers at two prisons.

The questionnaire was sent to all prisons in October 2005. A written reminder was sent after three weeks. Those who did not respond within a further three weeks received one or more telephone reminders.

### **Statistical analysis**

Individual questionnaire items were analysed descriptively. Other analyses used regression techniques to investigate service provision and healthcare staff support in relation to prison characteristics. These analyses utilised a number of variables constructed as below.

*Specialised services provision.* For each prison, provision was measured as the number of specialised services present out of 13 (table 2). We excluded mother-and-baby units, as these only applied to Womens' prisons.

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*Primary care provision.* We defined a “full” primary care service for diabetes, heart disease, asthma, or hepatitis as one with a patient register, written guidelines, and a recall system - features expected of such a service outside of prison. For anxiety/depression we defined a full service to have ‘talk therapies’ and ‘self help’ materials. Each prison was assigned a score, out of 5, based on the number of “full” chronic care services it provided. In addition, each prison was assigned a score out of 7, based on the number of “full” chronic care services it provided plus the existence of on site out-of-hours care and/or an on site pharmacy service (table 2).

*GP support.* Measured as the number of GP surgeries provided per week per 100 prisoners.

*Nurse support.* The number of nurse sessions provided per week per 100 prisoners. A “session” pertains to half-a-day, with a full-time nurse working 10 sessions a week. 79 (65%) prisons provided reliable data on nurse sessions. We used the mean number of sessions per nurse for this group to impute session numbers for another 36 (30%) prisons that reported nurse numbers but not sessions per se.

The prison characteristics were:

*Size of prison.* From inspection of the distribution of prisoner numbers, prisons were divided into three categories of size: Small (<400 prisoners); Medium (400-699); Large (700 plus).

*Prison Type.* We classified the prisons into six types. Most prisons hold adult males, with each prisoner assigned to a security category from “A” to “D”, with ‘A’ representing the highest risk. We coded these prisons according to the prisoners presenting the highest security risk (remand prisoners are classed as category “B”). Female prisoners and young offenders are not security classified. We therefore treated Womens’ prisons and Young Offender institutions as two further distinct categories.

Three sets of analyses were conducted to assess: (1) the influence of prison characteristics (size and type) on the provision of specialised and primary care services; (2) the influence of prison characteristics on GP and nurse staffing levels; (3) the influence of staffing levels on the provision of chronic disease services, both before and after controlling for prison characteristics. We hypothesised that more staff would result in better organisation of chronic disease services, therefore this analysis used numbers of GP surgeries and nurse sessions, rather than rates per 100 prisoners.

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For outcomes in the form of a count (number of specialised services, number of primary care services, number of chronic services) we applied multivariate poisson regression. In all cases the data showed a good fit to the hypothesised poisson distribution. For staffing support outcomes we applied multivariate linear regression. To examine effects of prison type, we first compared all types, then if this test was significant performed a sub-test between the four categories of adult male prison.

Prison size was missing in 24 (20%) cases, and prison type in 4 (3%). We dealt with this by treating missing cases as a separate group. This allowed us to include these prisons in the analysis, though we do not report the results for these groups. For simplicity we excluded the single mixed-gender prison from the regression analysis.

All analyses were conducted using Stata Version 9 and since this was an exploratory analysis an alpha level of 5% was used throughout.

## Results

Of the 138 prisons, 122 (88%) responded in time to be included in the analysis. Basic descriptives of the sample appear in table 1.

### Specialised services

Prisons were asked to indicate from a list which specialised services they had available (Table 2). About half reported an on site in-patient unit with an average number of beds of 17 (range 1-38). Most indicated they had available mental health in-reach team and CARATS (Counselling, Assessment, Referral, Advice and Throughcare Services). Methadone maintenance was offered by just over one-third of prisons. Prisons provided a median of 5 out of 13 specialised services, though the range was very broad with two providing none, and two all 13.

### Primary Care services

Prisons offered a median of 5 surgeries per week (table 3), with a minority (17%) offering 10. The most common appointment time allocation offered for routine appointments was 'variable' (66%) followed by '10 minutes' (26%). GP support was variable, ranging between 0.26 and 4.8 surgeries per week per 100 prisoners, with a mean of 1.6. Nursing support was even more variable; some prisons reported no nursing support, and others up to 56 sessions per week per 100 prisoners (mean 14.7). Prisons with no nursing support had all nursing posts vacant at the time of survey.

Out-of-hours care was most commonly organised via an 'in-house' scheme (30%), followed by a variety of PCT schemes (28%) or a deputising service (20%). Thirty seven percent obtained their pharmacy service from 'another' prison, while 25% had on site pharmacists; community pharmacists, hospital pharmacists and others accounted for the remainder.

Only 9% of prisons described themselves as being "paper light", with clinical information entered directly onto a computer - a marker of IT use. Almost all prisons could ensure transfer of medical records between prisons, but 73% had no system for transferring medical records in from the community.

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More than a half of all prisons provided full diabetes and asthma services; and nearly half provided a hepatitis service; but only about one-quarter had a full service for ischemic heart disease (table 2). Only around a third held registers of chronic patients in electronic form. With the exception of heart disease, around two-thirds of prisons had a designated lead for each chronic condition, usually a nurse, and about a half held special clinics. Less than a quarter of prisons had audited any of their chronic disease services in the last two years.

More than half provided both talk therapies and self-help materials for patients with anxiety or depression (table 2). Talk therapies were delivered by a mixture of providers such as Community Psychiatric Nurses (CPNs), psychologists and counsellors.

### **Vacancies**

Although there were a large variety of different staff vacancies and eight prisons had vacancies for GPs, the major difficulty appeared to be with general nurses. Sixty-four prisons (52%) were looking for one or more general nurses to work full or part time. Across all prisons there was a total of 200 vacancies for nurses.

### **Arrangements for governance and complaints.**

Of the 115 prisons who knew whether or not they had carried out a recent satisfaction survey, 56 (49%) had done so. Almost all stated they had leads for clinical governance and most said they had a formal system for dealing with complaints. About 80% stated they had formal meetings to discuss critical events.

### **Factors associated with service provision (table 4)**

*Number of specialised services.* In multivariate regression, specialised service provision was related to both prison type ( $P < 0.001$ ) and prison size ( $P = 0.007$ ). The differences between category A to D prisons alone were also significant ( $P < 0.001$ ). Figure 1 shows the adjusted mean numbers of specialised services for each type and size of prison. Category A and B, and Womens', prisons provided the widest variety of specialised services, on average around twice as many services as categories C and D. Medium sized prisons had on average around 30% (10% to 60%) more specialised services, and large prisons 50% (20% to 100%) more, than small prisons.

*Number of Primary Care services.* There was no evidence that provision of primary care services was in any way influenced by prison characteristics.

### **Factors associated with level of GP and Nurse support (table 5 and Figure 2)**

GP support was highest at Womens' prisons and lowest at Category C prisons ( $P < 0.001$ ), with averages of 2.4 (2.0 to 2.8) and 1.2 (0.9 to 1.4) surgeries per week per 100 prisoners respectively. Differences between category A to D prisons were non-significant ( $P = 0.076$ ). Small prisons held more surgeries pro-rata than medium or large prisons ( $P < 0.001$ ). Nurse support was also highest at Womens' prisons ( $P < 0.001$ ), by a wide margin, and slightly elevated at category A and B compared to C and D prisons ( $P = 0.004$ ). Nursing support, like GP support, was lower at medium and large prisons ( $P = 0.039$ ).

### **Factors associated with chronic disease care**

Provision of chronic disease services was not associated with either GP or nurse staffing levels either before ( $P = 0.124$  and  $P = 0.199$  respectively) or after ( $P = 0.086$  and  $P = 0.285$ ) adjustment for prison characteristics.

## **Discussion**

### **Implications**

The use of IT, including electronic records, was low. IT facilitates the structured care necessary for high quality chronic disease management (Balas, Weingarten et al. 2000; Bodenheimer, Wagner et al. 2002; Weingarten, Henning et al. 2002). Lack of IT potentially excludes prisoners from receiving an equivalent level of care compared to patients outside. The absence of systems for obtaining medical records from general practices outside is also concerning.

We chose fairly minimal standards to define a "full" service for chronic diseases. Although we lack hard evidence, we would expect almost all practices outside prison to meet these criteria, whereas substantial numbers of prisons did not. The service was particularly poorly developed for heart disease. This may reflect the absence of patients with heart disease in

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some prisons, though all are likely to have some patients at some time. Although there are known problems with high prisoner turnover rates (White, Park et al. 1999), high quality primary care depends on good recall systems for diabetes, heart disease and asthma. Even for diabetes, where the practice of regular recall is well known and in which the benefits of structured care have been established in the prison context itself (MacFarlane, Gill et al. 1992), one quarter of prisons had no recall system.

The low use of methadone maintenance therapy is worrying given the known benefits including reduction in mortality rates and incarceration rates (Farrell, Ward et al. 1994) and needs addressing. The high level of mental health problems in prisoners (Birmingham 2003) makes the absence of talk therapies in a third of the prisons surprising. The cost of transporting prisoners to community-based facilities for treatment, is generally prohibitively high, hence patients in prisons without on-site services are likely to have no access at all.

Over 50% of prisons reported one or more vacancies for general nurses. While some prisons might have been actively recruiting new nurses, for example in connection with moving provision from the prison service to the NHS this would not fully explain why general nurse vacancies were higher than those for other staff. It may be that there are particular difficulties with recruitment or retention or both, of general nurses. General practices outside prisons rely increasingly on nurse-led care provision; the shortage of nurses in prisons is likely to impact significantly on what is achievable in prisons.

Not all differences between community and prison indicated worse prison healthcare. Many prisons had systems in place to deal with the management of hepatitis which would be rare in general practice outside prison and this may indicate appropriate targeting of services to patient need.

Compared with small prisons, medium and larger prisons had a wider range of specialised services. The range of primary care services provided was similar across prisons, although GP and nurse support, relative to prisoner numbers, was lower in large and medium sized prisons than smaller ones. There may be economies of scale whereby the levels of staffing required to meet need reduces as prisoner numbers increase.

Most prisons hold adult males which are categorised by security rating. Prisoner security rating was related to specialised services, but did not appear to influence provision of primary care services. Category A and B prisons provided the widest range of specialised services, considerably more than categories C and D, although only marginally more than

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Womens' prisons. Many of the specialised services address mental health and substance abuse issues, and it is possible that patients in category A/B prisons have more of these kinds of needs compared to patients in other prisons, or that their needs can only be met within the prison environment because of security concerns. However, it is not self evident that male patients in category C/D prisons should receive a narrower range of specialised services simply because of their lower security status.

Womens' prisons had relatively high levels of healthcare support, including both GP and nurse support, even after adjustment for size. Patterns of vacancies cannot explain this result, as the data show that vacancies were more common at Womens' prisons.

### **Strengths and limitations of the study**

We obtained a good response rate, and the survey is likely to be representative of prisons as a whole. Prison size was missing for 20% of units, and data on nurse sessions had to be imputed for a sizable number, making the results for these variables less reliable.

The survey relies on self-report rather than observed activity. A key assumption is that healthcare managers were aware of the full breadth of services being delivered within their prison, which may not be true. The general view is that self-report tends to over-estimate or over-value available services; thus the true extent of problems may be greater than identified in this survey. Because this was an exploratory study, we used an alpha-level of 5%, but recognise that the number of statistical tests conducted is likely to have generated some spurious chance associations.

### **Implications for future research**

The survey points to the need to investigate more fully why primary care provision for chronic diseases in prisons is likely to be poorer than in the community, and to develop effective means to close this gap. Areas of note include the use of IT systems and nurse recruitment and retention which may act as potential constraints on service development in prisons. To our knowledge there is a lack of evidence about primary healthcare provision in prisons world-wide; research enabling comparisons to be made would be useful. Although prisoners' views of healthcare services have been investigated, there is a lack of knowledge about patient self-management of chronic diseases in prison and how best to promote self-

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care. There is a need also to understand why patients in some types of prisons, notably large prisons and category A/B prisons, appear to have access to a wider range of specialised services than those in other types of prisons.

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