

ELECTIVE (SSC5b) REPORT (1200 words)

A report that addresses the above four objectives should be written below. Your Elective supervisor will assess this.

1. In the United Kingdom (UK), diabetes is a relatively common condition. In 2014, the recorded prevalence of diabetes in the UK was approximately 3.3 million, equating to 6.2% of the population. When further subdivided by individual country, the highest prevalence was in Wales, where 6.9% of the population was recorded to have diabetes (Diabetes UK, 2015). There are thought to be a large number of people living with undiagnosed diabetes, and when the estimates for this was included in analysis, the prevalence rose to almost 4 million, or 7.5%. The number of people with diabetes in the UK is increasing. Estimates suggest that 4.5 million people were living with either diagnosed or undiagnosed diabetes in the UK in 2016. The majority of cases in the UK, around 90%, are type two diabetes (T2DM) (Diabetes UK, 2016).

The World Health Organisation (WHO) estimated the global prevalence of diabetes in 2014 to be 422 million: 8.5% of the world population. This is higher than the prevalence within the UK. The proportion of people living with diabetes in the UK is similar to that in Europe, and the only WHO region with a lower prevalence of diabetes than Europe is Africa (World Health Organisation, 2016).

Obesity is common metabolic condition both in the UK and globally. Public Health England data shows that the adult prevalence of obesity in England in 2014 was 25.6%, in Scotland this was 27.8%, in Wales 22.2%, and in Northern Ireland was 24% (Public Health England, 2017). These figures are much higher than the prevalence globally. In 2014, around 600 million people were obese globally, which is 13% of the global population (World Health Organisation, 2016). The amount of people who are overweight or obese is increasing both in the UK and worldwide, and this is closely linked with the increasing prevalence of type two diabetes.

Diabetes UK, 2015. Diabetes: Facts and Stats. Available online: <https://www.mrc.ac.uk/documents/pdf/diabetes-uk-facts-and-stats-june-2015/>. Accessed 15/04/2017.

Diabetes UK, 2016. Diabetes Prevalence 2016. Available online: <https://www.diabetes.org.uk/Professionals/Position-statements-reports/Statistics/Diabetes-prevalence-2016/>. Accessed 15/04/2017.

Public Health England, 2017. UK and Ireland Prevalence and Trends. Available online: https://www.noo.org.uk/NOO_about_obesity/adult_obesity/UK_prevalence_and_trends. Accessed 16/04/2017.

World Health Organisation, 2016. Global Report on Diabetes. Available online: http://apps.who.int/iris/bitstream/10665/204871/1/9789241565257_eng.pdf?ua=1. Accessed 15/04/2017.

World Health Organisation, 2016. Media Centre: Obesity and Overweight. Available online: <http://www.who.int/mediacentre/factsheets/fs311/en/>. Accessed 16/04/2017.

2. Management differs between type 1 diabetes (T1DM) and T2DM. Generally, those with T1DM are cared for in secondary centres. There is a general feeling that T1DM is best managed by specialists, and that their care should only be provided in primary care if there is significant support for general practitioners (GPs) from specialists. Those with T1DM should always have access to an experienced consultant-led team if needed (ABCD, 2016). Conversely, the majority of the care of T2DM is provided in primary care. This is increasingly important as the numbers of those with diabetes rises. For most patients, the GP makes decisions about care. If required, more complex patients can be referred to secondary care to be seen by a specialist team. In Tower Hamlets, specialist nurses visit GP practices on a regular basis to help with diabetes management, to reduce the numbers who require referral. (Healthcare for London, 2011). Monitoring for complications of diabetes is very important, and patients should have annual retinal screening, foot checks and renal function tests. Patients also have access to services such as dieticians and psychologists if they require this input.

Comparison will be made to two countries, one developed and one developing country. In the United States, one of the largest providers of integrated care for diabetes is Kaiser Permanente. Their model for chronic disease is similar to that in the UK. It separates patients into three tiers. Most patients are in tier one, where they receive their care in a primary care setting with lifestyle changes and medication, whilst tier three, secondary care, is reserved for those requiring specialist treatment (The Commonwealth Fund, 2009). In Nigeria however, most with diabetes are cared for in secondary care. Patients are cared for in primary care are often not treated adequately, or at all, due to limited resources and lack of experience of staff. Primary care centres often have little medication available beyond metformin and sulfonyureas, and rarely have access to blood glucose monitors. Therefore, in order to receive treatment of an acceptable standard, patients must attend secondary centres (Fasanmade, 2015), which differs vastly from the UK.

Association of British Clinical Diabetologists, 2016. Standards of Care for Management of Adults with Type 1 Diabetes. Available online: http://www.diabetologists-abcd.org.uk/Position_Papers/Type_1_standards_of_care.pdf. Accessed 18/04/2017.

The Commonwealth Fund, 2009. Kaiser Permanente: Bridging the Quality Divide with Integrated Practice, Group Accountability, and Health Information Technology. Available online: http://www.commonwealthfund.org/~media/Files/Publications/Case%20Study/2009/Jun/1278_McCarthy_Kaiser_case_study_624_update.pdf. Accessed 19/04/2017.

Fasanmade, O. and Dagogo-Jack, S. 2015. Diabetes Care in Nigeria. In: Annals of Global Health. Vol 81(6). Pp 821-829. Available online: [http://www.annalsofglobalhealth.org/article/S2214-9996\(15\)01309-0/pdf](http://www.annalsofglobalhealth.org/article/S2214-9996(15)01309-0/pdf). Accessed 19/04/2017.

Healthcare for London, 2011. Diabetes Guide for London. Available online: <http://www.londonprogrammes.nhs.uk/wp-content/uploads/2011/03/Diabetes-Guide.pdf>. Accessed 18/04/2017.

3. The majority of diabetes care is in primary care. Secondary care is mostly reserved for those with T1DM and more complex cases of T2DM. They will receive referrals from primary care for patients who need input beyond what the GP is able to offer. Secondary care usually involves clinics led by a

specialist consultant in diabetes, with access to diabetes specialist nurses and other important members of the diabetes team including podiatrists and psychologists. This basic level of care is expected of all secondary centres in the UK.

Tertiary centres generally provide many of the same services as secondary centres, yet also provide some much more specialist services. These centres may receive referrals from both primary and secondary care about patients with much more complex needs. The services that tertiary centres may provide beyond some secondary centres include very specialised podiatry care, more specialised care of renal disease if required, and care of rarer forms of diabetes by those clinicians with particular interests in these areas. Tertiary centres are also able to offer investigations that may not be available in secondary care, for example new DNA sequencing tests for Maturity-Onset Diabetes of the Young.

4. I have learnt that diabetology is an extremely varied speciality. I spent time with different diabetologists during my placement, and each ran clinics for areas of diabetes that they had developed a special interest in, such as renal disease, on top of general diabetes clinics. The ability to tailor a career in diabetes to your own particular interests is something I find very appealing.

I was also able to see the relationship that exists between doctor and patient in a speciality that cares for a chronic disease, and the rapport between them. This was something I particularly enjoyed experiencing whilst on my elective placement, and is something I now feel certain I would like in my future career. I also saw how closely diabetologists work with many other specialities, for example the renal doctors and vascular surgeons, to ensure that their patients receive the best care possible.

There are many changes and advances within diabetes which may alter the speciality in the future. With the increasing numbers of those with T2DM, good care of patients within primary care is paramount. The choice of treatments for T2DM is increasing, and its treatment is becoming more complex, and therefore diabetologists will need to work with GPs to ensure integrated care, and that models of care are in place to enable as many patients as possible to be cared for in the community. This is already occurring, but further innovations will be required to reduce the numbers being referred to secondary care.

New technology may alter the speciality. Much research is being done into advances such as the artificial pancreas (Kovatchev et al, 2016). Many diabetologists believe that within 10-20 years this technology may be at such a level that it can function as a pancreas for those with T1DM without need for input from the patient. If this is the case, the care of those with T1DM may alter dramatically. T1DM no longer require care by diabetologists, and therefore this area of the speciality may decline. The speciality may become much more focused on the treatment of T2DM. Other research, such as that looking at prevention of T1DM in its very early stages, may also in the future lead to a major shift in the types of patients being cared for by diabetologists.

Kovatchev, B. Tamborlane, W. Cefalu, W. Cobelli, C. 2016. The Artificial Pancreas in 2016: A Digital Treatment Ecosystem for Diabetes. In: *Diabetes Care*. Vol 39(7). Pp 1123-1126. Available online: <http://care.diabetesjournals.org/content/39/7/1123>. Accessed 20/04/2017.