The Health Foundation
Inspiring Improvement

PROCEED preconception care for diabetes in Derby/Derbyshire

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Part 1: The Model

The problem

Women with diabetes are two to four times more likely to give birth to a baby with an abnormality, and five times as likely as women without diabetes to experience a stillbirth. Effective preconception care (PCC) improves outcomes, but nationally only a third of women access this care. Locally, PCC had been delivered in the hospital antenatal clinic. While outcomes had been improved through raising awareness of the need for PCC, diabetes service restructuring resulted in a loss of capacity, and women became pregnant while waiting for PCC. In 2009/10, the percentage of pregnant women with diabetes receiving PCC (the PCC rate) fell from 68% to 48%, and adverse outcomes from pregnancy – particularly stillbirths – in women with diabetes increased.

The solution

With funding from the Health Foundation's SHINE programme, we piloted the first 'Teams Without Walls' integrated, community-based, user-centred approach to the redesign of the PCC service, to deliver an innovative model for PCC.[1]

1. We raised awareness of the need for PCC amongst all professionals in contact with women with diabetes, and we also sent written information to women with diabetes aged 18–45.
2. We utilised all resources with the appropriate competencies, irrespective of location across primary and secondary care, and for the first time integrated the preconception service vertically across the boundaries of primary and secondary care as well as horizontally across specialties.
3. Users were given a choice of clinics in hospital or in the community, flexibility with appointment times, and contact by telephone and email as well as face-to-face appointments.
4. Women had an initial multidisciplinary consultation, and a care plan was formulated to prepare them medically for pregnancy; the plan was implemented using resources across primary and secondary care, as appropriate.
5. We changed the Consultant Physician role from service delivery only to seeing those at highest risk, providing mentorship and optimising the lean delivery of the care pathway.
6. A care-bundled approach, including regular Plan Do Study Act (PDSA) cycles, was used to evaluate the project.

The outcomes

After 12 months we had:

Improved effectiveness, efficiency and timeliness

- Activity was doubled and median waiting time reduced from 13 to 5 weeks, despite only a 50% increase in capacity – demonstrating efficiency.
- The percentage of missed appointments was reduced from 18% to 5%.
- Compared with women who did not receive preconception care, those who did:
  - were more likely to conceive on high-dose folic acid;
  - had better glucose control in the first trimester of pregnancy;
  - attended fewer outpatient visits in the first 20 weeks of pregnancy;
  - had reduced length of stay before and after delivery;
  - had babies who were less likely to be admitted to the neonatal unit.
- The PCC rate rose from 48% to 70%. The stillbirth percentage was reduced from 6% to 0%.

Provided a person-centred service with improved equity

- The excellent feedback we received from users (see online at www.health.org.uk/multimedia/video/pre-pregnancy-care-in-diabetes-shine-2011/), together with fewer missed appointments, supported the fact that we were meeting the community's needs.
- We engaged with more women from traditionally hard-to-reach groups, particularly young adults and South Asian women from low socio-economic groups.

Ensured and improved safety

- Quality of care was not compromised by changing from a consultant-led to a nurse-led service, with spread across a wider geographical area.
- The improvement in pregnancy outcomes supported an improvement in safety.

Achieved financial savings

- PROCEED saved £61,000 during that first year. The main impact of PCC was through reducing birth defects, outpatient activity, and length of stay.

Part 2: Implementing PROCEED

Key components for success in implementing a project such as PROCEED are:

- Strong project management and leadership
- Strong relationships between partners, since a collaborative approach is essential for the development of integrated care. The engagement of the following groups was needed:
  - all clinicians who will be part of the service;
  - Service Leads in diabetes and obstetrics;
  - management of the Acute Trust and Partner Organisations;
  - Commissioners;
  - Users.

We involved all the above in the design of the project. A user, the leads from Partner Organisations, an Acute Trust senior manager and a Finance Manager were included in the grant application team. This facilitated the resolution of problems at the outset, as well as eventually the commissioning of the service.

Starting the project

A clinical stakeholder meeting including user representation was undertaken at the outset to define the grant application, establish how we would run the service, and collect data. All team members were involved in the design to ensure sign-up and adherence to the process.

Detailed discussions with service leads were undertaken to establish how we would backfill posts, and with Partner Organisations to establish community-based clinics. Recruitment was organised through the Acute Trust, but once we obtained funding, one of the difficulties we encountered was navigating through the Trust's vacancy control process. Despite our explanation, the Trust did not take into account that the posts would be externally funded; this delayed the start of our project. Having the support of senior management was important in resolving this and keeping delays to a minimum.

We recruited a project coordinator, who ensured the smooth running of the service, the booking of appointments, the organisation of PDSA meetings, and accurate data collection. A project management template was constructed, with a Gant chart and a template for monthly dashboards.

It is important to consider at the outset how the service will be evaluated, and as far as possible data should be collected prospectively. In our case this not only allowed the final evaluation to be undertaken with ease, but reviewing some of our data, as an important part of our PDSA cycles, allowed us continuously to improve the service for our users.

A robust financial evaluation is important when writing the business case for commissioning, and we involved a Finance Manager from the outset to advise us on how we could collect our data to optimise the final evaluation.

A care-bundled approach was used to evaluate the entire care pathway, using a whole group of endpoints rather than individual items. This method is described in the NHS document *10 High Impact Changes for Service Improvement and Delivery*.[2] When used in conjunction with PDSA cycles, the method has been shown to reduce variation and demonstrate quality improvement. We divided the endpoints into three areas: process, clinical outcomes and staff/user option. This reflected the following areas of quality improvement:

- Effectiveness
- Efficiency
- Timeliness
- Equity
- Safety
- Person centredness.

We invested in a database to:

- Collect clinical outcome and process data
- Produce monthly reports to facilitate PDSA cycles
- Generate letters to GPs.

Data entry forms were designed to facilitate prospective data collection in a pressured clinical environment

Undertaking the project

Monthly clinical team meetings were undertaken for the duration of the project. These were not only for project management purposes, but for PDSA cycles. All team members attended, including the project coordinator and, where possible, a user; all were encouraged to feed back problems as well as aspects that had gone particularly well. We were fortunate in receiving support from Springfield Consultancy as part of the SHINE award, and our mentor provided valuable project management support, although day-to-day project management was undertaken by the Consultant Physician.

Part of the monthly meetings was for the clinical team. A database report was produced listing the users who were actively attending the service, and where they were in the pathway. The Consultant Physician reviewed each case to ensure the person was achieving the targets that had been agreed, whether there were any delays – such as waiting for structured education – that could be resolved by prioritising the users, or whether there were 'routine' appointments that could be cancelled. This maximised the quality of the service as well as the lean delivery of the pathway.

User feedback, both formal and informal, was sought continuously through questionnaires and a focus group. We refined the service as feedback was received, and found that simple changes made a significant difference to user engagement. For example, one user told us that her employer needed to see her appointment letter before agreeing to let her have time off to attend; however, an appointment at a preconception clinic clearly would draw attention to the fact that she was planning a pregnancy. Removing the clinic's name from appointment letters was a simple way to resolve the problem.

The project coordinator was given the task of ensuring all the fields in the data entry forms were completed, and clinicians were contacted to complete fields if needed. This maximised the quality of data collection.

Service evaluation and commissioning

Our investment in data collection facilitated our service evaluation at the end of the funded period. The involvement from the outset of our Finance Manager meant he had a detailed knowledge of the project, and was able to drill down financial savings to savings as a result of the restructure, the changes in staffing as well as the clinical benefits arising from preconception care.

Our greatest challenge was in commissioning PROCEED. We had involved commissioners from the outset, and had planned to present our six-month data at the appropriate commissioning meeting. Unfortunately the meeting was cancelled at the last minute, as the Primary Care Trust structures dissolved more quickly than we had anticipated. The new Clinical Commissioning Groups were only just becoming established, and we were in the situation of not having secured funding beyond the first year. We were very fortunate in receiving support from one of our partner organisations, InterCare Health Ltd, an NHS organisation which has been commissioned to deliver general diabetes services for 29 GP practices. InterCare Health agreed to fund PROCEED for a further 12 months. During this time we were able to engage our new commissioners and write a business case, and our service was commissioned by Southern Derbyshire Clinical Commissioning Group from April 2013. The emphasis on quality data collection and our financial evaluation were key to achieving the commissioning of our service.

The future

PROCEED has won several national awards, including The Health Enterprise East innovations award for Long Term Disease Management and Care, and the Quality in Care Diabetes award for Best Improvement Programme for Maternity and Pregnancy.

The model has proved to be popular, with more than 10 centres expressing an interest in implementing it. The Health Foundation has awarded the PROCEED team funding to support the adoption and spread of PROCEED. This new project involves:

- Undertaking a feasibility study to explore the barriers and facilitators to delivering and commissioning a Teams without Walls approach to preconception care in diabetes. Two centres are involved in this part of the project: Leeds (Dr Eleanor Scott), and Norfolk/Norwich (Dr Rosemary Temple).
- Investing in a Health Economic Evaluation to quantify the resource implications of congenital abnormalities and thereby estimate the cost savings from reducing abnormalities as a result of preconception care. This will strengthen the business cases for centres wishing to adopt the PROCEED model, and increase the likelihood of commissioning local preconception services.
- Using information from the above, together with the existing data and experience from PROCEED, to write a web-based guide 'How to undertake and commission PROCEED'. This will be aimed at clinicians and commissioners who are interested in implementing the model.

We anticipate these measures will support the successful adoption and spread of our model in the future.

References

1. King P. A new model for preconception care for women with diabetes. *Journal of Diabetes Nursing*. 2013;17:56-61.

2. National Health Service. *10 High Impact Changes for Service Improvement and Delivery*. Change 6. Institute for Innovation and Improvement, 2004.