Improved clinical practice but continuing service deficiencies following a regional audit of childhood diabetes mellitus

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Abstract

Aim—To assess the changes in services for children with diabetes in the south west of England between two regionwide audits performed in 1994 and 1998.

Methods—Questionnaires were sent to consultant paediatricians, specialist diabetes nurses, dietitians, and Local Diabetes Service Advisory Groups. Information was gathered on consultant and nursing caseload, clinic structure, dietetic and psychological services, glycated haemoglobin use, and screening services. **Results**—In 1994 there were 21 consultant paediatricians caring for children with diabetes, only seven of whom fulfilled the British Paediatric Association definition of a specialist. By 1998 there were 14, 12 of whom fulfilled this definition. In 1994 a significant number of children were being seen in general paediatric clinics; by 1998 all centres stated that children were being seen in designated diabetes clinics. Between the two audits, despite a decrease in the average caseload of specialist diabetes nurses, nursing services in many centres remained deficient, as did dietetic and psychology services. Glycated haemoglobin use increased from 16 of 21 consultants to all consultants. In 1998 there was still patchy paediatric representation on Local Diabetes Service Advisory Groups. **Conclusions**—The 1994 audit was followed by a change in clinical practice, in contrast to continuing deficiencies in resources, despite the availability of national recommendations and the widespread distribution of the audit report to those in a position of influence.

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The government white paper, "A first class service" envisages widespread use of national audits. What service changes can reasonably be expected from well conducted interdistrict audits?

Childhood diabetes is an important subject for regionwide audit because of the rising incidence,^{1,2} the frequent morbidity in early adult life, and the availability of national recommendations for good practice.^{3,4} These recommendations were strengthened by the St Vincent Declaration, resulting from a meeting in 1992 attended by health professionals, representatives of governments, and people

with diabetes throughout Europe.⁵ A task force established by the Department of Health and the British Diabetic Association published its findings in 1995.⁶

A region provides an appropriate forum for undertaking an audit because of the relatively small numbers of clinicians and patients in any one district, and the ease of attending regional meetings. In studies involving groups of hospitals, differences in outcome may be related to variation in patterns of clinical care provided,⁷ recognising the large fluctuations that may occur in any one hospital in different years.

An audit of childhood diabetes services in 1994 in the south western region⁸ showed that the 61% of children who were looked after by paediatricians with a caseload of more than 40 children compared favourably on a number of measures of care received. The number of clinicians caring for children with diabetes had not changed from six years previously.³

In 1998, a reaudit of childhood diabetes services was undertaken, in order to establish what improvements in care had occurred.

Methods

The audit standards and outcomes used in the 1994 audit were based on national recommendations, and were agreed with the professionals providing care through a series of regional meetings. Information was collected simultaneously on the children with diabetes and the services at each hospital. A detailed analysis of the children with diabetes and their services was presented to all involved clinicians and then distributed as a written report to all Directors of Public Health, Clinical Directors, and Chief Executives of Trusts in March 1996 in such a way that their own service was identifiable. Specific recommendations to improve services and to rationalise consultant care consistent with national recommendations were included.

In 1998, following a regional meeting of clinicians, a further questionnaire was sent out to all consultant paediatricians who were thought to have been caring for children with diabetes in the south west in the previous four years. Separate questionnaires were sent to all diabetes nurses, dietitians, and Local Diabetes Service Advisory Groups.

Information was collected on:

- Consultant caseload
- Availability of designated diabetic clinics for both children and adolescents
- Numbers of specialist diabetes nurses and their caseloads
- Availability of the services of dietitians and psychologists

- Use of glycated haemoglobin as an estimate of medium term blood glucose control
- Paediatric representation on Local Diabetes Service Advisory Groups.

The results of the reaudit were then presented at a further regional meeting of relevant professionals. The reaudit report, including a summary of the comments of clinicians, was circulated to chairmen of Local Diabetes Service Advisory Groups, medical directors, and clinicians caring for children, with the service provided by their hospital(s) identified. Changes that had already occurred were highlighted and suggestions were made for further improvements in local services.

Results

Questionnaires were returned by 18 of 19 consultants, all 14 specialist diabetes nurses, and 11 of 12 dietitians from the 12 participating centres.

In 1994, there were 21 paediatricians caring for children with diabetes of whom only seven fulfilled the definition of a specialist. By 1998, there were 14 consultants caring for children with diabetes, 12 of whom fulfilled the definition of a specialist.³ The two non-specialist consultants both had a very small caseload. Neither was accepting new referrals of children with diabetes and one was actively transferring care to another consultant.

In 1994, 100 of the 812 children studied were seen in a general paediatric clinic and there were only five centres in which all children were seen in designated diabetes clinics. In 1998, all consultants who returned their questionnaires stated that they were seeing children in designated clinics.

Between 1994 and 1998, the total number of specialist diabetes nurses in the 12 centres had increased from 7.4 to 10.7 whole time equivalents; there was a decrease in average caseload from 129 to 107 children per whole time equivalent nurse and a reduction in numbers of centres with nursing caseload in excess of 100 children from nine to four. One centre had no diabetes nurse in 1994 and 1998.

Although a dietitian was able to attend all children's clinics in seven centres, they were only able to attend all adolescent clinics in two centres and only saw all children at least once in the year in four centres. Between 1994 and 1998, the main dietary advice given had changed from exchanges to a healthy eating approach. A psychologist was able to attend clinic regularly in only one centre in 1994 and in two in 1998; children were seen within four weeks of referral to the mental health service in a further four centres.

Glycated haemoglobin use increased from 16 of 21 consultants to all consultants between the two audits. Six consultants in 1998 stated that they had paediatric representation on their Local Diabetes Service Advisory Groups. Of those Local Diabetes Service Advisory Groups who replied, four of five recognised that there were significant deficiencies in their local

diabetes services for children and adolescents, and three had considered the 1994 recommendations.

Discussion

The reaudit has shown significant changes in the way care is provided for children with diabetes in the south west in the four years between two audits, particularly with respect to the concentration of care into the hands of smaller numbers of consultants, all but two of whom now fulfil the British Paediatric Association criteria as specialists.

Would the considerable reduction in numbers of consultants caring for children with diabetes have occurred without the audit? The lack of change in numbers of consultants caring for children between 1988 and 1994 would suggest not.

It is likely that the reduction in numbers of consultants also contributed to the more universal adoption of diabetic clinics. This should facilitate a multiprofessional approach to diabetes management. However, the lack of universal availability of dietetic advice in all but four centres was disappointing. This contrasts with the change in dietetic advice given. Likewise, the ready availability of psychology support was only achieved in six centres, despite the suggestion that this has appreciable benefits for both patients and the diabetes team.⁹

An increase in the number of specialist nursing staff was seen but the national recommendation of a nursing caseload of 70 to 100 children per whole time equivalent⁴ was still achieved in only seven centres. Although in 1994 nursing caseload seemed to have little association with most outcomes, the fact that the diabetes nurses were overstretched made it impossible to establish the consequences of smaller caseloads.

There is therefore a disparity between the changes in clinical practice, and the continuing deficiencies in the resources available for children's diabetes care. The involvement of all relevant professionals from the outset, and the evidence from the audit of improved care associated with larger consultant caseload were probably important factors in the achievement of change. It is disappointing that despite the audit report being circulated to all Chief Executives of involved Trusts and Directors of Public Health, recommendations requiring increased resources were implemented patchily, and paediatric representation on Local Diabetes Service Advisory Groups was not universal despite this being a recommendation of the audit.

In conclusion, the 1994 audit was followed by a change in clinical practice, in contrast to continuing deficiencies in resources, despite the availability of national recommendations and the widespread distribution of the audit report to those in a position of influence. It remains to be seen to what extent the development of clinical governance will have a positive effect on rectifying service deficiencies identified through interhospital audit.

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