Primary care: the custodian of diabetes care?

Azhar Farooqi

General Practitioner and Honorary Professor,
University of Leicester, East Leicester Medical Practice,
Leicester, UK

Correspondence to:
Professor Azhar Farooqi OBE, East Leicester Medical
Practice, 131 Uppingham Rd, Leicester LE5 4BP, UK;
email: farooqi_am@gp-clinic.nhs.uk

Received: 30 July 2012
Accepted: 1 August 2012

This paper was presented as the 2012 Mary Mackinnon lecture at the 2012 Diabetes UK Annual Professional Conference held in Glasgow

Abstract

Type 2 diabetes is the disease of our times. With some 3 million cases in the UK, primary care has a vital role in coordinating and delivering evidence-based care which includes the prevention, detection and management of diabetes.

However, primary care has not always been able to deliver such a role; up to the end of the 1980s, despite the drawbacks of busy hospital outpatient clinics, primary care could rarely offer the systematic care and skills that people with diabetes require.

Quality improvement and audit in the 1990s heralded the increased adoption of evidence-based practice in primary care. Many GP practices significantly improved the organisation and quality of care for diabetes as a result. The widespread adoption of IT systems and the emergence of a more robust evidence base for care (for example, UKPDS) accelerated this process.

More lately, investment in general practice through the Quality and Outcomes Framework and practice education programmes have helped deliver significant improvements in the quality of primary care diabetes.

However, there is still much to do, with variation in care and health inequalities persisting. The development of clinical commissioning offers further opportunities to make the best use of available resources and target investment where it is most likely to benefit patients. A health care system where primary care in collaboration with other stakeholders coordinates the care of people with diabetes offers the best hope in addressing this modern epidemic that we face. Copyright © 2012 John Wiley & Sons.

Practical Diabetes 2012; 29(7): 286–291

Key words

primary care diabetes; quality improvement; clinical commissioning; education and diabetes

Introduction

One of the cornerstones of the National Health Service in the United Kingdom is a primary care system where all citizens are able to register with a doctor-led service. This service not only holds the central patient record, but also offers health care from conception to the grave. It is ideally placed to coordinate and deliver the life-long, holistic care required by people with long-term conditions such as diabetes.

Mary Mackinnon (whose considerable contributions to diabetes are well described in Richard Holt’s Mary Mackinnon lecture of 2011) recognised this potential over three decades ago. Mary spent much of her early career improving community services for people with diabetes; she subsequently went on to develop and deliver pioneering diabetes education for primary care professionals. It is therefore fitting that in this lecture I consider the progress of diabetes services in primary care, and whether primary care is indeed achieving its potential to be a fit custodian for the care of people with diabetes.

Background: the burden and challenge of diabetes

Type 2 diabetes is the disease of our times. The UK prevalence of this chronic condition has increased from an estimated 1.4 million in 1998 to almost 2.6 million in 2010; this is predicted to rise to 4 million by 2020. The numbers of people with impaired glucose tolerance and at risk of future diabetes is estimated at double those with confirmed disease. The financial costs of diabetes, which already consume >10% of the health care budget, are set to increase with the rising numbers of patients, and with the increase in expensive complications such as renal failure and cardiovascular disease. The human costs of this huge burden of poor health and lost years of life are incalculable.

The positive side of this dim picture is that, unlike 30 years ago, we now have a robust evidence base on prevention, early detection (in the case of type 2 disease) and management of established disease. Appropriate interventions can prevent or delay the complications of diabetes, and we now have technologies which allow many
complications, if detected early (for example, diabetic retinopathy) to be treated effectively.

These developments, which apply to a large patient group with lifelong disease, pose a real challenge on how best to organise services for diabetes. A conservative estimate based on just four reviews or follow-ups a year, means that in the UK a minimum of 12 million consultations per year are required for people with proven diabetes. While some of these patients will have complex disease or complications which require hospital-based specialist care, it is clear that for the vast majority of patients care can only realistically be met in primary care, where general practices already deliver a doctor-led service providing 330 million face-to-face patient consultations per year.7

The challenges for primary care, however, are considerable. These include ensuring staff have the appropriate skills, support and time to deliver consistent and high-quality diabetes services. These challenges have increased over the last three decades as diabetes has become more common, and the evidence base for treatment more clear. I will explore how primary care has evolved to try and ensure it can deliver the services people with diabetes deserve.

The 1980s, the decade of realisation

The debate as to whether diabetes (in particular type 2 disease) should be managed in hospital by specialists or by GPs in primary care is not a new one. Even in the 1970s when the prevalence of diabetes was much lower, questions were being asked as to where care was best undertaken. Pioneers such as Professor John Malins recognised as far back as the 1960s that crowded hospital outpatient clinics were not best placed to provide care for many patients. Malins in Birmingham and Thorn in Wolverhampton did some of the early work to enhance the capability and expertise of general practice, including assisting practices to set up structured mini-clinics.8,9

The difficulties of oversubscribed diabetes clinics prompted some hospitals to discharge patients back to primary care. Eric Wilkes10 explored some of these issues further when a large cohort of patients was discharged from the Sheffield hospital service in the late 1970s. Wilkes, in a prospective study, demonstrated that many practices did not have the infrastructure to adequately follow up such patients. In his perceptive summary of this study, Wilkes articulates the dilemma patients faced:

‘...deaf, anxious partially sighted patients not accustomed to rapid learning in strange hospital environments absorb little of what they are told, but busy GPs attuned to contractual requirements and herculean tasks in the 5-minute consultation may not seek out extra work; even if they do, they will have to pay for the detection and pursuit of non-attenders themselves.’

In the 1980s, a common view (particularly among specialists) was that general practice simply could not be trusted to look after diabetes and, however imperfect, large-scale hospital outpatient care was the only solution.

In 1984 two papers, published in the British Medical Journal, contributed further to this debate (Table 1). Hayes and Harries11 published the results of a study in which patients attending a hospital diabetes clinic were randomly allocated either to continue attending hospital, or to receive follow-up care in general practice. Five-year follow-up data showed that patients attending the hospital service had better glycaemic control and lower mortality compared to those followed up in general practice. The study showed that only 15% of patients in the general practice arm attended regular follow up. In contrast, a study by Singh, Holland and Thorn,12 published in the same journal, demonstrated that patients discharged to selected practices which provided organised diabetes care (diabetes mini-clinics) had outcomes which were as good as hospital-based follow up. Interestingly, these practices included those which Thorn had worked with in the 1970s to develop mini-clinics.9

Both the Hayes and the Singh studies show that the glycaemic control for hospital and general practice patients was by today’s standard poor, with the average HbA1c achieved >10% (86mmol/mol). These and other studies provide objective evidence that most general practices at this time had neither the structure, nor the organisation, to look after patients with diabetes effectively. However, well-organised practices (although still a minority) could deliver care equivalent to that provided in hospital diabetes clinics. This conclusion is further confirmed in a meta-analysis by Griffin et al. (Figure 1).13

The time up to and including the 1970s were the decades of darkness as far as primary care diabetes was

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GP patients vs OPD</td>
<td>Structured GP mini-clinics vs OPD</td>
</tr>
<tr>
<td>200 patients, 100 discharged to GP</td>
<td>Matched pair design, n=4222 patients</td>
</tr>
<tr>
<td>5-year follow up</td>
<td></td>
</tr>
<tr>
<td>HbA1c: 9.5% (hospital) vs 10.5% (GP)</td>
<td>9.6% (hospital) vs 9.7% (GP) OHA</td>
</tr>
<tr>
<td>Higher mortality in primary care</td>
<td>10.6% (hospital) vs 10.8% (GP) BD insulin</td>
</tr>
<tr>
<td>Only 13% in GP seen annually</td>
<td>Only small % of all practices ran mini-clinics</td>
</tr>
<tr>
<td>Hospital care superior</td>
<td>No difference in HbA1c after 2 years between hospital and GP patients</td>
</tr>
</tbody>
</table>

GP = general practice; OPD = outpatient diabetes clinic; OHA = oral hypoglycaemic agents; BD = twice-daily

Table 1. Should type 2 diabetes be managed in hospital or general practice? Summary of 2 papers published in the British Medical Journal in 198411,12

The 2012 Mary Mackinnon lecture

PRACTICAL DIABETES VOL. 29 NO. 7 COPYRIGHT © 2012 JOHN WILEY & SONS
concerned. Professor John Malins summarised it thus:

‘Most physicians who run diabetes clinics would be glad to know of any satisfactory method by which patients could be returned to the care of their own doctors.’

The 1980s was the decade of a realisation that hospitals were not the ideal place for the care of patients, but also that most general practices were not yet equipped to offer an alternative service. Only with this realisation could the problem begin to be addressed.

**The 1990s, the decade of clinical audit and quality improvement**

In the 1990s, important changes were beginning to have an impact in general practice: vocational training was now well established, general practices were starting to become computerised and, with the support of the Royal College of General Practitioners and the Department of Health, quality improvement was now on the agenda for general practice. Clinical audit as a tool was increasingly used to promote quality in primary care, often facilitated by newly established Medical Audit Advisory Groups (MAAGs). The definition of clinical audit, as ‘a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change’, makes it clear that practices were expected to evaluate their practice, and make changes to improve patient care.

Diabetes was a popular clinical topic for audit, with a nationally recognised, evidence-based clinical audit protocol developed in Leicester. The impact of clinical audit of diabetes care in over 60 general practices in Leicester demonstrates that, with the support of external advice, practices were able to establish accurate disease registers, initiate call and re-call of patients and undertake structured care with significant improvement in performance. Khunti et al. demonstrated how such audits were improving care not just in Leicester, but in many parts of the country. This was a significant achievement at a time when many doctors were still not convinced of the benefit of such activity, and the process of audit was a time-intensive activity based on review of data from manual records.

The process of clinical audit highlighted barriers to improved patient care and allowed the development of strategies for improvement; these included improved team working, training and more effective use of information technology for record keeping.

An important development in the late 1990s was the publication of the UK Prospective Diabetes Study trials, which provided a robust evidence base on the importance of effective management of blood glucose, and cardiovascular disease risk factors in improving outcomes in type 2 diabetes. This further strengthened the realisation that a systematic approach to quality improvement in diabetes care should be supported, and even incentivised, within the NHS.

These developments culminated in the emergence of a national consensus on the ambitions for diabetes care with the publication of the National Service Framework (NSF) for diabetes, and in practical changes to improve care such as the diabetes standards in the incentivised Quality and Outcomes Framework (QOF) for primary care.

**The 2000s, the decade of frameworks: the NSF and QOF**

In 2001, the NSF for diabetes was published; the 12 standards in the NSF articulate the ambition that the NHS has set for the quality of care people with diabetes should receive. These standards encompass the adoption of evidence-based practice, the importance of involving patients in their own care, and the need to invest in diabetes services in all parts of the NHS. The implementation of the NSF, although patchy, has had real benefits – examples of which include the establishment of effective retinal screening programmes, the development of local clinical networks for diabetes and the appointment of a national champion for diabetes (with Dr Sue Roberts as the very able first appointment in this post).

The NSF contributed to the environment that enabled the resourcing of the QOF (diabetes standards) as a means to achieve improved care. The QOF builds on the previous work in clinical audit and quality improvement, by ensuring diabetes registers and audit of performance
began a routine part of general practice. The improvement of GP computer systems, adoption of evidence-based National Institute for Health and Clinical Excellence guidance for diabetes (e.g. the guideline for type 2 diabetes) and support from primary care trusts (e.g. in the adoption of prescribing and practice quality reviews) means that performance data in most practices are now routinely collected, and outliers can easily be identified and supported to improve.

The impact of the QOF and the supporting changes on standards of patient care have been significant. In contrast to the situation that prevailed in the 1980s, patients with diabetes are now much more likely to receive regular assessments and standards of care, such as blood glucose control (HbA1c) and cardiovascular risk factor management having improved significantly.

Table 2 illustrates the improvements achieved by general practices in England and Wales between 1999 (pre-QOF) and 2009.

<table>
<thead>
<tr>
<th>1999 Collation of multi-practice audits</th>
<th>2009 National Diabetes Audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retinal screen</td>
<td>67.5%</td>
</tr>
<tr>
<td>Foot check</td>
<td>67.7%</td>
</tr>
<tr>
<td>HbA1c</td>
<td>72.5%</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>37.5%</td>
</tr>
</tbody>
</table>

Table 2. Impact of the Quality and Outcomes Framework: uptake of annual process measures

The 2010s, the decade of collaboration and empowerment

The challenge for this decade is to build on the improvements that primary care has so far achieved, in particular to reduce the variation and inequalities in care that persist. Housebound patients and those from ethnic minorities, for example, continue to receive poorer care. Significant differences in outcomes (such as amputation rates) and take up of key care processes remain between different parts of the country (with up to a three-fold variation between primary care trust (PCT) areas).

While there are many interventions that can improve services for people with diabetes, I will focus on three key developments which I believe will help ensure primary care delivers a diabetes service fit for the 21st century.

Commissioning of effective patient pathways

The NHS – through the NSF, QOF and national clinical guidelines – has attempted to ensure that national standards of care for diabetics are implemented. While these initiatives have enjoyed significant success, many patients still receive suboptimal care. One of the key reasons for this has been the failure to reorganise service provision to address adequately the entire care pathway for people with diabetes. Such an approach would allow for appropriate investment in under-funded areas such as prevention and early detection, as well as ensuring services are available for difficult to reach groups.

For the past 10 years, PCTs have had the ability to commission diabetes services appropriate for their population. A collaboration of the Primary Care Diabetes Society, Department of Health and Diabetes UK has developed a detailed ‘Diabetes Commissioning Toolkit’, which offers clear and systematic guidance on the commissioning process.

Some areas with the support of PCTs, and with strong clinical leadership, have managed to adopt such methods to reshape local services (for example, in Cumbria, Northumberland and Leicester). However, such developments have not been the norm, with the status quo prevailing in many areas.

In 2012, the Health and Social Care Act heralded the establishment of Clinical Commissioning Groups (CCGs). These clinician-led organisations will be fully established by 2014, and have real authority to ensure clinical commissioning delivers effective services.

Key drivers will be improving quality and reducing inequalities of service provision. CCGs will also have a responsibility to provide cost-effective care – for example, by moving services from expensive hospitals (inpatient care currently consumes 66% of the NHS spend on diabetes) to more cost-effective and accessible community-based care. Effective commissioning will also enable investment in services which have poor local provision, such as retinopathy screening, foot care or dietetic support.

There is now a growing evidence base on providing better services for patients from ethnic minorities. Effective commissioning by establishing local needs will help ensure these are accommodated in local services. Although CCGs are led by GPs, the experience to date suggests that effective commissioning will require close collaboration between...
all stakeholders, including patients, carers and diabetes specialists in order to deliver sustainable and appropriate change.

Diabetes training for primary care professionals

If primary care is to play a greater part in the management of diabetes, then primary care professionals will need to acquire the necessary skills.

Mary Mackinnon recognised this when she started education programmes for primary care at Warwick University in the early 1990s. Such programmes are now much more available, with other centres (such as Leicester and Bradford) offering postgraduate courses in diabetes. Professional groups, such as the Primary Care Diabetes Society and the pharmaceutical industry, have also invested resources and time in up-skilling primary care, for example in topics such as insulin management.

While in the 1990s staff with enhanced skills in primary care were rare, more recent increases in uptake of education and training mean that many more primary care practitioners now have enhanced skills in diabetes.

Leicester City Clinical Commissioning Group, where the author is based, has recognised that any service reconfiguration will require greater levels of skills in primary care, and has decided to invest £1 million in its 65 member practices to ensure they acquire the skills to deliver diabetes care for their patients.

Such an initiative requires collaboration with specialists who need to lead much of the training activity and suggests a model others may wish to follow.

Patient empowerment

Empowerment of patients to self-manage is key to limiting the devastating impact of the diabetes epidemic. Evidence on the effectiveness of patient education programmes to enable patient empowerment is mixed.

There is good evidence for some programmes such as, for example, insulin management for type 1 diabetes (DAFNE), and in some settings intensive programmes for prevention of diabetes have been successful. The evidence for large-scale education programmes for people with type 2 diabetes (for example, the DESMOND programme) and for lifestyle change is less clear.

Further research in developing interventions which are effective in empowering patients in the primary care setting is vital, if we are to have a real impact in controlling the impact of diabetes in society.

Conclusion

One of the most talented academic general practitioners of our age, Trisha Greenhalgh, commented in 1998:13

‘We still do not know the precise competencies required for delivering different aspects of education, support and surveillance for patients with diabetes, and we certainly do not know how to communicate across interprofessional boundaries in so-called seamless care.’

These issues remain a challenge to this day, but I hope that I have demonstrated that primary care has been on a journey to address these challenges and is now in a very different place from even 10 years ago. The term ‘custodian’ can refer to the supervision of an act of imprisonment or to the watchful care of an individual. While the care of patients must always be a collaborative effort between health care professionals, I believe that primary care is now in a position to discharge its responsibility of watchful care for people with diabetes; we owe them no less.

Declaration of interests

There are no conflicts of interest declared.

References


<table>
<thead>
<tr>
<th>Variable</th>
<th>Routine care (general practice)</th>
<th>Intensive treatment</th>
<th>Change from baseline to follow-up β/odds ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline (n=1379)</td>
<td>Follow up (n=1285)</td>
<td>Baseline (n=1678)</td>
</tr>
<tr>
<td></td>
<td>Total with data available (%)</td>
<td>Value</td>
<td>Total with data available (%)</td>
</tr>
<tr>
<td>HbA1c (%)</td>
<td>1298 (94.1)</td>
<td>7.0 (1.5)</td>
<td>1226 (95.4)</td>
</tr>
<tr>
<td>Systolic blood pressure (mmHg); mean (SD)</td>
<td>1346 (97.6)</td>
<td>149.8 (21.3)</td>
<td>1205 (93.8)</td>
</tr>
<tr>
<td>Diastolic blood pressure (mmHg); mean (SD)</td>
<td>2346 (97.6)</td>
<td>86.5 (11.3)</td>
<td>1203 (93.6)</td>
</tr>
<tr>
<td>Total cholesterol (mmol/L); mean (SD)</td>
<td>1300 (96.3)</td>
<td>5.6 (1.2)</td>
<td>1226 (95.4)</td>
</tr>
</tbody>
</table>

Table 3. Effect of early intensive multifactorial therapy on 5-year cardiovascular outcomes in individuals with type 2 diabetes detected by screening (ADDITION-Europe): a cluster randomised trial.25 (Griffin SJ, et al. Lancet 2011;378(9786):156–67. Permission to publish has been granted from © Elsevier)