Health Innovation Manchester

Lilly

Project Delivered in Collaboration with Health Innovation Manchester and Eli Lilly

Reimagining Obesity Care Pathways in Greater Manchester Integrated Care System

August 2024

Executive Summary

Economic Impact

The estimated costs of obesity in Greater Manchester in 2023 were **£3.21 billion**, or £5,297 per person living with obesity per year. Reducing obesity prevalence could have an economic impact of up to £440m per year.[1]

Adult weight management pathways

Capacity and demand[2]:

- 17,313 tier 3 referrals were received across all 10 localities of Greater Manchester between November 2022 and October 2023
- Around **235k** adults are eligible for current NICE approved medications in Greater Manchester.
- There are around **85,000** adults with a BMI >40 in Greater Manchester
- There are around **11,000** adults with a BMI >50 in Greater Manchester
- **558** people were referred to the Tier 4 bariatric pathway in 2022.

Variation:

- Current Tier 3 models vary in terms of the number of patient interactions generated, with some generating up to 25 patient interactions, per patient over a year[2].

- No eligibility exception is made for people with a South Asian, Chinese, other Asian, Middle Eastern, Black African, or African-Caribbean family background with a slightly lower BMI (2.5 points lower) as NICE recommends[8].

- Greater Manchester does not currently commission any purely digital tier 3 services[2].

Public and Patient Involvement and Engagement[3]

The key themes from a series of service user discussion groups, conducted as part of this programme of work, were:

- Awareness among healthcare professionals (HCPs)

- Consistency of care provisions

- Person-centred care

Foreword from Health Innovation Manchester

One of the core strategic priorities for Health Innovation Manchester (HInM) over the last three years has been to develop meaningful partnerships between the healthcare system, academia, and industry partners.

Health Innovation Manchester's (HInM's) vision is to become a recognised international leader in accelerating innovation that transforms the health and wellbeing of our citizens, which includes understanding how new innovations, including new medicines and new technologies, can be deployed into our Greater Manchester (GM) system at pace and scale to drive benefits for our citizens.

As part of our proven methodology, in the implementation of innovations into real-world settings, we recognise the need to have a deep and insightful understanding of the care pathways that we are working or potentially going to be working in.

A previous collaborative working agreement between HInM (Health Innovation Manchester) and Lilly, Understanding Obesity Care Pathways in Greater Manchester, confirmed the belief by both clinicians and service managers within Greater Manchester that the current service model does not allow for equitable access for patients across the locality or demonstrate consistent successful treatment outcomes.

The outcome of the Understanding Obesity Care Pathways in Greater Manchester project included a deeper understanding of the current obesity services across the GM system, and provided a clear single report that described the "current state". Outcomes from this piece of work can be found here:
Understanding Obesity Care Pathways in GM ICS

This second phase of the programme has focused on working collaboratively with the system to support development of a "future state" that will optimise system readiness and appropriate use of any future innovations, such as medicines and/or technology to support citizens towards healthier weight management.

Our insights were gathered through a number of approaches, which included the establishment of a steering group chaired by the Manchester University NHS Foundation Trust Clinical Lead for Diabetes, Endocrinology and Metabolic Medicine. We also worked with partners from:

- The HInM and Lilly project team
- Tier 2, 3, and 4 weight management service providers
- The Office for Health Improvement and Disparities (OHID)
- Primary and Secondary Care clinicians
- Greater Manchester Medicines Management Pharmacists
- Greater Manchester Population Health Management Team

Key findings of the insight gathering are covered more fully in the report. The findings reflect that the estimated costs of obesity in Greater Manchester in 2023 were **£3.21 billion,** and reducing obesity prevalence could have an economic impact of up to £440m per year.

Recommendations

How we build on the report and react to its key findings will be a matter for strategic leaders to agree, once the report is validated.

We hope the report will provide findings that can help inform prioritisation and utilisation of some of the emerging National Institute for Health and Care Excellence (NICE) approved technologies and medicines. Given the agreed role of HInM in helping to support the delivery and deployment of proven innovations, we would recommend that we continue to work collaboratively with the Greater Manchester Integrated Care System to create an ecosystem that is able to optimise these fully.

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1.0. Introduction and Background

1.1. Collaborative Working Agreement and Data Protection

This project is a collaborative working agreement (CWA) between Health Innovation Manchester (HInM) and Lilly UK. This is in line with Clause 20 of the 2021 ABPI Code of Practice[4].

No individual healthcare professional will benefit from the implementation of this Agreement. This document will be publicly available on the Lilly UK corporate website and will be proactively shared with health care professionals and NHS staff within the Greater Manchester area who have an interest in chronic weight management.

The pathway analysis work was undertaken on behalf of Lilly by Tranoca, an approved Lilly vendor.

1.3. Background

In July 2020, the Department of Health and Social Care (DHSC) released the policy paper Tackling obesity: empowering adults and children to live healthier lives[5]. This paper provided guidance that systems may refer to in developing appropriate strategies for the management of obesity care provision. In June 2023, DHSC published further plans to tackle obesity across England, with a focus on weight management interventions and restrictions on promotion and advertisement of less healthy foods[6]. Greater Manchester is similarly committed to reversing the trend on obesity over the next five years. Obesity is regarded as a major challenge given that Greater Manchester is above the National average in terms of prevalence in its population[7]. Obesity, or healthy weight management as it is described by the GM population health management team, is an example of a challenge that cannot be met by clinical teams in isolation, but one that must be met through health in all policies and outlined as a whole system approach in the Greater Manchester Integrated Care Partnership Strategy[7].

There are significant inequalities in the prevalence of obesity in Greater Manchester, for example by deprivation, gender, age, and locality[6]. Obesity is a major health crisis countrywide, and in Manchester 63% of adults and 41% of children at year 6 (age 10-11) are overweight or living with obesity, which is higher than the national average[7].

A previous collaborative working agreement between HInM and Lilly, Understanding Obesity Care Pathways in Greater Manchester, included the development of a current weight management services pathway map for Tier 2,3 and 4 services,

complete with demand data (versus commissioned data where available), patient eligibility criteria, treatment management and patient attrition at each tier.

Key findings of this project were:

Prevalence[6]

Data from the Office for Health Improvement and Disparities Fingertips tool shows that more than 1 in 4 adults (27.1%)[13] are living with obesity in Greater Manchester, which equates to 606,292[6]

Data from the Greater Manchester Care Record shows 499,711 of these adults have a BMI recorded, in their patient notes, of ≥30, plus Black, Asian, and Minority Ethnic group BMI ≥27.5 - 29.9[6].

Of this population:

- 15% are people from Black, Asian, and Minority Ethnic population with BMI 27.5-29.9
- 51% have a BMI 30 – 34.9
- 21% have a BMI 35 – 39.9
- 13% have a BMI ≥40

Capacity and Demand[6]

- Annual tier 2 referrals as proportion of total BMI 30-35 population – 4.3%.
- 60% of patients referred enrol in the Tier 2 service.
- Annual Tier 3 referrals as proportion of obese (BMI ≥35) population – 8.3%.
- 28% of patients referred enrol in the in Tier 3 service.
- Annual Tier 4 Referrals as proportion of eligible obese population (BMI ≥40) – 4.5%.
- 11.4% of patients referred enrol in the Tier 4 service.

These findings indicated that there is further work needed to identify solutions which will improve efficiencies, patient access, and subsequent health outcomes across Greater Manchester

2.0. Project Approach

The project adopted a pluralistic project approach:

- A collaborative approach to optimise co-production and integrated working.
- A system multi-disciplinary governance structure with cross functional working groups (task and finish)

2.1. Aim

By utilising the outputs from Understanding Obesity Care Pathways in Greater Manchester, this project aimed to identify solutions to improve patient outcomes. The project will support optimisation of the obesity pathway through provision of recommendations to local weight management service commissioners based on multiple service scenario simulations. Simulations were run testing varying clinical roles and clinic formats. The ultimate goal of the project is to identify an alternative, scalable, approach to the management of eligible patients living with obesity throughout the 2-year obesity treatment timeline and beyond, if applicable.

2.2. Objectives

This work aimed to:

- Understand how many patients may require/will be eligible for interventions and stratify these eligible patients into risk categories.
- Create multiple service scenarios across the spectrum of obesity management.
- Publish a Health Economic report showing system-wide impact of obesity, and improved obesity management.
- Capture the patient voice through service user discussion groups across the locality.

3.0. Project Methodology and Limitations

3.1. Methodology

3.1.1 Health Economic Report methodology

The approach to exploring the costs of obesity in Greater Manchester was underpinned by an impact framework. Based upon reviewing academic, clinical, and grey literature relating to obesity, and in discussion with the Steering Group for this work, an impact framework was developed including the following categories of cost:

- Costs to individuals living with obesity.
- Reductions in health-related quality of life (HRQoL) due to obesity, both directly and due to obesity-related illness.
- Costs to NHS and social care sector. Increased demand for NHS and social care services from individuals living with obesity.
- Costs to family and carers of individuals living with obesity.
- Increased burden of informal care for individuals living with obesity.
- Costs to the wider economy and employers; reduced rates of employment, higher rates of sickness absence and lower rates of productivity among individuals living with obesity.

This report focuses on the costs which are due to obesity. These are the additional or incremental costs, which are experienced by individuals living with obesity which are not experienced by individuals not living with obesity.

3.1.2 Pathway Analysis and future state mapping methodology

The programme team engaged with each of the tier 3 service providers as well as a digital service provider to capture anticipated weight loss medication pathways. Data from the Greater Manchester Care Record was also used to provide demographic data for obesity across Greater Manchester.
We used NICE guidelines and guidance resources to better understand the medication management requirements for currently approved medications, and to cross reference the numbers of people NICE predict to be eligible for medications versus the data captured via the GMCR. We have used the NICE suggested data as the GMCR data was assumed to be underreported.

Through close engagement with the Salford Locality commissioner, we sourced accurate tier 3 referral data, starter and completer rates and outcomes data via the Salford commissioner.

3.1.3 Public Patient Involvement and Engagement methodology

A number of discussion groups were conducted using themes developed from the phase 1 report to understand patients' experiences of accessing and using weight management services. Participants were recruited from the bariatric service at Salford Royal Care Organisation, who invited HInM to present at a monthly support group to patients who are either considering or are on the pathway to receive bariatric surgery. The groups consisted of 11 females and 2 males with representation from half of the localities in Greater Manchester. 10 participants described themselves as being of a white ethnicity, with the rest being from multiple ethnic backgrounds.

3.1.4 Greater Manchester Care Record (GMCR) Analysis

The GMCR is a shared care record bringing together the health and care information of the 3.1m Greater Manchester residents, currently coordinated by HInM with the 10 localities, Greater Manchester Health and Social Care Partnership and supplier Graphnet.

The record brings together data from:

- Primary/Secondary Care (GPs/Hospitals)
- Mental Health
- Community
- Specialist Trusts (including the Christie cancer treatment centre)
- Social Care.

Other health and care providers may be added over time.

3.2. Limitations

- Triangulation of the GMCR data extract with NHS QOF data suggested under-reporting of obesity prevalence within the GMCR by approximately 15%. Data are also dependent on Greater Manchester citizens having had their weight and height measured and a BMI score recorded in their health records.

- It is not always possible to distinguish impacts and costs which are generally associated with obesity from those which are specifically due to obesity. This is unsurprising, given the range of factors (including societal factors) which contribute to and are caused by obesity and the complexity of these relationships. We have attempted to mitigate this issue as far as possible, by basing our health economic analysis on published literature which directly attempts to control for the issue of causality.

- The patient groups initially had 55 service users who expressed interest in taking part in the discussion groups. Despite the discussion groups being held at 6pm on a Wednesday which was a familiar time to the participants as this was also when the monthly group is held, only 13 service users were able to attend the groups.

- This review presents a snapshot in time, consequently all data and associated insight are drawn from information that was available at the time.

4.0. Findings

4.1 Health Economic Analysis

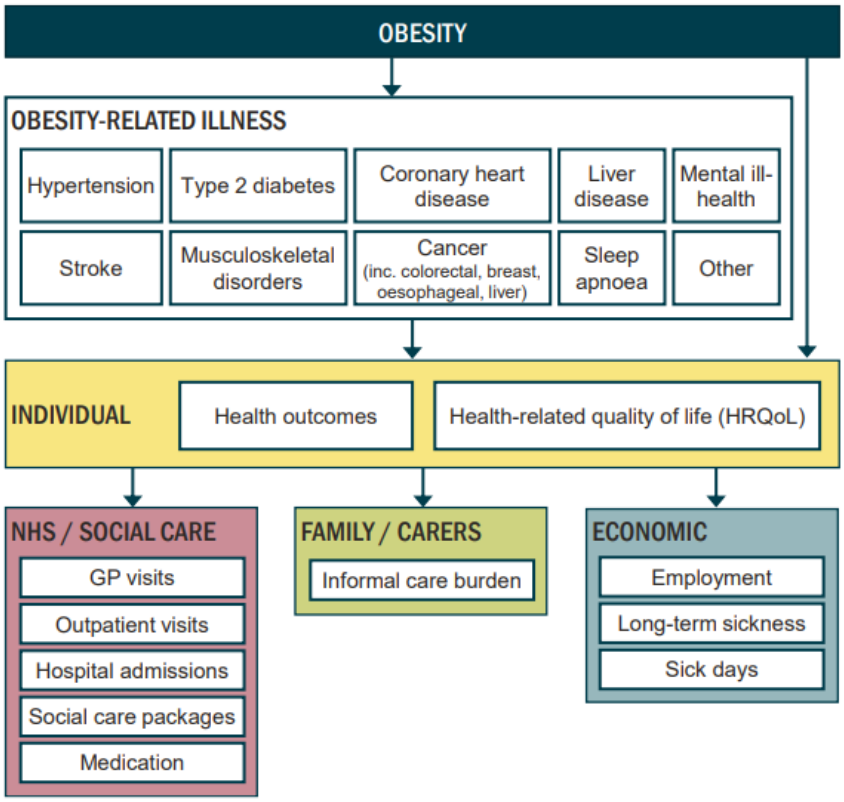
This report, underpinned by an impact framework, (fig.1) focuses on the costs which are due to obesity. These are the additional or incremental costs which are experienced by individuals living with obesity and which are not experienced by individuals not living with obesity.

The report explores the following issues:

- The annual costs to the NHS and social care sector associated with obesity.
- The wider costs to individuals, the economy and society associated with obesity.
- The variation of these costs across subpopulations.
- The potential avoided costs if rates of obesity were lower.

For the purposes of this report, in line with NICE's Clinical Guideline for Obesity: identification, assessment and management, obesity is defined as having a Body Mass Index (BMI) of 30 or higher, or 27.5 or higher for people of South Asian, Chinese, other Asian, Middle Eastern, Black African or African-Caribbean family background[8]. The report analysed obesity in adults aged 18 and over.

Figure 1 Impact framework



Source: Frontier Economics

It is estimated that around 1 in 4 (606,292) adults in Greater Manchester live with obesity (BMI ≥30 plus Black, Asian and Minority Ethnic group BMI ≥27.5-29.9). Of this population 15% are Black, Asian, and other minority ethnic groups population with BMI 27.5-29.9.[1]

The estimated costs of obesity in Greater Manchester in 2023 were £3.21 billion, or £5,297 per person living with obesity per year[1]. These costs are broken down as follows:

Cost category	Cost per person living with obesity (£)	Total costs due to obesity (£)
NHS costs	**£567**	**£344 million**
primary care costs	£44	£28 million
outpatient visit costs	£137	£88 million
elective admission costs	£142	£91 million
emergency admission costs	£197	£127 million
prescription costs	£47	£30 million
Formal social care costs	**£45**	**£27 million**
Costs to individuals due to HRQoL losses	**£811**	**£492 million**
Costs of informal care	**£937**	**£568 million**
Productivity costs	**£2,937**	**£1,781 million**
sickness absence costs	£267	£162 million
economic inactivity costs	£2,670	£1619 million
Total cost of obesity	**£5,297**	**£3,212 million**

Figure 2: Annual cost of obesity in Greater Manchester by cost category[1]

Cost Opportunity - Potential avoided costs if rates of obesity were lower

We estimate that if prevalence in Greater Manchester (currently 27.1%) was similar to the England average (currently 25.9%), overall costs would be £3.07 billion per year, £142 million (4.4%) lower than the current costs of obesity[1].

If prevalence in Greater Manchester was instead at the level currently observed in the borough with lowest prevalence (Bolton – 23.4%), we estimate overall costs would be £2.77 billion per year, £442 (13.8%) lower than the current costs of obesity[1].

Variation by Locality

The healthcare and social care costs of obesity vary across localities, due to variations in population size, and prevalence of obesity and severe obesity. The highest total cost of obesity is in **Manchester** locality while the highest cost per 1000 habitants is **Rochdale** locality[1].

Variation by Deprivation

The average NHS and social care costs per thousand habitants is **highest among the most deprived** populations (£199,497 in decile 1), and lowest among the least deprived (£113,217 in decile 10). Unsurprisingly therefore, 30.5% of all NHS costs in Greater Manchester due to obesity arise in the most deprived decile. By contrast, only 3.3% of the obesity costs relate to individuals in the least deprived decile[1].

Ethnicity

NHS and social care costs of obesity vary significantly across ethnic groups. E.g. average cost per thousand inhabitants is almost 50% higher for individuals of Black or Black British ethnicity (£227,639) than individuals of White ethnicity (£152,888)[1].

Variation by Age

Prevalence of obesity tends to increase with age, with the highest prevalence seen in the 45 to 54 years (34.4%) and 55 to 64 years (34.3%) age groups. The associated healthcare and social care cost per thousand habitants is highest for individuals between 55 and 64 years (£237,078)[1].

A link to the full health economic report can be found here:
Costs of Obesity in Greater Manchester

4.2 Pathway Analysis and future state mapping

The following sections of this report pertain to information that was available at the time of this review[2]

Capacity and Demand

17,313 tier 3 referrals were received across all 10 localities of GM from November 2022 to October 2023. Data suggests that 28% of those referred into a tier 3 service start a tier 3 programme and only 65% of these starters, or 18.5% of all referred, complete a programme[2].

Tier 3 specialist weight management services across Greater Manchester typically receive referrals for people who are living with obesity with a BMI above 35 or 40.

No eligibility exception is made for people with a South Asian, Chinese, other Asian, Middle Eastern, Black African or African-Caribbean family background with a slightly lower BMI (2.5 points lower)[2] as NICE recommends[8].

The existing specialist tier 3 weight management services across Greater Manchester were not established with the expected high demand for new weight loss medications in mind. Modelling undertaken as part of this project, and shared with Greater Manchester commissioners, suggests that demand for obesity medication may far outstrip the current capacity of the Tier 3 services resulting in a backlog[2].

Around 235k people in Greater Manchester are eligible for current NICE approved medications (as of April 2024)[2]. Of these:

- There are around 85k people with a BMI >40[2]
- There are around 11k people with a BMI >50[2]
- 558 people were referred to the Tier 4 bariatric pathway in 2022[2]

We have analysed the potential budget impact of the use of new medications on various patient groups within the eligible obese population across Greater Manchester. This has been shared with Greater Manchester commissioners.

Variation

Current Tier 3 models vary in terms of the number of patient interactions generated; the current programme pathways (non-medication) average an estimated 21 patient interactions over one year with some generating up to 25 patient interactions, per patient over a year. Programme outcomes do not appear to be impacted by volume of appointments[2].

Greater Manchester does not currently commission any purely digital tier 3 services. Current tier 3 pathways include limited community support via social prescribing.

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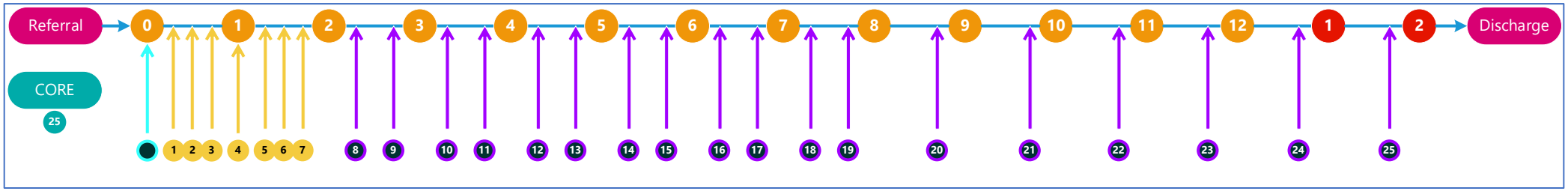
CURRENT **CORE PROGRAMME** PATHWAY[2]
(NO MEDICATION INVOLVED)

The below is one example of a number of specialist Tier 3 weight management provider pathways mapped as part of this programme of work. The circles represent the months, and the arrows show the patient interaction points. The key below describes the roles involved at each interaction point.



1	**MDT assessment**	Endocrinologist/Specialist GP, Psychologist, Dietician, Occupational Therapist, Physiotherapist, Health Advisor/ Assistant Practitioner/Healthy Lifestyle Advisor, Administrator. NOT PATIENT FACING
18	**Group session**	Psychologist, Dietician, Occupational Therapist, Health Advisor/Assistant Practitioner/Healthy Lifestyle Advisor
0	**1-2-1 non-medic session**	Psychologist, Dietician, Occupational Therapist, Health Advisor/Assistant Practitioner/Healthy Lifestyle Advisor
0	**1-2-1 medic-role session**	Specialist GP
7	**1-2-1 therapy session**	Psychologist, Dietician, Occupational Therapist
0-12	Year 1 months 0-12	

Figure 3. Core Tier 3 Programme: group sessions + 1-2-1 psychological support option over 1 year and 2 months MDT + 25 patient interactions

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Current weight management service provision outcomes

- Core programme pathways (medication free) typically deliver body weight loss of around 5-10% for those who complete the programme[9], which aligns with the national picture for tier 3[10]
- The total cost of delivering tier 3 weight management services across Greater Manchester in 2023 was £3.4m[9]
- 26.5% of patients lost ≥5% weight[9]
- Cost per 5% weight loss was £2488[9]

4.3 Public Patient Involvement and Engagement

Awareness among Health Care Professionals (HCPs)

Participants of our focus groups praised the approach and expertise of the providers of specialist weight management services. However, they spoke of how there appears to be little knowledge among their GPs and other care providers about the services on offer in their local area to support them to lose weight. All of the participants gave accounts of multiple negative experiences they had encountered when a HCP began a conversation about their weight. Often this was with a lack of empathy, leaving patients feeling embarrassed and discouraged[3].

Experiences shared also suggest a lack of awareness of services and the appropriateness of service offering.

'I wish I would've done this [Tier 3] service and I got told about it a lot sooner because I would never have needed bariatric [surgery] and it would've worked for me whether it [be] a 12 week programme or a year… I find that would've worked for me and I wouldn't be where I am today." - Focus group participant 'Lisa'[3].

Within this theme, our focus groups have highlighted the importance of HCPs understanding what services are on offer to allow patients to access what is right for them. Participants felt that there was also a need for training and guidance on how to approach conversations with patients about their weight as they felt HCPs often shied away from addressing a patient's weight[3].
Service users also discussed how having digital services improves their ability to be able to attend these groups[3].

Consistency of Care

The people we spoke to agreed that having regular touchpoints creates a sense of community. They felt that being with people who are at a similar stage in their journey is motivating[3].

Participants reported long waiting times within the traditional tiered system, with no continuity of support between tiers and a lack of continuity within the services. From the discussions, many people report waits of over 12 months for services and a lack of support when moving between Tier 3 services and Tier 4[3].

They reported experiencing unpredictability with group support, such as being moved to a new group or being grouped with others at a different stage in their weight loss journey[3].

"I finished the service for two years now and there's been no support… and they want you to lose 5-10% [body weight] at the end of the journey to be referred for surgery. But then you're waiting two years; I've not had surgery and I finished in 2022, it's now 2024. If I could maintain me [sic] weight, like lose weight, I wouldn't be where I am today" - Focus group participant 'Lisa'[3].

The Importance of Person-Centred Care

Participants often praised their weight management providers for understanding what they would benefit from in the sessions[3].

Many participants spoke of their long-term health conditions which had been prominent in their health before they struggled with their weight, and now that they are living with obesity the focus is placed on the weight as their sole health problem. Some participants felt unheard and shamed about their weight. It was also evident that those who were on the same service had differing opinions of it, demonstrating the need for some tailoring within the services as one programme will not work for everyone[3].

A link to the full Public Patient Involvement and Engagement report can be found here:
Greater Manchester Obesity PPIE Report

5.0 Recommendations

In the next phase of the project, and through a Collaborative Working Agreement with Lilly, HInM along with Greater Manchester Integrated Care System, will support the implementation of a new standardised model of care for obesity across Greater Manchester in line with the Greater Manchester Joint Forward Plan[11]. The next phase will build on the key themes identified in terms of the need to build on current unwarranted variation and significant unmet need within some of our obesity care pathways. Approaches taken will need to align with the principles of Core20PLUS5 to ensure that the allocation of limited healthcare resources are directed towards people living with obesity who have the greatest unmet need[12].

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