

# Prepregnancy care: improvements for some women but not for all!

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The key role of prepregnancy care for optimal pregnancy outcomes among women with type 1 and type 2 diabetes is well established. Optimal periconception glycemic control, variably defined as hemoglobin A<sub>1c</sub> (HbA<sub>1c</sub>) levels below 6.1%, 6.5%, or 7%, is associated with substantial reductions in major congenital anomaly and perinatal mortality.

Cyganek et al<sup>1</sup> have studied changes in clinical characteristics among 545 women with type 1 diabetes who attended for prepregnancy care over a 15-year period during the years 1998–2012. There were improvements in glycemic control with approximately 1% lower HbA<sub>1c</sub> values in women who “planned” pregnancy (6.4% vs 7.5%). The mean HbA<sub>1c</sub> levels also improved over time among women who “planned” and equaled 6.8%, 6.6%, and 6.1% during the 3 study periods (1998–2002, 2003–2007, and 2008–2012). However, there were no changes in glucose control among the cohort of women who did not plan their pregnancies (7.7%, 7.2%, and 7.5%).

Some notable changes in clinical care over this 15 years include the widespread use of insulin analogues, up from 2.6% to 95.6%, and of insulin pump therapy, up from fewer than 1 in 20 women to 1 in 3. Long-acting insulin analogues were not used, perhaps contributing to the widespread use of insulin pump therapy. The subgroup analyses suggest that glycemic control improved over time among women who planned their pregnancy, perhaps related to changes in insulin delivery. Unfortunately, there are no data regarding other aspects of prepregnancy care such as the use of safe effective contraception, folic acid supplementation, and cessation of potentially harmful medications.

The disappointing take-home message from this study is that only 40% of women “planned” pregnancy, meaning that the majority of women are still entering pregnancy with suboptimal

glucose control. Furthermore, there was no change in the rates of prepregnancy care attendance since 1998, so the importance of the message that prepregnancy care is vital for women with diabetes is still not reaching primary and secondary health care colleagues or all women with diabetes.

In response to the 2002–2003 Confidential Report into Maternal and Child Health (CEMACH), concluding that pregnancy preparation was inadequate, resulting in potentially modifiable adverse pregnancy outcomes,<sup>2</sup> the United Kingdom has established a National Pregnancy in Diabetes (NPID) audit.<sup>3</sup> The audit describes pregnancy preparation and care given to women with diabetes during pregnancy as well as maternal fetal health outcomes. All maternity centers delivering care to women with diabetes are expected to participate (<http://digital.nhs.uk/npid>). Since the years 2002 and 2003, the proportion of women with type 1 diabetes taking preconception folic acid (a surrogate marker for prepregnancy care) has increased by almost 10%, from just over 40% to 53%. As has been shown previously, there is a strong association between maternal socioeconomic status and prepregnancy care attendance, with the 2015 NPID data confirming strikingly high rates of folic acid use and thus pregnancy planning, reaching 75% among women with type 1 diabetes living in the least deprived areas. Likewise, for glycemic control, 1 in 4 women achieving the target HbA<sub>1c</sub> levels of less than 48 mmol/mol (6.5%)<sup>4</sup> in early pregnancy, as recommended by the National Institute for Health and Care Excellence, were among the most socioeconomically advantaged. Only 1 in 10 women living in disadvantaged areas achieved equivalent glycemic control. The women achieving HbA<sub>1c</sub> levels below 6.5% were slightly older (31.3 vs 29.8 years) and also had lower body mass index (again strongly associated with socioeconomic advantage).

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All women with type 1 diabetes have regular health care contacts for provision of essential self-management supplies (glucose monitoring strips, insulin, etc). Hence there are ample opportunities to check that women of reproductive years who are not planning pregnancy have access to safe and effective methods of contraception. Women who are not optimally using contraception (struggle with compliance, previously “conceived on the pill”) should be offered long-acting reversible contraception methods or referred to a specialist family planning clinic. Increasingly, online tools and mobile phone apps are available for women with diabetes to decide about the best contraceptive methods for them ([www.fpa.org.uk](http://www.fpa.org.uk)).

Our own previous qualitative research indicates that most women with diabetes have some understanding of the issues concerning diabetes during pregnancy and are aware of the importance of optimal glycemic control.<sup>5</sup> However, most (70% of women in our study) are not regularly using safe reliable forms of contraception and most were neither planning nor avoiding pregnancy. Some of the potentially modifiable barriers to prepregnancy care attendance were misplaced fertility concerns (thought getting pregnant would be harder/take longer because of diabetes), getting pregnant faster than expected, and long-standing poor relationships with diabetes teams. The clear message is that women with diabetes should be encouraged to start prepregnancy care before stopping contraception. For a smaller number of women, there were additional practical or logistical barriers to attending (living too far away, childcare problems) and a desire for “normality” rather than the inevitable medicalization of a high-risk type 1 diabetes pregnancy.

The critics of prepregnancy care have suggested that prepregnancy clinics favor well-educated and the most socioeconomically advantaged women, thus failing to engage women at the highest risk of adverse pregnancy outcome who could benefit most. It is clear from this study by Cyganek et al<sup>1</sup> that further work is needed to increase awareness about the importance of prepregnancy care and to improve prepregnancy care clinic attendance among women planning pregnancy. However, if pregnancy outcomes are to be improved, the inequalities in prepregnancy care access need to be urgently addressed. By far, the most concerning statistic in this study is the lack of glycemic control improvement in women who did not attend prepregnancy care clinics. Specific targeting of prepregnancy care awareness among family doctors, diabetes health care professionals, and women with diabetes living in disadvantaged areas is essential if the current health care inequalities are to be overcome.

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