Equity and local health systems: a qualitative evaluation of the experiences of local health service leads during the first two years of the NHS Low Calorie Diet programme pilot

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Abstract

Background: Obesity and type 2 diabetes (T2DM) can both profoundly impact health and wellbeing. Their prevalence largely follows a social gradient. The National Health Service Low Calorie Diet programme in England aims to support people to achieve T2DM remission while also reducing health inequalities. We aimed to explore the experiences of local health service leads and identify barriers and facilitators in relation to the equitable mobilisation of the Low Calorie Diet programme.

Methods: Twenty semi-structured interviews were completed with 24 locality leads across the first two years of the Low Calorie Diet programme. Interviewees were purposively sampled from the 10 localities who undertook the Low Calorie Diet programme pilot. Each interview explored a number of topics of interest, including referrals, training, communication, incentivisation, governance and engagement, before being subjected to a thematic analysis.

Results: From the data, seven core themes were identified: COVID-19 and primary care capacity and engagement; methods of communication; approaches to training; approaches to incentivisation; approaches to referrals; barriers to referrals; and the importance of collaboration. COVID-19 presented a specific challenge to the mobilisation and delivery of the Low Calorie Diet programme; however, our findings demonstrate the large variation and differences in the approaches taken when delivering the programme across 10 geographically and demographically distinct pilot sites. We also identified a lack of a recognised approach or strategy to mobilisation and delivery support for the Low Calorie Diet programme, such as proportionate universalism, which is a social policy response to tackling health inequalities by ensuring that service delivery is equitable.

Conclusions: Health inequalities remain a significant challenge, and health service leads have the potential to adopt an equity perspective from the start of programme mobilisation. In doing so, resources at their disposal can be managed equitably and can therefore contribute to efforts to reduce the potential occurrence of intervention-generated inequalities.

Introduction

Obesity and type 2 diabetes (T2DM) are both prevalent non-communicable diseases which can profoundly impact health and wellbeing.[1] In England, 64% of adults live with overweight, and of these 26% live with obesity.[2] It is estimated that 3.8 million adults (≥16 years) in England have diabetes, and modelled projections indicate that the National Health Service (NHS) and the wider societal costs associated with obesity and diabetes will escalate unless urgent action is taken.[3]

Health outcomes largely follow a social gradient: prevalence of both obesity and T2DM increase with age and area-level deprivation and among people of Black and South Asian ethnicity.[1,2,4,5] Inequalities, the unjust and avoidable differences in people's health outcomes, have been further exacerbated by the COVID-19 pandemic,[6-8] and they also exist in access to healthcare. For example, amongst people of Black and South Asian ethnicity, inequalities in diabetes treatment and metabolic control have been evidenced in the UK.[9] Although addressing inequalities is a public health priority,[10] many interventions aimed at improving health across the entire population can be markedly more beneficial for individuals of higher socio-economic status and of White ethnicity.[11-14] This has been referred to as an inequality paradox – the

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occurrence of intervention-generated inequalities in interventions that aim to reduce them.[15]

The NHS Low Calorie Diet programme

Recent systematic reviews,[16-20] and clinical trials,[21-23] show that for some people living with or at risk of obesity and T2DM a Low Calorie Diet (LCD) achieved by Total Diet Replacement (TDR) can lead to clinically significant weight loss, support remission of T2DM and improve quality of life. The NHS Long-Term Plan made a commitment to pilot an LCD programme for people living with excess weight and T2DM.[24] This commitment aims to significantly improve health while reducing health inequalities and associated future costs to the NHS. NHS England, partnered with Diabetes UK, commissioned the programme delivered by commercial providers across 10 geographically diverse pilot areas using integrated care systems.[25] Integrated care systems are partnerships between NHS bodies, local authorities and local organisations which work together on health and care services to improve the lives of people locally. Each area tested one of three different delivery models (group, 1:1 and digital) (see Additional file 1 online at www.bjd-abcd.com). The programme was available to adults aged 18-65 years with a body mass index (BMI) $\geqslant$27 kg/m^2 (adjusted to $\geqslant$25 kg/m^2 for Black, Asian and other ethnic groups) and a T2DM diagnosis within the last six years. Full eligibility criteria were given by the NHS in 2019.[26] The programme aims to significantly improve health by reducing glycaemic parameters, diabetes-related medication and weight, and by achieving remission.

The delivery of the NHS LCD programme gave due regard to the reduction of health inequalities by ensuring compliance with the NHS Act 2006 and the Equality Act 2010.[27,28] The promotion of equal access by all service users, and the tailoring of a programme to support those with the greatest need through a proportionate universalism approach, was also mandated in the service specification.[29] Thus, health equity (the state in which people have a fair and just opportunity, irrespective of their social position, to attain their full health and wellbeing from social conditions that seek to promote and support good health),[30] is crucial to the delivery of the NHS LCD programme. Although the programme is delivered by commercial service providers, the local health system (primary care) is responsible for referring eligible patients to the programme. The obligations set out in the service specification, and specifically the due regard to reduce inequalities, is therefore incumbent in part on local health service leads who have responsibility for the mobilisation of the programme. This paper aims to explore the experiences of local health service leads and to identify barriers and facilitators in relation to the equitable mobilisation of the service.

Methods

This study received ethical approval from the Health Research Authority (REF 21/WM/0136), and is reported using COREQ guidelines (see Additional file 2 online at www.bjd-abcd.com).[31] Participants from each of the first 10 Integrated Care Systems

(referred to from this point as 'localities') who undertook the pilot programme across England were sampled. Twenty four health service leads (referred to from this point as 'locality leads') (20 females and 4 males) with responsibility for the mobilisation of the NHS LCD programme and employed by local integrated care systems (local commissioning lead, project manager and clinical lead) were interviewed across 20 interviews (see Additional file 1 online at www.bjd-abcd.com). Semi-structured interviews (MS Teams) lasting between 60 and 90 minutes were completed between July and September 2021 (n=10), with follow-up interviews completed in July 2022 (n=10).

Interviews in 2021 were carried out by two researchers (KD and CF), who each conducted five interviews. All follow-up interviews in 2022 were conducted by KD. The interviews were semi-structured in nature, giving the interviewer control over the interview, and were designed to elicit discussion on specific topics of interest. Topics were communicated to interviewees prior to interview, and included: referrals, training, communication, incentivisation, governance and engagement. These topics were pre-empted by initial programme theory,[32] developed through the overarching realist informed Re:Mission evaluation,[33] to which this study contributes. Fieldnotes were recorded after each interview.

Interviews were audio recorded, transcribed verbatim, and then subjected to a thematic analysis as described by Braun *et al*.[34] KD and CF familiarised themselves with the data by undertaking multiple readings of the interview transcripts from the interviews they conducted. Transcripts were coded using a latent coding method and the interview guide as a deductive framework for analysis. This involved abductive reasoning, or the mixing of inductive and deductive reasoning which facilitated movement between participant accounts and researcher-defined topics of interest. Following initial coding, KD, CF and KK read through a sample of transcripts as second coders to search for alternative meanings in the data that had not previously been tagged. Differing interpretations of the data were discussed. NVivo software (QS International Pty Ltd. Version 12) was used to assist this process of storing and organising textual data and initial coding.

The use of thematic analysis allowed for the identification of patterns ('themes') in the data. The identification, reviewing, defining and naming of themes was conducted by KD, who used inequalities as a theoretical lens for interpretation. This involved the organisation of codes by clustering them to identify what Braun *et al.* call 'higher-level' patterns in the data. Twelve and 10 themes, respectively, emerged from the data collected in 2021 and 2022. These themes were then subjected to a further interrogation by KD to consolidate themes into clusters that represented broader patterns in the data. A fourth researcher (CH) provided a greater depth of meaning in the analysis, which led to the refinement and consolidation of themes and the development of recommendations.

Findings

Upon completion of the analysis, seven core themes were constructed out of the data from both years. The following

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section presents these core themes, along with exemplar quotes. Further supporting quotations can be found in Additional file 3 online at www.bjd-abcd.com.

COVID-19 and primary care capacity and engagement (theme 1)

The NHS LCD programme was mobilised when primary care was experiencing COVID-19-related pressures, such as the pausing of governance processes, the vaccine rollout, and the deferral and alteration of annual diabetes reviews. By year two of the programme, interviewees discussed Covid-19-related backlogs and staffing challenges.

"We've not got back to pre-pandemic levels at all. I think it is still very much a barrier, you know from a workforce perspective, from a backlog perspective" (LL10 – Y2).

In this context of Covid pressures, the engagement of GP practices was mixed and variably defined. Engagement was discussed in relation to the generation of referrals in the healthcare system where, by year two, the percentages of referring practices fell between 42% and 85%. Engagement was also deduced from the number of practices that had taken part in LCD training.

"187 practices in [area], 87 of whom have referred. So that's 46.5% have referred" (LL6 – Y2).

Interviewees also discussed referrals being generated by a small number of practices, or even single referrers. Specifically, the capacity of referrers and their interest and passion for the NHS LCD programme were important aspects of engagement.

"But this practice that's done 56 is a single referrer" (LL20 – Y2).

"It seems to be that you have one particular referrer who just gets the programme, sees the benefits of the programme and is passionate about it" (LL10 – Y2).

The engagement of practices was not only dependent on referral staff, such as GPs, practice nurses or pharmacists. Interviewees discussed the important contributions of other colleagues from the wider community, including nurse or diabetes champions, dietitians, clinical leads and care coordinators. Thus, the engagement of practices was dependent on the wider team across the whole health system.

Methods of communication (theme 2)

Interviewees discussed a multitude of methods used to communicate information about the NHS LCD programme to the local health system. These methods included internal communication channels, which typically relied on written communication such as bulletins, newsletters or emails. It was, however, ubiquitous across all interviews that these more formal means of written communication did not always reach their

intended audience, either because the right gatekeepers in GP practices had not been identified, the information wasn't passed on or because primary care staff often suffered from "bulletin blindness" (LL3 – Y1).

"it's every other month for the GP bulletin. Again, we want to avoid like sending out too many and people just sort of then just skimming over it, I don't know, bulletin blindness" (LL3 – Y1).

Methods of communication also included synchronous information sessions, either via means of attendance at existing forums, such as practice or health system meetings, or via LCD-specific sessions such as drop-in sessions or diabetes education events. Information sessions were predominantly delivered remotely via video conferencing, with in-person sessions starting by July 2022. The use of existing forums was seen as the most successful method of communication.

"Newsletters, e-mail circulars, they just land in practice inboxes and don't tend to be analysed, read or they're put to the bottom of the pile. I think practices are absolutely bombarded with communications, be it from the CCG [Clinical Commissioning Group], from the NHS, from lots and lots of other sources. They just don't have the time or the capacity to wade through. Whereas if we can get ourselves a brief slot on a session that's delivered by a senior stakeholder like the CMO [Chief Medical Officer], practices will tend to engage with that" (LL15 – Y2).

Interviewees were unanimous about the need to find as many methods of communication as possible; three localities discussed using more informal and unstructured methods of communication, such as an MS Teams channel, WhatsApp group or lunch and learn session. These methods of communication were seen as successful because they dealt with the issues of "bulletin blindness" while providing a means of reaching referral staff via more unstructured and informal means.

"So, every time we sort of have an opportunity, we will raise it to just try and drive the numbers up really" (LL23 – Y2).

"We also have a WhatsApp group for [area] with 140 GPs, practice nurses and practice pharmacists" (LL11 – Y1).

During mobilisation, communication was focused on practices. However, in year two, five localities reported communicating directly to patients, including via Facebook, press releases, audio visuals in GP waiting rooms, diabetes events and at the end of structured education for diabetes.

Approaches to training (theme 3)

Interviewees discussed their localised approach to the adoption of training to support the mobilisation and delivery of the NHS

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LCD programme. Nine localities made training available - defined as a resource additional to the dissemination of written information – by providing synchronous webinars and their recordings for asynchronous viewing. One locality did not make training available since it was not thought necessary.

"That works on it's a sort of a 2 minute introduction from me to the programme itself, a 5 minute introduction from [provider] [...] on how they operate. And then the rest of the session is delivered by the GP going through the referral process, going through the medication changes with Q&A time. And as I say, we record those sessions and then make them available as well" (LL21 – Y2).

"I think from our perspective, it was fairly cut and dry. You have a new service with a set of criteria, you have a mechanism whereby practices can identify and refer patients into that, as I say those parameters are fairly set in stone, we provide the supporting information. I guess we trust our clinicians to a certain degree to read and absorb that, and we didn't, I guess we didn't really feel that there was a need for formal training" (LL12 – Y1).

Training was typically delivered by a team, including locality leads, IT support staff, providers and clinical leads, with an emphasis on clinical leads being important for addressing the concerns of referral staff. The frequency of training varied but was overall provided infrequently across both years of data collection, with fewer synchronous sessions provided in year two.

"We did, we did all the bulk of the referrer training [at the start]. So, we haven't done anything since then up until this last couple of weeks where what we've done is, we've started to create more recordings" (LL10 – Y1).

The aim of training varied between localities. It was made mandatory by four localities because it was perceived to lead to a higher proportion of eligible referrals and thought to be better for referral staff and patient safety. Conversely, training was made optional by five localities because participation in the programme was voluntary, and because mandatory training was seen as a barrier to generating referral numbers. The need for training overall coalesced around the needs to address referrals barriers, ineligible referrals and to improve engagement amongst GP practices.

"We were seeing quite a high proportion of inappropriate or ineligible referrals either because the patient didn't meet the eligibility criteria or the medication changes simply hadn't been filled in, either appropriately or indeed at all. So, what we wanted to do was go back out to practices and stress one, raising the awareness, but two, taking them through and giving them the opportunity to see how to go through the referral properly and make those medication changes appropriately" (LL21 – Y2).

There were no national requirements on the use of training, and therefore training was managed based on local resources (time of key stakeholders), the views and experiences of locality leads and clinical leads, and in line with local approaches to training more broadly. Moreover, any training that was put in place and described by locality leads did not address inequalities.

Approaches to incentivisation (theme 4)

Reimbursement systems are intended to create incentives to achieve policy objectives or health-related targets.[35] During mobilisation of the NHS LCD programme, four localities deployed incentivisation while a further two had their plans to incentivise delayed by COVID-19. As a result, by the second year of data collection, six localities were offering localised incentivisation, which varied in the amount and the time of payment. For example, one locality paid £200 per practice for attendance at LCD training. Three localities paid between £10.30 and £75 for each referral; one locality also paid £41.20 for patients starting TDR while a second paid an additional £10 for programme completion. A fifth locality paid £90 for starting TDR. A sixth locality introduced a local improvement scheme and paid GP practices a one-off sum of £150 for making a referral to the programme, as well as £20 at six and 12 months for the completion of GP reviews.

"We released a local improvement scheme that incentivises practices. But they have to follow certain steps before they get a payment, they have to do the search, review the [...] numbers that the search throws up, contact the patients, do the consultation, do the medication review and generate at least one eligible referral before we pay them £150" (LL19 – Y2).

There was also variation in the reasons for incentivising. For some localities, incentivisation was deployed as a means of increasing the number and eligibility of referrals. Other interviewees discussed incentivising as a means of just remittance for the increased work of referral to the programme. There was an element of opportunism to incentivisation locally, and plans were devised in line with other services, or because the money was available.

"What we're trying to say is we recognise these consultations will take longer. We want to make sure that they're high quality, and therefore we will remunerate you in this pilot phase for this" (LL13 – Y1).

The remaining four localities reasoned that incentivisation did not increase the number or improve the quality of referrals, or stated that they did not have sufficient funds to incentivise.

"Unless it's something that's really significant, the same practices that will refer anyway will refer whether they are incentivised or not. And the lower referring practices [...] whether or not you're incentivised, they'll still be the

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lower referring practices. I don't think that any previous project has proven that incentivisation generates more referrals" (LL8 - Y1).

During the second year of the programme, the NHS added the NHS LCD programme to the national weight management incentivisation scheme.[36] To maximise referrals to weight management services, during the second year the programme was included in the Weight Management Enhanced Service which enabled practices to claim a payment of £11.50 for each individual referred who was eligible for the enhanced service payment, and within an allocation limit of 20% of the number of patients on the practice's obesity register. Thus, all 10 localities had a form of incentivisation as well as their localised approaches to incentivisation.

Approaches to referrals (theme 5)

Five localities staggered the rollout of participating practices over a period of 1 to 12 months due to capacity issues and the need to provide training before practices could refer. Yet, despite these differing approaches taken during mobilisation, all localities were required to adopt an open referral policy, namely that any eligible patients could be referred within the referral limits at any time. The main reasons given for this approach were that an open referral policy facilitates high referral numbers and is considered fair or provides an equality of opportunity.

"You'll get some that will need an awful lot of hand holding. But we didn't have the time and the resource to set out and map out a phased introduction of those practices, so we just went with the big bang once we were happy that everything worked" (LL6 – Y1).

"I think it's because there are practices that have been generally quite good at referring in, and then there's always the practices that, that aren't so good, and we just wanted to make sure that there wasn't any inequality in patients being able to access it" (LL7 – Y1).

In the first year of the programme, five localities allocated referral places at either a practice or area level, thus putting some caps on referral numbers. These allocations were typically based on diabetes prevalence locally: for example, one locality initially allowed practices to refer 1% of their registered population with T2DM. The remaining localities did not allocate referral places since they did not want to add barriers to the generation of referrals. However, all five localities that initially used a referral allocation had removed that cap to encourage increased referral numbers by the second year of the programme.

"We also thought we didn't necessarily want practices to think that they were restricted in terms of the number of referrals that they could send. So initially we just really wanted to kind of keep it open to encourage practices to refer anybody that they had identified as eligible" (LL2 -Y1).

"We'd allocated everybody 1%. But actually, what we were finding was a high proportion of non-engaging practices. So therefore, we removed the cap of 1% so that people could refer as many as they found, and they wanted to" (LL20 – Y2).

During the second year of data collection, a greater number of localities subsequently discussed monitoring referrals to see who refers before taking action to target individuals or areas where the number of referrals were low or not representative of the population. Given this practice of monitoring referral numbers, inequalities or inequities were not considered or addressed in the management of referrals by all localities from the start of the programme or were only starting to be considered during the latter stages of the programme. Some localities discussed a focus on inequalities as taking time, not being conducive to referral generation and an aspect to have been discussed only following the first year of the programme.

"I have started talking to our engagement officer about actually how are we going to target with that inequalities lens. [...] I think as we're kind of going through this year we'll definitely put an inequalities lens on that and that's something I'm really keen to do" (LL24 – Y2).

"What I found quite difficult with the inequalities aspect of this is it, it kind of seems to have raised its head quite recently" (LL10 – Y2).

Barriers to referrals (theme 6)

By the second year of the programme the majority of locality leads reflected that referral numbers were below their referral trajectories. This resulted in frustrations: it was felt that referral numbers did not reflect the work locality leads were putting into the programme, which in turn resulted in a sense that some localities just did not know what worked to generate increased referrals.

"At the moment I'm really struggling to see that we're even gonna get to our figures" (LL10 -Y2).

"It doesn't feel like the referrals are reflecting kind of the effort we are putting in" (LL17 – Y2).

In this context of low referral numbers, multiple referral barriers were discussed by interviewees. They include process-based barriers such as ineligible referrals, the time needed for a referral and the fact that it was considered complicated.

"We were seeing quite a high proportion of inappropriate or ineligible referrals" (LL21 – Y2).

"The comment that's often passed from referrers is oh it's complicated, it's a complicated criteria" (LL6 – Y2).

Referrer-based barriers were also discussed, such as staff turnover in the local health system and referrer confidence and expertise.

"Staff turnover is like a really big issue. We worked with our provider to get like time at various forums for practice managers, nurses, you know even with GPs, social prescribers. But the turnover is so high it's almost as if we need to do that on a constant basis" (LL14 – Y2).

"I think again this comes down to confidence though, 'cause in my experience of going into practices it's not always that they don't know what they're doing, they just need a reminder of how to do it or you know, obviously it's a live clinical system" (LL16 – Y2).

Some locality leads also discussed a lack of database searches to identify eligible patients. Instead, and to varying degrees, all localities relied on opportunistic referral touch points, such as annual reviews, to identify eligible patients. However, with COVID-19-related disruption and the reliance on staff engagement in the local health system, localities discussed a lack of opportunistic referral touch points.

"Some of the barriers would include one, the search function itself is not, not capturing the totality of the patient population, because the information simply isn't up to date or correct. Second is the capacity within practices themselves to run the searches and then act upon them appropriately when there's so much other stuff going on" (LL21 – Y2).

"I think the biggest issue for the LCD has been that patients haven't been seeing their clinicians face to face" (LL18 – Y2).

A number of localities had started to address these barriers, and in doing so made the referral process easier for referral staff. At the time of data collection, at least one locality had developed a referral pop-up and had shared it amongst several other localities. The referral pop-up maximised opportunistic touch points by prompting referral staff to discuss the programme with eligible patients, whilst also alleviating the need to run searches. Another locality was potentially providing additional staff to run searches, whilst three other localities were trying to increase referral touch points by involving clinical pharmacists, dietitians and care coordinators in the referral process.

"Late last year we started working on a clinical system pop-up. So, these pre-runs the searches and caches them in a report. Then when the patient's record is opened by an appropriate clinician [...] [LCD] will pop up [...][and what] they're presented with is about 95, 98% populated referral form. So, as it's gone along it prepopulates and the only things that they're left to do

are any free text that the field needs to go on to support the referral and medication changes" (LL6 – Y2).

"The second approach that we're looking at doing is putting in additional staff to the provider and getting the GP practices to consent to running a search and sharing the eligible participants with the provider. So then the provider can ring them up and say, would you like to join one of these sessions" (LL20 – Y2).

The importance of collaboration (theme 7)

Locality leads discussed the importance and positive impact of collaboration with fellow public health colleagues in mobilising and supporting the delivery of the NHS LCD programme. Steering groups, and to a degree programme boards, which was protected leadership time, enabled oversight of the programme and brought together a broad representation of people who could share ideas and converse constructively about the challenges of delivering the programme. Despite some COVID-19 disruption, these governance structures were largely unchanged across the two years of the programme.

"It was important for us that the steering group wasn't just those that were going to be directly involved in this, so we have dietetics representation, we've had varying clinical inputs, we've got a GP practice-based nurse at the moment who's got a particular interest in research and obesity, so she sits on it and gives a really good clinical insight. Our clinical lead's on it. We've also got population health and public health representation. So, we've gone quite broad in terms of where those people sit, it's open to all localities [...]. We wanted people in that group that, that would constructively challenge" (LL12 – Y1).

The notion of collaboration also includes the role of the provider and their contributions towards the mobilisation and delivery of the programme. Provider representatives attended LCD engagement events, contributed to the delivery of training and sat on steering groups. Overwhelmingly, the relationship between the locality leads and providers was discussed positively. These views of the providers are held in a context where the locality lead role has been filled by a number of different staff with different levels of experience, and where those in post have reported having numerous other responsibilities. Locality leads reported having other pressures which limited the time they could spend on the NHS LCD programme but overall the support and time put in from the provider enabled delivery to progress.

"It's been a really, really good working relationship. Really positive I think right from the outset [...]. In terms of how easy the team have been to work with, really kind of positive. I think that has made a huge difference actually, in terms of, you know, working together collaboratively, as a team, I don't think that could have really been any better to be honest" (LL2 – Y1).

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"It would be a couple of hours per week is the amount of time I'm able to put into LCD" (LL21 – Y2).

Discussion

In this paper we have provided insights from the evaluation of the NHS LCD programme (which will be renamed NHS Type 2 Diabetes Path to Remission Programme when rolled out nationally in June 2023) by exploring the experiences of NHS staff involved in the mobilisation within the wider local health system. A significant investment for the NHS, the NHS LCD programme is based on outcomes from two recent UK clinical trials.[21,22] However, translating controlled clinical trials into routine service delivery remains a significant challenge. The data presented in this paper elucidate this challenge by highlighting the approaches and context in which the NHS LCD programme is being delivered, and contribute to a larger programme evaluation (Re:Mission study).[33,37]

At its most fundamental level, our findings demonstrate the variation and differences in the approaches taken when mobilising the NHS LCD programme. Key aspects of these approaches, such as training, incentivisation and management of referrals (allocation, rollout to practices), and the human and financial resource they depend on, were utilised, and were justified differently across the 10 pilot localities. COVID-19 presented a specific challenge, which meant the programme was mobilised and delivered in a context that undoubtedly had a constraining influence on the capacity and capability of the local health system. The findings also highlight a lack of focus on proportionate universalism, and although delivery is ultimately the responsibility of the service providers, local health systems could play a more prominent role in driving this agenda through the mobilisation process.

Despite an ongoing debate about the use of targeted and universal strategies to address health inequities,[38] proportionate universalism is an example of a policy approach or strategy considered appropriate for tackling the social gradient in health. Marmot defines proportionate universalism as universal actions "with a scale and intensity that is proportionate to the level of disadvantage" and calls for a combination of universal and targeted actions.[5] Proportionate universalism, therefore, is conceived as a social policy response to inequities – the state in which people do not have a fair and just opportunity to attain health. This is important because it is inequities that create, perpetuate and exacerbate inequalities: inequalities or the social gradient in health are the manifestation of inequities.[10,30]

An equity perspective from the start

During the first year of data collection, five of the 10 localities adopted referral allocations based on the size of eligible populations. While these localities did not explicitly target specific populations, by considering how eligibility was distributed they adopted a 'secondary' level of targeting within their referral policy. This level of targeting is considered secondary because it ensures that areas or practices with the highest need are given more opportunities to refer but does not take measures to ensure that certain groups within these areas or practices subsequently receive referrals.

Our findings show that the targeting, or the equitable distribution of referrals, was not something adopted by all localities. For localities that started with referral allocations, there was a tension between generating referrals and doing so equitably. Specifically, despite the best intentions of some localities, there was a tension between generating referrals equitably and utilising all the places available, and therefore maximising the benefit from the NHS LCD programme for the whole population. While the lack of a referral allocation may result in referrals coming from a small number of practices, it is possible these referrals are generated equitably. Nonetheless, referral allocations adopted in year one were later changed in order to meet overall referral numbers, which often relied on a small number of practices or referral staff. A lack of commitment to concrete action to reduce inequalities in local systems has previously been reported.[39] Yet, following the ratification of the Health and Social Care Act 2012, local health systems have had an increased responsibility to address inequalities in access to health and health outcomes.[40]

To address inequalities, or achieve equitability, there is a need for a suite of measures at varying levels, including at a national or policy level, organisational or planning level (local health systems), service delivery level and at lifestyle level.[41-45] By implication, there is also a need to adopt an equity perspective from the start, as a degree of responsibility for identifying and addressing the inequities in healthcare falls upon those doing public health work.[46] The organisation and planning of resources at a local health systems level can be managed within a proportionate universalism approach. As a result, the decisions that locality leads make regarding the organisation and planning of resources at a local health system level have an impact on the equitability of programme delivery and should be duly considered.

A health equity impact assessment (HEIA), a process of exploring or mitigating the impacts of decisions on inequalities during decision making, is one such tool that encourages an equity perspective from the start.[42] A HEIA can act as a catalyst to equity-focused organisational change and can improve health equity by promoting and encouraging considerations of health equity in policies and programmes, such as the deployment of resources at the disposal of local health systems. The local completion of an HEIA has been recommended by Public Health England,[44] who advocated positioning health equity at the heart of all strategies and policies across local health systems. Doing this can reduce the negative impact of policy and programmes that could further widen health inequalities.[42]

Managing resources equitably

Overall, our findings demonstrate the importance of training for addressing referral barriers and ineligible referrals and for improving engagement amongst GP practices. The use of information sessions proved effective at communicating information about the programme to the local health system, especially in light of the phenomenon of "bulletin blindness",

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where written communications do not always reach referral staff. Therefore, training and/or synchronous information sessions can be considered important in enabling the effective referral of eligible patients to the NHS LCD programme. For example, our findings show that barriers to referrals include referrer-based barriers, many of which can be addressed by providing appropriate training. The depth of knowledge of participating stakeholders in the health system, and the subsequent need for training, have been shown to be important for the effective delivery of large diabetes programmes.[47]

There is also a need to consider the proportionality of service resourcing and provision when delivering health-based interventions. Time could be distributed differentially at a planning or organisational level, for example, by delivering training amongst GP practices proportionate to their need, judged by the prevalence of T2DM in their population or their level of engagement across multiple programmes. However, our results show that time was not managed equitably by all participating localities, because training and synchronous information sessions were delivered variably.

Many localities were reactive in allocating additional time and resources to support practices or areas with lower rates of referral. There was less evidence of proactive allocation of time and resources at the initial stages of mobilisation to avoid potential development of intervention-generated inequalities in referral rates at the outset. Many localities did not use resources and time proportionately from the start, thus missing a potential opportunity to adopt an equity perspective in service resourcing and provision. Indeed, where local health systems have allocated resources that are proportionate to need, instead of simply supporting those who are easiest to support, proportionate universalism has been an effective policy approach.[44]

The introduction of incentivisation has been associated with an improvement in quality of primary care for people living with diabetes.[48] However, we found that economic resource, used as an incentive, missed a potential opportunity to use financial incentives to address inequalities.[49] As a consequence, the actions of locality leads run the inherent risk of exacerbating existing inequalities if patients who are more likely to achieve favourable outcomes are selected.[50] There is limited evidence to support the use of incentives to address inequalities, and it has been suggested that resource allocation matched to increased needs might have a greater impact on health inequalities than incentivisation.[35] Nonetheless, the approaches to incentivisation have the potential to contribute to a more equitable programme and should be considered through an equity lens. This is important, because any programme that does not take due diligence towards equities runs the risk of becoming an inequality paradox, becoming markedly more beneficial for individuals of higher socio-economic status and of White ethnicity.

The importance of collaboration within the local health system was also demonstrated in this study. A close working relationship with providers,[51] and community involvement to identify services users,[47] have also been reported by others. The presence of a Steering Group was more often than not discussed as an important part of the NHS LCD programme,

which presented an ideal location for the equitable management of resources. Findings from this work help to build a comprehensive picture of the programme mobilisation, which will be further supported by insights from NHS staff responsible for patient referral to the programme.

Limitations

This is the first study to explore the experiences of local health service leads with the responsibility for the mobilisation of a national Low Calorie Diet programme of this nature in real-world settings. However, there are a number of limitations to the current study. 1) The programme was mobilised in the middle of the COVID-19 pandemic, which placed significant strain on the health system and will have undoubtedly impacted programme mobilisation. 2) The wider health system, including the position of locality lead, experienced a high turnover of staff during this tumultuous period, meaning that follow-up interviews were often conducted with different personnel, which will have impacted consistency in the findings between the first and second years. 3) These findings alone do not permit us to conclude which approaches and methods are the most successful when judged against their impact on the identification and generation of referrals. Instead, we have attempted to share the perspectives of locality leads, and as we move away from first order constructs, we have shared our interpretations of the data using inequalities as a lens for interpretation. 4) There is also a need to consider the impact on equity at a national or policy level, which in the case of the current study precedes the actions of locality leads and therefore has not been considered. This is important as an equity perspective from the start needs to consider policy, which has not always been presented convincingly.[52,53]

Recommendations

Based on our findings, the following recommendations may help inform the equitable mobilisation of the NHS LCD (and similar) programmes at a local health system level in the future.

1. Localities could consider an approach to addressing inequalities at the start of programme mobilisation, such as a local HEIA, and review it regularly to ensure it remains fit for purpose.
2. Training and/or information sessions could be delivered equitably, for example by prioritising delivery to parts of the local health system with a high proportion of eligible patients and/or low engagement.
3. Financial incentivisation can be used to increase the equity of the NHS LCD programme, but should be measured to ensure this is achieved. For example, outcome incentives, whereby practices receive payment for the number of patients referred, have been shown to stimulate more participation.[54] However, they could also adopt an equitable perspective, or be proportionate to the prevalence of T2DM locally, by paying more to areas with a greater need.
4. Built on the collaboration within the wider health system, a means of regularly monitoring uptake in addition to

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Key messages

▲ Health inequalities remain a significant challenge, but health service leads with responsibility for programme planning and organisation can contribute to tackling this challenge by adopting an equity perspective from the start.

▲ Health equity is the state in which people have a fair and just opportunity, irrespective of their social position, to attain their full health and wellbeing from social conditions that seek to promote and support good health. Health service leads, via the equitably management of resources from the start of programme mobilisation have an important role in ensuring fair and just opportunities exist for all.

adopting an equity perspective from the start is reasonable, as is responding to this data in a timely manner to address any emerging inequalities.

Conclusions

Health inequalities remain a significant challenge. While the healthcare system may not be able to remedy inequalities that transcend healthcare, such as socioeconomic inequalities, we should expect that the healthcare system does not exacerbate existing inequalities. It is important that health service leads adopt an equity perspective from the start of any new service mobilisation, and in doing so manage resources equitably. This will help to reduce the potential occurrence of intervention-generated inequalities and avoid the possibility of programmes becoming an inequality paradox. Perhaps only when inequities are considered at a planning or organisational level can we expect to see more favourable outcomes in health and access to healthcare between different socio-demographic groups.

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Additional file 1 Drew *et al*

Overview of the first 10 localities commissioned by NHSE

Localities	Delivery model
Bedfordshire, Luton and Milton Keynes	Digital
Birmingham and Solihull	Group
Derbyshire	Group
Frimley	1:1
Gloucestershire	Digital
Greater Manchester	Group
Humber Coast and Vale	Digital
North Central London	Digital
North East London	Group
South Yorkshire, and Bassetlaw	1:1
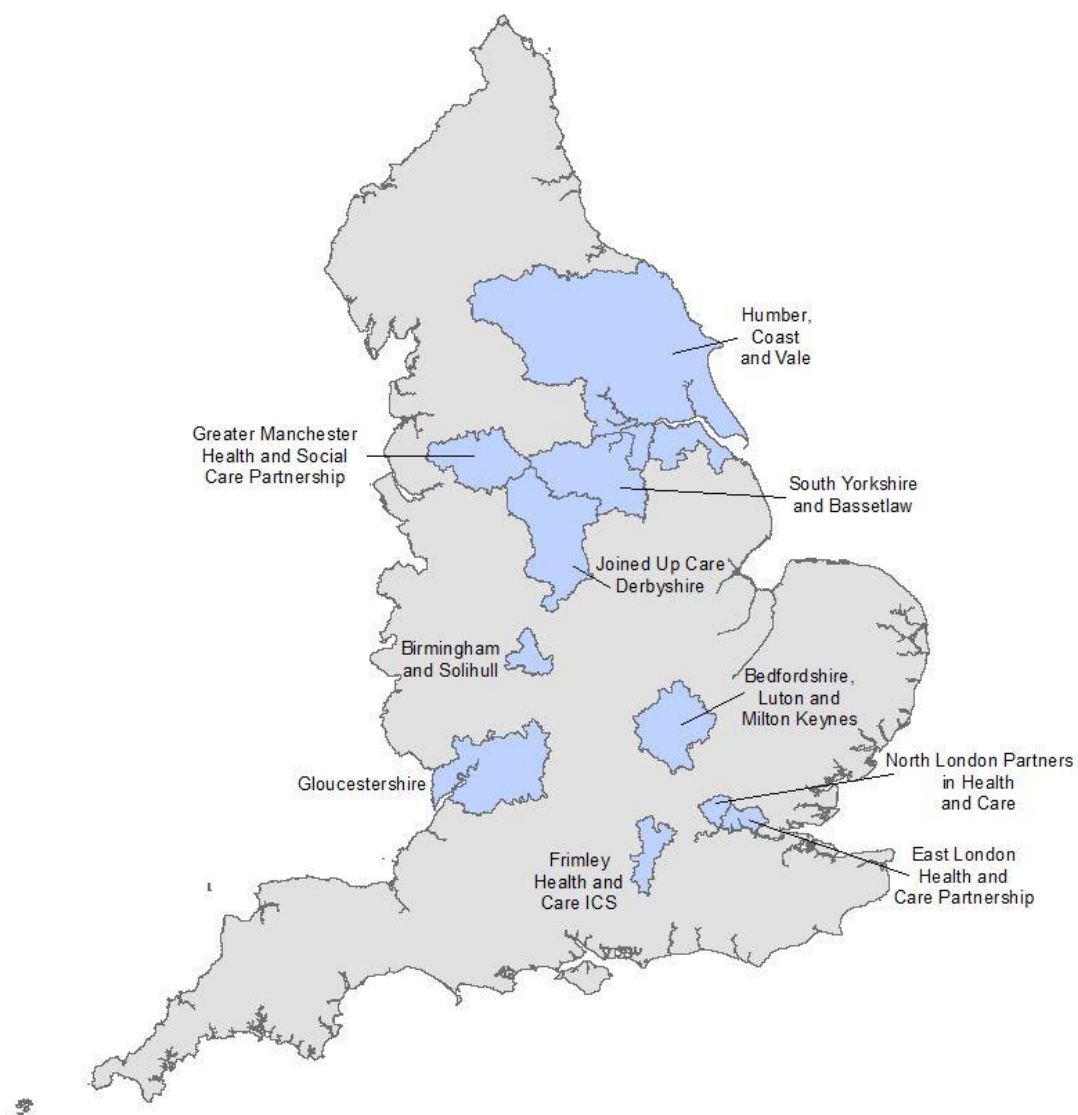
Geographical locations of the ten pilot sites; updated to April 2021 Integrated Care System configurations: taken from the Strategic Health Asset Planning Evaluation tool (SHAPE)

The NHS Low Calorie Diet programme delivery structure
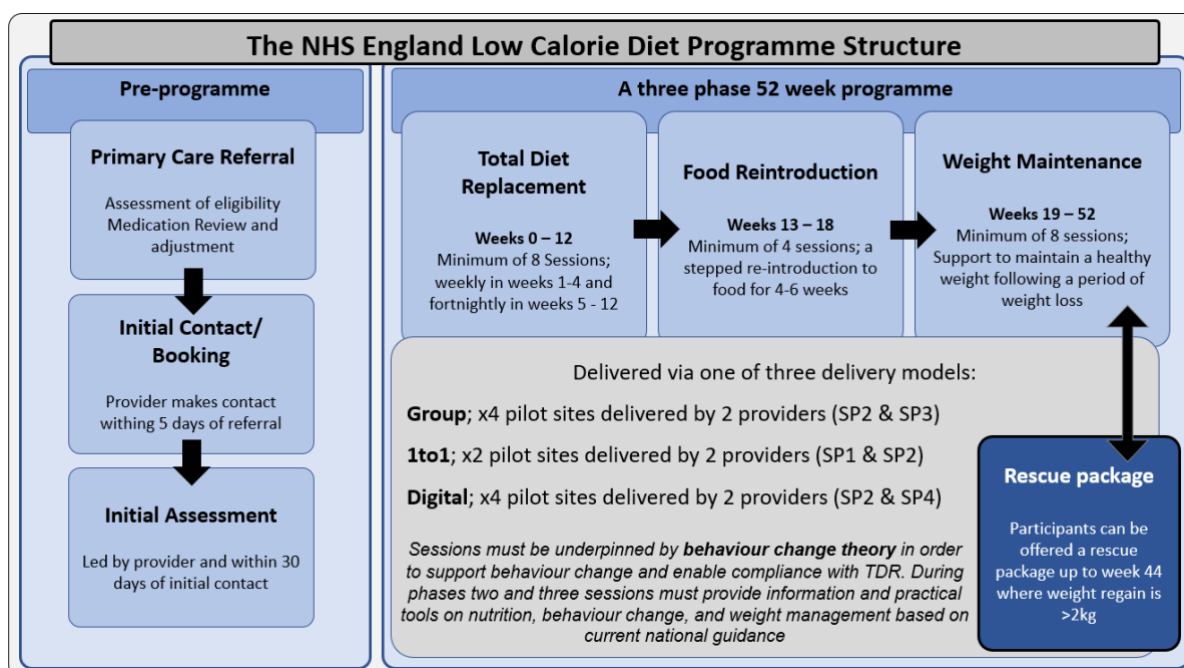
The four providers used different total diet replacement (TDR) product brands with large differences in range of products and flavours available. One provider provided six different options (soups and shakes) while a second provided 89 different options (soups, shakes, smoothies, bars, breakfasts and pre-prepared meals). The other two providers provided 15 (soups, shakes, smoothies and porridge) and seven (soups, shakes and bars) options, respectively.

Interviewees in 2021 and 2022

Locality	Participant IDs 2021	Participant IDs 2022	Change in participants
L1	LL1, LL2	LL17, LL18	Yes
L2	LL3	LL21	Yes
L3	LL4, LL5	LL4, LL22	Yes
L4	LL6	LL6	No
L5	LL7, LL8	LL8, LL23, LL24	Yes
L6	LL9, LL10	LL10, LL16	Yes
L7	LL11	LL20	Yes
L8	LL12	LL12	No
L9	LL13, LL14	LL14	Yes
L10	LL15	LL19	Yes
Total	**15**	**15**	

Additional file 2 Drew *et al*

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No. item	Guide questions/description	Reported on page #
Domain 1: research team and reflexivity		
Personal characteristics		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	p5
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Additional File 2
3. Occupation	What was their occupation at the time of the study?	Additional File 2
4. Gender	Was the researcher male or female?	Additional File 2
5. Experience and training	What experience or training did the researcher have?	Additional File 2
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	p26 (acknowledgements)
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	p5
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	p5
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	p5
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	p5
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	p26 (acknowledgements)
12. Sample size	How many participants were in the study?	p5
13. Non-participation	How many people refused to participate or dropped out? Reasons?	p5
Setting		
14. Setting of data collection	Where were the data collected? e.g. home, clinic, workplace	p5

15. Presence of non-participants	Was anyone else present besides the participants and researchers?	N/A
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	p5
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	p5
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	N/A
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	p5
20. Field notes	Were field notes made during and/or after the inter view or focus group?	p5
21. Duration	What was the duration of the interviews or focus group?	p5
22. Data saturation	Was data saturation discussed?	N/A
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	N/A
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	p6
25. Description of the coding tree	Did authors provide a description of the coding tree?	p6-17
26. Derivation of themes	Were themes identified in advance or derived from the data?	p5
27. Software	What software, if applicable, was used to manage the data?	p7
28. Participant checking	Did participants provide feedback on the findings?	N/A
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	p6-17
30. Data and findings consistent	Was there consistency between the data presented and the findings?	p6-17 Additional File 3
31. Clarity of major themes	Were major themes clearly presented in the findings?	p6-17
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	p6-17

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Intl J Quality in Health Care* 2007; **19**(6): 349 – 57.

Personal characteristics:

Dr Kevin J Drew PhD (Male). Post-doctoral Research Fellow with 7 years' experience of conducting qualitative evaluations of health-based interventions.

Dr Catherine Homer PhD (Female). Senior Research Fellow with experience working in academia and extensive experience working in public health.

Dr Duncan Radley PhD (Male). Reader with 25 years' experience conducting obesity research, and previously research manager in weight management service providers.

Charlotte Freeman (Female). Project Research Assistant with experience of evaluating interventions in academia and experience of working in public health.

Karina Kinsella MRes (Female). Research Officer for the Re:Mission study with experience of evaluating interventions.

Dr Maria Maynard (Female). Professor of Health Inequalities, specialising in the patterning of health by ethnicity and migrant status, with extensive experience of programme evaluation.

Dr Chirag Bakhai (Male). General Practitioner, Clinical Lead on the Re:Mission study oversight group and Primary Care Advisor to the NHS Diabetes Programme.

Dr Louisa Ells (Female). Professor of Obesity with a specialist interest in multi-disciplinary, cross-sector applied obesity research, with extensive experience of leading programme evaluations.

Additional file 3 Drew et al

Additional quotations

Covid 19 and primary care capacity and engagement (theme 1)

Year one – theme 1: Covid-19 added pressures to primary care

"*I think, to be honest I think a lot of it depends on what the asks of primary care at the time are. So obviously you know when they're doing the Covid vaccination programme, then that's going to be, you know top priority and then as we kind of go into the flu season and the booster programme, then you know that that is a primary focus so*" (LL2 – Y1).

"*They, it might affect take up by the patient and over the last year diabetic reviews have been a bit different in, in not so much of it has been face-to-face, where there might not be quite so many opportunities for those face-to-face conversations*" (LL5 – Y1).

"*We would see the, you know, oh great, I get 75 pounds if I do this here, you know I'll call all of my diabetics in. It hasn't been about that. GPs have not had the headspace. They've been flat out doing you know all sorts of things around Covid*" (LL13 – Y1).

"*A lot of response I've had back is that Covid priorities in primary care has just kicked this to the back of the queue*" (LL15 – Y1).

Year one – theme 10: mixed engagement with the LCD programme

"*We then see probably at the moment a 50% drop off, which obviously means we're only having about 25% of an area train and refer*" (LL9 – Y1).

"*And then what we found was actually not every practice wants to be involved. Perhaps just over 50, 60% of practices are keen, the others for whatever reason, are short staffed or whatever with the pandemic, so they haven't got involved*" (LL11 – Y1).

Year one – theme 11: staff on the ground matter for the engagement of pilot sites

"*Recently I've been in contact with a couple of the dietitians in [sub-area 2], [sub-area 3], [sub-area 4] and [sub-area 5]. They've got dieticians in their PCN supporting them, so they've run searches. So, they're doing it on behalf of the practice*" (LL15 – Y1).

"*We had a very outspoken GP even before we'd actually got, been appointed successfully as a pilot site who was copying in GPs all over the county saying, well, this is really dangerous, everyone's gonna die of heart attacks and strokes and all sorts and raising a lot of fear I think. So he's taken a bit of managing but we've got him sorted*" (LL11 – Y1).

Year two – theme 1: the continued impact of Covid to primary care

"*I think our referrals haven't been amazing and it's disappointing because I think as a steering group, [LL18], I'm sure you'd agree like we come up with amazing ideas and we've got a great team around us and kind of we're doing as much as you know we think we could do and we've still not seen like a significant increase in the referrals. But I do, we obviously can't blame everything on Covid, but I do think that that has been a, a significant kind of factor to that*" (LL17 – Y2).

"*Well, the continuing impact is you know, the pressure on primary care to increase access, you know for patients to be able to get into them and that's taken their priority really. So the fact that we got so many practices that actually signed up to it this, signed up to do it this year is, is good. I think you know that it shows that perhaps they're coming out of totally focusing on Covid and starting to look at other areas*" (LL19 – Y2).

"*We're still on the catch up programme and ensuring that the people we do know about are treated well. But the case finding hasn't even started and obviously the more people that are identified, the more people that are eligible for the programme*" (LL20 – Y2).

Year two – theme 10: engagement with practices has been mixed, as the capacity, interest and passion of staff on the ground make a difference

"I think it's probably dependent on the GPs and kind of what their kind of specialist interests are. We've got kind of GP champions for diabetes across different patches. And so, you can almost guarantee that where there's a diabetes champion, there's gonna be uptake" (LL17 – Y2).

"90 out of 160 signed up. But of those, nine have made 51% of the referrals" (LL 19 – Y2).

"We have some more practices that have joined, but just to give you an estimate, yeah it's about 42% of practices" (LL14 – Y2).

Methods of communication (theme 2)

Year one – theme 7: finding as many ways to communicate with practices as possible

"*I guess we, we needed to think about what communication channels are available to us. The GP Bulletin is sort of like the agreed mainstay of how we communicate with our practices because there was a time before where Practice Managers would get multiple communications from various bits of the CCG*" (LL12 – Y1).

"*Yeah I mean you'll get some practices that will monitor their generic inbox every day and they'll cascade it because they use it. There might be other practices that don't use it as, as more frequently. It's just, I guess it's difficult because every practice has their own process for this sort of thing and they all work differently. So it's just finding as many ways to get into, get into that as possible I guess*" (LL15 – Y1).

Year one – theme 8: unstructured and informal means of communication support the reach of disseminated information

"*Yeah, it's every other month for the GP bulletin. Again, we want to avoid like sending out too many and people just sort of then just skimming over it, I don't know, bulletin blindness, but and then I think it will be a case by case basis or keeping an*

eye on referral numbers and then do some targeted trying to go to local meetings when we can" (LL3 – Y1).

"*The lunch and learn sessions have been quite popular and I think that's because they're informal, and they can just drop in and out of them. So you know sometimes when you go to training and you think I know all this, but you've got to sit through it anyway. I think that informal setting has been helpful because you know, they're time limited as well, so I think if they know they only need to be in a call for five minutes to ask a question I think that would encourage someone to just pop in and ask a question*" (LL15 – Y1).

Year two – theme 7: continue, as in the first year, to find as many ways to communicate information about LCD as possible

"*Other than that, we haven't really done anything outside of what I would class as kind of normal communications, so that's kind of been through CCG newsletters. We've done some social media work. So it was diabetes week couple of weeks ago*" (LL16 – Y2).

"*No, because we used the standard, the standard channels which was the newsletter and and where we've had an opportunity, or the providers had an opportunity getting a nurse forum or practice manager meeting just to publicise. And that's just like I say a short presentation saying this is the programme, these are the outcomes we're getting, this is how to refer in. So, it's it's just using those same channels and just repeating really*" (LL12 – Y2).

"*No, only that we talk about it at the end of all our structured education for diabetes. So every patient who gets referred, which is a significant number at the end of every session, we talk about the LCD and how to get referral and if they're interested, we give them information to go away with. So again just they at least they then go back, can go back to their GP surgery, and even if they've not mentioned it, at least the patient's got the control of that, whether they bring it up or not*" (LL18 – Y2).

Year two – theme 8: unstructured and informal means of communication support the reach of disseminated information

"I think it's really hard to say. I think one of the things that I think could possibly happen, so if there's any kind of e-mail comms, it goes to one e-mail inbox. But you know how the practices, how the practices themselves manage and you know comms within a practice and how that information filters down to different roles. You know, I don't know how that happens and I, based on some individuals reaching out to be like oh, I'd love my practice to sign up to LCD, and actually they're already signed up. It kind of shows a bit of a breakdown of communication within the practice I think" (LL14 – Y2).

"We also drip feed so we have as part of the training session we ask people if they want to become part of the [area] WhatsApp group which is run by our clinical lead. So [colleague] would have" (LL20 – Y2).

"More recently [provider] have actually set up drop in sessions. We've advertised those to primary care and that's kind of a live session with a Microsoft Teams link that GPs can just log on, ask questions and get a bit of training. So I've not had any feedback from those yet, but kind of that's a newer one that we're trying and hopefully all that will be successful" (LL18 – Y2).

Approaches to training (theme 3)

Year one – theme 9: training was managed differently between pilot sites

"Know in some other areas they've had to do the training in order to refer, and obviously I think that that was seen as obviously that would have been a barrier potentially to people actually referring in, so I think again, we've just gone for that really open approach" (LL7 – Y1).

"So that was one of the reasons why I think going out to all areas at one time felt a little bit mad and a bit too much to handle to try and roll that out. So that's why we did those information sessions. And that's where we had quite a good uptake at those information sessions, and that's when we put that offer out to say any practice who wants to train now and is ready and keen and eager to do so can do so" (LL10 – Y1).

"What we wanted to ensure, although I'm not sure we've been able to really do it, is we were really clear that we felt that training would support the, would basically ensure that we had high quality referrals" (LL14 – Y1).

Year two – theme 9: training managed differently between pilot sites, but always remotely and to address referral barriers

"It's not scheduled in that way, it's more ad hoc when you know a new area's, a new PCN is coming on board" (LL14 – Y2).

"It was a webinar really to try and address some barriers and kind of encourage practices to refer, especially those who've trained but haven't referred" (LL16 – Y2).

"Yeah I think I might hopefully have found it. Let's see. I think the other challenge with LCD and I guess any programme though it's first, it's getting all of the practices engaged, but then it's also getting all of the staff engaged. And I think it's been really interesting because one of the things that like our clinical lead's feeding back is that yeah like staff turnover is like a really big issue. So you know, we worked with our provider to get like time at various forums for practice managers, nurses, you know even with GPs, social prescribers. But the turnover is so high so it's almost as if we need to do that on a constant basis" (LL14 – Y2).

"Yeah, you know when she says things like "what I do when I'm referring is", you know, "when I've struggled to identify someone", "when I've found it difficult to know which medications to stop." And I think it really does increase the confidence and, you know, no question is a silly question to her. Because it, you know, as some nurses may have, may not be prescribed as they may not sort of start medications, but yet they can stop them (LL20 – Y2).

Approaches to incentivisation (theme 4)

Year one – theme 6: incentivisation was managed differently between pilot sites

"*We talked about it. We talked about it in the mobilisation planning phase and we decided that we've done incentivisation on other programmes in the past, and I have to say, as a canny Scotsman, I don't like spending money and getting no return for it*" (LL6 – Y1).

"*it's just a nice bonus, but it's not incentivised you. So we're trying to, so the plan is it's, it's on the brink of its very, very last layer of governance for the second time running and then once that gets approved we're going to do a big push to practice managers because practice nurses you can inspire them on the basis of good clinical care*" (LL11 – Y1).

"*And secondly we had some implementation money from NHSE and we felt that it would be beneficial to use some of that money to put directly to frontline so that we, we did actually access and get the engagement*" (LL13 – Y1)

Year two – theme 6: incentivisation was managed differently between pilot sites but used more in second year

"*Yeah. So we've kind of jumped on the back of the weight management service spec. So LCD is attracts a payment of £11.50 per eligible patient. So we've kind of stuck with that. There seems to be mixed messages again. We've floated the idea. I know some areas have had real success with payment. And for us, it just again feels really inconsistent*" (LL10 – Y2).

"*If the referral is correct because we get quite a few referrals that they don't meet the criteria for, so then they get bounced back. So, it's only if they're the right patient, trying to encourage them to give us the right patient*" (LL18 – Y2).

"*So, we now for £10.30 per patient referred onto the programme and then £41.20 per patient who's accepted*" (LL17 – Y2).

"*Because it was deemed a complex referral and it was remunerating practices for the the time that would be required for a referral. I'm not quite sure how much impact it's*

had. I don't feel like we're further ahead than those that didn't incentivise" (LL20 – Y2).

Approaches to referrals (theme 5)

Year one – theme 3: open referrals to all eligible clients but referral allocation and rollout was managed differently

"We didn't want there to be a monopoly in some areas where, for example, they may have really engaged practices and to use up a lot of those places. So, we thought as a, as a starting point what we would do is divvy up the number of those 500 places equally across [Area]. So, we looked at the eligibility criteria and created an EMIS search which would give us per practice the number of eligible patients, approximate number, so we could see the spread across [Area]. And then we used those figures to essentially assign […] those 500 places fairly across [Area]" (LL3 – Y1).

"I think it as well, it's a bit of capacity because if you open the floor up to 432 GP practices, that's a lot for somebody to manage and the, what we were very keen to do is to have eyes on who they were that were coming through because you know, coming out of Covid" (LL10 – Y1).

"To clarify that, you know we have left it open that if practices wanna refer in they can" (LL15 - Y1).

Year one – theme 4: we wait to see who refers then do some targeting

"*I think as we progress through the project, and as [LL1] said, we do some of the analysis about the numbers of referrals against that initial kind of target allocation, which did take into account kind of areas of higher deprivation and ethnic minority communities, if we can see that the referral numbers are lower in those areas, then we'll do some more targeted engagement work with those specific practices*" (LL2 – Y1).

"*We didn't know when we set upon this course what the uptake would be in terms of engagement with practices. So based on that and we, we've very much been with our provider looking at the data, so we've had some practices, and we have like a weekly check in, or they send us the figures, so we have a spreadsheet we get each*

week saying what the allocation of places is and when I say allocation of places that's not referrals, that's actually TDR starts" (LL12 – Y1).

Year one – theme 5: referral allocation opened up and increased during year one

"*So we've had the four referral windows and then we were realising part way through, by about referral three, we could open it up to 2%. And then on the day we went live with referral window number four, so that's essentially every practice in [area] has had the opportunity, we increased it to 3% of your diabetes list*" (LL11 – Y1).

"*We had a challenging, a bit of a challenging conversation with [ICP 1], probably in July I would say [LL14] and actually over the last couple of you know, couple of weeks, whatever we then have pushed and we've now got where we wanted to get to, which was our ultimate aim of trying to get them to open up, but they've done that on their own volition. So I think at the moment what we have to think about is this is one program*" (LL14 – Y1)

Year two – theme 4: the duality of generating referral numbers and doing so equitably

"*I think the difficulty I have is which is gonna take priority, which is more important? Is it getting people through the programme that enhances the evaluation that gives NHS England a better overview of how that works on a larger scale population? Or do I sort of put that to one side and do I look at some inequalities work and maybe get far less referrals, but understand those different communities?*" (LL10 – Y2).

"*I have started talking to our engagement officer about actually how are we going to target with that inequalities lens. Because now that I've got access to the connected care data, we can start to kind of unpick where are our highest prevalence and then overlay that with deprivation and actually look at her workload and say right for the next year of this pilot we're gonna really target those PCNs which have got that cohort of patients that really would benefit from something like this. So, I think as*

we're kind of going through this year we'll definitely put an inequalities lens on that and that's something I'm really keen to do" (LL24 – Y2).

Barriers to referrals (theme 6)

Year two – theme 5:

"Late last year we started working on a clinical system pop up. So, these pre-runs the searches and caches them in a report. Then when the patient's record is opened by an appropriate clinician […] [LCD] will pop up. Then through, it's done the pre-search so it's looked across the things which are retrievable by coding […] And then it leaves you with about half a dozen questions around the things that can't be gleaned from coding, the key ones being the retinopathy state […] it asks half a dozen quick questions. It takes about two to three minutes to fill it in. […] When they get to the end, what they're presented with is about 95, 98% populated referral form. So, as it's gone along it prepopulates and the only things that they're left to do are any free text that the field needs to go on to support the referral and medication changes" (LL6 – Y2).

"I tend to go via the PCNs these days because the PCNs in [town 1] are trying to identify care coordinators with an interest in weight management. So, I go through that rather than the individual practices, but [city] might be different" (LL4 – Y2).

"Some others are enthusiastic, but operationally, they just don't have the time to kind of perhaps replicate what our clinical lead's put into her practice" (LL8 – Y2).

The importance of collaboration (theme 7)

Year one – theme 2: coming together was key for mobilisation

"*Because it's the first programme of its kind and it is such a unique offer for patients it's quite, you know, it's an amazing opportunity for patients, and I think that was recognised by a lot of our clinical leads and they were very engaged with helping it roll out, which was brilliant. And we still have that momentum going with our monthly steering group, and there's I mean every meeting there will be so many actions that*

come out from ideas of things that we could be doing that you almost think we need, we need some more CCG capacity to do some of these things" (LL3 – Y1).

"*it's led by our diabetes clinical lead [colleague 2] obviously, obviously I sit on there, [provider] sit on that group, then we've got a practice nurse lead, we've got our pharmacy lead for LCD. So yeah, it has been helpful because, and we've got the digital team, I won't forget them because they've been like one of the most important people. But yeah, because we've had the people that we needed, yeah, I would say it's been useful*" (LL15 – Y1).

Year one – theme 12: an engaged provider facilitates mobilisation

"*I have to, so just from a mobilisation point of view from sort of when we found out that we were going live, so we found out in the July and obviously the like, the go live date for two of the areas was September and the provider kind of pulled together all of the time frame that they could work to, what the kind of the materials that they thought would be helpful*" (LL8 – Y1).

"*Quite a lot of it was front ended before we launched. I'd say ongoing, probably more from our provider perspective what they now do is they do weekly updates for practice, sorry, monthly updates for practices on the programme*" (LL12 – Y1).

Year two – theme 2: coming together, including with an engaged provider, is key for the continued delivery of LCD

"*Yeah, it is useful. And just to get different perspectives, isn't it? And from different backgrounds as well, which helps to drive it forward (LL18 – Y2)*".

"*I think in terms of kind of coming up with new ideas to increase referrals, I think it's kind of a really dynamic group and it's, yeah, everyone kind of pulls their weight and comes up with great ideas. And yeah, definitely feels like we work as a team (LL17 – Y2).*

"*So the LCD has a has a steering group which is comprised of [provider] the provider, me, our clinical lead and a couple of other clinical representatives from across [area 1]. We and a colleague from public health as well from the local authority side of things, we get together on a monthly basis to look at our reports, oh*

and colleagues from NHS England region also join in that one. We get together on a monthly basis to look at our monthly report, suggest areas of potential improvement in intervention. There's an action log that's maintained. That feeds into our wider diabetes and weight management network where again we'll look at particular trends in the number of referrals. Talk about any escalations that we might make. Our diabetes and weight management network feeds into a long term conditions steering group, which is where the clinical leads for each of the boroughs come together to talk about wider population health initiatives" (LL21 – Y2).

Year two – theme 3: locality leads, despite their variable nature and many responsibilities, have very little time to keep LCD ticking over

"Yeah. Yeah, it was. And my actual role is I'm a senior integration manager and I cover diabetes. So, the umbrella of diabetes work comes under me. So, the low calorie diet programme, the transformation programme and the diabetes prevention programme" (LL19 – Y2).

"Oh, that's already hard one because I've just got so many other things I do as well. I suppose the, some other things, I do read the weekly reports that come through. Yeah, so that there's that time to do just that a week. There it's, it ebbs and flows cause you know when I'm trying to get them into practice manager meetings and that I have to do a bit of legwork to speak to colleagues to try and get an agenda slot etcetera. And sometimes we've done a sort of like a sort of like a tag team on that. In other, in other times they're just doing it on their own so that varies. And I guess it's the steering group meeting that's as I say once, yeah what was once a month and that would be like a hour and a half, two hour meeting" (LL12 – Y2).