The English NHS Diabetes Prevention Programme

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NHS

NHS HEALTH CHECK

Helping you prevent
diabetes
heart disease
kidney disease
stroke & dementia

National Guidelines around Case Identification

National Institute for Health and Care Excellence (NICE)

NICE Public Health guideline 38 (2012)

Type 2 diabetes: prevention in people at high risk

Risk identification = 2 stages:

- 1st stage = validated risk assessment tool

- 2nd stage = blood test

High risk: HbA1c 42-47 mmol/mol (6.0-6.4%)   OR

Fasting plasma glucose 5.5-6.9 mmol/l

Evidence Base

NHS

- Pan et al. Effects of diet and exercise in preventing NIDDM in people with impaired glucose tolerance. The Da Qing IGT and Diabetes Study. Diabetes Care 1997; 20: 537-44.

- Tuomilehto et al. Prevention of Type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. NEJM 2001; 344: 1343-1350.

- Diabetes Prevention Program Research Group. Reduction in the incidence of Type 2 diabetes with lifestyle intervention or metformin. NEJM 2002; 346: 393-403.

- Kosaka et al. Prevention of type 2 diabetes by lifestyle intervention: a Japanese trial in IGT males. Diab Res Clin Pract 2005; 67: 152-162.

- Ramachandran et al. The Indian Diabetes Prevention Programme shows that lifestyle modification and metformin prevent type 2 diabetes in Asian Indian subjects with impaired glucose tolerance (IDPP-1). Diabetologia 2006; 49: 289-297.

- Sampson M et al; Norfolk Diabetes Prevention Study (NDPS) Group. Lifestyle Intervention With or Without Lay Volunteers to Prevent Type 2 Diabetes in People With Impaired Fasting Glucose and/or Nondiabetic Hyperglycemia: A Randomized Clinical Trial. JAMA Intern Med 2021; 181(2):168-178.

5 Year Forward View
Getting serious about prevention

5 Year Forward View 2014
"The future health of millions of children, the sustainability of the NHS, and the economic prosperity of Britain all now depend on a radical upgrade in prevention and public health"

Origins – NHS DPP 2015 / 2016

- **Expert Reference Group**

- **Service specification**

- **Procurement - providers**

- **Each local area chooses from one of the providers**

Evolution

Financial Year 2016/2017 = First wave of national roll-out

  51% geographical coverage of England

Financial Year 2017/2018 = Second wave

  75% geographical coverage of England

Financial Year 2018/2019 = Third wave

  Universal coverage of England by Summer 2018

Barron E, Clark R, Hewings R, Smith J, Valabhji J. Progress of the Healthier You: NHS Diabetes Prevention Programme: referrals, uptake and participant characteristics. Diabet Med 2018; 35: 513-518.

NHS England and NHS Improvement

Early Outcomes From the English National Health Service Diabetes Prevention Programme

Jonathan Valabhji,[1,2,3] Emma Barron,[4] Dominique Bradley,[1] Chirag Bakhai,[1,5] Jamie Fagg,[4] Simon O'Neill,[6] Bob Young,[6] Nick Wareham,[7] Kamlesh Khunti,[8] Susan Jebb,[9] and Jenifer Smith[4]

https://care.diabetesjournals.org/content/diacare/43/1/152.full.pdf

NHS England and NHS Improvement

Digital Diabetes Prevention Programme Pilot

NHS

9 delivery areas – LHEs (CCGs)*	→	5 digital providers (private sector)	→	Target 3,500 NHS patients at risk of developing diabetes

Weight loss was clinically significant at 12 months
- Mean change at 12 months was -3.1 (-3.4 to -2.8) kgs, p<0.001

HbA1c reduction was clinically significant at 12 months
- Mean change at 12 months was -1.6 (-1.8 to -1.4) mmol/mol, p<0.001

Certain features were associated with significantly greater reduction in HbA1c and weight
- Peer support and a website and telephone service

Ross JAD, Barron E, McGough B, Valabhji J, Daff K, Irwin J, Henley WE, Murray E. Uptake and impact of the English National Health Service digital diabetes prevention programme: observational study. BMJ Open Diabetes Res Care 2022;10(3):e002736.
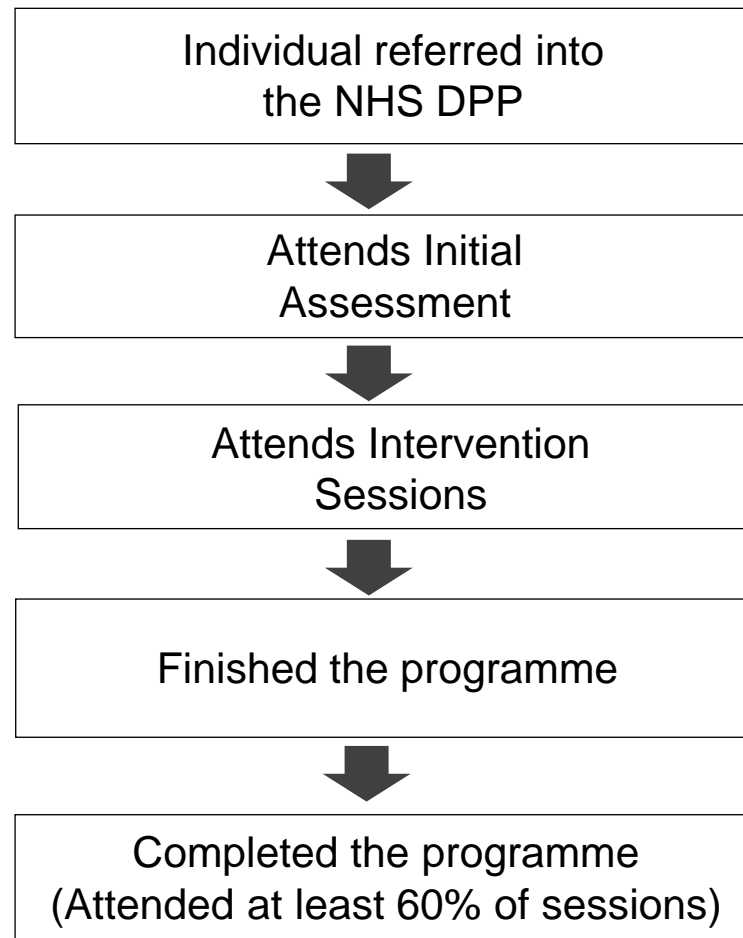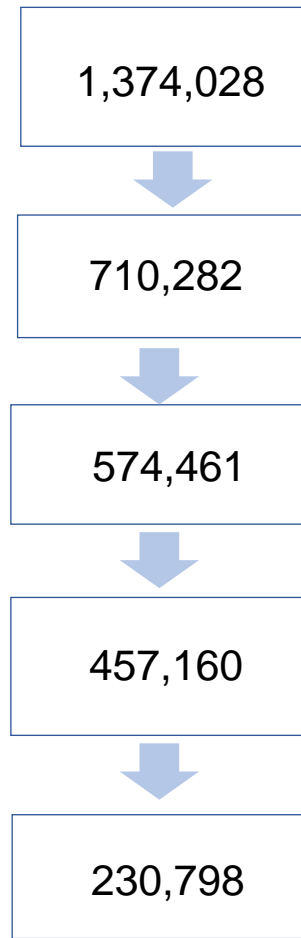
Referrals over time
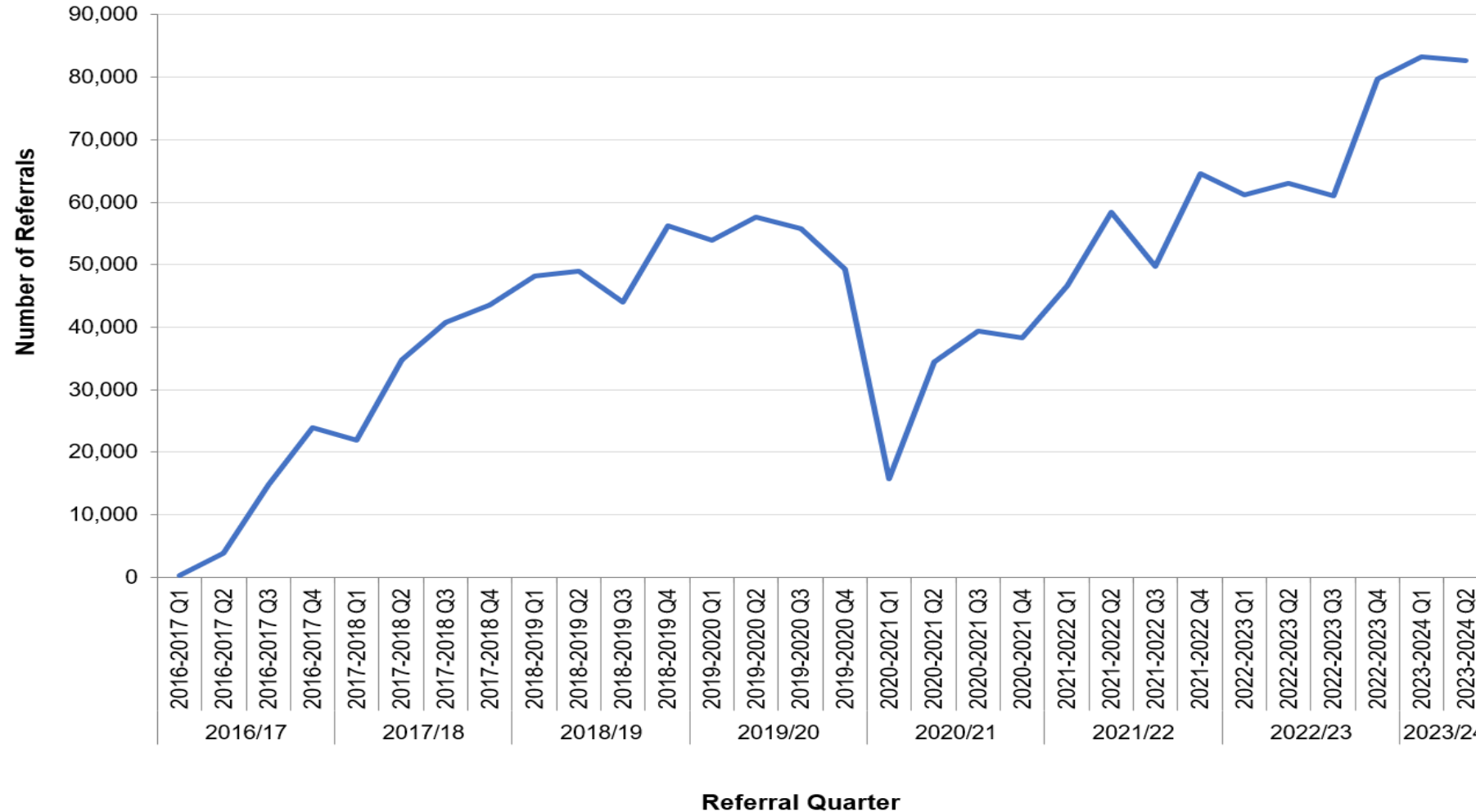
- Since the programme started in 2016, almost 1.4 million referrals have been received
- The dip in 2020-21 Q1 referrals coincided with the start of the COVID pandemic
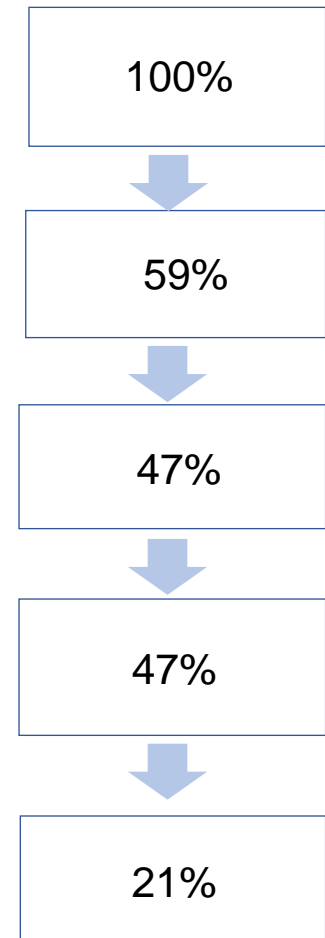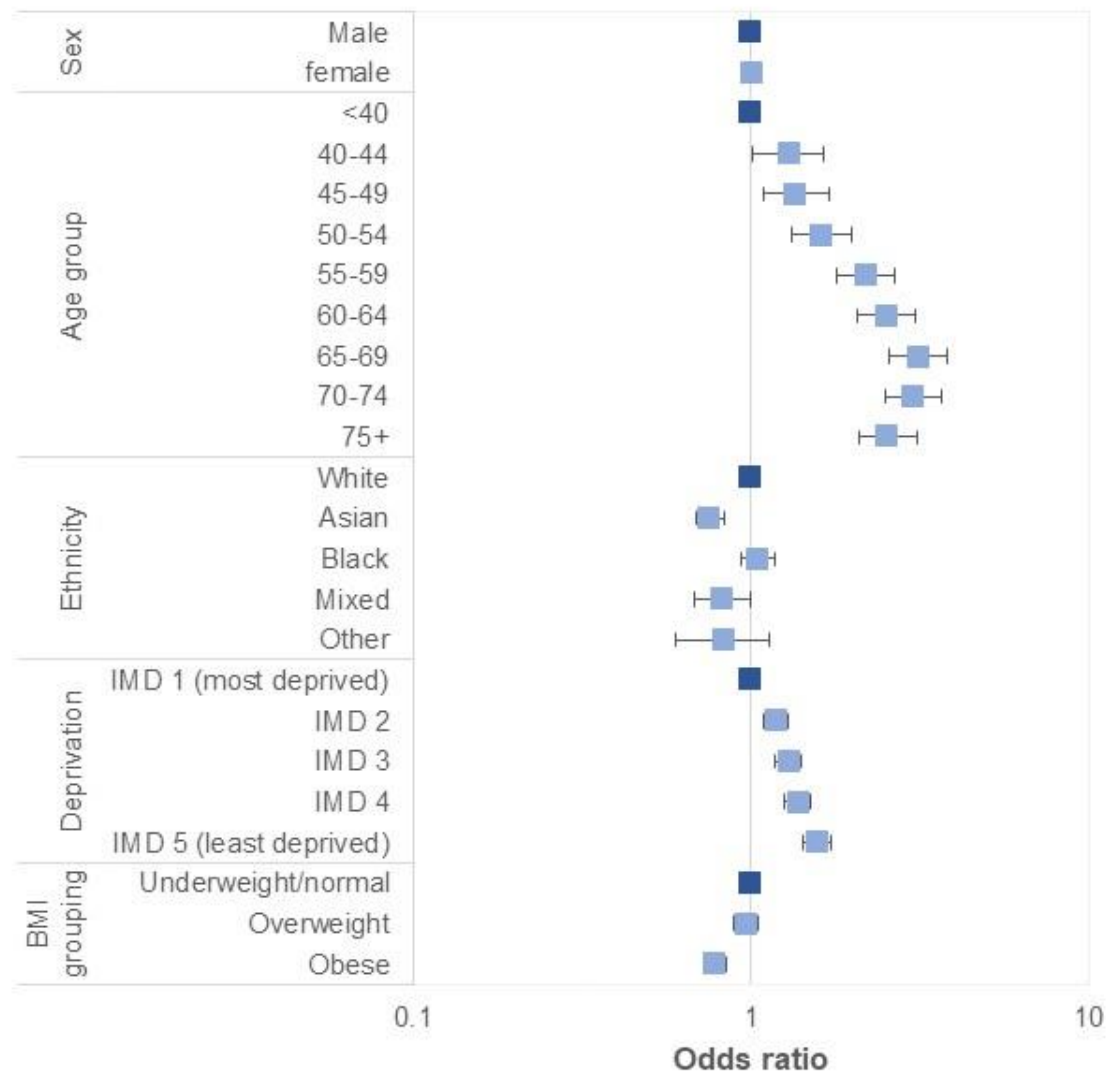- Referrals have now recovered to above pre-pandemic levels

	Number of referrals at each stage in the programme by end of Sep 23	Percentage retained allowing sufficient time to elapse for each stage of the programme
Individual referred into the NHS DPP	1,374,028	100%
Attends Initial Assessment	710,282	59%
Attends Intervention Sessions	574,461	47%
Finished the programme	457,160	47%
Completed the programme (Attended at least 60% of sessions)	230,798	21%

9-12 month intervention duration

Completion of the programme, mixed effects logistic

- No significant difference in completion by sex

- Increased as the age of the participant increased

- Asian and mixed ethnicity significantly lower completion. No significant difference in completion between black, other and white ethnic groups.

- Increased as deprivation decreased

- Significantly lower for obese participants

*Analysis based on complete case data. Provider also included in the logistic regression model as a fixed effect and local health economy as a random effect
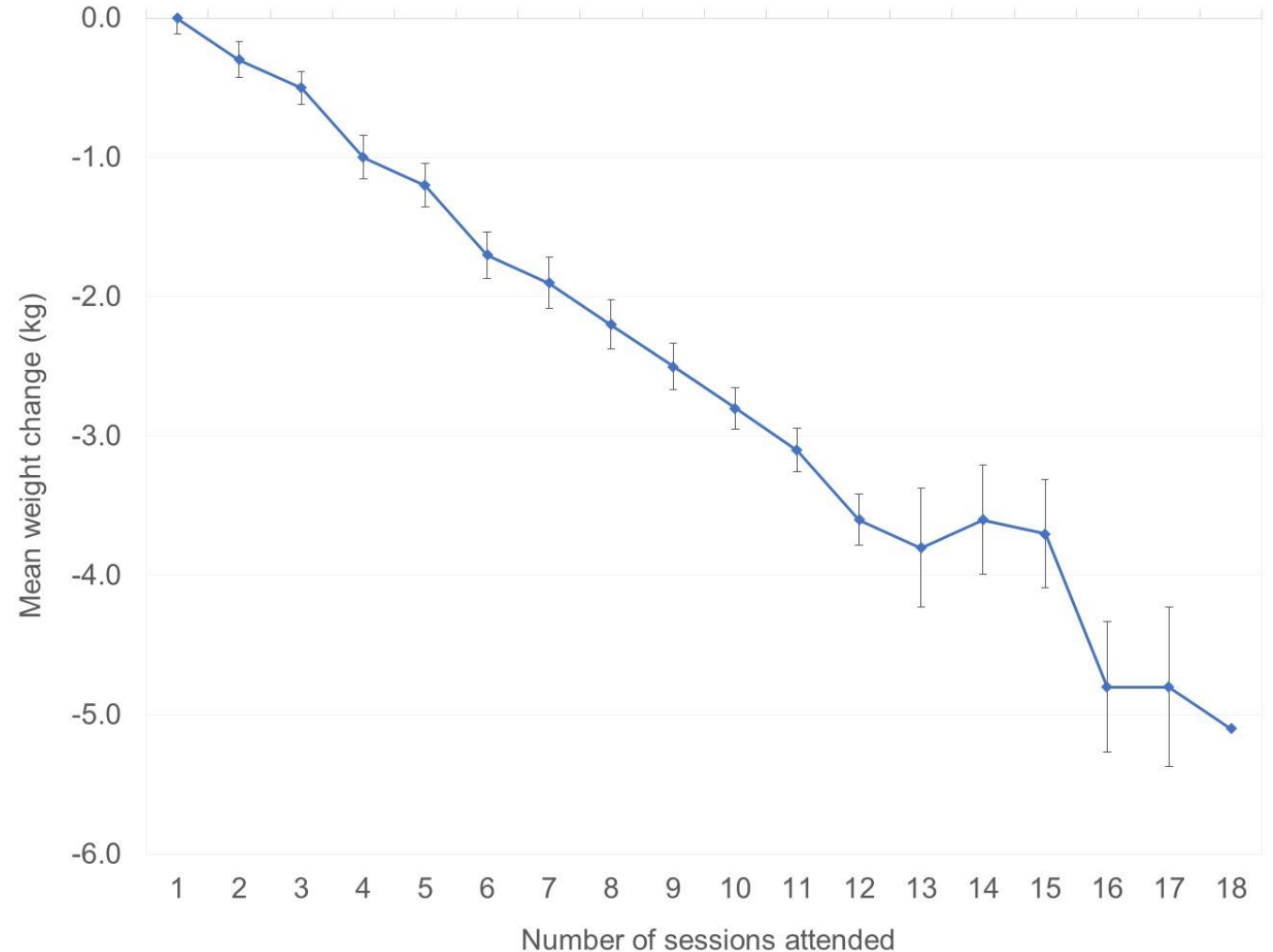
Weight Change

Completer Analysis

- Mean weight change of -3.3kg (-3.4 to -3.2kg)
- % Mean weight change of -4.0% (-4.0 to -3.9%)
- 37% achieving a weight loss of 5% or more

Intention-to-treat analysis

- Mean weight change of -2.3kg (-2.3 to -2.2kg)
- % Mean weight change of -2.7% (-2.7% to -2.6%)
- 24% achieving a weight loss of 5% or more

*Using complete case data

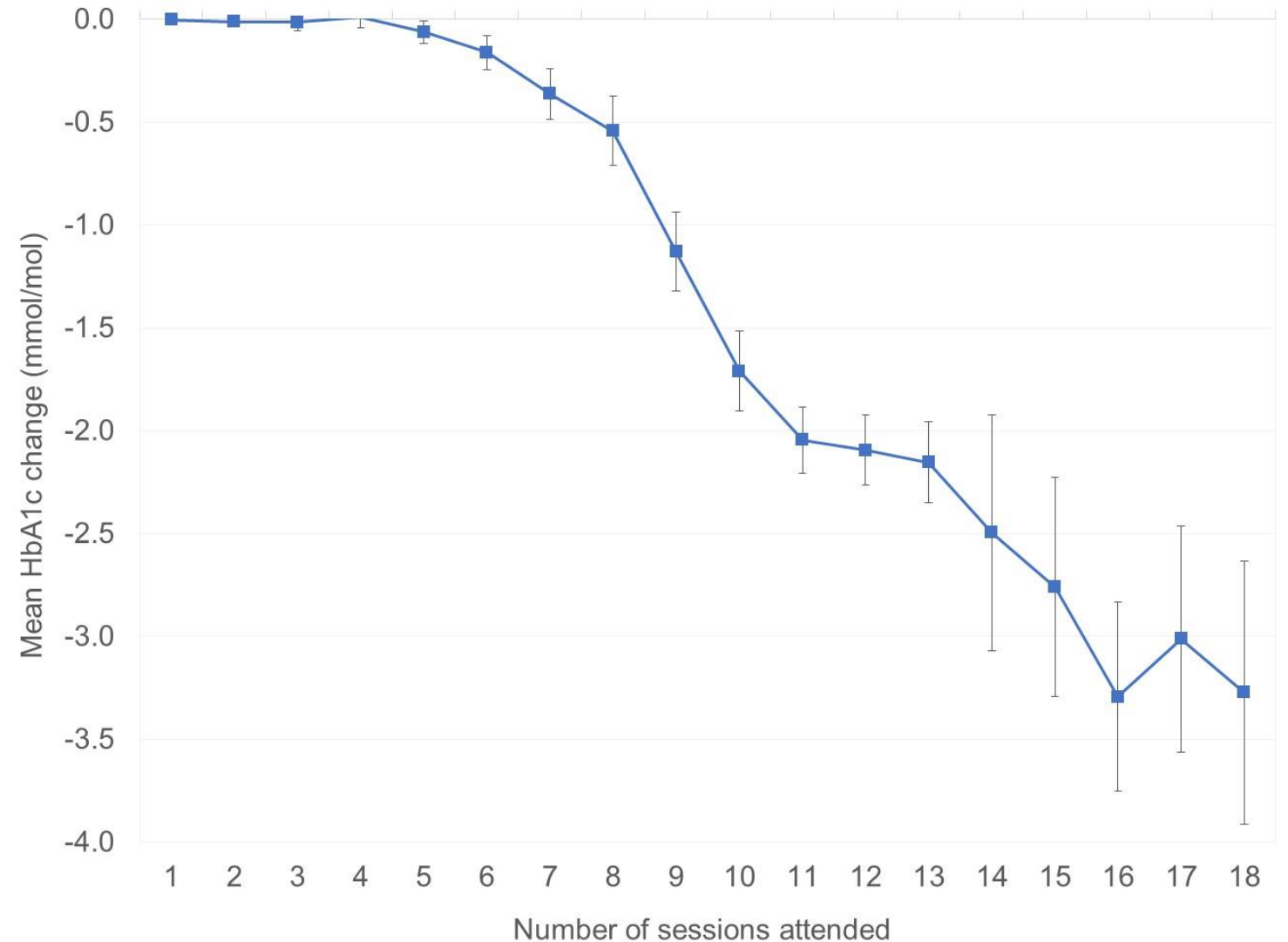**Mean weight change by number of sessions attended**

HbA1c Change

Mean Hba1c change by number of sessions attended

Completer Analysis
- Mean Hba1c change of
  -2.0mmol/mol
  (-2.0mmol/mol to -1.9mmol/mol)

Intention-to-treat analysis
- Mean Hba1c change of
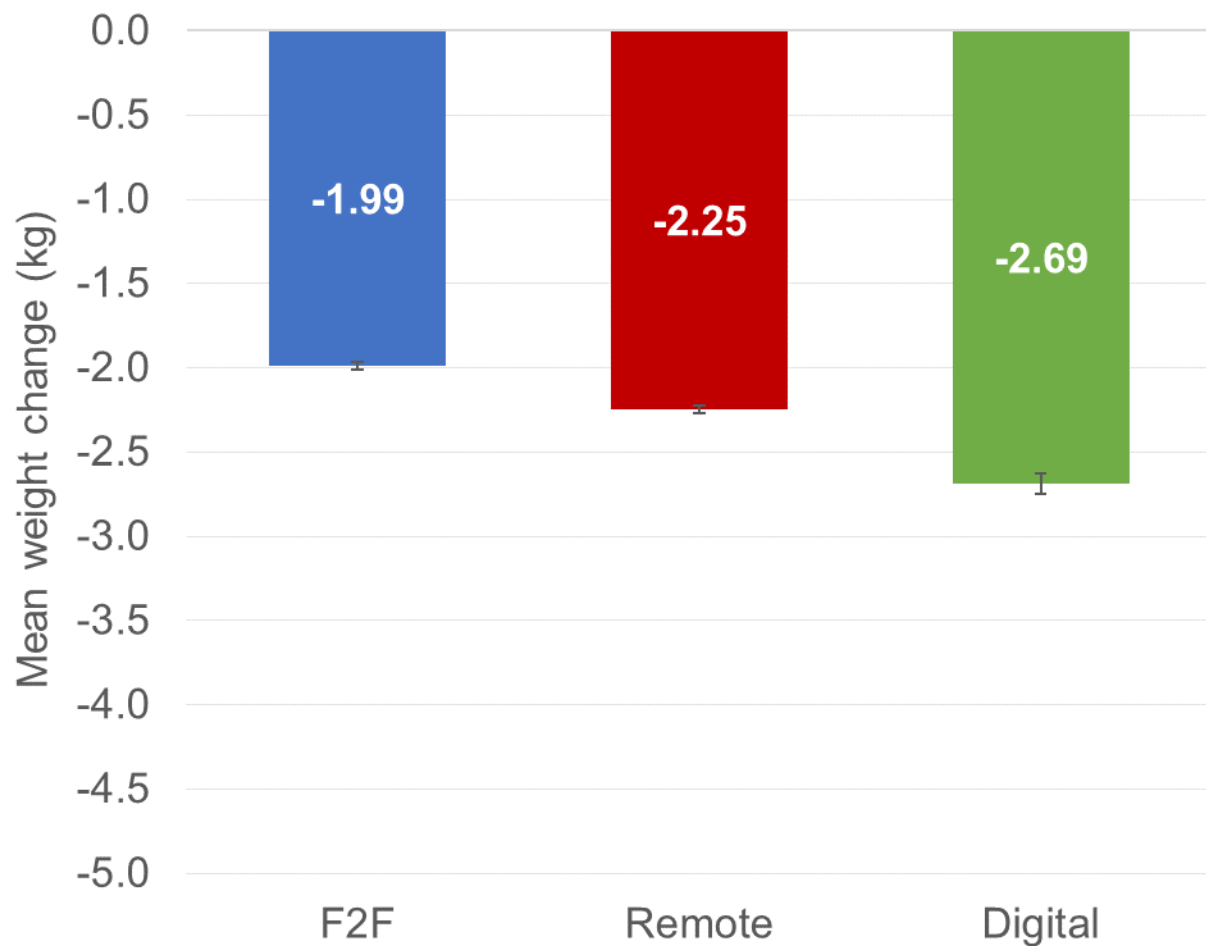 -1.3mmol/mol
  (-1.3mmol/mol to -1.2mmol/mol)
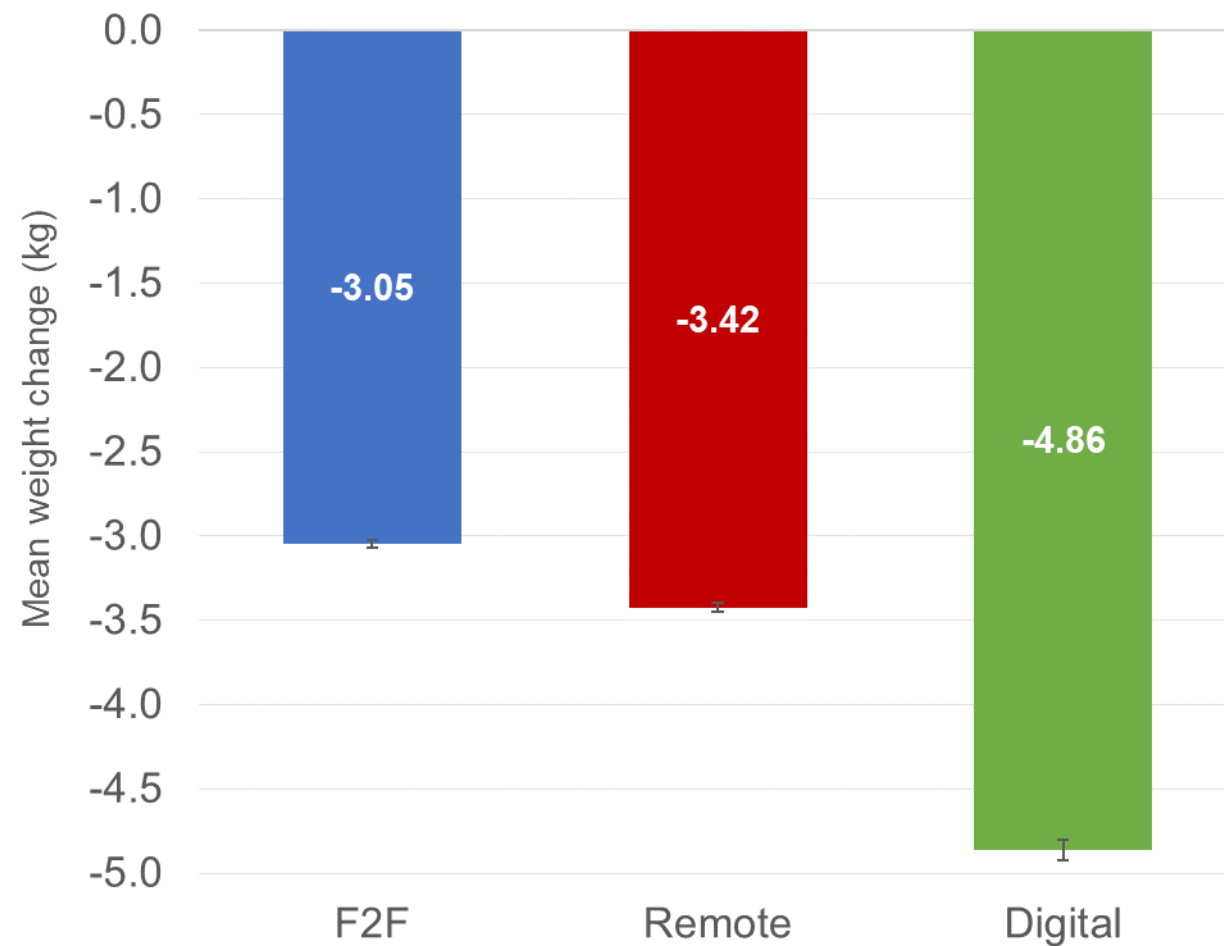
*Using complete case data

Mean weight change by intervention type
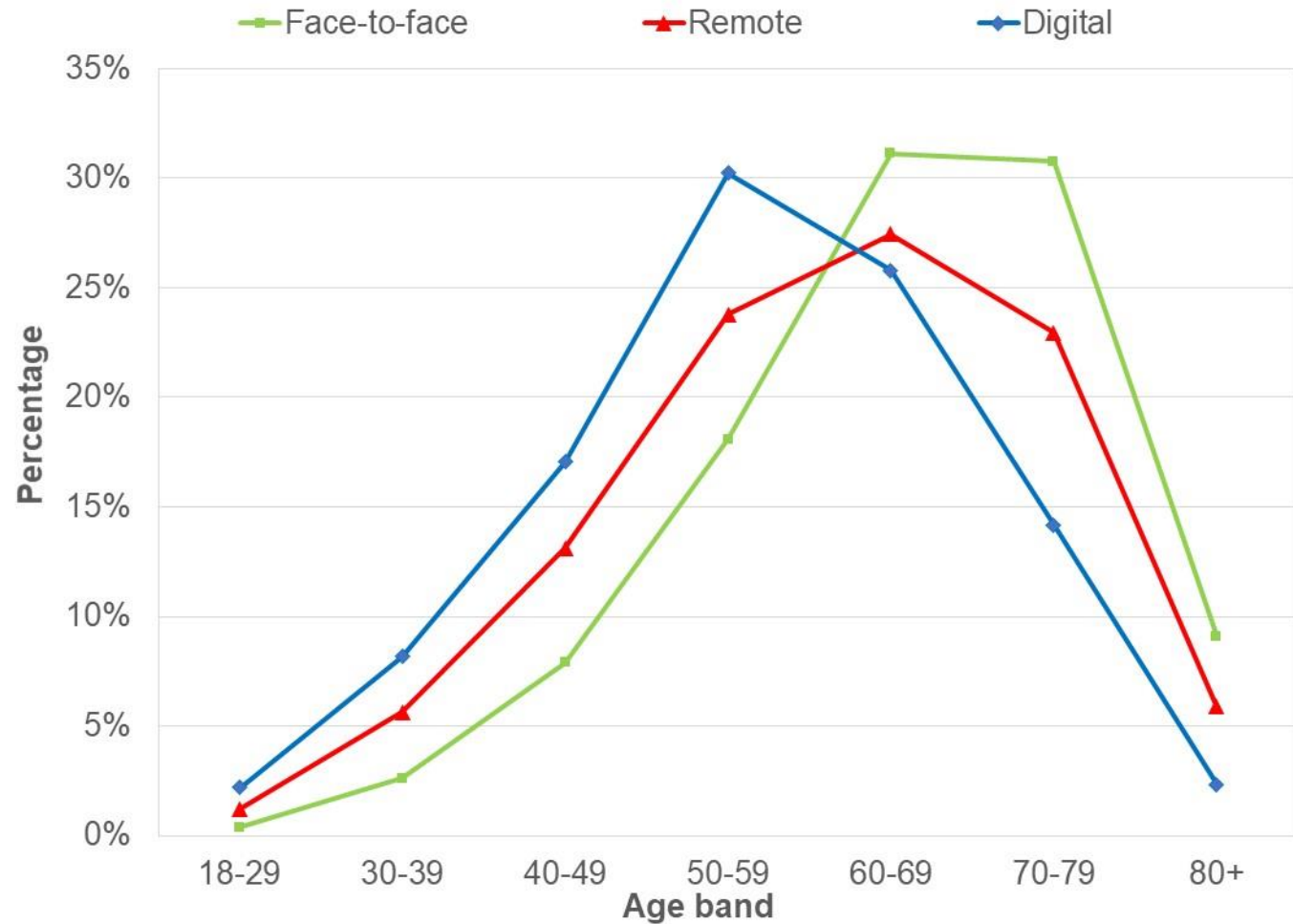

Intention-to-treat weight change

Completer weight change

Age distribution of participants by intervention type

Mean (SD) Age

- Face-to-Face: 65 (12) years

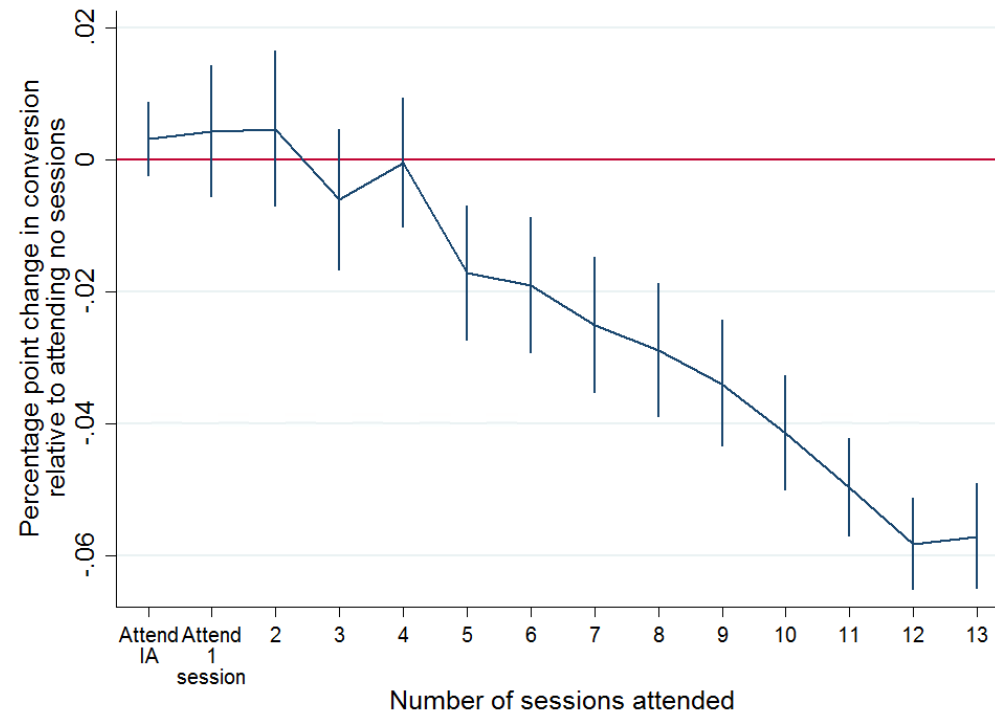- Remote: 60 (13) years

- Digital: 56 (12) years

NHS England and NHS Improvement

Parkinson B et al. Diabetic Med 2022;39(S1):9.

Relative risk reduction of 37% for conversion to type 2 diabetes in people with non-diabetic hyperglycaemia who completed the NHS DPP (data in abstract expressed as absolute risk reductions)

Conversion to Type 2 Diabetes: number of sessions attended

Independent evaluation of the NHS DPP

Population level impact of the NHS Diabetes Prevention Programme on incidence of type 2 diabetes in England: An observational study

Emma McManus,* Rachel Meacock, Beth Parkinson and Matt Sutton

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Summary

Background The NHS Diabetes Prevention Programme (DPP) is the first nationwide type 2 diabetes prevention programme targeting people with prediabetes. It was rolled out across England from 2016 in three waves. We evaluate the population level impact of the NHS DPP on incidence rates of type 2 diabetes.

Methods We use data from the National Diabetes Audit, which records all individuals across England who have been diagnosed with type 2 diabetes by 2019. We use difference-in-differences regression models to estimate the impact of the phased introduction of the DPP on type 2 diabetes incidence. We compare patients registered with the

Effect of the COVID-19 pandemic on body weight in people at high risk of type 2 diabetes referred to the English NHS Diabetes Prevention Programme

Jonathan Valabhji, Emma Barron, Dominique Bradley, Chirag Bakhai, Kamlesh Khunti, Susan Jebb.

Mean baseline weight over time

Thank You for Your Attention

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