

# Paediatric DSNs improve glycaemic control in children with type 1 diabetes

*John N Harvey, Senior Lecturer in Diabetes, Endocrinology and Metabolism, Centre for Endocrinology and Diabetes, Wales College of Medicine, Cardiff*

The goal of attaining good glycaemic control in children with diabetes remains very challenging despite the availability of new insulins, more sophisticated devices and better models of care.

Data from the Epidemiology of Diabetes Interventions and Complications study demonstrated the importance of good glycaemic control in the early years of type 1 diabetes to achieve a reduced risk of complications, increased longevity and a quality of life comparable to people without diabetes (Nathan et al, 2005).

A recent analysis by the Brecon Group (Box 1) looked at changes in glycaemic control in Welsh children with type 1 diabetes from 2001 to 2006 (O'Hagan et al, 2010). A modest improvement was seen, with a reduction in mean HbA<sub>1c</sub> across Wales from 9.1% to 8.9% (76–74 mmol/mol).

Of the 12 contributing centres, five had appointed a full-time paediatric DSN, having not had one previously. These paediatric clinics had previously relied on support from adult DSNs who had to fit children in among their busy adult clinic commitments. It was the centres with new paediatric DSNs that showed greatest improvement in glycaemic control; in

these centres, mean HbA<sub>1c</sub> reduced from 9.6% to 8.7% (81–72 mmol/mol).

Glycaemic control was generally worse in older children, and greater insulin dose was associated with poorer glycaemic control. The implication, therefore, is that more insulin gets prescribed for worse glycaemic control in adolescents who are probably not taking their prescribed regimen in full.

When the influence of the new paediatric DSNs on the different age groups were compared, it was the older children (aged over 10 years) who showed the greatest improvement, with little change in the younger people. This improvement occurred with no increase in prescribed insulin dose.

Since the DSNs produced better control without more insulin we believe that they generated better adherence in the adolescent population. They achieved this through greater contact with the young people. There were more home and school visits and nurse clinic sessions were established between doctor appointments (O'Hagan et al, 2010).

In other studies, paediatric DSNs have been shown to improve clinic attendance rates and reduce length of stay (Cowan et al, 1997), but there has been little previously published data on their effects on glycaemic control.

In the continuing quest to obtain the specialist nurse staffing that optimum care requires, it is useful to obtain more data to demonstrate the benefits that can be gained, and important to show their impact on the issue of diabetes care in adolescence. ■

Cowan FJ, Warner JT, Lowes LM et al (1997) Auditing paediatric diabetes care and the impact of a specialist nurse trained in paediatric diabetes. *Arch Dis Child* 77: 109–14

Nathan DM, Cleary PA, Backlund JY et al (2005) Intensive diabetes treatment and cardiovascular disease in patients with type 1 diabetes. *N Engl J Med* 22: 2643–53

O'Hagan M, Harvey JN on behalf of the Brecon Group (2010) Glycaemic control in children with type 1 diabetes in Wales: the influence of the Paediatric Diabetes Specialist Nurse. *Diabetes Care* April 27 [Epub ahead of print]

## Box 1. The Brecon Group.

The Brecon Group is the Welsh Paediatric Diabetes Interest Group. All units seeing children with diabetes in Wales are active participants. The Group has collected data on the incidence of type 1 diabetes in Wales and influences upon it as well as glycaemic control and neonatal diabetes. It has also collected data on workload and staffing in paediatric diabetes units to influence the planning and commissioning of paediatric diabetes services.

## The IMPROVE™ Control Campaign

The Global Task Force on Glycaemic Control is a group of physicians and specialists in the field of diabetes from around the world that is working in collaboration with Novo Nordisk with the ultimate aim of identifying and developing practical solutions to the global problem of poor glycaemic control in people with diabetes. Since early 2008, the *Journal of Diabetes Nursing* has featured articles and submissions under the banner of IMPROVE™ Control – a global public awareness campaign focused on the need for improved control, as part of the Task Force's work. Throughout 2010, the journal will continue to bring you articles on the barriers to good glycaemic control, and submissions from you, our readers, outlining the strategies you have used to help people with diabetes improve their control.

For example, perhaps you have implemented a new educational session in your area that has helped break down barriers to control, or maybe you have set up a new referral pathway that has helped improve HbA<sub>1c</sub> levels. The *Journal of Diabetes Nursing* would like to help you share your practical solutions for improving control, no matter how big or small, with other nurses working in diabetes. We encourage you to take part in this global initiative by calling 020 7627 1510, or emailing [jdn@sbcommunicationsgroup.com](mailto:jdn@sbcommunicationsgroup.com).



changing diabetes