Long-term effects of a lifestyle change support programme for people with impaired glucose tolerance

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About the CLAHRC for Greater Manchester
The CLAHRC for Greater Manchester is a collaboration of the University of Manchester and NHS Trusts across Greater Manchester. Their five-year mission is to improve healthcare, reduce inequalities in health and support self-management for people with cardiovascular conditions. This poster describes the results of the CLAHRC diabetes prevention project which was undertaken in collaboration with NHS Bolton to offer diabetes prevention for people at increased risk of developing type 2 diabetes in primary care.

The challenge
The CLAHRC worked in partnership with NHS Bolton and NHS Salford to improve quality of care for people with IGT. This was achieved by implementing evidence-based preventative lifestyle services, translating intensive programmes used in randomised controlled trials into primary care-based, real-world settings. Educational support, offered through a series of structured goal setting and action planning, provides people with an enhanced understanding of their condition, empowering them to make choices about how they can make and sustain lifestyle changes that will reduce their risk of developing type 2 diabetes.

The results
A total of 134 participants were included in the initial evaluation. However, we only report here on 83 participants with a confirmed IGT diagnosis with a recent 2 hour OGTT between 7.8 and 11 mmol/l. A description of the sample, its baseline characteristics and result data for after the intervention (6 months) and the 18 months follow-up can be found below. No follow-up data was available for 22 participants which are therefore not reported in Graph 1. Additional complication in reporting the data was given through the change from OGTT to using HbA1c in primary care which meant that not all follow-up data was through OGTTs.

Sample Description (n=83)
- Age: mean (SD) 65.6 (11.8)
- Sex: % female 41.0
- Ethnicity:
  - % White: 85.5
  - % Asian: 14.5
  - % Black: 0.0
  - % Other: 0.0
- BMI (kg/m²): mean (SD) 31.0 (6.0)
- Weight (kg): mean (SD) 87.0 (18.5)

Table 1: Sample description (n=83)

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>6 months follow-up</th>
<th>Difference (to baseline)</th>
<th>12 months follow-up</th>
<th>Difference (to baseline)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI (kg/m²): mean (SD)</td>
<td>31.0 (6.0)</td>
<td>29.7 (1.5) n=80</td>
<td>-1.1 (1.5) /</td>
<td>/</td>
<td></td>
</tr>
<tr>
<td>Weight (kg): mean (SD)</td>
<td>87.0 (18.5)</td>
<td>84.0 (17.0) n=80</td>
<td>-2.9 (4.5) /</td>
<td>/</td>
<td></td>
</tr>
<tr>
<td>Waist circumference (cm): mean (SD)</td>
<td>105.3 (13.2) n=65</td>
<td>102.2 (12.4) n=65</td>
<td>-3.1 (4.8) /</td>
<td>/</td>
<td></td>
</tr>
<tr>
<td>OGTT 2-hour plasma glucose (mmol/l): mean (SD)</td>
<td>9.1 (0.9)</td>
<td>8.4 (3.2) n=40</td>
<td>-0.7 (3.2) /</td>
<td>8.8 (2.6) n=40</td>
<td>-0.3 (2.3) /</td>
</tr>
</tbody>
</table>

Table 2: Outcome data (n=83)

Graph 1: Changes in glycaemic states (n=61)

Our approach
The model of lifestyle support was tailored to Bolton’s local context and existing community services. An existing face-to-face service delivered by Health Trainers was chosen. The service offers educational support over a period of six months and is evidence-based. Data was collected at baseline and at the end of the intervention and included changes in weight, waist circumference. Additional data regarding fasting and 2 hour oral glucose tolerance test (OGTT) results were collected at baseline, at the end of the intervention and 18 month after enrolment.

Conclusion
Outcome data suggest that the Health Trainer service is effective in helping people at risk of developing type 2 diabetes to make and maintain healthier lifestyle choices. Changes in weight and waist circumference at six months are comparable to published studies. And follow-up data at 18 month after enrolment indicates that the number of participants remaining in the normal glycaemic range stayed stable. There has been an increase in people who developed type 2 diabetes within the 12 month follow-up period.

However, there are limitations to this data. Not being a randomised controlled trial we relied on routinely collected data in primary care which meant we were unable to collect follow-up data regarding weight and waist circumference as this data was not available. It also meant that not all follow-up data regarding the 2h OGTT was available; in the meantime GP surgeries had changed to HbA1c for diagnosis of IGT and for some participants only random glucose readings were available.

Nonetheless, this diabetes prevention programme is an effective and sustainable mode of service delivery: since the project started in 2009 over 2500 people with IGT have seen a Health Trainer. We will look into analysing this larger data set in future. It also is possible to spread this model to other areas as currently being done in NHS Ashton, Leigh and Wigan. However, not every health economy will have Health Trainers available so the model of delivery is best chosen taking into account local and contextual factors, e.g. currently available primary care services; demographic characteristics of the local IGT population and operating service location and service users’ needs.
