

The University of Lincoln

Addressing Multiple Unhealthy Risk Factors

An Evaluation of Integrated Care in Lincolnshire



August 2022

Contributors

Emma Sayers,¹ Heidi Green,¹ Professor Jacquelyn Allen-Collinson,²
Dr Dave Dawson,³ Dr Nima Moghaddam,³ Dr Hannah Henderson,² and
Professor Ros Kane¹

1 School of Health and Social Care, College of Social Sciences, University of Lincoln,
Lincoln, UK

2 School of Sport and Exercise Science, College of Social Sciences, University of Lincoln,
Lincoln, UK

3. School of Psychology, College of Social Sciences, University of Lincoln, UK

This report presents independent research funded by Thrive Tribe and Lincolnshire County Council. The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of One You Lincolnshire. If there are verbatim quotations included in this publication, the views and opinions expressed are those of the interviewees and do not necessarily reflect those of the authors.

Published August 2022

List of Abbreviations

AIC	Akaike Information Criterion
BMI	Body Mass Index
COM-B	Capability, Opportunity, Motivation, Behaviour
GDPR	General Data Protection Regulation
GP	General Practice
ICCs	Intraclass Correlation Coefficients
ICS	Integrated Care Systems
ILS	Integrated Lifestyle Service
LCC	Lincoln County Council
LSOAs	Lower-Layer Super Output Areas
LTHC	Long Term Health Condition
MHC	Mental Health Condition
NCDs	Non-Communicable Diseases
NHS	National Health Service
OR	Odds Ratio
OYL	One You Lincolnshire
QALYs	Quality-Adjusted Life-Years
RE-AIM	Reach, Effectiveness, Adoption, Implementation, Maintenance
TA	Thematic Analysis

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Executive Summary

Introduction

This report presents the independent evaluation findings of One You Lincolnshire (OYL). OYL is an integrated lifestyle service that covers hundreds of county sites, including leisure centres, commercial weight management groups and sub-contracted sites. The service is also delivered over the phone and Microsoft TEAMS. The service supports weight loss, healthy eating, physical activity, alcohol reduction and smoking cessation for Lincolnshire residents from the most deprived areas with long-term health conditions. However, the service is open to all individuals in the county who meet the service's eligibility criteria of over 18 years old (12 years and older for smoking cessation). Clients must have a BMI of 30 or above for weight management pathways. Eligibility also includes less than 150 minutes of moderate physical activity, smoking tobacco and drinking more than 14 units of alcohol per week.

The service has self-directed online tier 1 guidance and tier 2 support that provides 1:1 health coaching and group classes and programmes. The service also partnered with commercial weight loss programmes—for example, Slimming World, Weight Watchers, and Second Nature to provide a range of interventions. OYL and Lincolnshire County Council commissioned the University of Lincoln to undertake the service evaluation. This report captures clients' experience using the service and health professionals involved in referrals and implementation. The effectiveness of the service was also compared to the standard provision of care.

Methods

A RE-AIM evaluation was implemented to have a comprehensive picture of OYL. The evaluation looked at the service's accessibility, effectiveness, implementation, and sustainability. In phase 1 of the evaluation, between July 2020-2021, 53 in-depth interviews were conducted. Participants included clients, health professionals, OYL staff, external

partners and OYL leadership. In phase 2 of the evaluation, between July 2021 – July 2022, secondary data analysis was conducted. 24,370 referrals were nested within 16,354 clients and nested within 128 coaches.

Accessibility

Most clients referred to the service were White British and women. Clients in OYL from deprived LSOAs were likelier to have long-term health conditions and poorer mental health. The underrepresentation of men in the service was explored, and factors such as reduced GP visits, perception of women-dominant weight loss programmes and fears of seeking help affected access. COVID-19 put a considerable strain on primary care. Clinics focused on COVID-19 management, removal of face-to-face contact and, as a result, fewer referrals to OYL via GPs. One major reconfiguration in the service referral process was the introduction of self-referral. The average age of clients became younger and was more women dominant.

There were also fewer referrals from ethnic minorities, long-term unemployed and deprived populations. At a service level, alcohol consumption support had fewer referrals than other OYL pathways. Interviews showed that alcohol-related discussions were not always considered essential to GPs' work. Some GPs viewed alcohol support as challenging to ascertain in clients than more visually presenting risks like obesity and smoking. Coupled with limited time for appointments, GPs were more likely therefore to recommend weight loss and smoking cessation to clients.

Effectiveness

OYL outcomes were better across all pathways compared to previous standard care provisions. For instance, 56% of OYL clients self-reported quitting smoking at four weeks. In contrast to 46% of patients with past Lincolnshire benchmarks. Quitting was more likely in older OYL clients and those with a high confidence score. Additionally, 57% of OYL clients self-reported consuming less than 14 units of alcohol a week or decreased units by 50%. As opposed to 10-30% of patients using national brief alcohol interventions. Using a health coach and being engaged in other pathways increased the likelihood of reducing alcohol

intake for OYL clients. 43% of OYL clients also increased to 150 minutes of moderate activity a week compared to 13-18% on national exercise referral schemes.

Success was more likely for women and clients with LTHC. Using a health coach and participating in additional pathways also increased physical activity success. 33% of clients self-reported losing 5% of body weight after 12 weeks. 40% of Second Nature/Slimming World clients also met the target. Therefore, all OYL clients on weight management exceeded the NICE guidelines of 3% weight loss. Successful weight loss was associated with older clients, consistent attendance, and the use of a health coach.

Interviews highlighted that health coaches' rapport with clients built encouraging, positive relationships. Health coaches were also able to offer support for less referred pathways through weight loss motivations. Client interviews also found that personalised online delivery better-suited individuals with LTHCs. For example, clients with limited mobility could still engage in group activities via video calls. Although, some clients with financial difficulties did struggle with digital service delivery. Nevertheless, most clients achieved meaningful changes. Clients experienced increased confidence, motivation, and self-esteem, critical factors for sustained lifestyle changes.

Working relationships

Most OYL clients trusted GPs. As such, GPs often had access to engage with disadvantaged groups. Focus groups with external partners highlighted the role of OYL as a primary care intermediary. Many external partners viewed OYL as building relationships with GPs, enabling smooth referrals and delivery operations within the service. Although, some primary care staff presented gaps in knowledge of the OYL service model. Interviews with OYL leadership suggested quality assurance was encouraged across team members and working group implementation promoted integration. The relationships between OYL and partners were positive, and consistent communication and trust were highlighted as OYL's key strengths.

Sustainability

The service provided continued access to support throughout the COVID-19 pandemic, and the service-maintained outcome success rates from pre- to post-reconfiguration. Completion rates for most pathways were over 50%, and for 'Drink Less' approached 50%. Move More completion rates appeared lower. However, attendance recording was inconsistent and under-representative for this pathway. There are some evident inequities in the uptake of reconfigured services. Most access seems to be enhanced for those from less deprived areas. As a result, the service did move further from the targeted representation of those from the most deprived areas. Remote access through digital solutions overcame restrictions to in-person delivery. Moreover, more open referral pathways boosted referrals from ~353 per month to ~668 per month. If sustained, outcomes delivered by OYL could lead to savings for the local health and social care system as integrated care may increase disposable income for local communities.

Conclusion

OYL provides crucial evidence on the benefit of clients with multiple unhealthy risk factors as OYL outcomes exceed all standard care across all four lifestyle risks. Despite COVID-19, the service remained adaptable with ongoing success during service reconfiguration. OYL also focused on local relationships making solid links with other organisations in Lincolnshire. OYL created a much more integrated offer for the clients, increasing the likelihood of better outcomes.

Chapter 1 Introduction

Background

Globally, non-communicable diseases (NCDs) are predominantly driven by unhealthy lifestyles. Environmental factors account for 71% of deaths yearly (WHO, 2021). Tobacco accounts for more than 7.2 million deaths yearly, and 4.1 million deaths have been attributed to excess salt/sodium intake. More than half of the 3.3 million annual deaths attributable to alcohol use are from NCDs, including cancer, *and* 1.6 million deaths annually can be attributed to insufficient physical activity (Forouzanfar et al., 2016). Common unhealthy behaviours, such as tobacco use, physical inactivity, an unhealthy diet, and the harmful use of alcohol, significantly increase a person's risk of diseases. Illnesses such as obesity, coronary heart disease, and stroke are more likely, increasing the risk of reduced quality of life and premature death. According to Evans and Buck (2018), approximately 70% of adults in the UK have two or more risk factors. Around 40% of the UK's disability-adjusted life years are attributable to tobacco, alcohol consumption, or being physically inactive (Newton et al., 2015).

This RE-AIM evaluation was commissioned in response to a call by Lincolnshire County Council (LCC) and Thrive Tribe, a healthy lifestyle service provider contracted by LCC to deliver One You Lincolnshire (24/01/2020 – tender released). The call sought to evaluate Lincolnshire's integrated healthy lifestyle service and develop an active research methodology to evaluate the impact and outcomes. This study was subsequently commissioned to explore the impact of addressing multiple unhealthy behaviours in individuals in Lincolnshire.

As section 1 (1) of the Care Act states, **care of local authorities must promote the integration of care and promote quality in the provision of services** (Care Act, 2014). As such, Lincolnshire County Council has commissioned One You Lincolnshire to provide an integrated care system at a local level. This evaluation of One You Lincolnshire started in July 2020 and was completed in July 2022. A team of researchers at the University of

Lincoln, led by Professor Ros Kane, conducted the evaluation. Ethics approval was obtained from the Health Regulation Authority on the 22nd of December 2020 (Appendix A).

Research Objectives

This study explored the implementation, quality, and impact of addressing multiple unhealthy behaviours for individuals in Lincolnshire through One You Lincolnshire (OYL). The study objectives were to:

- Identify critical components of good practice of the client pathway, considering views from clients, programme staff, healthy lifestyle service subcontractors, and referral teams that capture vital barriers and facilitators of OYL service implementation and delivery.
- Identify access and acceptability of the service provision within client subpopulations against local population demographics.
- Assess baseline effectiveness of OYL, exploring variables that moderate outcomes such as client, provider, and programme factors compared to service targets and external benchmarks
- We explore the costs associated with delivering OYL in person and service reconfiguration.
- Develop clear recommendations for real-world settings suitable and amendable for service improvement of OYL
- Contribute to the growing body of evidence on the impact of integrated lifestyle service delivery and future quality assurance of service outcomes

Report Structure

In the rest of this chapter, we outline the UK's policy context for integrated lifestyle services. The background includes information on unhealthy lifestyle factors in England and the development of integrated services to **"Make Every Contact Count"** against increasing pressure on primary care services. The current report is reserved for stakeholders involved in the development, delivery, and management of One You Lincolnshire and a wider

audience interested in delivering integrated lifestyle services in community settings. The report, thus, assumes a certain level of knowledge and understanding of lifestyle services and behavioural change models.

Chapter 2 outlines why we used a RE-AIM evaluation approach and applied the principles to evaluating integrated lifestyle services.

Chapter 3 reports the findings of the qualitative interviews and focus groups of One You Lincolnshire. This chapter explores how integrated care was implemented and the perceptions of the barriers and facilitators from participants.

Chapter 4 reports the findings of outcomes for clients using One You Lincolnshire datasets to provide quantitative evidence outputs such as quit smoking and weight loss rates.

Chapter 5 reports the economic evaluation findings that explore the effectiveness and cost-effectiveness of integrated care compared with standard lifestyle services.

Chapter 6 triangulates the evidence generated across the qualitative and quantitative data. We present the findings of this RE-AIM evaluation of the complex factors that decision-makers must consider ensuring quality and effective integrated care for people in Lincolnshire.

Integrated Care

Integrated care is a complicated phenomenon covering many frameworks and delivery processes. According to Kodner and Spreeuwenberg (2002), *integrated care* can be defined as a **"coherent set of products and services delivered by collaborating local and regional health care agencies"**. In the UK, integrated care is often interpreted as removing traditional divisions between hospitals and family doctors, physical and mental health, and NHS and council services.

The primary focus of this evaluation is on **"integrated lifestyle services"** (ILS), a term used to capture integrated care in the context of unhealthy risk factor interventions such as

smoking cessation, weight management, healthy eating, physical activity, and alcohol reduction. ILS are often not-for-profit private organisations commissioned by local authorities, which connect local health behaviour providers with primary care services through a single access point. This service model is becoming common as local authorities move towards a preventive, community service approach. Between 2017 and 2019, 14 ILSs were formed across England, increasing to 42 by the time of this study (NHS Digital, 2022).

Multiple unhealthy risk factors

In this report, the term “**multiple unhealthy risk factors**” refers to a simultaneous combination of risk factors (behavioural) that impact individuals and pose a health risk (Evans and Buck, 2018). Research on multiple risk factors has been a focus of public health for over a decade, with compelling evidence suggesting that poor diet, physical inactivity, excessive alcohol consumption and smoking are linked to ill health. After following a cohort for 11 years, Khaw et al. (2008) showed that an individual with four risk factors had a four-fold risk of dying compared with someone who ate well and was active and did not smoke or drink to excess (Figure 1).

Figure 1. Why multiple unhealthy risk factors matter



Adapted from King's Fund. Relative all-cause mortality risk shown applied after an average 11-year follow up in a cohort of adults aged 45-79.

Likewise, individuals from lower socio-economic groups risk having three or four simultaneous behavioural risk factors. In 2018, the King's Fund published a report on multiple unhealthy risk factors. The report identified that although the prevalence of risk factors has been declining among adults in England since 2003, reductions were much more likely to come from higher socio-economic groups (Evans and Buck, 2018). Therefore, lifestyle services must be cognisant of the social determinants underpinning population risk factors and barriers such as financial inequality that may impact accessibility and availability of interventions. The report highlights the research knowledge gap and the need to consider essential questions such as - is it better to attempt a behaviour change simultaneously or sequentially?

One You Lincolnshire

In June 2019, Lincolnshire County Council commissioned Thrive Tribe to deliver an integrated lifestyle support service, focussing on providing high-quality and accessible information and direct support to adults in Lincolnshire. The commission included helping residents adopt and maintain healthier lifestyles, focusing on the four behaviours that have the most significant impact on health and wellbeing: smoking tobacco, physical inactivity, obesity (food, nutrition, and a healthy weight), and excess alcohol consumption.

Local Context

It is estimated that the potential target size for One You Lincolnshire is almost 60,000 eligible adults. Lincolnshire has a smoking prevalence rate higher than the national average of 15.3% (Office for Health Improvement and Disparities, 2021a). The Office for Health Improvement and Disparities (2021a) reported the percentage of adults in Lincolnshire classified as overweight or obese (BMI of over 25 and 30) as 67.6%, worse than the national average of 63.5%.

There have also been efforts to encourage physical activity in the population, with 26.5% of adults categorised as inactive (Office for Health Improvement and Disparities, 2021c).

Additionally, 20.4% of adults drink more than 14 units of alcohol a week in the county (Office for Health Improvement and Disparities, 2021b). Therefore, Thrive Tribe implemented OYL as an ILS to promote sustainable lifestyle changes. The service provides access to stop smoking services and extended brief interventions for alcohol, diet and nutrition, and physical activity through tier 1 and tier 2 support.

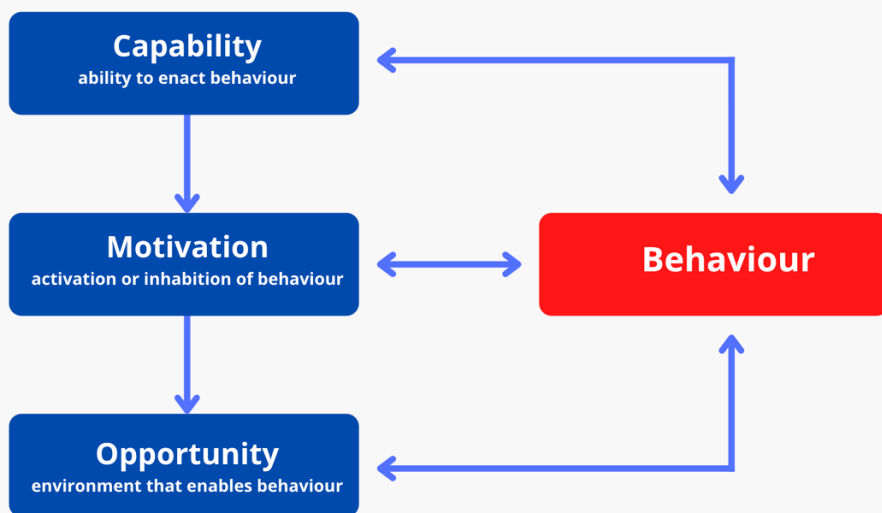
Theory of Change

One You Lincolnshire service design used the COM-B model, which focuses on working through individuals' capability, opportunity, and motivation to change (Michie et al., 2011). COM-B is a valuable framework since it helps connect behaviour change to the broader determinants of health, as shown in Figure 2.

Figure 2. The COM-B Model of Change

The COM-B Model

A fundamental model of change used is the Capability, Opportunity, Motivation, Behaviour Model (COM-B) to identify what needs to change to be effective for a behaviour change intervention. COM-B identifies factors that need to be present for any behaviour to occur capability, opportunity, and motivation, which interact over time so that behaviour can be seen as part of a dynamic system of change (West and Michie).

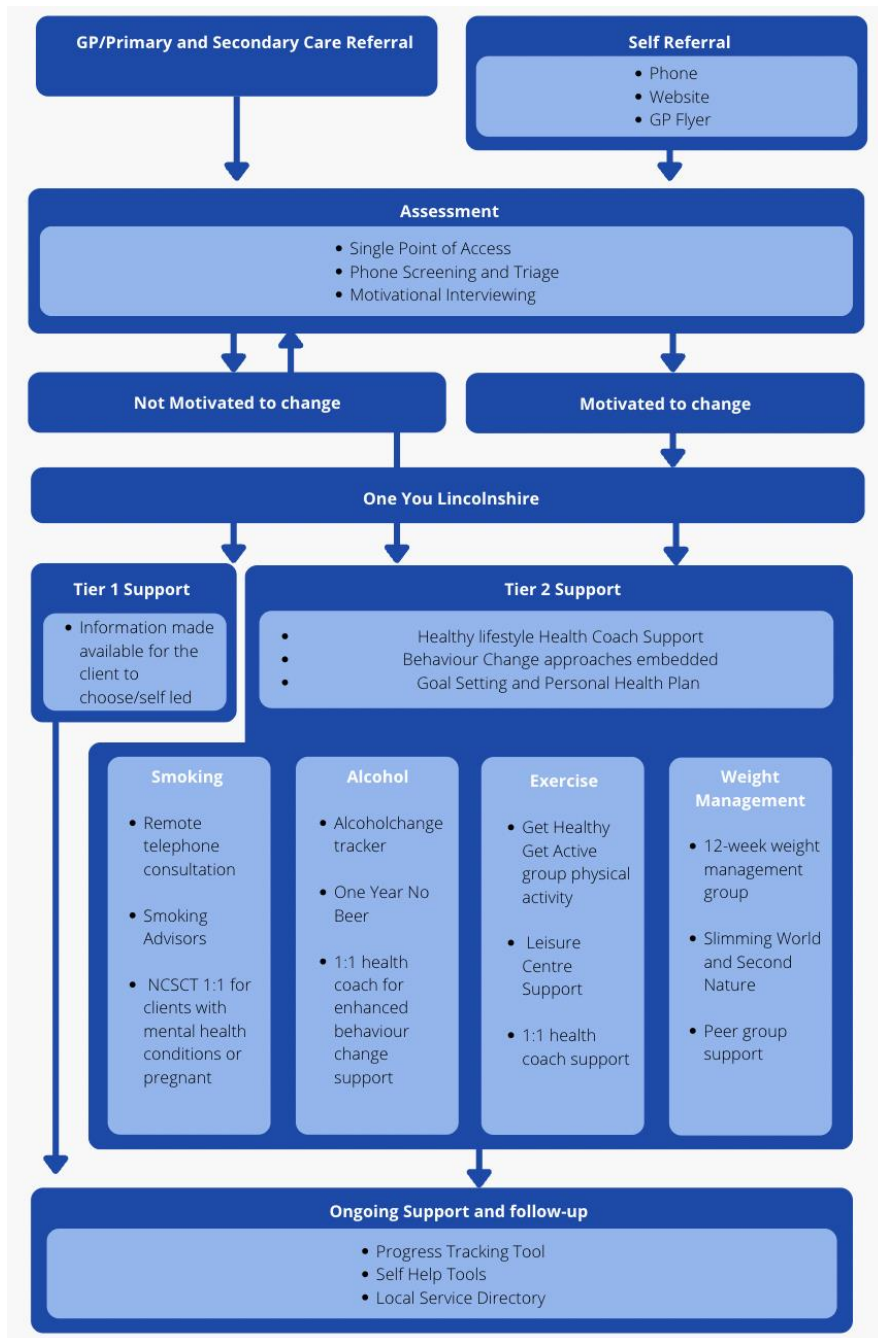


Source: Adapted from Michie et al. (2011)

Client Care Pathway

One You Lincolnshire provides service to eligible individuals for up to 12 months to support them in achieving their health outcomes via health information, signposting, goal setting, action planning, and support tailored to the client's needs (Figure 3).

Figure 3. One You Lincolnshire Client Pathway



Eligibility

All clients using the service are adults 18 years old and over who have been identified as having an at-risk status and one or more unhealthy behaviour (OHID, 2021). One You Lincolnshire eligibility criteria are:

- I. People with long-term health conditions made worse by unhealthy behaviours, including obesity (BMI of 30 or above/ 27.5 or above for Black, Asian, and Minority Ethnic clients), diabetes, cardiovascular disease risk, liver disease, musculoskeletal conditions, osteoporosis, coronary heart disease and respiratory diseases.
- II. At-risk adults who may have undertaken NHS Health Check for Cardiovascular Disease Prevention or received a Q-Risk score of >10%, enabling the primary care staff to refer them directly to the ILS.
- III. People engaged with the NHS's health optimisation about the future need for support for smoking cessation and weight management before surgery.
- IV. Carers in Lincolnshire who may be obese with a BMI of 30 or above, smoke, drink to excess or are inactive.
- V. Individuals 12 years and over who smoke and are seeking help to stop smoking, including pregnant women, and their partners.

The Impact of COVID-19

This study occurred during COVID-19. The pandemic led to a national lockdown and restrictions between March 2020 and December 2021. Restrictions included a ban on non-essential travel, working from home measures, closing of schools and non-essential shops and social distancing. As the pandemic progressed, lifestyle factors, including obesity and smoking, were correlated with an increased risk of COVID-19 severe illness or related death. At the time of this study, the number of deaths due to COVID-19 was more than 100,000 in the UK (ONS, 2022).

In March 2021, the Department of Health and Social Care released a policy paper, "**COVID-19 mental health and wellbeing recovery action plan**", which aimed to prevent, mitigate, and respond to the health impacts of the pandemic from 2021 to 2022. The policy outlined the government's proposed Health and Care Bill, which aimed to help local health and care systems deliver higher quality care to their communities by putting integrated care systems on a statutory basis. Additionally, the Department for Digital, Culture, Media and Sport supported Sport England in the implementation of its new 10-year strategy, which focuses on the recovery and reinvention of the sport and physical activity sector from COVID-19, as well as bringing communities together through sport and physical activity.

Chapter 2 RE-AIM Evaluation

Overview of RE-AIM evaluation approach

This evaluation uses the RE-AIM model, developed in 1999 in response to a need for a framework to evaluate public health interventions (Holtrop et al., 2018). The RE-AIM framework was first produced to help evaluators balance internal and external validity when developing, testing, and implementing interventions. The framework's goal is to help maintain programme sustainability in community settings. The RE-AIM dimensions' constitutive definitions are straightforward and appealing to community and clinical organisations (Glasgow et al., 2019).

RE-AIM Principles

In their introduction of the framework, Glasgow et al. (2019) argued that, while reach and efficacy might define the impact of a programme, extra attention should be directed towards the adoption, implementation, and maintenance dimensions (Table 1).

Table 1. RE-AIM dimensions used in this evaluation and the scope of each dimension

RE-AIM Dimensions	Definition
Reach	<ul style="list-style-type: none"> • WHO is intended to benefit and who participates or is exposed to the intervention?
Effectiveness	<ul style="list-style-type: none"> • WHAT are the most important benefits you are trying to achieve and what is the likelihood of negative outcomes?
Adoption	<ul style="list-style-type: none"> • WHERE is the programme or policy applied and WHO applied it?
Implementation	<ul style="list-style-type: none"> • HOW consistently is the programme or policy delivered, HOW will it be adapted, HOW much will it cost, and WHY will the results come about?

Maintenance

- WHEN will the initiative become operational; how long will it be sustained (Setting level); and how long are the results sustained (Individual level)?

The **Reach** element refers to the number of individuals participating in an intervention, including characteristics like age, ethnicity, and rurality. **Effectiveness** is the impact of an intervention on important outcomes and includes adverse effects, quality of life, and economic outcomes. **Adoption** is the absolute number, proportion, and representativeness of settings and intervention agents who start a programme. **Implementation** refers to the intervention agents' fidelity to and adaptations of intervention and associated implementation strategies, including the consistency of delivery as intended and the time and costs. **Maintenance** is the extent to which a programme becomes routine. Within the RE-AIM framework, maintenance also applies at the individual level and has been defined as the long-term effects of a programme's outcomes (Kwan et al., 2019).

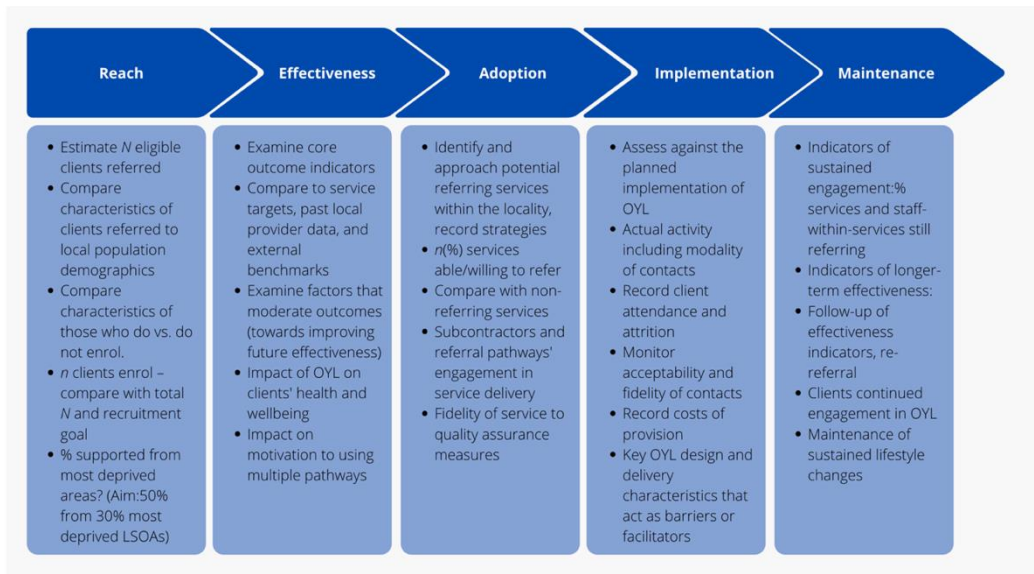
Application to research

One benefit of the RE-AIM framework is that it provides a valuable starting point for determining the public health impact of interventions: **Reach**, captures a given population who participates in a programme and describes their characteristics. **Effectiveness** shows the positive and negative outcomes of the programme. **Adoption** defines the percentage of settings that agree to take part in the programme. **Implementation** indicates if a programme is delivered as intended and its cost; and **Maintenance**, at the individual level, reflects the maintenance of the primary outcomes (Sweet et al., 2014).

RE-AIM challenges researchers to ask questions about complex issues before, during, and after implementing a programme in real-world settings. Among the many RE-AIM strengths are its robust structure and pragmatism, facilitating broad use across settings, populations, and interventions (Harden et al., 2018). Also, the framework supported an agile approach to service improvement. The research team identified areas for improvement during the study, so OYL could be responsive and adapt the service for immediate improvements. A two-year evaluation enabled insights into One You Lincolnshire's implementation and client

engagement. Each RE-AIM outcome measure used in the study is defined below in Figure 4.

Figure 4. Components of the RE-AIM framework in the context of One You Lincolnshire



Chapter 3 Interviews and Focus Groups

Overview

This chapter explored the perspectives of clients, staff and stakeholders in qualitative interviews and focus groups. The methodology used in the research is outlined, and the fieldwork's research design and aim. The results highlighted the impact of the OYL on clients' outcomes and barriers and facilitators to service delivery.

Methodology

Research Design

The study collected qualitative data from January to June 2021. To capture the views of a diverse range of clients, the research team conducted a pre-interview survey to assess the type of support and demographic of potential interviewees. An online survey was designed and delivered using Qualtrics software and asked potential client participants about their demographics, referral routes to the service and pathways they used. The steering group piloted the survey, and changes were adopted where appropriate. All interviews and focus groups (telephone and TEAMS) were conducted using a semi-structured interview guide. Topic guides were developed with the steering group to ensure that questions followed the RE-AIM framework. The whole group reviewed the interview questions for question order and flow appropriateness. Thus, key stakeholders, staff, and clients were allowed to contribute to the interview and focus group guides on its design phase.

Research Setting

One You Lincolnshire operates in 17 areas across the county for face-to-face delivery. A range of interventions is available via online support and remote health coach sessions to all clients who cannot attend in-person support resulting in a complete county offer. Table 2 shows the various activities of each site delivery service.

Table 2. One You Lincolnshire Programmes available at each site grouped by risk factor.

		Lincoln	Grantham	Boston	Spalding	Skegness	Gainsborough	Stamford	Steaford	Louth	Bourne	M Deeping	Mablethorpe	Horncastle	Holbeach	Ruskington	Long Sutton	Coningsby
Stop Smoking	Health Coach Appointment	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Specialist 1:1 Stop Smoking	X	X	X	X	X	X	X	X	X	X	X	X	X				
	Stop Smoking in Primary Care*	X	X	X	X	X	X	X	X	X	X	X						
	28 Days Telephone Service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Move More	Specialist 1:1 Sessions with PA instructor*	X	X	X	X	X	X	X	X			X						
	Supervised Sessions in Leisure Centre*	X	X ¹	X	X	X	X	X ¹		X	X	X ¹	X	X				
	Group Sessions with PA instructor*	X	X	X	X	X	X	X	X	X	X	X	X					
	Get Healthy Get Active	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Eat Healthy	Lose Weight with OYL	X	X	X	X	X	X	X	X	X	X							
	MAN, V FAT Football*	X	X	X	X	X												
	Gloji Online Gym	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Slimming World/Weight Watchers*	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Drink Less	Our Path Digital Service	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Health Coach Session	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	One Year No Beer	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Alco-change	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

**Delivery model changed due to COVID-19*

1 Did not return after COVID-19

Sampling and recruitment of participants

Between July 2019 and July 2020, OYL had 6,268 clients in its database. The service has eight Service Leads, with 33 Programme Staff ranging from Triage and Support Workers, Health Practitioners, Advisors, and Referral Generation Officers (Appendix B). The service also works with 175 subcontractors across Lincolnshire. Staff were contacted via the research team, and OYL’s website and social media advertised a call for client participation. Participants could telephone or email the research team to express their interest. The staff also used a telephone script to advertise the study to clients already engaged in the service. The advertising material was developed collaboratively with OYL, client representatives and the research team. The sample of participants was monitored to ensure diversity such as gender, ethnicity, and carer status across the participation groups. Participation was voluntary, and the recruitment of participants used an opt-in method in line with GDPR (Data Protection Act, 2018).

Inclusion criteria and recruitment

Clients were recruited that met one of the eligibility criteria of the research as follows:

- Not deemed motivated following motivational interviewing
- Not deemed eligible following the health assessment
- Declined support
- Took up tiers 1 or 2 support
- Incomplete attendance or unsustained change
- Complete support and sustained change

Before the researcher made contact, clients were approached via recruitment flyers online and health coaches promoting the study. Interested clients were sent a study information sheet and asked to complete a pre-interview screening survey. The researcher explained that participation was voluntary, and participants could withdraw at any time or refuse to answer questions. Also, participation was anonymous, and no personal information would be shared with One You Lincolnshire. Informed consent was collected before interviews, and if they or someone else was at risk of harm, the interviewer would be obliged to take appropriate action. The participants also received a £10 voucher per interview for sharing their time and experience.

Data collection

Data collection occurred between February 2021 and June 2021 and involved qualitative interviews and focus groups with various participants. 53 participants took part in the study (Table 3). Participants who agreed to the study were given a detailed information sheet and a consent form before data collection. Participants were allowed to book an interview time with the researcher, and the interview was conducted via telephone or Microsoft TEAMS, as preferred by the participant. Only participants who provided informed consent and met the pre-interview screener were included. Participants had the right to revoke, decline, or withdraw consent during data collection. Consent forms (via Qualtrics) were completed before the interview/focus group and stored as PDFs on a secure cloud-based server. The interviews/focus groups were recorded, transcribed, and transcriptions were stored.

Table 3. The number of interviews completed by June 2021.

Individuals Interviewed	February- June 2021
Clients	24
OYL Staff	21
Health Professional	5
Stakeholders	3
Total	53

Topic guide

Topic guides were used to ensure a consistent approach to each interview. However, the topic guides were used flexibly, with open and non-leading phrasing to allow participants to give their accounts in their own words and describe their lived experiences. Staff focus groups concentrated on service delivery and implementation, whilst client interviews focused on the perceptions of the service and perceived impact. The interviews and focus groups ranged from 30 to 120 minutes in length.

Ethics

This study was defined as research and obtained Health Regulation Approval (Project IRAS ID 289313) on the 22nd of December 2020 (Appendix A). A steering committee was established and met every 3 months to ensure all the study's practical details were consistently progressing and working well. The study has also been adopted onto the NIHR portfolio (ID 289313).

Analysis

The research team inductively analysed the transcripts using the principles of thematic analysis (TA) proposed by Braun and Clarke (2006). Researchers explored participants lived experiences as situated within a broader socio-cultural context of their health. The research assistant set up a coding log to ensure all data and recruitment files conformed to requirements of anonymity. All interviews were recorded verbatim and transcribed, except one interview conducted over email. Each transcript was reviewed and coded by the original interviewer.

An iterative data analysis process involved all research team members through periodic team meetings where differences in interpretation were discussed. NVivo software (Version 10) facilitated analysis. The qualitative data were thematically analysed, with the codes summarised. A coding frame was developed based upon early rounds of interviews and refined by the research team until an agreed structured/hierarchical coding frame was developed. Summaries of significant findings were generated to identify recurrent themes and compare and contrast findings. The team was careful to consider outlier data, divergent accounts and issues, and commonalities to identify critical themes for the study.

Results

Characteristics of Clients

Twenty-eight responses were recorded, with 24 agreeing to a follow-up interview (Table 4). Most respondents were female (75%), reported their ethnicity as White British (93%) and living with a long-term health condition (82%). A quarter of participants had friends and family support, while 14% had caring responsibilities. However, most participants did not have caring responsibilities (57%). Self-referral was the most common route into the service (39%), followed by GP referrals (36%). Some participants were referred to via social media, word of mouth and work referrals.

Most participants completed their assessment over the phone with the OYL triage team. Once assessed, most participants were offered tier 1 online information support *and* access to tier 2 health coach support (46%). 21% were offered only tier 1 support and 25% only used a health coach for support. Healthy eating was the most common pathway participants engaged with (71%). 46% engaged with a physical activity programme. Smoking cessation and alcohol reduction support were each used by 21% of the participants. Most participants engaged in more than one type of support. 57% signed up for two programmes, often healthy eating, and physical activity. One participant did get referred to three lifestyle programmes. Whilst the remaining 39% of participants engaged in only one lifestyle programme.

Finally, most participants were working towards their goals during the study. A small percentage did not achieve or maintain their changes in the study (4%). 36% of participants indicated that they had maintained their changes. However, when interviewed, some had no longer maintained their changes, suggesting some discrepancies between the screener questions and the follow-up interviews.

Table 4. Characteristics of clients from pre-interview survey

	<i>n</i>	%
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Gender	Female	21	(75%)
	Male	7	(25%)
Ethnicity	White British	26	(93%)
	Non-White British*	2	(7%)
Living with a Long-Term Health Condition	Yes	23	(82%)
	No	4	(14%)
Carer Status	Preferred not to answer	1	(4%)
	Had friends or family support them	7	(25%)
	Had caring responsibilities	4	(14%)
	Had friends or family support them AND had caring responsibilities	1	(4%)
Referral Route	Did not have caring responsibilities	16	(57%)
	Self-Referral	11	(39%)
	Via GP	10	(36%)
Assessment Process	Other Route	7	(25%)
	In Person	3	(11%)
	Via Website	5	(18%)
Level of Support	Via Phone	19	(68%)
	Other Route	1	(4%)
	Tier 1 Support Only	6	(21%)
	Tier 2 Support Only	7	(25%)
Type of Support Used**	Both Tier 1 and Tier 2 Support	13	(46%)
	Did not know	2	(7%)
	Healthy Eating	20	(71%)
Used Integrated Care Support	Increasing Exercise	13	(46%)
	Reducing Alcohol Consumption	6	(21%)
	Stop Smoking	6	(21%)
Maintenance of Lifestyle Changes	One Programme Only	11	(39%)
	Two Programmes	16	(57%)
	Three Programmes	1	(4%)
Maintenance of Lifestyle Changes	Maintained changes	10	(36%)
	Currently working on changes	16	(57%)
	Did not maintain changes	1	(4%)

[REDACTED]	Did not achieve changes	1	(4%)
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*Due to the small sample size (n=28), some data were aggregated to ensure anonymity.

**Percentages equal >100 as participants could select multiple responses.

Eligibility, Referrals, and Demand

Lesson 1: Impact of COVID-19 on eligibility, referrals, and demand

Change to client eligibility

A pivotal change to the delivery model of OYL was widening the eligibility criteria for clients. OYL commissioning documents stated that a long-term health condition was an essential requirement. However, the need for a pre-existing condition was removed from March 2020, and access was widened via self-referral routes. The change saw a perceived **"bigger impact on the county"**, as well as fewer referrals from older populations.

Reduced GP referrals

COVID-19 reduced GP referrals because of pressure on primary care centres to divert resources to covid-related care. As such, GP services interacted less with the general population as restrictions prevented patients from attending centres in person. GPs had fewer opportunities to provide OYL leaflets or refer patients. As such, GPs gave patients OYL's phone numbers to the clients, then expected the client would self-refer.

Increased service demand

Despite the reduction in GP referrals, the demand for OYL increased during the pandemic. OYL staff correlated increased demand as a knock-on effect of widening the eligibility criteria. However, the demand for the service was seen in less deprived areas. As the pandemic progressed, some clients' rationale for accessing the service was a response to smoking and obesity being correlated with poorer health outcomes if infected with COVID-19. Some clients viewed the service as a preventive measure to improve their health in

case of a COVID infection. Thus, increased demand for the service resulted in some delays in referrals for clients, with staff mentioning it took **"5–10 days"** to get people triaged.

Lesson 2: Accessibility and inclusion of the service

Targeted client groups

An essential contract requirement of OYL was 50% of clients to be from 30% of the most deprived LSOAs. In Lincolnshire, coastal sites had higher deprivation levels than other areas. OYL staff noted higher inequalities and unemployment rates in sites such as Mablethorpe. Staff saw clients more likely to binge drink and suffer from alcohol addictions in areas with high unemployment rates. In contrast, clients using alcohol support were in full-time employment. Therefore, social determinants were a critical factor in the level of support provided for an individual.

Appropriate referrals

Multiple interviews with staff and stakeholders highlighted the concept of an 'appropriate' referral. The idea of **"getting the right ones"** with the **"right mindset"** was a central identifier of clients being referred and triaged into the service. Determining a client's motivation is crucial to successful health outcomes. Also, there was a sense that GP definitions of 'appropriate' may have differed from OYL's definition. For example, an external smoking cessation partner explained that **"if you are a smoker, the [GP] will say you should give up smoking"**. Although correct, staff argued that the referral was not always appropriate at the time. Health professionals referred clients who they **"[did not] know what else to do "**. Therefore, GP identification of a client was based only on lifestyle requirements. As noted in the COM-B model, being a smoker may not have included a person's motivation to engage in a behaviour change (Figure 2).

Barriers for male clients

The demographics of the service across pathways varied but had an average client demographic. Most clients were White British women with underlying health conditions. Such as **"asthma and high blood pressure, osteoarthritis "**. The staff highlighted those pathways such as weight management had a higher proportion of women than other

pathways. Likewise, this study had more female participants than men, reflecting the service demographic. OYL staff were aware of the gender disparity in the service with a **"real priority to try to work out how [to] engage men"**.

The staff mentioned that engaging men in preventive care was difficult across the sector. Often men **"do not engage until the last minute"** to seek care, making engagement in preventive care more challenging for male clients. Consequently, the staff noted that men were more likely to be referred to through GP health checks than self-refer. Both staff and client participants noted that some males felt uncomfortable accessing the service. Some men feared **"admitting that they have got things wrong or want to explore things that scared them"**. Once referred, some men's expectations of weight loss services were gendered. Programmes such as Slimming World were assumed to cater to women and were **"like a women's meetings for women to catch up"**.

Lesson 3: Factors impacting hesitancy in referrals

Alcohol support hesitancy

Triage staff noted limited referrals to the Drink Less pathway, with **"few and far between compared to the other pathways"**. A key challenge of the Drink Less pathway is identifying who should be referred. GPs spoke about how drinking habits **"don't come up"** when talking to patients, making it difficult to approach the topic. Similarly, OYL staff noted that the promotion of alcohol brief interventions in primary care was limited - **"how many people walk into a GP surgery and that conversation happens '[are you] drinking 18–20 units per week?'"**.

Furthermore, OYL staff discussed the expectations and understanding of the pathway. The **"Drink Less pathway has connotations of people drinking too much"** for health professionals and clients. Clients and referrers often viewed the pathway as alcohol dependency support rather than a brief intervention **"looking at people reducing"** their alcohol consumption. As a result, alcohol support health coaches noted **"an added layer of stigma and stereotyping"** associated with the pathway.

Also, OYL staff highlighted those clients had limited awareness of the impact of alcohol consumption, creating another barrier to accessing the service. For example, potential clients often do not acknowledge drinking when stressed. Health coach leads commented how for individuals who drank over the guidelines of 14 units a week, which was the target group for the pathway, potential clients did not always view excess alcohol consumption as a risk factor that required intervention, with the rhetoric **"Is that an issue?"**. However, some staff spoke about a phenomenon known as the common-sense barrier. A critical challenge - **"people know the alcohol is bad for them, they do not need to be told, and they can stop if they want to"**. Thus, the reasons for low referrals are multifaceted. Coaches suggested careful marketing to clarify the difference between treatment and brief advice as a key recommendation.

Lesson 4: Referral Pathways Routes

Referrals across pathways

Clients had various ways of referring to pathways. The most common route was self-referrals to be triaged by OYL staff to the most appropriate pathways. However, many clients were referred to additional pathways once within the service. Referrals across pathways were a unique feature of the integrated care service. Clients had a single-entry point, as **"many [clients] come through for one pathway, could end up going to two or three"**.

One pathway that benefitted from cross-pathway referrals was the Drink Less programme. Health coaches recognised that clients were not entering the service to reduce drinking. So, pathways such as Healthy Eating were able to highlight that **"alcohol played more of a part than [clients] realised"**. Weight management coaches commented that a part of their role was educating clients on the calories in alcohol. For example, one coach explained, **"there are 600 calories per bottle of wine. So, we are picking [excess drinking] up in different ways"**. Also, publicised and known services such as Slimming World and Weight Watchers were vital marketing tools. Triage staff stated, **"quite a lot of ladies might have heard of Slimming World or Weight Watchers"**. Potential clients were also offered OYL services, resulting in a wider variety of support to access. Nevertheless, some clients were

unaware of access to all pathways through One You Lincolnshire. Staff found that some clients referred via a health professional **"did not even realise that [OYL] are multiple pathway agencies"**.

GP understanding of referrals

GPs had a trusted role within OYL as they referred many clients to the service. However, interviews with GPs and OYL staff revealed that access to the service for clients had challenges. GPs revealed limited understanding of the service and the support on offer. For example, some GPs believed they **"could not refer to the exercise [pathway]"**. OYL staff reiterated that **"ManVFat Football, and Lose Weight [with OYL], were not known that well to GP's"**. Therefore, GPs did seem to have a gap in knowledge of the OYL service model. Some GPs acknowledged forgetting what OYL offered. Instead, GPs would, **"refer to the Addaction"** for alcohol support. When explored further, OYL staff mentioned the limited time GPs had to learn about the service. One OYL staff member concluded, **"you get time to say it is a male weight management programme. It's framed around football, and there are leagues and there are 14 weeks, and it's free, and there's about a 95% success rate to weight loss"**. A short time to explain the service seemed to result in GPs having a brief understanding of the complete service.

Referrals via Secondary Care

Secondary care clinics were also part of the referral route. Referrals via hospitals were **"usually to stop smoking or drinking. Depending on what [clients] had been in hospital for"**. Secondary care referrals were viewed as more complex than primary care referral routes. Secondary care staff had a different referral form to primary care teams as the forms listed **"every single pathway"**. Primary care referrals relied on the OYL triage team to navigate which pathways were most appropriate for a client. In contrast, secondary care staff were **"presented with a very long list of pathways"**. Referring to OYL through secondary care was seen as more laborious and thus less likely to be used. To help identify clients awaiting treatments that required lifestyle changes before operations, OYL staff suggested implementing a **"priority email account "** for **"urgent referrals"**.

Client Motivation, Commitment and Outcomes

Lesson 1: The importance of client motivation

Motivation as a facilitator to behaviour change

Health coaches discussed the importance of the first meeting with a client to set the tone of the service. Coaches would ask questions such as, **"– Tell me about what has motivated you to want to change"**. Coaches viewed motivation as core to behaviour change. One coach stated, **"unless [clients] have intrinsic motivation to change, you help them foster that, it's very unlikely that they're actually going to do it"**. Thus, partners and OYL staff viewed a client's motivation as insightful information. It became a foundation for a client's values for coaches to deliver support aligned with the client's motivations. For example, many clients mentioned COVID-19 as a motivator. The impact of bereavement and **"having a similar health condition"** were identified as reasons for seeking support. Clients described the realisation of **"living quite an unhealthy lifestyle"** as a desire to change their lifestyle.

Coaches, in turn, understood a client's value as wanting to reduce their risk of COVID-19 morbidity as a central motivating factor. Health coaches viewed motivation as active and dynamic, which could be encouraged and strengthened throughout a client's journey. However, for some clients, the pandemic was a demotivator to change. Triage staff mentioned how clients that did not take up support **"diverted their emotional resources into coping"**. As such, coping mechanisms were prioritised during lockdown measures. **"Resources that [clients] otherwise would have put towards moving forward to the cycle of change"** were used to cope. Thus, client motivation was individual and required personalised support from health coaches.

Quality Assurance, Fidelity, and Partner Relationships

Lesson 1: Quality Assurance

Local service ownership and quality champions

Commissioners wanted Thrive Tribe to deliver OYL within the local context to the population. Thrive Tribe leadership was keen to establish local ownership of the service for staff and local partners. Quality champions encouraged staff to embed quality protocols within the service using self-reflection. For quality champions, the role was a voluntary position. A local staff member's duties were to **"support with things like audits"** and **"support on handling complaints and incidents"**. Quality champions ensured **"people were automatically doing that quality assurance themselves, rather than just being an external person that just parachutes in"**.

Leadership wanted to create a national network of quality champions from different service sites. The champions could then share good practices across Thrive Tribe commissioning service. Thrive Tribe leadership believed that quality assurance as a local agenda encouraged staff to **"get more engaged"**. Coaches were encouraged to **"feel a bit more empowered to drive any changes"** and **"feel more part of the whole quality improvement agenda"**. As such, most staff responded to the decision to local ownership as **"really wanting the service to work"**. Thus, staff often viewed quality as decentralised and both leadership and staff responsibility.

Staff Training and continual development

OYL had mandatory staff training to engage with clients and deliver programmes. Mandated training was outlined in centralised Thrive Tribe guidelines and service specifications. Most client-facing staff were required to have **"behaviour change levels one and two"** at recruitment. Pathway leads were then required to have extra training. The training helped leads handle complex caseloads through mental health first aid training. At the time of data

collection, Thrive Tribe had rolled out mental health first aid training for all staff. Also, the culture set by leadership encouraged continual learning and development for staff. The staff mentioned that **"[there is] always something you can improve on no matter how experienced you are or learn a different way of doing something"**.

At a local level, each pathway had working groups. The groups shared lessons learned, service challenges and good practices among staff. As well as **"an opportunity to talk with like-minded people"**. Staff felt the groups helped to **"just spark ideas, and enthusiasm, and help people not reinvent the wheel"**. Staff held monthly multidisciplinary meetings alongside intra-pathway groups. The cross-pathway groups were aimed to show that **"staff can learn across the disciplines"**. Groups across the pathway reinforced the integrated nature of the service delivery model.

Lesson 2: Impact of previous service models

Commitment from GPs

Both external partners and OYL staff spoke of OYL service delivery with previous models of care. One key challenge was engaging with GP clinics. External partners stated that GP buy-in for referrals had been difficult before OYL. One reason for poor engagement was **"some huge priorities with surgeries"**. For example, **"CQC inspections have not gone well, or they are having to merge with another surgery. Some fairly hefty managerial things going on"**. OYL referral generation staff had dedicated considerable time to rapport building with GPs. As such, GP engagement has improved since the service launch. External providers saw that **"One You Lincolnshire's actual relationship with the GPs had improved"**. As a result, GPs had increased **"buy in, and commitment"**. Partners viewed OYL as **"being that sort of interim"** between providers and GP clinics. A vital connection for the service delivery model.

Lesson 3: Relationship with external partners

Contracted partners

One You Lincolnshire had multiple external partners contracted to deliver various client programmes. Partner organisations varied in size of operation, modality, and site location. Partners perceived OYL as a positive relationship. For example, there was a perception that **"they have got a good team"** amongst partners. Partners highlighted effective leadership and consistent communication as positive factors. Many partners stated the importance of good working relationships. Relationships were viewed as fundamental to the success of an integrated service. One partner mentioned, **"If there's going to be an ongoing relationship of any kind, it needs to be reciprocal"**.

Both OYL and partner organisations were responsible for ensuring an ongoing working relationship. OYL was viewed as having strong leadership and **"just a – Can do organisation. Right from the top"**. OYL was viewed as a competent provider, and partners felt OYL was **"very well experienced"**. The experience came from OYL running **"integrated health services for several different authorities"**. External partners valued **"the ability to have somebody else that was putting the referrals through"**. Many partners had found referrals from primary care services difficult. One partner stated, **"sometimes it was tricky to arrange meetings with the GP"**. Also, partners viewed OYL as accessible with consistent communication. For example, OYL spoke to partners **"pretty much on a daily basis by email"**, which built trust and rapport. In contrast, some smaller partners did want increased technical support from OYL. Some partners struggled using online 365 portals during the pandemic. However, these partners acknowledged that low digital literacy within their team affected aptitude.

Staff capacity and post-COVID service delivery

Lesson 1: External Staff Capacity

Administration Tasks

A critical administration task for partners was data sharing of referral rates, clients' progress, and outcomes. OYL collected data to a centralised database that could be used to compare against commissioning targets. Each partner had varying staff capacity to complete the administrative tasks required for each client. Some external staff felt **"a lot of time could be wasted"** filling out client data. Staff preferred to be **"seeing people"** and external staff had limited buy-in on the importance of the administrative tasks. Tasks were viewed as **"time-consuming"** and difficult for coaches to complete alongside daily responsibilities. Some partners adapted to limited capacity by implementing a separate triage role within their service. The new role could then carry out administration tasks on behalf of coaches. These organisations seemed to view administration tasks more positively and valued data collection. Thus, consistent data sharing seemed to correlate to whether a task was viewed as beneficial or time-wasting.

Lesson 2: COVID-19 changes to service delivery

Transition to digital delivery

Six months into OYL implementation, the UK entered lockdown due to the COVID-19 pandemic. Many pathways established as in-person had to transition into online and digital-based operations. OYL leadership stated that a change to service delivery was a significant implementation task. Staff felt **"overwhelmed"**, and the transition was **"challenging"**. A critical pathway that COVID-19 affected was Get Healthy Get Active. Pathway leads spoke about the struggle with transitioning sessions into a digital intervention. Yet, leads still wanted to ensure communities were connected to the service across various demographics. Staff reflected on the initial challenges being overcome. As the pandemic progressed, digital resources and tools were better understood. Coaches were able to put in place good practices across programmes, for example implementing bookable systems for clients to access interventions in advance.

Pauses to client progress

Most OYL pathways adapted to online delivery to ensure clients continued using the service. Yet, some clients' progress was interrupted. Coaches mentioned that some clients

who accessed the service **"hadn't completed"**. Staff acknowledged that some clients did not want to continue support using online services. Clients who were less likely to continue using the services were often on the Get Healthy Get Active pathway. Clients did **"not want to come back into a gym"** despite online interventions being available. However, staff highlighted, that **"most of the people on the scheme so far who haven't completed yet, were quite eager to come back"**.

Client Case Studies

Face-to-Face Support

Sam is a White British man with a long-term health condition. His GP referred him to One You Lincolnshire. He was then assessed in person and decided to take up the Stop Smoking pathway with the help of a health coach. Sam also had caring responsibilities for his wife.

The main reason I wanted to stop smoking was the financial implications. If I was to say I smoked four packets of cigarettes a week, I wouldn't be far off the road. Well, it's anywhere between £36 and £45 a week, and you times that by 52 weeks, and you're on your way to £2000. Last year, I told myself I would stop, as the GP kept pestering me via text. I kept the previous text and thought, well, I'll take it. I've got nothing to lose.

I was going a little bit before we were even talking of lockdown. I would have been happier to have carried on face-to-face. One thing to improve is I didn't know where this clinic was. I worked to find this place. One You Lincolnshire needs to be more precise on where they actually are.

I said I wanted to stop smoking but didn't like the patches. The health coach explained how it works. And then, when I got my first lot of tablets, I had to pinpoint I would stop that

day. The health coach said, 'it is your choice,' which is vital. I know what I've been doing for the last 45 years is an addiction. The health coach didn't look down on me or talk down. She was no high and mighty person. ***There was none of this clinical type. All it was, we were having a cup of tea together and talking.***

The health coach played a significant part. I celebrated one year. It hasn't been as hard as I thought it would be, and I could get back in touch with them if there was an issue. Not stopping smoking for a year helped my lungs, and I won't put a burden on the NHS or anybody else.

Online Support

Sarah is a white British woman with a long-term health condition. The cardio rehabilitation clinic referred her to One You Lincolnshire. The triage team assessed her over the phone, and she decided to take up group support for Healthy Eating. Sarah also has carer support from family and friends.

Five years ago, I was very ill, and it turned out that it was heart problems. Gyms didn't understand some of the issues alongside heart problems. For the cardiac people, I said how miserable I felt because I'd gone from walking and doing all sorts to none. So, the clinician put me through the service, saying, "I could refer you to this One You Lincolnshire". I thought, 'this is an approved programme'. I needed to lose weight, but I needed some support because of this constant uncertainty about whether I should be pushing myself.

One You Lincolnshire contacted me and explained the course and how you had to commit to the 12 weeks. I could do a Wednesday morning, Thursday afternoon or whatever. I met my particular group on Thursday afternoon, from 1:30 PM to 2:30 PM, which is quite a long time. ***I prefer doing a Zoom online to sitting in a room in***

the evening while they call out your weights. The first hour was like other weight programmes. You went through it week by week as a topic, but the last half an hour was an exercise class. That was super because you were at home. All you had to do was create a bit of space, and I found it much more manageable.

About 10 or so people and the tutor could share the screen. The coaches encouraged people to join in the presentation, and there would be questions and little quizzes. They also encouraged people to share what had gone well during their week or how they felt. I had to make a weekly goal. That was good because it motivated you. You went through the balance between vegetables and fats, protein, and sugars. But it wasn't ever framed as "you must do this". The expectation was that you were on the programme. You want to make changes to your diet, and you are going to improve your fitness level.

One You Lincolnshire did send out little freebies. There was a measuring cup for portion size. They were smaller than anything on the food packets would suggest!

The health coach was excellent. I spoke to the health coach about this fear of what I can do. They were outstanding. In each class, the coach would say, these are the exercises. He would show you that you could do them sitting, or you could do them standing up. He tried to help you grade it and what it felt like to do moderate or vigorous exercise. It was a psychological acceptance that I could do it, and I felt more confident. I didn't make the total loss that One You Lincolnshire aimed for. But I can still access the online gym, and the health coach said he would call in three or six months to see how I am going.

Integrated Support

Anna is a White British woman with a long-term health condition. She self-referred to One You Lincolnshire, and the team assessed her over the phone. She decided to take up Slimming World, and her health coach offered the Increased Exercise pathway. Anna also had carer support from family and friends.

Since I've hurt my back and can't do much. I've gone from being very active, seeing many people, to my own four walls, 24 hours a day. It was a weblink my doctor gave me to sign up about getting some help with weight loss. I was with the pain clinic, and I was with them for 18 months. I kept telling them that I needed help and exercise. I pressed the link and then went online. I read about what One You Lincolnshire is and what they do and researched it a bit more. The website seemed to draw me in, making me think I needed them more. It could have been the point in my life I thought, 'I've got to do something.

I was really, really nervous that I had to get somebody to listen to me again. The healthcare staff told me my back problem was all in my head, and I didn't want to go down that road again. I had a couple of phone calls with a referral staff member who said, 'there are a couple of options they could do'. I did Slimming World before, so I knew how to do it. I got a free three-month trial, which gave me the push I needed. The health coach got me back into Slimming World, and I did a 12-week free course with them.

Then *the health coach got me in contact with another lovely lady in the One You Lincolnshire service*. She got me exercises and all catered for somebody with my lack of ability to do things. So, it's been fantastic. With One You Lincolnshire, it's all been over the telephone, but they've been constant. The health coaches have messaged me to see how things have been progressing. They've been so helpful, and they've listened. It's been nice to have somebody listen to what I need.

For somebody who's never actually seen me, and it's been over the telephone, it's been fantastic. It's been nice to have somebody else support me for what I need, boosting that it's me doing it. We need clarification that we're doing well. I'm exercising, and I'm feeling happier. The health coach always said she could hear the change in me, and I

couldn't have asked for a friendlier bunch of people to help me. One improvement to the service is, if you weren't very active, you could do a face-to-face rather than a phone call. To make sure you're doing the exercises correctly. At the end of the day, you don't want to hurt yourself while you're doing exercise.

I could only do the exercises over a few days when I started doing them, but I can do the exercise programme three times a week now. I can't say I'm more mobile because I'm not. But I went out yesterday, and I can walk a bit further than I would have been able to 18 months ago. My mood since losing weight and exercising more has improved.

Yes. I've still got the pain. But with a change of medication and losing weight, I can do more for myself. It's the motivational aspect they give you to actually want to do something about how you are. I've now come to terms with the fact that I will not be riding my bike again, but I know I can still do things. My broken body isn't going to stop me from enjoying life.

Chapter 4 Secondary Data Analysis

Data Analysis Overview

The aim of phase 2 was to provide quantitative evidence, and the analysis aimed to explore the accessibility, efficacy, and fidelity of the service. In this chapter, anonymised secondary data provided by One You Lincolnshire was used to explore the outcomes of each of the four pathways. Data was collected on client uptake, attendance, and completion across client demographics. Key outcomes were:

- Identify critical components of good practice of the client pathway, capturing the views from clients, programme staff, healthy lifestyle service subcontractors, and referral teams on barriers and facilitators of service implementation and delivery.
- Identify access within client subpopulations against local population demographics.
- Assess baseline effectiveness of OYL. Exploring variables that moderate outcomes such as client, provider, and programme factors compared to service targets and external benchmarks.

Methods

Data collection

One You Lincolnshire collected demographic-identifying variables from 17 sites (Table 2). Anonymised data were transferred to the University of Lincoln team, and data were stored on Microsoft 365, and no files were downloaded before the team cleaned, processed, and

analysed the data. Each site had data for demographics such as age, ethnicity, gender, long-term health conditions, LSOA, and pathways.

Research Design and Analysis

Statistical analysis was performed using SPSS software (v27). Service attendance and completion rates were expressed as frequencies and proportions. Descriptive statistics summarised session attendance as a proportion of total sessions offered/planned. The demographic characteristics of clients were summarised via descriptive statistics. Local population norms were interpreted to understand inequalities in service access and acceptability. A key performance indicator was the percentage of clients supported from the most deprived areas. In line with the service target that 50% of clients were from the 30% of most deprived LSOAs. Service uses such as uptake, attendance and dropout were explored about client demographics. Then service-use indicators regressed to demographic factors. Before applying linear/non-linear models to the data. For effectiveness analysis, client outcomes were coded for attainment and enrolment.

Sample Size

Secondary data analysis was conducted for all available data. A census sampling approach was used, and the dataset size was sufficient for modelling purposes (Bell et al., 2008). The analytic approach produced stable, unbiased estimates with a sample of ≥ 500 level-2 cases, and this criterion was met for all outcomes of interest. In total, 24,370 referrals nested within 16,354 clients nested within 128 coaches were included in the dataset for analysis.

Outcome Measures

Primary outcome analyses focused on self-reported health behavioural outcomes (Table 5). Focal outcomes varied by programme. The outcomes reflected target levels of behaviour for clinically meaningful improvement. Goal achievement indicators were defined as the following:

- Smoking quit status at four weeks

- Alcohol intake reduced to less than 14 units per week or decreased by 50% or more
- Physical activity increased to 150 minutes or more of moderate activity per week
- 5% or more weight loss at 12 weeks

Table 5. Outcome variables and descriptions of codes

Outcome Variables	Coding Description
Smoking Cessation	<u>Quit status at 4 weeks</u> 0 = Not achieved 1 = Achieved
Alcohol Reduction	<u>Intake reduced to <14 units per week or decreased by $\geq 50\%$</u> 0 = Not achieved 1 = Achieved
Physical Activation	<u>Physical activity increased to ≥ 150mins moderate activity per week</u> 0 = Not achieved 1 = Achieved
Weight Reduction	<u>$\geq 5\%$ weight loss at 12 weeks</u> 0 = Not achieved 1 = Achieved

Secondary Outcomes

Secondary outcomes were related to the following:

- Client uptake (0 = programme declined/did not start, 1 = programme commenced)
- Attendance (n of sessions attended, % of sessions attended [as a proportion of all sessions offered])
- Completion (0 = dropped out, 1 = programme completed) rates.

The analysis considered confounders such as client age, gender, ethnicity, socio-economic status, rural/urban, health status and disabilities (Table 6).

Table 6. Tertiary coach-level, secondary client level and primary level referral predictor variables and descriptions of outcomes

Coach Level Variables		Coding Description
Coach ID		Unique ID for coach (clustering variable) [†]
Client Level Variables		Coding Description
Client ID		Unique ID for client (clustering variable)
Age		In Years
Gender		0 = Female 1 = Male [‡]
Ethnicity		0 = White British 1 = Ethnic minority
Rurality		0 = Urban 1 = Rural
Deprivation		0 = Not living in top-30% most deprived LSOAs 1 = Living in top-30% most deprived LSOAs
Long-term health condition (LTHC)		0 = No LTHC 1 = LTHC
Mental Health Condition (MHC)		0 = No MHC 1 = MHC
Long-term sickness/disability/unemployment		0 = Not long-term sick and/or unemployed 1 = Long-term sick and/or unemployed
Carer		0 = non-carer status 1 = Carer status
Body Mass Index (BMI)		kg/m ²
Programme Participation		Number of tier-2 programmes attended (0 – 4)
Reported Importance of making change		<u>11-point self-report scale</u> 0 = not important at all 10 = extremely important
Reported Confidence about making change		<u>11-point self-report scale</u> 0 = not confident at all 10 = extremely confident
Referral Level Variables		Coding Description
Referral (n)		Referral instance (nth referral for the same client)
Attendance		Number of sessions attended for this referral instance

[†] No coach characteristics were available for modelling

[‡] Cell-size for other gender identities was too small to model

Statistical Analysis

For primary effectiveness analyses, client outcomes were coded. Client outcomes included the attainment of enrolled pathways. Secondary analysis used frequencies and proportions to express service attendance and completion rates. Session attendance was defined as a proportion of total sessions offered/planned—demographic characteristics of clients such as completers and non-completers; were also summarised. Client demographics were compared and interpreted against local population norms. Analysis was used to understand any inequalities in service access and acceptability to clients.

A key performance indicator was (and marker of Reach) the percentage of clients supported from the most deprived areas. The indicator was compared against a target that 50% of clients were from the 30% of most deprived LSOAs. Across tier-2 programmes, outcomes were represented as binary variables. Thus, generalised linear mixed modelling was applied for all primary analyses. Models used a binomial distribution and logit link function. Parameters were estimated via the penalised robust quasi-likelihood method—the method accommodated for possible violations of model assumptions. As the data were hierarchical, a three-level model was constructed. Referrals (level 1) nested within clients (level 2), and clients nested within coaches (level 3). Intraclass correlation coefficients (ICCs) were computed to identify the outcome variance at each level. Random intercepts were used to correct for differential outcomes by the client and coach. Predictor variables were examined as fixed effects and presented as odds ratios (OR) with 95% confidence intervals.

Model building

We first examined bivariate models of individual predictor-outcome relationships. Then we built a multivariate model including all significant predictors from bivariate models. Finally, we dropped predictors that were not significant in the multivariate model. We then had a final parsimonious model. Removing weaker/less relevant predictors from the model reduced standard errors for other predictors, enabling more precise estimates of their effects. Model fit was monitored using the Akaike information criterion (AIC). Pairwise deletion, with cases excluded from models in which data were missing on a required variable, was used to manage missing data. We applied linear mixed models for secondary outcomes that were non-binary, such as the percentage weight loss. The models used maximum likelihood estimation, paralleling the generalised linear mixed models' approach.

Results

Table 7 presents descriptive statistics for clients in the dataset. OYL activity was between June 2019 and February 2022 with data for 16,354 clients available. However, data completeness varied across cases and variables. Proportions in Table 7 are expressed as a percentage of valid (non-missing) data for each variable.

Table 7. Client characteristics in quantitative dataset (N unique IDs = 16,354)

Client Variables		<i>n</i>	%
Age	<i>Mn 49.6 (SD 15.5)</i>		
Gender	Male	4,694	(32%)
	Female	9,654	(66%)
Ethnicity	White British	10,662	(93%)
	Ethnic Minority	829	(7%)
Rurality	Rural	5,948	(51%)
	Urban	5,793	(49%)
Deprivation	Living in top-30% most deprived LSOAs	5,026	(38%)
	Living in less deprived LSOAs	8,360	(63%)
Long-term health condition	Yes	7,272	(72%)
	No	2,767	(28%)
Mental health condition	Yes	3,600	(39%)
	No	5,659	(61%)
Long-term sickness and/or unemployment	Yes	2,528	(26%)
	No	7,377	(75%)
Carer Status	Carer	852	(7%)
	Non-Carer	11,240	(93%)
BMI	<i>Mn 34.6 (SD 13.7)</i>		
Programme participation	<i>Mn 1.4 (SD 0.9)</i>		

Importance of making
change

Mn 9.2 (SD 1.3)

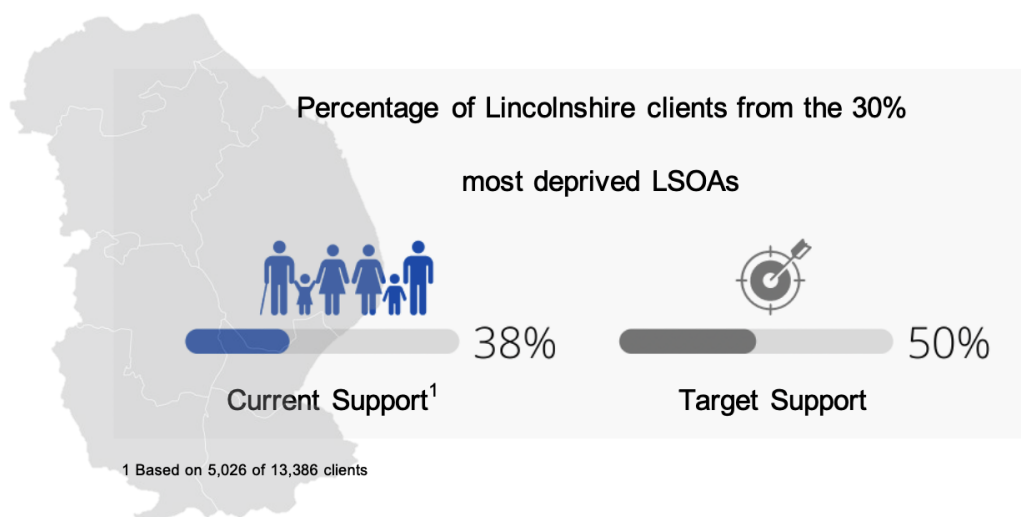
Confidence in making
change

Mn 7.0 (SD 2.4)

Note. % Reflect proportions for valid (non-missing) data. Percentages may not sum to 100% due to rounding. LSOA = Lower Layer Super Output Area

For evaluative interest in **Reach**, there is evident diversity in the OYL client base. Compared to Lincolnshire population norms, OYL service users represent the broader population. 93% of the Lincolnshire population identified as White British in the 2011 census. However, the service was under-representative of men—48.7% of the Lincolnshire population and older than the county average of 43.2%. Figure 5 shows the percentage of One You Lincolnshire clients from the 30% most deprived LSOAs compared to the commissioning target.

Figure 5. Percentage of One You Lincolnshire clients from the 30% most deprived LSOAs compared to commissioning target



Service outcome effectiveness and predictors

Evaluative results relate to **Effectiveness** across the core outcome indicators, such as Stop Smoking, Alcohol Reduction, Physical Activity, and Weight Loss.

Stop Smoking Pathway

OYL quit smoking was above the target standard of 50%. As shown in Figure 6, for OYL clients engaging with Stop Smoking support and setting a quit date, **56% quit smoking (95% CI = 55-57%)**. Successful quitting was self-reported at four weeks, and data came from 8,124 quit attempts within 6,036 clients. The improved quit rate under OYL has seen Lincolnshire Stop Smoking Services rise from 10th to sixth place in total quits. OYL compares well to available figures from previous stop-smoking services in Lincolnshire. Data from 2017-18 and 2018-19 indicated 46–50% quit rates.

Moreover, the quit rate observed within OYL is comparable to NHS Stop Smoking Services outcomes in England. In the concurrent period (2019-22), NHS outcomes were 51–59%.

OYL rates were more than double the estimated 25% quit rate among self-quitters (Dobbie et al., 2015). Due to the impact of the pandemic and the shift to remote support, Carbon Monoxide verification in the national NHS data has dropped to 2-3%. The proportion of Carbon Monoxide verification in OYL data over this pandemic-affected period was low at 10%. There was no significant effect of COVID reconfiguration on Stop Smoking support. For instance, quit outcomes were similarly for pre- vs post-pandemic, indicating the shift to remote support and reliance on self-report without Carbon Monoxide verification did not inflate positive quit outcomes. For specific target populations, 44% of 685 pregnant women quit smoking with OYL. OYL outcomes were comparable to NHS Stop Smoking Services outcomes of 45-48% over the same period. NHS outcomes had also improved pre-OYL, with a success rate of 38% in pregnant smokers over 2017-18.

Figure 6. Service delivery differences in self-reported successful quit smoking rates



1 <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-nhs-stop-smoking-services-in-england/april-2020-to-march-2021>

2 <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-nhs-stop-smoking-services-in-england/april-2019-to-march-2020>

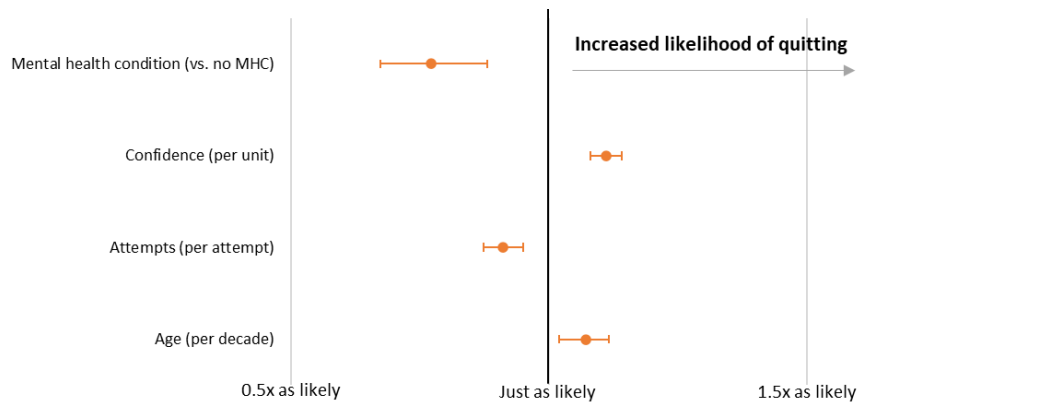
3 Based on 8,124 quit attempts within 6,036 clients

Only a small proportion of variance was accounted for at the level of the coach (2%) or client (6%) for smoking outcomes. Most variances were explainable at the referral level, reflecting variability within clients. Such as that the same client might achieve their quit target on one occasion but not another. When modelling all bivariate predictors together, four variables emerged as independent predictors. Figure 7 shows the predictors for smoking outcomes. At the client level, success was more likely with age. Success was also more likely with reported confidence in the ability to change and perceived self-efficacy.

Yet, less likely in the context of existent mental health conditions (NHS Digital, 2021). For illustration, the quit rate in those aged 40 years and older was 52% compared to 61% in those aged 60 years and older. The quit rate in those with vs without a mental health condition was 51% vs 59%. Clients reporting a confidence score of 7 or more out of 10 in their ability to make a change had a quit rate of 61%. Compared with a quit rate of 50%, those reported a confidence score of 6 or less. At the referral level, success decreased with successive attempts/referrals.

Chaiton et al. (2016) found that individuals who found quitting easier tended to succeed in early attempts. Whereas individuals with repeated unsuccessful attempts, the average success rate diminished over attempts. Adjusting for the predictors above, we observed outcome equalities. Rurality, deprivation, gender, ethnicity, and presence of long-term health conditions did not impact outcomes. Neither did sickness and unemployment status, carer status, and BMI. Smoking outcomes were not significantly related to attending multiple programmes. The reported importance of change and COVID reconfiguration were unrelated to outcomes also.

Figure 7. Likelihood of quitting smoking by client factors and quit attempts whilst using One You Lincolnshire between June 2019 to February 2022

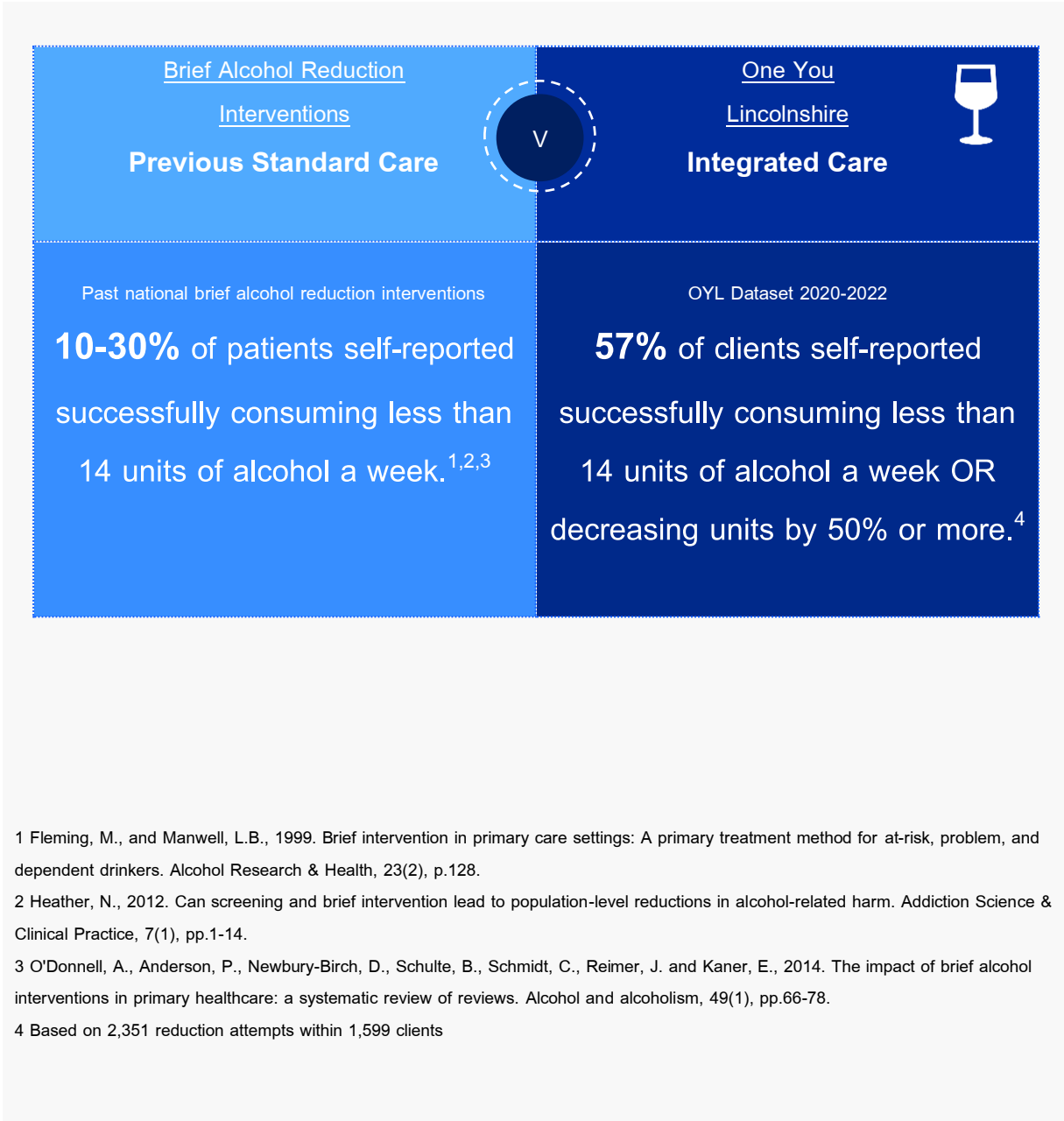


Note. Error bars give 95% Confidence Intervals (CIs) for each observed odds ratio. All effects are statistically significant (95% CIs do not cross the line of equal likelihood).

Alcohol Reduction Pathway

Figure 8 shows **57% reduced alcohol use** (95% CI = 52–61%) via OYL alcohol reduction or health coaching pathways. Data came from 635 reduction attempts within 544 clients. Reduced alcohol use was determined as decreasing intake by 50% or more or to less than 14 units per week. Moreover, across all OYL clients meeting eligibility criteria for alcohol reduction, **37% reduced alcohol use** (95% CI = 35–39%). Data was monitored from 2,351 referrals across 1,599 clients. Benchmark outcomes for brief alcohol reduction interventions were 10–30% (Heather, 2012, O'Donnell et al., 2014). High rates of alcohol reduction were supported across the service. Intention-to-treat analysis showed that clients not in the alcohol reduction pathway still reduced drinking.

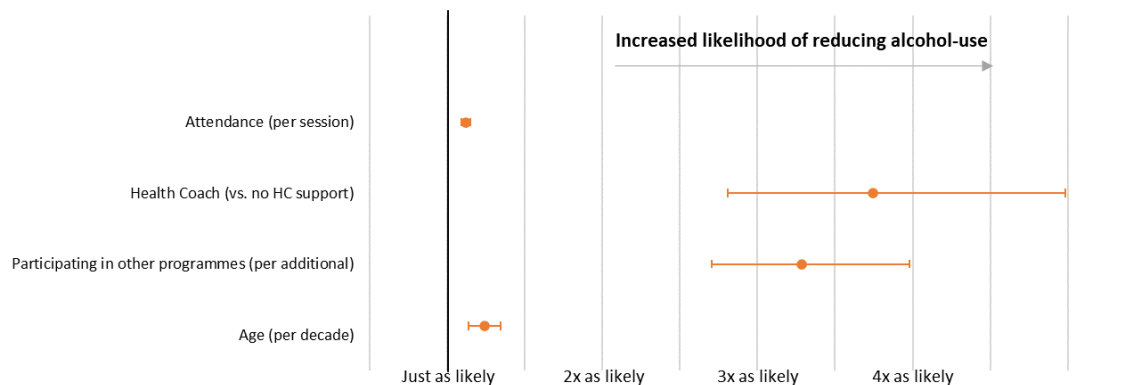
Figure 8. Service delivery differences in self-reported successful reduced drinking rates



Most outcome variance was accounted for at the coach (19%) and client (11%) levels for alcohol reduction outcomes. In particular, there was evident clustering by the coach. Clustering suggests between-coach differences in outcomes. For example, the

characteristics of coaches may enable successful outcomes. When modelling all bivariate predictors together, three variables emerged (Figure 9). The variables were independent predictors of alcohol reduction outcomes. At the client level, success was more likely with age and participation in other tier-2 programmes. At the referral level, success was more likely following 1:1 health coach input. Adjusting for the predictors above, we observed outcome equalities. Rurality, deprivation, gender, ethnicity, and long-term health conditions did not impact outcomes. Neither did mental health, sickness and unemployment, carer status, and BMI. Alcohol reduction outcomes were not significantly related to the reported change in importance or confidence. COVID reconfiguration was not related either. Predictors suggest equity of outcome after transitioning from in-person to online delivery.

Figure 9. Likelihood of reducing alcohol consumption whilst using One You Lincolnshire between June 2019 to February 2022

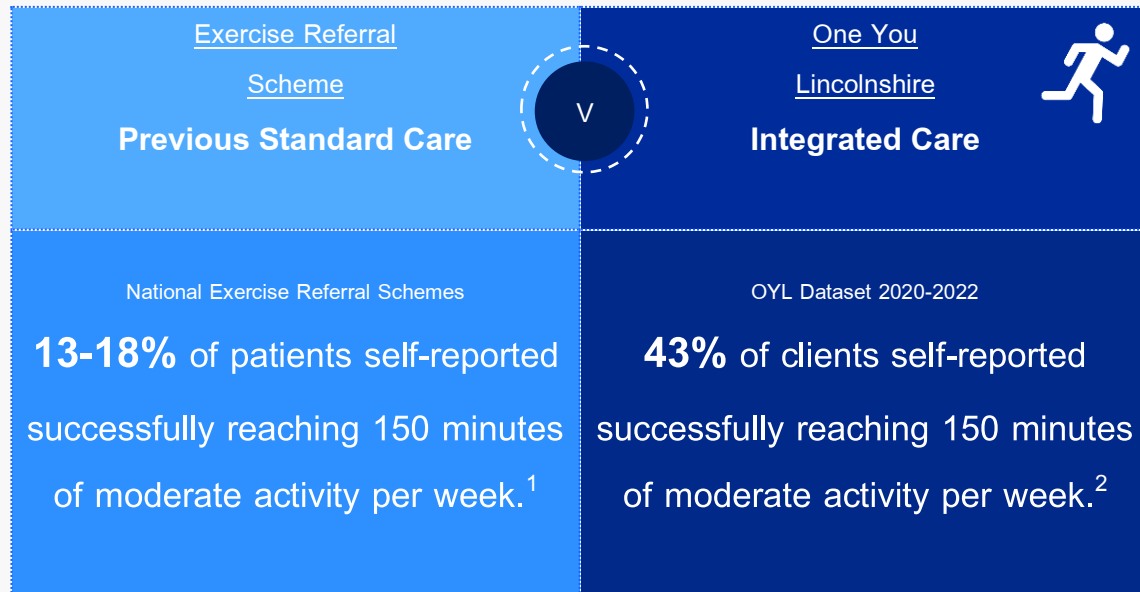


Physical Activity Pathway

As shown in Figure 10, **43% (95% CI = 42–44%) of clients increased physical activity** via physical activity or health coaching pathways. Data came from 7,881 activation attempts within 5,943 clients. A successful outcome was 150 minutes of moderate activity per week. Across all OYL clients meeting the eligibility criteria to become active, **28% (95% CI = 27–29%) were supported to be ‘active’ by the end of referral**. Eligibility criteria were those who were ‘inactive’ or ‘fairly active’ when entering the service. Data was monitored from 16,181 referrals to 10,877 clients. Observed success rates compared to benchmark effectiveness of exercise referral schemes of 13–18% (Williams et al., 2007). High rates of

physical activation were supported across the service. Intention-to-treat analysis showed that clients not in the physical activity pathway still increased physical activation.

Figure 10. Service delivery differences in self-reported successful increased physical activity rates



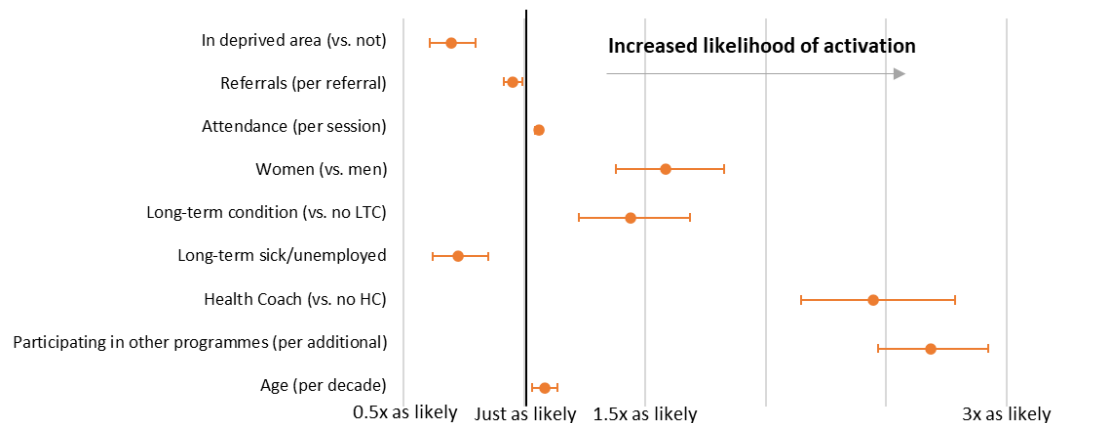
¹ Williams, N.H., Hendry, M., France, B., Lewis, R. and Wilkinson, C., 2007. Effectiveness of exercise-referral schemes to promote physical activity in adults: systematic review. *British Journal of General Practice*, 57(545), pp.979-986.

² Based on 16,181 activation attempts within 10,877 clients

Most of the variance was accounted for at high levels. There was 27% variance at the coach level plus 24% at the level of the client for physical activity outcomes. The predictors emphasise the value of coach-level and client-level influences on activation outcomes. When modelling all bivariate predictors together, nine variables emerged (Figure 11). The variables were independent predictors of activity outcomes. At the client level, success was more likely with age and participation in other tier-2 programmes, and success was less likely with deprivation, long-term unemployment, and sickness.

Additionally, success was more likely in women and when living with long-term health conditions. At the referral level, success was more likely following 1:1 health coach input. Also, increased attendance and over repeat referrals. As shown in Figure 10, the most influential factors were multi-programme participation. Clients participating in more than one programme were 2.7 times more likely to succeed. Health coach input correlated to 2.5 times as likely to succeed. The factors suggest that integrated delivery potentiated better outcomes across the client base. Adjusting for the predictors above, we observed outcome equalities. Rurality, ethnicity, presence of mental health conditions, carer status, and BMI did not impact outcomes. Physical activation outcomes were not significantly related to changes in importance and confidence. Also, neither was COVID reconfiguration. We observed some inequities in the outcome. Gender and deprivation predictors suggested that some groups were less able to benefit from OYL support in physical activity. Long-term unemployment and sickness, as a marker of disability, also affected outcomes.

Figure 11. Likelihood of increasing physical activity to 150 minutes a week whilst using One You Lincolnshire between June 2019 to February 2022



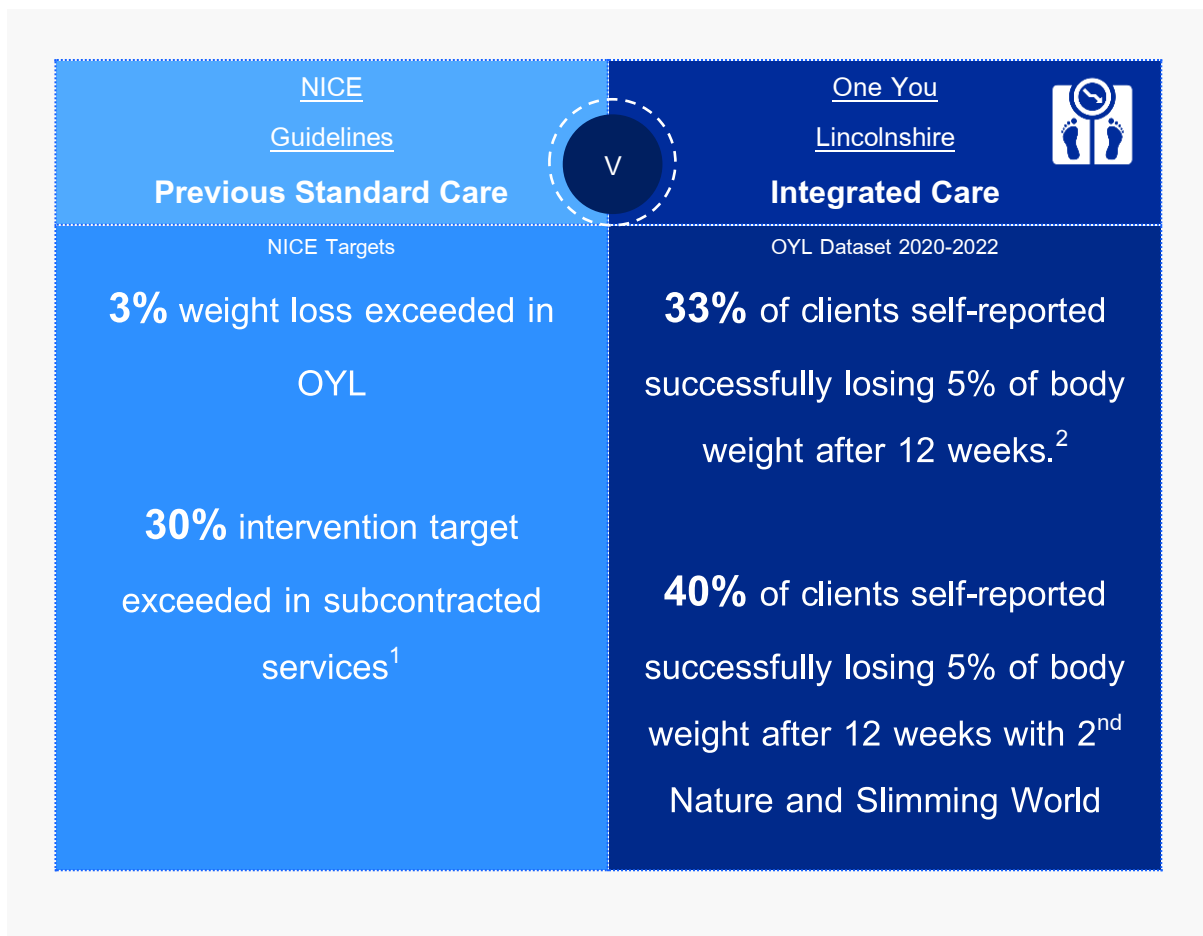
Weight Loss Pathway

As shown in Figure 12, **33% (95% CI = 32–34%) of clients achieved 5% weight loss** via adult weight management or health coaching pathways. Data came from 6,858 reduction attempts within 5,885 clients. Successful weight loss was achieved at 12 weeks following the start of a client's weight management plan. Across all OYL clients meeting the eligibility criteria of a BMI of 30 or above, **25% (95% CI = 25–26%) of clients achieved 5% weight**

loss. On average, clients had a weight reduction of 6%. Data was monitored from 12,915 referrals to 8,201 clients. The success rate of clients opting into the weight management pathway exceeded NICE guidelines (NICE, 2014).

Guideline targets for commissioned weight management services were 30% achieving 5% weight loss. OYL also exceeded the guidance of an average weight loss target of 3%. In a recently published evaluation of UK tier-2 weight management services, it was found that only a minority met the NICE criterion (Ells et al., 2018). The success rate for OYL is comparable to those observed in auditing patients referred to NHS weight loss programmes at 33% (Ahern et al., 2011). OYL also had a better rate (32%) than other integrative programmes in the UK (Birnie et al., 2016).

Figure 12. Service delivery differences in self-reported successful reduced weight rates

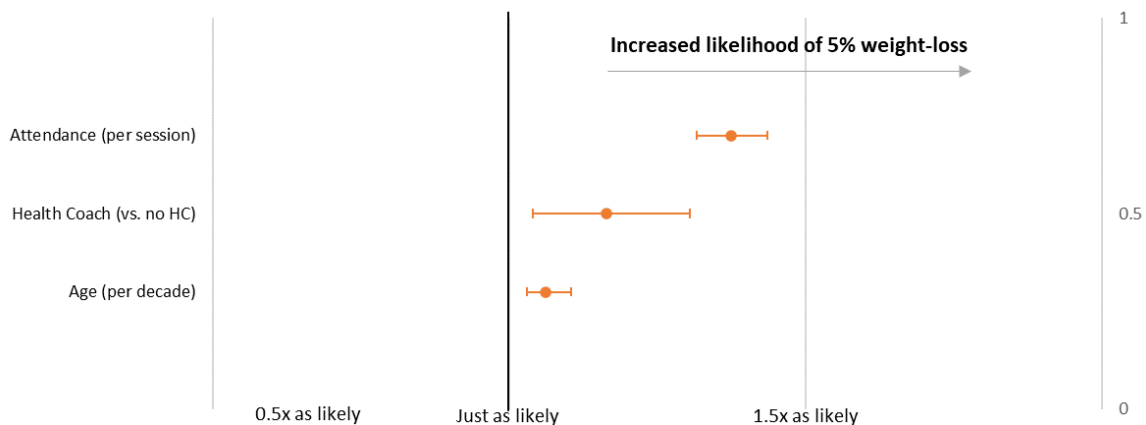


1 <https://www.nice.org.uk/guidance/ph53/chapter/1-Recommendations>

2 Based on 12,915 reduction attempts within 8,201 clients

For weight loss outcomes, a small amount of variance was accounted for by coach predictors at 3%. A more substantive amount of variance was accounted for by between-client differences at 22%. When modelling all bivariate predictors, three variables emerged as predictors (Figure 13). At the client level, success was more likely with age. At the referral level, success was more likely following 1:1 health coach input and increased attendance. Adjusting for the predictors above, we observed outcome equalities. Rurality, deprivation, gender, and ethnicity did not impact outcomes. Neither did long-term health and mental health conditions or sickness, unemployment status, carer status, and BMI. Weight loss outcomes were not significantly related to a client's importance or confidence in making change, and multi-programme attendance or COVID reconfiguration was also unrelated.

Figure 13. Likelihood of a 5% weight loss whilst using One You Lincolnshire between June 2019 to February 2022



Pathway attendance and completion

Table 8 presents **Implementation**, pathway attendance and completion results. The table shows whether pathway delivery and engagement were consistent with planned provisions. Available 'Move More' data underestimates attendance and completion rates as data on session attendances was not maintained. In contrast, the data for 'Eat Healthy' was more

dependable as the data linked to weekly weight records. The completion rate for Eat Healthy was 70%. OYL exceeded the NICE guidance criterion for weight management programmes of 60% or above for completion.

Table 8. One You Lincolnshire pathway attendance and completion

Tier-2 programme	Standard N sessions offered	Criterion n for completion	Mn attendance	(95% CIs)	% Meeting completion criterion
Stop Smoking	6 [†]	≥5	6.80	(6.70, 6.91)	63%
Move More	12	≥9	4.51	(4.44, 4.57)	26%
Eat Healthy	10	8	8.78	(8.67, 8.88)	70%
Drink Less	6	≥5	4.44	(4.28, 4.60)	46%
Health Coach	4	≥3	3.59	(3.49, 3.69)	56%



Note. Each referral ID contains a single attendance figure, which may in some cases reflect attendance across multiple programmes. Estimates were obtained by limiting to referrals that only contained outcome data for a single programme but may be inflated. [†]But can range up to 12 sessions as needed.

COVID-19 reconfiguration

Sustaining outcomes through challenging reconfigurations relates to the **Maintenance** of successful implementation. Effectiveness analyses showed that post-COVID reconfiguration did not significantly affect outcomes. Outcome effectiveness was maintained after transitioning from in-person to remote delivery. We also explored if OYL could maintain equitable access after service reconfiguration. As shown in Table 9, there were significant changes in the characteristics of the client base. There were changes in age, gender, deprivation, ethnicity, and disability. The changes indicated that some subpopulations were less well-represented post-COVID. **Reach** was enhanced through service reconfiguration in some ways. Enabling remote access to services and digital solutions overcame restrictions on in-person delivery. Remote access also allowed more open referral pathways, boosting commenced referrals from ~353 per month to ~668 per month. However, there were some evident inequities in the uptake of reconfigured services. Access seemed to be enhanced

for those from less deprived areas. As a result, the service moved further from the targeted representation of those from the most deprived areas.

Table 9. Significant differences in demographic profile of clients accessing services pre- vs. post-COVID

	 Pre-COVID	 Post-COVID
	In-person	Remote
Commenced referrals (n)	3,174	15,357
Mean Age	52.1	49.6
% Men	37%	31%
% From most deprived areas	45%	35%
% Ethnic minorities	9%	7%
% Long-term unemployed/sick	30%	24%

Limitations

Limitations must also be acknowledged. As is typical for real-world intervention evaluations, a pre-post design was used with no control group. Furthermore, client outcomes were self-reported using instruments suited to a clinical setting. As such, there was modest validity relative to gold standard research measures. However, the changes in measured health outcomes suggest that behaviour change was achieved. Whilst limitations might be seen as weaknesses for efficacy, the benefits of healthy lifestyles are well known. Hence, the primary contribution of this study relates to implementation outcomes.

Chapter 5 Economic Evaluation

Value Proposition

Definition

A value proposition is a ***"statement of the benefits and value that a service can deliver to its customers and prospective customers"*** (Barnes et al., 2009). Service provision involves contributions from stakeholders, and each stakeholder can be considered a customer receiving a service from another stakeholder. However, the primary customer is the patient. A value proposition differs from an economic evaluation in encompassing a range of value measures (Price and St John, 2019).

Application

The most quoted definition of value in health care is ***"health outcomes achieved per pound spent"*** (Porter, 2010). However, we recognise other dimensions of value in healthcare. Improving quality is integral to pursuing value in healthcare, and Donabedian (2002) advocated for quality healthcare to improve processes and outcomes. Therefore, the value proposition describes the nature of the service and the care pathway to which it contributes.

One You Lincolnshire's Value

Clients accessing OYL's integrated support service adopted healthy lifestyles. OYL success rates exceeded national benchmarks across behavioural outcomes of smoking, physical activity, healthy eating, and alcohol consumption. OYL's services show equities of the outcome. People from ethnic minority groups and rural areas were likely to benefit from integrated support recognising the interdependent nature of health behaviours. Integrated

care had a significant impact on outcomes. Support across pathways from a health coach and participation in multiple pathways increased success rates. Success was seen across weight management, physical activity, and alcohol reduction pathways. For example, the success rate for alcohol reduction clients without a health coach or engagement with multiple pathways was 2%.

Clients with a health coach support and engage with all pathways had a success rate of 75% for alcohol reduction. The synergistic effects of integration represent added value over siloed provisions. The effect translates into incremental cost-effectiveness compared to equivalent funding of a group of isolated providers. OYL serves over 16,000 people in Lincolnshire. The service has been able to pivot in challenging circumstances. Moreover, it continued to provide access to support throughout the COVID-19 pandemic. OYL maintained outcome success rates from pre- to post-reconfiguration. OYL also almost doubled client referral rates. The service has an established and tested infrastructure for regional delivery across different modalities. If sustained, outcomes delivered by OYL will lead to savings for the local health and social care system. As lifestyle-related conditions and disability-adjusted life years are reduced. Smoking cessation and alcohol reduction could increase disposable income within local communities.

Chapter 6 Discussion

Access and referrals to One You Lincolnshire

Overall accessibility to the service

This evaluation explored the reach of One You Lincolnshire (OYL) for eligible clients in the county. Secondary analysis and interviews found that most clients were white British and women. The average age of a client was around 50 years old, and there was an even distribution of clients from both rural and urban settings. Compared to the literature, the demographic of OYL reflected most weight-loss interventions. For example, most clients were white, female and from less disadvantaged groups (Haughton et al., 2018, Jackson et al., 2020). Additionally, most clients at the point of triage had a BMI categorised as obese. A key eligibility criterion of OYL was clients having a long-term health condition. Clients with LTHC are often more at risk of obesity and experience barriers to care (Betts and Froehlich-Grobe, 2017). As such, OYL was able to provide accessibility to a critical target group at risk of ill health.

Barriers for subpopulation groups

The underrepresentation of men in the service was explored in the qualitative interviews. Men reported reduced GP visits, perception of women-dominant programmes, and fear of seeking help. Indeed, a study by Wagner et al. (2007) found that reduced health-seeking behaviours in men were associated with limited health literacy. Literature shows that men were less likely to seek care than women, even with severe health problems (Schlichthorst et al., 2016). Among those aged 21 to 58, men consulted a GP half as often as women, and the difference was not explained by reproductive health reasons (Schlichthorst et al., 2016).

Ethnic minorities were also underrepresented in OYL. Previous lifestyle services also noted fewer minority groups accessing the service (Haughton et al., 2018). For example, Azar et

al. (2020) found that older ethnic minority groups had more significant barriers to services than the general population. Nevertheless, OYL clients that accessed the service were motivated, and most clients have a high confidence score to change and the importance to change at the start. Before the COVID-19 pandemic, most OYL clients were referred to the service via their GP. The use of annual NHS Health Checks was found to be better attended by older individuals (Coghill et al., 2018).

However, COVID-19 put a considerable strain on primary care. Qualitative focus groups highlighted the prioritisation of clinics on COVID-19 management. Also, the removal of face-to-face contact with patients resulted in fewer referrals to OYL via GPs. One major reconfiguration in the service was the introduction of self-referral. Secondary analysis revealed that the demographic of OYL changed with the new reconfiguration. For example, the average age of clients became younger. The demographic also was more women-dominant and had fewer ethnic minorities. Clients who were long-term unemployed and from deprived populations were also less likely to refer to the service. Interviews suggest that COVID-19 resulted in GPs encouraging potential clients to self-refer. Rather than initiating direct referrals, GPs relied on a client's health-seeking behaviour to follow up on the GPs suggestion. As such, groups with lower health-seeking behaviour may have been less likely to self-refer than if referred by GPs. Thus, men may be less likely to self-refer or visit a GP, making referral routes for men into the service difficult.

Meeting Commissioning Targets

Deprived groups live in the poorest neighbourhoods on low incomes. As such, populations often have limited access to safe living and health services. The commissioning target for OYL was 50% of clients from the 30% of most deprived LSOAs. However, OYL's reach was currently 38%. Extensive literature has shown that social inequities impact access to health services. When compared to other lifestyle services, OYL reflected similar accessibility barriers. Individuals living in more deprived neighbourhoods had poorer population health (Coghill et al., 2018). As such, complex health needs were more common in clients from deprived areas. Clients in OYL from deprived LSOAs were likelier to have long-term health conditions and poorer mental health.

Also, clients were more likely to have long-term unemployment, sickness, or substance dependencies. Complex unhealthy lifestyle behaviours may be an indicator of reduced service engagement. One study found that participants with many unhealthy lifestyles were 24% less likely to attend a GP appointment than those without (Feng et al., 2014). As disadvantaged groups are more likely to have complex health needs, they may have been less likely to engage in the referral routes OYL offered. Previous work has shown that unhealthy lifestyles cluster among low socioeconomic groups and deprived populations are less likely to seek primary healthcare. Thus, it is uncertain whether behavioural interventions in primary healthcare are reaching those in most need (Feng et al., 2014).

Barriers to alcohol reduction referrals

Excess alcohol consumption can impact older adults, and drinking has been shown to exacerbate long-term health conditions in older groups (Bareham et al., 2021). The average age of clients in OYL was 50 years old. Thus, alcohol reduction support was beneficial to existing OYL clients. However, OYL had low referrals to the alcohol reduction pathway. Health coach focus groups revealed that time-constrained care affected practitioners' ability to address clients. Previous studies show that alcohol-related conversations were not regularly part of a GP's work (Bareham et al., 2021). In the context of older populations, practitioners were deterred from talking. GPs mentioned concerns about sensitivity to the topic prevented discussions.

Also, competing priorities when addressing older people's complex health needs. GP interviews from this study highlighted the limited promotion of alcohol reduction to clients. Practitioners were more likely to recommend weight management and smoking cessation to clients. Practitioners found diet and smoking behaviours easier to infer than alcohol intake. These findings reflected existing literature on GP engagement with brief alcohol interventions. One study noted that GPs felt that assessing smoking status was 'straightforward'. Practitioners often determined physical activity from appearance, assessing if a patient was overweight (Ampt et al., 2009). In contrast, assessing alcohol intake was only during a formal health check. Therefore, a practitioner's congruence and capacity may influence alcohol pathway referrals. The relationship between patient-GP is thus key for lifestyle interventions (Johnson et al., 2010).

Client Outcomes of One You Lincolnshire

Overall service outcomes

Clients referred to OYL were likely to engage in the service's healthy eating and physical activity pathways. Most clients used one or two pathways whilst in the service, as exemplified in the case study of Sarah's story. Sarah discussed how she went to the service for Slimming World. After completing the 12 weeks, she was recommended for physical activity support by the health coach, which she took up. As a result, Sarah could use multiple pathways of the service. A review by Johns et al. (2014) found more significant weight loss in services combining diet and exercise compared to interventions focused on either diet or exercise alone. Therefore, OYL had better outcomes across all pathways than the standard level of care, with a higher percentage of clients meeting targets.

Physical Activity: online delivery, health coach support and deprived groups

28% of clients on the OYL physical activity pathway met the target of 150 minutes of moderate to vigorous exercise weekly. In comparison to 13-18% of patients that had used the national exercise referral scheme. Being a woman and older increased the likelihood of achieving 150 minutes weekly. Long-term health conditions were also more likely to achieve 150 minutes a week. Conditions affecting mobility and pain management were most common in the qualitative findings. The introduction of personalised online delivery may have favoured individuals with LTHCs. As Anna's case study described, online group exercise classes were beneficial for limited mobility. A study by Betts and Froehlich-Grobe (2017) found that limited mobility was a barrier to weight loss and exercise interventions. In-person weigh-ins and inaccessible transport reduced the feasibility of attending and completing interventions. Therefore, OYL presents an opportunity for physical activity for people with impaired mobility and LTHCs and meets the needs of growing evidence of weight-related disparities.

However, studies show that digital services are more likely to undermine disadvantaged groups. Poor access to mobile technology, Wi-Fi, or mobile data has been associated with

low user motivation for behaviour change (Szinay et al., 2020). Thus, online delivery may present opportunities and challenges to OYL delivery. A health coach and better attendance increased the likelihood of successful activity outcomes. McGuire et al. (2019) found that people receiving 1:1 and group support were more likely to engage in physical activity than in group sessions alone. Likewise, frequent meetings were associated with weight loss (Dansinger et al., 2007). OYL clients from more deprived areas with long-term unemployment were less likely to achieve 150 minutes weekly. A systematic review of low-income groups found that whilst people kept up with dietary changes, physical activity was less consistent (Bull et al., 2015). Evidence shows that one of the main reasons for individuals not achieving outcomes was incurred costs (Nagelhout et al., 2017).

Despite data finding that deprived groups were less likely to meet goals, OYL clients showed meaningful changes. After the intervention, interviews found that clients had greater confidence, motivation, and self-esteem. These factors are critical for sustained lifestyle changes (Male et al., 2022). Jong et al. (2020) highlighted that creating a supportive environment for behaviour change was essential for success. Thus, OYL encompasses not only physical activity but psychosocial well-being. However, Baumeister et al. (1998), Vohs and Heatherton (2000) found that human self-regulation draws on limited resources as such single behaviour change may benefit low-income groups. Thus, the most effective modality of lifestyle services may depend on the target group.

Weight loss: commercial programmes, older clients, and person-centred support

OYL exceeded NICE guidance of an average weight loss target of 3%. 33% of clients also achieved 5% weight loss. 40% of clients lost weight with external partners such as Second Nature and Slimming World. Similar studies have found positive outcomes from commercial weight-loss programmes. Allen et al. (2015) found that a 'free' GP referral to services that typically cost people money encouraged participation. Age was a predictor of weight loss, with older clients more likely to achieve losing weight. Also, clients with a health coach who attended more sessions were more likely to achieve a weight loss of 5%. Previous evidence found that 60-year-olds lost more weight than younger individuals and sustained significant weight loss (Svetkey et al., 2014).

Qualitative interviews revealed that clients valued ongoing person-centred support. Rapport with health coaches was viewed as encouraging, with positive relationships among many clients. The health coach interviews mentioned using proactive messaging. Messaging included motivational interviewing. Also, coaches engaged with clients and gave feedback on progress and tips. Celis-Morales et al. (2017) found that people with personalised support consumed less unhealthy food. Health coach interactions may influence client outcomes as higher engagement leads to greater effectiveness. Some clients discussed a preference for online, viewing group sessions as more accessible. To date, few studies have compared health coaching delivery. However, Appel et al. (2011) found improvement in weight with both remote and face-to-face support. Thus, the reconfiguration of OYL service delivery may offer a unique insight into online and face-to-face support.

Alcohol Reduction: age, deprivation, and physical activity

Despite low referral rates to OYL brief alcohol support, clients had successful outcomes. In comparison to 10-30% in standard interventions, 57% of OYL clients drank less than 14 units of alcohol a week. Older clients and 1:1 support were predictors that increased a client's likelihood of achieving the behaviour change outcome. The Royal College of Psychiatrists (2018) recommended that low-risk drinking for people aged 65 and over be drinking no more than 12 UK units per week. Older people are likely to be more sensitive to alcohol-related harm through the effects of ageing and have a higher risk of interactions with prescribed medications (Rao, 2020).

Another predictor was a client being referred to another OYL pathway. Alcohol support was suggested to clients through physical activity or weight loss, and coaches offered support through alcohol reduction for weight loss rather than dependency. Studies have shown that exercise may reduce alcohol consumption among hazardous drinkers (Rasmussen et al., 2021). Indeed, specific exercises may encourage more days of no drinking. For example, one study by Gunillasdotter et al. (2022) found that people who did yoga drank around 5.5 drinks less per week than those in the aerobic exercise group. Interviews revealed that deprived populations used the pathway less. One reason may be that alcohol treatment was often needed for individuals rather than brief advice. Evidence shows that individuals in the most deprived areas are less likely to drink but more likely to engage in heavy episodic drinking. Deprivation is associated with heavy episodic and frequent drinking (Fat et al.,

2017). Health coaches mentioned that the pathway faced stigmatisation, and support for alcohol reduction was still viewed as challenging by health professionals.

However, a key predictor of alcohol reduction was clients being in another pathway. Few scientific reports have investigated the effect of programmes targeting several lifestyle factors. However, one study found similar outcomes to OYL. Lee et al. (2009) showed that at-risk drinkers in integrated care were more likely to access treatment as such drinkers decreased harmful drinking more than those in the specific alcohol referral interventions.

Smoking cessation and mental health

56% of clients quit smoking for four weeks using OYL compared to 46% of patients using the NHS Stop Smoking Service. Older clients with a high confidence score were more likely to quit. In contrast, clients with previous attempts are less likely to quit. Also, clients with mental health conditions were less likely to quit. Studies have shown that changing behaviour is more difficult for service users with mental health conditions (**Bradley et al., 2021**). As such, there is a greater need to focus on confidence-building and readiness to change. As such, an improvement in mental health may significantly impact a client's ability to make physical health changes.

Working Relationships with One You Lincolnshire

Primary care practitioners and capacity

Primary care is crucial in preventive health care activities, with staff promoting smoking cessation, responsible alcohol consumption, weight control and physical activity (Schlichthorst et al., 2016). Studies reveal that GPs often recruit hard-to-reach populations (O'Hara et al., 2015). GPs were identified as a critical element of the OYL service model. Most clients expressed a high trust in GPs. Clients followed GP suggestions, often assuming that "the doctors know best". However, in this study, primary care staff presented some gaps in knowledge of the OYL service model.

Also, GPs expressed having limited capacity and time to engage with the referral process of the service. Health coaches and partners reflected on historical relationships with primary care clinics. Before the introduction of OYL, a key challenge was managerial capacity at primary care clinics, which limited clinics' buy-in to community services. Din et al. (2015) found a reluctance to promote physical activity to patients by GPs. The study identified several barriers to referral—for example, the time constraints placed on GPs. Also, the priority of physical activity about other health promotion activities (Din et al., 2015). As a result, OYL leadership found relationship building a critical need for service initiation and delivery. Interviews showed OYL had worked to gain buy-in from primary care clinics, and partners valued buy-in and viewed it as a critical facilitator for referrals into external programmes.

Quality assurance and data sharing

Quality assurance was a key commissioning strategy the evaluation aimed to evidence. Interviews revealed that quality was embedded into the service design as OYL leadership encouraged buy-in across teams and pathways. All OYL team members had consistent training in behaviour change, and continual learning was also embedded into the organisation. Vangen and Huxham (2000) suggested that trust was imperative for a successful partnership working. Relationships between OYL and service partners were positive, and consistent communication and trust were highlighted as critical strengths of the organisation. One factor that did vary between partners was data sharing. Each partner

organisation had different data-sharing processes and administration capacities. Also, referral routes had varied approaches to referring to the service. These areas may provide opportunities to streamline tasks, as Henderson et al. (2018) found that seamless data sharing between organisations often contributed to a consistent end product.

Service completion and sustainability of One You Lincolnshire

Pathway completion and service configuration

Lifestyle interventions often have sustained low changes reported. Completion and long-term changes were as complex as the factors influencing access to the intervention (Gidlow et al., 2005). However, many studies showed that close adherence to lifestyle modification resulted in a favourable outcome (Oh et al., 2018). OYL had a range of completion rates across the four lifestyle pathways. More than half of clients that took up stop smoking support had still quit four weeks later. Over half of the clients completed their sessions with a health coach, and over a quarter completed the physical activity and weight management programmes. However, there was limited data to explore the reasons for non-completers. Common challenges of non-completion of weight loss programmes were self-monitoring and low mood. Venditti et al. (2014) demonstrated that problem-solving weight loss programmes were associated with better outcomes. The sustainability of OYL can also be looked at through the organisation's ability to withstand risk and change as the service delivered all pathways for Lincolnshire residents during the COVID-19 pandemic.

Chapter 7 Recommendations and Conclusion

Improve access for disadvantaged groups

OYL had good access for most clients entering the service and reflected the demographic of the county. However, some clients were less well represented in the service. There may be a need for improved access for disadvantaged groups, men, and ethnic minorities. Previous studies found that individuals living in deprived areas preferred personalised care (Christensen et al., 2020). The role of the health coach was also valued. Coaches helped handle low moods and lack of motivation among vulnerable groups. Rapport building with a client started at the initial engagement. Coaches were able to address a client's willingness and ability to change. Then throughout the service, address triggers that affect a client's ability to sustain positive change.

As there were few clients from different ethnic groups, further research may be needed to understand rapport building. Social opportunity barriers included cultural identity linked to the consumption of traditional starches—also, the desire to perform physical activity that was culturally acceptable such as walking and dancing. The evaluation also highlighted signposting by health practitioners. Less direct referrals may have reduced the number of clients to reduced alcohol consumption pathways. The role of practitioners is a vital component of the service, and they are necessary for networking, integrating care elements, and showing leadership. The NHS Health Check was a key route into the service. Previous studies have also shown that inviting patients for an NHS Health Check is a predictor of attendance. Verbal, telephone, and enhanced letter invitations are predictors of attendance. In comparison to a traditional letter invite (Coghill et al., 2018). Thus, applying behavioural insights may be more effective at encouraging attendance to the health check and, in turn, OYL.

Innovative promotion of alcohol support

Phase 2 showed that alcohol reduction support had low referrals. Alcohol consumption was challenging for referral routes to promote as there was stigma toward receiving support. However, once on the pathway, clients had significantly improved outcomes compared to standard care. One unique feature of OYL was that most clients on the pathway were referred once in the service. Services supporting substance use have traditionally been delivered separately from other health care services. As substance use is seen as a social problem, prevention support is often not considered a responsibility of the health care systems. Alcohol reduction was promoted positively via weight loss with holistic health benefits. Thus, OYL may want to consider the promotion and social marketing of alcohol reduction.

Streamlining of data

Technology can play a crucial role in supporting integrated care. Electronic health has the potential to support quality, track patients, and identify trends and threats. As OYL had issues with Response 365 and some gaps in data, robust data systems could improve the organisation and usability of clinical data. Data sharing could help patients, health care professionals, and health system leaders coordinate care, promote shared decision-making, and engage in quality improvement efforts. Also, data systems could provide information in many languages, connecting patients with culturally appropriate providers. Exchanging treatment records among health care providers improves treatment and patient safety. However, given known discrimination based on race or substance use disorders, safeguards against inappropriate or inadvertent disclosures are essential when streamlining data sharing. Therefore, protecting confidentiality when exchanging sensitive information must be considered.

Conclusion

Integration is the systematic coordination of general and behavioural health care. Integrating services have been shown to provide a practical approach to supporting whole-person health and wellness. Too many patients fall through the cracks when health care is not well integrated and coordinated across systems. A lack of integration can lead to missed prevention or early intervention opportunities. Single behaviour changes interventions have been successful; however, OYL provides crucial evidence on the benefit of clients with multiple unhealthy risk factors. OYL outcomes exceeded all standard care across all four lifestyle risks and positive qualitative experiences from clients. Despite COVID-19, the service remained adaptable and successfully reconfigured service delivery. OYL was able to focus on local relationships and made strong connections with organisations in Lincolnshire. As such, OYL was able to create an integrated offer for clients, increased the likelihood of better outcomes and has the potential to reduce health disparities.

Acknowledgments

We want to thank the following individuals: Dan Rogers (Head of Service) and Jackie Williams (Head of Quality), for their continual support and guidance at One You Lincolnshire. Sally Bassett (East Midlands Public Health Research Specialty Manager), Liz Furnell (Study Support Facilitator), Marie Thompson (Study Support Service Divisional Manager) and Professor Pip Logan, Professor of Rehabilitation Research at the University of Nottingham, for support and help through the NIHR and the West-East Clinical Research Network (CRN). Also, thank you to members of the steering group, David Clarke, Katie Ferrett, Justin Jones, Jimmy Rushworth, Jenny Spence, Lisa Saunders, and Gary Baker, for contributing to this report's research design and analysis. All One You Lincolnshire staff who gave their time and dedication to recruiting participants. Individuals from Lincolnshire for participating in interviews and focus groups for this evaluation.

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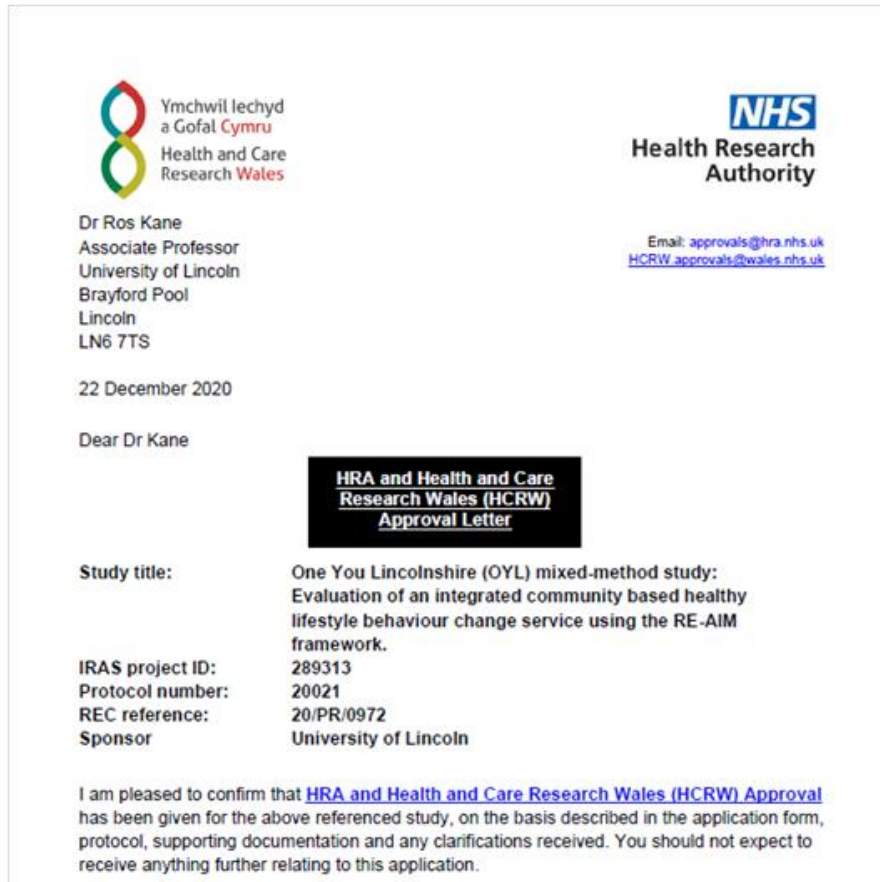
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List of Appendices

Appendix A: Health Research Authority (HRA) Approval



Dr Ros Kane
 Associate Professor
 University of Lincoln
 Brayford Pool
 Lincoln
 LN6 7TS

Email: approvals@hra.nhs.uk
HCRW.approvals@wales.nhs.uk

22 December 2020

Dear Dr Kane

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title: One You Lincolnshire (OYL) mixed-method study: Evaluation of an integrated community based healthy lifestyle behaviour change service using the RE-AIM framework.

IRAS project ID: 289313
Protocol number: 20021
REC reference: 20/PR/0972
Sponsor: University of Lincoln

I am pleased to confirm that [HRA and Health and Care Research Wales \(HCRW\) Approval](#) has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Appendix B: Sampling and recruitment framework

Participant Group	Sample Size
GP Staff (GPs, social prescribers, nurses)	4
Slimming World/Weight Watchers and Get Healthy Get Active Subcontractors	3
One Year No Beer, 28 Days	3
Adult Weight Management Lead, Alcohol Lead, Physical Activity Lead, Smoking Cessation Lead	4
Senior Triage Officer, Referral Generation Lead, Health Coach Team Lead	3
Adult Weight Practitioner, Man V Fat Coach	3

Triage Worker, Referral Generation Officer	3
Physical Activity Coach, Health Coaches	4
Stop Smoking Advisor, Pharmacy Facilitator	3
Total	30

Participant Group	Sample Size
Carer	2
BAME (Black and minority Ethnic)	2
Long Term Health Condition	2
LCC (Lincolnshire County Council) employees	2
Clients not motivated	2
Clients not eligible for service	2
Clients eligible but do not take up service	2
Tier 1 clients	2
Tier 2 clients	2
Low need support	2
Medium need support	2
High need support	2
Drop out clients	2
Clients that did not maintain sustained change	2
Clients that did maintain sustained change	2
Total	30

