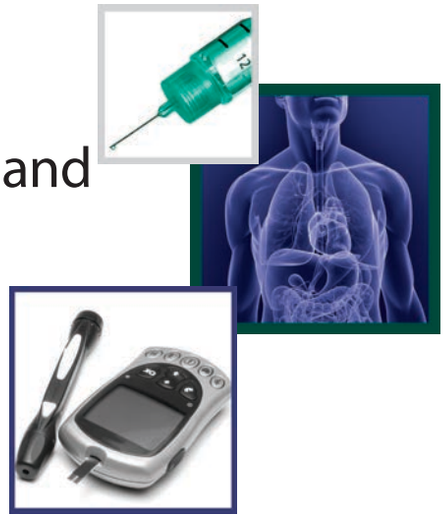
POLICY PERSPECTIVE

Break down these walls: diabetes care and management in a prison environment



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Practice Points

- Diabetes management in prison should include greater prisoner empowerment, improved dietary screening and improved blood glucose monitoring.
- Diabetes education in prison should involve better education of prison staff regarding diabetes and hypoglycemia.
- Diabetes education programs should be made available for all prisoners with diabetes.
- Diabetes prevention care should include more exercise, better dietary options, and in-house screening of eyes, feet, diet and diabetes treatment.

SUMMARY Diabetes affects many people within a multitude of environments. Prison is one such environment, and currently the care and management of prisoners with a diagnosis of diabetes is very variable and needs to be reviewed in order to enable gold standards of care within this patient group. This paper highlights the strengths and weaknesses of current diabetes care in this population, and identifies recommendations for current clinical practices regarding the care and management of prisoners with a diabetes diagnosis. This paper is related to the UK, but it could be anticipated that some of the issues and the potential care recommendations could arise and be applied worldwide.

Diabetes is one of the greatest health challenges in our society and is currently encountered throughout the world [1]. It affects all people, regardless of age, gender and ethnic origin, and the prison environment is, therefore, an environment in which diabetes will be identified as a health issue as it is in wider society.

It has been clearly identified that there are a number of possible reasons why the management and implementation of high-quality care to persons within a prison setting is difficult [2]. This group of people within this specific setting raise many care challenges. It is clearly a challenging environment to work in, with multiple conundrums for the healthcare professionals within it. Historically, healthcare has been inferior in prisons, and this has led to the implementation of the current practice within the UK National Health Service (NHS). Shortcomings in healthcare amenities have been identified specifically with reference to chronic diseases such as diabetes [3]. An audit of care was commenced in 2009 [4] in response to problems that were identified in this sector [5] and the results were reported in 2011 [6,7]. The Booles and Clawson audit requested that all UK prisons complete an online questionnaire regarding the care and management of prisoners with a diabetes diagnosis. There was a 28% response rate, and the reasons given for this lower than expected response rate were security concerns and the lack of a member of prison staff who is directly responsible for

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this care area, meaning that no one could answer the questionnaire request [6]. From the responses received within the UK, it was identified that a wide variety of strengths and weaknesses exist in specific care for prisoners with a diabetes diagnosis [6,7], and potential care recommendations were identified that would move care forward in a positive manner within this setting in the UK [7].

It was deemed very important that the range and type of care services offered to prisoners with diabetes within a secure setting needed to be assessed and evaluated in order to identify how the care and management of prisoners with a diabetes diagnosis could be enhanced and strengthened.

There are currently 90 prisons in the UK with an approximate yearly population of 90,000, of which 6% have a known diabetes diagnosis [8]. It had been highlighted by Read and Lynne as far back as 1997 that the provision of healthcare within a prison setting was suboptimal [9] and, now, over a decade later, this is still the normal picture. Therefore, specific care for prisoners with a diabetes diagnosis is not as good as it should be, a point that was made by Booles [7] and Nagi *et al.* [10]. The prison environment must be seen as an opportunity for prisoners to access healthcare and education to improve their quality of life, which for prisoners with a diabetes diagnosis will clearly be seen as a great step forward and will have a real positive impact on diabetes care and management.

In 2013, Diabetes UK identified that there were approximately 3 million people living with diabetes in the UK and that it was expected that this figure would rise to approximately 5 million within the next 20 years [11]. The characteristics of prisoners are similar to those in wider society except that they have either committed a crime resulting in a period of imprisonment or were awaiting court decision while on custodial remand [12]. Therefore, the number of persons with diabetes is proportionate in prisons to the number in the wider population. The National Services Framework for Diabetes identified that all individuals with a diagnosis of diabetes need to be cared for and managed on the basis of 12 standards that they have identified; standard 4 identifies prison and diabetes clearly as an area that needs to be focused on [13,14].

Unfortunately, in 2013, like many areas related to the set standards for diabetes, there are still many gaps in both care provision and management of diabetes in the prison setting, and these need to be reviewed and responded to for the benefit of prisoners with a diabetes diagnosis. Their prison sentence is for a crime or potential crime, and they should not have to suffer another sentence in reference to their personal health while in prison as a result of poor-quality diabetic care and management that may result in potential future long-term diabetic complications.

The audit by Booles and Clawson has highlighted a number of areas in particular that were believed to be weaknesses in care, such as a lack of individual care planning management in terms of prisoners' diabetes, and inadequate dietary management and support, including the absence of correct dietetic assessment on arrival at the prison [6]. In addition, the poor management of hypoglycemic events or diabetic ketoacidosis events is due to a lack of understanding and knowledge in prisoners and prison staff, as well as the lack of knowledge of how to respond to these events and how they can be prevented. An improvement in blood glucose monitoring is also needed, and it should be carried out as required on an individual basis for individual assessment rather than just before meals and at night before sleep. There was a lack of specialist health support for diabetic prisoners, because no services were provided within the prisons, meaning that they had to go out to hospital clinics if there were problems. Furthermore, the amount of health education, such as for foot care, eye screening and the importance of exercise, was very limited, and did not meet the required government targets of annual screening of both feet and eyes for all persons with a diabetes diagnosis. Those in prisons were often forgotten about because local services did not know that there were diabetics requiring support in their prisons, demonstrating a clear communication disparity/breakdown. The above issues were also identified by Nagi and colleagues in a survey on diabetes care in prisons [10].

Thus, it has clearly been identified by Booles [7], Nagi *et al.* [10] and, more recently, Mills [15] that the care needs of this vulnerable group of diabetic patients in the prison setting should be reviewed, discussed and analyzed, and the potential care recommendations put forward could be implemented within the UK. It has been identified in the work of both Nagi *et al.* [10] and Mills [15] that redesigning the care process within a prison setting for those prisoners with a clinical diagnosis of diabetes would mean health

improvements in these prisoners that may also have an impact on their psychological and social wellbeing – if they feel that their health is better this should affect how they perceive both themselves and their surroundings, and could potentially result in a lower likelihood of reoffending for some of these persons.

The healthcare redesign process seen in the work of Nagi *et al.* had a clear impact not only on the prisoners with a diabetes diagnosis, but also on the team who were part of their care, such as healthcare workers, social workers and prison staff, as well as making the atmosphere in the prison setting more positive [10]. This could have a positive role model effect owing to staff responses, which could potentially impact on the health and wellbeing of other prisoners, resulting in a positive care model with holistic and individualistic effects, as well as a potentially psychologically uplifting effect on all of those in detention.

We need to 'break down the walls', as was described and identified by Booles and Clawson when they undertook their audit of care for persons with a diabetes diagnosis in the prison environment [4,6]. Their audit showed that diabetes care was identified as not being as good as it should be by clinical staff in prisons within Scotland in 2009 [101], which resulted in this work being undertaken. These finding were disappointing because it was clearly identified in the original National Service Framework: Standards for Diabetes that this is one of the 'hard to reach' groups with diabetes that needs support and guidance with their personal health [14].

If this group could receive greater support and guidance, they could become more attuned to their diabetes needs, which would then have a beneficial influence on their long-term health and reduce diabetes-related incidents and long-term complications, such as nephropathy, retinopathy, neuropathy and cardiac/cerebral vascular conditions, resulting in a healthier and longer life span. It could also have a psychological impact by creating a more positive mental health picture that perhaps could also result in fewer further incidents that might cause increased time within a prison setting for them.

Therefore, while in prison we could introduce diabetes education, such as possible Dose Adjustment for Normal Eating (DAFNE) courses for the prisoner with Type 1 diabetes and Diabetes Education and Self Management for Ongoing and Newly Diagnosed (DESMOND) courses for prisoners with Type 2 diabetes covering areas such as dietary education, including carbohydrate counting, blood glucose monitoring, importance of exercise, foot care, eye screening, and specialist practice appointments/review, which could potentially reduce long-term complications, hypoglycemia and diabetic ketoacidosis events, and will, therefore, have a positive physical, psychological and social impact on their lives and behavior. The introduction of diabetes education programs (e.g., DAFNE, DESMOND and X-PERT) to all prisoners with a diabetes diagnosis could result in improved and enhanced diabetes management, resulting in healthier patients with a better quality of life. This will help them directly, and will also have an indirect positive impact on their partners and families, as well as society as a whole, by lowering the likelihood of this population reoffending. Currently, any person held in detention with a diabetes diagnosis should receive an educational booklet developed by Diabetes UK [16] to help them self-manage their own diabetes at this time, but this has limited focus and education needs to be expanded within this setting.

The audit reported by Booles and Clawson clearly highlighted the strengths and weaknesses in reference to clinical care management of those prisoners diagnosed with diabetes, and the importance of sharing good practice activities and reviewing areas in need of development throughout prisons in the UK was highlighted, but what is really interesting to note is that this process did not appear to be strongly experienced within this sector [6]. It could be argued that this is not something that is unique to the prison sector, because the lack of sharing of good practice information is often seen and experienced elsewhere within the healthcare sector. So why does this happen? Is this something to do with this activity not being encouraged? Do people fear sharing their knowledge because it may not be accepted? Do people not want to share what they do well as it may not be accepted? Do people not want to criticize others' ideas of correct practice? How can we change the attitudes of professionals so that they are willing to share and accept others' opinions to improve what they do in their area of practice?

Good examples of this have been identified by Nagi *et al.* at HMP Wakefield (UK) [10]

and Mills at HMP Risley (Warrington, UK) [15], and police custody practice in Lothian and the Borders (UK) [101]. These centers are implementing some good ideas, such as support groups for prisoners with a diabetes diagnosis, creation of a register to be held in the prison containing a list of all persons with a diabetes diagnosis, and the provision of blood glucose meters for all prisoners with diabetes. However, as identified previously, there appears to be a clear reluctance to share and divulge information to other prisons, even within their locality, regarding their different approaches to diabetes care and management. To a nonmember of this prison environment, it appears to be 'a closed society', with a lack of openness and communication [6,7].

There are particular challenges within a prison environment in reference to diabetes:

- Prisoners with a diabetes diagnosis are not being managed by their normal diabetes care team and general practitioner, and it is difficult to access specific diabetes information for each individual prisoner with a diabetes diagnosis;
- There is a lack of care continuity and variations in healthcare provision between prisons, resulting in care failures in diabetes management;
- Prisoners with a diabetes diagnosis often do not have a key worker for support and guidance;
- There are poor relationships and communication between local diabetes services and prison general practitioners, causing the specific care and management of prisoners with a diabetes diagnosis to not be up to the standards identified in the Diabetes National Service Framework [14];
- There is poor communication within the prison setting itself between healthcare staff and prison officers, resulting in poor knowledge sharing and staff training on specific care issues, such as the care and management of prisoners with a diabetes diagnosis, particularly regarding hypoglycemia, blood glucose monitoring, dietary management, exercise and treatment strategies used;
- Prisoner movements are frequent, such as to court and between prisons, which results in both missed medication and poor diet, causing consequences for the individual prisoner (this also links with the previous points);
- Poor hypoglycemia recognition has been linked to seclusion and segregation for bad behavior in prisoners with a diabetes diagnosis. This acute diabetes emergency can result in uncharacteristic behavior owing to confusion related to low blood glucose levels and can potentially cause violent episodes, and if not treated or managed correctly could result in prisoner death;
- Other drugs used in those with diabetes, such as antipsychotics and steroids, can cause blood glucose levels to either increase or decrease with resultant care consequences for the prisoner;
- Prisoners can use insulin, by taking an overdose or by refusing to take their medication, to manipulate prison and healthcare staff within this setting.

So how can the care and management of prisoners with a diabetes diagnosis be improved and strengthened for their direct benefit, and also have an indirect effect on their fellow prisoners, the prison staff and have a long-term effect on their family, friends and society as a whole once they are released back into society? Booles recognized a variety of achievable strategies that can result in a positive effect on the specific care needs of a prisoner with a diabetes diagnosis [2]. Some of these recommendations are now being implemented in some specific prisons within the UK, including HMP Wakefield [10] and HMP Risley [15].

These examples of positive care changes should now be divulged and shared throughout this sector. These examples that have been identified by Booles and Clawson [4] and Booles [7] can be beacons of light to shine a way through the darkness. This would have a direct and positive impact on the life of a prisoner with a diabetes diagnosis, affecting both their life in prison and subsequently following their release.

The suggested recommendations identified below could be potentially implemented in all prisons and detention environments by prison officers and healthcare staff. These recommendations are based on current good practices happening within UK prisons, as well as strategies identified by research and practices shared among staff currently working within the prison environment. This process has already started to happen in some specific prisons within the UK [10,15], but these practices and recommendations need to be shared throughout the UK:

- Policies and procedures for diabetes care are required in all custodial premises. These must follow the NICE guidelines [17];
- Every prison should have a register of all patients with diabetes that all staff are aware of, thus enabling these prisoners to receive quality care. This could also aid the process of information transfer when prisoners move prisons because delayed information sharing can have serious health consequences for the prisoner with a diabetes diagnosis. This has been implemented by Nagi *et al.* [10];
- A standardized approach to screening all prisoners with a diabetes diagnosis on arrival at any prison including information on treatment pathway, diet, blood glucose monitoring process, hypoglycemia recognition and management. This screening process should be led by a knowledgeable practitioner at the prison;
- Dietary assessment should be carried out on the prisoner's arrival at prison so the process of management of this aspect of diabetes care can be initiated straight away to ensure diabetic control is maintained. This will clearly reduce hypoglycemia and diabetic ketoacidosis/hyperglycemia events for the individual prisoner with a diabetes diagnosis. This assessment must be carried out by a knowledgeable practitioner at the prison. This is an area of practice that was the reasoning behind the original work of Booles and Clawson [4], and diet is still identified in this environment as being difficult to manage and often the basis is linked to funding;
- The review of prisoners in terms of their diabetes should be in line with that of general practice and acute hospital care. They should be seen and reviewed every 6–12 months as a minimum. This should be done by setting up an in-reaching clinic within the prison during which a diabetologist, specialist nurse, dietician, retinopathy nurse assessor, podiatrist and diabetes educater work together over a morning or afternoon. This will be most effective because more people with a diabetes diagnosis can be seen, a set diabetic education program can be started and it saves money owing to reduced security risks and fewer prison officer manpower hours being lost as the clinic would be held within the prison. This type of program has been seen initiated successfully by Nagi *et al.* [10] and Mills [15];
- Blood glucose monitoring must be patient focused and should be set up on an individualized basis to ensure that the data collected can be used to improve diabetes management and care of each prisoner with a diabetes diagnosis. Each prisoner should have access to their own meter and relevant equipment at all times;
- Retinal screening should be carried out annually as dictated by government health guidelines and, if clinics are set up within prisons, this process can be undertaken during this health review process. This practice is currently happening within prison settings in both south Wales and the southwest of England;
- The management of hypoglycemic events needs to be standardized. All prisoners with a diabetes diagnosis need to be spoken to about their hypoglycemic events, including a discussion of what happens and whether they have any warning signs. This information needs to be written down and made accessible to all staff involved with the diabetic prisoner. It should also be underlined that all staff within the prison setting are given education sessions on hypoglycemia and how it should be managed;
- It is also important to consider whether there is a possible need for some hypoglycemia education for other prisoners, especially those who may be sharing a cell with a prisoner with a diabetes diagnosis to strengthen the management and response to a hypoglycemic event within the prison setting;
- The roles and responsibilities of both the 'clinical lead for diabetes' and 'diabetes specialist nurse' must be identified within the custodial arena. These roles should not be either the same post or carried out by the same person with similar responsibilities, and would be more effective if carried out by different people. This is an idea currently being tested in a number of prisons within the UK [10,15];
- Staff training, especially for prison staff, should be revised and appraised especially in reference to management of hypoglycemic events. It may also be good practice to give all staff a half-day study day on diabetes, including topics such as what it is, how it is treated, managed and cared for, including elements on diet, blood glucose monitoring and exercise;
- All prisoners with a diabetes diagnosis must be given adequate time to exercise each day;

- Education of prisoners needs to be revisited, specifically in the areas of independent care and the recognition of hypoglycemic events. One strategy would be to set up either DAFNE (Type 1 diabetes) or DESMOND (Type 2 diabetes) education programs for small groups of prisoners, or an educational program such as EXPERT (Type 1 and 2 diabetes) for mixed diagnoses groups;
- All staff working in the prison environment should be educated about the dangers of insulin in terms of overdose and treatment refusal, as well the effects that other drugs may have on blood glucose levels;
- All staff should undertake the safe insulin and hypoglycemia e-modules on the NHS Diabetes website [102];
- All prisoners who are going to court or being transferred to another prison should have a dietary and treatment assessment prior to leaving, and both their treatment and diet needs must be sorted out prior to either event;
- A national network should be created throughout all prison settings for healthcare professionals providing diabetes care to prisoners.

If we look at the recent government changes in reference to the Health and Social Care Act 2012 [18], there are key points that could be linked with the recommendations identified. Diabetes care is variable within prisons in the UK, and clearly needs to become less fragmented and incorporate better communication both with local diabetes services in the community and hospitals, as well as sharing good practices seen in prisons such as those that have been identified in both the work of Nagi *et al.* [10] and Mills [15]. This article clearly identifies that the NHS must be responsive to the needs of all patients in whatever environment they live, including prisons. The Care Quality Commission must actively respond to the care inequalities encountered in environments such as prisons. As highlighted in the work of Booles and Clawson [4], Booles [7], the Department of Health [2,13,14], the Royal College of Nursing [5] and NHS Diabetes [19], communication must be strengthened between all organizations to reduce care variability for diabetic prisoners.

As suggested in the Health and Social Care Act, services need to look at the care needs of prisoners with diabetes and revise their practices based on the needs of this population [18]. Prisoners need to have a voice in reference to their care, they are in prison or remand for a reason, but this does not mean that their health should suffer as a result of their care not being of the suggested standard.

By reflecting on and challenging current practices, using innovative methods to meet and understand patient needs, the care of diabetic prisoners can be improved to meet the guidelines suggested by the Health and Social Care Act of 2012 [12].

Improving care in this environment can also have an economic benefit for both services within the NHS and the prison services, as it will potentially result in a financial and workload saving as a result of fewer hospital visits, and, therefore, a less disrupted schedule for the prisoner and prison staff. If all of these recommendations can be brought together, then more prisoners with diabetes would have higher quality care, support and education, there would be fewer security issues, reduced manpower required, and fewer trips out of prison, resulting in potential cost savings.

This article also tried to look at care for prisoners with diabetes from a global perspective, and three specific pieces of research have highlighted similar issues to those encountered in the UK [20–22], but the depth of specific literature is somewhat limited.

If we look at the overall care issues of the disempowerment of prisoners with diabetes, something encountered in the audit of Booles and Clawson [6], the paper by Petit *et al.* based in French prisons highlighted that this was an issue because blood glucose monitoring, treatment management and diabetes control were all taken away from the prisoners, with the consequence being an increased incidence of diabetic events [20]. Petit *et al.* suggested that this could be managed by increasing empowerment of prisoners, increasing knowledge, skills and understanding of the staff caring for and managing this group, and the active integration of all diabetes care, such as medical, nursing and dietetic screening, within the prison environment itself [20].

Two other more specific studies focused on Japanese prisons [21,22]. These studies showed that a healthy high-fiber diet had very beneficial effects on blood glucose levels and reduced treatment needs [22], and that eye screening on a regular basis within the prison setting

dramatically reduced the incidence of blindness and diabetic retinopathy in prisoners with a Type 2 diabetes diagnosis [21]. Both of these points have also been highlighted in the work of Booles and Clawson [4,6], Booles [7] and Nagi *et al.* [10].

Conclusion

In conclusion, it can be seen that the original care audit of Booles and Clawson identified that prison environments were small, unique communities similar to normal society, containing persons with a Type 1 and 2 diabetes diagnosis that require support in the management and care of their condition [6]. This has been recently supported by both the work of Nagi *et al.* [10] and Mills [15], and is now being explored in other prisons within the UK. These prisoners require extensive supervision and advocacy regarding the specific care they require during their time in prison. The audit allowed the appreciation and awareness of the care needs of prisoners with diabetes. This has been further expanded in the recent work of Nagi *et al.* [10] and has been identified as key in the work of Mills [15]. Care in this domain unveils many exclusive challenges for healthcare workers based in this setting.

Considerable responsibility lies with the prison officers who do not possess specialist healthcare knowledge, and may have limited experience and competency, but who play a key role in the care of prisoners with diabetes. It is vital that they are assisted to undertake these roles more effectively by improving communication, relationships and knowledge, and breaking down the walls between prison staff and diabetes care teams outside of the prison environment [4]. All current evidence highlights the significance of excellent cooperation, as well as first-rate dissemination of information between the prisoner, healthcare professionals and prison staff. It is a great tribute to all staff in this setting that this process is now starting to become common practice, but it needs to be further expanded to all prison environments within the UK.

It is really good to see examples of good practice in the care and management of prisoners with a diabetes diagnosis, but the information and skills need to be shared throughout the prison community as soon as possible, and this requires the creation of a nationwide network to allow effective communication.

The original audit highlighted the extensive scope for the advancement of diabetes service within the prison environment [6] and the recent report by NHS Diabetes implied that all diabetic patients in our society deserve a high standard of care, including those in prison [19]. Care must have no walls and the barriers encountered must be overcome in order for effective care to be implemented [4].

This audit [6], as well as current research in other prisons [10,15], has clearly identified that there are both strengths and weaknesses within current practice relating to the care and management of prisoners with a diabetes diagnosis. This audit has resulted in further stimulation and discussion among staff based within the prison sector, which is encouraging them to examine their own current practices in managing this patient group. This exploration can only result in improvements that will have a direct benefit for the prisoner with a diabetes diagnosis.

Improving the overall management of prisoners with a diabetes diagnosis will have a direct impact on their long-term diabetes management, including reducing the incidence of long-term complications later in life, such as retinopathy, peripheral neuropathy and nephropathy, as well as reducing the incidence of cerebral-vascular accidents and myocardial infarctions, both of which are becoming increasingly encountered in hospitals in those with poor diabetes control.

As Booles and Clawson originally stated, diabetes care should never be surrounded by walls or hidden from view [4]. All barriers must be broken down in order for those with diabetes to receive gold-standard care [14]. The recommendations within this article as well as what is currently being seen in practice within some prison environments must be spread throughout all prisons to enable gold-standard care and management for every diabetic prisoner, thus moving towards what was set out in the Department of Health National Service Framework in Diabetes standards in 2001 [14] and particularly standard 4 of the Diabetes National Services Framework document [7].

Clearly, greater prisoner empowerment in respect of diabetes management is essential, and this is linked with better education and, thus, knowledge for both prisoners with diabetes and prison staff who are dealing with prisoners with diabetes. There needs to be a greater emphasis on communication between diabetes services

outside of prison and those within the prison setting, and this process should continue after the release of the prisoner. For this to occur, greater use of technology needs to be established between detention settings and health services.

By making these changes, the barriers will be broken down and diabetes care can be made equally available for all individuals wherever they happen to be at any stage of their life.

Future perspective

What can be speculated in terms of how future care of prisoners with diabetes will be administered within the UK in the next decade? Greater communication links for overall healthcare will be established within this environment, and will have a positive impact on care management of those prisoners with a diabetes diagnosis. We are already seeing a move towards onsite diabetic clinics in high-security prisons, resulting in improved healthcare and this good practice could spread into all prisons whatever their security rating. This may improve the long-term care in this group, leading to fewer long-term diabetes complications such as myocardial infarction, stroke, renal disease and sight complications.

I would hope to see a greater depth of knowledge among prison staff at all levels regarding diabetes, which will hopefully have a positive effect on the prisoners' wellbeing, as well as preventing incidents of death in custody caused by hypoglycemic complications or diabetic ketoacidosis events, which are still currently encountered within this environment. Equipment used for screening purposes, such as annual eye screening will become more compact, easy to transport and have fewer security concerns. The immediate sharing of knowledge for all prisoners with diabetes who are being transported to different prisons has resulted in a reduction in incidents of knowledge deficits that result in poor care.

Diabetes care must and will move forward in a positive manner in the next decade, but for this momentum of change to happen both in the UK and globally, people in all areas of diabetes care and those within the prison setting must work together to ensure that diabetes care improves in the prison setting.

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The author has no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties.

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