

A new deal for diabetes

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The isolation of insulin opened the way for many advances in the management of diabetes. New strategies continue to evolve and new skills develop for the care of the diabetic patient. This now comes from a team of health professionals, and new demands for understanding and active participation have been placed upon the patient. Therapeutic goals have broadened from simple manipulation of diet and medication for blood glucose control to the prevention, attenuation and treatment of the major complications of the disease—end-stage renal failure, retinopathic blindness, ischaemic and neuropathic gangrene and coronary heart disease. The increasing availability of means to achieve these objectives is not yet matched by the facilities to apply them most effectively. Services will need to be reorganised and resources redeployed. With medical services generally under scrutiny, it is timely to review the provision of care for the approximately 1 million people with diabetes in the UK.

Impact and costs of diabetes

The financial impact and costs of diabetes mellitus, to the patient and to society, are large and increasing [1]. There is an overall 2 to 3 fold excess mortality for the diabetic; among younger patients it is much higher [2]. Chronic cardiovascular ill health is approximately doubled. Destructive lesions of the feet necessitate prolonged hospital stays and the rate of lower limb amputation is increased at least 20 fold [2, 3]. Diabetic retinopathy is the single largest category of registered blindness in the working years of life in England and Wales [4]. Diabetic kidney disease is a leading cause of end-stage renal failure [5] and could potentially absorb up to one-third of the annual national allocation of funds for renal support therapy [6]. A recent estimate from the British Diabetic Association put the direct cost of diabetes in the UK at £360 m/year, excluding the cost of GP and community nursing service [7]. It has been calculated that in the UK the direct cost of patients with diabetes to one health region was £21.6 m in 1987, of which two-thirds was directly attributable to diabetes itself [1]. The US with

its 6.5 million diabetics is estimated to have spent a total of 20.4 billion dollars in 1987, of which about one-half represented medical costs [8–10].

There is good reason to believe that substantial reduction in these enormous costs can be obtained alongside an improvement in both the quantity and the quality of life of diabetic patients. This can be achieved by more efficient application of currently available preventive and therapeutic measures [11–15].

A new deal

Clinical and fundamental research and technical innovation have greatly contributed to the scope of diabetes care. One major consequence has been the increased need for active participation by the patient. This involves setting realistic and appropriate goals and acquiring the means to implement them. New requirements to develop and co-ordinate diabetes services now also fall upon health authorities, regionally and locally. The more effective deployment of resources, outlined below, could rapidly bring benefits to the patient and pay for itself many times over in the reduction of costs [11–15].

Hospital and community agencies

The hospital setting, at first crucial to the care of the 'incurable' diabetic, later the centre for the administration and distribution of insulin, has increasingly tended to integrate its activities with those of the community health agencies. The roles of the general practitioner [16, 17] and the diabetes specialist nurse working across the hospital–community divide have been especially explored. The concept of GP mini-clinics was first described by Thorn and Russell in the early 1970s; they were run by interested GPs in collaboration with the local diabetes specialist [18]. Hill described a different version of a shared-care scheme in Poole [19]. He organised local GP refresher courses and introduced a co-operation booklet which linked the hospital clinic and the general practitioner in an agreed scheme of regular and systematic care. In another approach, an itinerant clinical assistant or diabetes specialist conducted a round of collaborative visits to interested GPs [20].

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Individual practitioners have developed special arrangements for the care of diabetes within their own practices. Despite the major efforts put into these schemes, however, the outcome falls short of expectations [21,22]. This is not due to lack of interest or goodwill but, in our opinion, to the inadequate creation of a local organisational infrastructure charged with a district-wide responsibility to formulate, implement, co-ordinate and monitor policies for diabetes. It is from this perception of need that the concept of the district diabetes centre has emerged [11]. It becomes the new 'centre of gravity' for the care of the diabetic patient, lying between the hospital and community services, integrating their contributions into effective and locally appropriate schemes for diabetic care.

The district diabetes centre

The traditional hospital diabetic clinic fails to meet modern expectations of adequate diabetes care [11]. Typically, brief consultations with different doctors follow long waits in crowded conditions. This approach to the management of a life-long disorder is inefficient and sometimes so distasteful that contact is broken. The diabetes centre transforms these conditions, both for the patients and for those who care for them. Staffed by a trained team of doctors, nurses and other supporting professionals, unlike the outpatient clinic it offers access to patients throughout the week. It has the space, facilities, time and skills to provide for the broad range of needs of diabetic patients.

District-based diabetes centres were discussed at a Sheffield workshop in 1987 attended by 63 doctors, nurses and allied professionals [23]. Many contributed from their personal experience. It was agreed that adequate diabetes care could no longer be effectively provided within the time and space limitations of the traditional diabetic clinic. The first centres to become established in the UK presented their diverse origins, design, responsibilities and experiences. General models and the means for providing them were presented and discussed at length. The improved quality of organisation and care provided for the patient by the centres was universally and enthusiastically endorsed. For many, the diabetic outpatient clinic remained but it had assumed a 'problem finding' function whereas 'problem solving' was a main function of the diabetes centre.

Operations of the diabetes centre

The emphasis in the diabetes centre is on the healthy diabetic person rather than the sick patient. Regular care and advice is provided there by the diabetes care team in an unhurried and friendly atmosphere. A central feature of all centres is the planned teaching and training of patients and, in many, of medical, nursing and other staff. The centre has many other possible roles. It offers a central resource for general practitioner and community nursing services. It lends itself to regular and systematic patient screening for detec-

tion and prevention of diabetic complications; it can be the venue for meetings of many types, eg parents' groups, young patient groups, diabetes slimming groups. The diabetes centre can also plan to tackle the major problem of the 'lost patients'. As many as half of those with diabetes receive little if any attention from either hospital or primary health care agencies [24-26]. Contact may be limited to requests for repeat prescriptions. The first presentation of such patients to GP or hospital is often only when some potentially preventable disaster such as gangrene or visual loss is impending or has occurred. In collaboration with local GPs, a register of diabetics compiled at the centre could set the scene for providing 'lost patients' with adequate attention.

Centre design

Dedicated accommodation is needed, ideally newly built to a desired design or adapted from pre-existing buildings. A location is desirable within easy reach of the specialised services of a large general hospital. The centre should be situated so that it can easily look outwards into the community and its health agencies and be seen by them as a readily accessible resource. Its structure should be adequate to accommodate regular clinical review, visits by appointment, 'drop in' visits, routine and anticipatory treatment, and the systematic teaching of patients. It forms the work centre and should house the diabetologist and health care team. Clinical documentation and patient records can be kept there. A kitchen for food preparation and diet teaching is desirable, and also simple laboratory facilities. The use of the premises out of hours by patient groups and the local British Diabetic Association branch should be allowed for if possible.

The diabetes team

In general, led by a physician with special interest and training in diabetes, the team includes nurses, dietitians, chiropodists and administrative/organisational staff on a semi-permanent basis. Depending upon local resources and arrangements, junior medical staff, medical social workers, educationalists and others will be variably involved. Joint sessions with specialist groups—ophthalmic, renal, obstetric, orthopaedic—can be arranged.

The diabetes specialist nurse

Doctors lack the time, skills and inclination to provide the prolonged and sustained education, motivation and technical instruction mandatory for obtaining the best clinical results. A new breed of diabetes specialist nurses with the skills to provide these services has proved highly effective both professionally and economically [14]. Their activities probably represent the single most important factor in raising standards of care for diabetes.

Formal training courses have gained recognition

from the English Nursing Board. The running of the diabetes centre itself is largely a nursing responsibility with a sister supported by trained staff. An average-sized district general hospital is likely to have 20 or so diabetic patients, often unknown to the team, scattered through its wards at any one time. A diabetes specialist nurse with a roving commission, but based on the centre, can identify and evaluate these patients. This has an important updating role for other hospital staff who are often out of the diabetes mainstream.

In the community, the diabetes liaison health visitor is employed by the local authority but can use the diabetes centre as a base. By visiting patients in their homes and maintaining liaison with general practice and community nursing services, the health visitor bridges the gap between community and hospital care.

New relationships

The traditional role of the doctor as the provider of care, the patient as its passive recipient and the nurse as the intermediary is inadequate for the lifetime management of diabetes. The patient must become a main agent in securing the necessary levels of care; the professionals should adopt an advisory and supportive role—a relationship not without problems. The centre reduces the institutional dependence of the patient and promotes the objective of the 'healthy diabetic'. The special interests and experience of general practitioners and community nurses can be fostered within the centre, and the district authority may use it to identify the local problems of diabetes and to formulate plans to deal with them. The centre forms a 'unit of evaluation' for audit and provides major opportunities for operational and organisational research.

The next steps

The British Diabetic Association and the Royal College of Physicians reported on medical care for adults with diabetes in 1984 [27]. The definition of minimum acceptable levels of care for diabetic patients [28] and the Report on Diabetes in the United Kingdom (1988) [8] all require major revision of present inadequate provision for diabetes care in the UK. The British Diabetic Association has invested substantially in piloting the development of some of the early pioneering centres. Many *ad hoc* regional committees of physicians concerned with diabetes are pressing for this development, and a number of health districts are already taking action along these lines. Formal recognition of this evolution in diabetes care by national health departments is now due. It would receive enthusiastic support from professional and lay bodies concerned with diabetes.

Improved patient education with prevention of complications as the goal is a feasible and highly cost effective direction to take. Avoiding one unnecessary amputation meets the salary of a diabetes specialist nurse for 2 years; 10 cases of blindness prevented by efficient screening and timely treatment procure the cost of a

serviceable building; postponing or preventing renal failure, now in prospect, could halve the enormous cost of providing renal replacement therapy.

In the context of 'working for patients', the title of the government White Paper on the health services, the role of the diabetes centre has even more point and significance. Apart from the improvement in efficient and effective transfer of health care and information, the structure and organisation of the centre lends itself supremely well to the needs of audit, quality assurance, planning and costing that are likely to become a feature of the health services over the next decade. Some of the proposals, however, appear to threaten the collaboration and co-operation vital to success.

The costs of diabetes mellitus to the patient and to society are huge. Strategies for reducing them are available. To implement these strategies, redeploying existing resources is more important than providing new ones. The 'new deal' for diabetes could be an important first fruit of the general drive for a more effective and acceptable style of health care delivery in a reformed NHS.

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Down came a spider

Your memory, if any, of the Elizabethan physician Thomas Mouffet, FRCP, probably comes from the *Oxford Dictionary of Nursery Rhymes*, published in 1951. The book 'suggested' that the arachnophobic Miss Muffet was Patience, the daughter of Dr Thomas Mouffet. It also pointed out that the rhyme, first printed in 1805, was one of a class in which someone is waiting for something to happen. If Mouffet was indeed the subject of Elizabethan popular verse he must have been a remarkable man.

True, Mouffet wrote about spiders, in his book on insects completed in manuscript in 1590. Spiders, he wrote, 'climb into Kings' courts to teach them virtue; they work in Noblemen's chambers to teach them their duties; they dwell in poor men's houses to teach them patience, to suffer and to labour.' After dwelling on how people who eat spiders might become 'envenomed' by them, he added '... and we in England have a great lady yet living who will not leave off eating them.'

That Mouffet was a man of power is evident from the College's obsequious attitude to him. The rudest letter preserved in the *Annals* is one penned in 1584 by Mouffet when he learnt that he might be passed over for Fellowship. He poured insults on the College and its Fellows, some 'being such manner of men as I would not vouchsafe to speak unto, nor bid them God speede.' To make matters worse, Mouffet in the same year had published in Germany a book in praise of Paracelsus, anathema to the pro-Galen College. Yet in 1588, at the age of 35, he was elected FRCP and immediately made a censor.

Mouffet practised his Paracelsian medicine on some distinguished patients such as Walsingham, he met

Drake who showed him a flying fish, and he went to Normandy with the Earl of Essex in 1591. None of this shows much political clout in London. However, from the mid-1590s to his death in 1604 he was the devoted servant and pensioner of the Countess of Pembroke at her Wilton House, Wiltshire. Sister of Philip Sidney, mother of the poet Pembroke, the Countess was brilliant, witty, and so beautiful that her husband was advised not to take her to Court.

Aubrey said that Wilton House was like a college: 'there were so many learned and ingeniose persons.' The Countess gathered round her many of the intellectual circle who had met at John Dee's Mortlake house. Perhaps Mouffet had gained his influence from this circle. Dee, the greatest mathematician of his day, was an exponent of the Cabalist mystic philosophy that was later taken up by the Rosicrucians. Mouffet was a Paracelsian, a 'skilful mathematician', and had his book on insects published 50 years after his death by a Rosicrucian. When Dee was discredited and the mob, fearful of a magician, sacked his library, it was necessary for his friends to lie low. What better than for Mouffet to retire to Wilton House and join Mr Boston who 'undid himself by studying the philosopher's stone.'

When the Queen visited Wilton in 1599 she was greeted by a masque written by the Countess with all the symbolism that Dee had used for the monarch. It was to the Countess that Mouffet dedicated his poem on silkworms. Was she the 'great lady' who ate spiders, and did she reply to this comment of Mouffet's by writing the rhyme about little Miss Muffet?

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