

# **A Survey of the Delivery of Health Care in Prisons in Relation to Chronic Diseases.**

**Charles Cornford**

**Bonnie Sibbald**

**Lenny Baer**

**Katie Buchanan**

**James Mason**

**Helen Thornton-Jones**

**Mark Williamson**

**Prison Health Research Network, Primary Care**

## **Address for correspondence**

Dr C S Cornford, Centre for Integrated Health Care Research, University of Durham,  
Queen's Campus, Wolfson Research Institute, University Boulevard, Stockton-on-Tees,  
TS17 6BH

Contact	Telephone Number:	0191 33 40373
	Fax:	0191 33 40374
	E mail:	<a href="mailto:Charles.Cornford@durham.ac.uk">Charles.Cornford@durham.ac.uk</a>

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# **1 Executive summary**

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## **Background**

There are several potential reasons why it is difficult to deliver high quality health care to patients in prison. The prison population of patients is, in various ways, a challenging group. The prison organisation itself imposes additional problems for health care professionals. Arguably health care has been substandard in the past, and this has led to current initiatives to mainstream health care in prisons with the rest of the NHS. Deficiencies in health care provision are likely to be particularly noticeable with regard to chronic diseases. Assessing the type and range of services available for patients with chronic diseases in prisons is therefore important.

## **Aims**

The aims were to describe the organisation of health care delivery in prisons, to describe the organisation of services for the management of diabetes, ischaemic heart disease, asthma and hepatitis, to describe systems of information transfer between organisations, to describe types of staff and staff vacancies and to compare data between different types of prisons.

## **Method**

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

## **Results**

The survey showed a very low use of IT. There were significant gaps in the provision of health care for patients with chronic diseases. Significant problems were

apparent in the recruitment or retention of general nurses. Prisoners in category A/B prisons had a greater range of health care services available to them compared to non-category A/B prisons.

## **Conclusions**

The results indicate that prisoners with chronic diseases are obtaining a poorer level of care compared to patients outside prison. In order to deliver an equivalent level of care for patients with chronic diseases in prisons, significant improvements in IT will need to be made and the problems concerning the recruitment and retention of general nurses will need to be addressed. Non-category A/B prisoners are receiving a narrower range of health care services compared to category A/B prisoners; reasons for this need justifying.

## **2 Introduction and literature review**

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### **2.1 Background to the study**

Health care professionals face a number of challenges in providing an equivalent level of care for patients in prison compared to outside prison. These challenges can be broadly related to the particular patient population they work with, the health care organisations within the prison and the prison environment itself.

Prisoners themselves are a demanding group and have a higher prevalence of chronic diseases compared to the general population (Butler, Kariminia et al. 2004). There are three broad categories of reasons for this. First, they are drawn predominately from a deprived population outside prison (Singleton, Meltzer et al. 1998) and so all the diseases that show an increased prevalence in deprived groups are also present more commonly in prison populations. Second, there are disorders which are associated with incarceration including, for instance, mental health problems and learning disabilities. Third, there are a number of diseases and disorders that are the direct or indirect result of activities leading to incarceration, such as hepatitis from illegal substance misuse, in women (Haywood, Kravitz et al. 2000) as well as men.

Apart from the increased prevalence of diseases, health care professionals face a number of other problems directly related to the prisoners themselves. A few prisoners are of course dangerous. Some are just awkward to deal with, sometimes because of issues related to drug addiction. There are problems concerning trust in that, more often than outside prison, the health care professional can not trust what a prisoner says

(Pettinari 1996). And there are difficult and specific problems faced only in a prison environment such as hunger strikes and dirty protests (Gray, Pearce et al. 2006).

Health care organisations in prisons face a number of potential difficulties in delivering good quality care. Given the challenges noted above, problems with recruitment, high turnover and effective leadership might be expected. Health care services are currently moving, or have moved, from employment through the prison service to become part of the mainstream NHS for various reasons including worries that prisoners have not received the care patients outside prison might expect, and that entirely prison based doctors may become isolated from the NHS and professional cultures of good care (Reed and Lyne 1997; Smith 1999). It would be expected that some of these problems predating the move to NHS organisations would still be apparent in prisons. The move itself may impose additional burdens on NHS staff working within prisons.

The prison environment is also potentially challenging for health care professionals. Challenges include working in a culture where health care provision is not the predominate concern (DOH 1999). For instance issues such as security may conflict with the delivery of the best care. This shows itself in missed appointments because of insufficient prison staff to allow a prisoner to access outside appointments.

The management of chronic illness and disease in the population as a whole are current priorities within the NHS. The move to mainstream or normalise care in prisons assumes that prisoners should receive the same standard of care that they receive outside prison (Smith 1999). This concept is not entirely straightforward because it might be expected that patients in prisons, for the reasons outlined above, should receive different

care more in keeping with their particular needs. The prison population is also significantly different from primary care populations outside prisons in terms of demographic characteristics (predominately male and young) and with a very high turnover (White, Park et al. 1999). Provision of care for chronic diseases affecting predominately older people such as Ischaemic Heart Disease (IHD) or type II diabetes might need to be arranged differently. There are the further complications of organising care on a relatively small scale – even large prisons are small compared to primary care practices outside prison.

## **2.2 What is known about delivery of primary care services in prisons**

Although prisons should, at least theoretically, provide opportunities to improve physical and mental health (Reed 2003), there is a lack of evidence about general current health care service provision in prisons (Levy 1997). For instance the report of the inspection of 19 prisons in England and Wales (Reed and Lyne 1997) - although finding problems such as inadequately qualified medical staff, poor opportunities for professional development, poor monitoring and few academic or management meetings between staff - did not specifically comment on the provision of services for patients with chronic diseases.

## **2.3 Individual diseases**

The published evidence about service provision for most individual diseases is also patchy. There is evidence for the poor health status of older male prisoners (Colsher, Wallace et al. 1992) (Fazel, Hope et al. 2001), for the high prevalence of some chronic diseases such as asthma (Butler, Kariminia et al. 2004) and that hypertension may be more prevalent in prison populations compared to outside control groups, rising with

length of time incarcerated (Olubodun 1996). However there is very little published work describing the provision of services in prisons for patients with asthma, IHD or hypertension.

### ***2.3.1 Diabetes***

The difficulties involved in caring for patients with diabetes and the provision of services for such patients have received more attention, although much of the work is now dated. Difficulties described include hyperglycemia deliberately induced by patients to obtain admission to hospital, misinterpretation by health care staff of symptoms as 'acting-up' and sub-optimal care (such as the lack of structured follow-up) compared to care received by patients with diabetes outside prison (Gill and MacFarlane 1989). Nevertheless, the potential for improvement was demonstrated by the use of a more intensive and structured approach in a prison through a weekly visit by an outside physician. This resulted in significant falls in glycosylated haemoglobin both in patients with type 1 and type 2 diabetes (MacFarlane, Gill et al. 1992). The reasons for the improvement are not entirely clear but may have been due to changes in treatment, a more regular diet and exercise regime, the relative absence of alcohol and other drugs in prison or the supervision of insulin and oral medication. Younger patients admitted to irregular attendance at outside clinics and probably had chaotic life-styles although older patients claimed to have regular attendance at clinics.

In the last study the average glycosylated haemoglobin at the initial assessment appeared similar to populations outside prison (although would now be considered high). A study of one prison with a large Maori population (and therefore with a high prevalence of diabetes) (Braatvedt, Rowan et al. 1994) similarly showed that patients

with diabetes had reasonable glycaemic control. Many were reported to have complications, although no specific comparisons were made with outside groups. Deliberate manipulation of treatment to induce hyperglycaemia and hypoglycaemia was again noted as a problem.

Difficulties involved with providing care for patients with diabetes in prison are not limited to the UK. In a survey of prisons in France (Petit, Guenfoudit et al. 2001), restrictions in prisoners' opportunities to self-monitor and self-medicate with insulin and needles were noted, as were apparently high admissions to hospital with either hyperglycaemia or hypoglycemia. Other problems recorded include the difficulty in providing appropriate diets and lack of diabetes clinics (Waring 1996).

There are a number of limitations with these studies. They are often based in single prisons. The studies discussed are dated – not only has the care for patients with diabetes changed in the general population, but certain aspects of the care of patients within prison may have changed, such as the use of self-administration of drugs including insulin. Presumably as a result of these studies, and in contrast to other chronic diseases, recommendations for the care of patients with diabetes in prison have been made (Gill, MacFarlane et al. 1992) (MacFarlane 1996) including the provision of diabetes care teams, strategies to manage diabetes such as self-monitoring, improved dietary provision and organised education of staff and prisoners about diabetes.

### ***2.3.2 Cervical cytology***

Cervical cytology screening in prisons is an example of a service for which there is both an increased need and also potentially an opportunity to meet that need. It could be predicted that female prisoners would be at a higher risk of cervical cancer because of

the groups in society from which they are predominately drawn. Indeed it has been shown that female patients who are prisoners have a relatively high proportion of abnormalities on cervical smears, that of the abnormalities a greater proportion are severe rather than mild and that they have a relatively low uptake of cervical smear screening (Karsai, Coldman et al. 1988) (Martin 1998; Plugge and Fitzpatrick 2004). There is also evidence that being in prison does result in greater uptake and that specific interventions work. For instance, an increased uptake in prison is suggested by evidence that women in prison for longer are more likely to report having a recent smear compared to women in prison for shorter periods (Martin 1998; Plugge and Fitzpatrick 2004). A study providing specific interventions also showed a modest increase in uptake (Martin, Hislop et al. 2004).

### ***2.3.3 Hepatitis B and C***

Hepatitis B and C are examples of chronic diseases that are more prevalent in prison populations (Butler, Dolan et al. 1997; Boutwell, Allen et al. 2005; Maher, Chant et al. 2004) mainly because of intravenous drug taking activities, although tattooing may also play a part in hepatitis C conversion (Hand and Vasquez 2005). It could be argued that management of these conditions should be a greater priority for primary care services within prisons compared to outside. Nevertheless the evidence required to support this contention is not entirely clear. For instance, screening on the basis of reported risk-taking behaviours may fail to identify large number of prisoners positive for hepatitis C (Macalino, Dhawan et al. 2005). There is a lack of consensus, with some arguing for the feasibility and effectiveness of screening and treating in prisons (Farley, Vasdev et al.

2005) whilst others argue that the yield of identifying individuals in prisons who would benefit from drug therapy is low (Horne, Clements et al. 2004).

The effective management of hepatitis C in prisons goes beyond issues such as who to screen and the value of screening. It is known for instance that hepatitis C conversion occurs in prison (Champion, Taylor et al. 2004). It is also known that maintenance methadone treatment within prisons not only reduces mortality and re-incarceration rates but also reduces hepatitis C transmission after prison (Dolan, Shearer et al. 2005). Consequently a wide range of effective management strategies towards hepatitis C is needed.

Hepatitis B is also common among prisoners (Butler, Dolan et al. 1997) and is transmitted during stays in prison (Khan, Simard et al. 2005). Vaccination programs, which seem to be more effective if designated nursing staff run special clinics (Gilbert, Costella et al. 2004), and needle exchange programs (Dolan, Rutter et al. 2003) therefore would seem to be of importance.

Despite the importance both of hepatitis B and C within the prison population and the increasing evidence base about what to do about the problem, there is a lack of evidence about the current provision of relevant primary care services within prisons.

#### ***2.3.4 Mental health problems.***

Prisoners have a very high level of mental health problems, even excluding drug addiction problems (Butler, Allnutt et al. 2005), and yet fail to receive the same level of care as people with mental health care problems outside (Birmingham 2003). This may be partly due to deficiencies in health care services within prisons (Reed and Lyne 1997),

but deficiencies in the NHS outside prisons are contributing factors (Birmingham 2003).

It is important to obtain some information about what is currently available.

## **Aims**

It is arguable whether the best care for patients in prison equates to the same care as patients might receive outside prison. However in order to inform policy – either to ensure that the same care is provided inside as outside prison, or to ensure that the best care is provided for patients in prison environments – it is essential to understand the current state of health care provision, and that is the purpose of this study.

The aims of the study are, in relation to the delivery of health care for patients with chronic diseases in prisons:

1. To describe the organisation of general medical services within prisons, including specialist services and information transfer.
2. To describe the number and types of primary health care staff in prisons.
3. To describe the organisation of care for five common chronic conditions - diabetes, IHD, asthma, hepatitis and anxiety/depression.
4. To make comparisons between different types of prisons.

### **3 Method**

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A postal survey was conducted in all prisons in England and Wales.

#### **3.1 The questionnaire**

The survey questionnaire (appendix 1) gathered information about the number and types of primary health care staff serving prisons and the organisation of care for five common chronic diseases – diabetes, IHD, asthma, hepatitis and anxiety/depression. The survey instrument was based on a questionnaire used previously by the National Primary Care Research and Development Centre to investigate variations in the quality of care across general practices in England (Campbell, Hann et al. 2001) and was modified to be applicable for prisons. Additional questions thought relevant for the prison environment were produced by the primary care research interest group of the national Prison Health Research Network. The questions were refined by the group during two meetings. The questionnaire was piloted for acceptability and clarity by health care managers at two prisons (appendix 3).

#### **3.2 Sample**

The sample consisted of all prisons in England and Wales, including adult and youth offender institutions. Prison addresses were supplied by the Department of Health.

#### **3.3 Questionnaire administration**

The questionnaire was sent to the prison governors with a covering letter (appendix 2) in October 2005. The letter requested the governor to pass the questionnaire to the manager of the health care services in their prison for completion. A stamped addressed envelope was included for return to the Department of Health. One written

reminder was sent to prisons which had not responded within three weeks. Those who did not respond within a further three weeks received one or more telephone reminders.

### **3.4 Data handling and analysis**

The data were entered onto a computer by a professional agency in service to the University of Manchester. Data were entered into SPSS for analysis. The data were used to describe the organisation of chronic disease care in prisons and the factors associated with variations in provision. Descriptive statistics were used for the questionnaire responses, including the following:

- Mean (average)
- Median (value of the middle observation when data are ranked in order)
- Standard deviation (stdev): a measure of variation about the mean
- Standard error (sterr): an indication of how good the estimation is of the mean
- Skewness (skew): a measure of extent of departure from a symmetrical distribution about the mean

Multivariate statistics were used to examine the association between prison characteristics (e.g. security category, size and male/female) and organisation of care.

### **3.5 Permissions**

The survey was essentially an ‘audit’ of existing prison services by the Department of Health. The investigators are acting as the government’s agents in conducting the audit. As such, the project was exempt from the need for Research Governance or Ethics Committee approval.

### **3.6 Project Management**

CC was responsible for leading the project team and took overall responsibility for its delivery. KB was responsible for questionnaire administration and arrangements for data entry. JM took responsibility for data analysis. All members of the team participated in the design of the study.

## 4 Results

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### 4.1 Response rates

Of the 138 prisons to which the questionnaire was sent, a total of 124 responded after one postal reminder and telephone requests. Of these, two responded too late to be included. The response rate was therefore 87% (122 prisons from a possible 138).

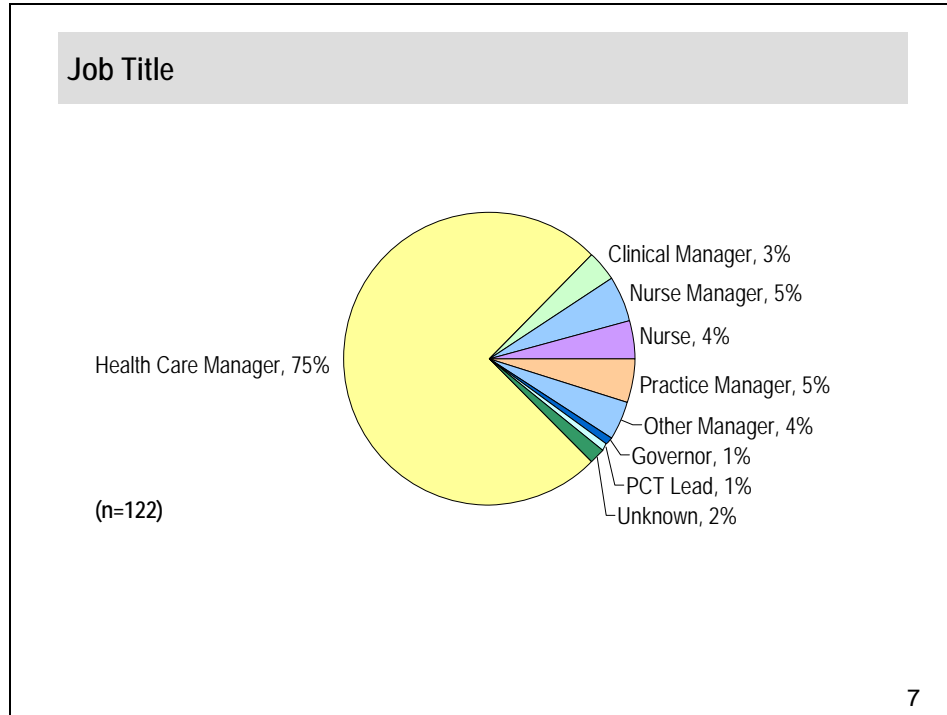
### 4.2 The Survey format

The survey format and the number of items are given below:

Survey format	
• 10 page survey	No. of items
• Respondent details	
• Section 1: Organisation	16
– General Medical Services (4)	
– Pharmacy Services (1)	
– In-patient Services (1)	
– Specialist Services (3)	
– Healthcare organisation (7)	
• Section 2: Chronic Diseases	30
– Diabetes, IHD, Asthma, Hepatitis (7 each)	
– Anxiety/Depression (2)	
• Section 3: Information Transfer between Facilities	3
• Section 4: Staff	2
– Number, type and time; details of vacancies	
• Section 5: About The Prison	3
– Category and number of prisoners; type of prisoners	
• Future contact details and further comments	
	5

### 4.3 Job title of person completing the questionnaire

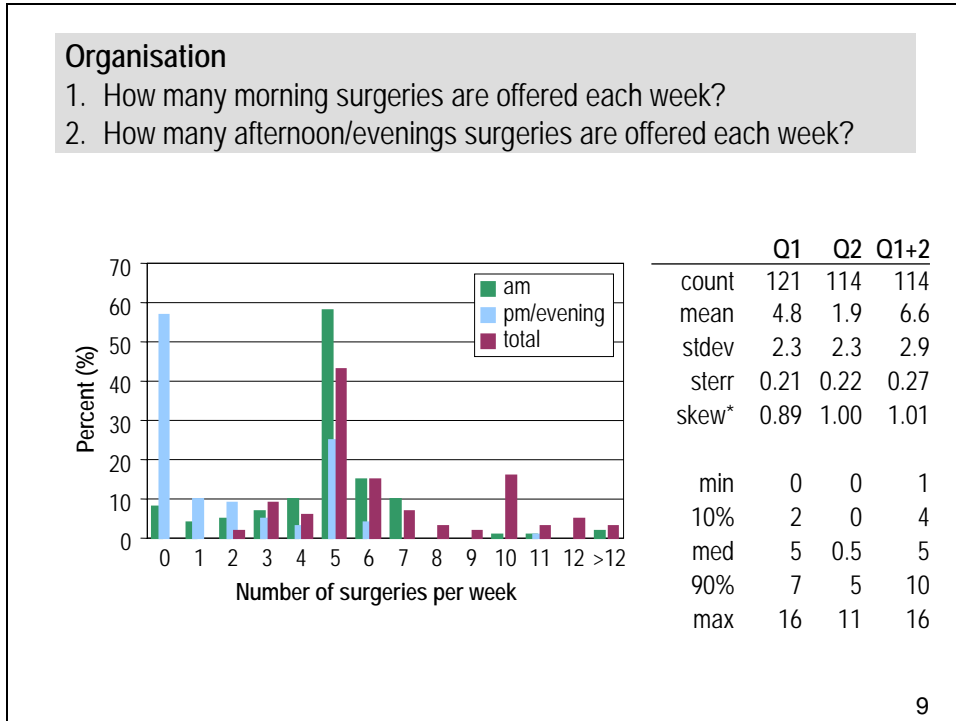
The most frequent title provided by the person completing the questionnaire was 'health care manager' with small numbers of others describing various titles.



## 4.4 Organisation

### 4.4.1 The organisation of morning and afternoon/evening surgeries

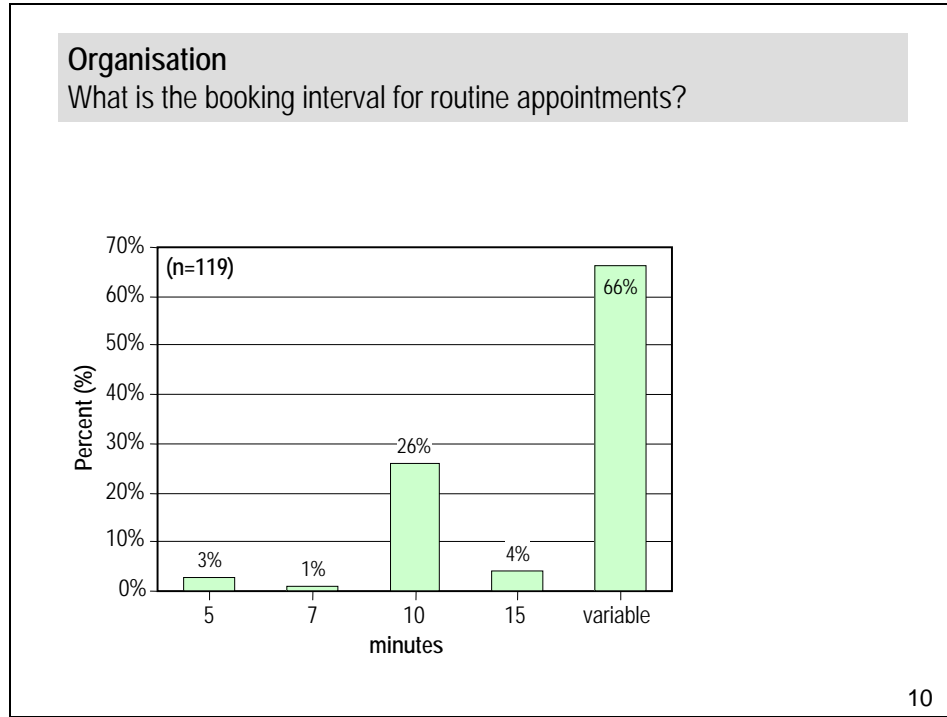
The survey showed that morning surgeries were more frequent than afternoon and evening surgeries and 5 and 10 surgeries per week were particularly frequently offered.



- As a rough guide, a skewness value more than twice its standard error is taken to indicate a departure from symmetry.
- Non-responders are excluded from the analysis.

#### 4.4.2 The booking interval for routine appointments

The results showed that, in contrast to general practice outside prisons where the most commonly booked interval is currently 10 minutes, the most common interval was ‘variable’ and the next most common interval 10 minutes.

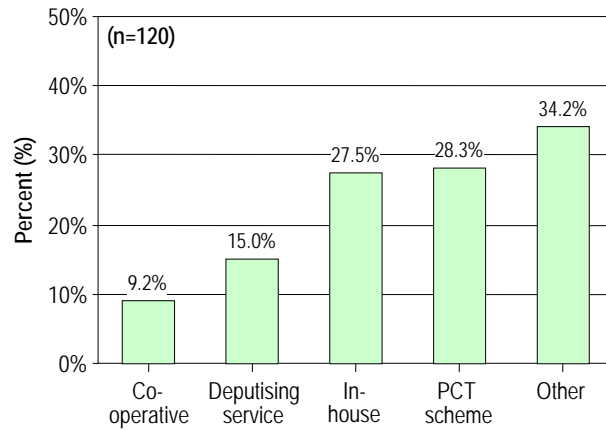


#### 4.4.3 The organisation of out-of-hours care

There was a wide range of reported methods to organise out-of-hours care. As a response to the questionnaire the most frequently stated was ‘other’. Reclassifying the descriptions given of ‘other’ suggested that an ‘in-house’ scheme was the most common, with a variety of PCT schemes almost as common and a deputising service accounting for 20%.

## Organisation

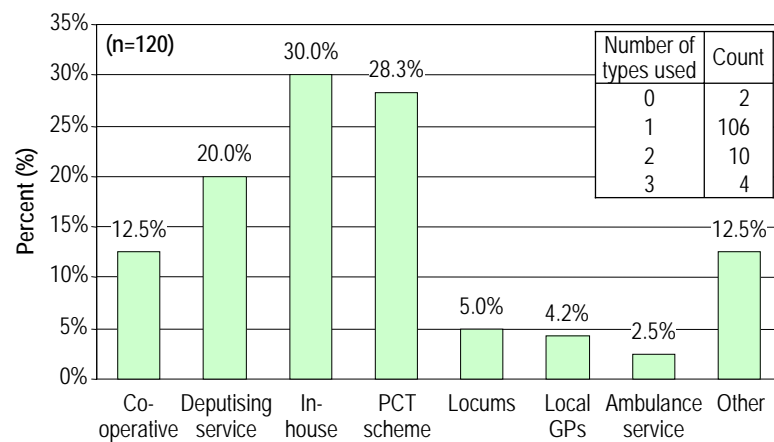
How does the prison organise its out-of-hours care?



11

## Organisation

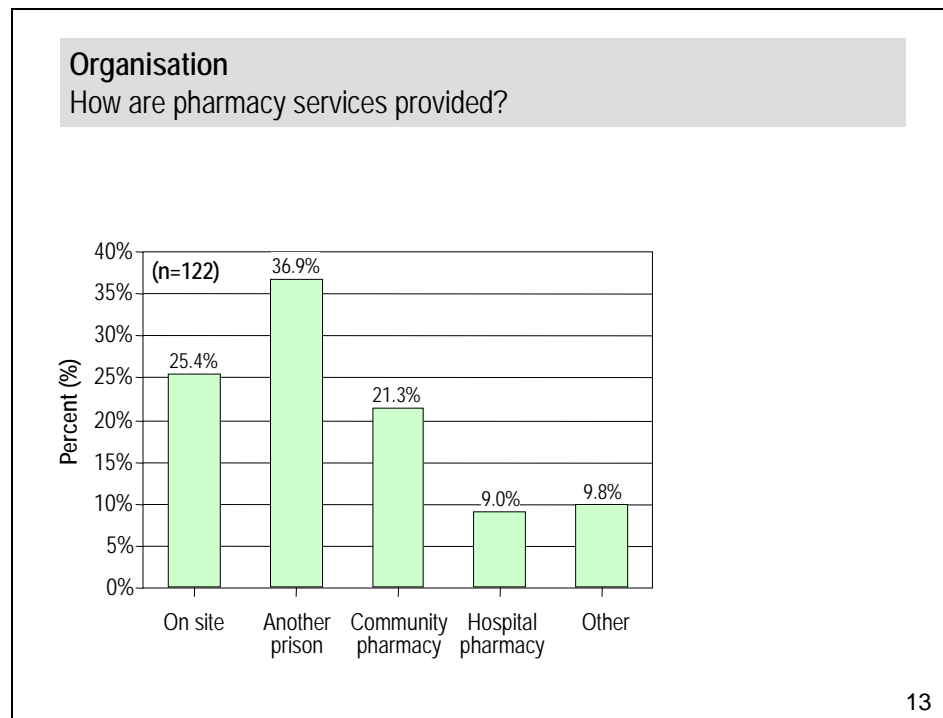
How does the prison organise its out-of-hours care? (adjusted)



12

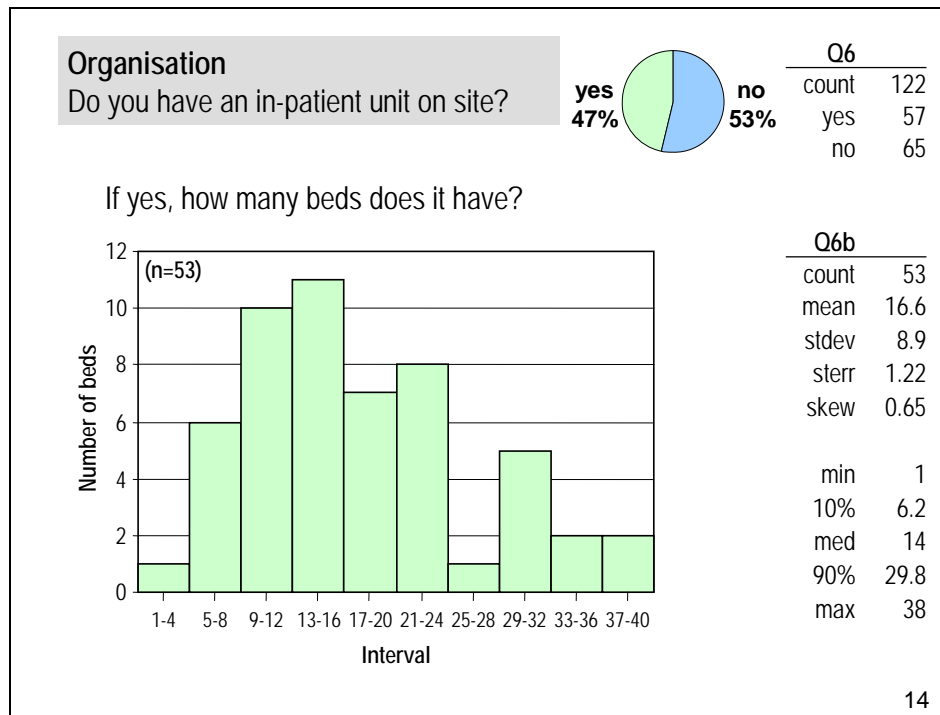
#### 4.4.4 The organisation of pharmacy services

A variety of methods of providing pharmacy services was apparent with 'another prison' being the most common, presumably indicating that some prisons are providing pharmacy services for two or more other prisons.



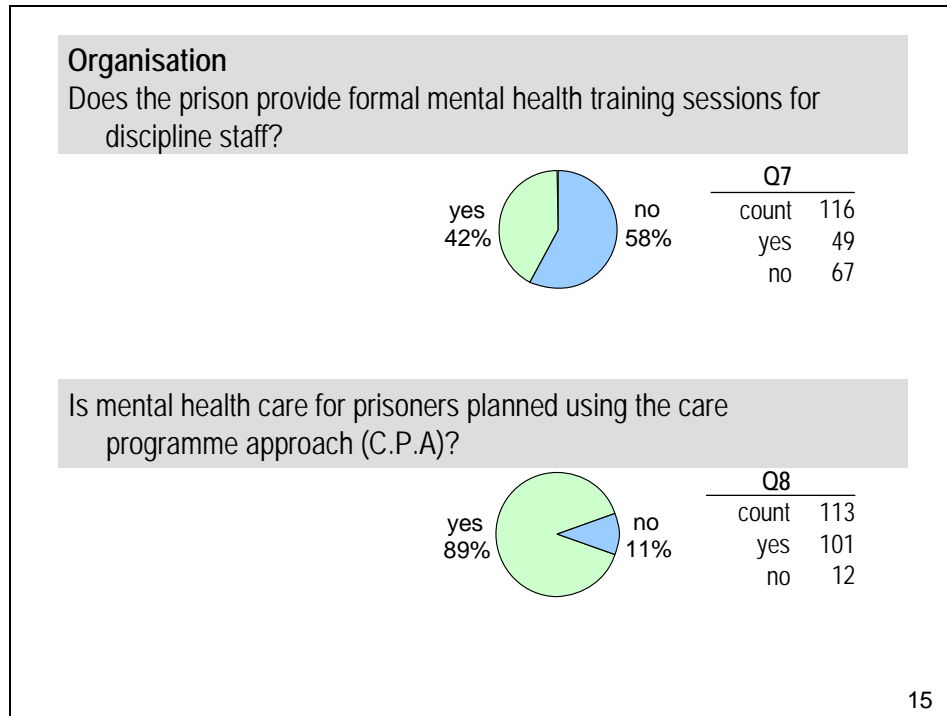
#### 4.4.5 In-patient units

About half of the prisons reported that they had an in-patient unit on site. The number of beds on those stating they had such a unit is given in the table below.



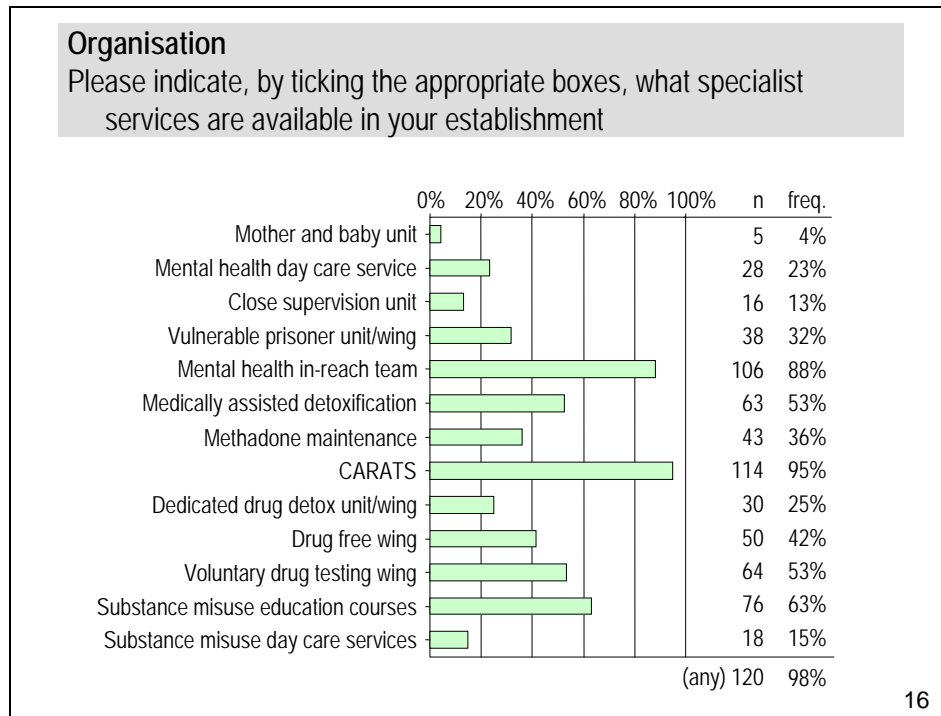
#### 4.4.6 The provision of formal mental health training sessions for discipline staff and care programme approach for prisoners

Over half of the prisons stated that they provided no formal mental health training sessions for discipline staff. Most used the care programme approach for mental health care for prisoners.



#### 4.4.7 Provision of specialist services

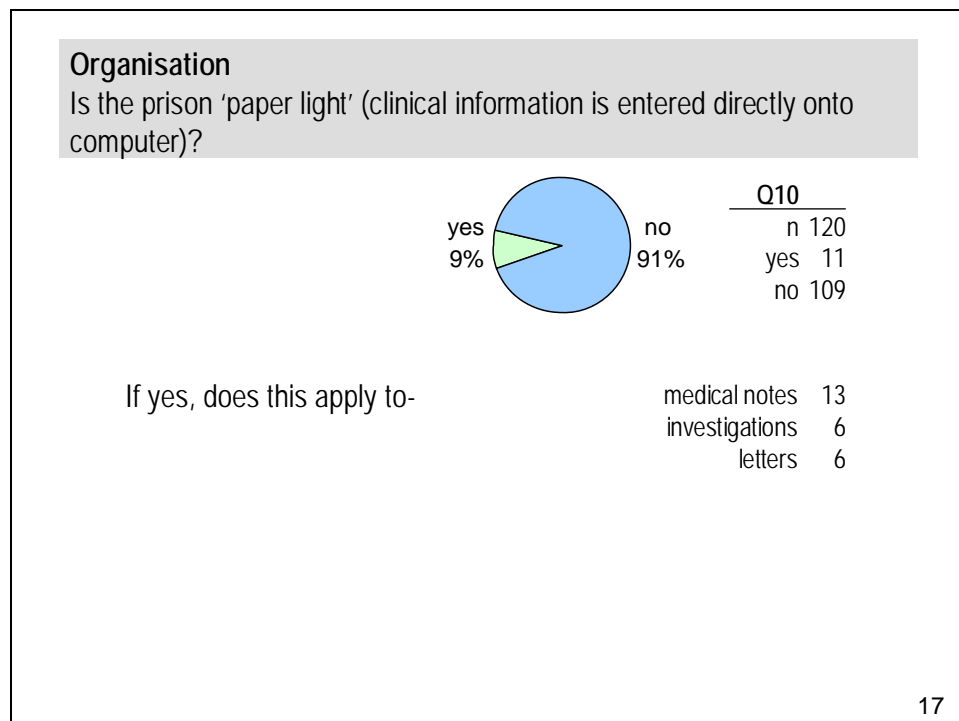
The prisons were asked to indicate from a list which specialist services they had available to them. The full results are given in the table below. Most indicated they had available a mental health in-reach team and CARATS (Counselling, Assessment, Referral, Advice and Throughcare Services).



There is a limitation with the information in that we failed to include a 'don't know' box. It follows that a no tick may indicate a 'don't know' rather than the absence of a service.

#### 4.4.8 Use of IT

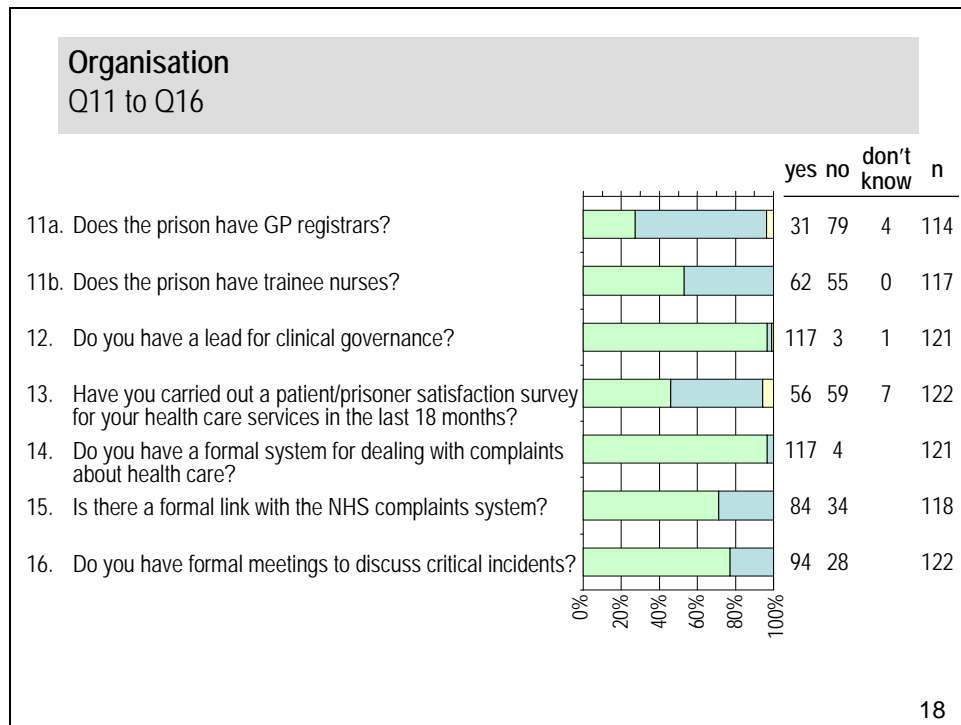
We asked as one indicator of the use of IT whether the service was ‘paper light’, which we defined as clinical information entered directly onto a computer. As the following table shows, only about 1 in 10 prisons categorised themselves as being paper light according to this definition.



#### 4.4.9 Training of personnel, arrangements for governance and complaints.

We asked whether the prison had attached GP registrars and trainee nurses. We also asked about leads for clinical governance, and systems for recording patient satisfaction and complaints.

About one quarter stated they had attached GP registrars and one half trainee nurses. Although only about a half had carried out a satisfaction survey, 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.

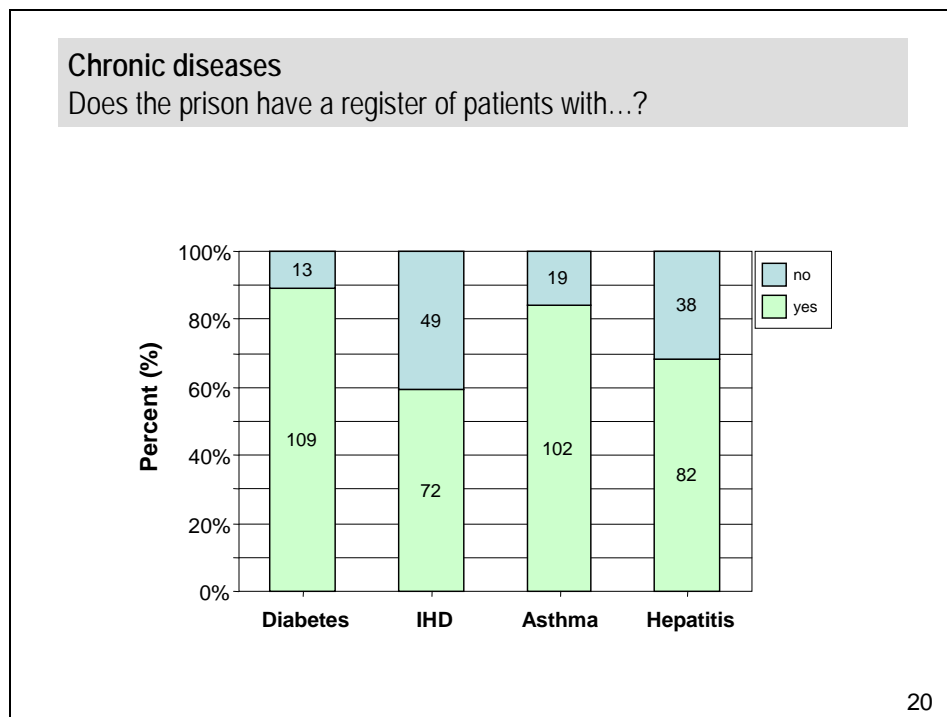


## 4.5 Chronic Diseases

### 4.5.1 Registers for the four diseases (diabetes, IHD, asthma, hepatitis)

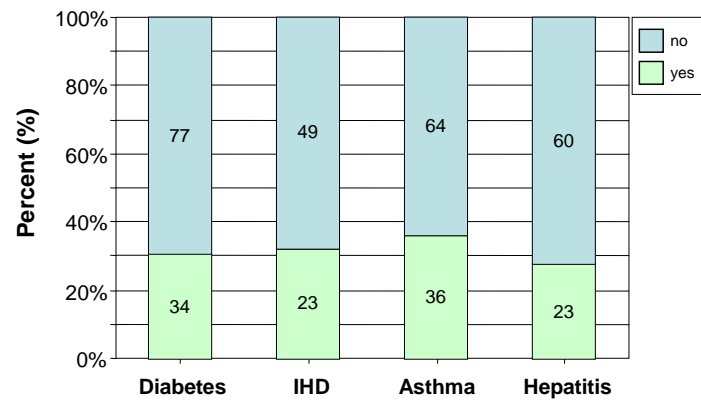
The prisons were asked whether they had a register for each of the diseases, if so whether it was electronic and how many patients were on the register (manual or electronic).

Although most did have registers there were significant numbers who did not. In keeping with the previous question about IT, the majority of such registers were not electronic. The following tables provide the details to the responses and the mean numbers of patients on each of the disease registers.



## Chronic diseases

If yes, is the register electronic?



21

## Chronic diseases

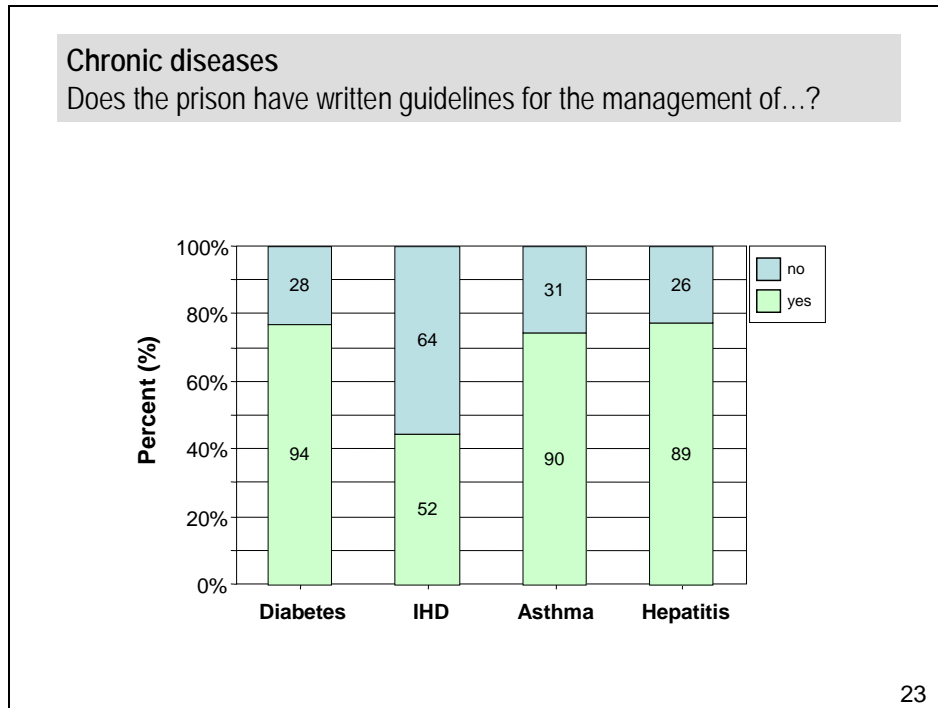
1. How many patients do you have on the register with ...?

	Diabetes	IHD	Asthma	Hepatitis
n	85	62	65	41
mean	9.0	14.3	44.3	14.5
stdev	9.1	16.5	38.6	15.6
sterr	0.98	2.10	4.79	2.43
skew	1.77	1.34	2.04	2.22
min	0	0	0	0
10%-tile	1	0	10.4	0
med	7	8	35	10
90%-tile	19.6	41.2	96	30
max	43	64	203	81

22

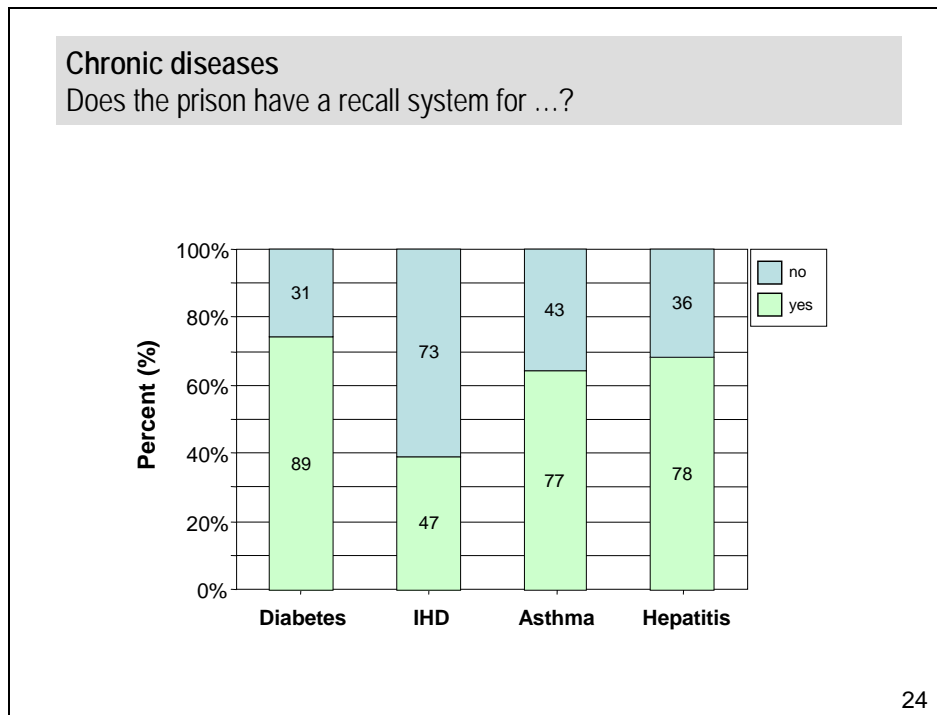
#### 4.5.2 Written guidelines

As the following table shows, although most had written guidelines for the four conditions, significant numbers did not.



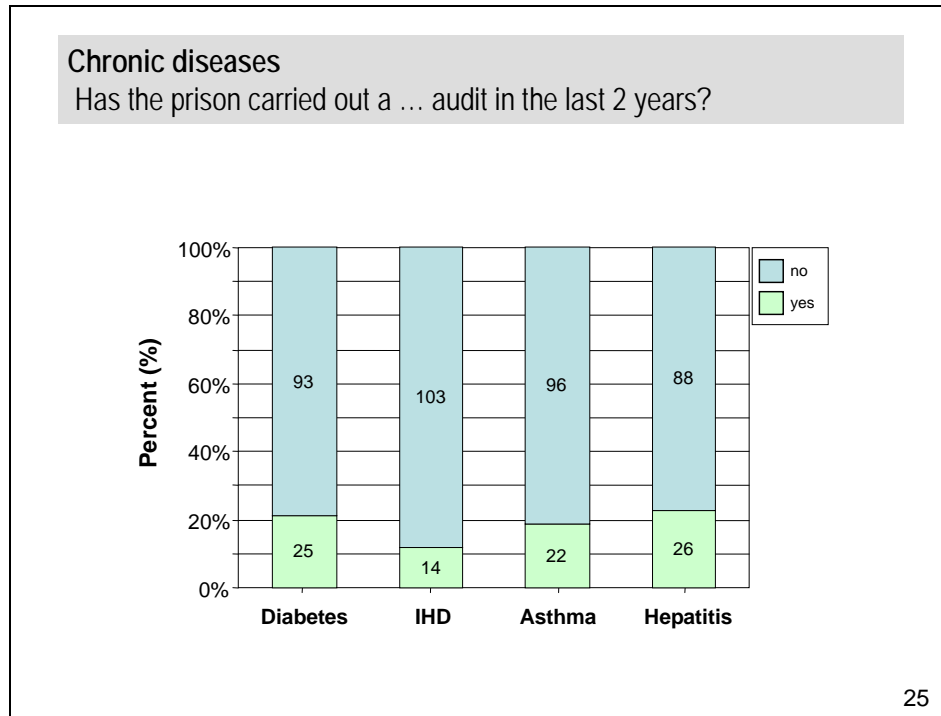
#### 4.5.3 Recall systems

Similarly, although most stated they had recall systems for most of the conditions except IHD, a large minority of prisons did not.



#### 4.5.4 Audits

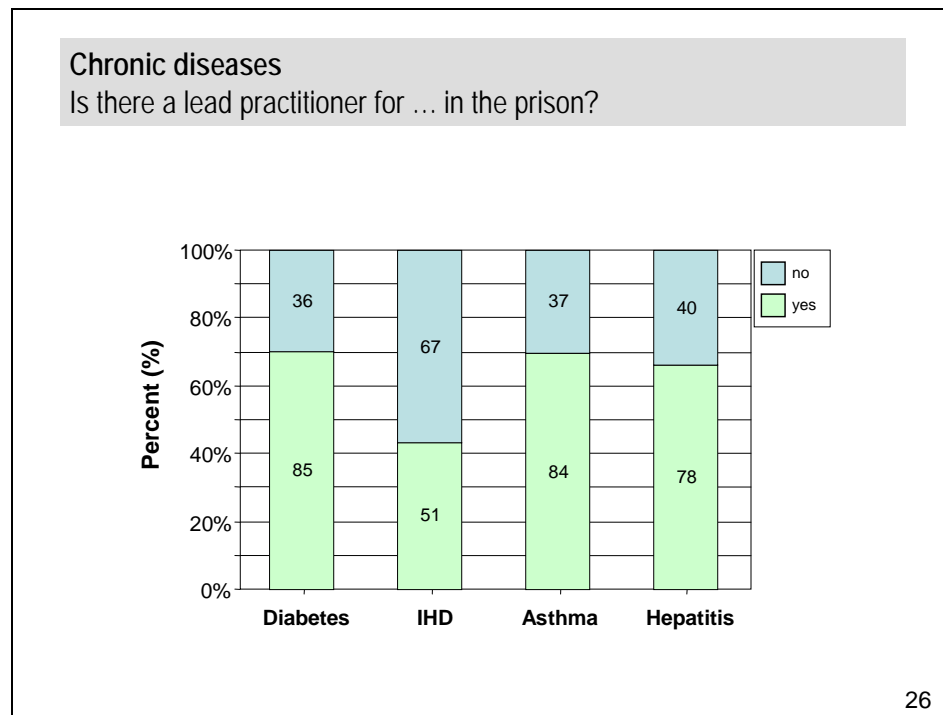
As a further indicator of routine care for patients with chronic disease, the prisons were asked whether they had carried out an audit for the four diseases in the last 2 years. As the following table shows, most had not.



#### 4.5.5 Leads for the diseases

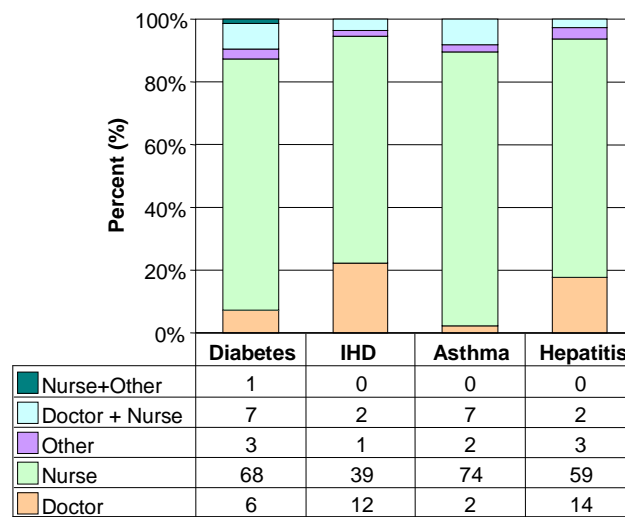
The prisons were asked whether they had a lead practitioner for each of the four diseases, and if so, who it was.

Although most did (again with the exception of IHD) about one third did not. By far the most frequent lead for each condition was a nurse.



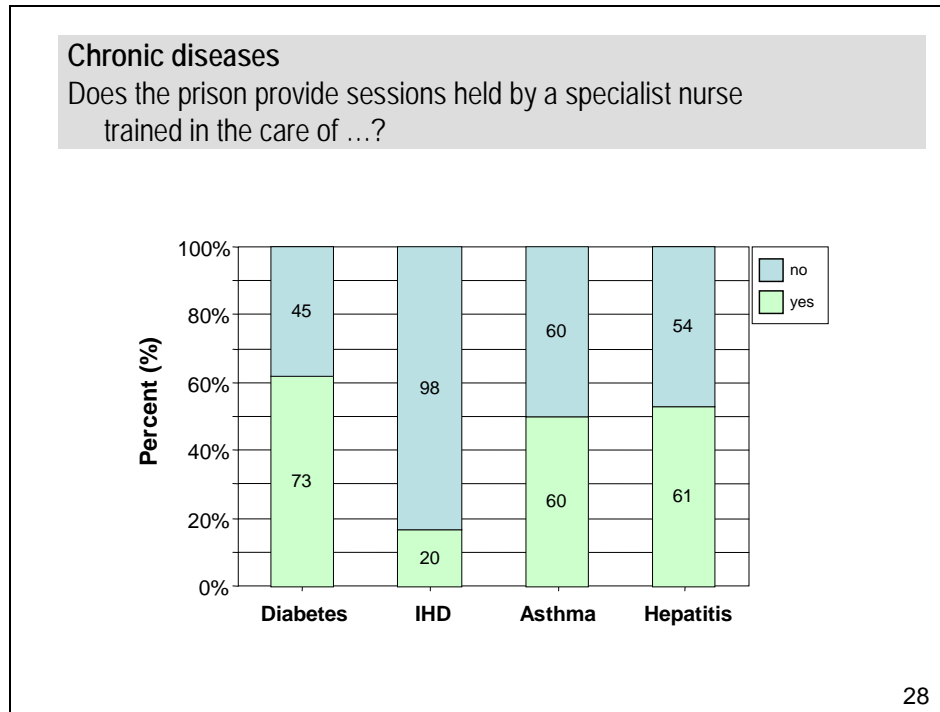
## Chronic diseases

If yes, who undertakes the role?



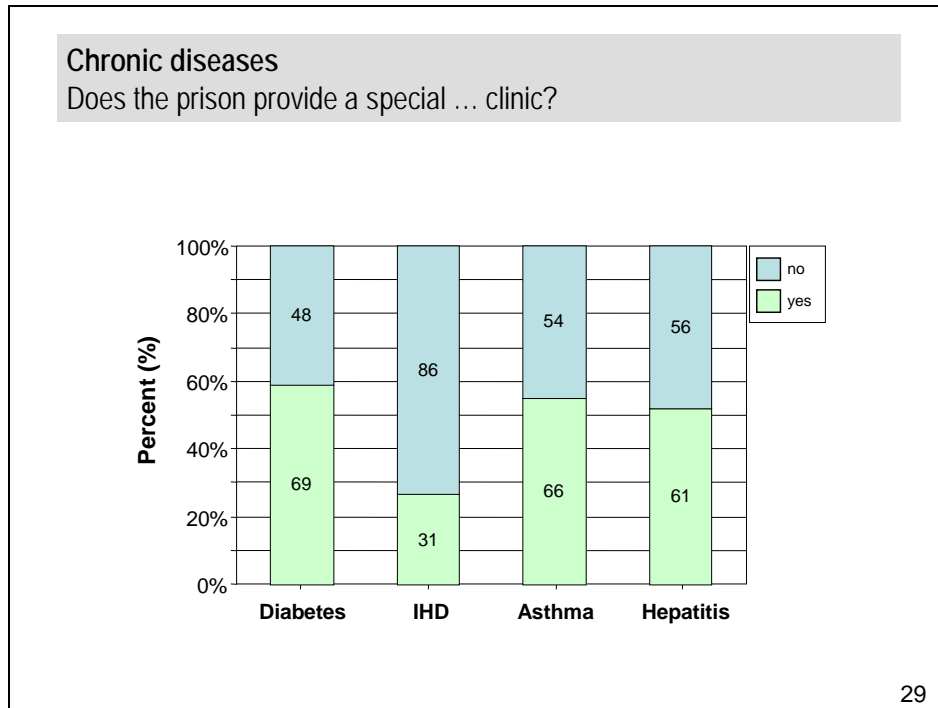
#### 4.5.6 The provision of sessions held by specialist nurses in the four diseases.

Few of the prisons held sessions run by specialist nurses in IHD. The situation was best for diabetes, but even for this condition over a third of prisons stated they had no session undertaken by a nurse trained in diabetes care.



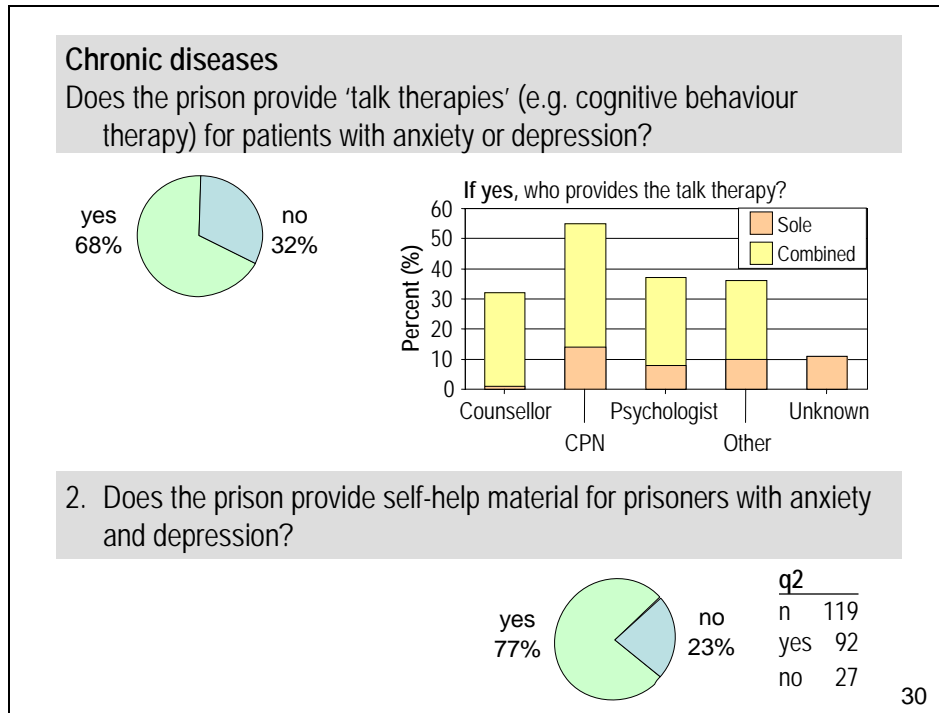
#### 4.5.7 Special clinics

About half of the prisons held special clinics in each of the conditions, again with the exception of IHD which was less frequent.



#### 4.5.8 Anxiety and depression

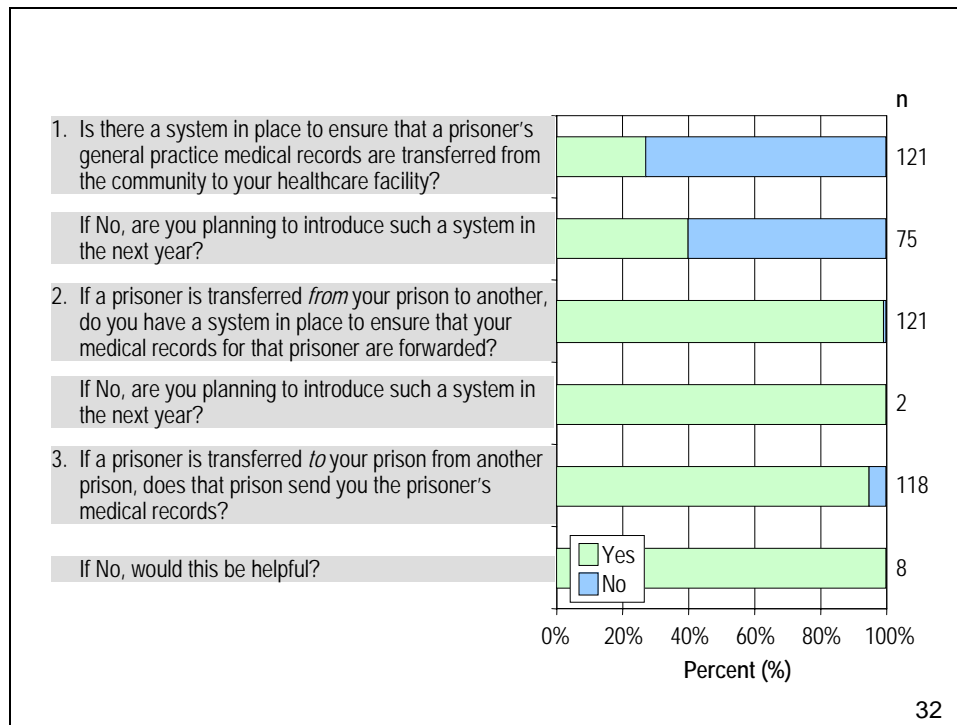
For these conditions, we asked whether talk therapies were provided and if so who provided them? About one third of prisons stated that they did not provide any such therapies. Of those who reported they did, most used a combination of providers. 11% of prisons said they provided talk therapy but did not identify any category. We also asked whether the prison supplied self-help material for patients with anxiety and depression and one quarter stated they did not.



#### 4.6 Information transfer between health care facilities

We asked whether there were systems to ensure the transfer of medical records between outside general practices to prisons and between prisons.

Most said there was not a system in place to transfer records from outside practices into the prison. In contrast, as the following tables show, almost all said there were systems to ensure transfer of records between prisons.



## 4.7 Staff

### 4.7.1 Numbers of staff

We asked about the total number of people working in each of the following categories in the prison in the last month, and the number of sessions worked per week in the same categories.

Any missing answers have not been assumed as zeros; therefore means are based only on those prisons responding to each of the categories. The final five column headings represent the cumulative percentages, with the 0% column representing the minimum number of staff working in a prison and 100% the maximum number of staff working in a prison.

**Clinical staff working in the prison in the past month.**  
Total number of people\*

	count	mean	stdev	sterr	skew	0%	10%	50%	90%	100%
General practitioner <sup>#</sup>	116	2.8	2.6	0.2	5.1	0	1	2	5	24
Psychiatrist – adult	101	1.7	1.4	0.1	2.3	0	1	1	4	9
Psychiatrist – child/adolescent	40	0.6	1.4	0.2	4.4	0	0	0	2	8
Nurse practitioner	55	0.9	1.3	0.2	2.2	0	0	0	3	6
Nurse – general <sup>+</sup>	106	9.1	8.1	0.8	2.9	1	2	7	18.5	60
CPN	96	3.1	4.3	0.4	6.0	0	1	2	5.5	38
Dentist	113	1.7	5.4	0.5	10.2	0	1	1	2	58
Dental care assistant	102	1.3	1.0	0.1	6.3	0	1	1	2	10
Pharmacist	76	0.9	0.6	0.1	0.4	0	0	1	1	3
Pharmacist assistant	77	1.3	1.0	0.1	0.7	0	0	1	3	4
Clinical Psychologist	57	0.9	1.6	0.2	4.6	0	0	1	1.4	11
Counsellor	57	1.6	1.7	0.2	1.1	0	0	1	4	7

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#Outlier = 178 removed

+Outlier= 608 removed

**Clinical staff working in the prison in the past month.**  
Sessions per week\*

	count	mean	stdev	sterr	skew	0%	10%	50%	90%	100%
General practitioner*	110	7.7	5.1	0.5	2.0	1	3	6	14	30
Psychiatrist – adult	89	2.4	4.2	0.4	5.2	0	0.25	1	4.2	32
Psychiatrist – child/adolescent	12	1.7	2.7	0.8	3.1	0	0.05	1	2	10
Nurse practitioner	18	3.0	2.6	0.6	0.9	0	0	3	5	10
Nurse – general*	39	26.3	41.9	6.7	3.2	1	5	10	60	210
CPN	57	7.5	7.8	1.0	1.5	0.25	1	5	20	31
Dentist	99	2.4	1.6	0.2	1.8	0.25	1	2	4	10
Dental care assistant	88	2.3	1.4	0.2	1.2	0.25	1	2	4	7
Pharmacist	40	5.1	6.4	1.0	1.9	0	0	3	10	30
Pharmacist assistant	46	7.3	8.3	1.2	1.8	0	0.25	5	16.5	30
Clinical Psychologist	31	3.3	7.2	1.3	4.7	0	0	1	8	40
Counsellor	38	3.6	4.6	0.8	3.0	0	0.35	2.5	6.5	24

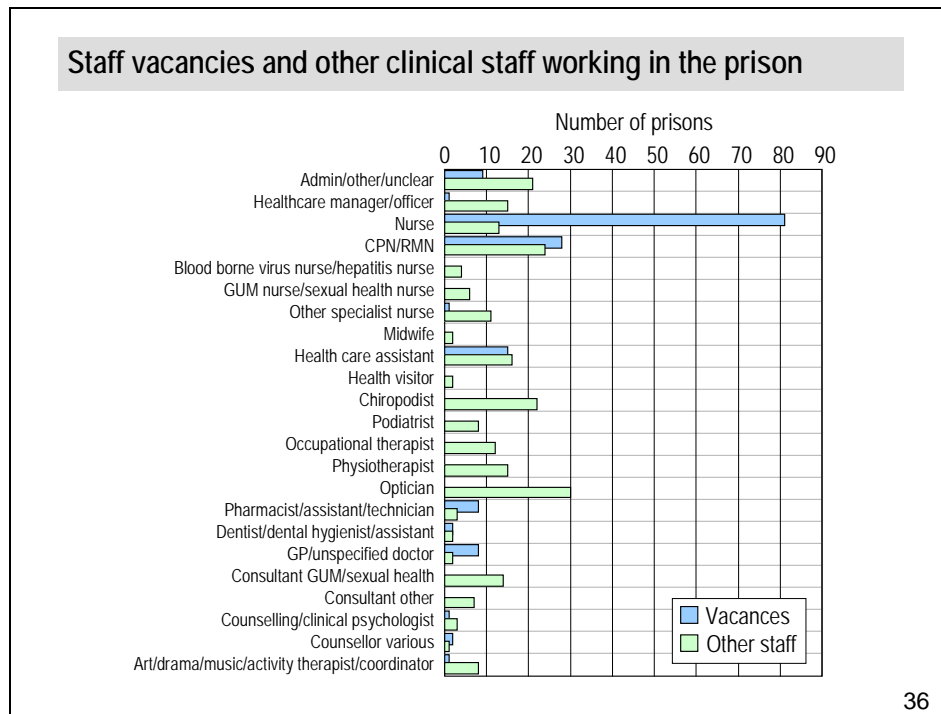
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\* Responses giving sessions per month were re-estimated as sessions per week

#### 4.7.2 Vacancies

We asked whether the prison had any unfilled vacancies for clinical staff and, if so, to list the type of vacancies.

As the following table shows, there appears to be a difficulty with excessive vacancies for general nurses in that over 80 prisons representing 2/3 of respondents were looking for one or more general nurses to work full or part time. (The table also shows ‘other staff’ working within prisons not represented in the categorisation in section 4.6.1)

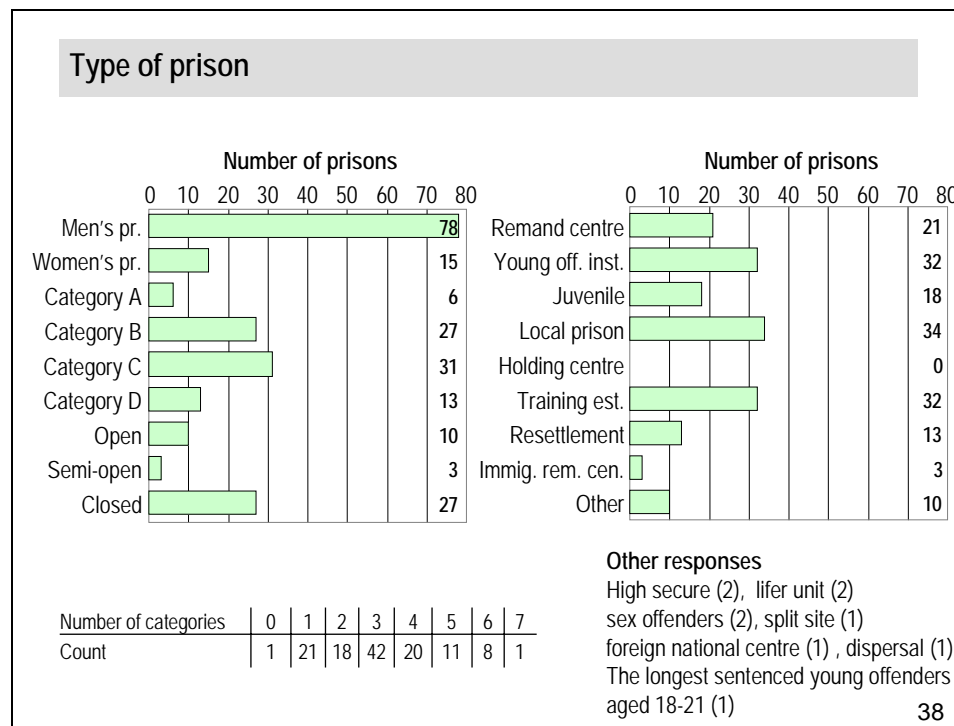


## 4.8 Exploratory analysis

### 4.8.1 Background to the analysis

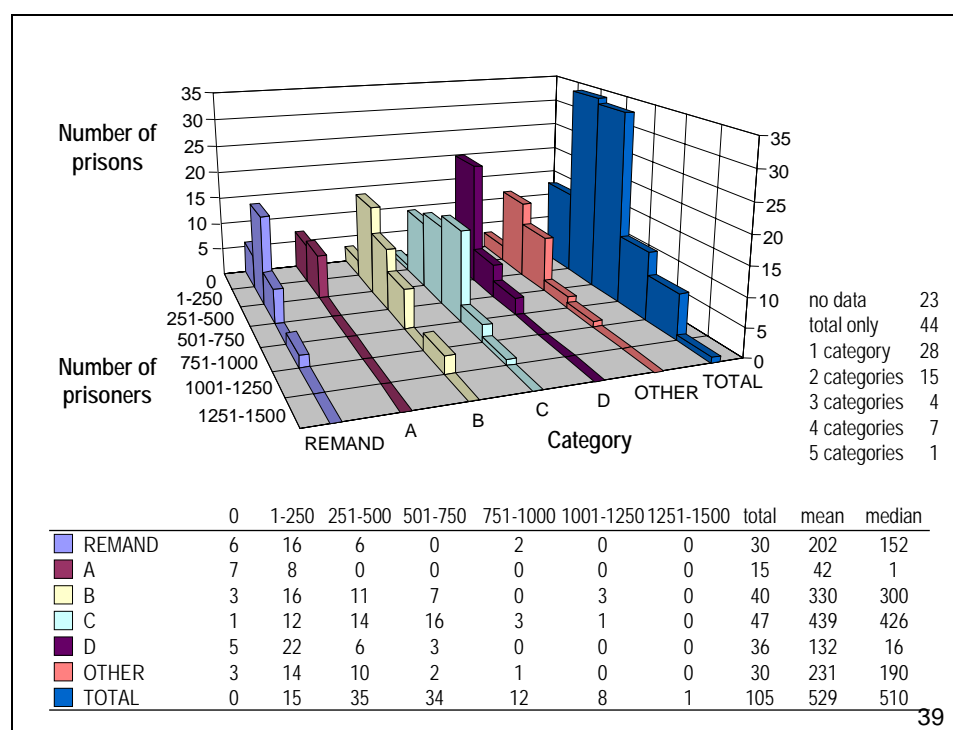
In order to carry out an exploratory analysis based on different types of prison we asked the person completing the form to indicate the type of prison by ticking appropriate boxes, and to indicate the number of prisoners in the categories 'remand' 'A', 'B' 'C', 'D' and 'other'. (Categories 'A' to 'D' represent a scale of security risk, with category 'A' representing the highest risk).

The following table provides the result of the type of prison according to the boxes indicated:



There was some ambiguity in the results. A prison must be either men/women/both prisoners but 20 prisons have ticked neither, presumably as they read this as men only/women only. 21 prisons only ticked one category which is not likely. In addition, this and the following table indicates that 8 prisons have category A prisoners, but 6 call themselves category A prisons, and 40 prisons have category B prisoners, but 27 call themselves category B prisons. It is probable that some respondents read these categories exclusively rather than inclusively.

The following slide shows the number of prisoners in the categories ‘remand’ ‘A’, ‘B’ ‘C’, ‘D’ and ‘other’.



There are also some difficulties in interpretation in responses here as well. ‘Zero’ may be used inconsistently as ‘zero’ or ‘don’t know’. Positive responding would have required a ‘don’t know’ box. This question really tells us about the spread in those prisons that have a category and have responded. Some prisons omitted the total category, and in this case the sum of the separate categories was calculated.

### *The stratifying variables used*

We used the following stratifying variables, defined in the following way:

- **Category of prison.** If category A or B prisoners were present, the prison was categorized as a category A or B prison.
- **Women’s prison.** The 15 prisons identifying themselves as ‘women’s prison’ were classified as such, all others as ‘men’s prison’.
- **Large prison.** All prisons with more than 500 prisoners were classified as large.

- **Level of healthcare support.** This was problematic since the sessions per week were badly reported in some prisons which might have led to miscategorisation. In contrast GP attendance appeared well reported. Therefore GP sessions per week per prisoner was used as an indicator of level of support with  $>0.02$  indicating a high level of such support.

### *The rationale behind the analysis*

- We were looking for consistent differences in the patterns of care in different types of prison.
- We were looking for differences between groups where  $p < .1$  (which is arbitrary) to identify patterns. ( $p < .1$  means that the probability of an association occurring by chance alone is less than 10 %.)
- In the analysis of proportions (binomial):
  - The sample size of 122 prisons was large enough to detect differences of approximately 20% between groups.
  - We were sifting for big differences.
  - On a more complex statistical note this sifting exercise will identify differences of a little less than 20% when probabilities are close to 0 or to 1.
  - Also, where the response rates drops, then we are unlikely to find significant differences.

#### 4.8.2 Relationship between the stratifying variables

The following table shows that category A or B prisons are likely to be large, women's prisons are likely to be small, women's prisons tend to have a high level of health care support and large prisons have a low level of health care support.

Relationship between stratifying variables					
Correlations					
		Category A or B prison	Women's prison	Prison popn >500	GP sessions /week /prisoner > 0.02
Category A or B prison	Pearson Correlation	1	-.234**	.249*	.185
	Sig. (2-tailed)		.009	.008	.058
	N	122	122	113	105
Women's prison	Pearson Correlation	-.234**	1	-.324*	.373**
	Sig. (2-tailed)	.009		.000	.000
	N	122	122	113	105
Prison popn. >500	Pearson Correlation	.249**	-.324**	1	-.287**
	Sig. (2-tailed)	.008	.000		.005
	N	113	113	113	96
GP sessions /week /prisoner > 0.02	Pearson Correlation	.185	.373**	-.287*	1
	Sig. (2-tailed)	.058	.000	.005	
	N	105	105	96	105

\*\* . Correlation is significant at the 0.01 level (2-tailed).

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The Pearson correlation, which was used here, is a measure of association between two variables.

#### 4.8.3 Organisation of on-site medical services

The following analyses show the relationships between prison characteristics (category A/B v other, women's vs men's, large vs small, high vs low GP attendance) and the presence or absence of in-house out-of-hours care, on-site pharmacies and on site in-patient units.

As the findings show, category A or B prisons are more likely to provide these services.

Organisation On site medical services			
Question	Percent (%)	$\chi^2$ , p	Valid (%)
Out of hours care: in house	27.0%		
* Cat A/B prison	37.8% vs. 20.8%	.041	100.0%
* Women's prison	13.3% vs. 29.0%	.20	100.0%
* Large prison	26.1% vs. 23.9%	.79	92.6%
* High GP attendance	28.6% vs. 27.4%	.91	86.1%
On-site pharmacy	25.4%		
* Cat A/B prison	53.3% vs. 9.1%	<.001	100.0%
* Women's prison	13.3% vs. 27.1%	.25	100.0%
* Large prison	34.8% vs. 16.4%	.025	92.6%
* High GP attendance	19.0% vs. 22.6%	.723	86.1%
In-patient unit on site	46.7%		
* Cat A/B prison	88.9% vs. 22.7%	<.001	100.0%
* Women's prison	40.0% vs. 47.7%	.58	100.0%
* Large prison	54.3% vs. 37.3%	.073	92.6%
* High GP attendance	61.9% vs. 40.5%	.077	86.1%

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Chi-square is the statistic used in this table and is a measure of the difference between two proportions. P is the significance of the difference, where a value less than 0.1 shows the probability that a difference may have occurred by chance is less than 10%. Valid percent gives the percentage of prisons (of 122) on which the analysis was based.

#### 4.8.4 Specialist services

The various specialist services are more likely to be provided in category A/B prisons as the following tables show.

Organisation Specialist services			
Question	Percent (%)	$\chi^2$ , p	Valid (%)
M/H training for discipline staff	42%		
* Cat A/B prison	48.8% vs. 38.4%	.27	95.1%
* Women's prison	66.7% vs. 38.6%	.040	95.1%
* Large prison	43.9% vs. 39.4%	.65	87.7%
* High GP attendance	50.0% vs. 35.4%	.30	81.1%
M/H care planned using CPA	89%		
* Cat A/B prison	90.9% vs. 88.4%	.67	92.6%
* Women's prison	93.4% vs. 88.8%	.59	92.6%
* Large prison	95.1% vs. 84.1%	.086	85.2%
* High GP attendance	80.0% vs. 90.8%	.18	78.7%
Mother and baby unit	4%		
* Cat A/B prison	2.2% vs. 5.2%	.42	100.0%
* Women's prison	33.3% vs. 0.0%	<.001	100.0%
* Large prison	0.0% vs. 7.5%	.058	92.6%
* High GP attendance	14.3% vs. 0.0%	<.001	86.1%

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The table in section 4.8.3 and the table above provide all the results between the four stratifying (independent) variables listed on page 46 and 47 and the dependent variables regardless of whether they were statistically significant or not. (The dependent variables in the table above are the presence or absence of mental health training for discipline staff, the presence or absence of the care programme approach and the presence or absence of a mother and baby unit). From now on, although all the dependent variables tested are listed, only where there may be statistically significant associations with particular stratifying variables are the Chi-square value, p value and valid percentage stated for the relevant stratifying variable.

## Organisation Specialist services

Question	Percent (%)	$\chi^2$ , p	Valid (%)
Mental health day care service	23%		
* Cat A/B prison	35.6% vs 15.6%	.015	100%
Close supervision unit	13%		
* Cat A/B prison	26.7% VS. 5.2%	.001	100%
Vulnerable prisoner unit/wing	31%		
* Cat A/B prison	57.8% vs 15.6%	<.001	100%
* Women's prison	6.7% vs 34.6%	.029	100%
* Large prison	45.7% vs 16.4%	.001	92.6%
Mental health in-reach team	87%		
* Cat A/B prison	95.6% vs. 81.8%	.030	100%
Medically assisted detoxification	52%		
* Cat A/B prison	80% vs. 35.1%	<.001	100%
* Large prison	60.9% vs. 41.8%	.046	92.6%
* High GP attendance	66.7% vs. 46.4%	.097	86.1%

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## Organisation Specialist services

Question	Percent (%)	$\chi^2$ , p	Valid (%)
Methadone maintenance	35%		
* Cat A/B prison	51.1% vs. 26%	.005	100%
* Women's prison	86.7% vs 28%	<.001	100%
* High GP attendance	47.6% vs. 27.4%	.074	86.1%
Dedicated drug detox unit/wing	24.6%		
* Cat A/B prison	42.2% vs. 14.3%	.001	100%
Voluntary drug testing wing	53%		
* Cat A/B prison	62.2% vs. 46.8%	.099	100%
* Large prison	60.9% vs 41.8%	.046	92.6%
Substance misuse education courses	62.3%		
* Cat A/B prison	73.3% vs 55.8%	.054	100%

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Chi-square is used again – see section 4.8.3 for explanation.

#### 4.8.5 Chronic diseases

There was some patchy and limited evidence for differences between stratifying variables and various responses to the questions for chronic diseases, as shown in the following tables.

As before, all the dependent variables tested are listed but only where there may be statistically significant associations with particular stratifying variables are the Chi-square value, p value and valid percentage stated for the relevant stratifying variable. The following tables appear different because for many of the dependent variables there was no significant association with any of the four stratifying variables.

Likewise, Chi-square is the statistic again used in the tables. It is a measure of the difference between two proportions. P is the significance of the difference, where a value less than 0.1 shows the probability that a difference may have occurred by chance is less than 10%. Valid percent gives the percentage of prisons (of 122) on which the analysis was based.

Chronic Diseases Records, Guidelines			
Question †	Percent (%)	$\chi^2$ , p	Valid (%)
A register of patients with diabetes?	87%		
A register of patients with IHD?	59%		
* Category A or B prison	73.3% vs. 51.3%	.017	99.1%
A register of patients with asthma?	84%		
A register of patients with hepatitis?	68%		
If yes, is the diabetes register electronic?	30.6% (111)		
If yes (IHD register), is the register electronic?	24.7% (93)		
If yes (asthma), is the register electronic?	34.6% (104)		
If yes (hepatitis), is the register electronic?	25% (92)		
Written guidelines for the management of diabetes?	77% (122)		
Written guidelines for the management of IHD?	44.8% (116)		
Written guidelines for the management of asthma?	74.4% (121)		
Written guidelines for the management of hepatitis?	77.4% (115)		
* Category A or B prison	86.0% vs. 72.2%	.086	94.3%
* High GP attendance	63.2% vs 81.3%	.088	81.1%
† Unless shown, no variation by stratifying variables			

## Chronic Diseases

### Recall, audit

Question †	Percent (%)	$\chi^2$ , p	Valid (%)
A recall system for diabetes?	74.2%		
A recall system for IHD?	39.2%		
A recall system for asthma?	64.2%		
* Cat A/B prison	54.5% vs. 69.7%	.094	98.3%
A recall system for hepatitis?	78%		
A diabetes audit in the last 2 years?	21.2%		
An audit for IHD in the last 2 years?	12%		
An asthma audit in the last 2 years?	18.6%		
A hepatitis audit in the last 2 years?	22.8%		

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## Chronic Diseases

### Leads, specialists

Question †	Percent (%)	$\chi^2$ , p	Valid (%)
Lead practitioner for diabetes in the prison?	70.2%		
Lead practitioner for IHD in the prison?	43.2%		
* Women's prison	71.4% vs. 39.4%	.023	96.7%
Lead practitioner for asthma in the prison?	69.4%		
* Cat A/B prison	59.1% vs. 75.3%	.062	99.2%
Lead practitioner for hepatitis in the prison?	66.1%		
* Cat A/B prison	79.1% vs. 58.9%	.024	96.7%
Sessions by a specialist nurse in diabetes care?	61.9%		
Sessions by a specialist nurse in IHD?	16.9%		
Sessions by a specialist nurse in asthma care?	50%		
Sessions by a specialist nurse in hepatitis care?	53%		

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## Chronic Diseases

### Special clinics, anxiety and depression

Question †	Percent (%)	$\chi^2$ , p	Valid (%)
Special diabetes clinic?	59.0%		
Special IHD clinic?	26.5%		
* Cat A/B prison	38.1% vs. 20%	.033	96.0%
* Large prison	34.1% vs. 16.9%	.039	89.3%
Special asthma clinic?	55.0%		
* Large prison	65.9% vs. 49.3%	.084	91.0%
Special hepatitis clinic?	52.1%		
* Cat A/B prison	62.8% vs. 45.9%	.079	95.9%
* Large prison	61.4% vs. 43.8%	.072	88.5%
For prisoners with anxiety and depression:			
Does the prison provide 'talk therapies'	68.1%		
Does the prison provide self help material	77.3%		
* High GP attendance	50% vs. 81.7%	.003	83.6%

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#### 4.8.6 Transfer between health care facilities

As shown in section 4.6, the majority of prisons stated that there was a system in place to transfer records between prisons, but there was less consistency when it came to the transfer of records in from general practice outside prisons. There was some evidence that this was more likely to be successful for category A/B prisons, women's prisons, large prisons and those with high GP attendance.

Transfer between health care facilities			
Question †	Percent (%)	$\chi^2$ , p	Valid (%)
System to transfer GP records from the community to your healthcare facility?	27.3%		
* Cat A/B prison	40.9% vs. 19.5%	.011	99.2%
* Women's prison	46.7% vs. 24.5%	.072	99.2%
* Large prison	17.4% vs. 31.8%	.086	91.8%
* High GP attendance	50% vs. 20.2%	.006	85.2%
Prisoner transferred from another prison: prison sends medical records?	94.9%		
Prisoner transferred to another prison: system to transfer medical records to the new prison?	99.2%		

#### 4.8.7 Summary of findings from the exploratory analysis

Prisons with category A or B offenders:

- Tend to be larger and men's prisons.
- Are more likely to have:
  - on-site out-of-hours care, pharmacy and in-patient units
  - close supervision unit and vulnerable prisoner unit/wing
  - mental health day care service and in-reach team
  - medically assisted detoxification, methadone maintenance, dedicated drug detox unit/wing, voluntary drug testing wing, substance misuse education courses.

- Have patchy evidence for better chronic disease management
  - 0/7 diabetes items
  - 2/7 IHD items (register of patients & special clinic)
  - 2/7 asthma items (recall system & lead practitioner)
  - 3/7 hepatitis items (lead practitioner, special clinic, guidelines)

Women's prisons:

- Tend to be smaller, have fewer category A and B offenders and higher GP attendance.
- Other patchy differences may be due to chance. They include increased likelihood of mental health training for discipline staff, methadone maintenance, and a lead practitioner for IHD in the prison. They are less likely to have a vulnerable prisoner unit or wing.

## 4.9 Regression analysis

There was evidence for a greater number of services apparently available for category A/B prisons and for large prisons. However category A and B prisons are also likely to be large. We therefore carried out a regression analysis to see which of these two independent variables was most important in explaining the greater number of services.

### 4.9.1 On-site pharmacy

As the following tables show, of the two independent variables – category A/B prison or large prison – category A/B prison is more important in determining the presence of an on-site pharmacy.

**Classification Table(a)**

	Observed			Predicted		
	Pharmacy: on-site		Percentage Correct			
	no	yes				
Step 1	Pharmacy: on-site	no		68	18	79.1
		yes		7	20	74.1
	Overall Percentage					77.9

a The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	strat_A/B(1)	2.377	.461	26.565	1	.000	10.769
1(a)	strat_size(1)	.682	.461	2.188	1	.139	1.978

a Variable(s) entered on step 1: strat\_ab, strat\_size.

#### 4.9.2 In-patient unit

Category A/B prison was again more important than size in determining whether an in-patient unit was present.

**Classification Table(a)**

	Observed			Predicted		
	Do you have an in-patient unit on site?		Percentage Correct			
	no	yes				
Step 1	Do you have an in-patient unit on site?			58	5	92.1
	yes			17	33	66.0
	Overall Percentage					80.5

a The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	strat_ab(1)	2.825	.495	32.618	1	.000	16.857
	strat_size(1)	.052	.495	.011	1	.916	1.054

a Variable(s) entered on step 1: strat\_ab, strat\_size.

#### 4.9.3 Vulnerable prisoner unit/wing

Though category A/B was the most important variable in determining the presence of a vulnerable prisoner unit/wing, the size of the prison was also important.

**Classification Table(a)**

	Observed		Predicted			
	Specialist services: vulnerable prisoner unit/wing		Percentage Correct			
	no	yes				
Step 1	Specialist services: vulnerable prisoner unit/wing	no		63	18	77.8
		yes		12	20	62.5
	Overall Percentage					73.5

a The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	strat_ab(1)	1.832	.443	17.127	1	.000	6.244
	strat_size(1)	1.227	.443	7.687	1	.006	3.411

a Variable(s) entered on step 1: strat\_ab, strat\_size.

#### **4.9.4 Medically assisted detoxification**

Category A/B prison was the important variable determining the presence of medically assisted detoxification

**Classification Table(a)**

	Observed		Predicted		
	Specialist services: medically assisted detoxification				
	no	yes	Percentage Correct		
Step 1	Specialist services: medically assisted detoxification		48	9	84.2
	yes		27	29	51.8
	Overall Percentage				68.1

a The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	strat_ab(1)	1.418	.417	11.581	1	.001	4.127
	strat_size(1)	.396	.417	.903	1	.342	1.486

a Variable(s) entered on step 1: strat\_ab, strat\_size.

#### 4.9.5 Methadone maintenance

Category A/B prison was the important factor here as well.

**Classification Table(a)**

	Observed			Predicted		
	Specialist services: methadone maintenance		Percentage Correct			
	no	yes				
Step 1	Specialist services: methadone maintenance			55	20	73.3
	yes			20	18	47.4
	Overall Percentage					64.6

a The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	strat_ab(1)	1.264	.416	9.245	1	.002	3.538
	strat_size(1)	-.198	.416	.227	1	.634	.820

a Variable(s) entered on step 1: strat\_ab, strat\_size.

#### 4.9.6 Specialist services: substance misuse day care services

Category A/B prisons was the important factor

**Classification Table(a)**

	Observed			Predicted		
	Specialist services: substance misuse day care services		Percentage Correct			
	0	1				
Step 1	Specialist services: substance misuse day care services	0		67	29	69.8
		1		8	9	52.9
	Overall Percentage					67.3

a The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	strat_ab(1)	1.396	.416	11.234	1	.001	4.037
	strat_size(1)	.157	.416	.143	1	.705	1.171

a Variable(s) entered on step 1: strat\_ab, strat\_size.

#### 4.9.7 Provision of special IHD, asthma and hepatitis clinics

There was weak evidence that category A/B prison was the important variable in determining the presence of a IHD clinic, but not for asthma or hepatitis clinics.

**Classification Table(a)**

	Observed			Predicted		
	Does the prison provide a special IHD clinic?					
	no	yes	Percentage Correct			
Step 1	Does the prison provide a special IHD clinic?			59	24	71.1
	no					
	yes			14	12	46.2
	Overall Percentage					65.1

a The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	strat_ab(1)	1.041	.419	6.192	1	.013	2.833
	strat_size(1)	.831	.419	3.940	1	.047	2.295

a Variable(s) entered on step 1: strat\_ab, strat\_size.

**Classification Table(a)**

	Observed			Predicted		
	Does the prison provide a special asthma clinic?					
	no	yes	Percentage Correct			
Step 1	Does the prison provide a special asthma clinic?			34	15	69.4
	no					
	yes			33	29	46.8
	Overall Percentage					56.8

a The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	strat_ab(1)	-.370	.404	.837	1	.360	.691
	strat_size(1)	.652	.404	2.603	1	.107	1.919

a Variable(s) entered on step 1: strat\_ab, strat\_size.

**Classification Table(a)**

	Observed			Predicted		
	Does the prison provide a special hepatitis clinic?		Percentage Correct			
	no	yes				
Step 1	Does the prison provide a special hepatitis clinic?		no	30	23	56.6
			yes	19	36	65.5
	Overall Percentage					61.1

a The cut value is .500

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1(a)	strat_ab(1)	.526	.408	1.663	1	.197	1.692
	strat_size(1)	.526	.408	1.663	1	.197	1.692

a Variable(s) entered on step 1: strat\_ab, strat\_size.

## 5 Discussion

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### 5.1 Main findings

- The survey showed a very low use of IT, which has an important bearing on the quality of care that can be provided in prisons.
- There were significant gaps in the delivery of health care services for chronic diseases apparent even in the basic criteria we chose to use as indicators of care.
- Significant problems are apparent in recruitment or retention of general nurses.
- Prisoners in category A/B prisons have a greater range of health care services available to them.

### 5.2 Discussion of the findings

The low use of IT, with only about 10% of prisons stating they entered data directly onto clinical records, is worrying and effectively excludes prisoners from receiving an equivalent level of care received by patients outside prison. Although we have no data to directly support this, it is fairly self-evident that there is a much higher level of IT in primary care services outside prison. Though theoretically it may be possible to provide exemplary care without IT, in practice modern primary care relies upon it for a structured, managed approach to the delivery of care for chronic diseases. The problem with low use of IT in prisons has been noted before (Anaraki, Plugge et al. 2003).

There appeared to be a problem with the transfer of records from primary care outside prison to inside prison. We did not directly obtain information about the reverse process, but the low use of IT must make transfer of timely information from prison to practices outside on discharge problematic, even allowing for the known problems of

patients wishing to keep knowledge of their incarceration confidential. Given the markedly increased mortality rate prisoners face on discharge from prison, as a result of drugs as well as other causes (Bird and Hutchinson 2003), the effective transfer of medical information is particularly important.

We chose minimal and basic measures to measure the delivery of services for chronic diseases, measures which we would expect almost all practices outside prison to meet. Although most prisons also met most of the measures, a large minority did not. Significant numbers did not have registers for the four diseases chosen. In a paper light system such registers are of course automatic. Most of the registers in prisons were non-electronic, reflecting the general low use of IT and contrasting to what will be the usual type of register in primary care outside prison.

Significant minorities did not have written guidelines for the four chronic diseases. The worst was the absence of guidelines for IHD. This may reflect the absence of patients with IHD, though presumably at some time patients with IHD will be admitted to most prisons and written guidelines should be in place about the management of IHD to provide an equivalent level of care to outside. Though IHD may be relatively uncommon in prison populations, all prisons will have some patients with asthma, a condition for which nevertheless a quarter of prisons also had no written guidelines.

Substantial numbers of prisons did not have recall systems which are, of course, made easier with the use of IT. Although there are known problems with high turnover rates in prison, it would be expected that modern primary care in the UK of a reasonable standard would have recall systems in place at least for the management of diabetes, IHD and asthma. It is particularly of concern that even for diabetes, where the practice of

regular recall has been established for a long time 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. Few of the prisons had carried out an audit of care in the four diseases and substantial numbers did not have leads for the individual diseases.

Given the high level of mental health problems in prisoners (Birmingham 2003), the absence of talk therapies in a third of the prisons is surprising as well as the absence of provision of self-help material in a quarter of prisons. Over half of the prisons reported that they did not hold formal mental health training sessions for discipline staff, though it is conceivable that such training is provided by another organisation.

The low use of IT is unlikely to be the only problem health care services in prisons face in delivering equivalent levels of care. The study revealed that two thirds of prisons reported one or more vacancies for general nurses. As for IT, we have no equivalent information, but it would seem highly unlikely that this level of vacancies applies to practices outside prison. There is therefore likely to be a problem with recruitment, or retention, or both, of general nurses working in primary care within prisons. Modern primary care relies upon nurses to deliver much of the care for patients with chronic diseases and so the difficulty with recruitment and retention is likely to impact significantly on what is achievable in prisons.

The survey revealed interesting differences between care inside and outside prisons which may not necessarily relate to the standard of care received. For instance many prisons did have systems in place to deal with the management of hepatitis, which is unlikely to be the case for practices outside prison. The appointment systems for GPs

are clearly different, with the most common appointment interval offered being 'variable' rather than 10 minutes which is likely to be the most common appointment interval provided outside prisons. Although the total number of surgeries offered per week is roughly 'bell shaped', there is a large increase at 5 and 10 per week, which together with the variable appointment interval suggests that surgeries are booked to cover fixed periods during the week rather than adjusted to meet the actual numbers of people that need to be seen, as is more likely to be the case in practices outside prison.

One obvious difference between primary care inside and outside prison is that prisons - even large prisons - are 'small' in comparison to general practices outside. There was evidence of economies of scale with large prisons having a relatively small health care support (defined as number of GP sessions per week per prisoner) compared to small prisons. Women's prisons also had a large level of health care support, presumably reflecting health care needs, although women's prisons are also small.

There were substantial differences between category A/B prisons and the others. They were more likely to have on-site medical services such as in-house out-of-hours care, on-site pharmacies and on-site in-patient units. They were also more likely to have a number of specialist services including mental health day care services, close supervision units, and a vulnerable prisoner unit/wing. Other services they were more likely to receive include medically assisted detoxification, methadone maintenance services and a dedicated drug detoxification unit. Larger prisons were also more likely to have some of these services but the results for category A/B reached a greater level of significance. The logistic regression analysis showed that category A/B was the important variable in explaining the provision of these services.

This raises interesting questions about the reasons for providing, or not providing, these services. There may be good reasons why such prisons should receive more extensive services, either through economies of scale, or because of security concerns, or because prisoners in category A/B are more likely to have medical conditions that require these services. But it is not necessarily self-evident that the prisoners in category A/B prisons should receive a wider range of services (or conversely that prisoners in A/B prisons should receive a narrower range of health care services) simply because of their security status.

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

We obtained a good response rate, although two prisons provided very little data. This means that the survey is likely to be representative of prisons as a whole in England and Wales.

The survey relies on what people say rather than what they actually do. However this if anything is likely to underestimate some of the deficiencies identified in, for instance, the indicators for provision of services for chronic diseases. Given the small number of prisons available for study, some of the statistical associations noted may be due to chance alone.

### **5.4 Directions for future research**

The findings will be used to identify prisons with innovative and progressive models of care provision that will form the sample for a subsequent case study analysis. A separate research proposal will be brought forward for this phase of the research.

The survey points to the need to investigate more fully why IT provision is so poor and what the barriers are to effective implementation.

The apparent difficulties in the recruitment and retention of nurses needs further work. This would include identifying motivating factors for general nurses to work in prisons and the barriers faced. There is a gap in understanding how professionals working in prison view their roles with regard to the management of chronic diseases. It was noted that about half of the prisons did not have sessions by nurses trained in the care of patients with diabetes, IHD, asthma and hepatitis. Though it is possible that the question could have been stated more clearly, it seems likely that there are training gaps for nurses working in prisons in the management of these chronic diseases. There is a need to examine further what training general nurses in prisons have actually received and to investigate what their future training needs are in order to fulfill standard primary health care roles.

Although prisoners' views of health care services have been investigated, there is a gap in how they manage chronic diseases for themselves in a prison context. Their views of health care services specifically with regard to chronic diseases could also usefully be explored.

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## Appendix 1

### PRISON PRIMARY HEALTH CARE SURVEY

*To be completed by the manager responsible for health care delivery in the prison*

*It would help us if the person completing this questionnaire notes the following so we can contact you if we have any queries:*

**Name of prison:**.....

**Your name:**.....

**Job title:**.....

**Telephone number:**.....

**E-mail:**.....

All data will be treated in the strictest confidence. No prison will be identified from any output of the project and all data will be held in anonymised form.

*If you have any problems completing this questionnaire, or have any questions you would like to ask, please contact Katie Buchanan on 0161 275 6623.  
(e mail: [Katie.buchanan@manchester.ac.uk](mailto:Katie.buchanan@manchester.ac.uk))*

## SECTION 1: ORGANISATION

*This section asks about various organisational aspects of the prison*

### General Medical Services

1. How many morning surgeries are offered each week? .....
2. How many afternoon/evenings surgeries are offered each week? .....
3. What is the booking interval for routine appointments?  
☐<sub>0</sub> No fixed interval                      Fixed interval of...\_\_\_\_\_minutes
4. How does the prison organise its out of hours care?  
☐<sub>1</sub> Co-operative                      ☐<sub>2</sub> Deputising service  
☐<sub>3</sub> In-house                      ☐<sub>4</sub> PCT scheme  
☐<sub>5</sub> Other (Please describe.....)

### Pharmacy Services

5. How are pharmacy services provided?  
☐<sub>1</sub> On-site pharmacy  
☐<sub>2</sub> In-reach service provided by another prison  
☐<sub>3</sub> In-reach service provided by local community pharmacy  
☐<sub>4</sub> In-reach service provided by local hospital  
☐<sub>5</sub> Other ( Please describe .....

### In-patient Services

6. Do you have an in-patient unit on site?  
☐<sub>1</sub> Yes                      ☐<sub>2</sub> No  
If yes, how many beds does it have? ...\_\_\_\_\_ beds

## Specialist Services

1. Does the prison provide formal mental health training sessions for discipline staff?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

2. Is mental health care for prisoners planned using the care programme approach (C.P.A)?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

3. Please indicate, by ticking the appropriate boxes, what specialist services are available in your establishment.

### *General*

☐ Mother and baby unit

### *Mental health*

☐ Mental health day care service

☐ Close supervision unit

☐ Vulnerable prisoner unit/wing

☐ Mental health in-reach team

### *Drug misuse*

☐ Medically assisted detoxification

☐ Methadone maintenance

☐ CARATS

☐ Dedicated drug detox unit/wing

☐ Drug free wing

☐ Voluntary drug testing wing

☐ Substance misuse education courses

☐ Substance misuse day care services

## Organisation

4. Is the prison 'paper light' (clinical information is entered directly onto computer)?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**If yes, does this apply to-**

☐ medical notes      ☐ investigations      ☐ letters

5. Does the prison have -

GP registrars      Yes ☐<sub>1</sub>      No ☐<sub>2</sub>      Not sure ☐<sub>3</sub>

Trainee nurses      Yes ☐<sub>1</sub>      No ☐<sub>2</sub>      Not sure ☐<sub>3</sub>

6. Do you have a lead for clinical governance?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>      Not sure ☐<sub>3</sub>

7. Have you carried out a patient/prisoner satisfaction survey for your health care services in the last 18 months?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>      Not sure ☐

8. Do you have a formal system for dealing with complaints about health care?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

9. Is there a formal link with the NHS complaints system?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

10. Do you have formal meetings to discuss critical incidents?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

.....  
.....

## SECTION 2: CHRONIC DISEASES

*This section asks about services provided for chronic diseases. It may be that many of the questions do not apply to you. However, please answer all questions.*

### A. Diabetes

1. Does the prison have a register of patients with diabetes?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**If yes,** is the register electronic?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

How many patients do you have on the register with diabetes? .....

2. Does the prison have written guidelines for the management of patients with diabetes?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

3. Does the prison have a recall system for diabetes?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

4. Has the prison carried out a diabetes audit in the last 2 years?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

5. Is there a lead practitioner for diabetes in the prison?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**If yes,** who undertakes the role?

- Doctor ☐      Nurse ☐      Other ☐
6. Does the prison provide sessions held by a specialist nurse trained in diabetes care?  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>
7. Does the prison provide a special diabetes clinic?  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**B. Ischaemic Heart Disease (IHD)**

1. Does the prison have a register of patients with IHD?  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>  
**If yes, is the register electronic?**  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>  
How many patients do you have on the register with IHD? .....
2. Does the prison have written guidelines for the management of patients with IHD?  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>
3. Does the prison have a recall system for IHD?  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>
4. Has the prison carried out an audit for IHD in the last 2 years?  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>
5. Is there a lead practitioner for IHD in the prison?  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>  
**If yes, who undertakes the role?**  
Doctor ☐      Nurse ☐      Other ☐
6. Does the prison provide sessions held by a specialist nurse trained in IHD?  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>
7. Does the prison provide a special IHD clinic?  
Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**C. Asthma**

1. Does the prison have a register of patients with asthma?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**If yes,** is the register electronic?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

How many patients do you have on the register with asthma? .....

2. Does the prison have written guidelines for the management of patients with asthma?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

3. Does the prison have a recall system for asthma?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

4. Has the prison carried out an asthma audit in the last 2 years?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

5. Is there a lead practitioner for asthma in the prison?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**If yes,** who undertakes the role?

Doctor ☐      Nurse ☐      Other ☐

6. Does the prison provide sessions held by a specialist nurse trained in asthma care?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

7. Does the prison provide a special asthma clinic?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**D. Hepatitis**

1. Does the prison have a register of patients with hepatitis?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**If yes,** is the register electronic?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

How many patients do you have on the register with hepatitis? .....

2. Does the prison have written guidelines for the management of patients with hepatitis?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

3. Does the prison have a recall system for hepatitis?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

4. Has the prison carried out a hepatitis audit in the last 2 years?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

5. Is there a lead practitioner for hepatitis in the prison?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**If yes, who undertakes the role?**

Doctor ☐      Nurse ☐      Other ☐

6. Does the prison provide sessions held by a specialist nurse trained in hepatitis care?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

7. Does the prison provide a special hepatitis clinic?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**D.      Anxiety/Depression**

1. Does the prison provide 'talk therapies' (e.g. cognitive behaviour therapy) for patients with anxiety or depression?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**If yes, who provides the talk therapy?**

☐ counsellor

☐ CPN

☐ Psychologist

☐ Other

**If other, please**

describe.....

2. Does the prison provide self help material for prisoners with anxiety and depression?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

.....  
.....

**SECTION 3: INFORMATION TRANSFER BETWEEN HEALTH CARE FACILITIES**

1. Is there a system in place to ensure that a prisoner's general practice medical records are transferred from the community to your healthcare facility?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

If No, are you planning to introduce such a system in the next year?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

2. If a prisoner is transferred *from* your prison to another, do you have a system in place to ensure that your medical records for that prisoner are sent to the new prison?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

If No, are you planning to introduce such a system in the next year?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

3. If a prisoner is transferred *to* your prison from another prison, does that prison send you the prisoner's medical records?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

If No, would this be helpful?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

.....  
.....

## SECTION 4: STAFF

*This section asks about the numbers and types of clinical staff working in your prison in the past month.*

Type of staff	Total number of people	Total number of sessions worked Per week or Per month	
General practitioner			
Psychiatrist – adult			
Psychiatrist – child/adolescent			
Nurse practitioner			
Nurse - general			
CPN			
Dentist			
Dental care assistant			
Pharmacist			
Pharmacist assistant			
Clinical Psychologist			
Counsellor			
<b>Other</b> – please state type, number, and number of sessions in boxes below			

Does the prison have any unfilled vacancies for clinical staff?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

**If yes...**

For which posts?	How many vacancies?

## SECTION 5: ABOUT THE PRISON

*So that we can compare responses from different types of prison, please indicate the number of prisoners in each of the following categories*

CATEGORY	NUMBER OF PRISONERS
REMAND	
A	
B	
C	
D	
OTHER	
TOTAL	

Please indicate the type of prison by ticking the appropriate boxes.

- |   |  |
|---|--|
| <input type="checkbox"/> Men's Prison   | <input type="checkbox"/> Remand centre                   |
| <input type="checkbox"/> Women's prison | <input type="checkbox"/> Young Offender Institution      |
| <input type="checkbox"/> Category A     | <input type="checkbox"/> Juvenile                        |
| <input type="checkbox"/> Category B     | <input type="checkbox"/> Local prison                    |
| <input type="checkbox"/> Category C     | <input type="checkbox"/> Holding centre                  |
| <input type="checkbox"/> Category D     | <input type="checkbox"/> Training establishment          |
| <input type="checkbox"/> Open           | <input type="checkbox"/> Resettlement                    |
| <input type="checkbox"/> Semi-open      | <input type="checkbox"/> Immigration removal centre      |
| <input type="checkbox"/> Closed         | <input type="checkbox"/> Other (please<br>describe.....) |

May we come back to you to learn more about how chronic diseases are managed?

Yes ☐<sub>1</sub>      No ☐<sub>2</sub>

If yes, whom might we contact please?

Name:.....

Position:.....

Daytime telephone number:.....

If you wish to provide additional comments please do so here. This might include, for instance, your views about significant challenges faced in providing health care in your prison.

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**THANK YOU FOR COMPLETING THE QUESTIONNAIRE.**

**Please return to:**

**[Address]**

## Appendix 2: Covering letter

To be addressed to the Governor on PHRN notepaper with  
PHRN logo

Dear Sir

The change in responsibility to the NHS for health care delivery is intended to ensure prisoners receive the same standard of health care inside prison as outside. Yet the prison population differs from 'normal' populations in general practice outside prisons, and the prison environment significantly constrains health care delivery.

In order to make recommendations about the improvement in health care delivery for patients with long term medical problems (such as diabetes, heart disease, liver problems and mental health problems) it is important to know the current range of health care services in prisons.

We are therefore conducting a national survey investigating the range of health care personnel available in prisons to look after patients with long-term health problems. We are asking all Directors of Health Care in prisons nationally to complete a questionnaire.

We would be grateful if you would pass the questionnaire on to the Director of Health Care for your prison to complete. Once the questionnaire is completed please return it in the pre-paid envelope provided as soon as possible.

If you have any queries about this project or would like more information please do not hesitate to contact Katie Buchanan on 0161 275 6623 or e-mail  
.....

We would like to thank you for your time and assistance with this matter and we can assure you that all information will be treated in the strictest confidence.

Yours sincerely,

Dr C.S.Cornford  
Senior lecturer in General Practice and Primary Care  
University of Durham

### **Appendix 3: Piloting**

Thank you very much for arranging for this questionnaire to be piloted in your prison.

In addition to completing the questionnaire, we would welcome your views about it and the covering letter.

The things that we would like your views on are -

For the questionnaire:

- Time it took to complete the questionnaire
- Length of questionnaire
- Wording
- Any confusing statements
- Any errors
- Anything else you have a view on

For the covering letter:

- Who should the questionnaire be addressed to – the prison health care manager or the governor?
- Is it clear?
- Is it inviting enough to promote a good response?
- How can it be improved?
- Anything else you have a view on

Once you have completed this questionnaire please return it in the envelope provided.