

Prevention and Enablement Model Evaluation Report



November 2022

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Evaluation Consortium

This report was **written for the Essex County Council, Active Essex and partners by an Evaluation Consortium** led by the University of Essex. The current consortium comprises academics at the **University of Essex** and the **University of Suffolk**, and Commercial Partners at **State of Life**. This report summarises the evaluation findings in relation to the **Prevention and Enablement Model (PEM)** from **August 2020 to August 2022**. Some data in the report were collected within the **Essex Local Delivery Pilot (LDP)** evaluation contract, which ran between August 2019 and December 2021. In addition to members of the PEM evaluation consortium, the LDP evaluation team included other academics at the University of Essex, Brunel University and Sheffield Hallam University, and commercial partners. LDP evaluation [reports](#) and associated outputs from 2019-2021 are available to offer broader context to the current PEM report.

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Executive Summary

What is the Prevention and Enablement Model?

The Prevention and Enablement Model (PEM) is a test and learn initiative in Essex that launched in August 2020 with Adult Social Care at Essex County Council, Active Essex, and Sport for Confidence CIC as key strategic and delivery partners. PEM also brings together a diverse range of wider partners across Adult Social Care, the NHS, and the third sector (e.g., local councils, Essex County Council teams, Provider Quality Innovation Team, and care homes) in a whole system approach to improve the lives of people living with disabilities and/or long-term health conditions. Its overarching theme is to encourage and support people to be more active and is delivered via a system of unique partnerships across the county's Adult Social Care sector, with four interrelated workstreams: Care Homes, Community Partnerships (Reconnect), Physical Activity in Occupational Therapy, and Strength and Balance.

Objectives of PEM

1. **SYSTEM** - To develop system-led opportunities for disabled people and those with long-term health conditions and to encourage them to be active in their local community, reconnecting them to their local area.
2. **EMBED** - To embed physical activity in the system, and to redesign a targeted pathway to achieve this.
3. **WORKFORCE** - To create practice-based learning opportunities that transform ways of working by increasing the confidence and capability across the integrated workforce in using physical activity as a tool for health.
4. **IMPACT** - To test and learn the impact of this transformation and build a case to scale up across Essex.

Context: Why is PEM needed now?

Addressing physical inactivity is a global public health priority. Similar to other developed nations ([Guthold et al., 2018](#)), only 61.4% of adults in England and 59.3% of adults in Essex do 150 minutes or more of moderate intensity physical activity per week ([Active Lives data, 2020/21](#)). Further, certain groups have a higher prevalence of physical inactivity, including individuals with disabilities and/or long-term health conditions. This mirrors evidence beyond physical activity, with deteriorations in health and widening health inequalities across England ([Marmot et al., 2020](#)). [Heron et al \(2019\)](#) estimated the cost to the NHS of sedentary behaviour was £0.8 billion in 2016/17.

There have been numerous calls in Health and Adult Social Care to have a greater focus on prevention and integrated approaches rather than conventional intervention-focused practice (e.g., Anderson et al., 2021; [Care Act 2014](#); [NHS Long-Term Plan](#)). [Masters et al \(2017\)](#) conducted a review of international studies and found that the median Return on Investment of public health interventions was £14 for every £1 spent. By tackling physical inactivity in a progressive, preventative and integrated manner across Adult Social Care, Health and the

third sector, PEM could be a pioneering programme that enhances activity, wellbeing, and independence.

Evaluation Approach

The evaluation used a mixed methods approach to collect data from across the system to understand the design, implementation, and impact of PEM. Methods included questionnaires, interviews, focus groups, and reflective logs, along with looking at objective service use data and documentary analysis.

Key Findings

System-led opportunities

PEM has successfully developed a range of system-led, co-designed and context-specific opportunities to promote active lifestyles and connections within communities. These include:

- An integrated falls prevention programme
- Inclusive activity sessions in leisure centres
- Enabling and supporting Health and Social Care professionals to embed physical activity into their practice and everyday work

The reach of these opportunities continues to grow. In the last two years:

- The Community Partnerships sessions have had over 900 unique users in total, and an average of over 800 attendances per month.
- The follow-on sessions within the integrated falls prevention programme have had an average of 150 attendances per month.
- The majority of people who accessed these services had a disability or long-term health condition.

Although physical activity is central to many opportunities, it is often a tool to enable independence and wider outcomes. The success of developing and implementing system-led opportunities was underpinned by initial work to understand existing provision and identify evidence-based and place-based solutions that met the needs of individuals, groups, and communities. PEM has provided choice and empowered individuals and groups.

The evolving restrictions of the COVID-19 pandemic was a key challenge that impacted the design, implementation, and reach of PEM, and necessitated a flexible and agile approach. Further, a number of individuals who attended PEM sessions have become long-term attendees. Although these sessions provide opportunities for the individuals, it is important to consider the intended function of PEM or similar programmes, specifically whether they should be a perpetual service that people become regular and long-term users of and/or an opportunity to develop skills, confidence and the ability to access a wider range of services in the community.

Embedding physical activity

Beyond the provision of opportunities, PEM has made excellent progress to embed physical activity and a preventative focus across the Essex system. There is an exciting and ongoing shift in culture and practice in Health and Social Care, particularly in Care Homes and Occupational Therapy. However, there has also been a ripple effect to other Healthcare Professionals who have interacted with PEM. The work of a number of Care Homes was recognised in the [NHS East of England Winter Deconditioning Games](#).

The successful embedding of physical activity across the system has been underpinned by a number of factors including:

- Understanding the system and leverage points
- Facilitative leadership
- Alignment with national policies
- Individuals and organisations across the system developing a shared vision and working in a collaborative and integrated manner

Despite the success, interviewees recognised that work is still needed to further improve how different services and Healthcare Professionals can work more effectively together. Further, it is important for all individuals and organisations who interact with people who access PEM services to receive education and support to understand the varied needs of individuals with disabilities and long-term health conditions and to help facilitate a holistic and positive experience for them.

Workforce development and practice-based learning

A key focus and success of PEM was to develop knowledge, skills, and capacity in the Health and Social Care workforce through training and education. Baseline data highlighted that:

- Care Home staff and Occupational Therapists had received limited or no training in physical activity promotion
- They typically discussed physical activity with fewer than half of their service users
- Conversations typically focused on general physical activity rather than muscle strengthening activity and breaking up sedentary behaviour
- Barriers included such as time, knowledge, skills, resources, and support

Recipients highly valued the training, not just for the knowledge and skills that it developed, but also the opportunity to build networks to share best practice. Alongside workshops, a key driver of success was the provision of ongoing mentorship. Through this work, PEM has enabled, developed, and supported many of the workforce to embed physical activity into their daily practice and has enhanced their job satisfaction. A number of Occupational Therapists also reported that PEM has taken them back to their professional roots and stimulated conversations across the sector.

Some interviewees, however, suggested that co-design could be strengthened in the development of future education to ensure that contextual factors are fully recognised. Further, even after training, some members of the workforce appeared to see physical activity as something that *could* be discussed with *some* individuals rather than a topic that *should* be discussed with *most*.

The impact and cost effectiveness of PEM

Beyond the points above regarding the provision of opportunities, embedding physical activity and workforce development, qualitative insights revealed that people who accessed PEM services perceived themselves to have experienced a number of benefits including enhanced:

- Health
- Wellbeing
- Confidence
- Skills
- Routine and structure
- Independence

Similarly, self-report quantitative data suggested that PEM has a demonstrable and significant impact on physical activity and wellbeing. Individuals who had participated in PEM for longer, had higher physical activity levels, and more favourable attitudes to physical activity, wellbeing, subjective health, and self-efficacy.

Data were compared to the [Active Lives Survey](#), a nationally representative survey. This comparison suggested that PEM may have the effect of lifting a person living with a disability or long-term health condition to similar physical activity levels and wellbeing as typically reported by non-disabled people. These effects were mostly still apparent even after controlling for demographic variables. This suggests that PEM could play a crucial role in reducing health inequalities between individuals with and without long-term health conditions. However, the limitations of the PEM research design means causal relationships cannot be inferred.

Self-reported service use (i.e., day care, formal/informal support, GP visits, ambulance calls, and hospital visits) also showed a slight decrease in people who accessed PEM services.

- A *tentative* estimate is that this reduction in service use equates to a cost saving of £365.23 per PEM participant per year split across Adult Social Care (£163.34) and the wider system (£201.90).

Further, a novel aspect of the evaluation was the work of State of Life to follow the 2021 [Wellbeing Supplementary Guidance in the Treasury's Green Book](#) and apply the treasury recommended WELLBY to monetise the wellbeing value of PEM. Taking the difference reported by individuals about to start PEM to those with over one month of involvement in PEM, this difference in life satisfaction is estimated to equate to a monetary value of £22,230 per person per year.

Scaling the value of reduced service use and higher life satisfaction to the typical number of unique users in Community Partnerships/Reconnect (where most data were collected) suggests that the total annual social value could exceed £20 million. When this benefit is considered against *direct* running costs, PEM could deliver up to an estimated £58.71 of social value per each £1 invested. This is mainly due to the extremely high association between participation in the programme and improved personal wellbeing. That is, within

the £58.71, the value of reduced service use equated to 95p compared to the value of increased wellbeing of £57.76.

Higher levels of wellbeing may deliver social value through potentially enabling individuals to engage in employment, volunteering, and other activities, and thus potentially bringing direct and indirect benefits to Adult Social Care, Health and wider society. Although some of these benefits may be directly quantifiable savings to specific parts of a system, other benefits may be more qualitative, and harder to quantify and attribute to system settings. To provide more robust and certain estimates of both the social value and specific savings within the system, future evaluation should seek to include estimates of indirect costs, increase the sample sizes across all PEM workstreams, track individuals over time, and use additional objective data on service use and cost benefits.

Key Recommendations

System-led opportunities

It is important to develop further understanding of the needs and resources within systems. Opportunities that adopt a whole systems, place-based and preventative approaches should then be co-produced and co-funded (e.g., Health and Social Care). Opportunities and programmes should be evidence-based, integrating community insight, scientific evidence, and the tacit knowledge of Health and Social Care Professionals.

Embed physical activity

It is important to more strongly embed physical activity into Adult Social Care, Health and wider systems, and ensure targeted pathways are sustainable. Additional political supporters and organisations within the system should be identified, and partnerships developed around a shared vision and common language.

Workforce

Education should be extended to reach more Care Home staff, Occupational Therapists, and other Healthcare Professionals. Workshops should be co-designed with some Care Home staff, Occupational Therapists, and other professionals to ensure that the content is tailored to different contexts and perspectives. Further ongoing support including mentoring and infrastructure would help to ensure the workforce is able to continue to deliver physical activity in many contexts. Longer-term changes to working practices should be monitored and evaluated.

Impact

PEM or similar preventative programmes should be developed to apply the learning from the current Test and Learn programme, but maintaining a focus on people living with disabilities and/or long-term health conditions. Monitoring and evaluation should track individuals over time and integrate additional objective measures of service use to understand the longer-term impact and benefits across the system.

Introduction

What is PEM?

The Prevention and Enablement Model (PEM) is a test and learn initiative in Essex that launched in August 2020, with Adult Social Care at Essex County Council, Active Essex, and Sport for Confidence CIC as key strategic and delivery partners. PEM adopts a whole systems change approach in Adult Social Care to improve the lives of people living with disabilities and/or long-term health conditions, and encourage and support people to be more active, happier, and live more independently. To achieve this, an innovative and progressive programme was developed and implemented that drew together a system of unique partnerships across the county spanning the Adult Social Care, the NHS, and the third sector (e.g., local councils, Essex County Council teams, Provider Quality and Innovation Teams, and care homes) with physical activity at the core of day to day interventions.

PEM focuses on four key objectives across four workstreams covering Tendring, Colchester and Basildon – the three Essex Local Delivery Pilot (LDP) localities. The Essex LDP is one of 12 sites funded by Sport England to test innovative whole systems approaches to tackle physical inactivity and improve wider social and economic outcomes. Since its inception in 2017, the Essex LDP has developed and implemented a broad range of innovative programs, structures and actions, and provided initial funding and support for PEM.

PEM vision

The PEM vision is to ensure that all Essex citizens can be active, be a member of their community, be happy, and live independently.

Objectives of PEM

1. **SYSTEM** - To develop system-led opportunities for disabled people and those with long-term health conditions and to encourage them to be active in their local community, reconnecting them to their local area.
2. **EMBED** - To embed physical activity in the system, and to redesign a targeted pathway to achieve this.
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4. **IMPACT** - To test and learn the impact of this transformation.

PEM workstreams

1. **Care Homes** - An education programme and monthly mentoring from an Occupational Therapist and Provider Quality Innovation Team for Care Home staff to enable and support the integration of physical activity into practice.
2. **Community Partnerships (Reconnect)** - A programme of community-based inclusive sport sessions delivered by Sport for Confidence in local leisure centres.
3. **Physical Activity in Occupational Therapy** - A practice development programme for Occupational Therapists to enable and support the integration of physical activity into practice.

4. **Strength and Balance** - An integrated community-based strength and balance pathway that followed existing Otago sessions to provide 'step-on' provision to sessions delivered by Sport for Confidence in local leisure centres.

Note, only the Community Partnerships and Strength and Balance workstreams were still delivering at the time of this report.

Context: Why is PEM needed now?

Addressing physical inactivity is a global public health priority. Inactivity is associated with a range of health problems such as increased risk of heart disease, obesity, Type 1 diabetes and some cancers, and [Heron et al \(2019\)](#) estimated the cost to the NHS of sedentary behaviour was £0.8 billion in 2016/17. The [UK Chief Medical Officers' Physical Activity Guidelines](#) recommend that adults should aim to be physically active every day, do muscle strengthening activities on at least two days a week, accumulate at least 150 minutes of moderate intensity activity (or 75 minutes of vigorous activity, or shorter bouts of very vigorous activity or a combination of these), and to minimise sedentary time. However, similar to other developed nations ([Guthold et al., 2018](#)), only 61.4% of adults in England do 150 minutes or more moderate intensity physical activity per week and only 42.8% do two or more sessions of muscle strengthening activity per week ([Active Lives data, 2020/21](#)). Figures in Essex are 59.3% (see Table 1) and 43.3% respectively.

Table 1. *Estimated percentages of individuals across England, Essex and Local Authorities in Essex who exceeded 150 minutes of physical activity a week (data from: <https://activelives.sportengland.org/Home/AdultData>)*

Location	Nov 15-16	May 16-17	Nov 16-17	May 17-18	Nov 17-18	May 18-19	Nov 18-19	May 19-20	Nov 19-20	May 20-21	Nov 20/21
England	62.1	62.0	61.8	62.3	62.6	63.2	63.3	62.8	61.4	60.9	61.4
Essex	61.0	61.5	61.1	61.6	63.0	62.7	61.6	61.6	61.7	59.8	59.3
Basildon	61.7	60.1	57.1	57.6	57.2	60.3	60.3	56.4	54.1	55.1	57.4
Braintree	50.1	58.1	63.1	66.2	62.4	61.0	62.0	58.0	58.2	58.0	56.9
Brentwood	65.2	68.8	67.6	62.3	63.6	68.6	70.7	68.6	66.7	66.4	64.7
Castle Point	64.3	56.2	54.2	58.0	64.7	64.4	58.9	57.7	61.1	58.9	57.6
Chelmsford	61.5	63.0	64.6	59.0	58.1	66.6	65.6	63.8	66.2	65.5	62.8
Colchester	68.4	64.6	62.2	64.0	63.9	63.9	66.7	71.7	70.0	59.5	57.6
Epping Forest	66.0	64.1	63.5	64.6	64.1%	64.1	62.3	61.8	61.7	61.2	62.8
Harlow	57.4	61.6	59.7	55.7	58.2	59.1	57.8	57.6	56.8	54.8	54.5
Maldon	60.3	61.3	62.5	65.3	64.4	67.1	63.6	66.7	67.8	62.6	61.2
Rochford	59.7	63.2	65.8	65.3	66.2	65.5	62.8	58.4	58.0	60.8	60.6
Southend-on-Sea	63.4	58.6	59.3	64.5	58.3	56.1	59.8	60.9	59.4	57.6	57.5
Tendring	54.1	54.8	52.1	55.8	56.8	53.9	54.4	55.9	57.8	53.7	53.8
Thurrock	51.7	52.9	54.9	57.9	57.0	56.3	54.0	51.1	51.5	52.7	50.2
Uttlesford	63.5	65.5	65.4	66.7	67.2	68.8	69.5	62.7	63.0	66.0	67.2

Beyond those overall statistics, certain groups have a higher prevalence of physical inactivity and sedentary behaviour, including individuals with disabilities and/or long-term health conditions. For example, in Essex, only 44.7% of individuals with a disability or long-term health conditions do 150 minutes or more of moderate intensity physical activity per week ([Active Lives data, 2020/21](#)). Further, COVID-19 has compounded and perpetuated these inequalities in participation levels. This mirrors evidence beyond physical activity, with deteriorations in health and widening health inequalities across England ([Marmot et al., 2020](#)). Now, more than ever, there is a need to innovate to support disabled people and people with long-term health conditions to move more and to tackle health inequalities.

Preventative approaches

There have been numerous calls in Health and Adult Social Care to have a greater focus on prevention and integrated approaches rather than conventional intervention-focused practice. For example, the [NHS Long-Term Plan](#) emphasises the importance of reducing growth in demand for care via improved integration and prevention. A recent [LSE-Lancet Commission](#) on the future of the NHS made a number of recommendations including to strengthen the prevention of disease and disability and preparedness to protect against threats to health, to develop a sustainable, skilled and inclusive health and care workforce, and to improve integration between health, social care, and public health across different providers (Anderson et al., 2021).

The NHS Long Term Plan 33

Chapter 2: More NHS action on prevention and health inequalities

2.1. Demand for NHS services continues to grow, for at least five separate reasons. The first three are either desirable or unavoidable:

- **our growing and ageing population**, inevitably increasing the number of people needing NHS care and the intensity of support they require;
- growing visibility and concern about areas of longstanding **unmet health need** (for example in young people's mental health services);
- **expanding frontiers of medical science and innovation**, introducing new treatment possibilities that a modern health service should rightly be providing (for example, new cell and gene therapies).

2.2. But the second set of demand drivers are potentially modifiable by:

- action set out in the previous chapter to redesign healthcare so that people get the right care at the right time in the **optimal care setting** (for example, providing better support to people living in care homes to avoid emergency hospital admissions; providing better social care and community support to slow the development of older people's frailty; and fundamentally redesigning outpatient services so that both patients' time and specialists' expertise are used more appropriately);
- improving **upstream prevention** of avoidable illness and its exacerbations. So for example, smoking cessation, diabetes prevention through obesity reduction, and reduced respiratory hospitalisations from lower air pollution. This can also be achieved through better support for patients, carers and volunteers to enhance 'supported self-management' particularly of long-term health conditions.

Figure 1. Excerpt from the NHS Long-Term Plan (NHS, 2019).

“Renew the focus on and provide funding for prevention and health promotion within the NHS and relevant sectors and evaluate the return on these investments. As part of this renewed focus, each constituent country should develop and implement a strategy across government departments to promote health, wellbeing, and equity in all public policies.” ([Anderson et al., 2021](#)).

Further, the [Care Act 2014](#) requires local authorities to ensure that they integrate wellbeing into Health and Social Care provision with an aim to prevent or delay health related issues and hospitalisation. The concept of wellbeing is broad in its definition and encompasses all things that may assist an individual with an illness or impairment to live balanced lives, both safely and independently ([SCIE, 2020](#)).

“Prevention is about helping people stay healthy, happy and independent for as long as possible. This means reducing the chances of problems from arising in the first place and, when they do, supporting people to manage them as effectively as possible. Prevention is as important at seventy years old as it is at age seven.” ([Department of Health & Social Care, 2018](#), p. 4).

As noted in a report by the [Department of Health & Social Care](#), the economic value of preventative health is significant. [Masters et al \(2017\)](#) conducted a review of international studies and found that the median Return on Investment of public health interventions was £14 for every £1 spent. More [recent work by State of Life](#), using the new, treasury recommended WELLBY measure, found that ‘parkrun’ could be up to 25 times more cost effective than the NHS at producing health benefits. The new treasury [Green Book](#) emphasises the importance of welfare economics, wellbeing and a WELLBY measure that is benchmarked to the NHS measure of economic cost and value the QALY has enabled an startling analysis to show how valuable prevention is compared to cure. This could help herald the long sought after revolution in healthcare that shifts more investment to preventative healthcare than a costly and overburdened treatment model.

By tackling physical inactivity, PEM is therefore a pioneering programme that seeks to address the wellbeing of this population using physical activity as a tool within a whole systems and preventative approach - it is timely, cost efficient, relevant, and essential. And now, for the first time, we can estimate how this compares to the NHS cost of healthcare.

“There is a massive focus within Health and Social Care on how we shift from long-term care and support prevention and early intervention and obviously social care has a legal responsibility to promote wellbeing, as part of the Care Act.” PEM Strategic team member

Whole systems approaches

There is increasing interest in the role of whole system approaches to tackle public health issues, including increasing physical activity levels and reducing health inequalities. For

example, the [World Health Organisation European Region’s Physical Activity Strategy](#) emphasised the importance of integrated, multi-sectorial and partnership based approaches, alongside other guiding principles such as empowering people and communities, adaptability of physical activity programmes and the use of evidence-based strategies. Similarly, the [World Federation of Occupational Therapists endorsed the WHO strategy](#) and highlighted the role and commitment of Occupational Therapists in working with governments at all levels, non-governmental organisations and service users to address and implement the strategy.

Despite the above, evidence of how to operationalise and implement whole system approaches in Health and Social Care issues is limited. Therefore, it can be difficult to decide how to direct, plan and evaluate such efforts ([Bagnall et al., 2019](#)). The LDP and PEM have exciting potential to generate insight and learning that can contribute to the emerging evidence-base to tackle physical inactivity, health inequalities, and wider health issues. The LDP evaluation team drew on existing literature (e.g., [Bagnall et al., 2019](#); [World Health Organisation, 2018](#); [NICE, 2010](#)) to develop the ten features of successful whole systems approaches to tackling physical inactivity. These are shown in Figure 2 and they informed the evaluation of PEM through providing a frame of reference to understand the progress of PEM and key factors that have contributed to its successes and challenges.

A whole system approach is a method by which whole system change can be achieved. It is defined as: “...an ongoing, dynamic and flexible way of working. It enables local stakeholders, including communities, to come together, share an understanding of the reality of the challenge, consider how the local system is operating and where there are the greatest opportunities for change. Stakeholders agree actions and decide as a network how to work together in an integrated way to bring about sustainable, long-term systems change” ([Public Health England, 2019](#), p. 17).



Figure 2. Ten features of a successful whole systems approach to tackling physical inactivity (Essex LDP Evaluation Report, 2022; Bagnall et al., 2019; NICE, 2010; World Health Organisation, 2018). See [Appendix](#) for definitions.

PEM logic models

At the start of the PEM programme, the PEM leadership team for each workstream started to develop logic models. These highlighted the intended activities, participation, and outcomes. These were refined through the programme and shaped the implementation and evaluation of PEM. The [appendix](#) provides an example of the logic model from the Strength and Balance workstream and the key outcomes in the logic model of each workstream.

“When the project plans were designed, every work stream then had a working group attached to it, which then met regularly and developed a logic model and reviewed it with regular meetings with an allocated lead. Those meetings have meant that you're constantly having to come back and report on what you're doing and why you're doing.”
PEM Strategic team member

Aim of this report

The aim of this report is to summarise evaluation findings in relation to PEM from August 2020 to August 2022. The report is structured around the four key objectives of PEM. It highlights key findings relating to both successes and challenges within the four objectives, and then provides evidence-based recommendations that have been formulated from the evaluation findings. This report is not a detailed examination of each PEM workstream in isolation, but rather considers PEM as one overarching programme. However, activities, examples, and learning from unique workstreams are provided where they help to understand the design, implementation, and impact of PEM.

Evaluation approach

The evaluation used a mixed methods approach to collect data from across the system and to examine the design, implementation, and impact of PEM. We drew on the Medical Research Council's guidance on the process evaluation of complex interventions ([Moore et al., 2015](#)). In doing so, we were not only interested in the outcomes of PEM, but also learning relating to the design, implementation, reach, and the influence of context (Moore et al., 2015). The data collection was informed by the logic models developed by the PEM team and methods used in the wider evaluation of the Essex LDP. The methods are described below and Table 2 summarises the methods, purpose, participants, and the workstream and objective they addressed.

For all aspects of the evaluation, we obtained the relevant research governance permissions and approvals. For example, ethical approval for the evaluation was granted by an Ethics Review committee at the University of Essex, and the Strength and Balance evaluation was registered with North East London NHS Foundation Trust and East Suffolk and North Essex NHS Foundation Trust as this workstream had referrals via NHS pathways.

Interviews

We conducted 29 semi-structured interviews (Mean duration = 34.8 minutes) with key stakeholders including people who accessed PEM services and their carers, Essex County Council and Active Essex staff, commissioners, and leaders and deliverers of PEM workstreams to explore the design, implementation, and impact of PEM and to understand the successes and challenges. Interviews focused primarily on PEM, but some explored wider aspects of the LDP. Interviews were conducted online or in person and were recorded and transcribed for subsequent analysis. Due to interviewee circumstances, one interview was not audio-recorded but the interviewer took comprehensive notes, which were included in the analysis alongside the transcripts.

Focus groups

We conducted 11 focus groups (Mean duration = 43.5 minutes) with a range of individuals including leaders and key staff within PEM workstreams, carers, and people who accessed PEM services. Focus groups were useful for bringing together groups of people to discuss a shared experience or issue. Focus groups typically involved 3-6 participants. The facilitator had a list of questions and prompts to facilitate discussion between participants, and to gain a sense of where experiences or views were similar or differed. Focus groups were conducted online or in person and were recorded and transcribed for analysis.

Reflective logs

Reflection is a way that individuals and systems learn from an experience to enhance understanding and development ([Andrews, 2000](#)). Drawing on work undertaken in the Essex LDP, we adopted the Driscoll model of reflection ([Driscoll, 2006](#)) as a framework to elicit reflections and learning within PEM. The model is orientated around three questions: What? So What? Now What? A total of 24 reflective logs were completed by leaders and

workforce in PEM based on those three questions to capture learning after a significant event or issue.

Questionnaires

We designed and used questionnaires within the PEM to collect information from a) the workforce who participated in training workshops/events and b) people who accessed PEM services. Questions were primarily a closed response format (i.e., a list of options on a scale), but the workforce questionnaire included some open response format (e.g., to provide brief reflections on the training and impact). Many of the questions had been used in Essex LDP and were taken from established and validated questionnaires to allow comparisons to national-level datasets. Participants typically completed the questionnaires online, although paper copies were available.

Workforce questionnaires

A total of 78 baseline workforce questionnaires were completed (27 in the Care Home workstream, 44 in Physical Activity in Occupational Therapy, and 7 the workstream was not reported) from the workforce training events. Participants were predominantly female (83.1%) and white (80.5%), with a range of ages (e.g., 25-34: 22.6%; 35-44: 22.6%; 45-54: 26.2%). The workforce were asked questions around their role, perceptions of advising service users on physical activity, previous training around physical activity, and perceptions of PEM. All participants from the baseline sample were invited to complete a follow-up survey 6 months later, but only 6 responses were received. As such, no quantitative analysis was viable on the follow-up data, but qualitative reflections were analysed.

Questionnaires from people who accessed PEM services

A total of 190 service user questionnaires were completed (82 by service users and 96 from carers by proxy, the remainder being partially or fully blank). Questions focused on their health, wellbeing and length of participation in the PEM programmes. These surveys, designed in collaboration with the PEM workstreams, had at the core the key questions and approach recommended in the [HM Treasury 2021 Supplementary guidance](#) on measurement and evaluation of wellbeing. As such, we were able to analyse and apply the new, innovative and progressive measures of economic value for wellbeing that serve also as an important tool to understand the economic value of preventative health measures like physical activity, mental health, and community interventions.

Alongside wellbeing questions there were also a new set of questions designed to track self-reported changes in use of NHS services like GP visits and ambulance call outs. This was, and is very experimental, and the methodology was developed to deal with any absence of objective data on actual service use. The findings should be treated as indicative given the novel approach used.

Objective service use

Within the Care Home workstream, we were provided data from the East of England Ambulance Service on the frequency, nature, and cost of 999 and 111 calls made from each

care home involved in PEM along with ambulance visits. Data spanned 2019 (i.e., pre-PEM) to July 2022, which allowed examination of potential changes in the number of and reasons for 999 and 111 calls and ambulance visits before and during PEM.

Documentary analysis

Documentary analysis involved reviewing documents in relation to PEM to understand the need for PEM, and how it aligned with, and informed, local and national policy and practice in Adult Social Care and Health.

Table 2. Data collections methods, purpose, participants, and the workstream and objective they addressed.

Data Source	Purpose	Participants	Workstream				Objectives			
			CH	PAOT	CP	S&B	System	Embed	Workforce	Impact
Interviews	To explore the design, implementation, and impact of PEM	Leaders, deliverers and key stakeholders	✓	✓	✓	✓	✓	✓	✓	✓
Interviews	To explore experiences within and impact of PEM	Service users and carers			✓	✓	✓	✓		✓
Reflective logs	To capture key learning from PEM	Leaders and workforce	✓	✓	✓	✓	✓	✓	✓	✓
Focus groups	To explore the design, implementation, and impact of PEM	Leaders and key stakeholders				✓	✓	✓	✓	✓
Focus groups	To explore the implementation and impact of PEM	Workforce	✓				✓	✓	✓	✓
Focus groups	To explore experiences within and impact of PEM	Service users and carers			✓	✓	✓	✓		✓
Questionnaires	To explore the need for and impact of training in PEM	Workforce	✓	✓					✓	✓
Questionnaires	To explore the impact of PEM on individual outcomes and perceived service use	Service users			✓	✓				✓
Objective service use data	To explore the impact of PEM	Service users	✓							✓

Notes - CH: Care Homes; PAOT: Physical activity in Occupational Therapy; CP: Community Partnerships/Reconnect; S&B: Strength and Balance

System-led opportunities to promote active lifestyles and connection with communities

Key Findings

- PEM developed a range of **system-led, co-designed, and context-specific opportunities** to promote active lifestyles and connections within communities.
 - e.g., **integrated falls prevention programme, inclusive activity sessions** in leisure centres, and supporting Health and Social Care professionals to embed **physical activity into practice**.
- **Over 900 unique users** have attended the integrated falls prevention programme and community-based sessions, with an average of **over 1000 attendances per month**.
- Success was underpinned by understanding existing provision, **building on strengths and assets**, developing **evidence-based and place-based solutions**, and ensuring opportunities were **inclusive, flexible and supportive**.

Understanding existing provision and opportunities for PEM

The first objective of PEM was to develop system-led opportunities for people living with disabilities and long-term health conditions. Initial work included workshops and mapping current provision within the LDP areas and more widely across Essex to build on strengths and address gaps. Stakeholders were engaged early in the process and have evolved and grown in numbers over time. These contributed a myriad of knowledge, resources, and expertise of working within Health and Social Care and with different groups contributing to the co-design of place-based, context-specific solutions. A number of opportunities and projects were subsequently identified within the four workstreams.

“We had quite a lot of engagement first of all. And it was very much based on, with varying partners across the system to try to understand and kind of start to gauge how people kind of associated physical activity and how it was being used... We did a series of workshops, and I think that some of the outputs of that is really important in us developing PEM as a model.” PEM Strategic team member

Evidence-based practice

Alongside the insight obtained by stakeholders across the system including service users, the PEM Design and Delivery team emphasised the importance of basing decisions on contemporary scientific evidence. For example, the whole systems approach aligns with the call for systems-thinking and integrated approaches to promote physical activity and tackle health inequalities (e.g., [World Health Organisation, 2018](#)). The Strength and Balance workstream offers a transition pathway from an existing commissioned Otago Exercise Programme (delivered by NELFT and ESNEFT). Falls prevention programmes and strength and balance training have been shown to reduce fall and reduce hospital admissions in a cost-effective manner ([Public Health England, 2018](#)).

“When you first start out with an idea, you have to base it on evidence and you have to base it on the need.” PEM Delivery team member

In the Strength and Balance pathway, following a 12-week Otago programme that was separately commissioned by the NHS via iBCF funding, individuals could progress on to Stronger My Way sessions. In these integrated services, attention was paid to the importance of step-on provision and support to facilitate successful transitions. For example, Healthcare Professionals from the step-on provision attended some of the Otago sessions to build relationships with, and provide support to, individuals. The duration, design and content of specific sessions also reflect current evidence and guidelines.

“So with the Strength and Balance pathway that we have created, with that is that they do their 12 weeks with [NAME], the physio assistant. They do a PSI pathway so they do they exercises for 12 weeks and we then do a six week transition period where they come to us and we do six weeks of activities that they can do in the leisure centre so that it gives them a taste of what they can do...and then after the six weeks transition sessions we then support them to come to our sessions so there is that longevity and pathway. So they don't just go to a physio and do 12 weeks and that is it. We want them to continue so that the work that the physios have done is sustained and maintained in the community.” PEM Delivery team member

Current scale and reach of PEM

Following initial work to understand the existing system and opportunities, a multi-faceted programme was developed within PEM and the specific workstreams. This included the provision of sessions for members of local communities (e.g., see example Community Partnerships/Reconnect sessions in Figure 3), integrated services (e.g., in Strength and Balance workstream), and workforce development (e.g., training sessions in Care Homes and Physical Activity in Occupational Therapy workstreams).

STRONGER MY WAY
AIMED AT OLDER ADULTS (DEMENTIA FRIENDLY)
Mondays 11.00-11.45am SPORTS HALL

DANCE
Mondays 12.00-1.00pm SPORTS HALL

FUN FITNESS
Mondays 1.30-2.30pm SPORTS HALL

RACKET SPORTS
Mondays 3.30-4.30pm SPORTS HALL

CYCLING
BOOKING REQUIRED
Tuesdays 10.00-11.00am
Colchester Sports Park
Cuckoo Farm Way
Colchester CO4 5YX

SUPPORTED GYM PROGRAMME
BOOKING REQUIRED
Wednesdays 10.00-10.45am

BOCCIA
Wednesdays 11.00am-12.00pm SPORTS HALL

MULTI-SPORTS
Wednesdays 12.30-1.30pm SPORTS HALL

FOOTBALL
Wednesdays 2.45-3.45pm SPORTS HALL

GYMNASTICS*
Mondays 11.30am-12.30pm
*AT THE EVERSLEY CENTRE, PITSEA

STRONGER MY WAY
BEING STRONGER LETS YOU DO MORE,
FEEL BETTER & STAY ACTIVE
Mondays 1.45-2.30pm

SENSORY FRIENDLY & THERAPEUTIC SWIMMING
Mondays 3.00-3.45pm

AQUA
Thursdays 2.30-3.15pm

FOOTBALL FITNESS
Mondays 5.30-6.30pm

TABLE TOP TIME
Mondays 6.45-7.30pm

TRAMPOLINING
Tuesdays 9.45-10.30am
& 10.45-11.30am

TRACK SESSION
Tuesdays 10.00-10.45am

BOCCIA
Tuesdays 12.00-12.45pm
& 1.00pm-1.45pm

MULTI-SPORTS
Tuesdays 2.45-3.45pm
Wednesdays 1.00-1.45pm

CRICKET
Tuesdays 1.45-2.45pm

LOVE TO MOVE
AIMED AT OLDER PEOPLE AND
PEOPLE LIVING WITH DEMENTIA
Thursdays 11.45am-12.30pm

CREATIVE DANCE
Thursdays 12.45-1.45pm

NETBALL
Fridays 12.00-12.45pm

ALL SPORTS
£3.00
PER SESSION*
EXCEPT
CYCLING

£5.00
PER
SESSION

Location*
Basildon Sporting Village,
Cranes Farm Road,
Basildon SS14 3GR

Come along and try something different, meet new friends and learn new skills.

ALL SPORTS
£3.50
PER SESSION

Cycling and Love to Move are currently a closed session, due to their specialist nature. Please discuss your interest in attending any of the sessions with your Occupational Therapist before arriving.

*FOR ALL SESSIONS, WITH THE EXCEPTION OF GYMNASTICS, WHICH TAKES PLACE AT THE EVERSLEY CENTRE, PITSEA

Come along and try something different, meet new friends and learn new skills
All activities (except Cycling) take place at:
Leisure World Colchester, Cowdray Avenue, Colchester CO1 1YH
This programme is developed in partnership with an allied health professional and coaching team.

Figure 3. Examples of some of the activities offered within the Community Partnerships/Reconnect and Strength and Balance workstreams. (Note, some sessions shown are also wider services offered by Sport for Confidence and funded outside of PEM).

The engagement statistics by service users and the workforce (education and training) with the different workstreams was provided by the PEM team and is summarised in Table 3. Elements were impacted by COVID-19 restrictions and in places limited by capacity, but the current engagement and scale is promising.

Meeting the needs of individuals, groups and communities

Central to the successful provision and uptake of opportunities was meeting the needs of individuals and tailoring opportunities accordingly. Communicating and listening with a range of stakeholders, including service users was central to this endeavour, and provided vital insight to understand barriers to participation and identify solutions. For example, consulting with people over what sessions to run, accessible advertising materials, and issues such as lighting and noise within the building. The understanding and knowledge shown by the PEM team of different health conditions was widely recognised by interview participants, along with how this influenced the choice, design and implementation of group sessions.

“It takes communication, it takes dedication, and working together...They [PEM staff] listen and then implement that...it doesn’t always work...but together we seem to be able to establish how to do it right.” Carer

“They [PEM] have enabled us [partner organisation] to take that next step we have been looking for because before them there was nothing out there for people with [chronic health condition] and unfortunately there is not a lot of understanding.” Healthcare Professional

Table 3. The current number of sessions and engagement with these across the PEM workstreams (data correct as of 18th August 2022).

Workstream	No. of Sessions & Per Session Average (users)	Per Month Average (users)	Total Unique Attendance to date (users)
Care Homes (Basildon)	8 Workshops delivered with a minimum of 2 PEM Ambassadors per care home. Regular visits from Sport for Confidence OTs and Provider Quality Innovation Team to offer ongoing support and mentorship to PEM care homes.		
Care Homes (Colchester)			
Care Homes (Tendring)			
Community Partnerships/ Reconnect (Colchester)	8 sessions per week 11 users on average	297	332
Community Partnerships/ Reconnect (Tendring / Clacton)	7 sessions per week 6 users on average	160	163
Community Partnerships/ Reconnect (Basildon)	7 sessions per week 13 users on average	356	407
Basildon Inclusive Cycling (part of South Community Partnerships/ Reconnect)	1 session per week. 36 users per month. 9 users unique attendance		
North Inclusive Cycling (part of North Community Partnerships/ Reconnect)	1 session per week. 28 users per month. 7 users unique attendance		
Strength and Balance	2 sessions across Colchester, Clacton and Tendring per week. Average 12 users per session. Average 144 attendances per month. 3 talks per month to Strength and Balance users provided by SFC Occupational Therapist. 1 session in Basildon each week. South: 1 session a week for 23 weeks. Total attendances 126, unique users 30, average attendance per session 5. With 8 talks to NELFT users (2 per cohort)		
Physical Activity In Occupational Therapy	The programme ended in July 2021, but Sport for Confidence have continued to see a significant increase in the number of Occupational Therapists liaising with their team and accessing sessions with their service users. Sport for Confidence are regularly working with OT students and see an average of 12 students per month.		

The delivery of Community Partnerships/Reconnect sessions by a Sports Coach and Occupational Therapist also provides capacity and scope for people who access PEM services to receive individual, bespoke support within and beyond the main session (see example case study below). This includes helping individuals, such as those recovering from a stroke or experiencing health issues, to implement the advice received from their GP

and other Healthcare Professionals. This is consistent with intended outcomes of PEM such as providing tailored interventions in group settings.

Case study: One-to-one support

The PEM team works with a male asylum seeker in his twenties. He has some physical deformities including a limb, and some sensory difficulties.

Occupational deprivation is a term used by Occupational Therapists to describe when people are unable to do the things that they want and need to do due to external restrictions in their lives. Asylum seekers can experience occupational deprivation, along with the loss of valued activities, cultural norms, religious customs and social support systems. They often have to live in environments that are not conducive for a meaningful daily life, all of which can have a negative impact on health and wellbeing (Morville & Erlandsson, 2013). Further, although they are able to register with a local GP, they often face difficulties accessing services (BMA, 2019).

The individual was referred to PEM by Care 4 Calais as part of his rehab programme. The PEM team gathered information by talking to the individual, Care 4 Calais, and others involved in his care (e.g., social worker). An informal initial assessment was conducted when he first visited PEM, and together with him and others involved in his care the PEM team identified his needs, set goals, and created a plan of action,

The individual has several Healthcare Professionals involved in his care, but he can sometimes struggle to keep up with the different professionals involved and his appointment times, partly due to the language barrier, which can impact his ability to access healthcare services.

The action phase of the Occupational Therapy process is ongoing and he is attending weekly exercise sessions. Occupational Therapists within the PEM team are looking at this individual holistically, they are focused on both his mental and physical health, how they are related, and his ability to engage in his community, activities and services. In addition to the physical benefits of the exercise sessions (e.g., increased physical activity, building strength), there are a range of other benefits from the sessions. He is away from his friends and family and spends much of his time at home, so the sessions provide an opportunity for him to leave his flat and be involved in a community activity, and socialise with staff and other participants. He is still adjusting to a new country, so the sessions provide an opportunity for him to get used to using public transport, accessing the leisure centre, paying for his session, and navigating the facilities. The benefits extend beyond the one-hour session and impacted his activities and skills in all other areas of his life.

Beyond the exercise sessions, the PEM team have organised meetings with the other professionals involved in his care and are creating a communication card for him. This will include details of everyone involved in his care, what their duties are, their contact details, his upcoming appointments, and updates on his care. This will make it easier for him to understand his care, and it can also be shown to other professionals, which will be

particularly useful as he sometimes finds the language barrier challenging. Although there are many people involved in his care, no one has yet collated the information to help him.

Moving forward, the PEM team will continue to monitor and reassess his plan where required. The main goals for him are to support communication services, improve his access to healthcare, and improve his skills and knowledge outside of the exercise sessions.

In education sessions with Care Home staff and Occupational Therapists, the PEM team collaborated with them to understand how physical activity could be effectively integrated into their context and practice; this often was about adding small movement into daily routines (e.g., while brushing teeth, breaking up sedentary time) rather than bespoke physical activity sessions. This was in recognition that carers have limited time and capacity, and has helped engagement by both the workforce and people who access their services.

“Trying to give people ideas about how physical activity can be implemented in everyday life in a way that is not too disturbing to their routines but can also be added in as part of routine. So adding in movement rather than physical activity as such... It is pitching it in a way that is manageable for the staff to be able to implement.” PEM Delivery team member

Physical activity as a means to enhance independence

Although physical activity is central to PEM, the opportunities created and services offered extend beyond traditional sport and exercise. The emphasis is on ‘meaningful activity’ and how it enables individuals to live happier, more autonomous lifestyles and make real choices around how they want to spend their time. This includes the development of a range of transferable skills that might be needed to reduce the need for support services or to secure voluntary or paid employment. For example, it may encompass developing the standing endurance necessary to cook meals independently or crucial social or leadership skills.

“It is about breaking down the barriers, helping people engage with physical activity to help them in life... So if for example someone needs to learn how to time food in an oven, we can make them a referee and they can time on a stopwatch and build up their skills that way... The idea is by working on these skills we can reduce the impact on social services and NHS care, so hopefully they will need less care when they go home because they will be a little more independent.” PEM Delivery team member

The holistic focus reflects the practice of Occupational Therapists who aim to work in a person-centred manner to identify an individual’s barriers to participation, identifying what skills are needed, and grading activities appropriately to the client’s level. They then specifically craft environments to enable that individual to participate in the activity of their choosing, therefore achieving more balance in their lives through participating in meaningful

activity and developing productive roles and routines. This is an inherent part of how PEM works and its success.

“As an OT we have that extra layer of expertise to say well actually the relevance here for that individual with cycling is now independence following a brain injury and that they are no longer able to drive. So cycling is no longer an activity but an occupation as it is now going to hold significant importance for that individual and impact on other areas of their life.” PEM Delivery team member

Inclusivity

Community Partnerships/Reconnect and other aspects of PEM are inclusive in nature with a ‘no labels’ approach. This encourages a sense of belonging and inclusion for participants, and challenges assumptions and social transformation. However, adjustments are made to optimise sensory stimuli, equipment and the degree of challenge for individuals or groups. Participants noted that many other services have exclusion criteria which can limit opportunities, often for those with most need, and PEM was deliberately set up to do things differently.

“I’ve tried running an able-bodied come disability life. It didn’t work, because people looked at the disability, but didn’t understand that I was a person as well as the disability. Didn’t ask me how I wanted to deal with certain situations. Didn’t ask me what equipment I wanted to use... [At PEM] I’ve never heard anybody say no to anyone or turned people away. Whereas, when I’ve volunteered in the able-bodied world, it’s been, “Oh, but,” “Oh, but,” “Yes, but,” “No, but,” “You have a disability. So why do you want to try that?” PEM Service user

“They treat everyone equal, and that has never been in our world... It is like somewhere you can fit in, be a human being and have a life here you can’t outside. It is like so powerful what they give and what they have opened the doors to do, it just makes me emotional.” Carer

Choice and support

PEM has empowered and supported individuals to identify their own, preferred solutions for being active. This has often involved raising awareness of opportunities for being active within and beyond sessions, and to work with individuals to remove barriers to participation. The empowerment of individuals is not restricted to facilitating the choice of sessions, but also how some sessions are typically delivered. For example, programmes have been designed to encourage individuals to explore different movements and develop a sense of ownership, and feelings of competence in their physical abilities. Consistent with motivational theories (e.g., Self-Determination Theory; [Deci & Ryan, 1985](#)), this has provided an autonomy supportive environment that has given individuals a sense of choice and

empowerment, thereby enhancing motivation towards physical activity. Indeed, the support that PEM staff offer to both individuals and carers was widely recognised.

I had in my mind that the [staff] would be there to guide people in a step-by-step session. But what I saw was free flowing and empowering to the participants. Participants feeling empowered to explore.” Healthcare Professional

“It is their [staff] attitude, the way they are with people, the way they see people. They think outside the box. They genuinely care. Nothing is too much for them... They are unique.” PEM Service user

Flexibility and adaptability

PEM has a central ethos around inclusivity, physical activity, and enabling independence and happiness, but the specific sessions were adjusted due to COVID-19, local context, resources, and ongoing dialogue and feedback with stakeholders. The PEM team, workstreams and activities have been agile and flexible to meet the evolving constraints during periods of lockdown and associated regulations, such as shifting delivery online where necessary. Similarly, sessions are adjusted based on the facilities and resources in leisure centres, so what is possible in one location might not be feasible elsewhere. Feedback from participants and other stakeholders has also been pro-actively solicited and acted upon where possible. These factors have meant the original plans and logic models have needed to be reviewed and updated, and the PEM has evolved slightly differently to how some individuals had originally envisaged.

“It is really measuring the value of that session and if it needs to change or not, and being responsive to the feedback you get about that session. It might be that the session is really good and valuable to people, but it is not at the right time so then we have to change the time of it... so it is being really adaptive and responsive to what the participants are saying.” PEM Delivery team member

“It has evolved and grown and it has actually grown perhaps differently to how I thought it would originally grow. So we’ve got great community partners existing already, but I think some of our community partners had quite set ideas about how they wanted to work in sport and leisure, what it would look like and obviously with lockdown and covid, certain groups and how they came about were directed by that opportunity, like the track session for example, which was a crisis group that came about through stay connected.” PEM Strategic team member

Challenges and developments

Leaders emphasised the scale and ambition of PEM was at times daunting, but also immensely exciting and rewarding. Delivery staff also noted that some of the sessions had reached capacity. This may, in part, be due to the inclusive nature of PEM that welcomes a

diverse range of individuals. It is important to explore mechanisms to prevent a waiting-list system developing that might prevent those most in need of support accessing PEM sessions in a timely manner.

“Having four workstreams and being involved in every single one, which was essential that we were, but just that sheer volume of work and the job at hand. I’ve kind of over the years seen two-year project groups tackle one of these workstreams. And in the 12-month test and learn, we’ve had four. So just being very honest, I feel like it was a mountain to climb, which is why I really wanna reflect on what’s been achieved because I think it is quite phenomenal.” PEM Strategic team member

Following the above, a number of individuals who attended PEM sessions had become long-term attendees. Although these sessions typically provide opportunities for the individuals, it is important to consider the purpose of PEM sessions or similar programmes, specifically whether they should be a perpetual service that people become regular and long-term users of and/or an opportunity to develop skills, confidence and the ability to access a wider range of services in the community. This could facilitate further progress towards outcomes such as increasing independence, reconnecting people with their local area, and facilitating access/use of other wellbeing services.

“It is having that wider vision about ensuring all residents have the ability to be active, live independently and be a part of the community... So the community partnerships objectives, it’s really about delivering interventions which are based in a community group setting but I guess, aims to reconnect participants to the community by rebuilding occupational balance, structure and independence etc” PEM Strategic team member

Nationally, the COVID-19 pandemic led to a drop in physical activity levels and poorer mental wellbeing, and amplified some inequalities, but this reinforced the importance of PEM. The pandemic, however, significantly altered the planning, implementation, and delivery of PEM. As noted above, adjustments were successfully made, but potentially impacted the scale and impact of PEM. Similarly, the shift to online delivery provided a vital service to individuals experiencing social isolation, but did present a challenge around access to equipment and digital literacy.

“It was difficult for them [staff members] to get time during the day to incorporate that. There is so much to do in a care home... During their supervision they were coming back to us and saying ‘when can we do this?’” PEM Workforce training recipient

Despite the great progress in developing system-led opportunities, individual barriers to participation could still be problematic. For example, care home staff noted issues around competing demands on their time. Further, some care home residents could not attend external sessions (e.g., there was a desire to attend Strong My Way and/or Community Partnerships/Reconnect sessions) due to transport and cost of travel. Similarly, some

people who accessed Strength and Balance services struggled with transitioning to a larger and louder group. However, there was also evidence that working across the system could help resolve some of these issues, such as securing transport from voluntary services or health professionals working together to facilitate a smooth transition between groups and services (e.g., deliverer of a follow-on service attending some initial sessions in the initial programme). Despite the above challenges, there was a desire to take lessons from PEM and apply to similar initiatives in future.

Embedding physical activity in the system

Key Findings

- PEM has made excellent progress to **embedding physical activity and a preventative focus** across the Essex system. There is an exciting and ongoing **shift in culture and practice** in Health and Social Care, particularly in Care Homes and Occupational Therapy.
 - The work of a number of Care Homes was recognised in the [NHS East of England Winter Deconditioning Games](#).
- Key factors that have contributed to embedding physical activity and a preventative focus include **understanding the system** and leverage points, **facilitative leadership**, alignment with national policies, and organisations having a **shared vision** and working in a **collaborative and integrated** manner.
- Despite the success, interviewees recognised integration across system settings and the flow of services for individuals could still be improved.

Understanding the system

The second objective was to embed physical activity in this system, and to redesign a targeted pathway to achieve this. Consistent with successful features of whole systems approaches, work was undertaken to understand the Adult Social Care system and how it might interact with other systems to influence individuals' physical activity, and enabled them to lead independent and happy lives. In doing so, it was important to detect system components and connections between them, understand the behaviour of the system, and identify leverage points in order to drive transformation ([Tsasis et al., 2012](#)).

"It's complex. So just at a really high level, we have Adult Social Care Essex County Council, but equally we have 12 district and borough councils that are all interconnected...it's not just Social Care, it's the wider corporate agendas from communities to public health, to housing, all interrelated. Then you have a health system...We have three integrated care systems in Essex, and then we have a multitude of different providers across the care market, the voluntary community sector, education. All of those players are interrelated to the overarching view of what we want to do in PEM."
PEM Strategic team member

Facilitative leadership

A consistent thread in most interviews was the crucial role played by strong and supportive leadership within PEM and across the County and Borough/District Councils. Leaders provided political support and advocacy to underpin the efforts and direction of PEM. A number of leaders were clearly invested in the vision of PEM from the outset, giving support and time. In doing so, they facilitated connections across the system and some served as critical friends to shape the direction of PEM.

“I think key has been incredibly strong leadership and advocacy from [person’s name], and also I think, incredible energy and enthusiasm from [person’s name]. I think, I really think those two carry the whole thing, which I think is hugely important... But obviously for system change, we need to turn that into bringing everybody else along as well.” PEM Strategic team member

“I currently have monthly meetings with [Key council worker] to give him an update on what we are doing here and then he helps us out if there is anything going on in the local community, he’ll point me to it and then we can integrate with them... So he is good at identifying what is going on in the community and then community assets and we can tap into those and he is a good link for that.” PEM Delivery team member

Alignment with national policies and guidelines

Participants highlighted that PEM is a timely and innovative model that aligns with current directions in national policies in the health, care and physical activity sectors, and those recommended by the [Government](#), [NHS](#), and [World Health Organisation](#). For example, PEM aligns well with campaigns such as [We Are Undefeatable](#) and the move towards [Integrated Care Systems](#) that meet health and care needs through partnership working. The focus on a preventative approach that promotes wellbeing through participation in physical and recreational activity aligns with the [Care Act \(2014\)](#), which also provides a legislative context. Through robust evaluation and evidence gathering, there is a real opportunity for PEM to lead the way and make a significant contribution to the evidence-base that could inform policy and practice at local, national and international level. However, PEM was recognised as having a distinct philosophy and set of values that reflected local needs and the current strengths within the Essex system.

“It starts to get us to look, open up the conversations with our adults, rather than purely just meet the immediate need that they’ve identified as having difficulty with. It really connects us back to the Care Act. The wellbeing agenda, prevention, preventing people from disabilities to... well, not preventing them from disabilities, but preventing them from deteriorating. Starting to look at increasing their abilities, delaying the onset of probably a downward spiral and being able to try and enable them in areas that they’re able to probably improve and increase in.” PEM Strategic team member

Shared understanding and vision

Interviewees highlighted that tackling physical inactivity within the context of a whole system approach involved bringing multiple system stakeholders who share a vision. This was evident in each stage of PEM, including planning, implementation and ongoing developments. Regular meetings and the development of logic models facilitated mutual understanding within and across the workstreams. This approach of bringing individuals

together to agree a vision and action plan was also evident within specific programmes and activities across PEM

“Each workstream did the like logic model and took it through a very logical process as to why are we doing this? What is this actually going to look like? And I think that helped people see, you know, feel like they were part of it, and just be really clear on what the roles and responsibilities were.” PEM Strategic team member

Collaboration and integration

The development and evolution of PEM has been founded on each workstream working together and with wider stakeholders to ensure an integrated and progressive approach. Key organisations have included local authorities such as Essex County Council and Borough/District Councils, teams within the Councils (e.g., Provider Quality Innovation Team), Sport for Confidence, Active Essex, NHS Trusts, leisure centres, and care homes. They have adopted a collaborative approach to explore and capitalise on the needs, resources, and opportunities within the system. This ensured that PEM complemented existing and emerging initiatives in Essex, such as [Find your Active](#), the [Essex LDP](#), and bite-size sessions for care providers. These bite-size sessions were developed by Provider Quality Innovation Team Occupational Therapists to address a need for more training opportunities. Indeed, the Quality and Innovation Team brought care home staff together early on in the programme to explore what support was needed within PEM, which informed the support provided to care homes. Organisations with different knowledge, skills and resources can offer a more holistic and effective approach when working collaboratively than working in silos. Stronger integration has also allowed organisations to understand other places to which they can signpost individuals.

“I think what's been key really is collaboration. It's having those regular meetings, the open forums to talk through ideas with other professionals. I think it has really been key to being successful.” PEM Strategic team member

“There is an understanding there now because the conversations are happening. We are now not inaccurately signposting people with referral forms, we are engaged in a dialogue with other parts of the system about how we can support people, and that is a big change.” PEM Delivery team member

Key ingredients that have facilitated effective partnership working include time to build relationships, clear roles, similar values, trust, and a shared vision. Partnerships have continued to evolve throughout and beyond PEM. For example, PEM delivery staff have also gone on to facilitate a Community Network Group that brings together a diverse range of stakeholders to collaborate on wider societal issues. In this sense, PEM has provided a structure and an example of what can be achieved through a systems thinking approach and stimulated an interest in adopting it more widely.

Collaboration and integration beyond PEM

Below are example Members of a Community Network Group in Colchester that was developed alongside PEM and facilitated by PEM staff.

Social workers from Adult Social Care, Fire safety officers, Local link support team/OTs, Community 360, EPUT Mental health team/OT's, Mind, Beacon House OTs, Dedham Community Farm OTs, Age Concern, One Colchester, Employability team, IAPT – Therapy for You, Colchester Borough Council, Open door Colchester, Futures in Mind, CVS Tendring, Essex Cares, Carers First, Phoenix Futures, Healthwatch Essex, Enable East, Colchester Borough Homes.

“Really helpful to hear all the work everyone is doing. Thanks for hosting [NAME - PEM Delivery team member]. This group is invaluable to keep connected to services locally and assist our work with clients.” Feedback from Community Network Group member

Changing culture and practice

PEM has contributed to a change in culture and a re-orientation of practice within the system. Participants reported that there has been a greater focus and commitment to preventative approaches and embedding physical activity into practice. Workshops and training sessions have been an indication of what might be achieved through physical activity across both Occupational Therapists and Care Home staff. Following workshops, Adult Social Care Occupational Therapists have developed their own sessions to talk about how physical activity could be utilised within their work. In this sense, PEM sessions stimulated conversations and actions, rather than being the start and end point. Such findings offer evidence of progress towards intended outcomes such as changing culture and practice and embedding physical activity in interactions,

“Yeh, so I don't think there has been that real commitment before, to looking at prevention in a practical approach really. I've heard of lots of similar, potentially, activities which have gone on in care homes where they have supplied hoola-hoops and boccia kits maybe but actually what we're doing now is actually trying to change culture, which I think is the huge different piece that PEM is on in terms of this journey.” PEM Strategic team member.

Many interviewees noted that PEM had gone beyond previous approaches to increase physical activity through focusing on education and support. This was perceived to contribute to a shift in culture rather than just provision of just equipment or ad hoc exercise classes. Indeed, many participants felt the follow-up support provided had been crucial to success, as it has provided opportunities to discuss issues and novel solutions.

External recognition and ongoing developments

A number of Care Home staff highlighted the importance of learning more about physical activity, and had embraced the opportunity to integrate it into practice. The work of the care homes in this regard was recognised at the [NHS East of England Winter Deconditioning Games](#), with three care homes from PEM receiving gold medals. The chance to link PEM and wider work of the [Find your Active](#) to these games was perceived to have energised the care homes. To build on these successes, the Provider Quality Innovation team then launched the Gemstone Challenge, which is an 8 month challenge designed to encourage care homes to further embed the learning from PEM and Find your Active workshops. Over 50 care homes signed up to take part in the first two months.

“The key learning from linking the Deconditioning Games to the PEM programme and also the Find Your Active workshops was that it energised the homes to continue implementing what they had learnt and to embed it into their daily working practices. Being awarded medals, by NHS England, gave the homes a sense of accomplishment and something they could promote in their organisations and externally.” Essex County Council employee

Challenges and developments

Despite the success of embedding physical activity into the system and informing policy and practice, there was recognition that there are areas that can be further developed and strengthened, including continuing efforts to offer more integrated services, holistic focus, communication, and continued education. There were reservations about the flow of services still experienced by some individuals and that there needs to still be more integration between different services that they encounter. However, PEM offers rich insight and examples of how this can be improved. For example, Occupational Therapists were engaging with fellow health professionals (e.g., GPs, physiotherapists) and provided support for individuals needing to follow rehabilitation programmes. In places this was facilitated by the location of various services (e.g., in the same building or in close proximity), but communication between different Healthcare Professionals was vital.

“We just need more integrated teams, and then I think we would have a better ability to sort of get more coherence around how we see activity and recovery and things like that.”
PEM Strategic team member

The move towards preventative approaches at local and national levels and a focus on active lifestyles for disabled individuals and those living with long-term conditions was welcomed, but it was perceived that further work is needed. It was emphasised that as well as supporting these individuals, campaigns and educational approaches need to include all areas of the system that might interact with them. For example, interviewees felt that education could be extended beyond Healthcare Professionals to care providers, such as families and carers.

"I feel that the potential education need of care providers is more obvious as well. You know, it's one thing having therapists or thinking this way, but the people are in the houses actually working and supporting people, our family, carers and paid carers and I don't think there's enough investment in their training." PEM Strategic team member

Great progress has been made working with leisure centre staff to ensure they feel comfortable and confident in interacting with individuals with different communicative needs. However, there was a perception that some groups and individuals are still experiencing a sense of exclusion from some services across the system. Similarly, there was some concern that programmes might be relying too heavily on medical models of disability and that social models should be more strongly considered to inform the design of programmes.

"I kind of see at the minute this massive drive with sport and physical activity to link up with health and social care, and social prescribing and GP referral schemes... That is wonderful... There is the potential to head off down the wrong route and go down a medical model... We are almost going to just have a medical system that uses sport and physical activity rather than a fully integrated system which celebrates people and says how can you use physical activity in your life as a norm." PEM Strategic team member

There was a desire to see the lessons from PEM applied to help inform current and future programmes as appropriate, but recognition that other programmes, organisations and parts of the system might be impacted by contextual factors. Allowing sufficient time and planning similar initiatives would be essential to success. For example, it will be important to identify key leaders who can provide support and then allow time to build relationships with them and other stakeholders. Indeed, in the current iterations of PEM some areas of the programme advanced more quickly in locations where there was already a strong network of partners. Further, engaging with communication and evaluation teams earlier in the planning process was also highlighted as a key issue in future developments to ensure the right messaging and evaluation tools can be in place from the outset.

"We are quite casual with our language sometimes through PEM and with physical activity and I think that has become a barrier... We need to think a lot more carefully about how we use our language in relation to PEM and to move away from activity levels, and I think that is something that is so ingrained in the system that it is going to be quite hard to do, but I think if that message comes from the top around meaningful and relevant." PEM Strategic member

"We are a lot more established in the South...so I think that has affected the way that Reconnect has run.... Our partnership with [Key council worker] is incredibly strong and he believes in what we do because he has had a long time to see what we do and is invested in what we do whereas in the North, I think those system partners may not be as strong because those relationships haven't been built yet." PEM Delivery team member

Workforce: Practice-based learning opportunities to enable use of physical activity as a tool for health

Key Findings

- Baseline data highlighted a **need for training and education**, with Care Home staff and Occupational Therapists reporting that they had received limited or no training in physical activity promotion, and they typically discussed physical activity with fewer than half of their service users.
 - Barriers were time, knowledge, skills, resources, and support.
- Training was highly valued and developed **knowledge and skills, stimulated conversations**, and provided an opportunity to **build networks** to share best practice.
 - Alongside training sessions, a key driver of success was the provision of **ongoing mentorship**.
- PEM has enabled and supported many of the workforce to **embed physical activity into practice** and enhanced their **job satisfaction**.
 - A number of Occupational Therapists reported PEM had taken them back to their professional roots.
- Some interviewees suggested that co-design could be strengthened in the development of future education to ensure that contextual factors are fully recognised.

Training and education

Consistent with one of the key success factors in whole systems approaches to tackle public health issues, the third objective for PEM focused on capacity building. The PEM team identified the need to create education and practice-based learning opportunities to increase the confidence and capability of the workforce to physical activity as a tool for health, particularly in Care Home staff and Occupational Therapists. Similarly, qualitative interviews and the baseline survey of participants in PEM training programmes supported the need for training, with the majority of respondents indicating that they had received no previous training/education on physical activity promotion/prescription (CH = 71.4%; PA in OT = 53.5% - see Figure 4).

“There seems to be an issue about people’s confidence to address physical activity to promote exercise. You know, the typical response of an OT is do I need some training to prescribe exercise?” PEM Strategic team member

“It’s about upskilling the care staff rather than relying on the OT. It’s about trying to get the change in mindset for the care staff [...] that there are things that they can do.” PEM Delivery team member

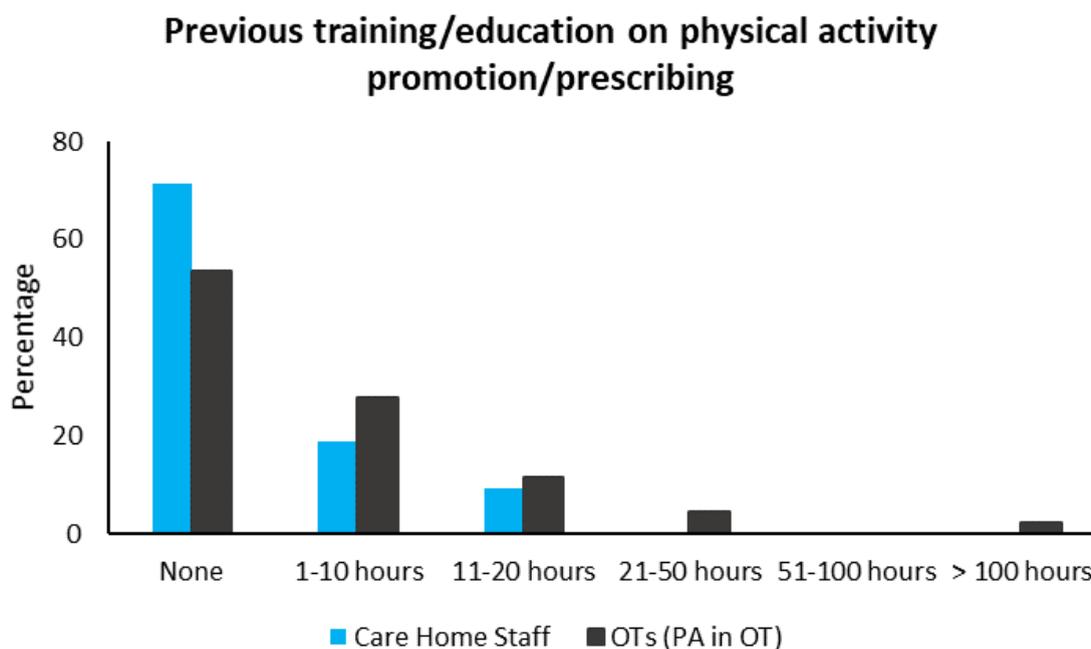


Figure 4. The amount of previous training/education on physical activity promotion/prescribing by workshop participants at PEM baseline.

Existing practice and the role of physical activity

The survey found that, prior to involvement with PEM, participants typically discussed physical activity with less than half of their service users (CH = 41.5%; PA in OT = 40.9%). Discussions are typically focused on general physical activity (CH = 54.2%; PA in OT = 84.1%), and not as often on muscle strengthening activity (CH = 29.2%; PA in OT = 36.4%) or breaking up sedentary behaviour (CH = 37.5%; PA in OT = 59.1%). However, the importance of muscle strengthening activity and breaking up sedentary behaviour are emphasised in the [UK Chief Medical Officers' guidelines on physical activity](#).

The survey also found that participants were typically *motivated* to provide physical activity advice to their service users, but many lack the knowledge, skills, resources, time and support (see Figure 5). Time pressures, resources and support are consistent with barriers in the wider literature. For example, Clark et al. (2017) found that key barriers to physical activity guideline implementation in Canadian doctors and nurses not only include knowledge, but other factors such as competing priorities, lack of incentives, and limited access to pragmatic programmes and resources.

Percentage of HCPs who agreed that they had the ... [x-axis variables] to give physical activity advice

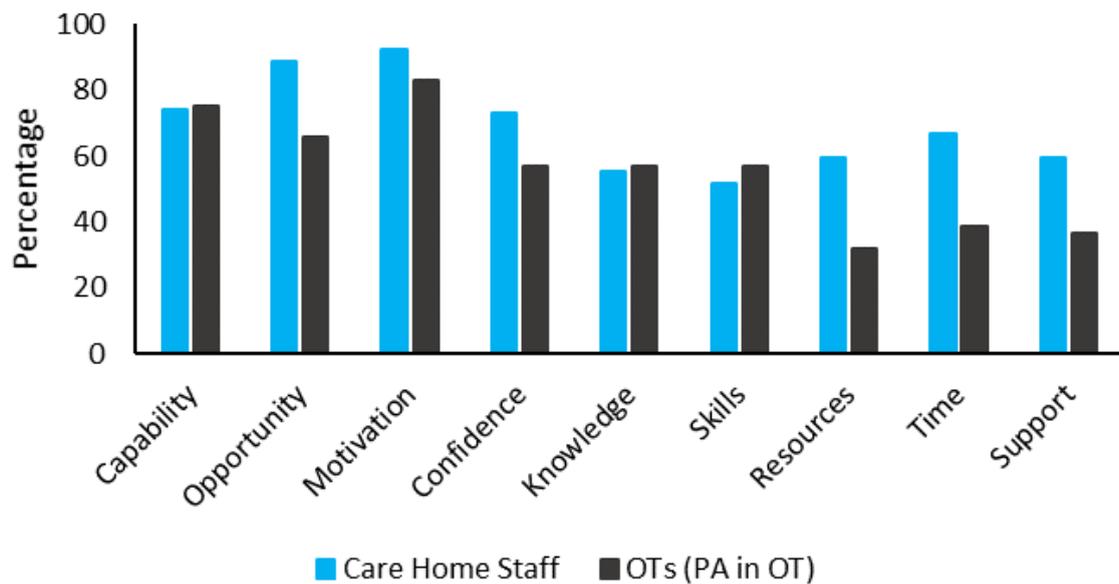


Figure 5. The perceptions of Care Home staff and Occupational Therapists at PEM baseline in relation to providing physical activity advice.

Example training workshop for Care Home workstream

Workshop aims

- Increase understanding of how physical activity can be used holistically
- Improve confidence with using physical interventions
- Support staff to increase resident's engagement in meaningful activity
- Reduce the risk of falls
- Increased independence in activities of daily living for residents'

Workshop content

- An overview of Sport for Confidence CIC
- An overview of why the carers role in supporting people to be active is so important
- The benefits of physical activity in the care home
- Occupational Therapy and Meaningful Activities
- How to use physical activity as an assessment tool – Practical session
- How to integrate into daily practice
- How to assess and monitor functioning level – Outcome measures
- Opportunities and ongoing support

Example aims of training workshop for Occupational Therapy and Physical Activity workstream

Workshop aims

- To explore the use of physical activity in Occupational Therapy practice
- To celebrate the unique contribution of Occupational Therapists using physical activity as both a therapeutic means and ends
- To empowering OT's to confidently embrace physical activity and physical interventions, to achieve the Care Act strategic aims

Workshop feedback

- *“This was an inspiring session that has encouraged me to re-evaluate my own delivery of practice”*
- *“This training reminded me how physical activity can be used as a therapeutic intervention. In ASC we tend to focus on equipment and care but this training encourages me to think of ways to connect people to their community and engage in sports to better their health, well-being and therapeutic outcomes.”*

The value of training and education

On completion of the training programmes, participants perceived a range of benefits of the education and wanted further training. They were motivated to apply the lessons learnt from the training into their own work. Occupational Therapists in particular perceived that PEM enabled them to return to ‘their roots’, a way of working that is more aligned with their professional philosophy and skills, which should support the sustainability of PEM. The value of Occupational Therapy was recognised by many interviewees, and highlighted a central to the success of PEM. However, it was not only the development of knowledge around physical activity that participants valued, but also the opportunity to build relationships. Further details on the impact of training are presented under the next objective (see [Impact](#)).

“By connecting with local initiatives such as Sport for Confidence it enables me to access specialist services (exercise, strength based work, community connections) that I may not always have the time to advise on in my work load.” PEM Workforce training recipient

Mentoring and support

Although the workshops and training sessions were highly valued, follow-on conversations and support has been vital to the success of PEM. In the Physical Activity in Occupational Therapy workstream, the training generated an interest in different ways of work and provided a stimulus for Occupational Therapists to meet and share ideas outside of the PEM sessions. In the Care Homes workstream, staff valued the opportunity to meet with PEM staff on a regular basis and receive ongoing mentorship and support to implement ideas into practice.

“We support the care home ambassadors, so we have created some care home ambassadors for each care home, someone who is responsible for activities and engaging their residents with physical activity and we support them long-arm. Every two weeks we check in with them, give them ideas that they can do in the care home to keep it all fresh. They keep their residents active.” PEM Delivery team member

Challenges and developments

Despite the success of the training and education programmes with PEM, some of the leaders and workforce provided reflections on how these could have been improved. Some people spoke of the need to more strongly involve a wider range of individuals in co-producing the content of workshops to ensure it best reflects the context in which different individuals operate (e.g., different members of the Occupational Therapy and Care Home workforce, other Health and Social Care Professionals and end-users). For example, the elements of the approach adopted in leisure centres might not translate to Occupational Therapists who work in other community settings. Alongside developing training, it might be that follow-on support includes mentorship to help individuals adapt, embed and share learning across their places of work.

“During the training there was some enthusiastic responses, but also some fairly muted responses, and I think what was going on was the OT were trying to process. OK. I could see myself doing that if I was doing what you were doing where you were doing it. But how can I relate that to what I'm doing in my practice and what my job and my role is here?” PEM Strategic team member

“You know, originally I thought we would ... get some training ... but what's been complex is thinking about the role that they [OTs] are in, the context they work in, which adults they're dealing with, and what the scope is to do.” PEM Workforce training recipient

Participants also reflected on the need for more time to build relationships further strengthening relationships and to ensure actions could be properly resourced and implemented. Further, even after training, some participants appeared to see physical activity as something that *could* be discussed with *some* individuals rather than a topic that *should* be discussed with *most*. As such, additional time, training, support, and resources may be needed to realise the full potential of the workforce workstream and to enable individuals to fully integrate physical activity into their practice.

The impact of PEM

Key Findings

- Qualitative insights revealed that PEM service users perceived themselves to have experienced numerous benefits including **enhanced health, wellbeing**, confidence, **skills**, routine and structure, and **independence**.
- Survey data found that individuals who had participated in PEM for longer had higher **physical activity** levels, and more favourable attitudes to physical activity, wellbeing, subjective health, and self-efficacy.
- Comparison to data from the Active Lives Survey, suggests that PEM may have the effect of lifting a person living with a disability or long-term health condition to similar physical activity levels and wellbeing as typically reported by non-disabled people.
 - This suggests that PEM could play a crucial role in **reducing health inequalities** between individuals with and without long-term health conditions, although limitations of the research design means causal relationships cannot be inferred.
- Self-reported service use showed a slight decrease in PEM participants.
 - A tentative estimate is that this reduction in service use equates to **a cost saving of £365.23 per PEM participant per year** split across Adult Social Care (£163.34) and the wider system (£201.90).
- Taking the difference reported by individuals about to start PEM to those with over one month of involvement in PEM, **the difference in life satisfaction is estimated to equate to a monetary value of £22,230 per person per year**.
 - When this benefit is considered against direct running costs, PEM (specifically Community Partnerships/Reconnect) could deliver **an estimated £58.71 of social value per each £1 invested**. This is mainly due to increased wellbeing (£57.76) rather than direct cost reductions in service use (95p).
- **To provide more robust and certain estimates**, future evaluation should seek to increase the **sample sizes** across all PEM workstreams, **track individuals** over time, and use **additional objective data** on service use and cost benefits.

Impact on the workforce - Qualitative insights

Developing knowledge, skills and partnerships

Participants in interviews and focus groups valued the workshops and training provided in PEM, particularly the opportunity to learn more about physical activity and to build relationships. They reported that PEM had strengthened their knowledge, skills and confidence to embed physical activity in their practice and daily work. It was not just the content of the workshops that contributed to this, but the opportunity to develop networks to share ideas and best practice. The training and education was also perceived to have been a stimulus to change the nature of conversations across the system.

“It makes you look at things outside the norm. It can just be little snippets as well, like if you are brushing your teeth, you can be moving while brushing your teeth. It is not just about setting up big activities which is what tends to happen in care homes. It is about doing little one to one things with people.” PEM Workforce training recipient

“It’s changed some of the conversations that Social Care OTs are having with people and partnership organisations.” PEM Strategic team member

Enabling and inspiring how physical activity is used

Training and education has directly helped the workforce to embed physical activity into their practice. They highlighted various ways in which they now use physical activity as a tool for health, including directing individuals to external activities, introducing group activities in care homes, and more informal activities with individuals to embed activity into everyday life. This was perceived to have had demonstrable impact on their residents, such as improved sleep, social connections, and wellbeing. Participants also highlighted how there has been a ripple effect in which their own changes to practice had inspired colleagues and other professionals to take action through. For example, in Community Partnerships/Reconnect, staff from a partner organisation who brought individuals to the sessions noted that they had been inspired to adopt the principles and activities they had observed into their own contexts.

“We [staff at partner organisation] are now trying to find what is it they [service users] can do at home that they are doing here at the sports centre, at [organisation] to help try and maintain it.” Healthcare Professional

“It was so exciting to have another person who was on our wavelength, bringing different ideas. That was amazing!” PEM Workforce training recipient

Example Care Home activities

Below are examples of the range of approaches and activities implemented across care homes following PEM workshops.

- Formal and informal physical activity sessions
 - e.g., chair yoga, dance classes, mini Olympics, walking clubs
- Incorporating movement into everyday activity
 - e.g., when passing objects to a resident, instead of placing them directly onto the lap, stand further away to encourage them to reach forward
- Encouraging meaningful activity to maintain functional ability
 - e.g., supporting a resident to manage the care home garden
- Care planning
 - Personalised exercises included in care plan for all staff

Job satisfaction

A number of individuals in interviews, focus groups, and surveys discussed how their involvement in PEM had positively impacted on their job. The underlying ethos and principles of PEM around physical activity and facilitating happy and independent lifestyles was highly valued. Some participants felt that it had returned them to their roots, while others perceived it had added a new dimension to their roles. Collectively this contributed to higher levels of job satisfaction.

“This initiative has brought a great dimension to my role and personally I have found this has recharged my passion for sports and integrating meaningfully in my role.” PEM Workforce training recipient

Impact on service users - Qualitative insights

Building social connections and relationships with others

Community Partnerships/Reconnect and Strength and Balance both targeted improvements in social outcomes, such as reductions in isolation and loneliness, and increased participation and connection with communities and a sense of belonging. The majority of interviewed service users reported that participation in PEM had reduced their social isolation and enabled social connections to be built. PEM successfully facilitated the process of connecting vulnerable, socially isolated individuals with each other to experience friendship, togetherness and fun times, and thereby reduced loneliness and helped to integrate them with local services and others in their community.

“It just feels like little this little group that look out for each other, and I think, I think it gives us all a sense of purpose and belonging, because essentially when you get a disability, you can feel very, very isolated and that's one part of the problem with it being disabled in this country. This doesn't make you feel that way and it makes you feel all as one. So it's like a family. So that's one of the biggest things with it.” PEM Service user

Interviewees also perceived that PEM sessions felt like a 'safe space', and were an extremely valuable part of their week. They enabled participants to feel equal to others and the only opportunity that they had to build relationships without feeling judged or categorised, or to have fun and have their thoughts taken away from their disability related issues.

“I've found a safe environment to socialise and make friends... Once I left school, I never thought I would have those opportunities again and I say it saved my life because I can just reach out the hand and know that I can possibly get a professional or friend to talk things through with.” PEM Service user

Development of life-roles through the acquiring of new skills and the new opportunities available

Short- and medium-term outcomes in Community Partnerships/Reconnect included developing vocational/employment skills and rebuilding occupational balance. Interviewees commonly reported that PEM had facilitated the acquiring of new skills and presented them with new opportunities. Many participants had developed new life roles, such as progressing onto volunteering from being a participant or taking on part-time employment. Academic literature highlights that life-roles are necessary for a fulfilling life, as they encourage goal-directed behaviours that promote routines, purposefulness, self-esteem, responsibility, and resilience ([Zafran, 2020](#), [Sansone et al., 2018](#)). PEM, in facilitating this process, enabled previously vulnerable and isolated individuals an opportunity to develop several life-roles from being passive observers to active members of a public gym, members of a social group, volunteers, and autonomous and independent individuals. Central to this outcome was the ability of Occupational Therapists to use their professional skill-set to implement graded approaches and activity analysis to help participants develop more basic life skills.

“Sport was always something I've really enjoyed, and as I got older, I wanted to start making a difference to other people. I think for me, joining as a coach, it has been an absolute Godsend for me in terms of my own mental health and overall well being. Because I mean back then I did join at a very low point in my life, and since then moments of it has dramatically improved in that regard.” PEM Delivery team member (previously a service user)

Improved confidence

Community Partnerships/Reconnect targeted improvements in confidence. Many people who accessed PEM services reported an increase in self-confidence and whilst the mechanisms of change were not well defined by participants, the learning of new skills, the new opportunities available, supportive environment, and the increased endurance and strength from physical activity itself seemed to be the most prevalent causes. The participants' descriptions of pre- post functioning made it clear that they felt more confident in their intrinsic abilities and were prepared to push themselves further after participating in PEM sessions. The variety of classes on offer played a part in the building of their confidence too, as it enabled choice and autonomy over what activities were participated in, which then enabled them to participate in activities that they felt more capable and confident in.

“And I think, the thing I thought about the world of sport, things were closed off to me. So, the one to one support as well, that's been really helpful and given me the confidence.”
PEM Service user

“Doing something that I used to do a long time ago but haven't done since being disabled it's really kind of made me realise that there's this whole world of sport and things I can do that. I just thought it would be beyond my reach. And that my life was kind of much smaller and much more limited to kind of safe activities.” PEM Service user

Structure and routine

The fixed timetable of sessions were effective at helping the participants develop a structure and routine in their lives. Many of the participants interviewed reported that PEM classes were the only groups that they attended and that they were attending them regularly. As reported by [Clark \(2000\)](#), routines can help to either compromise or optimise the life opportunities of disabled people. In PEM, the development of routines centred on participation in sessions, optimised opportunities around life satisfaction, physical activity, social connection, productivity, reducing self-limiting beliefs and practices (such as sedentary activity or mistrust in people and society), and instilling a sense of purpose.

“From there they referred me to a social worker and then the social worker got me here... It's just kind of just grown for me from that one session a week, to four days a week and having that opportunity to kind of explore beyond just what I'm doing here. And those different goals that you can achieve. This has been really, really, really positive for me.”
PEM Service user

“Coming here gave me a reason to wake up in the morning, every reason to go to bed early because my sleep pattern was, I would find myself being asleep all day and awake for half the night, which is not the way to go.” PEM Service user

Positive emotions

All people who accessed PEM services used significant amounts of positive language to describe their experiences and how PEM contributes to positive emotions, feelings of joy, good times, empowerment, and satisfaction. There is a substantial literature base on how positive emotions can influence health, such as increased optimism and coping skills, and reduced depression, complaints and boredom (e.g., [Tugade et al., 2005](#)).

"It has made a huge difference to my life, a huge difference. I am happy. I did not know I could feel this happiness. I always thought I was going to feel sad." PEM Service user

Given their positive experiences in PEM, one individual and their carer had been inspired to write poems, which they asked if they could share during their interview. They kindly granted permission for them to be included in this report (see one example below and the other in the [Appendix](#)).

Sports for Confidence is an awesome place to be...

The motion is active as well as attractive
The participants are like stars as well as all the staff
They make you smile and keep you going
To make you fit in, no matter what venue you go in
S – Special, F – Friendly, C – Challenge
They look at sport with lots of support
They keep looking at your future
It's like having your own personal tutor
You gotcha love the boccia, throw or roll your ball
There is a clue, just be you
To get in gear and have no fear
You'll be wanting to come back and back and back
SFC always have your back

Health and wellbeing

PEM workstreams target improvement in individuals' health and wellbeing. Physical activity is well known to strengthen muscle groups and improve mental wellbeing. It has also been evidenced to reduce the risk of cardiovascular disease, hypertension, diabetes, cancer and many more ailments (e.g., [Warburton & Bredin, 2019](#)). All people who accessed PEM services and many care homes staff spoke of improvement to mental and/or physical health and wellbeing. Benefits included increased functioning (e.g., greater standing endurance), life satisfaction, taking greater pleasure in hobbies, and better coping mechanisms when dealing with a fall, along with reduced stress, anxiety and depression and fewer issues with pressure sores in care home residents.

"They [care home residents] are all getting the confidence and you know to mobilise independently or even their eating and drinking improved. You know sometimes people can hold their cutlery or something now because of their hands and you know the muscle movements, they, they improved. I'm not saying there are miracles, but you know still there are improvements in their physical strength." Care Home staff

"I've been able to use my arms and things a lot better and if I fell I could never pick myself up, but because I've strengthened my legs here, I've learnt how to go on my hands and knees and stretch myself up. I had a fall about a month ago, and I was so pleased that I managed to get myself up, because I wouldn't have done, if I hadn't been coming to the classes." PEM Service user

"I can stand for a lot longer in the kitchen than what I did before, and I can do gardening. It's made gardening a lot more pleasurable" PEM Service user

"The resident wanted to sit in her room all day with the pressure sore, and with this project and the walking club and everything we encourage, this person is now walking confidently and the pressure sore healed." Care Home staff

Case study: Reflections from a Community Partnerships/Reconnect servicer user

Since joining Sensory Swim, Mondays are my new favourite day of the week. To be able to get out of the wheelchair and into the pool is such a feeling of freedom and physical ease and support, and the session is really great fun. There is such a wonderful vibrant energy with all the participants having an enjoyable time. The OT, OTA and coaches are really supportive and helpful. Full of encouragement. Working with you to find the best flotation devices to support what you are looking to achieve. Taking time to go over all information about equipment so you are safe.

I have noticed various improvements in my body since I began these sessions. I have recently moved into a new property with a steep-ish ramp. I had been suffering pain and discomfort in my spine from pulling the wheelchair up the ramp with my arms and bars. The swimming using a noodle and a hand held float allows me to stretch my spine and build up strength in the spinal muscles at a better angle and my back is no longer hurting. I also usually pull my wheelchair around the house with one good leg but since swimming has allowed my body to use different muscles in two legs whilst being supported I noticed that my body is returning to often using two legs to move the wheelchair around the house. I've also been able to practise walking in the water and doing various leg exercises as I'm fully supported by floats and water.

I have recently joined in with the Stronger My Way session. This is so much fun. The games really make me laugh, which is very beneficial. There are some games that are

not quite as easy for me due to the wheelchair and I can feel a bit sad, however, the team always find a way for me to be included, so, if they can find a way to say 'yes' to me being included, I find a way to raise my spirits and find my 'yes' to joining in. It's always worth finding a way to make it work. I've noticed that this session acts as a warm up for the swimming after it. I have managed to complete much more improvement in swimming since beginning this class.

Wider beneficiaries

The qualitative data provided strong evidence of the benefits to people who access PEM services. Importantly, however, benefits extended beyond the individual to parents, carers, and other health professionals. Parents and carers valued the opportunity that PEM provided to make connections with other individuals with caring responsibilities to share stories and build connections. Similarly, healthcare professionals who have observed and engaged with PEM sessions have been inspired to integrate some of the principles and activities they observed within their own practice. The findings provide evidence that PEM has made good progress towards intended outcomes such as increased support network for carers and developing partnerships and networks.

"I learnt that the session was not just beneficial to the service user but also to their carers... it is important to understand all outcomes to truly understand a legacy." Reflective log from PEM stakeholder

"We are shifting the culture in the care homes we are working with but also, like a stone thrown into water, this is making ripples out to the other care providers as well through some peer learning and other opportunities that PEM has shone the light onto". PEM Delivery team

Impact on service users - Insight from wellbeing and activity survey

To estimate the impact of the PEM programme on participants' wellbeing and physical activity levels, the Evaluation Consortium including State of Life and Impact Reporting deployed a quantitative survey on a Progressive Web Application (PWA), which means that the respondents were able to self-complete the questionnaire online by accessing a specific URL.

A total of 190 responses to the survey (178 excluding largely blank responses) were received; slightly more than half of these throughout the entire year 2021, and the remainder - in July and August 2022.

The sample was about 70% Male, 92% White, 94% not working (either unemployed or not in the labour force due to age or disability), and 81% reported having a disability or long-term health condition. For 65% of the total sample, their condition limits daily activities.

Although we did not have an explicit control group that matches the demographic composition of PEM participants (it is indeed unclear where or how people for this population outside of PEM could be recruited), we received varied responses to the question regarding the duration of involvement with PEM:

- 21 were about to start the programme
- 32 had been involved for less than a month
- 57 had been involved between one month and one year
- 68 had been involved for more than a year.

Exploiting this variation can help us estimate and infer the impact of PEM on key outcomes of interest, including wellbeing, physical activity, and Health and Social Care services use. Below we report on the key outcome levels across these duration of involvement categories and also compare them to statistics from the very large and nationally representative [Active Lives Survey](#), which samples up to 200,000 people in England every year.

Health and wellbeing

Looking at the statistics, there was a strong positive trend. The longer that individuals had participated in PEM, the better they scored on measures of personal wellbeing, subjective general health, and self-efficacy (see Table 4). Trust was the only outcome not to display this pattern.

Comparing the results to Active Lives Survey data, a large nationally representative survey, shows that people who were about to start PEM reported poorer outcomes than the average respondent with a limiting disability in the English population. However, for individuals who had participated in PEM for more than a year, all personal wellbeing outcomes except anxiety were above (better than) the average in the Active Lives Survey for those who do not have any disability. Therefore PEM may have the effect of lifting wellbeing for disabled people to levels typically reported by non-disabled people.

Table 4. Health and wellbeing outcomes in PEM service users as a function of length of involvement and comparisons to Active Lives (AL) data.

Outcome	About to start	Less than a month	Up to a year	More than a year	AL data: no disability	AL: limiting disability
Sample size	21	32	57	68	107621	22091
Life satisfaction	4.84	6.7	7.24	7.93	7.48	5.86
Happiness	5.05	6.88	6.96	7.52	7.5	6.02
Anxiety	6.47	4.67	4.93	4.48	2.95	4.28
Worthwhile	5.16	6.86	7.63	7.73	7.67	6.39
General health	2.6	2.68	3.12	3.01	4.19*	2.93*
Self-efficacy	3.1	3.26	3.73	3.92	3.91	3.32
Trust locals	3.4	3.7	3.53	3.25	3.43	3.2
Loneliness	1.84	1.9	1.71	1.7	1.48	1.82

Notes: AL - Active Lives Survey (2015-2019)

* Different answer options are used in this survey for this question: Active Lives has 5 - Very Good; 4 - Good; 3 - Fair; 2 - Bad; 1 - Very Bad; The PEM survey follows the Understanding Society scale: 5 - Excellent; 4 - Very Good; 3 - Good; 2 - Fair; 1 - Poor. Higher numeric scores are expected on the Active Lives scale as a consequence; someone with good health would yield a value of 4 in Active Lives and 3 in the PEM survey.

Physical activity

Individuals who were about to start PEM reported lower levels of physical activity than the subgroup with a limiting disability in the Active Lives Survey. They engaged in over two times fewer minutes of moderate equivalent activity per week on average, had a lower proportion of active respondents (≥ 150 minutes/week), and a higher proportion of inactive respondents (<30 minutes a week). Individuals who had participated in PEM for more than a year, however, had physical activity levels come closer to the Active Lives subgroup without a disability.

It is worth noting that the way minutes of total physical activity are derived for respondents in the Active Lives Survey may lead to an overstatement. This is because it is derived as the sum of the minutes of physical activity contributed by every sport that the respondent mentioned in an introductory question on sports participation. However, there is potential double counting, as some respondents may think of an activity they engaged in and tick the box for several different activities that they think it counts under.

Individuals who were about to start PEM participants had relatively low perceptions of capability, opportunity, and motivation to be physically active, only slightly higher than the sub-group with a limiting disability in the Active Lives Survey. Individuals who had participated in PEM for more than one year had more positive perceptions towards physical

activity than the Active Lives sub-group without a disability. This suggests that PEM may be particularly effective at fostering positive attitudes towards physical activity.

The main conclusion for physical activity levels and attitudes is the same as for wellbeing - PEM may increase physical activity levels and perceptions towards activity of a disabled person to similar mean scores typically reported by non-disabled people.

Table 5. Physical activity behaviour and cognitions in PEM service users as a function of length of involvement and comparisons to Active Lives data.

Outcome	About to start	Less than a month	Up to a year	More than a year	AL data - no disability	AL - limiting disability
Sample size	21	32	57	68	463656	127823
Minutes of mod+ activity / week*	163	453	294	565	707*	419*
% Active	28.6	46.4	48.1	57.1	68.3	43.3
% Inactive	50	25	22.2	27	19.4	43.3
Capability	3.4	3.84	4.13	4.35	4.33	3.06
Opportunity	3.7	3.84	4.39	4.44	4.14	3.37
Motivation	3.75	3.87	4.19	4.37	4.02	3.39

Notes: AL - Active Lives Survey (2015-2019)

* We believe totals for all physical activity may be exaggerated (see above)

Regression analysis insights

Given the unusually large differences in wellbeing and other outcomes above, one must ask the question whether these differences might be due to something else than PEM participation. Especially since our survey is not longitudinal, the respondents in the different duration of involvement subgroups are different people. We use multivariate regression analysis to control for any differences in observable demographic characteristics.

Table 6 shows the relationship between duration of involvement in PEM and life satisfaction, for the full sample and other key subgroups in the sample. The numbers in the table indicate the estimated difference in life satisfaction between being 'about to start' and other durations (column headings), while controlling for age, gender, employment status, ethnicity, disability and general health.

This relationship remained very strong and statistically significant even after controlling for other factors. This was also true for the Community Partnerships/Reconnect subsample, and other PEM workstreams. It is true for both self-completed responses and responses completed by a carer, even though statistical significance is diminished due to lower sample sizes.

Table 6. Results of regression analyses of length of involvement in PEM predicting life satisfaction.

Subsample	Less than a month	Up to a year	More than a year
Life sat. - full sample	1.333**	1.714***	2.191***
Community Partnerships/Reconnect only	0.937	1.916***	2.358***
Other PEM workstreams	-0.723	-1.357	-0.996
Proxy/carer responses	1.652*	1.306	2.001***
Self-completed responses	0.169	1.522	1.470

OLS regressions with heteroskedasticity-robust standard error. *p<0.1, **p<0.05, ***p<0.01.

Table 7 displays the associations between longer involvement in PEM and other outcomes (for the full sample only). There was also a strong and statistically significant relationship between PEM involvement (at least long-term involvement) and the other wellbeing measures, as well as self-efficacy. The relationship between PEM participation and physical activity, trust and loneliness was less clear after controlling for observable demographics.

Table 7. Results of regression analyses of length of involvement in PEM predicting measures of wellbeing, health, and physical activity

Model	Less than a month	Up to a year	More than a year
Happiness (0-10)	1.011	1.003	1.273**
Anxiety (0-10)†	-1.830**	-1.347*	-1.788**
Worthwhile (0-10)	0.828	1.659***	1.846***
Self-efficacy (1-5)	0.102	0.424	0.730**
Trust (1-5)	0.330	0.064	-0.194
Loneliness (1-3)†	0.313	0.094	0.062
Minutes of moderate+ phys. act. per week	90.568	-295.598	46.007
Active (>150 mins)	-0.026	0.073	0.190
Inactive (<30 mins)†	0.044	-0.028	-0.081

OLS regressions with heteroskedasticity-robust standard error. *p<0.1, **p<0.05, ***p<0.01.

†Negative measures - a lower score represents a better outcome.

Interpretation and causality

A goal of PEM is to improve the wellbeing, self-reliance, and health of people with disabilities through engaging them in physical activity.

At a first glance, a majority of people who access PEM services are indeed physically active, and display very positive attitudes towards physical activity. Both the levels of and attitudes towards physical activity improve considerably with duration of involvement in PEM.

Specifically, individuals about to start PEM had relatively low activity levels and attitudes, lower than respondents in the Active Lives survey with a limiting disability. Individuals who had participated in PEM for more than a year were closer in physical activity levels to the Active Lives sub-group without a disability, and attitudes were even more positive. This suggests that the aim of PEM to increase physical activity is being realised successfully.

Life satisfaction among people who accessed PEM services for more than a year was higher than even for non-disabled respondents in the Active Lives survey; the same for happiness and feeling that life is worthwhile. General health was lower than national survey sample averages but still higher than the averages for disabled people subgroups (taking into account that the Active Lives answer scale for the health question is skewed towards higher scores than the one we used in the PEM survey). Self-efficacy was also comparable to the mean score of non-disabled people in Active Lives.

There was significant variation in the length of time respondents had been engaged with PEM. Over 30% had participated for more than a year and thus had sufficient time to be exposed to PEM and experience its effects. On the other hand, around 30% had participated for less than a month or had not even started, which provides a reasonably-sized comparison group so that the results had some statistical significance.

The findings provide some evidence that many positive outcomes of PEM are being achieved, albeit some participants do continue to engage with PEM for long periods, which was not necessarily the intention and may need consideration in future (see earlier points on page 27-28). Despite this, there is evidence that PEM can help mitigate inequalities in physical activity, wellbeing, health, and self-efficacy, and bring people with disabilities/long-term health conditions closer to the outcome levels typically reported by people without disabilities/long-term health conditions. However, this is not the case for trust, and to some extent anxiety and loneliness, which improve but not enough to reach Active Lives averages for individuals without a disability/long-term health condition. Note that anxiety levels among PEM service users were particularly high.

Caveat: The current research design and available data do not allow us to establish causality or provide any robust evidence to say that it is participation in PEM that was definitely responsible for individuals' higher wellbeing or higher proportion of active people as opposed to their counterparts with disabilities in national surveys. We also cannot be certain that the respondents in our survey were representative of the entire pool of PEM participants.

Self-reported use of Health and Social Care services

Another important benefit of PEM postulated in the logic models was a reduction in Health and Social Care services use. The idea was that PEM should enable participants to live a more independent life and therefore be less reliant on day care or a carer visiting them. Furthermore, improving their general health and physical activity should lead to fewer GP visits and hospital admissions, thus reducing costs to the NHS.

The most accurate way to track service use and reduced use would be to link patient numbers of individuals to service use over time. This is possible but comes with significant

investment in time and data protocols to ensure GDPR compliance. Essex County Council are working on this but in the interim we took a subjective, survey based approach that was and is very experimental.

To try to assess the impact of PEM on service use, we included several questions on Health and Social Care services use in the PWA survey. They refer to six kinds of social care and medical services (column 1 of Table 8). The first set of questions asked about the current average level of service use (column 2). The second set asked the respondents to estimate how much they were using the service now in relative terms, compared to six months ago.

Based on this and the Unit Cost of Health and Social Care data, as well as a series of assumptions, we were able to provide a crude estimate of the average savings per person resulting from the reduction in service use associated with PEM participation. This was equal to approximately £365 per person per year (we transformed all measures in column 1 into yearly equivalent values). Out of that total, £163.34 is more attributable to cost savings for adult social care (Day care, formal support), with £201.90 more attributable to wider parts of the system (£128.99 in informal support; £72.91 across medical/health savings).

Table 8. Self-reported changes in service use by PEM participants and associated cost savings.

Service	Average level now	% using a lot less – (minus) % a lot more	% using a bit less – (minus) % a bit more	Reduction per person*	Unit cost**	Savings per person
Day care (sessions/month)	9.97	-3%	-3.00%	-0.105	£74.05	-£93.02
Formal support (hours/week)	61.86	0.00%	4.50%	0.278	£17.71	£256.36
Informal support (hours/week)	41.81	-6.50%	19.60%	0.140	£17.71	£128.99
Hospital admission (instances/6 mo.)	2.62	0.00%	6.80%	0.018	£1,854	£66.06
GP visit (instances/month)	2.35	0.00%	4.10%	0.010	£39	£4.51
Ambulance call-out (instances/month)	1.56	2.20%	-4.50%	0.002	£125	£2.34
Total						£365.23

*Based on the (arbitrary) assumption that 'a bit less' is a 10% reduction in service use and 'a lot less' is a 25% reduction in service use

**Sources: Information from the finance department of the Essex County Council on the average cost of a day care session and an hour of domiciliary care; PSSRU Unit Costs of Health and Social Care for hospital admissions, GP visits and ambulance call-outs.

Reduced service use is small, but this may still be a positive and significant finding

There may be several possible and plausible explanations for why there was only a small reduction in service use by the PEM participants despite such a profoundly positive improvement in health and wellbeing. However, even a small reduction or a lack of any increase in healthcare service use is important. Below are a few reflections on why, based on the qualitative interviews with the workforce and the team's collective understanding of PEM participants, their level of need and use of healthcare services.

1. A vast majority of PEM participants have long-term disabilities and chronic health conditions which may be untreatable or even deteriorating in nature, and therefore it is unrealistic to expect a disappearance of the need to regularly use Health and Social care services.
2. Related to the long-term health conditions of the PEM participants could be the case that without PEM there could be a progressive increase in service use (that is, the counterfactual, in the absence of PEM) and that participation in PEM mitigates against an increase in service use.
3. Those participating in PEM and with long-term disability and / or deteriorating health conditions are likely to have a care package ascribed to them that is relatively fixed - i.e., the patient has a limited ability to reduce their level of care in the period measured by this study.
4. According to the workforce consulted throughout the process - some individuals in PEM will “never” ask for reduced care as they will likely always have a need and a way that they can use the extra help to improve their lives.
5. An increase or lack of decrease in service use may not indicate a worsening of the respondents’ health condition, but rather greater willingness to use Health and Social Care services to address existing health conditions. Indeed, the PEM workforce's consistent (often weekly) contact with clients would often mean responding to participants' medical issues and identifying new needs that previously haven't been addressed. This could often result in recommending a visit to the GP.
6. The change in service use may be affected by the overall trend as the UK society slowly returns to normal following the COVID-19 pandemic. The overall trend is of an increasing Health and Social Care service use, as these services (e.g., in-person GP consultations) were often severely restricted during the peak phases of pandemic and the associated lockdowns.
7. It may be that a reduction of service use by the patient takes a little more time to take effect and may materialise after the time that we have been able to observe.

“If we can sort of like be there at the very start rather than maybe third stage or maybe fourth stage we could make a difference where these people are concerned. Money-wise, it would cost a lot less money.” Healthcare professional

“We have also noticed that they maintain it, so the [chronic health condition] hasn't worsened. [It] has not gone away, but it has not got no worse. And we can say that with all our members.” Healthcare professional

All things considered, the positive wellbeing impacts and indication of reduced service, albeit marginal, suggest that PEM is having a positive effect but perhaps through a different mechanism than originally forecast. That is, as noted previously, a number of individuals engage with PEM over a longer time-period instead (and/or alongside) of other services in the community.

The mitigating points 1 to 7 above are informed by the qualitative interviews with PEM participants and workforce. There is certainly scope for further study of objective data linked to patient numbers to extend the analysis of the current quantitative data and the qualitative feedback from patients and workforce. Such a study would be pioneering in healthcare.

Economic valuation

Based on the current (imperfect) data, we can estimate the economic impact to UK society from the reduced use of Health and Social Care services associated with PEM participation (for at least 7 months) of **£365 per person per year** (Adult social care: £163.34; Wider system: £201.90).

We do not know how long these effects last, the only way to estimate this duration is to track and observe PEM participants for long periods of time, which is a difficult and costly undertaking. Therefore, to be on the conservative side, we have assumed that the effects are concurrent (only happening as long as a person is still participating in PEM).

Furthermore, the improvement in life satisfaction associated with PEM participation can be monetised using wellbeing valuation techniques. We use the unit value of £13,000 / WELLBY, recommended by the recently released [Wellbeing Supplementary Guidance to HMT Green Book](#). We applied this to the estimated life satisfaction increase associated with PEM participation for at least a month in our regression analysis, which is 1.71. The monetary value of this increase would be **£22,230 per person per year**.

We scaled up the values per person to the typical number of unique regular participants in the Community Partnerships/Reconnect workstream and Inclusive Cycling. These numbers were provided by the PEM. See [this online appendix](#) for more detailed information and calculations.

There are several reasons why we do not consider the other workstreams for cost-benefit analysis:

- The PA-OT and Care Homes interventions are not delivered to the residents/patients directly, but rather to staff members who then work with the residents/patients. As a consequence, there were no records of final beneficiaries.
- As in the regression results table above, the association between PEM participation and wellbeing was driven by the Community Partnerships/Reconnect subgroup.
- Survey sampling was mostly done through the Community Partnerships/Reconnect sessions, and therefore even respondents who indicated other workstreams will also have participated in Community Partnerships/Reconnect.
- To produce a more conservative estimate.

Table 9. Potential benefits and cost savings from reduced service use and enhanced wellbeing of Community Partnerships/Reconnect.

PEM workstream	Unique participants	Value of reduced service use	Value of increased wellbeing	Total benefits
Community Partnerships/Reconnect (Colchester)	332	£121,257	£7,380,360	£7,501,617
Community Partnerships/Reconnect (Tendring / Clacton)	163	£59,533	£3,623,490	£3,683,023
Community Partnerships/Reconnect (Basildon)	407	£148,649	£9,047,610	£9,196,259
Basildon Inclusive Cycling	16	£5,844	£355,680	£361,524
Total				£20,742,423

Costs and net benefit

The final step was to add together the yearly costs and benefits of the PEM programme to calculate its bottom line metrics for policy evaluation - the net benefit and Benefit-cost ratio. Total costs of current PEM projects were obtained from the Operations Director at Sport for Confidence.

Table 10. Total direct costs of PEM for 2020-2022.

	Cost
Costs - 2020-21	£197,520
Costs - 2021-22	£155,770
Costs - total	£353,290
Total benefits	£20,742,423
Net benefit	£20,389,133
Benefit-cost ratio	58.71

Note: PEM has been running for 2 years at the time of writing this report. However, the unique number of participants in the previous table counts people who joined at different points in time, therefore we assumed the average exposure to the wellbeing benefits from PEM to be 1 year and only count 1 year's worth of benefits. We also considered the full expenditure associated with PEM rather than the share allocated to Community Partnerships/Reconnect only, to be on the conservative side, as some participants moved across workstreams.

Social Value

“The appraisal of social value, also known as public value, is based on the principles and ideas of welfare economics and concerns overall social welfare efficiency, not simply economic market efficiency. Social or public value therefore includes all significant costs and benefits that affect the welfare and wellbeing of the population, not just market effects. For example, environmental, cultural, health, social care, justice and security effects are included.” [HM Treasury Green Book \(2022\)](#), Section 2.1

PEM is a highly socially desirable investment, delivering over £58 of social value per each £1 invested. This is mainly because of the extremely high association between participation in the programme and improved personal wellbeing. That is, the value of reduced service use equated to 95p compared to the value of increased wellbeing being £57.76. This could be because PEM participants start with low levels of wellbeing to begin with, and lifting their wellbeing is easier than for the average person. If it is the main reason, then interventions such as PEM (i.e. targeting people with disabilities/long-term health conditions or who otherwise have problems with self-care and doing usual activities) are indeed one of the most effective ways to create more welfare in society. For comparison, [Sport England's social return on investment study](#) suggested sport has a return of £4 for every £1 spent.

Higher levels of wellbeing may deliver social value through potentially enabling individuals to engage in employment, volunteering, and other activities, and thus potentially bringing direct and indirect benefits to Adult Social Care, Health and wider society. While some of these benefits may be directly quantifiable savings to specific parts of a system, such as reduced use of GPs, hospital or social care, other benefits may be more qualitative, and harder to quantify and attribute to system settings. Further research and evaluation are needed to track service users over time to explore specific impacts (including cost savings) on service use, employment, and engagement with wider community services. However, wellbeing itself is valuable, not just as a means of performing other activities or bringing actual monetary savings to public institutions.

The idea of wellbeing as the ultimate objective of public policy has been advanced in, for example, Frijters and Krekel's [A Handbook of Wellbeing for Policy-Making](#) and the [HM Treasury Green Book](#). Within this line of thinking, £20 million may not translate to an actual monetary saving in specific parts of the system. Rather, the £20 million is a monetary equivalent estimate of the amount of wellbeing generated by a programme, using a common yardstick that everyone is used to - money. It (roughly) represents the equivalent amount of money that the group of affected people (in total) would be willing to pay or give up to experience the wellbeing increase that the programme has generated for them, although the effects might be spread unevenly across participants.

Estimates could be influenced by limitations in the research design (e.g., selection bias). All previously identified caveats apply regarding the validity of these economic findings. In truth, the actual a) number of PEM participants and b) average wellbeing impacts of PEM, c) average level of service use reduction as a consequence of PEM may be different. In this situation, the social value, net benefit and social return on investment ratio would also be different. We hope that more robust data may become available in the future that will help to

refine these estimates and increase their accuracy and validity. Further, it should be noted that estimates do not account for aligned work that was funded outside of PEM that may have also contributed to benefits.

Cost-effectiveness analysis and comparison to the NHS

The WELLBY can be linked to the NHS measure for health improvements - the QALY (Quality Adjusted Life Year), enabling a broad comparison between the value and cost effectiveness of physical activity-based preventative health and wellbeing programmes such as PEM and the NHS costs for similar outcomes. Namely, research has been conducted which shows that the average cost spent by the NHS per QALY generated is around £15,000. Given that a QALY can be considered equivalent to 6 WELLBY, this means that the cost-effectiveness of the NHS in generating wellbeing is £2,500 / WELLBY (for details, see [Frijters & Krekel, 2021](#)).

PEM generates 1595 WELLBYs with a total programme cost of just over £350,000. Therefore, the expenditure per each WELLBY generated is £221. This estimate suggests that PEM may be 12 times more cost-effective at generating wellbeing than the average NHS intervention. This finding for PEM is similar to a [2021 study conducted by State of Life](#) that found parkrun was 25 times more cost effective than the NHS at generating health and wellbeing. This is a helpful comparison given that parkrun does not have the infrastructure and overhead costs of PEM.

One reason why PEM could be more cost-effective than the NHS in terms of its ability to generate social welfare in the population is because PEM is a preventative health measure. It focuses on managing and preventing health problems and mitigating health inequalities in a non-medical environment rather than clinicians treating and curing these problems in hospitals, which involves significant expenses. This is not to suggest PEM and other physical activity programmes and preventative measures are a substitute for the NHS, but that their value as a cost reducing complement to the NHS seems positive and relevant. This focus on preventative health is outlined in the [2019 Green Paper on the future of health prevention](#). Further, and as noted previously, it is important to consider the purpose and role of PEM or similar programmes in terms of whether they should provide a long-term service for some/all individuals versus providing an opportunity to develop skills, knowledge and confidence before transitioning to wider services.

There is enormous potential in social cost-benefit analysis and wellbeing cost-effectiveness analysis using the WELLBY to determine which projects and programmes are most cost effective at improving the health of the nation. We hope this pioneering study stimulates more interest in the physical activity, health, and social care sectors.

Emergency response data

Within the Care Home workstream, we analysed data from the East of England Ambulance Service on the frequency, reason for, and cost of 999 and 111 calls made from each care home involved in PEM along with ambulance visits. Data spanned 2019 (i.e., pre-PEM) to July 2022, which allowed examination of potential changes in the number of and reason for 999 and 111 calls and ambulance visits before and during PEM. Nine care homes engaged

with PEM during the evaluation period, with five starting in May 2021, three starting in October 2021, and one starting in January 2022 (see Table 11). In recognition of the COVID-19 pandemic and any potential impact this may have had across the Care Home sector and use of emergency services, data from two separate control periods are included (0A – available data from pre-COVID lockdowns; 0B – data after the first COVID lockdown, but pre-PEM).

Table 11. *Number of care homes included in the analysis across time.*

Cluster	Period				
	0A Apr 19-Feb 20	0B Mar 20-Apr 21	1 May 21-Sep 21	2 Oct 21-Dec 21	3 Jan 22-Jul 22
1	5 homes	5 homes	5 homes	5 homes	4/5 homes*
2	3 homes	3 homes	3 homes	3 homes	3 homes
3	1 home	1 home	1 home	1 home	1 home

■ Before the introduction of PEM; ■ Care homes engaged with PEM

* One care home closed down during this period and was excluded from the analysis thereafter.

In the subsequent analysis, all data were adjusted for care home size (number of residents) and the different number of months of each time period, along with removing duplicate calls. Further, although there were nine care homes within PEM across the evaluation period, it should be noted that the PEM team reported that the homes had engaged to different extents. All five care homes in Cluster 1 and 3 were reported to have been engaged or very engaged. This included attending training delivered by Sport for Confidence, the Provider Quality Innovation Team and Active Essex, engagement with follow-up mentoring/support by an Occupational Therapist and other Adult Social Care staff, clear evidence of how learning had been implemented, and in most cases engagement with wider projects such as Prosper and Find Your Active workshops. In contrast, some of the care homes in Cluster 2 were perceived to have been less engaged. Although staff had attended training by Sport for Confidence, there was less engagement in follow-up support and less clear evidence of how learning had been embedded in practice.

There was significant variation within and across care homes in terms of the total number of 999 and 111 calls. However, there was no obvious trend for fewer total calls after engagement in PEM, and in the case of Cluster 2 care homes an overall increase (see Table 12). Similarly, there was no clear reduction in the cost of total calls and ambulance visits before and during PEM. However, the sample size is small, and the differing levels of engagement with PEM and various changes in COVID-related restrictions may have influenced the findings.

Table 12. Average number of 999 and 111 calls per 10 residents per month across time.

Cluster	Period				
	0A Apr 19-Feb 20	0B Mar 20-Apr 21	1 May 21-Sep 21	2 Oct 21-Dec 21	3 Jan 22-Jul 22
1	1.39	1.15	1.17	1.51	1.46
2	1.76	1.83	2.64	3.13	2.66
3	1.74	1.49	1.21	1.25	1.39

Beyond the overall number of calls, we examined the number of calls that were related to falls as opposed to other reasons. This reflected that two outcomes of the Care Home workstream were to reduce the number of falls and hospital admissions from falls. Similar to above, there was a notable degree of variation in the data, but a small trend in Cluster 1 for fewer calls relating to falls after engagement with PEM (see Table 13). That is, the average number of falls across homes in Cluster 1 fell from 0.33 falls per 10 residents per month before PEM to 0.28 falls per 10 residents per month during/after PEM. To provide more robust estimates, it would be important to track the falls across all care homes over a longer period, examine subsequent action (e.g., was ambulance visit necessary, was the individual transferred to hospital?) and explore the use of control clusters more fully. Alongside this small trend in the absolute number of falls leading to a 999/111 call, there was a reduction in the percentage of 999/111 calls relating to falls across all care homes. For example, in Cluster 1, falls accounted for 19.7% of all 999/111 calls before PEM, but this reduced to 14.0% of 999/111 calls during/after PEM.

Table 13. Average number of 999 and 111 calls for falls per 10 residents per month across time.

Cluster	Period				
	0A Apr 19-Feb 20	0B Mar 20-Apr 21	1 May 21-Sep 21	2 Oct 21-Dec 21	3 Jan 22-Jul 22
1	0.39	0.28	0.24	0.33	0.28
2	0.49	0.44	0.85	0.70	0.58
3	0.40	0.33	0.28	0.27	0.27

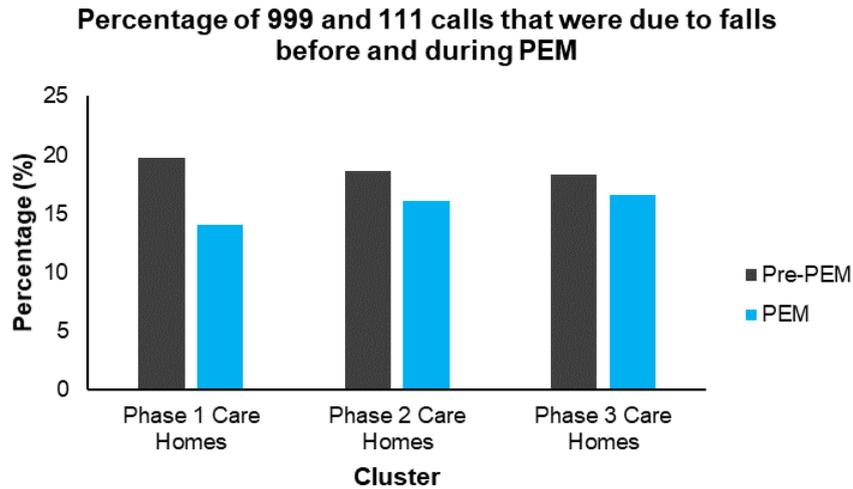


Figure 6. Percentage of 999 and 111 calls that were due to falls before and during PEM.

Challenges and developments

Despite the positive impact of PEM on improving (or maintaining) health and wellbeing, reducing service use and potentially saving costs, the evidence would be strengthened by further data within each workstream. This could include increasing the sample size, tracking individuals over time, and using additional objective data on service use and associated cost benefits. Although the economic analysis focused primarily on the Community Partnerships/Reconnect pathway, qualitative data demonstrated that stakeholders recognised the potential economic impact of all PEM workstreams and its value as an overarching programme. Further, given the benefits of PEM (or similar programmes in future) may be seen across Adult Social Care, Health and wider system settings, it is important to consider equitable approaches to the funding and resourcing of preventative programmes for which direct and indirect savings span beyond a sole commissioning organisation.

“If someone in this home falls and they are on a blood thinner, we call an ambulance. You know, so if you are stopping that [falls] you are saving on ambulances... Invest in this, less falls, less phone calls, less hospitals, less [need for] physios and OTs because staff are more confident with movement, handling and you know how to maintain people’s mobility and what they can do... It all has a knock on effect, GPs, the amount of behaviours and medicines that might have been prescribed.” PEM Care Home staff

Recommendations

The whole systems and preventative approach of PEM has made exciting progress and had demonstrable impact over since August 2020. Although further development, testing and evaluation should be undertaken, the innovative and integrated approach in Adult Social Care and Health could offer transformational change, embed physical activity into the system, improve the lives of people living with disabilities and/or long-term health conditions, mitigate health inequalities and support individuals to be more active, happier, and live more independently. This could be a development and iteration of PEM itself or through applying the learning from PEM to other similar programmes. Below are a number of recommendations to support future work.

System-led opportunities

PEM has successfully identified and developed a range of opportunities across the system to facilitate active and independent lifestyles. It is important to develop further understanding of the needs, opportunities, and resources within systems and to use this insight to design whole systems, evidence-based and placed-based approaches that tackle physical inactivity in marginalised populations. In doing so, the following specific recommendations should be considered.

1. Opportunities and programmes should be developed in partnership across the system, with the potential to more fully engage organisations across the Health system who could contribute knowledge, expertise and resources, and who could potentially experience direct and indirect benefits from whole-systems and preventative programmes.
2. It is important to integrate community insight, scientific evidence, and the tacit knowledge of Health and Social Care professionals to identify and implement opportunities that fit local context.
3. Opportunities should be co-produced with people who access PEM (or similar) services to ensure that they are placed-based, inclusive and accessible.
4. Interventions should create an autonomy supportive environment to empower people who access PEM (or similar) services, promote independence, and provide them choice and flexibility.

Embed physical activity

PEM has made important progress in embedding physical activity across the system, and for organisations to collaborate with a preventative focus. This has been supported by alignment with national policies, facilitative leadership, and cultivating a shared vision purpose. However, further work is needed to more strongly embed physical activity in the system and ensure targeted pathways are sustainable. In doing so, the following specific recommendations should be considered.

1. It is important to periodically review and map the system within and across Adult Social Care, Health and related sectors to identify and capitalise on potential links between organisations.
2. If PEM is developed and/or lessons applied to other programmes, key political supporters and leaders should be identified to provide advocacy and direction.

3. Continue to work collaboratively using common language and a vision to facilitate a culture change across the Health and Social Care system, and to further explore mechanisms to develop engagement and input within and across the system.

Workforce

The current findings highlight that there is a need for physical training in Care Home staff and Occupational Therapists, it is valued by recipients, and it can inform working practices. It is therefore recommended that teams across Adult Social Care and Health continue to work with their staff to understand education and training needs and how to embed the principles into their work. In doing so, the following specific recommendations should be considered.

1. Workshops and training should be co-designed with some Care Home staff, Occupational Therapists, other Health and Social Care Professionals, and end-users to ensure that the content is tailored to different contexts and perspectives.
2. Facilitators and barriers to implementing physical activity advice should be identified and tackled, and Health and Social Care Professionals equipped with the tools and confidence to help challenge and improve systems and approaches in their respective contexts.
3. It is important to monitor the longer-term changes to working practices after the training.
4. Opportunities to embed physical activity content in formal education programmes should be explored.
5. Ongoing support including mentoring and infrastructure would help to ensure the workforce was able to continue to deliver physical activity in many contexts.

Impact

Involvement in PEM was associated with higher levels of physical activity and wellbeing, and individuals leading more independent lifestyles, and with small reductions in the use of some healthcare services. As such, it is recommended that the lessons from PEM be applied to informed current and future programmes. In doing so, the following specific recommendations should be considered.

1. PEM and similar programmes should maintain a focus on people living with disabilities and/or long-term health conditions and to support individuals to be active in their local community, live more independently, and feel connected with their local area.
2. Monitoring and evaluation should seek to increase sample size, track individuals over time, and integrate objective measures of service use to understand the longer-term impact and key drivers of change upon individual and system outcomes and to disseminate this learning local, nationally and internationally.
3. Alongside measuring impact in direct service users of PEM (e.g., Community Partnerships/Reconnect or Strength and Balance), efforts should be made to examine the subsequent impact on services users who engage with recipients of training programmes who have changed their working practices (e.g., indirect beneficiaries of Care Home and Physical Activity in Occupational Therapy).

Appendix

Table 14. *Ten features of a successful whole systems approach to tackling physical inactivity developed by Essex LDP evaluation team.*

(adapted from Bagnall et al., 2019; Global Advocacy for Physical Activity (GAPA) the Advocacy Council of the International Society for Physical Activity and Health (ISPAH), 2010; World Health Organisation, 2018). Also Collaborate nine building blocks of system infrastructure.

Feature	Definition
Identifying a system	Explicit recognition of the system with the interacting, self-regulating and evolving elements of a complex adaptive system. Recognition given that a wide range of bodies with no overt interest in or objectives referring to physical (in)activity may have a role in the system and therefore that the boundaries of the system may be broad. The identification and progress of the system might also extend to/align with the development and dissemination of a national action plan for physical activity.
Capacity building	An explicit goal to support communities and organisations within the system. Actions could include capacity building through multi-sectoral partnerships, the development of workforce capabilities, and enabling financing mechanisms across all relevant sectors.
Creativity and innovation	Mechanisms to support and encourage local creativity and/or innovation, to reorient services and funding to prioritise physical (in)activity. Consequently, activities and benefits might be broad and further reaching (such as cleaner air, reduced traffic congestion, greater social connections etc).
Relationships	Methods of working and specific activities to develop and maintain effective relationships within and between organisations. Specifically, actions aimed at increasing population levels of physical activity and planned and performed through partnerships and collaborations, which take different forms and involve different sectors at multiple levels.
Engagement	Clear methods to enhance the ability of people, organisations and sectors to engage community members in programme development and delivery. Such community-level/place-based engagement should have the goal of creating and promoting access to opportunities and programmes, across multiple settings, to help people of all ages and abilities to engage in regular physical activity as individuals, families, and communities.
Communication	Mechanisms to support communication between the various stakeholders and organisations within the system, which strives for an increase in programmes and opportunities that help people of all ages and abilities to engage in regular physical activity as individuals, families, and communities.
Embedded action and policies	Practices and policy frameworks explicitly set out for tackling physical inactivity within organisations within the system, through creating and maintaining environments that promote and safeguard the rights of all people, of all ages, to have equitable access to safe places and spaces, in their cities and communities, in which to engage in regular physical activity according to ability.
Robust and sustainable	Clear strategies to resource existing and new projects and staff, in order to increase knowledge of, and appreciation for, the multiple benefits of regular physical activity according to ability and at all ages. A tangible and supportive policy framework and related regulatory actions are required to achieve sustainable change.
Facilitative leadership	Strong strategic support and appropriate resourcing developed at all levels, which enables community-level/place-based approaches, appropriate governance, leadership, advocacy, and information systems to address physical (in)activity.
Monitoring and evaluation	Well-articulated methods to provide ongoing feedback into the system, to drive change to enhance effectiveness and acceptability.

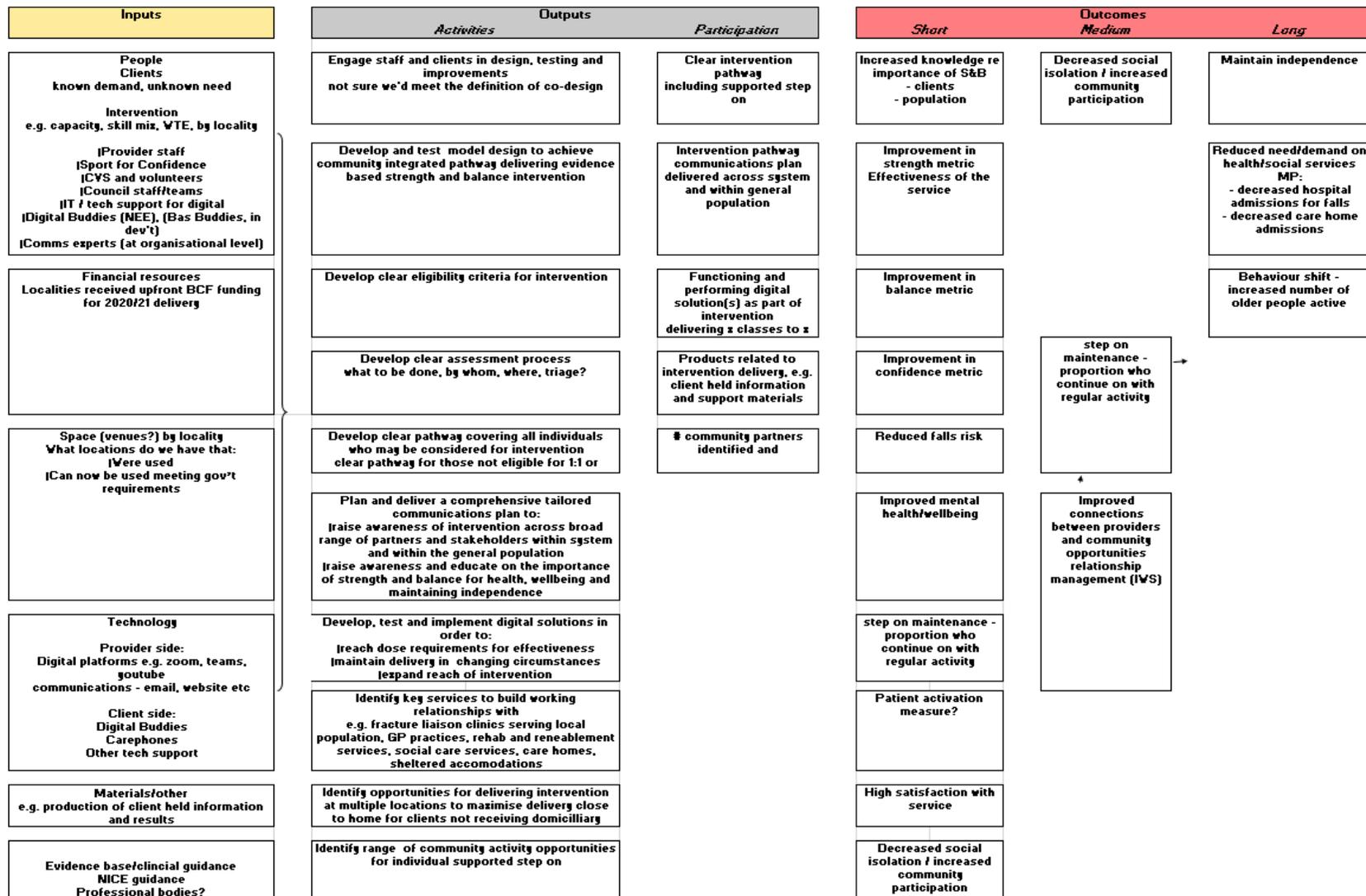


Figure 7. Logic model developed by the PEM team for the Strength and Balance workstream.

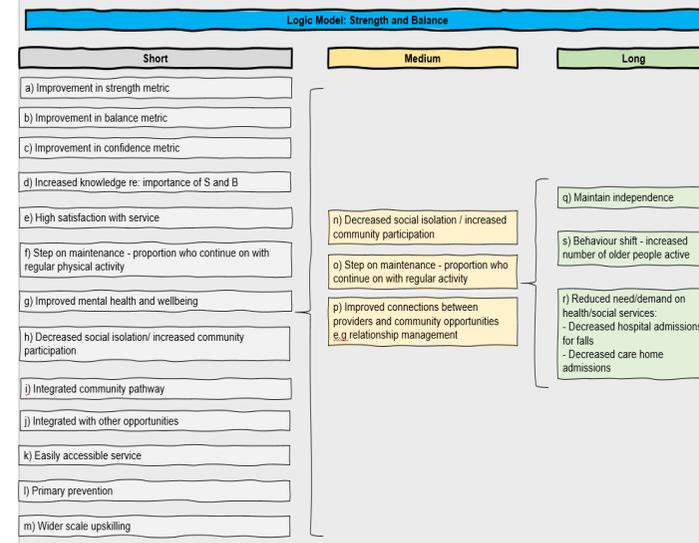
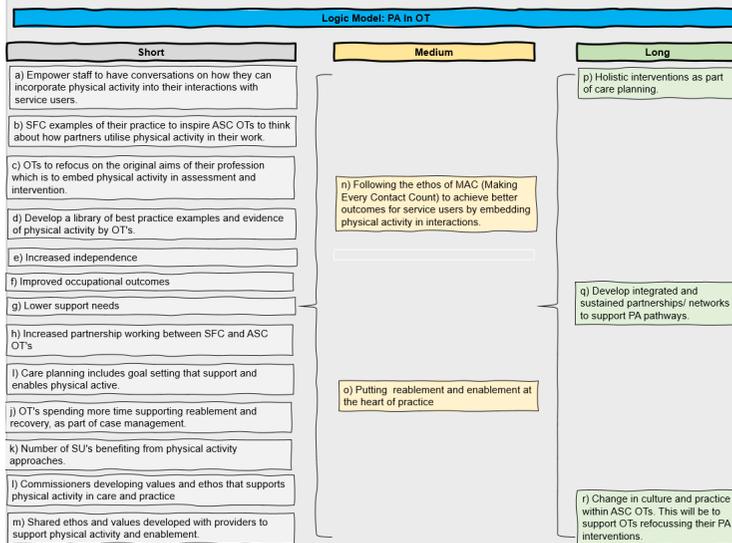
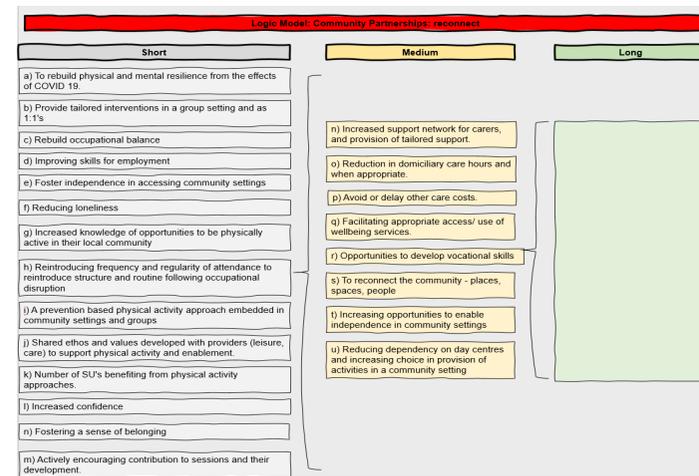
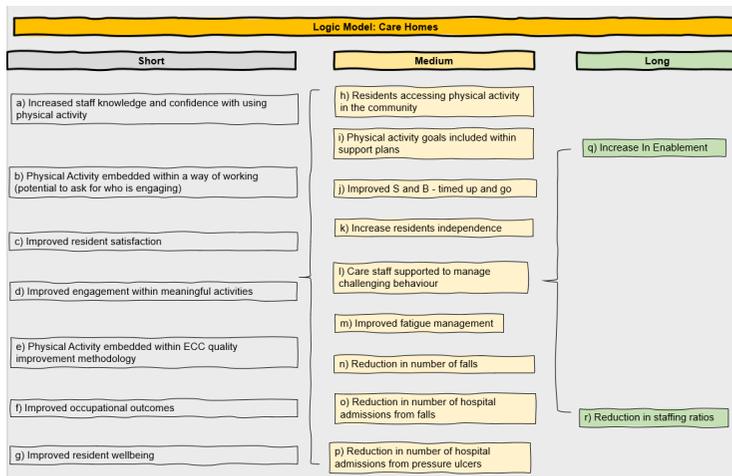


Figure 8. Outcomes for each workstream listed by the PEM team in the refined logic models.

A poem written by a carer who attended PEM sessions

I'm writing this poem straight from the heart because Sports for Confidence you really do play a very big part

Do you even realise how much you have done
You deserve a medal each & everyone

Your staff put their heart & soul into their jobs
It shows so much so please don't ever stop
You needed so much in so many ways
You make people have a happier day

You give purpose & meaning a reason for life
When people are suffering & in so much pain
Sports for Confidence your keeping them sane

You have something that's special I've not seen before
You make people wanted & give them much more
The time that you give the effort you use & the staff that you choose

Your perfect to help people you work from your hearts
& encourage every single person to want to take part
The energy you share to show that you care
Your doing so much by being just there

Your genuinely kind in all that you do
Your respectful & thoughtful it's clearly in you all
Your remarkable staff you deserve so much praise
Your amazing type of people who can take sadness away

I hope that you realise how important you are
The difference that you make to everyone near & from a far
What you all give you make people want to live

No matter what health problems people do have
You treat them with dignity & stop them feeling bad

You give people freedom & give them some life
You find out their strengths & help people build
But at the same time you keep them feeling chilled

When life's full of darkness you show people the light
You give people a future & give them all hope
So day by day you help people to cope

Sports for Confidence be proud of what you do
As people have life & it's all because of you
So when you all read this it's meant from my heart
because Sports for Confidence you play the biggest part