

Diabetes and podiatry in the 21st century: Is specialism the way forward?

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There are currently over 2 million people in the UK with diabetes, and thousands remain undiagnosed (Diabetes UK, 2006). The complications associated with diabetes and the projected increase in the diabetes population are major influences in driving changes within the NHS (National Planning Team, 2005). The challenges currently faced by diabetes foot services are set to intensify over the next few years, as the number of diabetes patients rapidly increases. Without careful planning of these services, the NHS will struggle to accommodate the burden of diabetes and associated foot problems. This article describes a method of planning future services based on imagined scenarios, and reports the results of using this model to plan services in diabetic foot care.

Foot problems associated with diabetes are the largest single reason for people with the condition being admitted to hospital in the UK (Boulton, 2005a) and it has been estimated that between 5 and 15% of people with diabetes will develop a foot ulcer at some point in their life (Booth and Young, 2000; Boulton, 2005a; International Working Group of the Diabetic Foot, 2007). The majority of non-traumatic lower-limb amputations are preceded by diabetic foot ulceration (Boulton, 2005b; McInnes et al, 1998). Additionally, mortality is increased in those who have undergone lower limb amputation with a 2-year survival rate of 50% (Ragnarson and Apelqvist, 2004).

Interventions from specialist diabetes

multidisciplinary foot teams have been shown to reduce the rates of major amputations in people with diabetes (Edmonds et al, 1986; Rayman et al, 2004). Diabetes specialist podiatrists (DSPs) are recognised as central to these teams, and, in the author's opinion, the increasing need for foot specialists should influence the structure of NHS diabetes services both locally and nationally.

Scenario planning

In order to avoid a health crisis the health service must plan for potential problems that may occur when the diabetes population increases. The purpose of any strategy is that it should ultimately add value to an existing organisation. Also, the suitability

Article points

1. Strategic scenario-planning can be useful for health services in order to devise a strategy to cope with the expected rise in diabetes' prevalence.
2. Strategic options can be regarded as suitable by analysing environment, capability and expectations.
3. Maximising the existing capabilities of the podiatry workforce will ensure that specialist care is provided and targeted at the appropriate time.

Key words

- Strategic scenario-planning
- Future health crisis

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1. Scenario planning has been described as a disciplined technique for imagining possible futures.
2. Scenario analysis attempts to identify a number of plausible futures, where occurrence is possible, but not assured.
3. Scenario analysis should not be projected too far in the future, as the contents can become progressively more vague.
4. A group was formed with other health professionals in the field of diabetes to brainstorm what the key drivers for change were.
5. The three scenarios chosen were all feasible, in that the historical planning of the NHS has often opted for no change with no cost, small investment in select areas or radical change where roles and services are diversified.

of any proposed new strategy must be able to fit into the future environment (Johnson et al, 2005). Because the NHS is subject to constant changes in its environment thus creating degrees of uncertainty internally and externally, scenario planning is an appropriate strategic method of determining the potential future of diabetic foot services.

Scenario planning has been described as a disciplined technique for imagining possible futures (Schoemaker, 1995); and, as described by Neiner et al (2004), it promotes a definition of a desired and shared vision of what may happen. It allows planners to anticipate problems, re-evaluate assumptions, and reflect on consequences of those alternate outcomes (Neiner et al, 2004). However, as Schoemaker and van der Heijden (1996) point out, scenarios are not predictions capable of influencing the future, but nor are they “science-fiction stories” merely to tease the imagination. The same authors explain that scenarios should be focused on: information that is determinable and somewhat predictable; and on potential surprises of major significance. Scenario analysis attempts to identify a number of plausible futures, where occurrence is possible, but not assured (Schnaars, 1987). Thus, the capability of scenario planning is that different options can be matched to various scenarios and an optimal strategic option can be generated.

Development of scenarios

Scenario analysis should not be projected too far in the future, as the contents can become progressively more vague (Linneman and Klein, 1979). As the NHS is constantly evolving, the author felt that it would be suitable to scenario plan for the next 5 years. The single dominant issue is the expected explosion of diabetes in the near future, both in terms of higher incidence of the condition and increased longevity of the population with the condition. This is central to the options that have been identified in the scenarios. The uncertainties of the role of the DSP in 5 years time, and how the NHS will cope with the increased incidence of diabetic foot complications, allow the scenarios to be narrowly focused.

There are two types of driving forces in scenario development: predetermined and unpredictable (Senge et al, 1994). The iceberg analysis (described by Van der Heijden, 1996) identifies that our knowledge of the present situation is just the tip of the iceberg (*Figure 1*). The predetermined forces set the boundaries of a scenario, and the unpredictable forces are a look at what is to come. Schoemaker (1995) points out that nothing is absolutely certain, but failing to make key assumptions, and to leave everything as uncertain, will cause paralysis in most organisations.

A group was formed with other health professionals in the field of diabetes to brainstorm what the key drivers for change were. This led to the identification of a number of predetermined and unpredictable factors and facilitated formation of the iceberg analysis (*Figure 1*) and subsequent planning of scenarios.

Scenarios

The three scenarios chosen were all feasible, in that the historical planning of the NHS has often opted for no change with no cost, small investment in select areas or radical change where roles and services are diversified.

The first scenario “Working within the status quo” adopts the position of what will happen if there is no real change in the provision of diabetic foot services in Scotland. The second scenario “Scotland funds diabetic foot services” will choose to increase the number of diabetic foot clinics in NHS Scotland; and the final scenario “Maximising the diabetic-foot workforce” will observe a future where there is an investment in podiatrists to train as specialists in diabetes.

Scenario 1

Working within the status quo

The year is 2013 and the incidence of diabetes has been and still is rising rapidly. NHS Scotland is struggling to meet the demands and diabetes services are reaching crisis point. Within this, the number of patients with foot ulceration and amputations that were already rising throughout the early part of the

Page points

1. The potential of Agenda for Change (AfC) to reward clinical specialism was never achieved. In fact, AfC did not increase podiatry professionalism but made it more difficult to be recognised in the specialist role.
2. The reduction of doctors' hours has put further pressure on diabetes services, and allied health professionals and nurses are expected to fill in the gaps and take more responsibility.

21st century have not been reduced. Diabetes control is improving, but the increase in the number of older people with diabetes has not been matched by increases in services and clinicians. There are a number of clinicians with specialist skills who have been working in their field for many years. However, there is still a deficit in the number of podiatrists who are working solely in the field of diabetes.

The potential of Agenda for Change (AfC) to reward clinical specialism was never achieved. In fact, AfC did not increase podiatry professionalism but made it more difficult to be recognised in the specialist role. The title "specialist" was given at an early career stage; thus, it was interpreted by employers that there were already appropriate numbers of specialist podiatrists in diabetes. However, the reality is that there are not enough appropriately trained clinicians that are fit for purpose.

The reduction of doctors' hours has put

further pressure on diabetes services, and allied health professionals and nurses are expected to fill in the gaps and take more responsibility. This is difficult to achieve, as clinicians are already overstretched and struggling to accommodate patients' needs. Managers have to include time for continuing professional development (CPD) for staff, but time away from clinics is increasingly difficult. These factors are heightening low morale within health professionals, and fewer people are opting for health as a career.

Scenario 2

Scotland funds diabetic foot clinics

The year is 2013, and the incidence of diabetes has been and still is rising rapidly. NHS Scotland recognised the potential impact of this in 2008, and the government decided to release funding to support an increased number of specialised diabetic foot clinics in

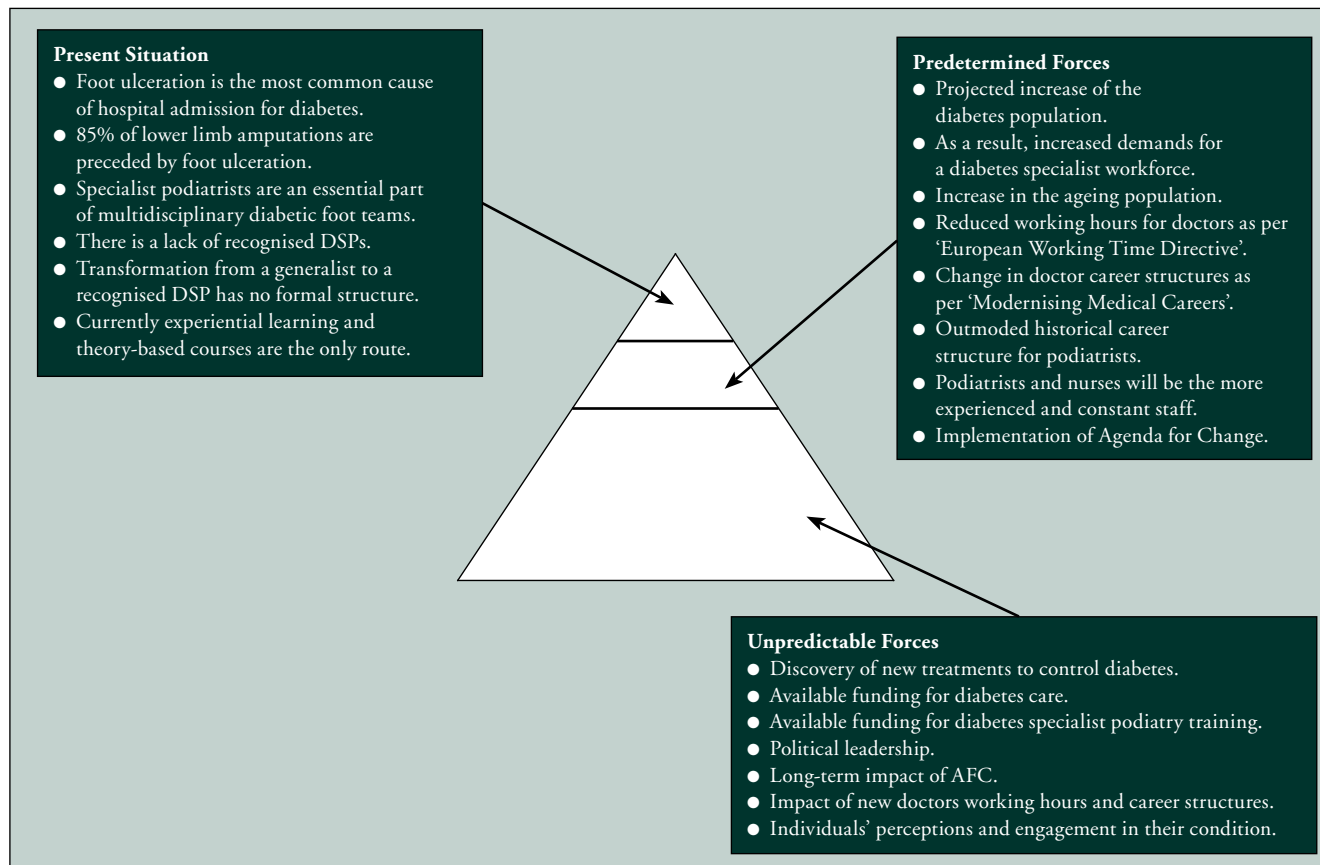


Figure 1. A modified version of the iceberg analysis (Van der Heijden, 1996) used for scenario planning.

Page points

1. The year is 2013, and the incidence of diabetes has been and still is rising rapidly. Podiatrists are recognised as a core component in the care of the person with diabetic foot complications. Fortunately, the government recognised this importance a few years ago and insisted on the development of a career structure for diabetes specialist podiatrists.
2. Strategic options can be regarded as suitable by analysing environment, capability and expectations.
3. A cost-benefit analysis was carried out to assess the acceptability of each scenario's option.

Scotland. This was perceived as a positive step in the future of diabetes care, and patients would have access to appropriate clinics.

The assimilation process of AfC banded a large number of clinicians into a specialist post, thus it appeared there were podiatrists with appropriate specialist skills to be employed in the clinics. Although many of the clinicians have since undertaken post-graduate education in the form of recognised diabetes courses, it has become apparent that there is a lack of clinical experience among these practitioners. Although many skills can be learned through experiential learning, as has been the process in the past, this fragmented learning approach is inconsistent and takes time.

Specialist foot clinics have been implemented in all areas of Scotland, but the running of them is expensive and proving financially draining. Many individuals are still being admitted to hospital as the clinics do not have facilities or appropriate staff to prescribe antibiotics, perform X-rays and other specialist treatment interventions. It is too expensive to provide consultant physician input at all times in all the foot centres. It is feared that there will be a disinvestment in the clinics if there is not a reduction in amputation rates.

Scenario 3

Maximising the diabetic foot workforce

The year is 2013, and the incidence of diabetes has been and still is rising rapidly. Podiatrists are recognised as a core component in the care of the person with diabetic foot complications. Fortunately, the government recognised this importance a few years ago and insisted on the development of a career structure for diabetes specialist podiatrists. This training included clinical skills and was underpinned by theory. There are now a substantial number of competent specialists in Scotland who are essential in reducing amputation and ulceration rates.

The DSPs now can undertake roles that previously were mainly carried out by doctors, such as prescribing, requesting X-rays and admitting to hospital. In the 2013 NHS Scotland, the medical career structure

consists of several 4-month placements and the reduction in doctors' working hours means that allied health professionals and nurses are finding themselves as the only clinical constants and often the main staff groups in specialist areas.

The implementation of AfC provided the opportunity for NHS Scotland to achieve recognition for specialists. Although the clinician is a specialist early on in the career structure, there is clear definition of how this is achieved and through the Knowledge and Skills Framework (KSF), more importantly, a clear way to progress. Treatments are based on evidence, which podiatrists are adding to regularly as part of their specialist role is participation in audit and research.

The investment in podiatrists has meant that diabetic foot clinics are running more efficiently than in previous years. Less consultant physician time is required in the services, and reduced admissions are financially benefiting NHS Scotland. Morale is higher as recognition for specialist skills is apparent and the initial problems with AfC implementation have been addressed.

Scenario analysis

The three options have to be analysed to generate the most appropriate strategic plan.

Suitability

Strategic options can be regarded as suitable by analysing environment, capability and expectations (Johnson et al, 2005). These options are then ranked in order of relative suitability to meet demands of the projected scenario adapted from the method recommended by Goodwin and Wright (2001) (*Table 1*). The higher the ranking, the greater the suitability.

Acceptability

A cost-benefit analysis was carried out to assess the acceptability of each scenario's option (*Table 1*). The limitations in the analysis are that it can be difficult to be financially accurate, as costs cannot be guaranteed in the future. However, Johnson et al (2005) argue that even if the monetary value of returns is arguable, it

can still provide a basis upon which strategy is decided. Although there are a number of tangible costs that may incur with an option, the tangible cost of amputation was used as an endpoint to which costs could be measured. Intangible factors such as patient satisfaction and staff morale cannot be costed, but were identified as benefits where appropriate.

Feasibility

All the options chosen were deemed to be feasible. It could be argued that maintaining the status quo is the most feasible as it has no initial outlay, but the evaluation frameworks have concluded differently. Although scenario 3 has the highest initial outlay, it has not only the best financial tangible return, but

Table 1. The suitability and cost benefits of the three scenarios.

Scenario	Environment	Capability	Expectations	Benefits	Costs	Returns	Rank
Working within the status quo	Increasing patient numbers. No expansion in capacity to treat patients.	No increase in capability of staff or services.	Increased waiting lists. Amputations increase above the rise in diabetes. Increased NHS costs. Decreased patient satisfaction. Low staff morale.	No initial increase in financial outlay.	£68.04 million ^a	Costs increase by £24million per year.	3
Funding foot clinics	Increasing patient numbers. More time available for treatment.	More clinics. Increased resources Staff competency remains static. More doctors needed.	Reduced waiting time. Little or no reduction in amputations. Increased costs. Unchanged staff morale.	Small initial outlay. Clinics expand by 12.5% to match demand Reduced waiting times. No increase in amputation rates.	£57.41 million ^b	Benefits £10.63 million over scenario 1.	2
Maximising the workforce	Increasing patient numbers. More highly specialised appointments available.	Podiatrists fully utilised. Staff capability increased. Service capability increased. Fewer doctors needed.	Reduced waiting times. Reduced number of amputations. Reduced overall costs. Increased patient satisfaction. Increased staff morale.	Reduced rates of amputations. Less need for consultant time due to autonomy of podiatrists. Increased morale. Improved patient outcomes.	£46.35million ^c	Benefits £26.69 million over scenario 1. Benefits £11.06 million over scenario 2.	1

^aBased on estimated rise of amputations of 0.1% and rise in diabetes patient numbers to 225000 (12.5% rise five years, 50% increase estimated in 20 years Diabetes Action Plan 2006) 2006 prices.

^bBased on maintaining amputation rate at 0.5% and a rise in diabetes population of 12.5%.

^cBased on reduction of amputation rate by 0.1% to 0.4% and a rise in the diabetes population of 12.5%.

Page points

1. This paper has discussed the potential responses to the impending crisis of diabetic foot disease, and, through scenario planning, identified the most suitable, feasible and acceptable solution.
2. Maximising the existing capabilities of the podiatry workforce will ensure that specialist care is provided and targeted at the appropriate time.
3. Currently, there are a number of diabetes education modules available in the UK, but minimal diabetic-foot-specific modules with limited practical and clinical experience.

also has higher intangible benefits to patient care and staff morale.

Conclusion

This article has discussed the potential responses to the impending crisis of diabetic foot disease, and, through scenario planning, identified the most suitable, feasible and acceptable solution. It has also addressed the most likely consequences of the options, and suggests that developing and investing in the diabetes specialist podiatry workforce is the way forward. It could be argued that scenario planning models are potentially inaccurate and based on opinion. However, this simpler approach has been shown to be as valid as complex forecasting models, and less costly (Schnaars, 1987).

Maximising the existing capabilities of the podiatry workforce will ensure that specialist care is provided and targeted at the appropriate time. It is not intended that podiatrists will replace consultant physicians in diabetic foot care, but the analysis has highlighted the possibility that the new career structure for doctors will mean that other health professionals may become the most constant clinical staff in diabetic foot clinics. Consequently, it is essential that podiatrists have the appropriate skills to work as independent practitioners. However, unless there is a structured career pathway to facilitate this transition, diabetes foot care will continue to be fragmented and inconsistent.

Currently, there are a number of diabetes education modules available in the UK, but minimal diabetic-foot-specific modules with limited practical and clinical experience. Already, groups like the Scottish Diabetes Foot Workforce Development Group and Foot in Diabetes UK are creating competency sets that encompass both theoretical and clinical components. These will assist the process of transition, but without a supporting training structure, it is unlikely that the projected benefits of a diabetes specialist podiatry workforce will be fully achieved. Although the scenario analysis model was based on NHS Scotland, it could be adapted to commissioning

bodies in the rest of the UK. This could be achieved by replacing the predetermined and unpredictable forces with locally relevant issues, hence generating potentially different scenarios and outcomes. ■

Booth J, Young MJ (2000) Differences in the performance of commercially available 10-g monofilaments. *Diabetes Care* **23**: 984–8

Boulton AJ (2005a) The diabetic foot: epidemiology, risk factors and the status of care. *Diabetes Voice* **50**: 5–7

Boulton AJ (2005b) The global burden of diabetic foot disease. *Lancet* **366**: 1719–24

Diabetes UK (2006) *Diabetes: State of the Nations 2006. Progress made in delivering the national diabetes frameworks*. Diabetes UK, London

Edmonds ME, Blundell MP, Morris ME et al (1986) Improved survival of the diabetic foot: the role of the specialised foot clinic. *Quarterly Journal of Medicine* **60**: 763–71

Goodwin P, Wright G (2001) Enhancing strategy evaluation in scenario planning: a role for decision analysis. *Journal of Management Studies* **38**: 1–16

Johnson G, Scholes K, Whittington R (2005) *Exploring Corporate Strategy Text and Cases. 7th ed.* Prentice Hall, New Jersey, US

International Working Group on the Diabetic Foot (2007) *International Consensus on the Diabetic Foot and Practical Guidelines on the Management and Prevention of the Diabetic Foot*. International Diabetes Federation, Brussels

Linneman RE, Klein HE (1979) The use of multiple scenarios by U.S. industrial companies. *Long Range Planning* **12**: 83–90

McInnes A, Booth J, Birch I (1998) Multidisciplinary diabetic foot care teams: professional education. *The Diabetic Foot* **1**: 109–15

National Planning Team (2005) *National framework for service change in the NHS in Scotland: Drivers for change in health care in Scotland*. Scottish Executive, Edinburgh

Neiner JA, Howze EH, Greaney ML (2004) Using scenario planning in public health: anticipating alternative futures. *Health Promotion Practice* **5**: 69–79

Ragnarson TG, Apelqvist J (2004) Health-economic consequences of diabetic foot lesions. *Clinical Infectious Diseases* **39(Supp 2)**: 132–9

Rayman G, Krishnan ST, Baker NR (2004) Are we underestimating diabetes-related lower-extremity amputation rates? Results and benefits of the first prospective study. *Diabetes Care* **27**: 1892–6

Schnaars SP (1987) How to develop and use scenarios. *Long Range Planning* **20**: 105–14

Schoemaker PJ (1995) Scenario planning: A tool for strategic thinking. *Sloan Management Review* **36**: 25–40

Senge P, Kleiner A, Roberts C et al (1994) *The Fifth Discipline Fieldbook: Strategies and Tools for Building A Learning Organization*. Doubleday Publishing, US

Van der Heijden K (1996) *Scenarios: The art of strategic conversation*. John Wiley, New York