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- 1 Casson IF. Outcomes of pregnancy in insulin dependent diabetic women: results of a five year population cohort study. *BMJ* 1997;315:275-8.
- 2 Hawthorne G. Prospective population based survey of outcome of pregnancy in diabetic women: results of the northern diabetic pregnancy audit, 1994. *BMJ* 1997;315:279-81.
- 3 National Institute for Health and Clinical Excellence. *Diabetes in pregnancy: management of diabetes and its complications from pre-conception to the postnatal period*. London: NICE, 2008. www.nice.org.uk/CG063
- 4 World Health Organization Department of Noncommunicable Disease Surveillance. *Definition, diagnosis and classification of diabetes mellitus and its complications. Report of a WHO consultation. Part 1: diagnosis and classification of diabetes mellitus*. Geneva: WHO, 1999.

Commentary: Controversies in management of diabetes from preconception to the postnatal period

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Why does the United Kingdom remain so far from achieving the aim of “a pregnancy outcome for women with diabetes that equates with that of women without diabetes,” an aim outlined at the landmark St Vincent meeting of diabetes experts, government representatives, and patient organisations nearly 20 years ago?¹ Pregnancy outcomes in the UK continue to be substantially worse for women with pre-existing diabetes (both type 1 and type 2), with rates of congenital anomalies and perinatal mortality significantly higher than in non-diabetic women and with care regularly falling short of the required standard.² Many of the recommendations in the new guidelines from the National Institute for Health and Clinical Excellence (NICE) seem sensible and will be of use to all healthcare professionals in this area, but in places they are surprisingly clear cut given the relative paucity of high quality evidence.

The guidelines suggest a comprehensive programme of care from preconception to postnatal management. They include a strong emphasis on preparation for pregnancy, which requires considerable involvement of general practitioners, diabetologists, specialist obstetricians and midwives, and most importantly the women themselves. This message has been echoed by the latest triennial maternal mortality report from the UK, which highlights the importance of joined-up care for such women.³ Given that two thirds of pregnant women with pre-existing diabetes had a haemoglobin A_{1C} concentration greater than 7% in the first trimester (the threshold for optimal glycaemic control in the report from the Confidential Enquiry into Maternal and Child Health),² achieving the recommendation of aiming to “maintain a HbA_{1C} below 6.1%” seems particularly optimistic. Much greater uptake of structured education programmes and use of continuous subcutaneous insulin infusion pumps, as shown to be beneficial outside pregnancy, may need to be considered to achieve these tough targets. The resource implications should not be underestimated,

particularly when those with poorest control may find it hardest to access and use health care.

The recommendation that screening for gestational diabetes should be by clinical risk factor alone is more controversial. The authors acknowledge the poor sensitivity and specificity of this approach compared with universal administration of oral glucose tolerance tests. In some groups, use of clinical risk factors misses nearly half the women with gestational diabetes,⁴ but the performance of this screening method will depend on the maternal age, ethnicity, and body mass index profile of each population. As the ACHOIS trial⁵ provided evidence of potential benefit for treatment of even mild gestational diabetes, missing a substantial proportion of cases of gestational diabetes may translate into clinical detriment. The ongoing hyperglycaemia and pregnancy outcome trial (which is assessing associations of maternal glycaemia with risks of adverse pregnancy outcome) will clarify further the need for treatment in this milder group. On a positive note, the option to use metformin for the treatment of gestational and type 2 diabetes will be welcomed as an alternative or addition to insulin.

Obstetricians may be surprised, given the limited evidence, at the recommendation to offer delivery to all women with diabetes at 38 weeks' gestation as this will represent a change in clinical practice for many. It reflects the difficulty with which late pregnancy complications, particularly shoulder dystocia and stillbirth, can be predicted. Women with diabetes already have a caesarean section rate of 60-70%, three times higher than the rate in the general population of women giving birth; the debate continues about the most appropriate rate for caesarean section in diabetic women, given the short and long term risks of this procedure, particularly in obese women. Optimising glycaemic control to prevent macrosomia and understanding the mechanism by which diabetes increases the risk of stillbirth may be more thoughtful approaches in the long term.

In conclusion, many of the NICE recommendations will prove beneficial in ensuring that women with pre-existing or gestational diabetes receive comprehensive care that aims to minimise risks to mother and baby. The recommendations will be most helpful for clinicians managing predominantly white women with type 1 diabetes and a high uptake of medical care and low deprivation; however, in areas with an increasingly obese, ethnically diverse population and a high risk of type 2 and gestational diabetes, implementation will be more challenging.

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- 1 Diabetes care and research in Europe: the Saint Vincent declaration [workshop report]. *Diabet Med* 1990;7:360.
- 2 Confidential Enquiry into Maternal and Child Health. *Diabetes in pregnancy: are we providing the best care? Findings of a national enquiry: England, Wales and Northern Ireland*. London: CEMACH, 2007.
- 3 Confidential Enquiry into Maternal and Child Health. *Saving mothers' lives: reviewing maternal deaths to make motherhood safer—2003–2005*. [The seventh report on Confidential Enquiries into Maternal Deaths in the United Kingdom.] London: CEMACH, 2007.
- 4 Pöyhönen-Alho MK, Teramo KA, Kaaja RJ, Hiilesmaa VK. 50 gram oral glucose challenge test combined with risk factor-based screening for gestational diabetes. *Eur J Obstet Gynecol Reprod Biol* 2005;121:34–7.
- 5 Crowther CA, Hiller JE, Moss JR, McPhee AJ, Jeffries WS, Robinson JS. Australian Carbohydrate Intolerance Study in Pregnant Women (ACHOIS) Trial Group. Effect of treatment of gestational diabetes mellitus on pregnancy outcomes. *N Engl J Med* 2005;352:2477–86.

TEACHING ROUNDS

Role modelling—making the most of a powerful teaching strategy

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Teachers need to be aware of the conscious and unconscious components of learning from role modelling, so that the net effect of the process is positive

Educating future generations of physicians is one of the privileges and obligations of the medical profession. As an important part of this process, doctors historically have patterned their activities on those of practitioners whom they respect and trust. These have been called role models, “individuals admired for their ways of being and acting as professionals.”¹ Both consciously and unconsciously, we model our activities on such individuals.²

Although role modelling is at the heart of “character formation,”³ medical students and junior doctors have observed that many clinical teachers are poor role models. In one study less than half of the teachers were identified as positive role models.⁴ In another, half of the clinical clerks and a third of the residents surveyed felt that their teachers were not good role models for doctor-patient relationships.¹ Clearly, this is a situation that should concern us and the institutions in which we work.

Learning from role models occurs through observation and reflection, and is a complex mix of conscious and unconscious activities (fig 1).⁵ We are all aware of the conscious observation of behaviours, but understanding the power of the unconscious component is essential. Active reflection on the process can convert an unconscious feeling into conscious thought that can be translated into principles and action. In an equally powerful process, observed behaviours are

unconsciously incorporated into the belief patterns and behaviours of the student.

Role models differ from mentors.⁶ Role models inspire and teach by example, often while they are doing other things. Mentors have an explicit relationship with a student over time, and they more often direct the student by asking questions and giving advice freely.⁷

What makes for an effective role model?

As teachers we are capable of wide variation in our performance as role models, and we can demonstrate both positive and negative behaviours in a single encounter, as illustrated in the first vignette (box 1).

The characteristics of role models have been well documented^{1 3 4 8–10} (fig 2) and can be divided into three categories:

Clinical competence encompasses knowledge and skills, communication with patients and staff, and sound clinical reasoning and decision making. All of these skills must be modelled as they lie at the heart of the practice of medicine.

Teaching skills are the tools required to transmit clinical competence. A student centred approach incorporating effective communication, feedback, and opportunities for reflection is essential to effective role modelling.

Personal qualities include attributes that promote healing, such as compassion, honesty, and integrity. Effective interpersonal relationships, enthusiasm for practice and teaching, and an uncompromising quest for excellence are equally important.

This series provides an update on practical teaching methods for busy clinicians who teach. The series advisers are Peter Cantillon, senior lecturer in the department of general practice at the National University of Ireland, Galway, Ireland, and Yvonne Steinert, professor of family medicine, associate dean for faculty development, and director of the Centre for Medical Education at McGill University, Montreal.