

## Who takes part in the NHS Diabetes Prevention Programme? How do they benefit?

### What we knew

Many countries worldwide have diabetes prevention programmes. They invite people at risk of diabetes to attend a course of education and exercise, which encourages them to change their behaviour (like unhealthy eating, lack of exercise, smoking) that can lead to type 2 diabetes.

We know that diabetes prevention programmes work in people at risk of diabetes, in reducing weight, lowering blood glucose and slowing the conversion to diabetes. Less is known about how the impact of these courses varies between different people, such as younger and older people, those from different ethnic groups, people who are better or worse off financially, from different geographic regions and between men and women.

We might expect that people only benefit if they actually turn up to the course when invited (we call this 'uptake') and attend a minimum number of sessions (we call this 'retention').

Again, we don't know how uptake and retention vary between different groups, between different geographic regions or whether different course providers do better or worse than others.

### What we did

England's NHS Diabetes Prevention Programme offers a course of at least 16 hours, over 9 months, of face-to-face group education. Up to August 2019, the course was offered in different parts of the country by one of four course providers (some private, some not-for-profit). The NHS set out details of what the course should cover, and the providers had some flexibility about how it was delivered to patients.

We analysed data collected by these providers on adults at risk of type 2 diabetes who were referred between 2016 and 2017. We used advanced statistical techniques to investigate: 1) Uptake and retention in the programme reporting on differences among patient subgroups, service providers, and sites; 2) Changes in weight and blood glucose measures among those who completed the programme, including differences among patient groups, providers, and different areas of England.

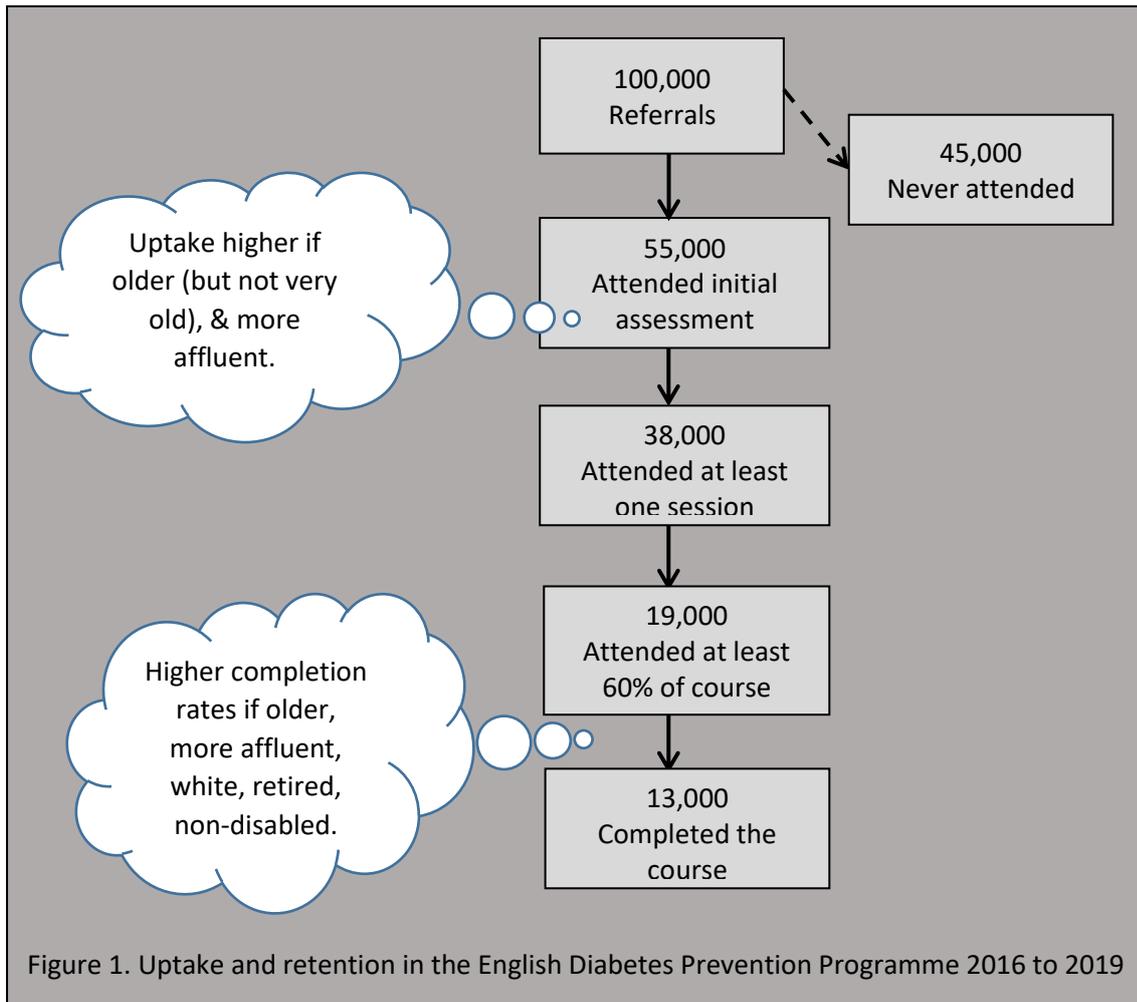
NOTE: Blood glucose measures are used by the NHS to monitor the progress of people with diabetes or at risk of diabetes. A reduction in blood glucose level while attending the programme would be a good indicator of whether a person has reduced their risk of developing diabetes.

### What we found<sup>1</sup>

1. Uptake (among 100,000 people who were referred to the programme):
  - Just over half (55,000) took up a place (attended at least once).
  - People were MORE likely to take a place on the course if they were older (but not the very oldest) and from more affluent areas of England.
  - Uptake did not vary between men and women.
  - There was substantial variation in uptake between different service providers.

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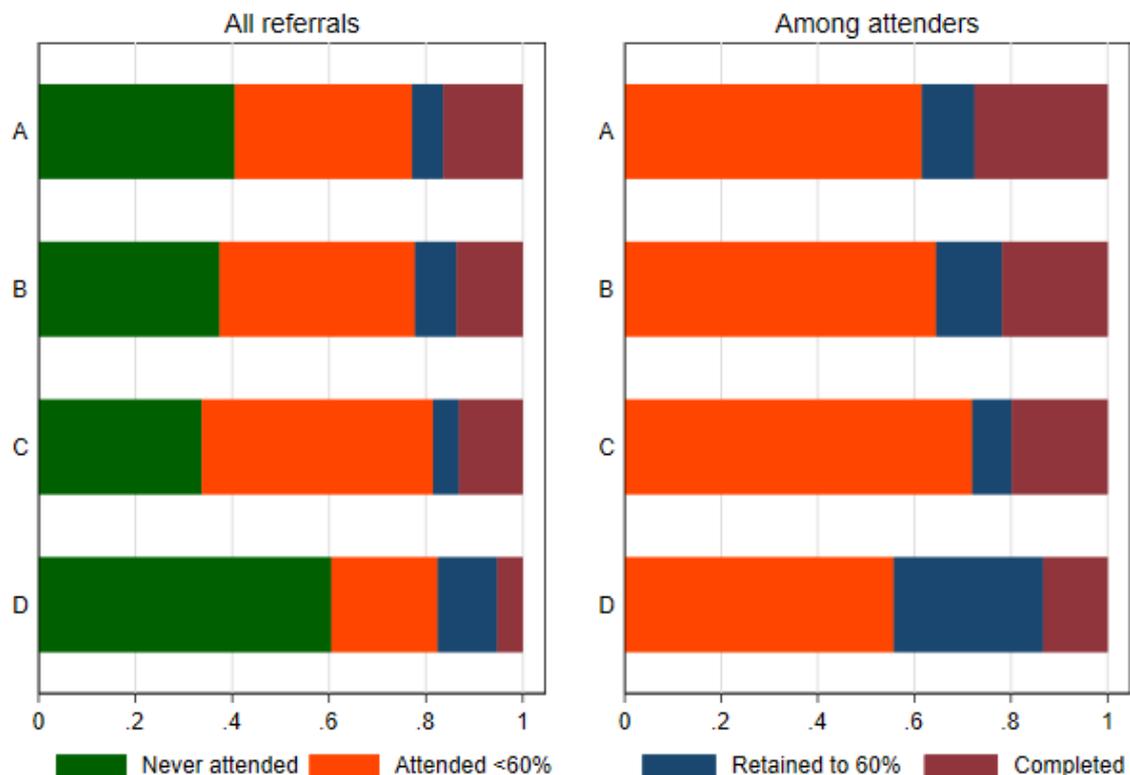
<sup>1</sup> All figures rounded to nearest 1000



## 2. Retention (among 55,000 people who started the programme):

- Most people attended for around a third of the course sessions.
- Of those who started the course, a third (34%) attended two thirds of the course sessions (regarded by the NHS as completing the course) and a fifth (22%) completed.
- People were MORE likely to complete the course if they were older (but not the very oldest) and from more affluent areas of England.
- People were LESS likely to complete the course if they were of Asian or black ethnicity, employed rather than retired, and if they had a disability.
- Retention did not differ between men and women, or among those with different weight or blood glucose level when they started.
- Retention rates varied between different providers. Higher levels of retention were seen where out-of-hours provision was offered.

Figure 2. Attendance at the Diabetes Prevention Programme, by service provider



### 3. Health measures:

- The analysis only includes those who stayed in the programme until 6 months (37,000 people) or completion (23,000) because health measures were not collected from people who left early.
- Change in blood glucose: After 6 months attending the programme, blood glucose scores had fallen on average, which indicates a positive health improvement. On completion of the programme, blood glucose scores had fallen further. We found the change in blood glucose was similar among different groups of patients (gender, ethnicity, deprivation, work status, disability, smoking, baseline weight).
- Change in weight: After 6 months, the average weight loss was 3.2kg (7lbs). On completion of the programme the average weight loss was 3.6kg (8lbs). Weight loss was greatest for white people compared to other ethnicities. Otherwise, we found weight loss was similar regardless of other patient characteristics.
- There was substantial variation in blood glucose change and a smaller variation in weight loss between providers and across different areas of England.

### What this means

When different organisations provide a service, they may deliver it in different ways, which can lead to differences in uptake, retention and health outcomes depending on which service you use. When

implementing a Diabetes Prevention Programme, attention is needed to promote consistency, standardisation and learning across the providers and in different parts of the country.

Our study suggests that flexible services (such as out-of-hours sessions) may improve retention rates.

Evidence from the NHS Diabetes Prevention Programme indicates that measures may be needed to improve uptake and retention among younger people and those from deprived areas; retention among minority ethnic groups, those with a disability, and people in work.

On average, people who COMPLETED the programme saw an improvement in their blood glucose measures and lost over 3 kg (7lbs) in weight. These results were similar regardless of patient characteristics, except weight loss was greater among people of white ethnicity compared to other ethnicities. But it is important to remember that the service did not measure blood glucose or weight from people who left the programme early (and these were more likely to be people of Asian or black ethnicity, younger people, those employed rather than retired and those who had a disability).