

NHS Diabetes Prevention Programme and Weight Management Services: Eligibility Criteria

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Purpose of this paper

1. The purpose of this paper is to provide clarity to local health economies with regards to the new NHS Diabetes Prevention Programme (NHS DPP) and existing Weight Management Services (WMS), in terms of person eligibility, referral options and delivery.
2. Analysis of the Health Survey for England (HSE) dataset is presented describing and comparing populations eligible for the NHS DPP and WMS.
3. The analysis focuses specifically on the eligibility criteria for the NHS DPP and WMS in order to establish the extent to which people may be eligible for more than one service. It is acknowledged that local clinical decision making will be necessary to assess the suitability of individual patients for available services.

Background

NHS Diabetes Prevention Programme

4. The NHS DPP is a new service developed via a partnership between NHS England, Public Health England (PHE) and Diabetes UK. Over the coming 3 to 5 years, that the programme will be rolled out across England with NHS England funding the programme.
5. The NHS DPP will provide a behavioural intervention for individuals with non-diabetic hyperglycaemia (defined as having an HbA1c of 42 – 47 mmol / 6.0 - 6.4% or fasting plasma glucose (FPG) of 5.5 – 6.9 mmol/l) and therefore high risk for progression to Type 2 diabetes. Those with normal blood glucose levels (HbA1c < 42 mmol / <6.0%) and those with HbA1c levels within the diabetic threshold (HbA1c > 47 mmol or FPG ≥ 7mmol/l) will not be eligible for the NHS DPP intervention.
6. The intervention will consist of a series of predominantly group based sessions delivered in person across a period of at least 9 months. There will be at least 13 sessions and 16 hours of contact time. Sessions will last between 1 and 2 hours and cover topics geared towards the programme's main goals of dietary improvements, increased physical activity and weight reduction. It will be underpinned by behavioural theory and behavioural techniques will be used.

Weight Management Services

7. WMS form part of the obesity pathway, although there is local variation in delivery.ⁱ

7.1 Individuals with a Body Mass Index (BMI) > 25 are eligible for Tier 2 WMS.ⁱⁱ Tier 2 WMS are commissioned by local authorities, they tend to be delivered in person through group sessions in the community, should be multi-component lifestyle services (including physical activity, behaviour change and nutrition elements) and typically last for 12 weeks.

7.2 Individuals with a BMI > 40, or BMI > 35 plus co-morbidities (including Type 2 diabetes) are eligible for Tier 3 WMS.^{ii,iii} Tier 3 WMS are specialist services for people with complex obesity delivered by multi-disciplinary teams that typically include a combination of bariatric physician, a dietitian, a specialist nurse, a clinical psychologist and a physical therapist. Tier 3 WMS are either commissioned by Clinical Commissioning Groups or local authorities.

7.3 Individuals who have been receiving or will receive intensive management via a Tier 3 WMS with i) a BMI > 40, or ii) a BMI between 35 and 39.9 plus co-morbidities) are eligible for Tier 4 surgical intervention (bariatric surgery).ⁱⁱⁱ Assessment for Tier 4 should also be considered for people a BMI of 30–34.9 who have recent-onset Type 2 diabetes as long as they are also receiving or will receive assessment in a Tier 3 WMS.ⁱⁱⁱ Tier 4 surgical interventions are currently commissioned by NHS England.

7.4 Surgical intervention is only an option if all appropriate non-surgical measures to achieve or maintain an adequate, clinically beneficial weight loss s have been tried and the person has been receiving or will receive intensive management in a Tier 3 WMS.ⁱⁱⁱ

8. Table 1 presents the eligibility criteria for the NHS DPP and WMS highlighting where the services overlap. The eligibility criteria for WMS presented here are based on current NICE guidance. Referral decisions should be discussed with patients and should take into account the health status of individuals and the presence of any weight related co-morbidities such as Type 2 diabetes, hypertension, cardiovascular disease, osteoarthritis, dyslipidaemia, and sleep apnoea.

Table 1. Eligibility* for the NHS DPP and / or WMS

	HbA1c < 42 mmol	HbA1c 42-47	HbA1c > 47 mmol
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ⁱ Public Health England, National mapping of weight management services. December 2015

ⁱⁱ NICE 2014 PH53 Weight management: lifestyle services for overweight or obese adults

ⁱⁱⁱ NICE 2014 CG189 Obesity: identification, assessment and management

	(normal blood glucose)	mmol (Non-diabetic hyperglycaemia)	Type 2 diabetes
BMI below 25	Not eligible for either service	Eligible for NHS DPP	Eligible for structured diabetes education
BMI 25 – 29.9 (overweight)	Eligible for Tier 2 WMS	Eligible for Tier 2 WMS and NHS DPP	Eligible for Tier 2 WMS and structured diabetes education
BMI 30 – 34.9 (obese)	Eligible for Tier 2 WMS	Eligible for Tier 2 WMS and NHS DPP	Eligible for Tier 3 WMS, Tier 4 surgical intervention and structured diabetes education
BMI 35 – 39.9 (obese)	Eligible for Tier 2 WMS	Eligible for Tier 2 WMS and NHS DPP	Eligible for Tier 3 WMS, Tier 4 surgical intervention and structured diabetes education
BMI 35 – 39.9 (obese plus co-morbidities)	Eligible for Tier 3 WMS	Eligible for Tier 3 WMS, Tier 4 surgical intervention and NHS DPP	Eligible for Tier 3 WMS, Tier 4 surgical intervention and structured diabetes education
BMI 40+ (severe obesity)	Eligible for Tier 4 surgical intervention	Eligible for Tier 4 surgical intervention and NHS DPP	Eligible for Tier 4 surgical intervention and structured diabetes education

*Please note this table presents an overview of the eligibility for different services, however, referral decisions should take into account the health status of individuals.

9. The National Cardiovascular Intelligence Network (NCVIN) has undertaken an analysis of the HSE dataset, in order to estimate the prevalence of non-diabetic hyperglycaemia to inform the NHS DPP. For full details of this work and methods please access the full report.^{iv}
10. Analysis of this data was conducted in order to ascertain: i) the prevalence of normal blood sugar, non-diabetic hyperglycaemia and diabetes within different population BMI categories and ii) the proportion of people with different BMIs among those with normal blood sugar, non-diabetic hyperglycaemia and diabetes. The outputs of these analyses are presented here.
11. Five years of HSE data (2009 to 2013) were combined in the analyses, of which 18,406 individual records had a valid HbA1c value. As presented in Table 2, 81.8% of the sample had a normal blood glucose level, 10.7% had non-diabetic hyperglycaemia and 7.5% had diabetes (either diagnosed^v or undiagnosed). The prevalence of non-diabetic hyperglycaemia was found to vary by different subgroups such as age and ethnicity. For example the prevalence of non-diabetic hyperglycaemia was higher in older people and those from BME groups.^{iv}

Results

12. Figure 1 displays the prevalence of normal and elevated HbA1c levels within BMI categories. The sample sizes within each category are displayed in Table 2.

^{iv} National Cardiovascular Intelligence Network (NCVIN) Public Health England, National NHS Diabetes Prevention Programme (NHS DPP) Non-diabetic hyperglycaemia. August 2015. <https://www.gov.uk/government/publications/nhs-diabetes-prevention-programme-non-diabetic-hyperglycaemia>

^v Self-reported doctor diagnosed diabetes

Figure 1: Prevalence of normal and elevated HbA1c levels within BMI categories

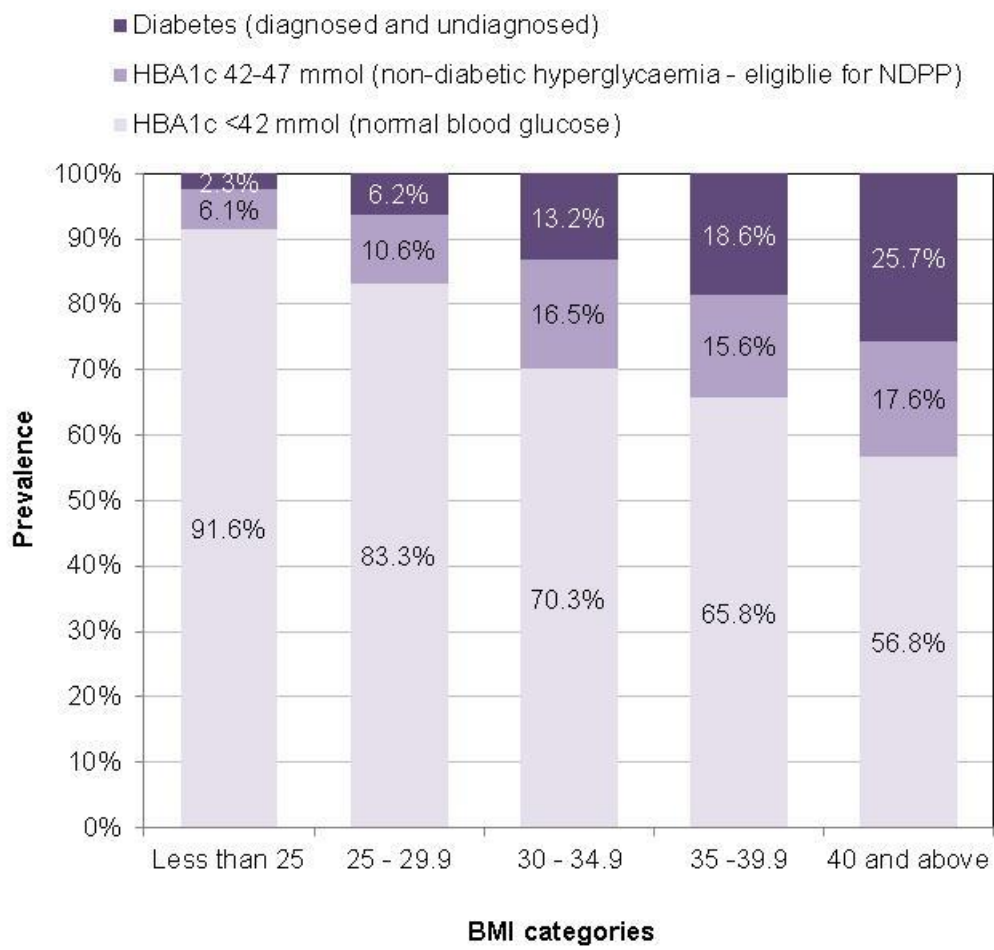


Table 2. Prevalence of normal and elevated HbA1c levels within BMI categories – sample sizes

	BMI < 25 n, (%)	BMI 25 - 29.9 n, (%)	BMI 30 - 34.9 n, (%)	BMI 35 - 39.9 n, (%)	BMI ≥ 40 n, (%)	Missing n, (%)	Total
Un-weighted sample size	5,807 (100%)	6,624 (100%)	3,000 (100%)	972 (100%)	410 (100%)	1,592 (100%)	18,406 (100%)
HbA1c < 42 mmol (normal blood glucose)	5,319 (91.6)	5,518 (83.3)	2,109 (70.3)	639 (65.8)	233 (56.8)	1,159 (72.8)	15,056 (81.8)
HbA1c 42-47 mmol (non-diabetic hyperglycaemia)	354 (6.1)	702 (10.6)	495 (16.5)	152 (15.6)	72 (17.6)	228 (14.3)	1,969 (10.7)
Diabetes (diagnosed ^v and undiagnosed)	134 (2.3)	411 (6.2)	396 (13.2)	181 (18.6)	105 (25.7)	205 (12.9)	1,381 (7.5)

13. Key findings are as follows:

13.1 A large proportion of people within both the overweight (BMI 25-29.9) and obese (BMI 30+) categories, 83.3% and 68.0% respectively, have normal blood glucose levels and therefore would not be eligible for intervention via the NHS DPP.

13.2 As BMI increases so does the proportion of people with elevated HbA1c (see Figure 1). For example 6.1% of people with a BMI <25 have non-diabetic hyperglycaemia compared to 17.6% of people with a BMI 40+.

13.3 The majority (91.6%) of people with a BMI below 25 also have normal blood glucose levels and will not require either service.

14. Table 3 displays the proportion of people with different BMIs within the normal, and elevated blood glucose level categories. For example, 34.4% of people with non-diabetic hyperglycaemia are in the overweight BMI category (with a BMI 25-29.9). Figure 2 presents the distribution of BMI categories for those eligible for the NHS DPP.

15. Key findings are as follows:

15.1 Of those with non-diabetic hyperglycaemia and therefore eligible for the NHS DPP, just under a fifth have a BMI less than 25. These people are not eligible for WMS.

15.2 Of those with non-diabetic hyperglycaemia and therefore eligible for the NHS DPP, more than two thirds have a BMI between 25-40 kg/m² and would also be eligible for Tier 2 WMS.

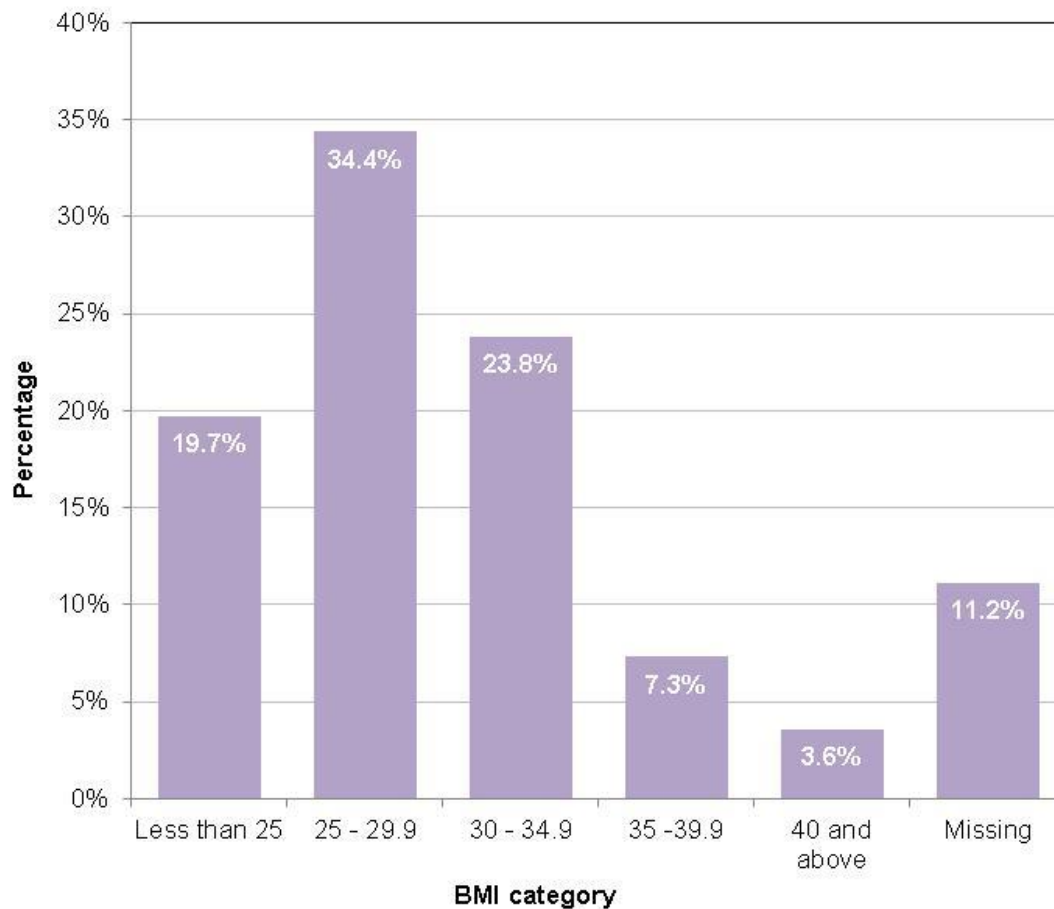
15.3 Of those not eligible for the NHS DPP due to having normal blood glucose levels (i.e. not high risk) just over half would have a BMI of between 25 and 40 and be eligible for Tier 2 WMS.

15.4 Of those not eligible for the NHS DPP due to having Type 2 diabetes (diagnosed^v & undiagnosed), the majority are also overweight or obese and would be eligible for WMS.

Table 3. Proportion of people with different BMIs within HbA1c categories

	HbA1c < 42 mmol (normal blood glucose)	HbA1c 42-47 mmol (non-diabetic hyperglycaemia)	Diabetes (diagnosed ^v and undiagnosed)	Total
BMI below 25	38.5%	19.7%	10.6%	10.7%
BMI 25 – 29.9	35.3%	34.4%	28.4%	28.9%
BMI 30 – 34.9	13.2%	23.8%	26.9%	26.6%
BMI 35 – 39.9	4.1%	7.3%	12.4%	12.6%
BMI 40 +	1.5%	3.6%	7.4%	7.4%
Missing data	7.4%	11.2%	14.3%	13.8%
Total	100%	100%	100%	

Figure 2. The distribution of BMI categories for those with non-diabetic hyperglycaemia and therefore eligible for the NHS DPP.



Conclusions

16. This data suggests that the prevalence of overweight and obesity is higher than the prevalence of non-diabetic hyperglycaemia. As such, a large proportion of those eligible for WMS will not have non-diabetic hyperglycaemia and will not be eligible for the NHS DPP. WMS therefore continues to be necessary to support these individuals to achieve a healthier weight. There are wider health consequences of overweight and obesity, beyond the development of Type 2 diabetes, and WMS play a key role in supporting individuals to reduce these risks.
17. This data also highlights a cross over between services, as more than two thirds of people eligible for the NHS DPP will also have a BMI greater the 25 and be eligible for WMS. Where individuals are eligible for both Tier 2 WMS and the NHS DPP it is suggested that they are referred to the NHS DPP where available as it will offer an intensive and targeted intervention and is specifically designed for individuals at high risk of developing Type 2 diabetes.