Setting up new medical services

Summary

The conditions experienced by people in custody in the UK have received considerable attention recently and there has been considerable debate concerning the standards of healthcare in British prisons. The Prison Health Care Service works under great pressure and difficulties and doctors have to deal with a large and ever-changing population, often with mental and physical disorders, who are frequently manipulative. This article highlights problems encountered in delivering diabetes care in prisons. Prisoners may self-induce diabetic ketoacidosis by refusing insulin injections, in order to be transferred to an outside hospital. On the other hand, prison staff may mis-interpret the symptoms of poorly controlled diabetes as 'acting up' by prisoners and inappropriate treatment can be given. If structured diabetes care is provided in prison, however, with close liaison between the Prison Staff and the local Diabetes Care Team, the basics of modern diabetes management can be provided. Good diabetic metabolic control can be achieved in the majority of patients, probably due to the rigid dietary regime, no alcohol and compliance with treatment. Imprisonment can ensure screening for diabetic complications and reassessment of treatment regimens. The British Diabetic Association guidelines for the provision of diabetes care in British prisons are outlined in this article.

Keywords: prison healthcare, diabetes in prison

Prison population: England and Wales

- 45 000 prisoners
- > 90% males, aged 15–55 years
- average sentence 18 months
- lower socio-economic groups over-represented
- 15% minority ethnic groups

Box 1

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Accepted 25 August 1995

The development of healthcare services for diabetic prisoners

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Until recently, there was little information on the health of prisoners, even in the most developed countries.¹ The great majority of prisoners are male and under the age of 40 years. Many have psychological problems and because of unhealthy lifestyles prior to entering prison (excessive smoking, alcohol, drug abuse), many are unhealthy despite their young age. The use of healthcare facilities prior to imprisonment has often been limited. This review examines the healthcare needs of prisoners and focuses on diabetes care with recommendations on diabetes management in prison.

The prison population: demographic data

The average daily prison population in England and Wales in the year 1993/4 was 45 114² (see box 1).² There were 77 888 first receptions into prisons and when transfers between prisons and special category prisoners are included, there is an estimated annual through-put of 110 000. Sentences are often reduced by one-third or more because of remission or parole. It is likely that the total prison population will increase to 51 000 by the year 2001.³

The Health Care Service for prisoners

The Health Care Service for prisoners is an integral part of the Prison Service.^{2,4} It aims to provide healthcare for prisoners equivalent to that of the National Health Service (NHS) for the community at large. It also has an obligation to safeguard human rights and to promote and maintain healthcare, irrespective of the offences or the punishments of individual prisoners. An independent Health Advisory Committee exists to advise the Home Secretary, the Director General of the Prison Service and the Director of Health Care on any matter pertaining to the health of prisoners and is required to receive and comment on the Annual Reports from the Director of Health Care.

In March 1994 the number of full-time and part-time health care staff (doctors, nursing, and pharmacy staff) directly employed by the Prison Service (England and Wales), including those employed under personal contracts for services, was 1947.² They work in 129 prison establishments and include 133 full-time medical officers, 120 part-time medical officers and 1627 nursing staff (1088 healthcare officers and 539 civilian nurses). The part-time medical officers are mainly practising general practitioners who work part-time in prison. At 62 prisons the head of healthcare is a part-time medical officer. Most of the dispensing of medication in prisons is undertaken by a pharmacist directly employed by the prison service and every prison is supervised by a qualified pharmacist.

The healthcare service makes extensive use of the services of individual specialists across a wide range of professional disciplines.^{2,3} Most of these specialists are still fee paid, either on a sessional or *ad-hoc* basis, but there is an increasing trend towards contracting with NHS and other external providers for the provision of specialist services.

Prisoners' health

It is important to realise that medical officers see all new prisoners coming in to their prisons (box 2). In addition to the new arrivals in a prison, the medical officers see and treat many of the large numbers of prisoners who report sick. During the year 1993/4 more than 1.6 million episodes of reporting sick occurred.² The daily average of reporting sick for the 129 prison establishments was 4500, approximately 10% of the prison population. This is considerably higher than in primary care, but does not necessarily reflect the health status of prisoners. There are special social and environmental conditions in prisons, for

Prisoners' health
Care provided by: <ul style="list-style-type: none">• prison Health Care Service• visiting specialists• all new prisoners are seen by medical officer
Particular problems: <ul style="list-style-type: none">• mental disorders• personality disorders• alcohol and drug abuse• HIV• hepatitis B• epilepsy• asthma• dental problems

Box 2

Table New referrals of prisoners to visiting consultant physicians by medical officers, HM Prison, Walton, Liverpool: January 1991–July 1993

Diagnosis	n
Diabetes	40
Ischaemic heart disease	29
Epilepsy	24
Asthma	16
Headaches	9
Hypertension	8
Old head injury	8
Organic brain syndrome	6
Jaundice (alcohol and hepatitis B)	6
Abnormal chest X-ray	6
Gastrointestinal disease	4
Cerebrovascular disease	4
Hunger striker	3
Miscellaneous*	84
Total: 247 over a 30-month period	

*vague respiratory and neurological symptoms: aches and pains

Problems of prison diabetes care
Prisoners' viewpoint: <ul style="list-style-type: none">• poor diet, inappropriate meal-times• no access to dietitians and diabetes specialists• lack of self monitoring facilities
Diabetes specialist's viewpoint <ul style="list-style-type: none">• sub-optimal diabetes care• unrecognised metabolic decompensation• self-induced ketoacidosis

Box 3

Specialist-led, structured diabetes care in prison leads to:
<ul style="list-style-type: none">• good diabetic metabolic control• few hypo- or hyperglycaemic problems• screening for diabetic complications

Box 4

example, lack of access to over-the-counter medication. During the same time period there were more than 60 000 reported admissions to prison in-patient facilities and 2162 prisoners were removed to outside NHS hospitals for in-patient observation or treatment. There is an increasing use made of visiting consultants and other specialists, mainly from the NHS, in prison. The largest numbers of consultations/treatments are by dental surgeons and psychiatrists.

Specific disorders

Mental disorders can dominate the work of the Prison Health Care service.^{1–3} There are large numbers of in-mates with personality disorders and with alcohol and other substance misuse problems who make up the bulk of sick parade attendance. It is clear from statistical and other sources that a significant number of mentally disordered people continue to come in to prison and that many of them ought to be in hospital.

Prison medical officers contribute to the nationwide notification system of HIV-positive blood tests. Such tests are voluntary and are accompanied by appropriate counselling. At the end of March 1994 the aggregate number of known HIV cases reported since 1985 was 445. The obvious high-risk activity for acquiring HIV infection was drug abuse, leading to the increased prevalence of HIV in prisons. The number of cases of active hepatitis B in the prison population over the past five years is 40 to 50 cases a year. Active tuberculosis was diagnosed in 28 prisoners last year.²

Medical problems which may be more common in the prison population include epilepsy, asthma, gastrointestinal disorders and dental problems.^{5–8} The table shows the prevalence of medical disorders referred by prison doctors to visiting specialist clinics at HM Prison, Walton, Liverpool, over the past few years.

Several studies from abroad have suggested that the overall mortality of male prisoners is lower than in the general population.^{9,10} It may be that the lifestyle specific to prisons is beneficial and counteracts some of the effects of previous unhealthy lifestyles. Alternatively it may be less likely for people with chronic conditions with a reduced life expectancy to serve a prison sentence.

Diabetes care in British prisons: problems and solutions

The care of chronic diseases in prison environments has until recently received little attention.¹⁵ For some years the British Diabetic Association had received complaints from diabetic prisoners and their relatives particularly regarding diet, self-monitoring facilities and access to specialist help (box 3). A report in 1989 highlighted prison diabetes problems, as presented to NHS hospital diabetologists practising near to one of Britain's largest prisons, Walton Jail in Liverpool.¹¹ Problems included suboptimal diabetes care: for example, one patient on release was found to need insulin treatment urgently, having been poorly controlled on oral agents in prison. Another prisoner who was suffering from a hyperosmolar hyperglycaemic state was thought to be 'acting up' and admission to hospital from the prison was delayed. Finally an 'epidemic' of self-induced ketoacidosis was recorded, with several prisoners refusing insulin injections in order to gain admission to the local hospital. Ketoacidosis has also been a problem in American prisons.¹²

The British Diabetic Association formed a multi-disciplinary working party (which included prison doctors) to investigate the problem and to make appropriate recommendations.¹³ The following four major areas were explored:

AVAILABILITY OF THE DIABETES CARE TEAM

Prison medical officers provide a general practitioner service for prisoners. They work under considerable pressure having to assess the new 'intake' of prisoners and the large numbers 'reporting sick' each day. Many prisoners may have no significant problems but some may have serious physical or psychiatric disorders. There is generally no specialist knowledge of diabetes amongst prison medical officers who usually manage diabetic prisoners themselves and only refer for further advice if and when they deem it necessary. In large prisons there is usually a 'visiting physician' from the local NHS hospital who comes intermittently to see any medical problems referred. This is not generally available in small penal establishments and, of course, a visiting physician may not necessarily be a diabetes specialist. An alternative mode of referral is to send the patient to a local NHS diabetic clinic, but this is difficult and time-consuming, requiring transport and accompanying prison guards. These visits, when arranged, may be cancelled at short notice because of difficulty in supplying escorts. In addition NHS hospital diabetic clinic staff may not be fully aware of the realities of prison life.

British Diabetic Association recommendations

- The 'diabetes care team' must be available in prison*
- diabetes specialist must be available: consultant to visit large prisons; in small prisons, patients can be taken to local clinic if necessary
 - dietitians should be available; regular visits to large prisons
 - specialist nurses to educate prisoners and staff
 - all diabetics to see a chiropodist and optician with follow-up during longer sentences

Box 5

British Diabetic Association recommendations

- Modern diabetes management strategies to be adopted:*
- diabetic prisoners should see a diabetic specialist for: assessment of control, treatment adjustment, complication screening, referral to other team members, if necessary
 - follow-up (depending on sentence length)
 - self-monitoring of blood glucose to be available for insulin-treated prisoners
 - non-smoking diabetic prisoners to be allocated to non-smoking cells
 - extra exercise, eg, prison gymnasium, to be available

Box 6

British Diabetic Association recommendations

- Dietary provision in prison:*
- a healthy prison diet would benefit all prisoners (semi-skimmed milk, low-fat spreads, wholemeal bread, fresh fruit and pulses, high-fibre cereals)
 - sugar-free puddings, fresh fruit, artificial sweeteners available for diabetics
 - 'diabetic' products unnecessary and expensive
 - prison shop to sell sugar-free snacks and drinks
 - to prevent hypoglycaemia at 'lock-up' (insulin- and sulphonylurea-treated): provide dextrose tablets and digestive biscuits (or equivalent) for evening snack
 - diabetic prisoners on insulin should not be locked up alone because of hypoglycaemic risks. Ideally, share with another diabetic
 - diabetic prisoners do not need 'extra' meat, cheese or milk. Overweight prisoners need dietary advice

Box 7

In the light of these difficulties and in view of the previously reported problems, the local hospital diabetologist began a fortnightly small diabetic clinic in Walton Prison, Liverpool. During a two-year period, 42 male diabetic prisoners, of whom 23 had insulin-dependent diabetes, were assessed. The diabetic metabolic control of these prisoners was significantly improved after several months in prison and during this time there were no troublesome acute hypo- or hyperglycaemic problems.¹⁴ From this study it can be concluded that good diabetic metabolic control can be attained in prison, probably due to the rigid dietary regimen, no alcohol and compliance with treatment (box 4). Many of the younger men had defaulted from their home diabetic clinics and imprisonment allowed screening for diabetic complications and reassessment of treatment.

Modern diabetes care is today delivered by a team of complementary health professionals. Clearly the consultant diabetologist is important but is ineffective without the help of diabetes specialist nurses, dieticians, chiropodists and specialist ophthalmological help. In prison there are traditional and easy routes of referral to chiropodists and opticians but no set pathway exists for specialist nurses or dietitians. The absence of dietetic advice is a problem, frequently perceived by prisoners and their relatives. Clearly the 'diabetes care team' must be readily available to prisoners and recommendations are given in box 5.

APPLICATION OF MODERN DIABETES MANAGEMENT STRATEGIES

In large prisons it should be possible to arrange a visiting diabetes team, although in smaller institutions the 'outside clinic visit' may still be necessary. Because many new prisoners have had chaotic lifestyles and have often attended their diabetic clinics poorly, all new diabetic patients should ideally be fully assessed by the team. Subsequent care depends on sentence length and the facilities and staffing of the prison. In larger establishments an interested prison medical officer could develop a diabetes 'mini-clinic' in prison if a diabetes specialist is not visiting. Recommendations regarding prison diabetes management strategies are listed in box 6.

IMPROVED AND SIMPLIFIED DIETARY PROVISION

Food has social as well as nutritional importance and in the tedious routine of prison life it assumes major importance. It is not surprising, therefore, that the prison diet is the major source of diabetes-related complaints. Unfortunately prison catering officers have a difficult task with very tight budgets and imaginative menus are genuinely difficult. The timing of meals presents difficulties for diabetic prisoners on twice daily insulin regimes. The timing of the main meals (breakfast 08.00, dinner 11.45 and tea 16.30) can lead to a 16-hour gap between 'evening' and morning insulins. In this situation insulin 'run out' can occur during the night with rising blood sugars in the early hours of the morning.

With regard to dietary content, the availability of sugar-free alternatives can be a major problem with porridge and puddings coming already sweetened. Some prisons provide 'diabetic products' (eg, jams, marmalades) and often 'extra rations' (eg, double meat portions, a pint of full cream milk daily). These are dietetically unsound and are economically wasteful. Most insulin-treated prisoners are provided with some form of easily absorbed carbohydrate for self-treatment of hypoglycaemic attacks, particularly important during prolonged periods of 'lock-up'. This practice should be extended to those taking sulphonylurea drugs. A summary of recommendations for diet and avoidance of hypoglycaemia is given in box 7.

ORGANISED EDUCATION OF STAFF AND DIABETIC PRISONERS

Education in diabetes care is widely accepted to be of major importance in achieving self-reliance, optimal glycaemic control and improved quality of life. Diabetes specialist nurses have counselling and supportive skills as well as considerable diabetes expertise and educational experience. Their advice would give prisoners greatly increased confidence in their care and they could advise prison staff on a wide variety of management-related problems. Much of the outmoded diabetes practice in British prisons is due to lack of updated information over the last 10 or 20 years and specialist nurses have a clear role here. Box 8 summarises educational recommendations.

Conclusions

The prison healthcare service works under great pressure and difficulties and is undergoing major central and local reorganisation. It is clear that providing ideal healthcare to people in custody is a daunting and complex task in view of the physical and psychological constraints of imprisonment. Doctors in the prison

British Diabetic Association recommendations

Organised education of staff and diabetic prisoners:

- local diabetes specialist nurse should be used for education of diabetic prisoners and prison staff
- increased diabetic input in to hospital officer and medical officer training courses

Box 8

health service deal with a large and ever-changing population, often with mental and physical disorders, who are frequently manipulative. Local hospital specialists and junior hospital doctors in training should be aware of these problems when called upon to assist in the healthcare of prisoners as should general practitioners when prisoners are released. With close liaison between the prison and the local diabetes care team it should be possible to provide the basics of modern diabetes management. Clearly if a crime is punished by a prison sentence then the cessation of reasonable diabetes care should not be added to the loss of liberty, as this is a denial of basic human rights. Implementation of the British Diabetic Association recommendations would not be especially costly. The main additional expenditure would be regular (perhaps monthly) sessions from local dietitians and diabetes specialist nurses from provider NHS units. The experience from Liverpool has shown that there are great benefits from a specialist-led service in terms of improved glycaemic control and a reduced incidence of metabolic decompensation. The current prison diet may be imperfect but its regularity and lack of alcohol undoubtedly aids diabetic control. Also, because many prisoners have had erratic lifestyles, the period of imprisonment can ensure reassessment of diabetic treatment regimens, screening for complications and healthcare education. The American Diabetes Association has described similar problems to those described here in US penal institutions.¹⁵

I thank Dr Geoff Gill, Consultant Physician, the Diabetes Centre, Walton Hospital, Liverpool, Dr Norman Tucker, HM Prison Health Care Service, and Dr Mary Piper, Department of Public Health, Kensington, Chelsea and Westminster Health Authority, for helpful discussions.

- 1 Smith R. *Prison health care*. London: BMJ Publishing Group, 1984.
- 2 *Prison health*. Report of the Director of Health Care. HM Prison Service, 1995.
- 3 Piper M. Male prisoners in custody: what are their secondary health care needs? How should these needs be met? London School of Hygiene & Tropical Medicine, MSc Thesis, 1993.
- 4 Leading article. The future of the prison medical service. *Lancet* 1985; 2: 755–6.
- 5 Smith R. The physical health of prisoners. *BMJ* 1984; 288: 129–32.
- 6 Glaser JB, Greifinger RB. Correctional health care: a public health opportunity. *Ann Intern Med* 1993; 118: 139–45.
- 7 Gunn J, Fenton G. Epilepsy in prison: a diagnostic survey. *BMJ* 1969; iv: 326–9.
- 8 Colsher PL, Wallace RB, Loeffelholz PL, Sales M. Health status of older male prisoners: a comprehensive survey. *Am J Public Health*, 1992; 82: 881–4.
- 9 Clavel F, Benhamou S, Flamant R. Decreased mortality among male prisoners. *Lancet* 1987; 2: 1012–4.
- 10 Salive ME, Smith GS, Fordham Brewer T. Death in prison: changing mortality among male prisoners 1979–87. *Am J Public Health* 1990; 80: 1479–80.
- 11 Gill GV, MacFarlane IA. Problems of diabetes in prison. *BMJ* 1989; 298: 221–3.
- 12 Keller AS, Link N, Bickell NA, Charap MH, Kalet AL, Schwartz MD. Diabetic ketoacidosis in prisoners without access to insulin. *JAMA* 1993; 269: 619–21.
- 13 Gill GV, MacFarlane IA, Tucker N. Diabetes care in British prisons: existing problems and potential solutions. *Diabetic Med* 1992; 9: 109–13.
- 14 MacFarlane IA, Gill GV, Masson E, Tucker NH. Diabetes in prison: can good diabetic care be achieved? *BMJ* 1992; 304: 152–5.
- 15 American Diabetes Association. Position statement-management of diabetes in correctional institutions. *Diabetes Care* 1989; 12: 505.