A nurse-led diabetes clinic in a prison setting

Kathryn Leivesley, Denise Booth

Article points

1. The diabetes service in HMP Manchester is staffed by a practice nurse and a diabetes specalist nurse, both of whom are nurse prescribers.
2. Prison populations are transient and keeping good records of clinical markers, and encouraging follow-up on release, are difficult.
3. The lack of appropraite diabetes patient education, and problems with nutrition, are two key areas that need improvement in the prison setting.

Key words

- Diabetes service development
- Nurse-led clinic
- Prison health care

Kathryn Leivesley is a Community Diabetes Specialist Nurse, Manchester PCT, Manchester. Denise Booth is a Practice Nurse with a Special Interest in Diabetes, Healthcare Centre HMP Manchester, Manchester.

The prison setting has been associated with a range of diabetes care deficiencies. People with diabetes in prisons experience their condition under unique circumstances that can result in barriers to good glycaemic control. The authors provide diabetes care for inmates at Her Majesty's Prison Manchester. Here, they reflect on the diabetes care provided at their institution and outline plans for service improvement.

Care of people with diabetes, or any other long-term condition, in prison should be no different to the provision of this service in any other sector of the community. However, there are inevitable difficulties in providing health care to a prison population. In terms of diabetes care, there are barriers to good glycaemic control as a result of the setting (Edwards, 2005).

Between 2000 and 2005, three important publications shed light on, and suggested service improvements for, diabetes care in prisons. In 2000, Marshall et al published an independent needs assessment that had been jointly commissioned by the Department of Health and the Directorate of Health Care in the Prison Service. In 2005, Diabetes UK issued a position statement on diabetes care in prisons that highlighted the difficulty of managing diabetes successfully in institutional settings. In the same year, Cornford et al (2005) published a survey of the delivery of health care in prisons for people with chronic conditions that proved to be a useful benchmark against which to evaluate prison diabetes services.

The authors provide diabetes care at Her Majesty's Prison (HMP) Manchester and in this article they review the service. The discussion centres on the key areas identified by Marshall et al (2001) in their needs assessment of prison populations with diabetes:

- The type of prison setting.
- Incidence of diabetes in the prison population.
- The health services in place to provide care for this group.
- The additions to the services that are required to best meet the needs of people in prison with diabetes.
- How change could be implemented to improve the prison diabetes service.
- The ongoing monitoring and evaluation of that service to ensure quality outcomes.

Setting

HMP Manchester (*Figure 1*), previously Strangeways Prison, opened in June 1868 to replace a smaller prison in the neighbouring city of Salford. The prison initially housed prisoners of both sexes, with female prisoners ceasing to be taken in 1963. The suffragette Christabel Pankhurst was a prisoner there in 1906.

The events of the 25-day siege that took place at the prison in 1990 are well

documented. Prisoners protested poor conditions in the prison, following which Strangeways Prison underwent extensive refurbishment and reopened as HMP Manchester in 1994.

HMP Manchester has single and double cells and an operational capacity of 1269 prisoners. In 2003, a high security classification was awarded (HMP Service, 2009).

Incidence of diabetes in prisons

As a general rule, prison populations tend to be young and have a high turnover. About 60% of prisoners in the UK are under 30 years old, and Marshall et al (2000) estimated that 0.6–0.8% of prisoners in the UK have diabetes. The same authors also found that diabetes is 2–8 times more common in prison populations than in the community. More recently in the US, the American Diabetes Association (ADA, 2008) reported a 4.8% prevalence of diabetes in prison settings.

At HMP Manchester, at the time of writing, 29 prisoners had diagnosed diabetes (type 1 *n*=2; type 2 *n*=27). The number of prisoners with diabetes fluctuates, but 25–30 prisoners with diabetes at any given time is usual at this facility. The total prison population fluctuates weekly, but is usually close to full operational capacity (*n*=1269), giving an estimated diabetes prevalence of 2.3% at HMP Manchester (0.2% type 1; 2.1% type 2) for the figures given above.

Health services in place for prisoners with diabetes

All UK prisons have some healthcare facilities and professionals onsite; these may include pharmacies, nurses and GPs (Triggle, 2006). In April 2006, responsibility for medical care in prisons in England and Wales was transferred from the Home Office to the NHS, with local PCTs taking responsibility for the provision care (Triggle, 2006).

Gill et al (1992) found some specialist clinicians visited prisons, while others transported prisoners to local clinics or hospitals for treatment. Gill et al (1992) concluded that transportation of prisoners for offsite medical care was time-consuming and required security arrangements, which often resulted in cancelled appointments or the avoidance of appointments being set up at all.

At HMP Manchester, the onsite medical facilities comprise a full nursing team, a full-time GP, additional part-time GPs, and a full-time pharmacist.

Identification of prisoners with diabetes

Each prisoner coming through the reception process at HMP Manchester is seen by a member of the prison's healthcare staff, either a registered general nurse or a registered mental health nurse. A GP is also present if required.

There are set reception screening protocols that include investigation for long-term conditions, such as asthma, diabetes or cardiovascular problems. These are primarily determined by patient self-report and follow-up testing, and community medical records are accessed when possible. Prisoners seen by the prison's medical staff during the reception process who have not been diagnosed with diabetes but are at high risk (i.e. family history, obese, symptomatic) are screened. If prisoners do have a long-term condition they are seen within 2–3 days of entering the prison community by the appropriate specialist nurse.

For those with diabetes, the practice nurse with a special interest in diabetes counducts a full review on first referal, including blood profiles. Once weekly, a joint nurse-led diabetes clinic is run at HMP Manchester. During this clinic, the community diabetes specialist nurse sees the more complex cases

Figure 1. Her Majesty's Prison Manchester.

Page points

1. Prison populations tend to be young and have a high turnover.
2. Usually, some 2.0–2.4% of the prison population of Her Majesty's Prison Manchester have diabetes.
3. Prisoners seen by the prison's medical staff during the reception process who have not been diagnosed with diabetes but are at high risk are screened.
4. If prisoners do have a long-term condition they are seen within 2–3 days of entering the prison community by the appropriate specialist nurse.

Page points

1. The community diabetes specialist nurse sees the more complex cases and those with very poor glycaemic control in conjunction with the practice nurse.
2. Personalised glycaemic targets are set by the nurses in conjunction with the prisoner.
3. The preference of the clinic staff is to have patients self-medicate and have control over their condition.
4. Referrals to other onsite healthcare services, or for other diabetes services, are addressed by the practice nurse.

and those with very poor glycaemic control in conjunction with the practice nurse. Personalised glycaemic targets are set by the nurses and the prisoner. Blood pressure and lipid management are also undertaken. Prisoners are followed-up 2 weeks after initiation of a new drug regimen.

Ongoing care of prisoners with diabetes

Once a drug regimen is set, those who are deemed to have the capacity to self-administer medications have them in their possession. The preference of the clinic staff is to have prisoners self-medicate and have control over their condition. Where it is inappropriate that a prisoner be responsible for their own drug administration, medications and medical devices (i.e. insulin pens and needles) are issued by the onsite pharmacy at hatches on each prison wing and are taken under supervision. Prisoners are encouraged by the clinic staff to maintain a glucose diary using finger-stick devices and to keep a food diary.

The structure of a usual diabetes clinic appointment in the prison is:

- Review and discussion of the prisoner's blood glucose diary (if kept, if brought to the clinic appointment).
- Review and discussion of the prisoner's food diary (if kept, if brought to the clinic appointment).
- Inspection of insulin injection sites (for those on insulin).
- Discussion of medication compliance (are they remembering to take their medication? are they experiencing any problems or side effects?).

At each appointment, prisoners are asked about how they are feeling in general and if they have any concerns that need to be addressed.

Appointments take place as and when needed. Appointments are ongoing where necessary, or prisoners can request appointments, or the nurses may request an appointment following feedback from HMP Manchester prison officers that an adverse diabetes related event has occurred. Prisoners are reminded of clinic appointments in writing on the day they are being seen.

HbA_{1c} tests taken in HMP Manchester are processed by the local hospital laboratory and the results are reported back via an electronic system. HbA_{1c} levels are tested for at the first diabetes clinic visit and 3–6 monthly thereafter, depending on response. The average HbA_{1c} reduction seen among prisoners is 1% (10.9 mmol/mol) after 3 months of nurse input, although better individual results have been achieved. As prison populations are transient and prisoners may leave the prison community before a follow-up HbA_{1c} is taken, it is challenging to keep good data on achievements in glycaemic control in this setting.

Annual diabetes review for prisoners

Annual diabetes reviews are conducted at HMP Manchester. Blood pressure, HbA_{1c}, height and weight are recorded. Blood samples for HbA_{1c}, and urine samples for early morning albumin : creatinine ratio, are taken and sent for laboratory analysis. Eye examinations are also conducted.

Prisoner access to allied health services

Referrals to other onsite healthcare services, or for other diabetes services, are addressed by the practice nurse. Other services provided for prisoners with diabetes at HMP Manchester are sessional onsite podiatry and ophthalmology, and a dietician who is invited as needed.

Data collection and management

HMP Manchester is paper light, although only one in ten prisons in the UK use this method (Cornford et al, 2005). Consultation notes are recorded using the Emis system. Changes to a prisoner's drug regimen by the diabetes clinic nurses are reported electronically to the prison's onsite medical ward when that prisoner is concurrently an inpatient of the ward.

The community diabetes specialist nurse also keeps a paper record of consultation notes, which are entered onto the PCT database, Lorenzo, for the purposes of Quality Outcomes Framework (QOF) data collection.

Nutrition

Guidelines produced on diabetes care in prisons by the ADA (2008) and Macfarlane (1996) suggest that meal times should be coordinated with drug regimens to reduce the risk of hypoglycaemia. However, flexibility in meal times in a prison setting is difficult to achieve. Furthermore, Macfarlane (1996) rightly describes food as having social, as well as nutritional, value, with meal times breaking up the monotony of prison life.

Both high-fat foods (e.g. pies, chips) and healthy options are on offer by HMP Manchester's catering services. The food choices made by prisoners is governed largely by individuals' perceptions of healthy choices and what kind of diet they had before they joined the prison community. The diabetes clinic staff provide dietary advice and education on appropriate choices.

HMP Manchester prisoners with diabetes are provided with a "diabetic pack" at night. This is provided in case of a hypoglycaemic event. Discussions with prisoners with diabetes suggest that these packs are eaten every night, regardless of whether hypoglycaemic symptoms are experienced.

Further to the main meals provided by the prison, snack food can be bought by prisoners at their own expense. The items regularly bought are biscuits and full sugared drinks.

Diabetes education

Prisoner patient education

Macfarlane (1996) says education is a major factor in achieving self-management and optimal glycaemic control for a better quality of life. The ADA (2008) acknowledges that the unique circumstances of prisoners with diabetes need to be considered when designing and delivering patient education. Prisoners tend to have low levels of education and poor literacy skills (Marshall et al, 2000).

Structured patient education at HMP Manchester is currently provided on a one-to-one basis by the diabetes clinic staff to cover the areas suggested by the Department of Health and Diabetes UK (2005).

Prison staff education

The ADA (2008) suggests that diabetes training for healthcare staff should be at least biannual, and Edwards (2005) recommends training on commencement of employment and with annual updates thereafter. Gill et al (1992) felt that diabetes education for prison staff was lacking and that their practices were out of date. At HMP Manchester, a session on glucose monitoring for prison staff – both medical and prison officers – has been held and will continue to be delivered on a 3–6 monthly rolling basis. HMP Manchester has a centre for staff education located close to the prison.

Transfer to community diabetes care on release

Prisoners usually have a poor history of attendance to community clinics prior to joining the prison community, especially the younger ones (Cornford et al, 2005). On release, the patient is provided with a letter to give to their GP, with details of the care given while in prison.

Service development and implementation of change in the prison setting

Prisons should be able to provide opportunities to improve physical and mental health (Reed, 2003). Having completed this review of the diabetes service at HMP Manchester, the authors have identified the below areas as needing improvement to achieve better healthcare outcomes for prisoners with diabetes.

Laboratory access

Blood and urine tests taken in HMP Manchester are processed by the local hospital laboratory and the results are reported back by an electronic system. The hospital laboratory only processes HbA_{1c} samples once per week. This system often leads to delays in receiving the results. In the prison setting, where turnover is high, this delay in results can mean not having a prisoner's results back before release.

Page points

1. The food choices made by prisoners is governed largely by individuals' perceptions of healthy choices and what kind of diet they had before they joined the prison community
2. Structured patient education at Her Majesty's Prison Manchester is currently provided on a one-to-one basis by the diabetes clinic staff.
3. On release, the patient is provided with a letter to give to their GP, with details of the care given while in prison.

Page points

1. To further improve the diet of prisoners with diabetes, the diabetes clinic staff, with support from the PCT, have made contact with the prison catering services and a meeting between the two parties is planned
2. Diabetes clinic staff have been, or are being, trained in the use of an education method called conversation mapping. Conversation mapping is a visual education tool that allows patient participation but does not rely on literacy skills, which are frequently poor in prison populations
3. Both nurses who provide diabetes care are nurse prescribers, which reduces waiting times for medication to be initiated.
4. Well controlled HbA_{1c} is a usual measure of good diabetes care, however the transient nature of prison populations makes follow-up of clincial indicators difficult.

Nutrition

Both high-fat foods and healthy options are on offer by HMP Manchester's catering services. The diabetes clinic staff provide dietary advice and education on appropriate choices. To further improve the diet of prisoners with diabetes, the diabetes clinic staff, with support from the PCT, have made contact with the prison catering services and a meeting between the two parties is planned. Menu options will be discussed, as will improvements to the content of the "diabetic pack".

Diabetes education

Prisoner patient education

Currently, patient education is provided on a one-to-one basis by the diabetes clinic staff. This method can be time-consuming and does not allow for peer support. Diabetes clinic staff have been, or are being, trained in the use of an education method called conversation mapping. Conversation mapping is a visual education tool that allows patient participation but does not rely on literacy skills, which are frequently poor in prison populations (Marshall et al, 2000). Using this method, group education sessions can be mediated by a single diabetes clinic staff member.

Prison staff education

At HMP Manchester, a session on glucose monitoring for prison staff has been held and will be maintained. Sessions on other diabetes-related issues, including hypoglycaemic events and injection technique, are being delivered in the near future. These sessions will be delivered by the prison's diabetes specialist nurse, and invited relevant speakers.

Reed and Lyne (1997) found healthcare staff in prisons where inadequately qualified and had few opportunities for professional development. The authors have not found this to be the case for the diabetes clinic staff at HMP Manchester. The prison practice nurse with a special interest in diabetes has attended several continuing professional development courses and has been trained to initiate insulin. Both nurses who provide diabetes care are nurse prescribers, which reduces waiting times for medication to be initiated.

Monitoring and evaluation

The diabetes nurses of HMP Manchester continue to reflect on the diabetes service, and on how it might be improved. However, the success or otherwise of the service needs to be measured in a quantifiable way.

One method is the monitoring of HbA_{1c} levels and other clinical indicators to assess the quality of diabetes care being received by prisoners. HbA_{1c} is the usual measure, and is a primary concern in QOF targets. However, the transient nature of prison populations makes follow-up of clinical indicators difficult.

Verbal feedback on the prison diabetes service is received from prisoners, and is usually positive. The authors are conscious that the patient feedback process needs to be formalised and this will be worked towards in the future. Given low levels of literacy in prison populations, written questionnaires may be inappropriate.

Formal feedback from prison staff also needs to be sought. Questionnaires assessing the education and training that staff have received, as well as their perceptions of the care provided to prisoners by the diabetes service, need to be developed and implemented in the future.

Conclusion

The role of the healthcare professional in a prison can be a difficult one. It can be hard to build trusting clinician–patient relationships where good health outcomes are achievable, but prisoners may be using their condition to manipulate their circumstances in the prison (Pettinari, 1996).

From reading Marshall et al (2000) and Cornford et al (2005), the diabetes service provided by HMP Manchester reviewed here achieves a good standard. A particular strength is the nurse-led diabetes clinics. These clinics allow the nurses to learn from each other, and continuing professional development also increases the diabetes care skills within the prison.

Where there are gaps or insufficiences in the HMP Manchester diabetes service, steps have been taken to make improvements. Continual review is necessary to assess the strengths and weaknesses of services. The authors plan to keep reflecting on the performance of the service over time. ■

American Diabetes Association (2008) Diabetes management in correctional institutions. *Diabetes Care* **31** (Suppl 1): S87–S93

Cornford C, Sibbald B, Baer L et al (2005) *A Survey of the Delivery of Health Care in Prisons in Relation to Chronic Diseases*. NHS Network, London

Department of Health, Diabetes UK (2005) *Structured Education in Diabetes*. DH, London

Diabetes UK (2005) *Prison Statement. Prisons – Care of People with Diabetes*. Diabetes UK, London

Edwards L (2005) Managing diabetes in correctional facilities. *Diabetes Spectrum* **18**: 146–51

Gill GV, Macfarlane IA, Tucker N (1992) Diabetes care in British prisons: existing problems and potential solutions. *Diabet Med* **9**: 109–13

Her Majesty's Prison Service (2009) *Manchester information*. Available at: http://tinyurl.com/6arqjl (accessed 14.11.09)

Macfarlane IA (1996) The development of healthcare services for diabetic prisoners. *Postgrad Med J* **72**: 214–17

Marshall T, Simpson S, Stevens A (2000) *Health Care in Prisons: A Health Care Needs Assessment*. University of Birmingham, Birmingham

Marshall T, Simpson S, Stevens A (2001) Health care needs assessment in prisons: a toolkit. *J Public Health Med* **23**: 198–204

Pettinari CJ (1996) *The Perception, Presentation and Assessment of Illness in Prison: a Pilot Study. Report to the Prison Service Directorate of Health Care*. Centre for Work, Interaction and Technology, School of Social Studies, University of Nottingham, Nottingham

Reed J, Lyne M (1997) The quality of health care in prison: results of a year's programme of semistructured inspections. *BMJ* **315**: 1420–4

Reed J (2003) Mental health care in prisons. *Br J Psychiatry* **182**: 287–8

Triggle N (2006) *The Challenge Providing NHS Care in Prison*. BBC News. Available at: http://tinyurl.com/ojefk (accessed 12.11.09)

"Where there are gaps or insufficiences in the HMP Manchester diabetes service, steps have been taken to make improvements. Continual review is necessary to assess the strengths and weaknesses of services."