



## Adherence to Contraceptive Use Guidelines and Preconception Advice in a Diabetes Clinic

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### ABSTRACT

**Background:** Women with diabetes have more complications during pregnancy. Contraceptive advice to prevent unplanned pregnancy is of utmost importance for them. Maintenance of strict glycaemic control is essential to have a positive outcome in pregnancy and proper care. Preconception care and counselling to help pregnancy planning is thus essential.

**Aim:** To assess whether proper education regarding importance of contraceptive use, preconception care and advice is being imparted to female diabetics according to NICE guidelines

**Method:** This is a proposed monocentric retrospective clinical audit to evaluate adherence of a diabetes clinic to NICE guidelines regarding education and advice on contraceptive use and preconception care. The three criteria being assessed include documentation of patient's intentions regarding contraceptive use and pregnancy at each visit with the diabetes care team; offering patients intending to get pregnant a structured education programme as soon as possible; and preconception care and advice being imparted to patients wanting to try for pregnancy before discontinuing contraception. Two patient cohorts, each consisting of 50 patients who meet the inclusion and exclusion parameters for the respective criteria will be made. Data collection will be done by the diabetologist, the diabetes specialist nurse and the practice nurse at St. June's Diabetes Clinic. Data will be collected by accessing previous records of patients from 01 January 2021 to 31 December 2021. Data will be compiled as a percentage and compared with the standard.

**Conclusion:** Improved patient-staff communication is the key point to improve compliance with NICE guidelines regarding these standards.

**KEYWORDS:** Contraception, Education, Maternal Diabetes, Preconception Care

### INTRODUCTION

Contraceptive use among patients with diabetes is less prevalent. In a study done by Britton et al., 2019; the results displayed that women with diabetes were more likely to use no contraception. Nojomi, Morrovatdar, Davoudi, & Hosseini, 2013 reported that coital withdrawal was the most common method used for contraception by diabetic women and there was a dire need for more patient education about this issue. Use of contraception among diabetic patients was low on follow up in Ethiopia in a study done by Mekonnen, Woldeyohannes, & Yigzaw, 2015 and they came to the conclusion that counselling and advice about contraception and preconception care needed to be fortified. NICE seeks to counter this by encouraging early patient education by breaking barriers about information regarding contraception. The guidelines recommend documentation of patient's intentions regarding contraception and pregnancy at each visit to the diabetes care team from adolescence (NICE, 2015). This is the first criterion to be assessed in this audit. Improving patient education regarding contraception would decrease the chances of an unplanned pregnancy, which has worse outcomes compared to a planned pregnancy in diabetes (Wender-Ozegowska et al., 2010). This would achieve favourable outcomes both for the health system by decreasing potential burden of a high-risk unplanned pregnancy and benefit the patient by helping her maintain good health.

Maternal diabetes has a high potential for complications (Hawthorne, 2011). These include complications for the neonate as well as for the mother (Hawthorne, 2011; Tennant, Glinianaia, Bilous, Rankin, & Bell, 2014). Risk of foetal complications including stillbirth, neonatal mortality and congenital malformations still remains high in diabetic pregnancies compared to other pregnancies as discussed in a study by Lapolla et al., 2008. Howarth, Gazis, & James, 2007 studied association between maternal diabetes and



complications of pregnancy and concluded that women with diabetes were at a higher risk of pre-eclampsia and pathological malformations of the foetus, thus leading to the interpretation that increased pregnancy surveillance and counselling is required in diabetic women. Preconception counselling was associated with better glycaemic control and reduced risk of adverse outcomes in pregnant women in a study done by Tripathi, Rankin, Aarvold, Chandler, & Bell, 2010. However, they also inferred that more efforts needed to be made to improve preconception counselling rates. NICE attempts to tackle this problem by recommending education guidelines about preconception advice and care. These include offering the patient a structured education programme when the patient expresses her desire to try for conception, and offering her proper preconception advice and care before discontinuing contraception (NICE, 2015). This would ensure the prevention of unplanned pregnancy and the patient will be educated on all aspects of managing her disease with the pregnancy, ensuring favourable outcomes.

The aim of this audit is to assess whether or not NICE guidelines are being followed at the diabetes clinic with respect to imparting education on contraceptive use and preconception care. Preconception counselling and contraceptive advice are things that might be overlooked at clinics. This audit will help in bringing this topic to the forefront and pointing out the benefits of educating the patients so future complications and potential disease burden can be prevented.

## METHOD

This is a proposed retrospective monocentric clinical audit to assess compliance of diabetes clinics with the education guidelines regarding contraceptive use and preconception advice and care recommended by NICE. Records will be accessed from 01 January 2021 to 31 December 2021 to check adherence with NICE standards.

**Study Design:** This clinical audit proposes to test compliance of a diabetes clinic with three criteria from NICE guidelines on maternal diabetes. Two patient cohorts, each consisting of fifty patients will be made, as illustrated in figure 1.

Cohort 1 will consist of fifty female diabetics, age of onset of diabetes between 13-45 years and diagnosed before 31 December 2021. All patient records from 01 January 2021 to 31 December 2021 will be accessed to check criterion 1 given in Table 1 that is documentation of contraceptive use and patient's intentions regarding pregnancy at every visit with the diabetes care team.

Inclusion Criteria for Cohort 1

1. Female diabetic patients of reproductive age group (13-45 years)
2. Diagnosed before 31 December 2019

Exclusion Criteria for Cohort 1:

1. Patient diagnosed with diabetes at age >45 years
2. Patient with hysterectomy
3. Menopausal patient
4. Patient with tubectomy
5. Patient records with missing data of previous visits.

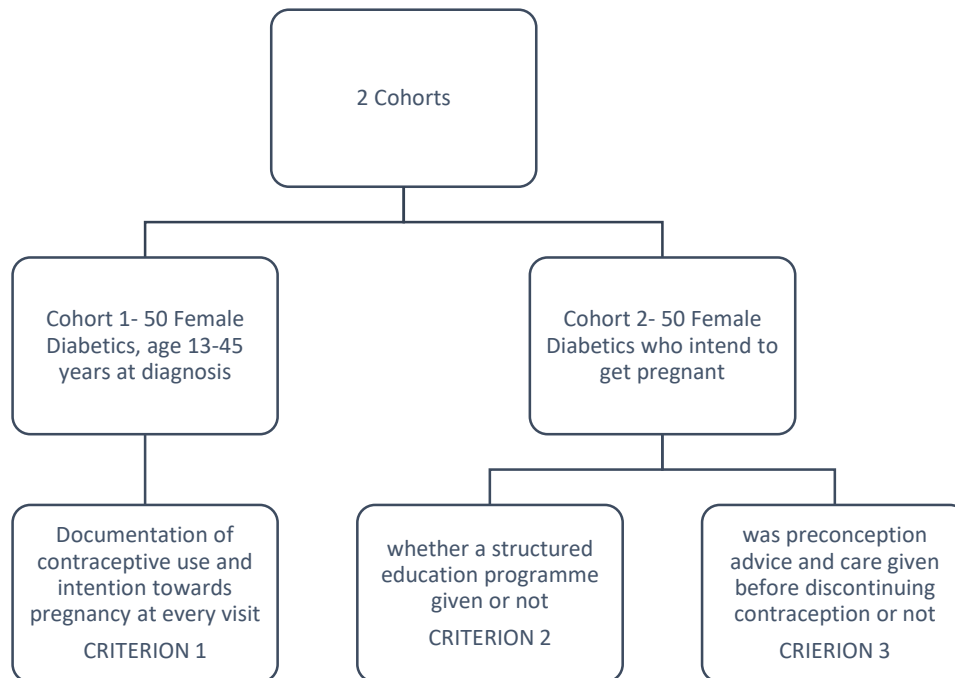
Cohort 2 will consist of fifty female diabetics who intend to get pregnant. Records of their previous visits will be accessed from 01 January 2019 to 31 December 2019 to check for criteria 2 and 3 in Table 1, which include whether or not patients planning to get pregnant were given a structured education programme, and whether or not preconception care and advice was given to patients before discontinuing contraception.

Inclusion criteria for Cohort 2:

1. Female patient with diagnosed diabetes intending to get pregnant
2. Pregnant patient with diagnosed diabetes with conception planned in the year 2019
3. Patient who had a previous planned pregnancy in the year 2019 in the course of diabetes

Exclusion criteria for Cohort 2:

1. No pregnancy or intention to get pregnant over the course of 2019
2. Unplanned pregnancy



**Figure1:** Flowchart showing cohorts for data analysis.

**Data Collection and Compilation:** The proposed audit will take place at St. June’s Diabetes Clinic. Patient records from 01 January 2019 to 31 December 2019 will be accessed. The staff at the clinic including the diabetologist, the diabetes specialist nurse and the practice nurse will be involved in the data collection and compilation. This does not require patient participation. Records of previous visits of patients who meet the inclusion parameters for each criterion will be accessed to evaluate the criteria illustrated in Table 1. For criterion 1, the staff conducting the audit will check whether or not patient’s intentions towards contraceptive use and pregnancy were noted in the records at every visit to the clinic in 2019. For criterion 2, patient records will be examined to check whether or not a structured education programme was offered to the patient when she expressed the desire to try for pregnancy. For criterion 3, the staff will determine from past records if preconception advice and care was given to the patient before she stopped taking contraception. The data will be compiled and presented as a percentage in Table 1.

**Purpose of Audit:** To assess whether the current education guidelines recommended by NICE regarding contraceptive use and preconception advice and care in diabetic women are being followed.

**Audit Criteria:** NICE guidelines for maternal diabetes include a section on education and support for contraceptive and preconception advice. This includes removing barriers to uptake of advice which recommends documentation of intention of the patient regarding contraceptive use and pregnancy at each visit with the diabetes care team after diagnosis, which will be assessed in this audit as criterion 1. Women with diabetes are less likely to use effective contraception compared to other chronic diseases (Britton et al., 2019; Schwarz et al., 2012). Advising them on contraception and pregnancy at every visit starting from an early age will be beneficial in regards to the correct contraceptive use with their condition and help in preventing unwanted pregnancy. Unplanned pregnancies pose a greater risk for diabetic women than planned (Wender-Ozegowska et al., 2010) and maternal diabetes is associated with a higher risk of complications such as stillbirths and congenital malformations (Lapolla et al., 2008). Therefore, assessment of this criterion with respect to NICE standards as an audit will be beneficial.

NICE also has separate recommendations for education and advice regarding conception for diabetic women. These include two standard guidelines which will be assessed as criteria 2 and 3 in this audit. Criterion 2 is if a patient intends to get pregnant, she should be offered a structured education programme as soon as possible. Criterion 3 is giving preconception advice and care to patients planning to get pregnant before discontinuing contraception. Women with diabetes are at a higher risk of complications



during pregnancy (Pisani et al., 2019) and should be offered ample advice before conceiving (Howarth et al., 2007) so that they can be well prepared for the strict glycaemic control and other measures that are required to get a positive outcome in their pregnancy.

**Table 1:** Audit Criteria and Standards

Serial Number	Criterion 1	Criterion 2	Criterion 3
<b>Criterion</b>	Document intention of patient regarding pregnancy and contraceptive use at every contact of patient with diabetes care team from adolescence	Diabetic women planning pregnancy should be offered a structured education programme as soon as possible	Offer preconception care and advice to diabetic women planning to become pregnant before discontinuing contraception
<b>Number of Patients assessed (N)</b>	50	50	50
<b>Number of patients in which criteria was achieved (n)</b>			
<b>Percentage of patients in which criteria was achieved (n/N x 100)</b>			
<b>Exceptions</b>	Patient age >45 years at diagnosis. Menopausal patients. Patients with hysterectomy. Patients with tubectomy.	Patient has no intention of getting pregnant	Unplanned pregnancy
<b>Standard</b>	1.1.27 Document the intentions of all women with diabetes regarding pregnancy and contraceptive use at each contact with their diabetes care team from adolescence. (NICE, 2015)	1.1.29 Offer all women with diabetes who are planning to become pregnant a structured education programme as soon as possible if they have not already attended one(NICE, 2015)	1.1.30 Offer all women with diabetes who are planning to become pregnant preconception care and advice before discontinuing contraception. (NICE, 2015)
<b>Percentage of standard</b>	100%	100%	100%

**DISCUSSION**

Maternal diabetes is a risk factor for foetal and maternal complications in pregnancy (Howarth et al., 2007; Lapolla et al., 2008). Strict glycaemic control is required by diabetic patients in pregnancy (Tennant et al., 2014; Vijayan, Antony, & Geeta, 2017), so preconception advice and care could be the key to a favourable pregnancy outcome. Tripathi et al., 2010 demonstrated the positive effects of preconception counselling in their study with lesser chances of adverse effects and better glycaemic control achieved by patients who received it. The impact of preconception counselling in diabetic teenage girls was observed in a study by Andrea, William, & Susan, 2010. The counselling given regularly at each visit demonstrated a positive outcome by educating the teens and the cost benefit ratio of this change was highly favourable. A follow up study of the long term effects of this counselling was also carried out by Charron-Prochownik et al., 2013. The results showed long term sustained positive outcomes in the girls and it was recommended that preconception counselling should be continued for better outcome in the future as well. Contraceptive use is also



less prevalent in diabetic women (Britton et al., 2019; Mekonnen et al., 2015; Nojomi et al., 2013) which can lead to higher rates of unplanned pregnancy among them, which have worse outcomes compared to planned conception (Wender-Ozegowska et al., 2010). Thus, patient education regarding these issues is beneficial in the long run and cost effective for the healthcare system in general. NICE recommends education guidelines regarding contraceptive use and preconception care so that the health of the patient can be safeguarded and the potential burden of poor outcome pregnancies on the healthcare system can be eliminated (NICE, 2015). The purpose of this audit is to verify whether a diabetes clinic follows these education guidelines on a regular basis or not, and identifying reasons for the non-adherence so that they can be improved.

The standard for the criteria assessed in this proposed audit is 100% as the advice and education should be imparted to every patient according to NICE (NICE, 2015). The outcome for criterion 1 which is the documentation of patient's intention regarding contraceptive use and pregnancy at every visit with the diabetes care team is estimated to be low, approximately 60%. Since the criteria required records to be checked of each and every visit, one of the main reasons for this low estimate can be documentation errors, which are common and might be eliminated by electronic device use (McCarthy et al., 2019). Another reason can be difficulty in breaching the topic of contraception especially in adolescents, as these topics are seen as taboo in many cultures creating a barrier to early education about them (Barral et al., 2020; Kragelund Nielsen, Nielsen, Butler, & Lazarus, 2012). The staff at the diabetes clinic could have overlooked documentation if they were overworked due to scheduling errors or increased patient load at the clinic. Time constraints could have been the reason as well. One easily amended issue could be lack of awareness about this guideline (Lowson et al., 2015) as education of patients regarding these topics can sometimes be overlooked in favour of physical ailments. Criteria 2 and 3 of this audit are related to preconception advice and care. The estimated outcome of these criteria is approximately 80%. Reasons for not achieving a perfect 100% outcome can be due to patient error, which may be due to stopping of contraceptive use when she decides to get pregnant without informing the diabetes care team. Another reason can be miscommunication between the staff and the patient. Awareness about the structured education programme might not be present among the staff (Lowson et al., 2015).

To amend these shortcomings, the clinic staff should be educated through workshops regarding the guidelines recommended by NICE about contraceptive use, preconception care and advice. Patient education should be emphasized. In a cross sectional study done by Lowson et al., 2015 regarding the implementation of NICE guidelines, it was observed that shared learning experiences and open communication between staff and hospitals was the key to proper implementation of guidelines, so regular workshops and open communication among the staff about these issues should be encouraged. As the topic of contraception is taboo (Barral et al., 2020; Kragelund Nielsen et al., 2012), emphasis should be put on the method of delivery of advice by the staff of the clinic. Patient record sheets can have an additional column for contraceptive use and intentions regarding pregnancy. This will prevent errors due to forgetfulness. Staff-patient relationship should be enhanced by improving communication between them. The audit can be repeated after a set period of time with similar criteria to evaluate the efficacy of these changes.

## CONCLUSION

This audit focuses on conception and contraception advice imparted to diabetic women at the diabetes clinic and aims to bring to light the shortcomings of the system in this regard so as to suggest improvements for the same. The NICE education guidelines focus on imparting care and advice before conception so that women suffering from diabetes can be better prepared and unplanned complications can be prevented. The criteria assessed in this audit are education and awareness related and the best method to improve compliance with the NICE standards is to improve communication with patients. Offering advice about contraception and documenting patient intentions about the same from an early age prevents the chances of unplanned pregnancies and the risks associated with maternal diabetes. Contraception advice at every visit will also help in implementing preconception care guidelines better as it will decrease incidence of unplanned pregnancy. Breaking societal barriers about such topics being talked about from adolescence will bring benefits for the health of the patient as a whole.

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