



GO Active Get Healthy – Diabetes

EVALUATION REPORT: JANUARY 2020

A COUNTY-WIDE PARTNERSHIP PROGRAMME



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GO Active Get Healthy (Diabetes)

Evaluation Report January 2020

1. Executive Summary

GO Active Get Healthy (Diabetes) [GAGH-D] began as a delivery-based project, embedding the NHS Let's Get Moving Physical Activity Pathway Oxfordshire-wide. This has developed into an Accountable Care Partnership consisting of Oxfordshire Clinical Commissioning Group, Active Oxfordshire, Cherwell District Council, Oxford City Council, West Oxfordshire Council, South Oxfordshire Council and Vale of White Horse Council. Over the last few years, this partnership has further developed and is now inclusive of other key providers across the Diabetes care pathway such as Oxford Health Diabetes2Gether, Moving Medicine, Talking Space and Age UK.

The GAGH-D project is funded by Oxfordshire Clinical Commissioning Group (OCCG) with match funding provided by the local authorities and Active Oxfordshire.

The fundamental element underpinning the programme is a behaviour change approach incorporating motivational interviewing techniques. These evidence-based methods involving one to one engagement between patients and exercise professionals, enables a truly individualised approach to support and advise patients on suitable subsidised activities which are provided by the local authority and its delivery partners. The programme emphasises the importance of a collaborative approach to truly providing person-centred care and as such, has seen successful partnership working to support the patient, according to identified needs once engaged within this programme.

This report provides an overview of the GO Active Get Healthy-Diabetes programme following statistical analysis conducted of the data input into the Data Capture System. The analysis was conducted in November 2019 by Oxford Brookes (OxCATTs Clinical Trial Unit (CTU) and Centre for Movement, Occupational and Rehabilitation Sciences (MORes). The outcomes from the analysis were hugely positive. Statistically significant outcomes were seen in improvements in physical activity levels as well as perceived health related quality of life achieved by the participants in this programme. These improvements as detailed in this report, indicate that GAGH-D appears to be an effective intervention to motivate and empower patients to increase their activity levels and improve their health related quality of life.

2. Background

GAGH-D is a community-based initiative which support patients with Type 2 Diabetes who are physically inactive, to self-manage their condition through improved activity levels. There is compelling evidence regarding the substantial benefits of undertaking a physically active lifestyle to improve health and management of over 20 chronic diseases and conditions, including Diabetes¹. The Academy of Medical Royal Colleges has described physical activity as a 'miracle cure'², with inactivity contributing to as many deaths in

¹ PHE. Health matters: getting every adult active every day (2016).

² Exercise: the miracle cure and the role of the doctor in promoting it. 2015. https://www.aomrc.org.uk/wp-content/uploads/2016/05/Exercise_the_Miracle_Cure_0215.pdf.

the UK as smoking³ and is the fourth leading risk factor for mortality worldwide⁴. Despite this overwhelming evidence, over 30% of our population in Oxfordshire are not meeting the Chief Medical Officer's (CMO) physical activity guidelines, of which 19% are entirely inactive. In addition, of those who are inactive, 51.4% are aged 75+ and 37% have a limiting illness⁵. Furthermore, alarmingly, it is becoming the norm for people to have a long-term condition; long-term conditions are more prevalent in older people (58% of people over 60 compared to 14% under 40) and in more deprived groups (people in the poorest social class have a 60% higher prevalence than those in the richest social class and 30% more severity of disease)⁶. Aligned to this, more people than ever have diabetes with around 90% of these who have Type 2 diabetes. In Oxfordshire, over 30,000 patients aged 17 years and over are registered with diabetes in GP practices (2018/19) which includes Type 1 and 2⁷

Given the prevalence of diabetes and inactivity, promoting and empowering people to be physically active is critical to the health of our local communities. However, given the complexity of physical activity as a behaviour, multi-layered interventions and support services need to be in place to provide appropriate opportunities according to individual needs. These interventions should be underpinned with rigorous behaviour change approaches as outlined in the evidence and NICE guidance⁸. Therefore, interventions need to provide a supportive environment which enables an active lifestyle and supports individuals to address their own concerns, attitudes and motivation levels particularly of those living with a health condition such as those with diabetes.

GAGH-D is based on the evidence-base and guidelines, and hence provides a supportive and inspiring framework to support behaviour change. This project aims to decrease inactivity, providing an educational approach to raise awareness of the benefits of physical activity to support self-management of their disease. It provides tailored motivational support according to individual needs and provides or signposts individuals to opportunities to undertake activities and ultimately embed these within their everyday lives.

It is recognised that clinicians are uniquely placed to help their patients to become more physically active and even a brief discussion within a consultation can lead to change⁹. Consequently, patients are initially invited directly by their GP practice to attend this programme's engagement events, given their diagnosis of diabetes. Patients often attend these events within a familiar environment such as their GP practice setting or within a locally accessible community facility. The initial engagement events provide a critical opportunity to raise awareness through a collaborative educational approach with other healthcare professionals, regarding the benefits of adopting a habitual active lifestyle and management of their condition. These engagement events are hugely successful. Following this event, patients are invited to join the GAGH-D programme where expert exercise professionals build on the initial brief advice to provide on-going motivational tailored support to emotionally engage, inspire and motivate individuals to adopt behaviour change. This tailored support is typically conducted over the phone and the exercise professional utilising motivational interviewing techniques, elicits and provides verbal advice, discussion, negotiation or encouragement and can vary from

³ Lee, I-Min, (2012). Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *The Lancet*.

⁴ World Health Organization. Global health risks: mortality and burden of disease attributable to selected major risks. 2009. <https://www.who.int/iris/handle/10665/44203>.

⁵ Active Lives Adult Survey – November 2017/2018. Sport England 2019.

⁶ Department of Health (2012). Report. Long-term conditions compendium of Information: 3rd edition

⁷ Oxfordshire Insight. Joint Strategic Needs Assessment 2019. Oxfordshire County Council.

⁸ NICE Guideline. Behaviour change: individual approaches. Public Health Guideline 2014.

⁹ Haseler, C., et al. Promoting physical activity to patients. *BMJ* 2019; 366: I5230 doi: 10.1135/bmj.15230

basic advice to a more extended, individually focused discussion. Baseline measures are collected and followed-up at 3, 6 and 12 months. These measures include key demographics as well as validated measures of physical activity and general wellness.

Following the initial advice and support, motivations and goals are established for individuals and they are then encouraged to adopt activities that are locally available. A range of information about local opportunities to be physically active is provided in recognition of their specific needs, abilities and preferences. Individuals are also offered local initiatives that are available within their local leisure facility, such as subsidised swimming opportunities, free visits to some leisure facilities and specific GO Active sessions. For this programme, individuals are encouraged to undertake a minimum of three activity sessions which are subsequently attempted to be tracked, recorded and input into the DCS. This follow-up enables monitoring and recording improvements in physical activity and wellness levels, as captured in the follow-up questionnaires at the identified milestones of 3, 6 and 12 months.

3. Performance to end Year 2 (June 2019)

In its second year, the project achieved significant successes, building on the implementation period of its first year. This is reflected in the increasing participation levels and uptake of physical activity opportunities by local residents who are motivated to improve the self-management of their diabetes, through undertaking a more active lifestyle.

The link between deprivation and poor health is very clear¹⁰. The link between these and physical inactivity is also clear. Helping get these populations more active is one response to supporting better health and delivering better community outcomes. Hence, there has been significant targeted engagement for participants in areas of health inequalities. This has been achieved by direct targeting of engagement events and concentrating GAGH capacity in these areas.

As well as improved participation levels, a Data Capture System (DCS) is utilised to allow collection of specific measures and ultimately aim to demonstrate the efficacy of the programme through analysis of baseline data at recruitment stage, with repeated measures conducted at 3, 6 and 12 months. However, the DCS has been problematic resulting in restrictions and challenges for data inputting but the District Teams worked tirelessly to input a substantial amount of good quality data allowing a comprehensive analysis to be conducted.

Consequently, in October 2019, Active Oxfordshire commissioned OxCATTS to provide an evaluation of the data available on the data capture system on participants that enrolled (had a baseline assessment from July 2018 – November 2019).

4. Data Analysis

Once recruited to the programme, participants agree to a baseline interview where a series of measures are captured and then subsequently repeated at 3, 6 and 12 months. The questionnaire captures the participant's key demographic information and also measures physical activity levels and perceived health-related quality

¹⁰ Stringhini S, Carmeli C, Jokela M, et al. Socioeconomic status and the 25 × 25 risk factors as determinants of premature mortality: a multicohort study and meta-analysis of 1.7 million men and women. *Lancet* 2017; 389: 1229–37.

of life, utilising the International Physical Activity Questionnaire (IPAQ)¹¹ and a self-report health-related quality of life questionnaire (EQ5D-5L)¹². The priority for this analysis was to demonstrate the programme’s impact on participants referred and recruited to GAGH-D specifically through analysis of their physical activity levels and their quality of life.

5. Results

(i) Recruitment Characteristics:

Following referral by health professional or recruitment via an Engagement event, 1035 people were recruited to the programme between July 2018 and November 2019. Of the 1035 people, 57% were referred by health professionals.

667 (64%) of those referred had a baseline assessment (enrolled onto the programme) with 413 of these people whose baseline was conducted before 01 August 2019 receiving a 3-month assessment. 285 people were assessed at 3 months with 128 (30.5%) being lost to follow up (Table 1).

Recruitment Characteristics	n (%)
Total recruitment into the programme	1035
Referral by health professional	590 (57%)
Baseline assessment, enrolled onto the programme	667 (64%)
Baseline assessment conducted before 1 st Aug	413
3-month assessment	285 (69%)
Lost to follow-up	128 (31%)

Table 1: Recruitment characteristics

(ii) Referral / recruitment routes:

Of the 1035 recruited to the programme, 57% of those were referred by a GP or Practice Nurse. The engagement events also prove to be successful methods of engagement as 128 (12%) patients were recruited

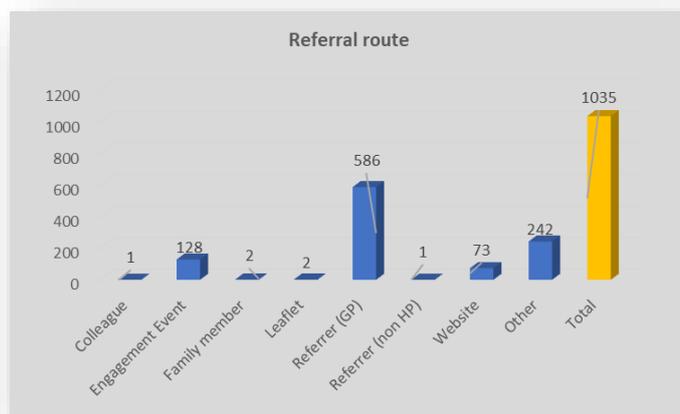


Figure 1: Referral / recruitment route

Referral route	Frequency	%
Colleague	1	0.1%
Engagement Event	128	12.4%
Family member	2	0.2%
Leaflet	2	0.2%
Referrer (GP)	586	56.6%
Referrer (non-HP)	1	0.1%
Website	73	7.1%
Other	242	23.4%
Total	1035	100.0%

Table 2: Referral / recruitment route into the programme

¹¹ Hagstromer M. et al. The International Physical Activity Questionnaire (IPAQ): a study of concurrent and construct validity. Public Health Nutrition 2006. Sept 9 (6) 755-62

¹² EuroQol Group. EuroQol – a new facility for the measurement of health-related quality of life. Health Policy 1990; 16: 199-208

as a result of attending one of these education and information events.

(iii) *Demographics*

Of the 1035 referred / recruited onto the programme, approximately an equal number of men (38.3%) and women (41.8%) engaged with the programme (Fig.2). From an ethnicity perspective, the majority of those recruited were white with only 5.3% of these reporting Asian / Asian British, or Black / Black British (Fig. 3). 72% of the population were aged 55 and over but the age breakdown shown in Figure 4, also indicates that there is a high prevalence amongst those aged 35-54 years.

At a district level, (when 'missing' data number is removed) Cherwell and West Oxfordshire accounted for the majority of referrals into the programme (36.5% and 31% respectively) with Vale receiving the lowest number of patients referred to GAGH-D (5%). However, there has been a staffing shortage across the South and Vale districts over Q1 2019/20 which clearly impacted on recruitment activity. Newly appointed Officer is in post from Q2 onwards and increased activity is already being demonstrated. (Figure 5 below, shows the recruitment activity breakdown at a district level).

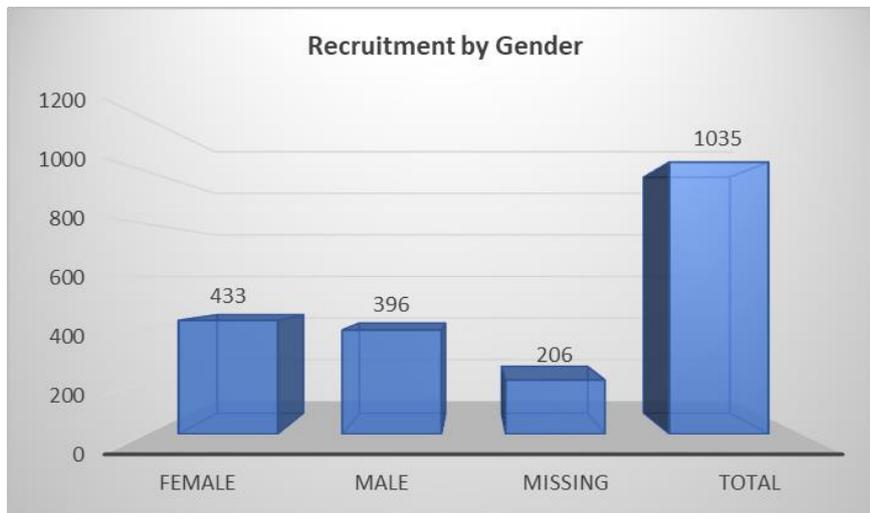
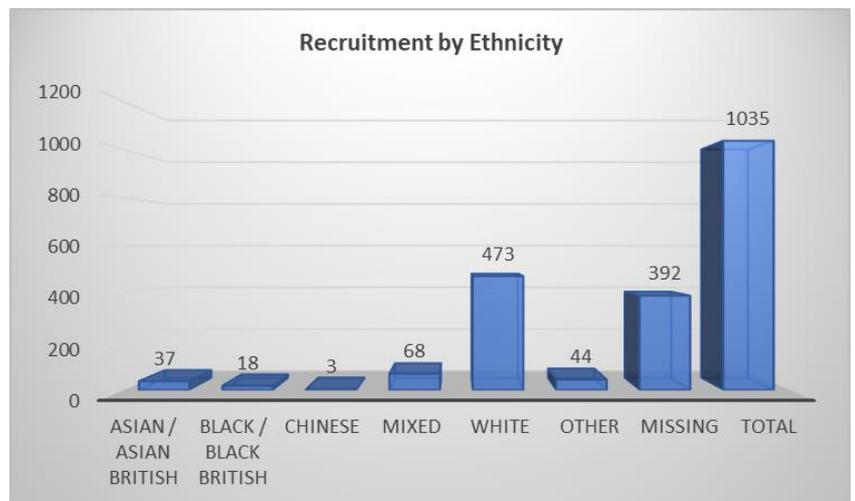


Figure 2: Recruitment by Gender

Figure 3: Recruitment by Ethnic Group



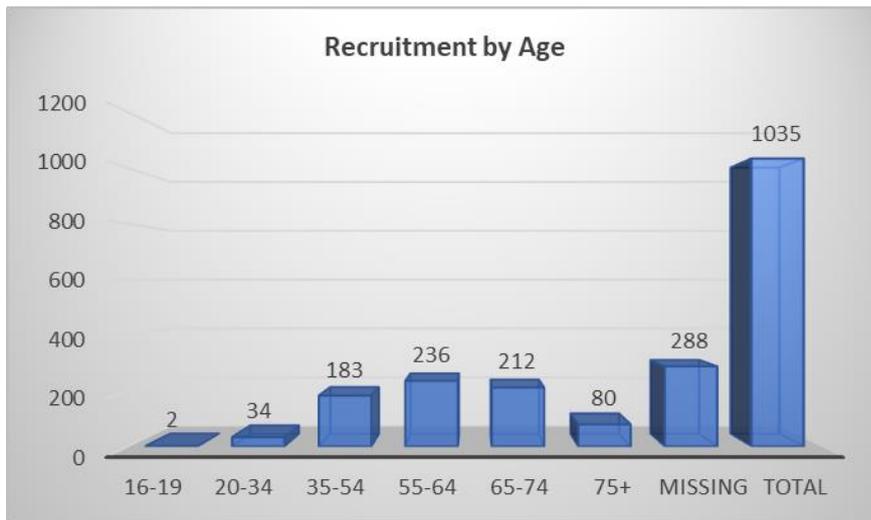


Figure 4: Recruitment by Age



Figure 5: Recruitment by District

(iv) Referral routes

Of the 1035 patients referred onto the programme, Table 3 below (and Figure 6), indicates the route of referral with the majority of referrals generated through GPs (56.6%) and 12.4% as a result of attending an Engagement event:

Analysis	n	%
Colleague	1	0.1%
Engagement Event	128	12.4%
Family member	2	0.2%
Leaflet	2	0.2%
Referrer (GP)	586	56.6%
Referrer (non-HP)	1	0.1%
Website	73	7.1%
Other	242	23.4%
Total	1035	100.0%

Table 3: Referral routes into the programme

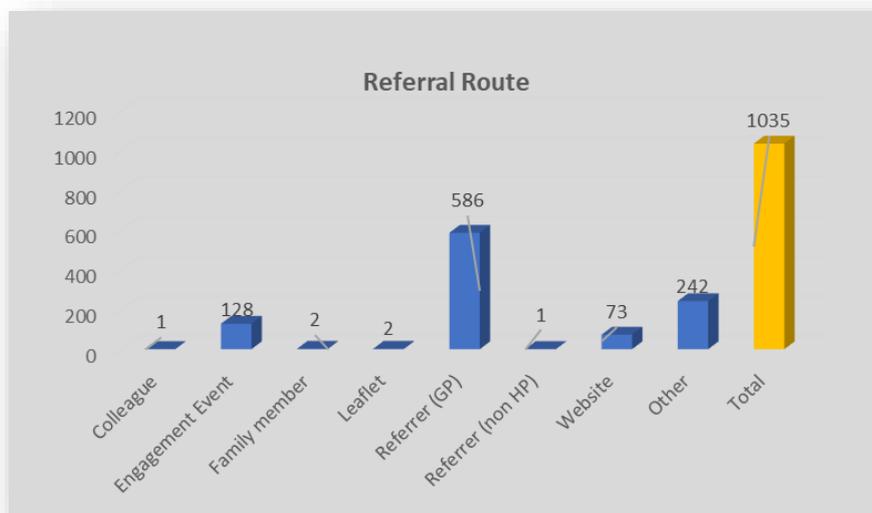


Figure 6: Breakdown of referral routes into the programme.

(v) Referring Practices

In total, there were 68 referrers into the programme, of which 1 was a pharmacy, 1 was from West DC, 1 from the Diabetes2Gether team and therefore, the remaining 65 were GP practices or medical centres. Figure 7 shows the total referral sources broken down with numbers of referrals received per source:

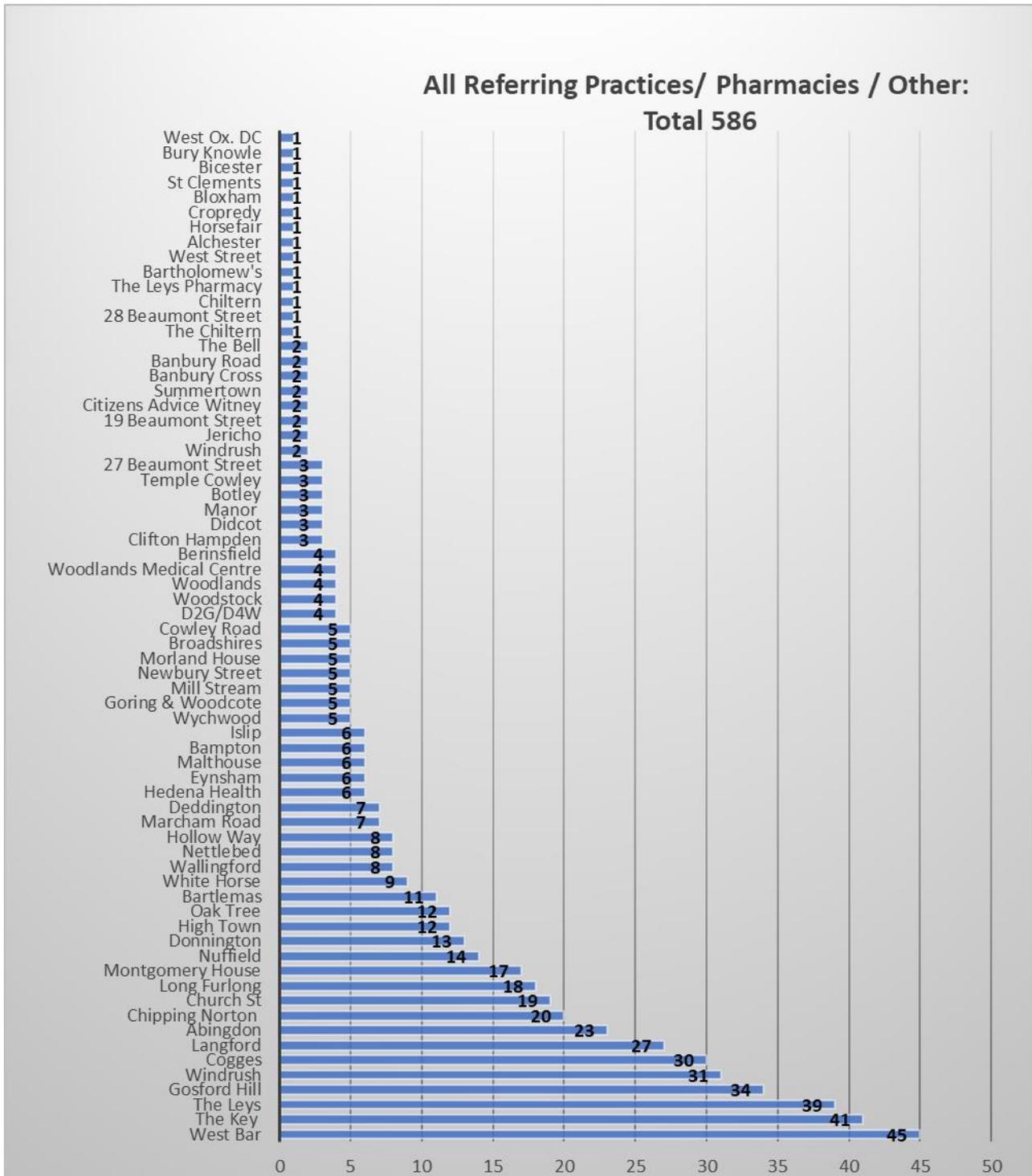


Figure 7: Breakdown of all referral sources with number of referrals per source

Figures 8, 9, 10, 11 and 12 provide the breakdown of referral source by District:

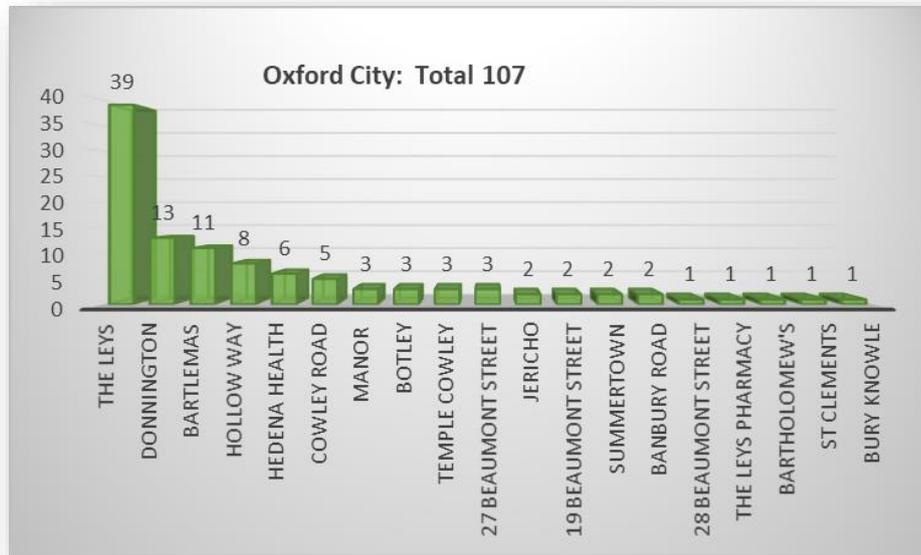


Figure 8: Oxford City - breakdown of referral source

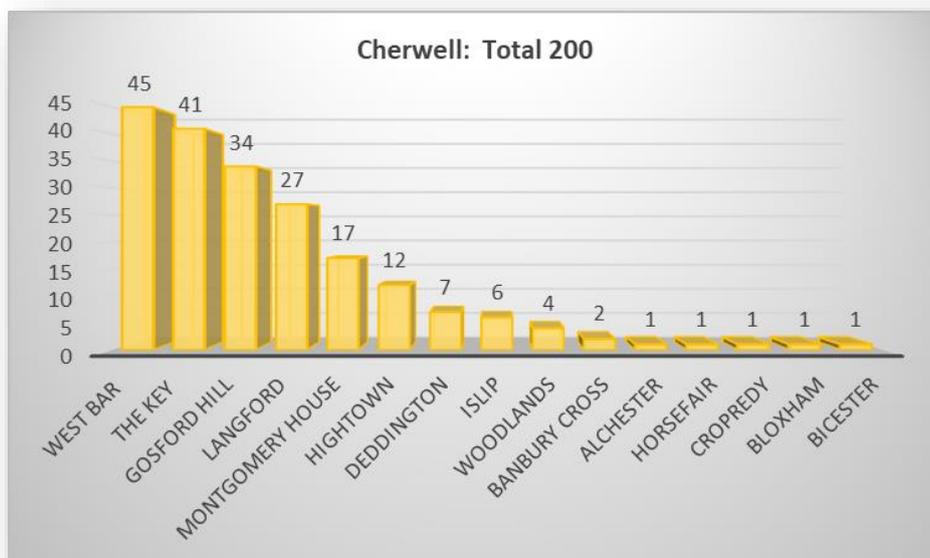


Figure 9: Cherwell - breakdown of referral source

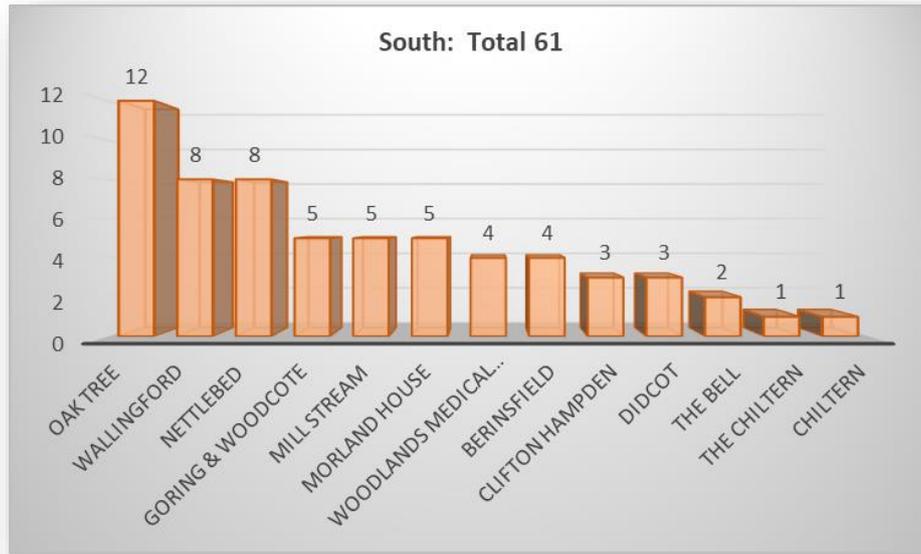


Figure 10: South Oxfordshire - breakdown of referral source

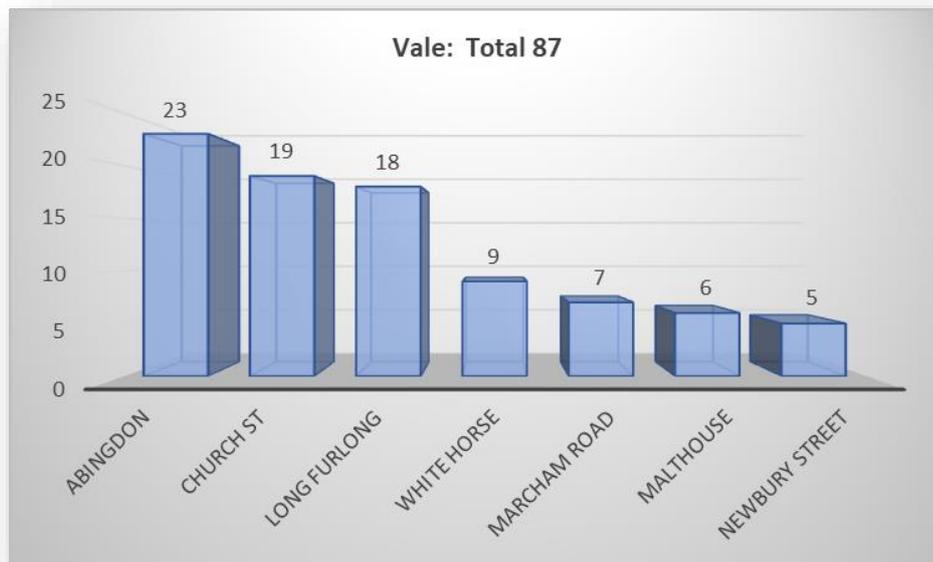


Figure 11: Vale of White Horse – breakdown of referral source

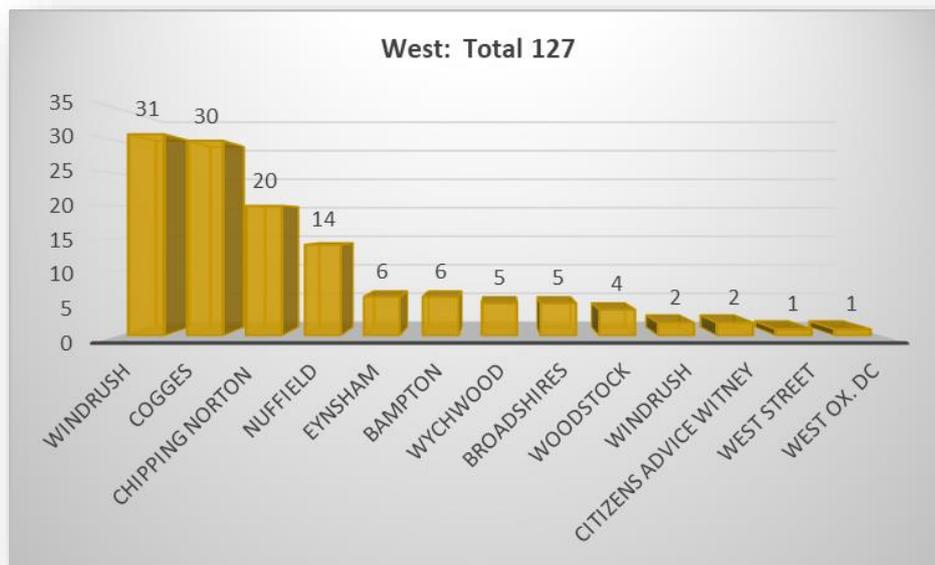


Figure 12: West Oxfordshire - breakdown of referral source

(vi) Referred and enrolled patient demographics

The following outlines the characteristics of those patients that were referred onto the programme and attended a baseline assessment (i.e. 'enrolled') compared to those who were referred but did not attend a baseline assessment, and therefore were not recruited to the programme.

There was no difference between the referred group and enrolled group from a gender perspective indicating that both females and males are similarly motivated and happy to engage with the programme. Of those who did enrol onto the programme, there is a lower proportion of 20-34 year olds who engage and participate (2.2% of those enrolled) compared to those who were initially referred (4.5% of the referred patients). However, there was very little difference between the referred and enrolled cohort from an ethnicity perspective where 5.8% of the total referred population were of Asian / Asian British origin and 6.9% of this ethnic group enrolled onto the programme.

It is interesting to note the varying demographics across the referred and enrolled cohorts at a District level:

- 36.5% of total referrals into the programme came from Cherwell and a greater proportion of these patients enrolled onto the programme (52.8% of all those enrolled)
- West Oxfordshire accounted for 31% of referred patients of which a lower proportion actually enrolled into the programme (17.6%)
- The City accounted for 16.4% of the referred population and had a lower proportion of engagement, with only 14.1% enrolled onto the programme.

Notwithstanding the differences at a district level, there was very little difference between the patient demographics of the referred and enrolled groups.

6. Outcomes

OxCATTS conducted a primary analysis on the available 3 month data that had been input into the Data Capture System by the District teams. This included all patients enrolled onto the programme up to 1st August 2019 and received a follow-up 3 month assessment. All patients who enrolled onto the programme, regardless of whether or not they attended their 3 month assessment were included in the analysis. This ‘intention to treat’ (ITT) analysis is a statistical method which analyses all data of those enrolled at a baseline assessment and all re-assessed at 3 months, not just on those that received the programme intervention. This explains the data analysed as set out in Table 4 below. In addition, individual cases were excluded from analysis if the hours in physical activity domains exceeded waking hours.

Primary Analysis on 3 month data	n
Baseline assessment conducted before 1 st Aug	413
Included in analysis (less data excluded)	404
Lost to follow-up	124
Assessed at 3 months	280

Table 4: Data analysed at 3 months

3 month Outcomes

(i) Physical Activity

Patients completed the ‘International Physical Activity Questionnaire’ (IPAQ) at baseline and at the follow-up assessment at 3 months. Patients report on physical activity that they have undertaken in the last 7 days and includes assessment of the types of intensity of activities performed. The current Public Health Guidelines for Physical Activity (2019)¹³ recommend that adults accumulate at least 150 minutes or moderate intensity activity per week and muscle strengthening activities should be done on at least two days a week.

The scientific evidence base is clear and compelling: the relationship between physical activity and health has grown. In general, the more time spent being physically active, the greater the health benefits. We also know that even relatively small increases in physical activity can contribute to improved health and quality of life.

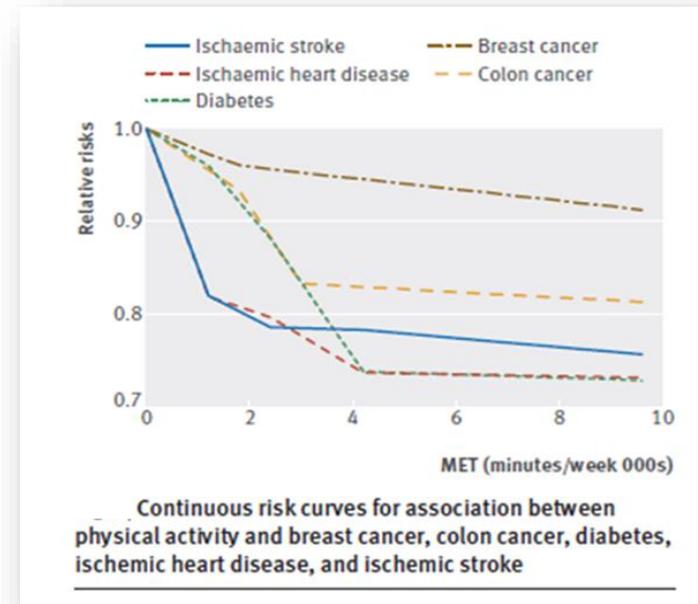


Figure 13: Continuous risk curves

¹³ Physical Activity Guidelines: UK Chief Medical Officers’ Report; Department of Health and Social Care; Sept. 2019

In relation to Type 2 Diabetes, being active improves glycaemic control, improves blood pressure and cholesterol, and reduces the risk of diabetic complications and the risk of cardiovascular complications. The responses to the IPAQ are analysed and interpreted in relation to their MET value. A MET (metabolic equivalent) is a unit of energy expenditure (i.e. the amount of oxygen required to undertake an activity) and resting energy expenditure is defined as the amount of oxygen consumed while sitting at rest and is equal to 3.5ml of oxygen per kilogram of body weight, per minute. A MET score is the objective measure of the ratio of the rate at which a person expends energy, relative to the mass of that person while performing specific physical activities and a way of describing the intensity of an activity or exercise. Low activity equates to <600 MET mins/week.

Moderate intensity activities (recommended in the CMO's guidelines) are those that get individuals moving fast enough to burn off three to six times as much energy per minute as achieved when sitting, valued as 3 – 6 METs in the 'Compendium of Physical Activities':

<https://sites.google.com/site/compendiumofphysicalactivities/home>

For patients with diabetes, the guidelines recommended are the same in relation to 150 minutes a week moderate or 60 minute vigorous intensity (ACSM¹⁴) and 1,620 MET minutes per week is recommended (European Federation of Sport Medicine Association [EFSMA]).

The analysis of the baseline and 3 month data of the IPAQ showed a statistically significant increase in physical activity levels as follows (p<0.001):

- At baseline: mean MET minutes per week = 1,231 (+/- 2,397)
- At 3 months: mean MET minutes per week = 2,318 (+/- 3,684)

Furthermore, there was an increase in proportion of people doing 150 minutes or more moderate or vigorous physical activity from baseline to 3 months:

- At baseline: 28.5%
- At 3 months: 40.9%

Consequently, in relation to the guidelines, the mean MET minutes per week exceeded those recommended by the EFSMA.

(ii) *Health Related Quality of Life*

The EQ5D-5L is a standardised measure of health status developed by the EuroQol group to provide a simple, generic measure of health which have been developed across a wide range of disease areas. The EQ5D comprises of a short descriptive system questionnaire and a visual analogue scale (VAS) that are cognitively undemanding and take only a few minutes to complete. It provides a simple descriptive profile of a respondent's health state as individual's rate their own overall current health.

As with the physical activity analysis, the outcomes of the 3 months follow up assessment demonstrate a statistically significant result (p<0.001), indicating a significant increase in perceived health related quality of life of participants who underwent the programme. These scores are from the visual analogue scale that takes

¹⁴ American College of Sports Medicine Guidelines for Exercise Testing and Prescription. Tenth edition. 2018

values between 100 (best imaginable health) and 0 (worst imaginable health), on which patients provide a global assessment of their health that range from 0-100.

- At baseline: mean 57 +/- 21
- At 3 months: mean 63 +/- 21

These statistically significant outcomes from the physical activity levels (IPAQ) and health related quality of life (EQ5D-5L) achieved by the participants in this programme, indicate that GAGH-D appears to be an effective intervention to motivate and empower patients to increase their activity levels and their health related quality of life.

6 month Outcomes

The GAGH-D programme follows participants up at 3 months but also at 6 and 12 months. The purpose of these follow-ups is important to be able to understand the longer term impact of the intervention to determine sustainability of improved physical activity levels. Hence, exploratory analysis of data was conducted only for those people who have received a 6 month follow-up to date as per protocol, hence caution should be applied to interpretation of this data as this includes those still on programme and therefore, likely to do well (attrition bias). Although a smaller dataset, this analysis similarly is very positive across sustained improvement in physical activity levels and health related quality of life showing statistically significant outcomes as follows:

(i) Physical Activity

A significant increase in physical activity (n=66*):

- At baseline: 793 +/- 1109 MET minutes per week
- At 3 months: 2293 +/- 2687 MET minutes per week (p<0.001)
- At 6 months: 5493 +/- 5446 MET minutes per week (p<0.001)

* some data was removed due to double counting of moderate walking

(ii) Health Related Quality of Life

A significant increase in EQ5D-5L (n= 127)

- At baseline: 54 +/- 23
- At 3 months: 66 +/- 20 (p<0.001)
- At 6 months: 67 +/- 19 (p<0.001)

7. Conclusion

Last year's report demonstrated its success through the over-achievement of the targets across the districts, the enablement of local delivery partners and the collaborative partnership working with both stakeholders and primary care teams. The analysis of this data conducted by OxCATTS demonstrating statistically significant outcomes, now reinforces the extent of how successful the GAGH-D programme is across the county.

The project's success is testament to the district teams themselves, who have worked cohesively, sharing best practice and with a collective determined effort to ensure this project is implemented consistently across the county. It is therefore rewarding to receive the positive outcomes of the data analysed to date, to understand the extent of the impact of the programme as evidenced by the increase in activity levels with an associated improved quality of life. Indeed, these statistically significant outcomes from the physical activity levels (IPAQ) and health related quality of life (EQ5D-5L) achieved by the participants in this programme, indicate that GAGH-D appears to be an effective intervention to motivate and empower patients to increase their activity levels and their health related quality of life.

Furthermore, physical inactivity and diabetes are both independent risk factors for cardiovascular disease (CVD) and preventing CVD is a top priority for Oxfordshire, given that CVD is one of the top four causes of illness in the adult population and one of the top four causes of death in people aged under 75. By continuing to deliver an evidence-based project together with revisions and on-going recommendations for service improvements to the intervention and its care pathway, Active Oxfordshire and the local authorities pledge to continue to be key players in addressing priority healthcare for inactive individuals with diabetes across Oxfordshire. It is recommended that further case studies are provided to capture the patient experience directly as well as gathering of further clinical data from a small sample of patients, to further endorse this successful intervention.

It is anticipated that with continued funding support from OCCG enabling longer term sustainability, this project has the ability to be a key asset and enabler to contribute to Oxfordshire's wider prevention agenda, to tackle physical inactivity and targeting those with, or at risk of long-term health conditions such as cardiovascular disease.

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