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Macmillan Northern Ireland Regional Integrated Cancer Prehabilitation Programme Evaluation

MACMILLAN CANCER SUPPORT

Final Report

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Project details and acknowledgements

Title	Macmillan Northern Ireland Regional Integrated Cancer Prehabilitation Programme Evaluation
Client	Macmillan Cancer Support
Project number	22155
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This project has been delivered to ISO 9001:2015, 20252:2019 and 27001:2013 standards.

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Language used

The language we use	What we mean
30 Second Sit to Stand Test (30 Sec STS)	The test is also known as 30 Second Chair Stand Test which is designed to assess leg strength and endurance, particularly in older adults. The participant needs to sit on a chair and tries to stand up fully and sit back down as many times as possible within 30 seconds. The number of full stands completed in 30 seconds is recorded as the outcome measure.
6-Minute Walk Test (6MWT)	The test is a simple, standardised test to help healthcare professionals understand how well a person's heart and lungs function during physical activity, reflecting their ability to perform everyday tasks. Participants are asked to walk as far as possible along a flat, hard surface for 6 minutes. The distance walked during this time period is recorded as the outcome measure.
Allied Health Professionals (AHPs)	AHPs are a distinct group of health professionals, such as physiotherapists, occupational therapists, radiographers, and dietitians, who provide a range of diagnostic, preventive, therapeutic, and rehabilitative services. They work in various settings, including hospitals, clinics, and community health centres, and often collaborate with other healthcare providers to deliver comprehensive care.
Alcohol Use Disorders Identification Test (AUDIT-C)	AUDIT-C is a brief screening tool used to identify individuals who may have hazardous drinking habits or alcohol use disorders. It consists of three questions that assess the frequency and quantity of alcohol consumption, as well as the risk of harmful effects.
Clinical Nurse Specialists (CNSs)	The Cancer CNS, is a registered nurse who is an expert within a specific area of cancer care, providing leadership and specialist knowledge. Working within a multidisciplinary team, CNSs coordinate care and are required to fulfil the key worker role, acting as the key point of contact from the point of diagnosis and throughout the pathway for people, families and carers. They promote health, empower patients to make informed decision and support self-management. CNSs may prescribe or advise as needed, conduct holistic needs assessment and deliver nurse – led clinics, in patient support and follow up. They collaborate with other professionals and voluntary agencies to ensure person- centred care and incorporate patient involvement within service improvement, innovation and research.
Distress thermometer	The Distress Thermometer is a widely used screening tool in cancer care designed to quickly assess a patient's level of psychological distress. It is typically presented as a visual analogue scale resembling a thermometer, where patients rate their distress on a scale from 0 (no distress) to 10 (extreme distress).
EQ-5D-5L	The EQ-5D-5L is a widely used tool for measuring health-related quality of life. It consists of two parts: the descriptive system and the EQ visual analogue scale (EQ VAS). The descriptive system includes five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression.
Grip strength test	A grip strength test measures how much force a person can squeeze with their hand. Participants are asked to squeeze a handgrip

	dynamometer as hard as possible for about 3-5 seconds. The highest reading displayed on the dynamometer is recorded as the outcome measure.
Health Thermometer	A self-reported tool for participants to rate their health status on a visual scale ranging from 0 to 100. In the case of the South Eastern Trust, patients were asked to rate how good or bad their health is on the day of the assessment, with 100 means the best health they can image and 0 means the worst health they can image.
International Physical Activity Questionnaire (IPAQ)	The IPAQ is a standardised tool used to measure physical activity levels across different populations and settings. It was developed to provide internationally comparable data on health-related physical activity. The IPAQ calculates the total physical activity in MET-minutes per week (Metabolic Equivalent of Task), which helps categorise individuals into different activity levels: low/inactive, moderate and high.
Malnutrition Universal Screening Tool (MUST)	The Malnutrition Universal Screening Tool (MUST) is a validated, five-step screening tool which is designed to identify adults who are malnourished, At risk of malnutrition (undernutrition), or obese.
Patient-Generated Subjective Global Assessment (PG-SGA)	PGSGA is a nutrition assessment tool used to identify and triage malnutrition, with a score ranging from 0-16, where higher scores indicate greater malnutrition risk and the need for nutritional intervention. The score provides healthcare professionals with clearer guidelines as to the level of medical nutrition therapy needed in a given case.
Rockwood Frailty Scale	The Clinical Frailty Scale (CFS), originated from the Canadian Study of Health and Aging, is a well-established tool widely used in clinical settings. It allows clinicians to summarise a patient's frailty and fitness based on their clinical judgement and evaluation. The CFS uses a 9-point scale, ranging from 1 (very fit) to 9 (terminally ill), to assess a patient's ability to perform daily activities, thereby determining their level of frailty.
SARC-F	SARC-F questionnaire is a screening tool for sarcopenia. It includes five components: strength, assistance with walking, rising from a chair, climbing stairs, and falls. The scores range from 0 to 10, with 0 to 2 points for each component.
Self-Efficacy for Exercise (SEE) scale	The scale assesses an individual's confidence in their ability to exercise three times per week for 20 minutes at the point of the assessment. The scale consists of 9 items, each representing a different situation that might affect exercise participation (e.g., bad weather, feeling tired, stress). Participants are asked to rate their confidence from a scale of 0 (No confident) to 10 (Very confident) for each item. The scores for each item are summed to produce a total score. The range of possible scores is from 0 to 90, with higher scores indicating greater self-efficacy for exercise.
Whole time equivalent (WTE)	Full time equivalent

Macmillan Northern Ireland Regional Integrated Cancer Prehabilitation Programme Evaluation

Executive Summary

Overview

In response to the COVID-19 pandemic, the Department of Health in Northern Ireland launched the Cancer Charities Support Fund to strengthen public health initiatives. Macmillan Cancer Support received £926,209 to lead a pioneering 24-month test of change – the Regional Integrated Cancer Prehabilitation Programme.

This initiative brought together all five Health and Social Care Trusts and eleven local councils to deliver integrated prehabilitation support in physical activity, nutrition, and emotional wellbeing, primarily through the Macmillan Move More Programme. A key priority of the programme was to establish a universal offer, ensuring that all individuals diagnosed with cancer had equitable access to early, holistic interventions. The programme aimed to demonstrate how such interventions could be embedded into cancer care pathways to improve patient outcomes and system efficiencies.

Evaluation Approach

M·E·L Research conducted an independent process and impact evaluation using mixed methods, including stakeholder interviews, patient surveys, and secondary data analysis. The evaluation aimed to assess implementation, effectiveness, and system-wide learning.

Key Learning Opportunities

1. Strategic funding as a foundation for impact: The programme's achievements were made possible through dedicated, time-limited funding. To ensure long-term success and equitable access, future efforts must be supported by ringfenced, multi-year investment that enables services to scale, embed into routine care, and innovate sustainably.

2. Strategic collaboration driving system change: Strong leadership, cross-sector partnerships, and well-established networks enabled rapid mobilisation and cohesive delivery. These collaborative foundations offer a powerful platform for embedding prehabilitation into standard cancer care pathways across Northern Ireland. Strengthening ties with local councils and leveraging existing community assets will be key to sustaining community-based support and expanding reach.

3. Tailored, patient-centred models of care: Patients consistently reported improved wellbeing, confidence, and recovery. The programme demonstrated that flexible, tumour-specific approaches and earlier intervention points (e.g. at diagnosis or endoscopy) are key to maximising engagement and outcomes.

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4. Workforce innovation and capacity building: Multidisciplinary teams—including Clinical Nurse Specialists (CNSs), Allied Health Professionals (AHPs), and support staff—delivered holistic, patient-centred care. Investment in a full MDT approach is essential to deliver multimodal prehabilitation to patients with increasing levels of complexity and need. Standardised training, structured induction, and peer learning opportunities are essential to build workforce confidence, consistency, and resilience.

5. Data-driven decision making: Sustained improvements in physical function and mental wellbeing were evidenced through patient-reported outcomes. A regional outcomes framework, supported by shared digital platforms, is critical for real-time monitoring, performance benchmarking, and strengthening the case for continued investment. The Trust-wide rollout of Encompass presents a timely opportunity to standardise data collection, enhance interoperability, and embed consistent performance tracking across the system.

Experienced key challenges	Future consideration
Delayed recruitment and misaligned timelines	• Regional coordination of recruitment and onboarding across all roles to ensure timely and consistent programme rollout. • Prioritise early and stable leadership appointments to provide strategic direction and continuity.
Lack of standardisation and service inequity	• Develop a unified regional model with consistent patient generated assessments and referral pathways, service delivery standards, and data protocols to ensure equitable access. • Standardise induction and training across Trusts to build workforce confidence and consistency. • Expand support roles (e.g. Band 4 staff) to assist with screening, referrals, and interventions.
Funding and resource constraints	• Secure multi-year, ringfenced funding to support core staffing (AHP, CNS and support workers), community services, and infrastructure. • Integrate prehabilitation into routine cancer care pathways, learning from models like cardiac rehab. • Strengthen partnerships with local councils, voluntary organisations, and community services to extend reach and share resources. • Allocate dedicated clinical space and equipment to support efficient, multidisciplinary service delivery.
Data and information system barriers	• Invest in integrated digital systems and data support to enable real-time tracking, evaluation, and service improvement. • Develop a regional outcomes framework with KPIs (e.g. referral/completion rates, functional outcomes, patient-reported measures). • Consider shared dashboards (e.g. Power BI, Tableau) for performance tracking and cross-organisational learning.
Governance and strategic oversight gaps	• Strengthen governance structures with clear accountability, guidance, and consistent programme management across all partners. • Plan for sustainability from the outset, including an exit strategy and integration into core services.

Key outcomes and impact for patients

1. Improved physical and mental wellbeing: Most patients either improved or maintained their functional performance on standard tests, with these gains largely sustained at four months. EQ-5D-5L scores showed significant improvements, particularly in reducing anxiety and depression, indicating that prehabilitation supports both physical resilience and emotional wellbeing.

2. Increased physical activity and lifestyle change: Participation in prehabilitation led to a marked increase in physical activity, especially among colorectal and lung cancer patients. Importantly, 75% of respondents reported maintaining or planning to increase their activity levels post-treatment, suggesting that prehabilitation can act as a catalyst for long-term lifestyle change.

3. Positive treatment preparation and recovery: Patients consistently reported feeling better prepared for treatment, both physically and mentally. Many experienced improved fitness, enhanced emotional wellbeing, quality of life, and healthier dietary habits, which contributed to smoother recovery and greater confidence going into treatment.

4. High engagement and satisfaction: The personalised nature of prehabilitation, tailored to individual needs and delivered at the right time, was highly valued by patients. This approach fostered a sense of control and motivation, which enhanced engagement and overall satisfaction with care.

5. System efficiency indicators: Lung cancer patients who received prehabilitation had shorter average and maximum hospital stays compared to those who did not, suggesting improved recovery and potential cost savings. While further data is needed, these early findings point to the programme's value in enhancing system efficiency.

Conclusions

Overall, the success of the programme was measured against the below four outcomes:

1. Reach and patient support: The programme reached over 1,300 patients by December 2024. Delivery was impacted by staggered staffing and limited resources, highlighting the need for sustained investment and time to embed services.

2. Equitable access for colorectal patients: All five Trusts implemented prehabilitation models for colorectal cancer, though service consistency varies due to local decisions and the discontinuation of the Macmillan Move More Programme which provided condition-specific community-based support. While Level 4 qualified support remains available within councils, the lack of a formalised and regionally coordinated referral system has led to uneven access, particularly for both universal and targeted patient groups.

3. Expansion to other tumour groups: Four Trusts extended services to additional tumour sites, confirming the need for tailored, tumour-specific pathways and flexible service models while maintaining the core elements of a prehabilitation service.

4. Demonstrated impact: Patient outcomes collected by Trusts showed clear benefits of prehabilitation, with improvements in physical health and mental wellbeing before treatment. Feedback from surveys and interviews highlighted the value of personalised support, with some patients reporting shorter hospital stays and faster recovery. While a formal cost-benefit analysis was not conducted, existing evidence supports the value of structured prehabilitation.

Background

About cancer prehabilitation

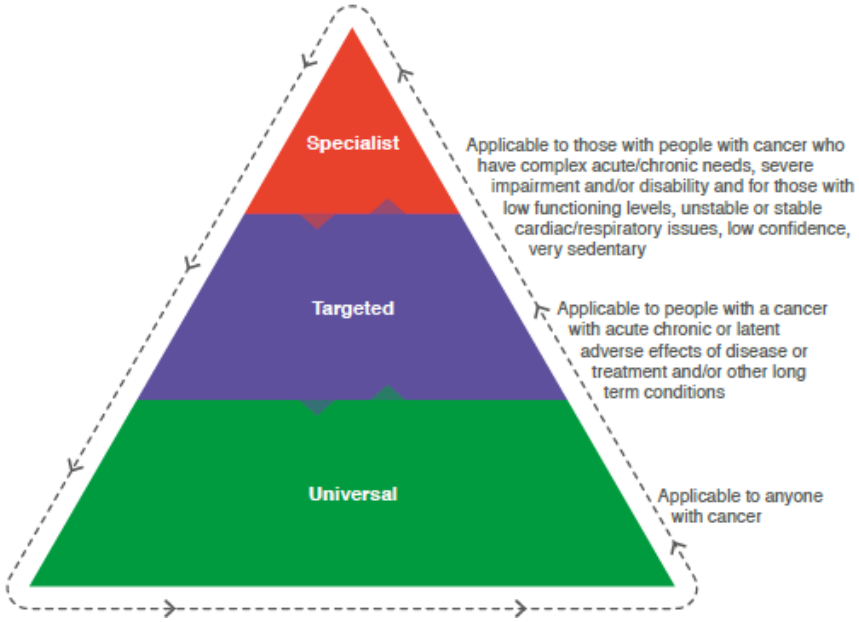
The Department of Health in Northern Ireland (NI) launched a 10-year Cancer Strategy in March 2022, aiming to reduce preventable cancer diagnoses, improve survival rates, and enhance the experience of those diagnosed with cancer. The strategy highlights the importance of addressing behavioural factors linked to cancer, such as smoking and poor diet, and emphasises offering targeted information and support to help patients "live well." Prehabilitation is identified as a crucial component, involving exercise, nutritional management, and psychological support.

Key components of prehabilitation, as outlined in the NI strategy, include multimodal prehab, personalised care plans, collaborative implementation and evidence-based practices. In 2017, Macmillan Cancer Support published an evidence review and guidance for prehabilitation [4]. Prehabilitation is defined as:

"A process on the cancer continuum of care that occurs between the time of cancer diagnosis and the beginning of acute treatment and includes physical, nutritional, and psychological assessments that establish a baseline functional level, identify impairments, and provide interventions that promote physical, nutritional, and psychological health to reduce the incidence and/or severity of future impairments."

Collaborations between organisations such as Macmillan Cancer Support, the Royal College of Anaesthetists, and the National Institute for Health Research has produced guidance documents to assist healthcare professionals who will be implementing prehabilitation into cancer care pathways [28]. Interventions are defined at three levels: universal, targeted and specialist (see Figure 1).

Figure 1. Three levels of cancer prehabilitation intervention



Evidence review carried out for this evaluation indicates that the benefits of cancer prehabilitation vary depending on the type of cancer and individual patient factors [7][19][23]. Patients who

understand the purpose and benefits of the prehabilitation programme tend to show greater commitment, while those who do not may be less engaged [2]. Key positive impact for patients can include:

- Improved physical function and fitness
- Reduced postoperative complications
- Enhanced psychological wellbeing
- Improved tolerance to cancer treatment
- Better quality of life

Cancer prehabilitation has also been associated with several positive impacts on secondary care services, such as:

- Reduced length of hospital stay
- Decreased postoperative complications
- Enhanced resource allocation
- Improved patient outcomes
- Reduced healthcare costs

Evidence also suggests that multimodal cancer prehabilitation programme delivery is critically dependent on the effective integration between community, primary and secondary care [28]. Prehab, it is stated, should be delivered by a multidisciplinary team working within a described framework using a combination of registered professionals (e.g. dietitians, occupational therapists, physiotherapists, psychologists) and unregistered professionals (e.g. prehab/therapy support workers, healthcare assistants, fitness instructors) where there is scope to delegate some responsibilities (as well as care givers, family, wider support networks). Others have included oncology nurses, cancer care managers or other 'navigators' in training to deliver prehabilitation services, (e.g. [30][31]). Key skills to facilitate the delivery of prehabilitation services included interpersonal, facilitation, motivational interviewing techniques and providing emotional support [2].

While cancer prehabilitation is associated with positive outcomes, some discussions consider the potential negative impacts on secondary care, for example resource allocation and implementation challenges, inconsistent evidence base, limited patient engagement, and potential for overwhelming healthcare services.

Further details on the topics discussed above can be found in the full evidence review report, located in Appendix A.

About the programme

After the COVID-19 pandemic, the Department of Health in Northern Ireland introduced several funding initiatives to support charities in improving public health. One notable initiative is the Cancer Charities Support Fund, which is part of a £10 million package aimed at supporting carers, cancer

charities, and mental health organisations in response to the pandemic.[1] A total of 14 projects successfully applied for the funding, including Macmillan Cancer Support, which was awarded £926,209 to:

- Deliver the 24-month Macmillan Move More Programme from April 2022 to March 2024, in partnership with 11 local councils across NI to provide cancer patients community-based support pre- and post-treatment.[2] Notably, prehabilitation activities under the Move More Programme began in January 2022, ahead of the formal programme launch.
- Enable a pioneering 24-month test of change, the Regional Integrated Cancer Prehabilitation Programme by funding the Macmillan Prehabilitation Clinical Project Manager post in each of the five Health and Social Care Trusts (HSCTs or Trusts). The key tasks of the Clinical Project Managers were to develop appropriate standards and guidelines, implement processes, and raise the profile of prehabilitation in current cancer pathways.

The programme brought together all five HSCTs and 11 councils to deliver integrated cancer prehabilitation services across NI. The collaboration aimed to provide universal and targeted support in physical activity, nutrition and emotional wellbeing, primarily through the Macmillan Move More Programme.

The goals was to embed **personalised, early-intervention** support into an integrated pathway for adults diagnosed with cancer in NI, establishing prehabilitation as a cornerstone of the cancer pathway for the first time in the region. The ambition was to establish regional standardisation around prehabilitation for colorectal cancer, as well as developing localised prototypes for up to five further tumour groups.

The main objectives were to:

- Support 3,000 people living with cancer across NI through the provision of personalised, early-intervention prehabilitation, and a further 13,500 people affected by cancer, transforming both outcomes of treatment and patient experience.
- Establish a model of equitable access to this support for colorectal cancer patients across NI, ensuring equity of access through the integration of standards across all pathways.
- Develop prototypes for the delivery of this support for up to five further tumour groups (two in each trust) - lung, upper Gastrointestinal and Hepatobiliary, head and neck, breast, and gynaecological cancers.
- Demonstrate evidence of impact on patient outcomes, patient experience, and cost-benefit to support a business case with recommendations for future investment such as commissioning to deliver this support sustainably.

1 https://www.health-ni.gov.uk/news/health-minister-robin-swann-has-announced-allocation-nearly-ps8m-support-grants-range-cancer-charities-northern-ireland

2 The Macmillan Move More Programme was fully funded by Macmillan from 2016 to March 2022, providing cancer rehabilitation support across Norther Ireland. From April 2022 to March 2024, Macmillan continued to fund 50% of the programme, enabling the delivery of prehabilitation support to universal and targeted patient groups, while maintaining its core rehabilitation services.

As of the time of this report, prehabilitation was accessible to patients aged 18 and older undergoing curative treatment for colorectal, lung (including those receiving palliative treatment), head and neck, and haematological cancers. However, not all five Trusts implemented prehabilitation across all four tumour sites.

The South Eastern Trust has had the longest running prehabilitation service since March 2021. Only the Northern Trust had a dedicated prehabilitation team, funded by Charitable Trust Funds. This team consisted of a band 7 physiotherapist and a band 7 dietitian, who were supported by a band 4 Physiotherapy Assistant and a band 4 Dietetic Assistant Practitioner.

It is also worth noting that only the South Eastern and Northern Trusts have had the same Clinical Project Manager in post throughout the evaluation period which has helped provide consistency and stability of leadership within the prehabilitation services. Meanwhile, in the Western Trust, the Clinical Project Manager secured a permanent role one month before the end of his contract. To ensure continuity, the Personalised Care Facilitator assumed responsibility for the service.

An overview of the programme implementation in each Trust, including funded and non-funded/in-kind resources, is provided in Appendix D. Some examples of screening and intervention details by tumour site are available in Appendix E.

Referral data

Referrals to prehabilitation interventions by tumour sites

By the end of December 2024, over 1,300 patients had been referred to cancer prehabilitation across the four Trusts that provided monitoring data. Due to the absence of the Clinical Project Manager role in the Belfast Trust for most of 2024, there were very few referrals during this period, and the evaluation was unable to obtain relevant data from the Trust. The table below includes referral numbers from the inception of prehabilitation in each Trust.

Table 1. Number of referrals by Trust and by tumour site from inception of prehabilitation in each Trust

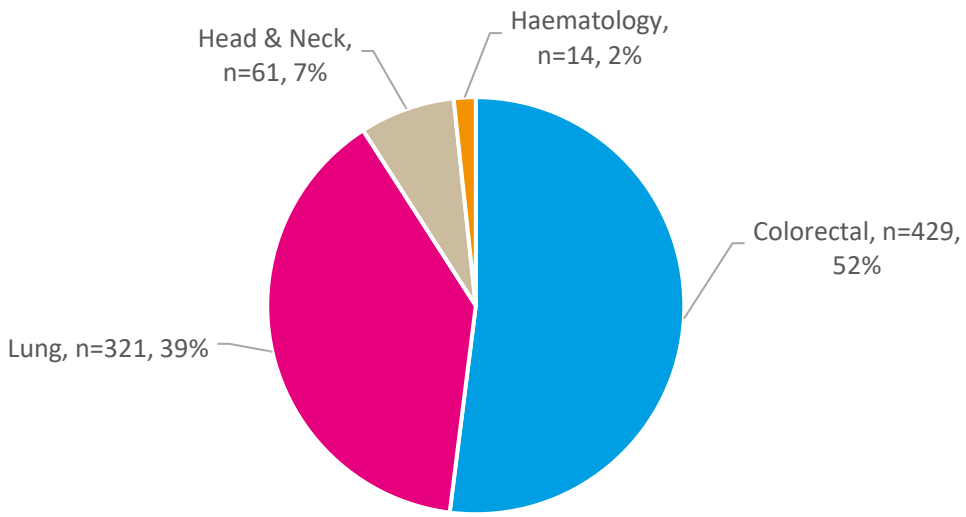
HSCT	Time period	Colorectal	Lung	Head & Neck	Haematology	Total
Belfast	N/A	No data provided				
Northern	Nov 22-Dec 24	272	257		11	540
South Eastern	Mar 21 – Dec 24	369	107	138		614
Southern	Nov 23 – Aug 24	53	45			98
Western	May 23 – Oct 24	52		14		66
Total		**727**	**409**	**152**	**11**	**1,318**

Source: Macmillan Prehabilitation Clinical Project Managers

Detailed referral data, collected during **January and December 2024**, by the three levels of prehabilitation intervention and by tumour sites, have been analysed and presented below. In total, 825 referrals were made across four tumour sites with colorectal accounting for half of the referrals,

followed by lung (Figure 2). Due to the very small number of referrals for haematology, this tumour site has been excluded from further analysis.

Figure 2. Referrals by tumour sites (n=825)

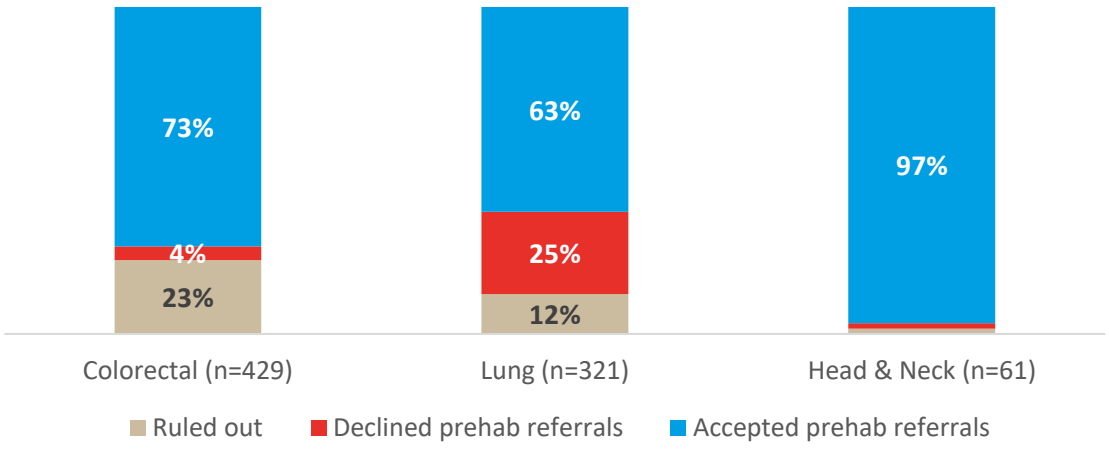


Source: Macmillan Prehabilitation Clinical Project Managers

When examining patients' level of acceptance to prehabilitation referrals, head and neck had the highest level of acceptance (97%), followed by colorectal (73%) (Figure 3). It is worth noting that the high acceptance of head & neck cancer patients to the prehabilitation interventions in the South Eastern Trust was mainly due to that prehabilitation was offered in the head & neck one-stop shop led by the CNSs and dietitian, which was part of the patients' treatment pathway.

Lung had the highest percentage of patients declining the referrals (25%), with ill health being the primary reason. Colorectal, on the other hand, had the highest percentage of patients being 'ruled out' of prehab, mainly due to not having enough time between diagnosis and treatment to fully benefit from the interventions.

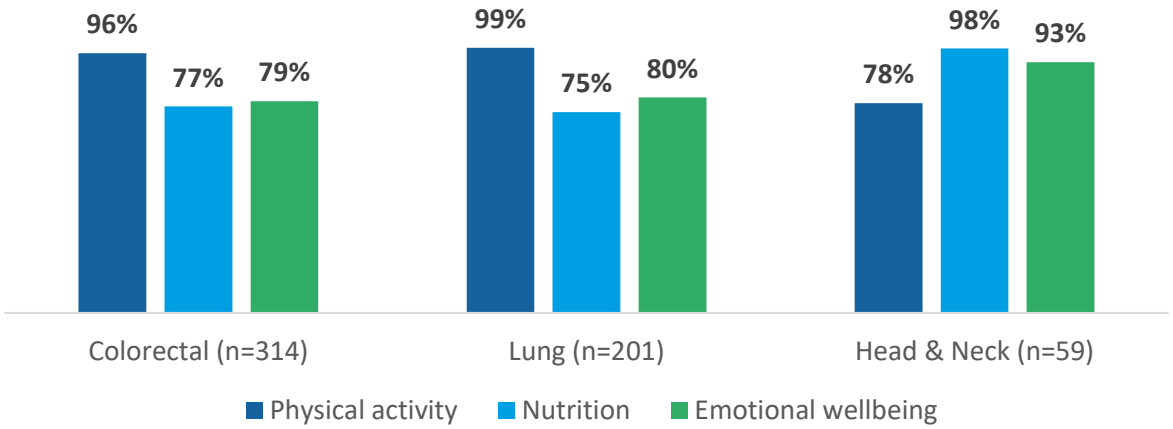
Figure 3. % of newly diagnosed cancer patients suitable for prehabilitation accepted or declined prehabilitation referrals



Source: Macmillan Prehabilitation Clinical Project Managers

Figure 4 illustrates how types of prehabilitation referrals differ between tumour sites. For colorectal and lung, most patients were referred for physical activity, whereas nutritional and emotional wellbeing support were more prominent for head and neck patients. Although the proportion of head and neck cancer patients referred to physical activity interventions was relatively low compared to the other two tumour sites, this was partly due to the absence of regional referral pathways. Specifically, patients diagnosed and treated at the South Eastern Trust but residing outside its locality faced challenges being referred to appropriate interventions available within their home Trust areas.

Figure 4. Referrals to different prehabilitation interventions



Source: Macmillan Prehabilitation Clinical Project Managers

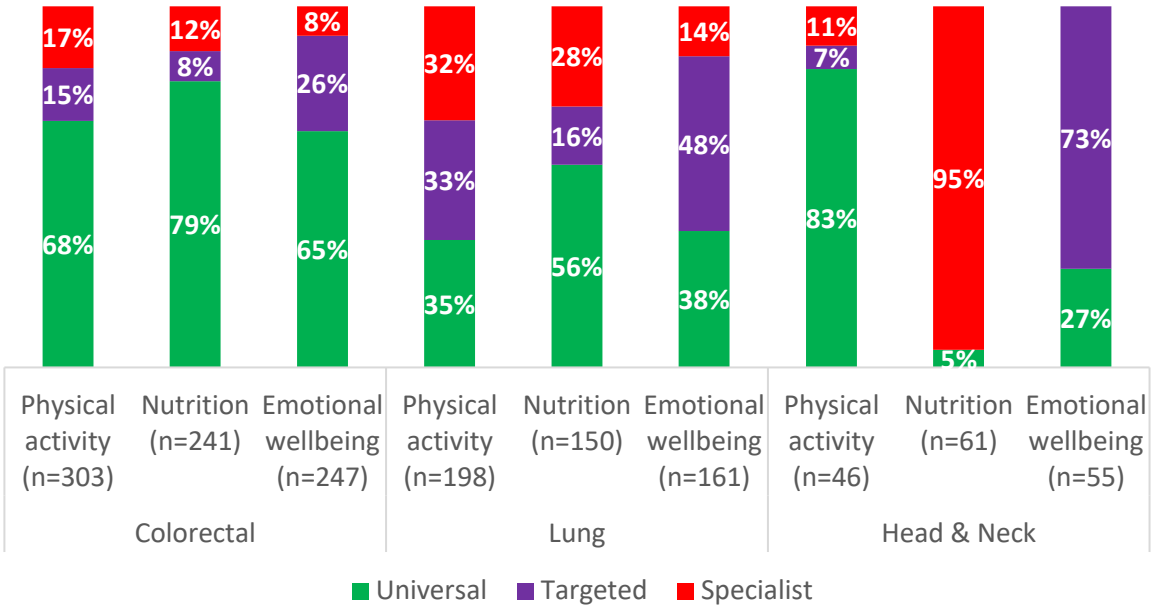
Figure 5 and Figure 6 further demonstrates the importance of having appropriate resources in place to provide all three different level of interventions (universal, targeted and specialist) and to ensure service provision is available to cater to the different needs of patients from various tumour sites.

In the case of colorectal, over two-thirds of patients were assessed to be suitable for universal support across all three types of interventions. Conversely, a third of lung patients required targeted support on physical activity, with another third requiring specialist support from a physiotherapist. Lung and head and neck patients were also more likely to require targeted emotional wellbeing support, compared to colorectal patients.

Data from the Macmillan Information Service team at Northern Trust indicated that 67% of lung patients received at least one onward referral to Practical, Emotional or Financial Support in 2023 (n=62), and this increased to 81% in 2024 (n=80), Financial support was the most frequent referral, accounting for an average of 68%.

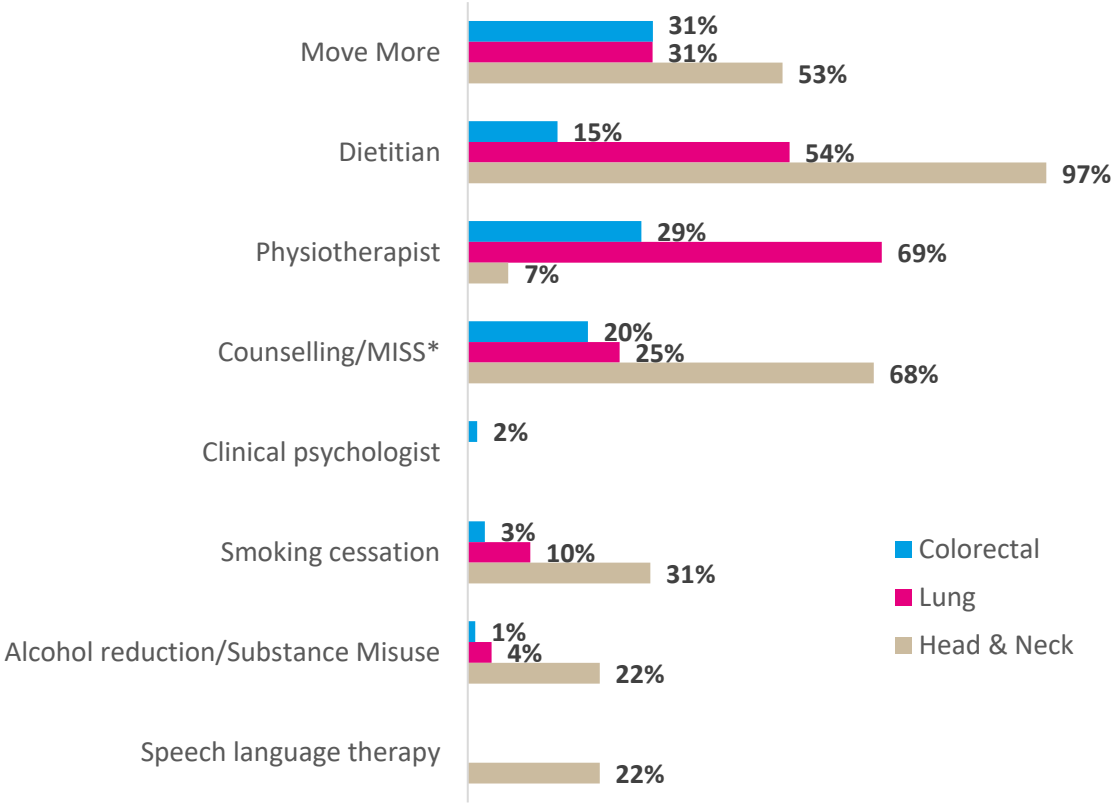
It is also apparent from the data that the needs of head and neck patients vary significantly from those of the other tumour sites, particularly with the majority of patients requiring specialist input from a dietitian, as well as support from a speech and language therapist, Macmillan Information and Support Service or counselling, and assistance from smoking cessation and alcohol reduction/substance misuse services.

Figure 5. % patients referred to different level of prehabilitation interventions



Source: Macmillan Prehabilitation Clinical Project Managers

Figure 6. Referrals to different prehabilitation services by tumour site



*MISS (Macmillan Information and Support Service)
Source: Macmillan Prehabilitation Clinical Project Managers

Referrals to Macmillan Move More Programme

Referrals to the Macmillan Move More Programme for prehabilitation were reported by local councils to Macmillan between **January 2022 and February 2024**. During this period, a total of 600 patients were referred and supported by Macmillan Move More Coordinators, accounted for 17% of all patients supported, including those for rehabilitation. Table 2 shows the number of patients supported for prehabilitation in each council.

It is worth noting that these figures were reported by individual councils to Macmillan, and have not been validated by the evaluator. Discrepancies have been identified when compared with the referral data provided by the Trusts. For instance, some councils reported supporting more patients through prehabilitation than the number of referrals recorded by the Trusts.

Table 2. Number of patients supported for prehabilitation by Macmillan Move More Coordinators in each council

Council	HSCT supported	Total number of clients supported	Total number of clients supported for prehabilitation	% of clients supported for prehabilitation
Antrim and Newtownabbey	Northern	441	52	12%
Ards and North Down	South Eastern	450	147	33%
Armagh, Banbridge & Craigavon	Southern	400	60	15%
Belfast	Belfast	420	44	10%
Causeway coast and Glens	Northern, Western	272	47	17%
Derry and Strabane	Western	340	20	6%
Fermanagh and Omagh	Western	350	48	14%
Lisburn and Castlereagh	South Eastern	232	101	44%
Mid and East Antrim	Northern	144	12	8%
Mid-Ulster	Northern, Southern	312	38	12%
Newry, Mourne and Down	Southern, South Eastern	154	31	20%
Total		**3,515**	**600**	**17%**

Source: local councils and Macmillan

Evaluation approach

Evaluation purpose and objectives

To support Macmillan and partners in assessing the implementation and impact of the prehabilitation programme, M·E·L Research were commissioned to carry out an independent evaluation. The evaluation looked to explore:

- NI-wide and Trust-specific learning for the prehabilitation programme and project-level development
- evidence of effectiveness of universal and targeted prehabilitation interventions and implementation strategies

To address the evaluation aims, a set of research questions were developed:

Evaluation aim	Key research questions
What are the outcomes and impact for people living with cancer?	▪ Do people living with cancer have **timely and equitable access** to prehab? ▪ How **effective** is the prehabilitation programme in terms of **supporting family and friends** of people living with cancer to adopt a healthier lifestyle? ▪ What are the **impacts** prehabilitation has on **outcomes** for people living with cancer? ▪ What does **good quality holistic care planning** look like for people living with cancer?
What are the outcomes and impact for staff?	▪ How does **information sharing** happen, between and within local areas / partner organisations? ▪ What **training and support** is provided to those **delivering** the prehabilitation programme? ▪ What **training and support** is provided to other **key partners or staff**? ▪ How does the **confidence and ability** to signpost people living with cancer affect the experience of staff?
What are the outcomes and impact for the wider system?	▪ What is required to make an **effective, sustainable prehabilitation programme** in NI? ▪ How would **success** be defined by different partners?

A Theory of Change (ToC) was developed by M·E·L Research, jointly with Macmillan and can be found in Appendix C.

Summary of data collection approach

The evaluation employed a mixed methods approach, collecting primary qualitative and quantitative data, along with analysing secondary monitoring data provided by the Trusts and local councils. All data collection tools used for the research were designed by M·E·L Research in collaboration with Macmillan and Macmillan Prehabilitation Clinical Project Managers, ensuring alignment with the key research questions set for the evaluation. Additionally, the evaluation included a rapid literature

review to support the development of the evaluation framework and provide insights from the findings.

A detailed description of the data collection approach and participant profiles can be found in Appendix B.

Statistical reliability of quantitative research results

The patient survey results reflect the opinions of 138 individuals diagnosed with cancer who were referred to prehabilitation interventions, regardless of whether they accepted the referrals. It is important to note that findings from subgroup analyses are indicative only, as the sample is relatively small and not representative of the broader target population. Percentages in charts may not always total 100% due to rounding, and figures in the text should be used for accuracy. The 'base' or 'n=' figure indicates the number of valid responses per question.

Qualitative research findings

All qualitative interviews took place with consenting participants and were recorded digitally if consented, then entered into a thematic analysis grid for further exploration. Key themes and findings were then identified for each of the key research questions, drawing together the quantitative and qualitative data against each evaluation aim and research question.

Other considerations

- While we have undertaken research evaluation activities, the impact of the programme was measured only through self-reported behaviours, with no independent validating observations, thus limiting the evidence.
- The programme did not include a control group; however, limited counterfactual evidence was gathered through the patient survey.
- The evaluation was carried out within a real-world healthcare setting, capturing the dynamic and continually evolving nature of the environment. Throughout the evaluation period, numerous personnel and organisational changes occurred across Macmillan, the Northern Ireland Cancer Network, the Trusts, and partner organisations, which influenced both the findings and the overall outcomes.

Evaluation findings

Programme implementation

Key findings

- Sufficient funding, the right resource at the right time, and commitment and support from senior management are crucial for successful programme implementation.
- Key learning points include:
    - Align recruitment, funding, and onboarding to avoid delays and ensure timely programme delivery.
    - Secure stable leadership and long-term roles to maintain continuity and reduce staff turnover.
    - Develop a standardised, equitable regional model with consistent referral pathways and outcome tracking.
    - Ensure sustainable funding and realistic staffing to maintain critical roles and deliver consistent, high-quality prehabilitation services.
    - Establish clear governance, leadership, and long-term planning from the outset to drive accountability and programme sustainability.

Key enablers and successful factors

Funding and resource allocation

Funding from Macmillan (enabled through the Department of Health's Cancer Charities Support Fund) has been instrumental in establishing the regional programme and fostering collaboration between secondary care and local councils to support people diagnosed with cancer. In the Northern Trust, additional funding from **Charitable Trust Funds** enabled the deployment of dedicated prehabilitation allied health professional (AHP) and support worker resources. This allowed the team to effectively support universal, targeted, and specialist patients, an enhanced capacity not available in other Trusts, thereby enabling more equitable and effective implementation of the prehabilitation programme.

Organisational commitment and support

There was clear willingness and commitment to deliver prehabilitation between partner organisations. Senior management within the HSCTs generally agreed that there was strong buy-in within their organisations, particularly within the multi-disciplinary teams (MDTs). Several councils had endorsement from elected members who viewed it as an important intervention to support local residents diagnosed with cancer. From the perspective of delivery staff, **endorsement and support from senior management**, both at the strategic and operational levels, can significantly empower them and enhance programme delivery. It was also felt that prehabilitation should be promoted more widely within the Trusts beyond the prehabilitation delivery staff.

Role of the Clinical Project Manager

The **Clinical Project Manager role** was crucial to the programme's implementation, as acknowledged by senior managers across the Trusts. This role provided leadership in designing and developing a prehabilitation model in collaboration with clinical colleagues, promoting and communicating the benefits of cancer prehabilitation both within and outside their respective Trusts, and serving as the central point to connect all delivery staff and partners, ensuring prehabilitation remained a priority in cancer care. Additionally, the existing relationships that Clinical Project Managers had with their clinical colleagues facilitated smoother programme implementation.

Multi-disciplinary delivery and leadership

Effective prehabilitation delivery, as highlighted in both the evidence review and this evaluation, requires input from a wide range of healthcare professionals. **Clinical Nurse Specialists** (CNSs) played a crucial role in screening and referring patients, while AHPs were essential not only for delivering prehabilitation interventions for targeted and specialist patients with more complex needs, but also for leading the development and education of prehabilitation programmes within Trusts. Additionally, roles such as **personalised peer facilitators** and **support workers** were vital in supporting patients and enabling positive behaviour change. Leadership and support from **health and improvement teams** within Trusts were considered invaluable, and the **Macmillan Regional Pathway Integration Lead** role has been pivotal in developing a standardised prehabilitation model across the region.

Building on existing relationships

Pre-existing relationships between Macmillan Move More Coordinators (MMCs) and hospital staff, established through the Macmillan Move More Programme which started in 2016, provided a strong foundation for the regional prehabilitation programme. These relationships made it easier to expand support to people diagnosed with cancer in the pre-treatment phase. Local steering group meetings further reinforced collaboration and continuity between stakeholders.

Key challenges and learning points

Delayed recruitment and misaligned timelines

The **misalignment in the funding periods, recruitment and appointment of key posts** was a primary barrier to the programme having the best possible start. The recruitment of the five Clinical Project Managers took a significant amount of time, mainly due to the lengthy process of agreeing and finalising the job descriptions and advertising the roles within each HSCT. The individuals were in post between September 2022 and June 2023. Meanwhile, Macmillan MMCs had already been in post and funded since January 2022 to deliver prehab.

Most of the Clinical Project Managers needed to develop a prehabilitation service within their Trust from scratch, which required time and resources. Consequently, two Trusts only started prehabilitation officially towards the end of 2023.

Learning Points:

- **Streamline recruitment processes:** Develop pre-approved job descriptions and recruitment frameworks that can be rapidly deployed across Trusts to reduce administrative delays.

- **Synchronise funding and recruitment cycles:** Ensure that funding release dates align with recruitment timelines of key roles/services to avoid delays in programme initiation. Early planning and coordination between funders and HR departments from all partners are essential.
- **Implement interim staffing solutions:** Consider secondments, temporary appointments, or shared roles to maintain momentum while permanent staff are being recruited.
- **Plan for onboarding and service setup time:** Allocate sufficient lead-in time for new staff to establish services, build relationships, and understand local contexts before service delivery begins.

Leadership and role instability

During the programme period, both Macmillan and the Northern Ireland Cancer Network underwent significant organisational changes, which influenced the leadership and development of the programme.

The Macmillan Regional Pathway Integration Lead role was appointed to work collaboratively with the Trusts and Councils to develop and embed a standardised regional approach to cancer prehabilitation. This role was pivotal in ensuring consistency across services, aligning referral pathways, and supporting the integration of prehabilitation into routine cancer care.

Although the post started in March 2023, it became vacant after seven months, creating a gap during a critical phase of programme development. The post was filled in May 2024 and good progress has been made in defining a standardised prehabilitation model since. However, it was recognised that this foundational work should have been completed during the early development stage of the programme to support more consistent implementation and service equity across the region.

Staff retention was also a significant challenge, impacting the programme's ability to maintain consistency among partner organisations. In addition to the Regional Pathway Integration Lead mentioned above, only two out of the initially recruited five Clinical Project Managers remained in post at the time of writing this report. Positively, two of the three vacant posts were subsequently filled, although with a new emphasis on scoping and testing a prehabilitation model that can meet the needs of patients across most, if not all, tumour groups within the respective Trusts. However, all relevant posts funded specifically to deliver this programme were on a temporary/fixed-term contract, an arrangement agreed upon by partners as part of the 'test of change' approach. However, this short-term structure likely influenced staff turnover and hindered long-term planning and service development. This experience highlights the critical need for sustainable funding and the establishment of permanent roles to support the continuity, growth, and effectiveness of prehabilitation services across the region.

Learning Points:

- **Prioritise early and stable leadership appointments:** Appoint key leadership roles at the outset to provide strategic direction and continuity throughout the programme lifecycle.
- **Secure long-term contracts for critical roles:** Temporary contracts can lead to high turnover and loss of institutional knowledge. Where possible, advocate for longer-term funding to retain talent.
- **Develop succession and contingency plans:** Ensure that knowledge transfer mechanisms and handover processes are in place to mitigate the impact of staff turnover.

Lack of standardisation and inequity

The lack of standardised regional approach as a result of the key challenges already noted has led to inconsistent referrals and delivery of prehabilitation across NI. Concerns over the inequality of the current service delivery models were shared among most stakeholders, particularly regarding the service provision available within local councils to support universal and targeted patients without external funding, and the AHP resources available for specialist patients. The lack of a consistent approach across the region also meant that the screening process and criteria were not standardised. Some Trusts collected patient outcome measures, while others did not.

Learning Points:

- **Co-design a regional framework:** Engage stakeholders early to co-develop a standardised model for prehabilitation that includes referral criteria, service tiers, and outcome measures.
- **Promote equity through resource mapping:** Identify and address disparities in local council and Trust resources to ensure all individuals diagnosed with cancer have access to appropriate levels of support.
- **Standardise data collection and evaluation:** Implement a unified system for collecting patient-reported outcomes and service metrics to enable benchmarking and continuous improvement.
- **Provide implementation support:** Offer training, toolkits, and peer learning opportunities to help partners across the region adopt and adapt the standardised model effectively.

Funding and resource constraints

Insufficient funding and secured resources have significantly impacted the programme's ability to fully deliver cancer prehab. Stakeholders across HSCTs have emphasised the need for adequate Clinical Nurse Specialists staffing levels, who are crucial for promoting prehabilitation, conducting screenings, and referring patients to the appropriate level of support.

The Macmillan MMC role was also considered integral and critical for programme delivery to support both universal and targeted patients in terms of physical activity. However, most councils could not continue to deliver a role dedicated to cancer interventions after the funding from Macmillan for the Move More Programme ended in April 2024. Although Macmillan offered an annual training budget of £15,000 per council over three years/£5,000 per year to help councils upskill more staff to deliver cancer care to their local communities, at the time of writing this report, only one local council has maintained its full-time Macmillan MMC post.

It was also widely acknowledged by both the post holders and senior managers that the Clinical Project Manager post being 0.6 WTE is insufficient to promote and implement prehabilitation effectively. The limited capacity not only constrained programme delivery but also posed a barrier to recruitment, as the scope of the role was perceived as too extensive for a part-time post.

Additionally, without dedicated prehabilitation AHP resources, it was challenging to provide timely interventions for targeted and specialist patients. Some AHP colleagues initially supported prehabilitation on goodwill, but this was proved to be unsustainable.

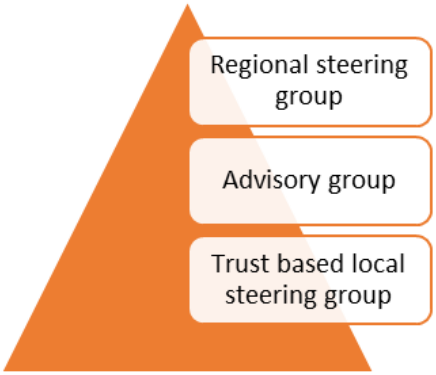
"The Trust doesn't have any colorectal CNS (Clinical Nurse Specialist) and dietetic input with limited oncology…The biggest challenge has been to test and develop pathways when we don't have any dedicated staff." – Senior manager, HSCT

"You can't have a programme unless you've got the people on the ground that are delivering it. They are the most important part of this programme, you know, so if they're not there, there isn't a programme." – Senior manager, Council

Learning Points:

- **Advocate for sustainable funding models:** Short-term or pilot funding can limit long-term impact. Engage commissioners and policymakers to secure ongoing investment in prehabilitation services.
- **Right-size roles to match responsibilities:** Ensure that job descriptions and working hours (e.g., 0.6 WTE) are realistic and aligned with the scope of work to avoid burnout and recruitment challenges.
- **Build local capacity through training:** Use training budgets strategically to upskill existing staff and embed prehabilitation knowledge across wider teams.
- **Integrate prehabilitation into core services:** Position prehabilitation as a standard part of cancer care pathways to justify permanent staffing and resource allocation.
- **Leverage partnerships:** Strengthen partnerships with local councils to ensure continuity of community-based support for prehabilitation. Explore collaborative opportunities with voluntary sector organisations, charities and community services to extend the programme's reach and share resources.

A lack of governance and strategic oversight



Regarding the governance of the programme, there were widespread concerns about the **absence of clear guidance and effective programme management**, during the initial stages of implementation. This was further compounded by a perceived **lack of accountability** among partner organisations. Although a governance structure and steering groups were in place, including the regional steering group, advisory group and local steering groups, the meetings often did not occur as intended. When the local steering group meetings were consistently held by some Trusts, they were found to be effective in fostering positive working relationships between local partners and reinforcing programme goals.

There was also a desire for strong leadership, particularly from Macmillan the funder, to help set clear objectives and key performance indicators, define each partner's roles and responsibilities, hold them to account, and develop a well-thought-out exit strategy with partners for the post-funding period.

Learning Points:

- **Establish robust governance structures early:** Clearly define the roles, responsibilities, and decision-making authority of each group and ensure regular, structured meetings are maintained.

- **Define shared goals and KPIs collaboratively:** Co-develop clear, measurable objectives and performance indicators with all stakeholders to align expectations and track progress.
- **Foster accountability through transparent reporting:** Implement regular reporting cycles and feedback loops to ensure all partners are aware of progress, challenges, and responsibilities.
- **Plan for sustainability from the beginning:** Develop an exit strategy in partnership with stakeholders that outlines how services will be maintained post-funding, including potential funding sources and integration into core services.

Other challenges included:

Timing challenges in patient pathways: Limited time between diagnosis and treatment, especially for colorectal cancer, restricted the window for delivering effective prehabilitation, leading to missed or unproductive referrals. To address this, the Northern and South Eastern Trusts began referring suitable patients immediately after endoscopy, raising uptake in Northern Trust from 74% to 94%. Meanwhile, Belfast Trust focused on rectal cancer patients with longer treatment windows, such as those receiving neo-adjuvant chemotherapy.

Infrastructure and space limitations: rusts commonly faced a lack of dedicated space for prehabilitation clinics. In the Northern Trust, teams operated across three hospitals using shared or borrowed rooms, which created inefficiencies. Physiotherapists and dietitians struggled to see patients simultaneously and often had to borrow equipment like gym gear to deliver interventions.

Data and information system barriers: A lack of shared data systems and limited resources made it difficult for Clinical Project Managers to track referrals and outcomes from councils. During 2023–2024, the rollout of the new *encompass* system—while a positive step toward integrated care records—further disrupted prehabilitation data collection across Trusts.

Trust specific learnings

Belfast Trust

Key enablers/ successful factors	• Active support from colorectal consultants and CNSs. • In-kind support from AHPs (physio, OT, dietetics) to deliver pilot rehabilitation programme • An established one-stop clinic for colorectal patients provided a natural entry point for introducing prehabilitation interventions. • In the absence of a Clinical Project Manager, physiotherapy led the pilot, designing and implementing prehabilitation based on outcome data. Prehabilitation was targeted at patients with sufficient timelines (i.e. neo-adjuvant rectal cancer), resulting in a 3-day shorter length of stay. While effective, the approach differs from Macmillan's original vision.
Key barriers/ challenges	• A lack of regional referral pathways for patients attending the Trust for diagnosis and treatment from outside the Trust's locality.

Northern Trust

Key enablers/ successful factors	• Having dedicated AHP and support worker resources to deliver prehabilitation (funded via non-recurrent funding from the Charitable Trust Funds) • Strong support from senior management • Active engagement from CNS teams across all three participating tumour sites, despite high clinical workloads • Timely referrals from endoscopy staff for suspected colorectal cancer patients • Continuous support from coterminous Councils
Key barriers/ challenges	• Limited availability of clinical space across the Trust for prehabilitation clinics and review appointments • Encompass system implementation • Inconsistent consultant engagement across participating tumour sites

South Eastern Trust

Key enablers/ successful factors	• One-year pilot established a strong baseline and foundation for implementing the Macmillan NI-wide prehabilitation programme, building on collaborative efforts with the Macmillan Move More Programme since March 2021. • Cross-directorate and departmental leadership at both strategic and operational levels (e.g. Cancer Services, Health Improvement, AHPs, Performance and Informatics) supported programme delivery. • Early stakeholder engagement through workshops and themed task-and-finish groups helped secure buy-in and collaboration. • Electronic referral and data collection tools streamlined processes and improved data capture. • Development of patient resources, including the Prehabilitation Toolkit and webpage, supported both the programme and wider tumour sites. • Head and Neck One-Stop Prehabilitation Clinic established as a model of integrated care.
Key barriers/ challenges	• A lack of regional referral pathways for patients attending the Trust for diagnosis and treatment from outside the Trust's locality.

Southern Trust

Key enablers/ successful factors	• Development of a Cancer Prehabilitation model for Trust, offering a scalable framework for broader implementation. • Encompass integration presents a timely opportunity to streamline referrals, improve access and enhance governance. • Strong stakeholder engagement, including teams from Pre-op Assessment and Endoscopy Clinics, supported early adoption. • Active involvement of AHPs, particularly from non-funded disciplines such as Dietetics and Occupational Therapy. • Dedicated physiotherapy input, with biweekly sessions from a Specialist physiotherapist, was essential to service delivery.
Key barriers/ challenges	• Low referral rates were driven by a range of factors, including: the absence of a fully established service, limited awareness among referrers of its value, and CNS staff as referral agents were often limited in capacity due to resource constraints.

Western Trust

Key enablers/ successful factors	• The creation of DIY patient self-management toolkit which was successfully implemented and replicated across Trusts. • The in-kind contribution of the Personalised Care Facilitator significantly enhanced the effectiveness of prehabilitation for the Trust.
Key barriers/ challenges	• Unable to introduce a third tumour site to the programme due to a lack of buy-in from the clinical teams

Patient outcomes measures

Key findings

- Most patients either improved or maintained their performance on the 6-Minute Walk Test and the 30-Second Sit to Stand Test from baseline to pre-treatment. At the 4-month follow-up, these gains were largely sustained, suggesting a potential long-term benefit of prehabilitation.
- Among colorectal patients, the proportion meeting or exceeding physical activity guidelines rose from 12% at baseline to 67% pre-treatment. For lung patients, this increased from 5% to 59%, highlighting a significant positive shift in activity levels.
- Patients reported improved health states on the EQ-5D-5L following prehabilitation, particularly in the anxiety/depression dimension. These improvements were even more pronounced at the 4-month follow-up, indicating sustained psychological and overall health benefits.
- Patients who engaged with the smoking cessation service achieved consistently high quit rates, surpassing broader service averages.
- Lung cancer patients who underwent prehabilitation had a shorter average hospital stay (4.83 days vs. 5.93 days) and a lower maximum stay (11 vs. 20 days) compared to those who declined, suggesting improved recovery and resource efficiency. Further data is needed to strengthen these findings.

This section highlights some patient outcome measures collected and reported by the South Eastern Trust (focusing on universal and targeted patients) and the Northern Trust (focusing on specialist patients) to demonstrate the impact of prehabilitation interventions. Notably, only these two Trusts had the necessary resources and systems in place to collect and report outcome data.

South Eastern Trust

The data provided by the South Eastern Trust includes colorectal, lung and head and neck patients who received **universal** and **targeted** interventions, covering the period from **March 2021 to May 2024**. Local Macmillan MMCs carried out the assessments and data collections, which were then reported back to the Trust. The analysis conducted by the Trust focused on patient data with repeated measures collected individually.

For physiological outcome measures, the South Eastern Trust gathered data on the 6-Minute Walk Test (6MWT), grip strength, and the 30-Second Sit to Stand Test (30 Sec STS). As shown in Table 3, over 90% of patients either improved or maintained their performance on the 6-Minute Walk Test and the 30-Second Sit to Stand Test from baseline to pre-treatment. It is also worth noting that the improvement in the test results for both tests are statistically significant at 95% confidence level. Nearly 3 quarters of patients also improved or maintained their grip strength from baseline to pre-treatment. Table 4 indicates that at the 4-month follow-up, most patients have performed well on the 6-Minute Walk Test and the 30-Second Sit to Stand Test. These results suggest the potential longer-term positive impact of prehabilitation interventions. However, it is important to consider that some

patients may have received post-treatment rehabilitation support, which could also contribute to the positive outcomes.

Table 3. Changes in physiological outcome measures from baseline to pre-treatment

Measure	Baseline	Pre-treatment	Variance	P values	OCM Improved/maintained
6MWT (n=26)	356.92	396	39.08 ↑	**0.00 (S)**	93% (81% / 12%)
Grip Strength (n=50)	27.88	29.48	1.6 ↑	0.02	74% (50% / 24%)
30 Sec STS (n=48)	8.35	10.25	1.9 ↑	**0.00 (S)**	90% (77% / 13%)

Source: South Eastern Trust

Table 4. Changes in physiological outcome measures from baseline to 4-month follow-up

Measure	Baseline	4-month follow-up	Variance	P values	OCM Improved/maintained
6MWT (n=24)	350.83	382.08	31.25 ↑	**0.00 (S)**	92% (75% / 17%)
Grip Strength (n=45)	31.18	30.13	-1.05	0.14	49% (40% / 9%)
30 Sec STS (n=48)	8.69	10.44	1.75 ↑	**0.00 (S)**	100% (75% / 25%)

Source: South Eastern Trust

Analysis results on patient reported outcome measures, including the Self-Efficacy for Exercise (SEE) scale and Health Thermometer, are presented in Table 5 and 6 below. The improvement on Health Thermometer from baseline to pre-treatment is statistically significant at 95% confidence level, with around 80% of patients maintaining or improving their scores. Although the 4-month follow-up figures are less positive, the changes are not statistically significant. This suggests that the observed difference may be due to random variation rather than a true effect of the intervention.

Table 5. Changes in patient reported outcome measures from baseline to pre-treatment

Measure	Baseline	Pre-treatment	Variance	P values	OCM Improved/maintained
Self Efficacy for Exercise (n=121)	55.74	59.57	3.83 ↑	0.01	41% (27% /14%)
Health Thermometer Analysis (n=120)	68.47	73.81	5.73 ↑	**0.00 (S)**	81% (64% / 17%)

Source: South Eastern Trust

Table 6. Changes in patient reported outcome measures from baseline to 4-month follow-up

Measure	Baseline	4-month follow-up	Variance	P values	OCM Improved/maintained
Self Efficacy for Exercise (n=144)	57.84	56.38	-1.46	0.35	48% (41% /7%)
Health Thermometer Analysis (n=57)	67.58	72.28	4.7 ↑	0.07	54% (47% /7%)

Source: South Eastern Trust

EQ-5D-5L is a validated tool that measure health-related quality of life in five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. Data provided by the South Eastern Trust, covering results from 118 patients who completed the assessment at both baseline and pre-treatment, and 139 patients who completed the assessment at baseline and again at 4-month follow-up. The findings indicate that patients' self-reported health states generally improved prior to starting treatment following prehabilitation interventions, with the most notable gains observed in the anxiety/depression dimension. This improvement was even more pronounced at the 4-month follow-up, suggesting sustained benefits over time.(see Table 7).

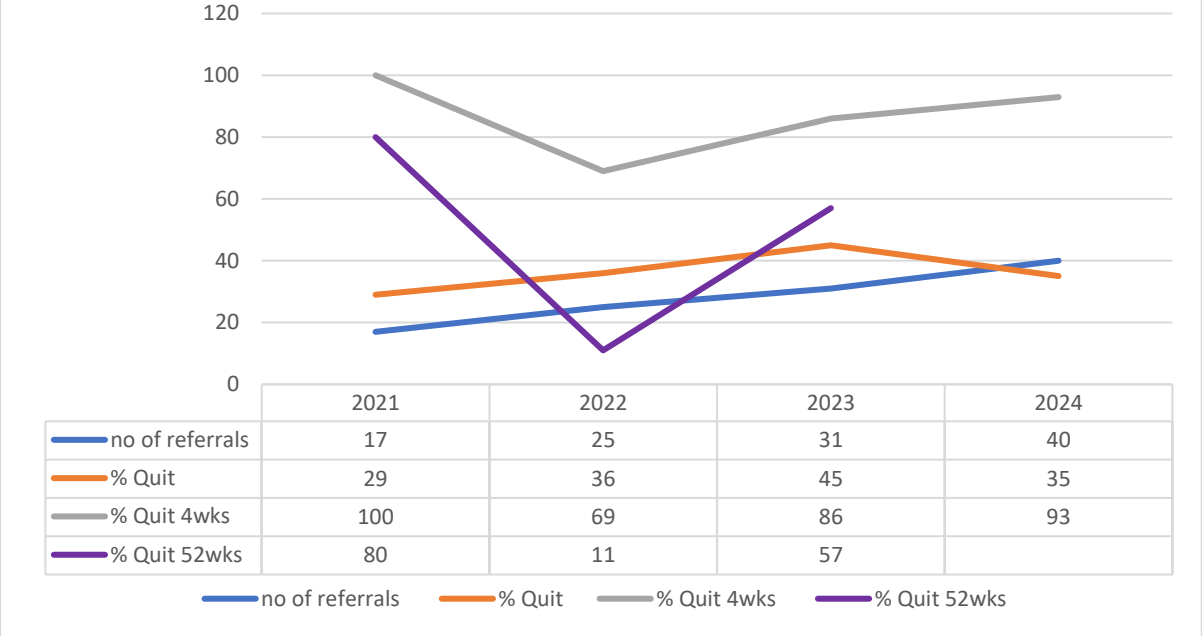
Table 7. Changes in EQ-5D-5L from baseline to pre-treatment (n=118) and from baseline to 4-month follow-up (n=139)

Dimension	Baseline n (%)	Pre-treatment n (%)	Difference %	Baseline n (%)	4-month follow-up n (%)	Difference %
Mobility						
No problems	68 (57.6)	74 (62.7)	+5.10	90 (64.7)	75 (54.0)	-10.70
Slight problems	29 (24.6)	26 (22)	-2.60	23 (16.5)	36 (25.9)	+9.40
Moderate problems	17 (14.4)	14 (11.9)	-2.50	18 (12.9)	20 (14.4)	+1.50
Severe Problems	4 (3.4)	3 (2.5)	-0.90	8 (5.8)	7 (5.0)	-0.80
Unable	0 (0.0)	1 (0.8)	+0.80	0 (0)	1 (0.7)	+0.70
Self-care						
No problems	97 (82.2)	90 (76.3)	-5.90	119 (85.6)	107 (77.0)	-8.60
Slight problems	17 (14.4)	18 (15.3)	+0.90	12 (8.6)	22 (15.8)	+7.20
Moderate problems	2 (1.7)	8 (6.8)	+5.10	5 (3.6)	5 (3.6)	0.00
Severe Problems	2 (1.7)	2 (1.7)	0.00	2 (1.4)	3 (2.2)	+0.80
Unable	0 (0.0)	0 (0.0)	0.00	1 (0.7)	2 (1.4)	+0.70
Usual activities						
No problems	76 (64.4)	72 (61.0)	-3.40	92 (66.2)	71 (51.1)	-15.10*
Slight problems	26 (22.0)	33 (28.0)	+6.00	33 (23.7)	38 (27.3)	+3.60
Moderate problems	13 (11.0)	8 (6.8)	-4.20	10 (7.2)	21 (15.1)	+7.90
Severe Problems	3 (2.5)	5 (4.2)	+1.70	3 (2.2)	6 (4.3)	+2.10
Unable	0 (0.0)	0 (0.0)	0.00	1 (0.7)	3 (2.2)	+1.50
Pain/discomfort						
No problems	46 (39.0)	40 (33.9)	-5.10	53 (38.1)	47 (33.8)	-4.30
Slight problems	41 (34.7)	48 (40.7)	+6.00	48 (34.5)	60 (43.2)	+8.70
Moderate problems	26 (22.0)	24 (20.3)	-1.70	29 (20.9)	26 (18.7)	-2.20
Severe Problems	5 (4.2)	6 (5.1)	+0.90	9 (6.5)	6 (4.3)	-2.20
Unable	0 (0.0)	0 (0.0)	0.00	0 (0.0)	0 (0.0)	0.00
Anxiety/depression						
No problems	43 (36.4)	47 (39.8)	+3.40	47 (33.8)	70 (50.4)	+16.60*
Slight problems	38 (32.2)	43 (36.4)	+4.20	45 (32.4)	43 (30.9)	-1.50
Moderate problems	29 (24.6)	19 (16.1)	-8.50	37 (26.6)	19 (13.7)	-12.90*
Severe Problems	8 (6.8)	7 (5.9)	-0.90	10 (7.2)	7 (5.0)	-2.20
Unable	0 (0.0)	2 (1.7)	+1.70	0 (0.0)	0 (0.0)	0.00

*Statistically significant at 95% confidence level
Source: South Eastern Trust

Referrals to the smoking cessation team via the prehabilitation programme have steadily increased across three tumour sites. Among patients who engaged with the service, quit rates at both 4 and 52 weeks were consistently high, with the exception of a dip in 52-week quit rates in 2022. Most patients referred in 2024 were still awaiting their 52-week outcomes. The smoking cessation team reported that these results surpass average quit rates across the broader service.

Figure 7. Smoking cessation referral outcomes



	2021	2022	2023	2024
no of referrals	17	25	31	40
% Quit	29	36	45	35
% Quit 4wks	100	69	86	93
% Quit 52wks	80	11	57	

Source: South Eastern Trust

Northern Trust

The outcome data collected and provided by the Northern Trust focused on patients receiving **universal, targeted** and **specialist** support, covering the period from **November 2022 to January 2025**. Baseline assessments were conducted by either the prehabilitation team physiotherapist or dietitian, with follow-up data collected by the team including support workers.

Outcome measures for colorectal patients - Table 8 below shows the changes in outcome measures from baseline to pre-treatment, as reported by the prehabilitation physiotherapist. It is worthing noting that the data includes universal and targeted patients who required specialist interventions such as pelvic exercises ahead of radiotherapy and/or stoma formation. The figures demonstrate that vast majority of patients had either improved or maintained their results. The positive impact of prehabilitation is further supported by the shift from 12% of patients attaining or exceeding the physical activity guidelines[3] at baseline assessment, to 67% pre-treatment (see Table 9).

[3] The NHS recommends that adults should aim for at least 150 minutes of moderate-intensity activity or 75 minutes of vigorous-intensity activity per week.

Table 8. Changes in outcome measures from baseline to pre-treatment for specialist colorectal patients, reported by prehabilitation team physiotherapist

Measure	Improved	Unchanged	Declined
6MWT (n=34)	***97% Improved or unchanged*** Average increase *+51.7m*		***3% declined*** *(1 patient declined 42 m)*
30 Sec STS (n=36)	***97% Improved or unchanged*** Average increase *+2.75*		***3% declined*** Average reduction *-1*
PT reported health quality (n=36)*	***61% Improved*** *Average increase +13.9*	*33% unchanged* ~	***6% reduced*** *-15*
Physical activity engagement (n=36)	***86% increased their physical activity from the initial assessment***	***11% maintained an already minimal/ highly active lifestyle***	*3% remained inactive*

* Using EQ-5D-5L questionnaire
Source: Northern Trust

Table 9. Behaviour change in physical activity engagement from baseline to pre-treatment for specialist colorectal patients, reported by prehabilitation team physiotherapist

Physical activity category	Baseline (n=80)	Pre-treatment (n=36)
Not active	54%	3%
Under active	34%	30.5%
Minimally active	7%	41.5%
Highly active	5%	25%

88%

67%

Source: Northern Trust

Physical activity engagement categories:

Not active – Performs no exercise

Under active – Performs some structured exercise but <PA guidelines

Minimally active - Attaining the PA guidelines

Highly active – Exercising above the PA guidelines

Similar positive results were also observed in the data reported by the prehabilitation team dietitian, presented in Table 10, which indicates the percentage of patients maintaining or improving their outcomes.

Table 10. Percentages of specialist colorectal patients maintaining or improving their outcomes pre-treatment, reported by prehabilitation team dietitian (n=27)

Measure	Baseline to pre-treatment (outcome improved/maintained)
PGSGA	100%
Weight & BMI	77%
Calf circumference	71%
Handgrip strength	88%
SARC F score	100%
Sarcopenia risk	100%

Source: Northern Trust

Outcome measures for lung patients – All lung patients undergoing treatment were referred to the prehabilitation team physiotherapist and dietitian for assessments as part of the standard pathway in the Northern Trust. Table 11 shows the changes in outcome measures from baseline to pre-treatment, as reported by the prehabilitation physiotherapist. Over 80% of patients showed improvement in the Six-Minute Walk Test and 30-Second Sit to Stand Test result, based on a sample of 117 individuals. Encouragingly, the proportion of patients being minimally or highly active increased from just 5% at baseline assessment, to 59% pre-treatment (see Table 12). The data reported by the prehabilitation team dietitian also demonstrate the positive impact of prehabilitation (see Table 13)

Table 11. Changes in outcome measures from baseline to pre-treatment for lung patients, reported by prehabilitation team physiotherapist (n=117)

Measure	Improved	Unchanged	Declined	Unable to retest
6MWT	84.6% Av ↑ = +63m	1.7%	12% Av ↓ = -63.5m	1.7% knee injury / High BP
30 Sec STS	82% Av ↑ = +3.2 reps	13%	4% Av ↓ = - 2.2reps	1% knee injury
Patient reported health quality*	58% Av ↑ = +23	32.5%	9.5% Av ↓ = -26	

* Using EQ-5D-5L questionnaire
Source: Northern Trust

Table 12. Behaviour change in physical activity engagement from baseline to pre-treatment for lung patients, reported by prehabilitation team physiotherapist

Physical activity category	Baseline (n=204)	Pre-treatment (n=117)
Not active	59%	1.5%
Under active	36%	40%
Minimally active	2%	35.5%
Highly active	3%	23%

95%
59%

Source: Northern Trust

Table 13. Percentages of lung patients maintaining or improving their outcomes pre-treatment, reported by prehabilitation team dietitian (n=123)

Measure	Baseline to pre-treatment (outcome improved/maintained)
PGSGA	96%
Weight & BMI	67%
Calf circumference	78%
Handgrip strength	83%
SARC F score	92%
Sarcopenia risk	97%

Source: Northern Trust

The Northern Trust also conducted an analysis of hospital length of stay (LOS) among lung patients who received prehabilitation interventions compared to those who declined. Among the 23 patients who participated in prehabilitation, the maximum LOS was 11 days, with an average LOS of 4.83 days. In contrast, the 15 patients who declined prehabilitation had a maximum LOS of 20 days, with an average LOS of 5.93 days.

These findings suggest a potential benefit of prehabilitation in reducing hospital stay duration. However, further data collection is needed to strengthen the evidence base and present more robust conclusions.

Patient experiences and feedback

Key findings

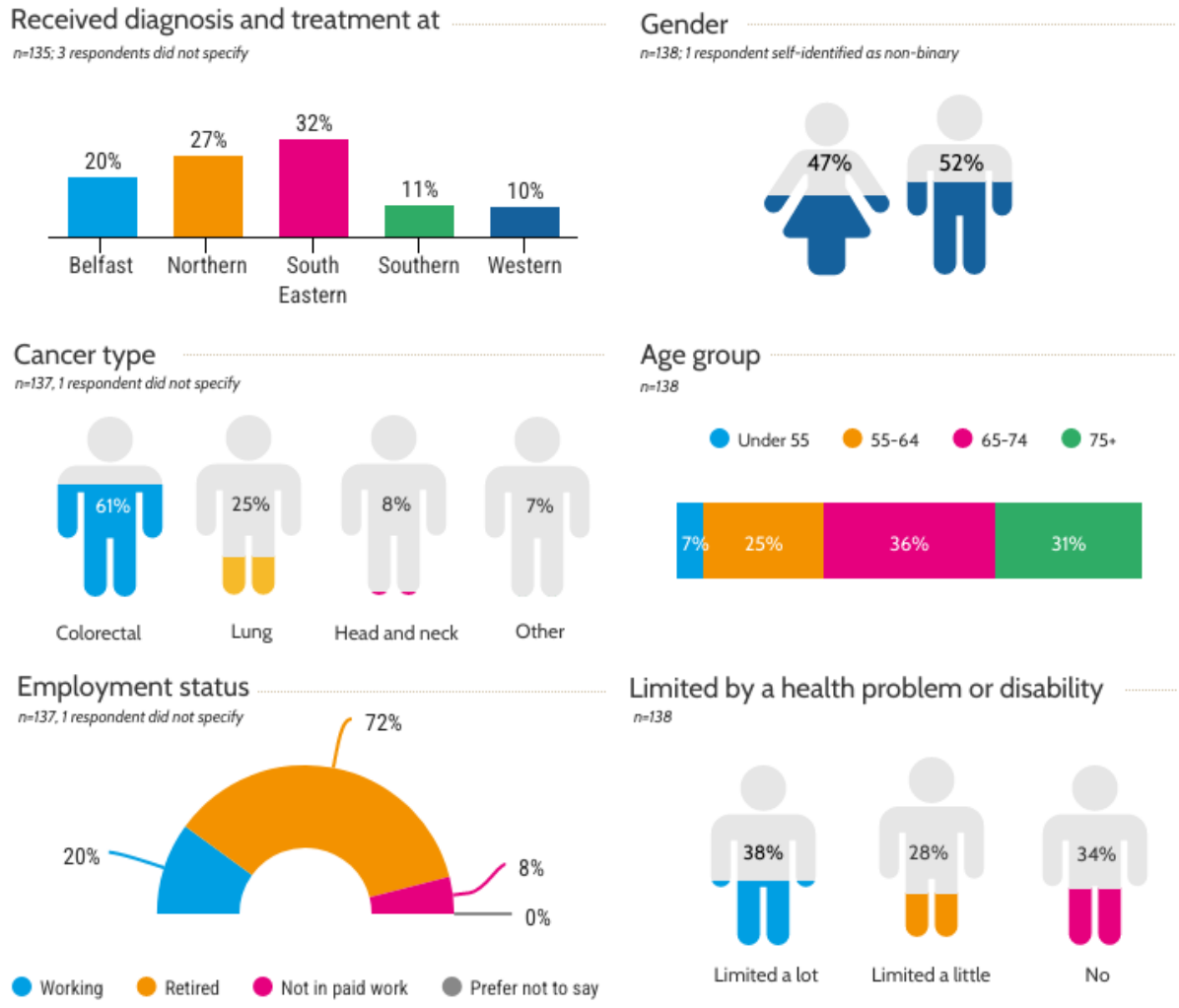
- Although the majority of survey respondents felt that prehabilitation was offered to them at the right time, considerations and advice should be provided when there is only a short time window between diagnosis and the start of treatment. This can help ensure that patients receive the necessary support and guidance while managing hospital appointments.
- Patients generally recognised the potential benefits of prehabilitation in improving physical fitness and recovery outcomes. They appreciated the sense of ownership over their own health and the purpose it provided, which contributed to their overall positive experience and motivation during the prehabilitation process.
- Most survey respondents agreed that prehabilitation helped them prepare for treatment and improve recovery time. The most noticeable impacts included better physical activity levels, quality of life, and adherence to a nutritious diet.
- The feeling of prehabilitation support being tailored to individual needs is clearly reflected in patients' feedback. Emotional wellbeing support from Personalised Care Facilitator, support workers, or peer groups can significantly enhance an individual's readiness for treatment.
- The survey results highlighted the impact of prehabilitation on promoting long-term behaviour changes towards a healthier lifestyle following a cancer diagnosis. Notably, 75% of respondents reported that they have either sustained or plan to enhance their physical activity levels in the future.

This section presents findings from patient feedback by triangulating data from multiple sources: the patient survey (n=138), patient interviews (n=26), online community (n=2), and qualitative feedback from some Trusts and one local council.

In total, a response rate of 19% was achieved from the 735 patients invited to participate in the survey. A summary of the survey participants' backgrounds and demographic profiles is presented in Figure 8. Further details on the patient engagement approaches can be found in Appendix B.

Throughout this section, some verbatim quotes from patients have been included to enhance the narrative. Additional relevant quotes are available in Appendix G.

Figure 8. Survey respondents' profile

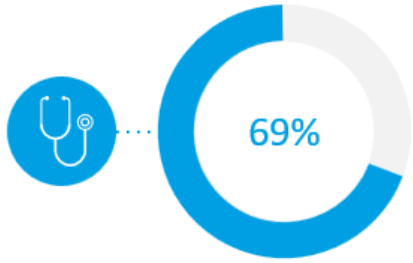


The offer and introduction of prehab

Most survey respondents felt that prehabilitation was offered to them at the right time, and the information provided was easy to understand (see Figure 9). Amongst those who felt that prehabilitation was offered either too early or too late, the reasons included:

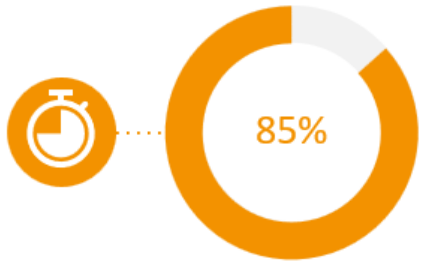
- **Too early:** lots to take in, lots of appointments to attend, feeling information overload.
- **Too late:** contacted a week or so before surgery, prehabilitation not offered.

Figure 9. Patient feedback on the offer of prehabilitation and related information



When was prehabilitation offered?

- Around the time of diagnosis or just a few days after: 69%
- A few weeks after diagnosis: 23%
- Can't remember: 9%

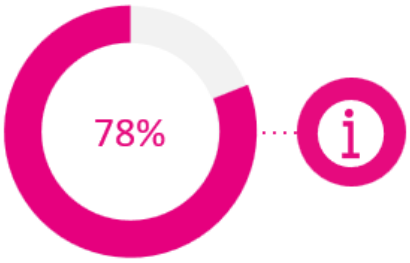


Was prehabilitation offered at the right time?

- Just right: 85%
- Too early: 6%
- Too late: 10%

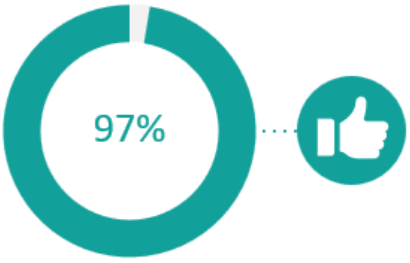
Provided with written and verbal information?

- Both info: 78%
- Written info only: 8%
- Verbal info only: 13%
- None provided: 5%



Information easy to understand?

- Very or fairly easy: 97%
- Not easy at all: 3%



Source: Patient survey, n=127-138

Subgroup analysis:

- Women were more likely to find the information very easy to understand, compared to men (70% vs. 52%).
- Those who lived with a partner or spouse were more likely to find the information very easy to understand, compared to those who lived alone (69% vs. 37%).

When interpreting the subgroup analysis results, it is important to note that while the subgroup analysis presented in this report shows statistically significant results, the findings should be treated with caution due to the small sample sizes. Smaller sample sizes can limit the generalisability of the results and may increase the likelihood of statistical anomalies. Therefore, these findings should be considered as indicative rather than conclusive.

When prehabilitation was introduced to the participants, their initial understanding varied widely. Some thought it was related to pre-op investigations or general wellbeing support, while others

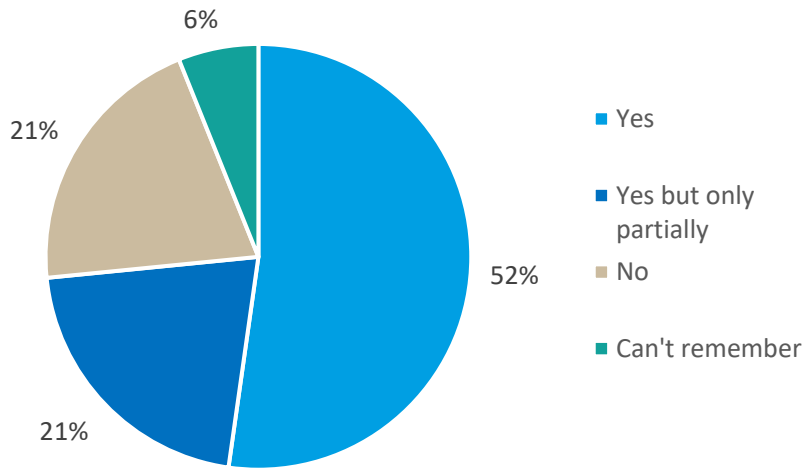
understood it as a focused exercise programme to prepare for surgery and recovery. The clarity of prehab's purpose often depended on how and when it was explained by healthcare professionals. People generally recognised the potential benefits of prehabilitation in improving physical fitness and recovery outcomes, appreciating the sense of responsibility and purpose it provided.

"When you hear the word cancer you don't normally hear anything else. A lot of it goes above your head, you only remember the bad things." – interview participant ID 11, male, age unknown, colorectal

"I understood that it was about doing exercise to get fit for the operation and for recovery. I was sent lots of written information that explained it very clearly" – interview participant ID 10, female, aged 65-74, lung

When asked about their participation in the prehabilitation programme, nearly three quarters of survey respondents indicated involvement, with 52% taking part fully and 21% participating partially (see Figure 10).

Figure 10. Prehabilitation participation rate



Source: Patient survey, n=132

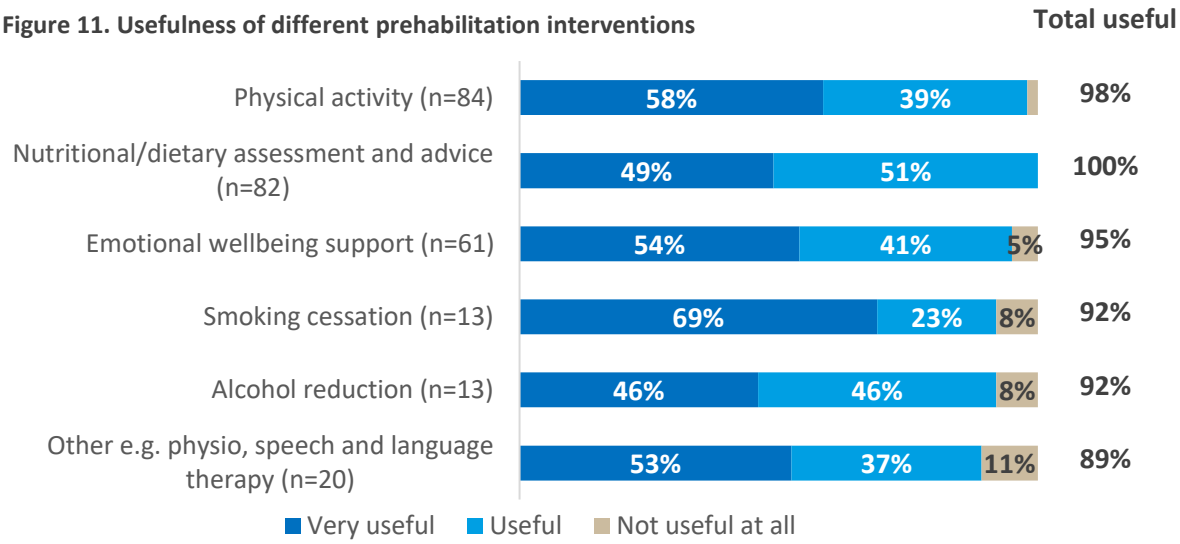
Subgroup analysis:

- Those with lung cancer were more likely to take part in prehabilitation then those with colorectal cancer (79% vs. 68%).

Usefulness of prehabilitation interventions

Of those who received prehabilitation support, almost everyone found the interventions either very useful or useful, particularly around physical activity, nutritional advice and emotional wellbeing support (see Figure 11).

Figure 11. Usefulness of different prehabilitation interventions



Source: Patient survey, n=13-84

Subgroup analysis:

- Those with a disability or long-term health issue were more likely to find the emotional wellbeing support being useful compared to those without (76% vs. 52%).
- Additionally, those without a disability or long-term health issue were less likely to require this type of support compared to those with (48% vs. 23%).

"I don't normally exercise but it was good. It was light exercise. The Move More Coordinator told me if there's anything I don't feel comfortable doing, I don't need to do….I found it very useful. It was nice knowing that somebody was caring about what I was going through." – interview participant ID 23, female, aged 65-74, colorectal

"Really excellent sessions with the physio - encouraging but pushed me to achieve my potential. Gave me confidence to do more. Useful to have specific exercises to do at home. Very good at follow up - a great service." – Lung (source: Northern Trust internal patient feedback survey)

87%
agreed that prehab helped them better prepare for their surgery/treatment.
(n=96)

76%
agreed that prehab helped improve their recovery time after surgery/treatment.
(n=86)

Subgroup analysis:

- Respondents aged under 75 were more likely to strongly agree that prehabilitation helped them better prepare for treatment or surgery compared to their older counterparts (49% vs. 23%).
- Those with a disability or long-term health issue that limited a lot of their day-to-day activities were more likely to strongly agree (60%) that prehabilitation helped them better

prepare for treatment or surgery compared to those who were limited a little (32%) or not at all (31%).

Patient feedback on the Macmillan Move More's exercise classes, provided by one local council, also demonstrated the usefulness and effectiveness of supported physical activity.

"After every session I felt so much more alive . The exercises helped my body, my balance was better and far less pains at my joints."

"Enjoyed the benefits of different exercises, improving muscle strength without putting strain on joints. Non swimmers able to participate [aqua fit]. Lots of fun for everyone so great both mentally and physically."

"So invigorating and yet such fun. Our instructor [Move More Coordinator] was excellent, mindful of everyone's ability and always checking to ensure everyone was ok. The best programme ever - can't wait for the next one."

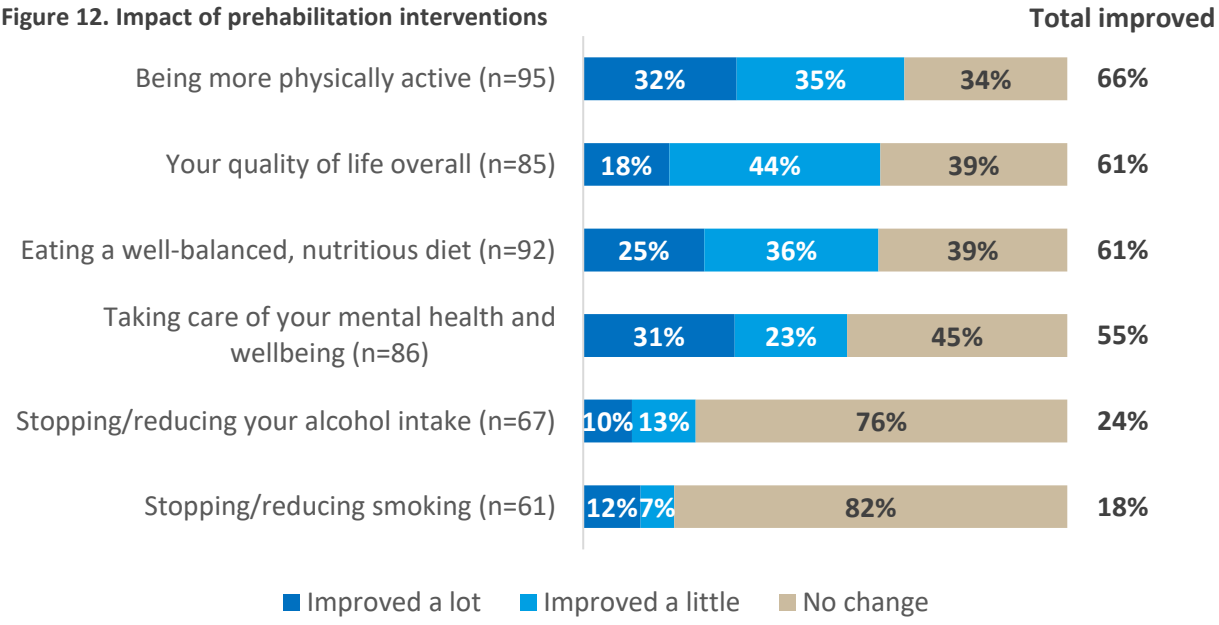
It is worth noting that some patients would have appreciated some level of continued support after surgery or treatment to assist with their recovery.

"I wasn't the same person at all after the surgery and felt very lonely coming out of the hospital. I wished it [the support phone calls] could have continued afterward by someone." – interview participant ID 18, female, aged 65-74, colorectal

Impact of prehabilitation interventions

Most respondents agreed that prehabilitation helped them better prepare for their treatment including surgery, and improve their recovery time afterwards. The most noticeable impacts of prehabilitation included improvements in physical activity levels, overall quality of life, and adherence to a well-balanced, nutritious diet (see Figure 12).

Figure 12. Impact of prehabilitation interventions



Source: Patient survey, n=61-95

Subgroup analysis:

- Men were more likely to indicate that prehabilitation has not had an impact on their diet compared to women (51% vs. 28%).

Qualitative research with patients revealed that the impact of prehabilitation on patients can vary significantly. Many patients felt well-supported by healthcare professionals, with easy access to contact them when needed. Some found prehabilitation immensely helpful, focusing on their needs for surgery and recovery, while others did not receive timely support or felt the programme was too short.

"Big impact, great confidence in the programme and the services delivered, this also gave my family confidence in my treatment and any questions they knew who to contact." – interview participant ID 4, male, aged 55-64, Head and neck

"I received brilliant support e.g. stopping smoking, and pre-op gym membership & instruction & fitness. And I knew that other supports were easily available if I wished." – survey respondent ID 24, male, aged 55-64, Colorectal

"I received an excellent service (prehab). All the professionals were understanding, supportive and reassuring. All these prepared me for surgery and left me in a good position to start my recovery with relevant information. I am grateful to all 3 (CNS, physio and dietitian), and my medical team." – Lung (source: Northern Trust internal patient feedback survey)

For those who participated in the Macmillan Move More exercise classes, the relaxed environment and peer support were particularly appreciated.

"I have kept in touch with the Move More walking group. It was nice to have the company and have the choice to become involved with others or not. I felt supported emotionally, socially and psychologically while having a wee bit of exercise." – interview participant ID 20, female, 55-64, colorectal

Overall, patients generally reported positive experiences, highlighting the excellent support received from Macmillan MMCs and healthcare professionals. They appreciated the advice, motivation, and tailored information provided, which contributed to their quick recovery and improved fitness before surgery or treatment.

Personalised care

A core principle of the cancer prehabilitation programme is the delivery of care tailored to individual patient needs. This personalised approach is consistently reflected in patient feedback, highlighting the value of emotional, physical, and practical support provided throughout the pre-treatment phase.

For instance, in the Western Trust, a Personalised Care Facilitator supported patients through weekly follow-up calls over a six-week period, offering motivation, emotional reassurance, and practical advice. Similar models of support have been adopted across other Trusts, with multidisciplinary teams, including Macmillan MMCs, physiotherapists, dietitians, other AHPs and support workers, providing tailored interventions to help patients optimise their physical and emotional wellbeing before

treatment. Overall, patients across the region reported feeling involved in their care, with many noting that they were consulted and given meaningful choices about the support they received.

"We have a good laugh she [Personalised Care Facilitator] and me. She always made a point of being available. I didn't realise that time how much it would mean to me. It's quite a bombshell in your life to get news like that. She helped me through it." – interview participant ID 16, female, aged 65-74, colorectal

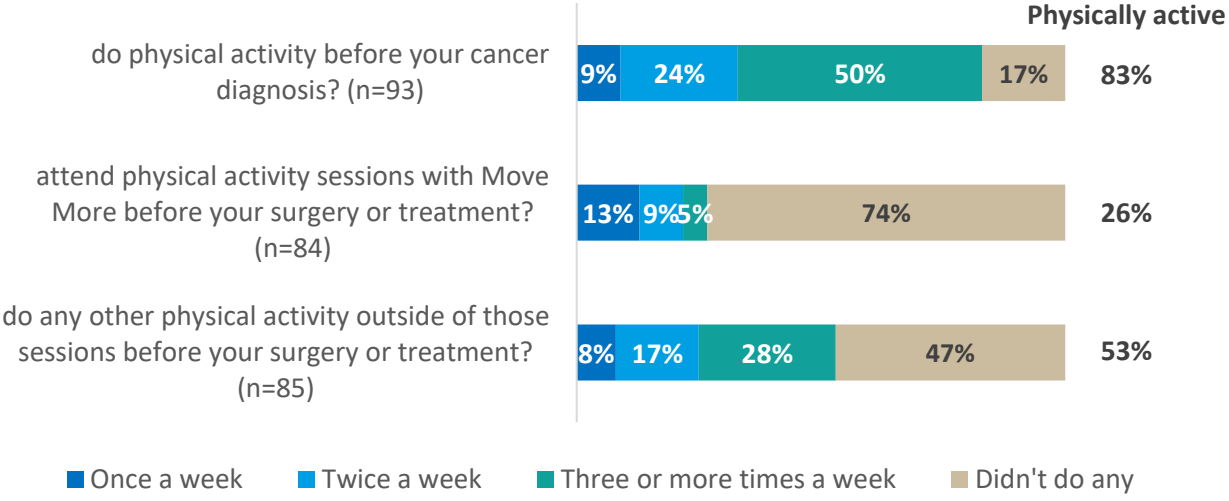
"I had a speech and language therapist from an early stage, everyone was always letting me know what was going to happen." – interview participant ID 4, male, aged 55-64, head and neck

Physical activity and use of local leisure centre

To further investigate the effect of prehabilitation on long-term behaviour change towards leading a more active lifestyle after cancer diagnosis, survey respondents were asked about their physical activity frequency both before their diagnosis and between diagnosis and treatment, whether independently or in an exercise class with a Macmillan MMC.

Although a decrease in physical activity levels following a cancer diagnosis is expected, 59% of survey respondents continued to be physically active before treatment, either with support from a Macmillan MMC (26%) or independently (53%). More encouragingly, 75% indicated that they have either maintained or intend to increase their level of physical activity after treatment/moving forward.

Figure 13. Physical activity level before cancer diagnosis and pre-treatment



Source: Patient survey, n=84-93

59% (n=90) continued to be physically active before treatment whether it was supported by a Macmillan MMC or by themselves

54% (n=96) said the amount of physical activity they have done since receiving prehabilitation has either increased a lot or a little

75% (n=96) have done or intended to do either more or the same level of physical activity moving forward

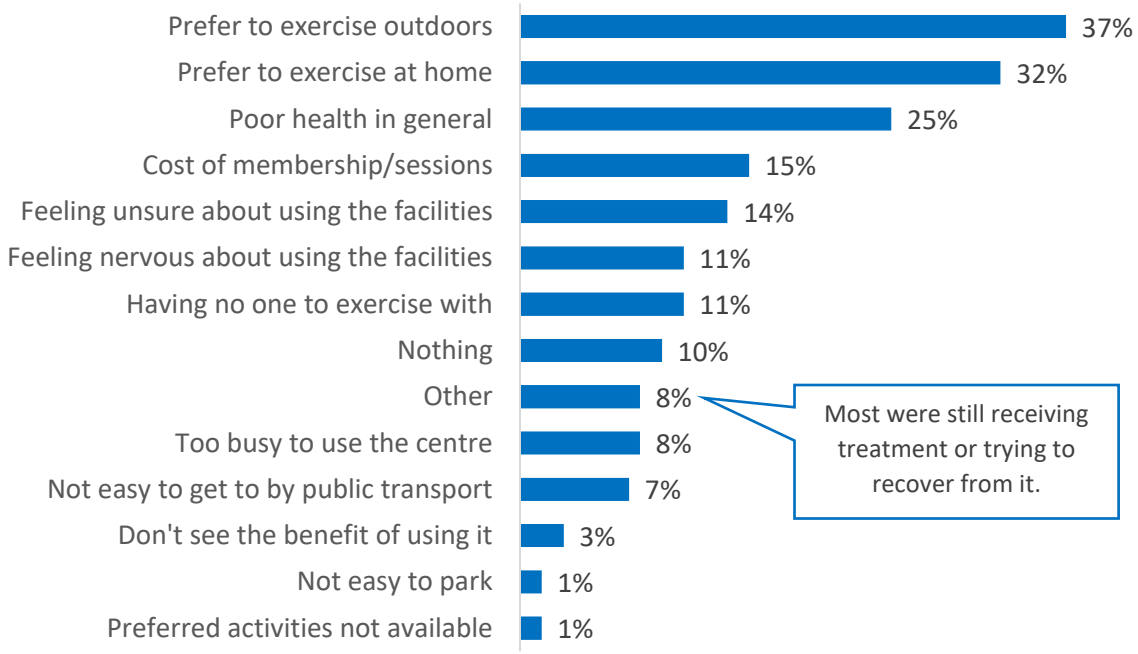
Subgroup analysis:

- Men were more likely to do physical activity themselves three or more times a week compared to women (51% vs. 28%).
- Those under the age of 65 were more likely to do more physical activity moving forward compared to those aged 75 and above (50% vs. 19%).
- Men were more likely to continue to same level of physical activity moving forward compared to women (51% vs. 29%).

When asked whether they have used their local leisure centre for any sports or physical activity since their cancer diagnosis, 20% of survey respondents (n=27) said yes. Of those, 17 individuals (63%) indicated that prehabilitation has encouraged them to do so, with nearly two-thirds using their local leisure centre weekly.

When asked what has or would prevent people from using their local leisure centre, the most mentioned reasons were preference for exercising outdoors or at home, followed by general poor health (see Figure 14).

Figure 14. Barriers to using local leisure centre



Source: Patient survey, n=136

Subgroup analysis:

- Respondents aged 65-74 and 75+ were more likely to prefer to exercise at home compared to their younger counterparts (39% and 43% vs. 16%).
- Those with a disability or long-term health issue that limited a little of their day-to-day activities were more likely to indicate that cost of membership/sessions was a barrier for them to access their local leisure centre, compared to those without (26% vs 7%).

- Those without a disability or long-term health issue were more likely to prefer to exercise at home compared to those with a condition that limited a lot of their day-to-day activities (46% vs. 23%).
- Unsurprisingly, those with a disability or long-term health issue that limited a lot of their day-to-day activities were more likely to contribute their barrier to access local leisure centre to poor health compared to those who were limited a little or not at all (44% vs. 13% and 11%).

Unintended outcomes

The **absence of a regional approach and standardised referral pathways** to the Macmillan Move More Programme has raised significant concerns over the **equality of prehabilitation support** across NI for both universal and targeted patients. Additionally, there was a general shortage of CNS resource to screen and refer patients, and AHP resources to support specialist patients, across the five Trusts. The exception was the Northern Trust, which managed to secure a dedicated prehabilitation AHP team through non-recurrent charitable funding.

Patient stories

To demonstrate the impact of the prehabilitation programme, eight patient stories were produced by the evaluator, and two were provided by the Southern Trust. A selection of these stories is presented below, with additional stories available in Appendix F.

Patient story: Ann

About Ann

Ann is in her mid 50s and works as an admin officer. She visited her GP in February 2024 due to a prolonged cough. The GP recommended an X-ray which led to further scans and biopsies. She was diagnosed with lung cancer in May 2024. She had a surgery in July 2024 to remove half of her lung.

Health and Social Care Trust: Northern

Tumour Site: Lung

How was prehab introduced?

The cancer nurse told Ann about prehab on the day of her diagnosis. She also received a phone call from the prehab physiotherapist to invite her to take part in prehab support.

Prehab support received

Ann was referred to her local Move More Coordinator for exercise classes. She participated in the circuits class and also armchair yoga which helped with her breathing. She also benefited from the emotional support provided by others attending the classes.

"It was so nice to meet people who are going through the same thing. The whole thing about it was just lovely. You didn't feel alone. People completely understood what you are going through."

Additionally, she was referred to a prehab dietitian who recommended increasing her protein intake, and to the smoking cessation service.

"My friends and family said that there's no doubt I did the best I could to get ready for the operation."

Impact of prehab

Ann has truly benefited from the prehab support she received. She felt that the healthcare professionals were working together to ensure she was well-prepared for her surgery. She attributes her quick discharge from the hospital - just two days after surgery - to the effectiveness of the prehab programme.

"Fantastic, 10 out of 10. I haven't really thought about getting fit before the operation. The way they talked about how much better I would feel if I have done exercise... what they said made sense. I wouldn't have taken up exercises and joined Move More otherwise."

"I was in the hospital in the 23rd July and was home in two days. I think it was all down to prehab."

Adapting to living with cancer

Ann now enjoys daily walks and maintains a healthy diet. She has also successfully quit smoking. She knows that she can contact the nurse, physiotherapist or dietitian whenever she needs them.

m·e·l research

Patient story: Terry

About Terry
Terry, in his late 50s, was diagnosed with tongue cancer in October 2023.

His treatment plan involved surgical removal of the tumour, followed by a course of radiotherapy.

Health and Social Care Trust: South Eastern

Tumour Site: Head and neck

How was prehab introduced?
Terry was referred to prehab support at the time of diagnosis. He understood that it involved various services to help him prepare for 'whatever was ahead'. However, he felt that the benefits of prehab could have been explained more thoroughly.

"Perhaps the benefit of prehab should be explained more. When just diagnosed, it is a lot to take in and although you want the best outcome, surviving is the most important."

Prehab support received
Additionally, Terry was referred to a Move More Coordinator at his local leisure centre. After having a chat with them, two days after diagnosis, he declined the exercise programme as he preferred to engage in his own physical activities.

"I had a speech and language therapist from an early stage. Everyone was always letting me know what was going to happen."

"My nurse introduced the whole team. She brought the physio in, who gave me great confidence. The dietitian explained the impact it would have on my diet. The whole team was great, helpful, accessible and reassuring."

Impact of prehab
Terry felt that he was able to get all the relevant support he needed through prehab, which had a really positive impact on both him and his family. Terry maintains an active lifestyle by frequently going for walks and to the gym.

"A big impact, great confidence in the programme and the services delivered. This also gave my family confidence in my treatment and if they had any questions they knew who to contact."

Adapting to living with cancer
Terry felt confident in managing his condition moving forward. His wife has become very creative in preparing soft foods to help maintain his weight. He has found it beneficial to speak with someone who has gone through a similar journey and now wishes to support others by doing the same.

"I would love to speak to other patients and give them the hope that the lived experience gave me."

"I was in a lot of pain after surgery. I had lost my taste and radiotherapy destroyed my saliva glands. Although this was explained well, the best part was bringing in someone who had been through the same surgery and was able to give me tips and I saw how he had healed. Definitely speaking to someone who had the same diagnosis helped."

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Patient story: Rosalind

About Rosalind

Rosalind is in her early 70's. She is retired and lives with her siblings. She previously had bowel cancer in July 2024 and had an ileostomy.

She has had radio/chemo therapy with good response and further surgery planned for May 2025 for more resection.

Health and Social Care Trust: Southern

Tumour Site: Colorectal

How was prehab introduced?

At the Pre -operation Assessment clinic, Rosalind's anaesthetist explained to her that the surgery she was going to have was substantial and the importance of being in the best possible condition for it. He introduced her to the Prehabilitation Clinical Project Manager who went on to explain the process in more detail.

Prehab support received

Rosalind attended a face to face session with Specialist Physiotherapist in which she was given a range of exercises to work on to help her prepare for the surgery and utilise to support her breathing after surgery. She was offered telephone follow up. The Clinical Project Manager, also an Occupational Therapist, provided her with a DIY Prehabiliation Toolkit which was tailored to meet her individual needs. She was given telephone support to set small goals to work on in the lead up to her surgery as well as advice on maintaining her psychological wellbeing throughout the process. The Dietician provided advice and support in maintaining her weight and use of supplements. Rosalind found this particularly reassuring and welcomed the advice.

Every exercise she (the physiotherapist) did with me, in addition to explaining, showing me how and what to do! Her explanations were down-to-earth, full of understanding for me and of obvious empathy for me. She watched my facial expressions and body behaviors closely and I could feel her 'knowing how' I was feeling about everything.

Impact of prehab

Rosalind felt that Prehabilitation made a significant impact on her preparation for surgery. She was very motivated to engage and welcomed the opportunity to take a proactive role in her own recovery.

Adapting to living with cancer

Rosalind is in the last week leading into her surgery and feels so grateful for all the support that she has received from all the staff in the Southern Trust.

Source: Southern Trust

Patient story: Aoife

About Aoife

Aoife, in her late 50s, visited her GP in November 2022 after noticing some blood in her stool. The GP was quick to respond and referred her to the hospital for further investigations. Aoife received her cancer diagnosis in March 2023. Her treatment plan included two surgeries, one of which resulted in a permanent stoma.

Health and Social Care Trust: Western

Tumour Site: Colorectal

How was prehab introduced?

After her diagnosis, Aoife was immediately informed about the prehab support that was available to her, a concept she was unfamiliar with. The Personalised Care Facilitator at the Western Trust then got in touch shortly after and explained prehab in more details which helped Aoife see how she could benefit from the support.

"It was to get me in the best possible place before surgery. It was good in that it gave me responsibility for myself. Instead of sitting in a state of despair, it gave me a purpose. Steer your thought to 'this is what I have to do to get the best result for myself'."

Prehab support received

Aoife received a weekly phone call from the Personalised Care Facilitator for a six week period, while waiting for a second surgery. She felt the support from the Personalised Care Facilitator was very much tailored to her personal needs.

"There was all of the different categories that she was covering: nutrition, exercise, emotional wellbeing. I felt very free to say if something wouldn't work for me or if I didn't understand something. It was very much tailored to my own needs."

Impact of prehab

Aoife was delighted with the prehab support she received, which exceeded her expectations. The weekly phone calls with the Personalised Care Facilitator were instrumental in helping her concentrate on enhancing her physical condition in preparation for her operations. Aoife felt that the exercise classes helped her better prepared for the surgeries. She also appreciated the social and peer support the classes provided.

"I feel if I didn't have the support groups, it would have been harder. I wouldn't have felt really understood and empathised with."

"The support I have got was maybe beyond what I expected. I really did not think it was available and to the extent that I received"

Adapting to living with cancer

Aoife felt very confident in managing her condition moving forward. She is supported by the stoma nurse on an ongoing basis and knows that she can reach out to her cancer nurse for any concerns.

"I'm now back to myself and I have the strength now. I do want to help others by telling my own stories. I feel that not only I have strength in myself, and I have strength for others too."

m·e·l research

Outcomes and impact for staff

Key findings

- While informal training and self-learning has enabled staff to deliver cancer prehab, a more structured and formalised induction, along with the creation of shared resources, would have been welcome.
- A centralised digital platform accessible to both clinical staff and council staff could improve efficiency and accuracy in exchanging and updating patient records and outcome data.
- There is a strong belief that cancer prehabilitation should continue to be delivered, given the positive impact of the holistic and personalised care approach in improving patient outcomes and enabling longer-term behaviour change. However, there is significant concern regarding the programme's equity and sustainability following the cessation of the Macmillan Move More Programme, compounded by a lack of funding for dedicated resources.

Training and support needs

Hospital staff training was largely informal and delivered internally, with some staff taking the initiative to attend seminars or conferences to enhance their knowledge. Cancer prehabilitation was a new area for most hospital delivery staff supported the programme, and it was felt that there should have been more opportunities for formal training and induction rather than learning on the job. This lack of structured training impacted some staff's confidence in supporting patients through prehab.

Several staff members suggested the need for shared resources or literature outlining the prehabilitation service specifications and expectations, common FAQs to aid problem-solving, and guidance on adjusting advice for patients with different comorbidities. Staff also welcomed the idea of networking and learning from others, such as through a prehabilitation AHP forum.

A notable example of good practice is the South Eastern Trust, which has implemented a formal induction programme and developed shared resources to support consistent and confident delivery of prehabilitation services across the Trust. Similarly, the Western Trust has created a prehabilitation Do It Yourself (DIY) toolkit, which has since been widely adopted by other Trusts as a practical and accessible resource.

As part of the governance and quality assurance framework associated with referrals from the Trusts to the Macmillan Move More Programme, it was mandatory that all Macmillan MMCs completed the Level 4 Cancer Essentials Course. In addition, coordinators were required to undertake the following training to ensure high standards of communication and support for individuals affected by cancer:

- The spirit of motivational interviewing
- Motivational interviewing
- Sage & Thyme (a structured, evidence-based communication skills training programme)
- Emotive conversations in health and social care
- Courageous conversations in health and social care

- Introduction to coaching skills
- Developing coaching skills

These training components were designed to equip coordinators with the necessary skills to engage effectively, empathetically, and confidently with service users throughout their cancer journey. Following the end of the Macmillan Move More Programme funding in March 2024, some councils have signalled they will no longer support delivery by Level 4 trained staff. This creates a risk of disrupting referral pathways from the Trusts and widening regional inequalities. To maintain equitable access and service quality, a stable, long-term funding model is essential.

Additionally, Macmillan MMCs were accustomed to working with rehabilitation clients who had completed treatments and were trying to live well with cancer. In contrast, prehabilitation clients had just been diagnosed with cancer, bringing a range of emotions and priorities to address. Some Macmillan MMCs felt unsure about how best to engage patients at this early stage of their diagnosis. It was suggested that training on how to effectively engage this client group and what is appropriate or inappropriate to say would have been beneficial.

From the perspective of roles such as Personalised Care Facilitators and support workers, several key skills are considered essential for delivering effective prehabilitation support to patients. These include:

- **Motivational interviewing** to encourage positive behaviour change.
- **Strong communication and active listening skills** to build trust, understand patient concerns, and respond empathetically.
- **A general understanding of health improvement messages** to promote physical activity, nutrition, smoking cessation, and other lifestyle changes in a supportive and informed manner.
- **Awareness of psychological well-being principles** to supporting patients' emotional resilience and mental health as they prepare for treatment.

Information sharing challenges

Encrypted email had been the main method used to share prehabilitation patient information, whether it was within the Trusts or between the Trusts and councils. The approach worked fine when the communication is one-way, but several stakeholders also highlighted the inefficiency and inconvenience when needing to update different partners with progress. It has been suggested that a central digital platform where relevant staff could access and update patient information/progress would work well.

The level of information shared was also not consistent across organisations and many felt that having more details beyond name, address, phone number, and treatment plan etc. would help them better prepare and support patients. Information around comorbidities were often mentioned.

Staff satisfaction and challenges

It was unanimously felt that cancer prehabilitation is the right thing to do and should be continued with involvement from both the Trusts and councils. Delivery staff have found it a satisfying and rewarding experience to provide prehabilitation support and this sentiment is further reinforced by positive patient outcomes and feedback. However, Trust-based delivery staff were also faced with

challenges such as not feeling fully supported by their senior managers at a practical level, not having enough resources to deliver the programme, and not having enough support or buy-in from other clinical colleagues.

Confidence in the prehabilitation programme

Stakeholders across the board firmly believed and endorsed the holistic and personalised care approach to cancer prehab. Advice and support they 'prescribed' were tailored to individual needs, and linking up prehabilitation support with personal motivations has helped with behaviour change. Patient feedback echoes this finding.

However, confidence in the programme providing an equitable service across the region was generally low. The primary concern was the absence of a consistent referral pathway from Trusts to community-based support, particularly following the end of the Macmillan Move More Programme in April 2024. While all councils confirmed that Level 4 qualified support continues to be available locally, the lack of a formalised and regionally coordinated referral mechanism has created variability in access, especially for both universal and targeted patient groups.

Additionally, the ongoing challenge of securing AHP resources to support specialist patients further diminished clinical staff's willingness to refer patients into prehabilitation services. At the time of writing this report, patients in different council/Trust areas can receive varying levels of support, creating a postcode lottery.

It is important to note that all services received the agreed funding, but differences in recruitment timelines and local capacity to mobilise quickly affected delivery. This misalignment between funding availability and implementation readiness has further contributed to inconsistencies in service provision.

Unintended outcomes and emerging challenges

Although the primary focus of the prehabilitation programme was to develop a service model that best supports universal and targeted patients through integrated working between Trusts and local councils, the need to support specialist patients also became apparent at the early stage of implementation. This necessitated additional AHP resources, which only the Northern Trust managed to secure through non-recurrent charitable funding.

While this funding provided a short-term answer, it underscored a broader challenge: all Trusts will require a long-term, sustainable solution to deliver prehabilitation at the level needed for all patient groups, including those with more complex needs. Without this, the ability to provide equitable and comprehensive prehabilitation services across the region remains limited.

Outcomes and impact for the wider systems

Key findings

- The programme has encouraged collaborations within the Trusts and between the Trusts and councils.
- While a standardised regional approach is required, considerations for the different needs of patients with different tumour sites should be taken into account, including how extra resources required could be funded.
- Essential key roles include CNSs who are pivotal in encouraging prehabilitation uptake, patient screening and referrals, a community-based programme to provide equitable support across NI, and AHPs such as physiotherapists, dietitians, speech and language therapists to provide specialist interventions and occupational therapists. Support workers play a vital role not only in offering administrative assistance but also in actively supporting patient engagement and enabling positive behaviour change.

Collaboration and partnership working

The programme has undoubtedly facilitated multidisciplinary collaboration within participating Trusts and improved inter-organisational relationships between the Trusts and councils. This was considered a very positive outcome of the programme. The continuation and strengthening of these relationships will depend on senior management within both the Trusts and councils.

Progress towards a standardised regional model

Significant progress has been made in refining the regional prehabilitation service model despite early challenges (see Appendix H for the model currently in development). While there is broad recognition of the need for a standardised approach, achieving this remains difficult due to varying resource constraints and operational differences across Trusts and councils.

It was also widely established that cancer prehabilitation cannot be effectively delivered without appropriately funded resources. There is a need for the regional model to consider what the service would look like as a bare minimum if extra funding cannot be secured.

In parallel with regional efforts, some Trusts have explored local innovations to meet patient needs. For example, Belfast Trust has begun developing a comprehensive service model to support a wide range of tumour sites. This includes multidisciplinary input from occupational therapists, dietitians, physiotherapists, exercise instructors, and speech and language therapists, as well as initiatives such as a surgery school and specialist services like pelvic floor therapy and cognitive prehabilitation. While these developments are promising, how such models could be sustainably resourced remains an open question and reinforces the importance of long-term planning at both local and regional levels. Tumour-specific approaches and learning

Learning from the programme implementation has shown that while some elements are core to cancer prehabilitation delivery, a one-size-fits-all model would be inappropriate and ineffective. From

the programme data analysis, it was apparent that patients from different tumour group can have very different needs which call for different level of prehabilitation interventions.

Key roles and resources for effective delivery

While NI's Cancer Strategy acknowledges the crucial role of Allied Health Professionals in delivering prehabilitation services, evidence from this evaluation suggests that a fully functional service also requires additional key roles and resources, including:

- **Project Manager:** Until prehabilitation is fully embedded into routine cancer care, the role of a Project Manager is considered essential to provide leadership, liaise between internal stakeholders and external partners, and promote, communicate, and improve the implementation of prehab.
- **Clinical Nurse Specialists:** CNSs are crucial in promoting prehabilitation to patients, and screening and referring patients to the appropriate level of support. The evaluation highlights the significant impact a lack of CNS support and resources can have on prehabilitation implementation.
- **Community-based exercise programme and support:** Trust staff highly valued the universal and targeted support Macmillan MMCs provided to people diagnosed with cancer, and the importance of having a programme accessible to patients across NI, within their local community. The positive impact of the exercise programme is evident from patients' feedback. While most councils have transitioned away from disease-specific models due to sustainability challenges, they continue to recognise the expertise required to deliver effective support. There remains a willingness to maintain community-based provision.
- **Allied Health Professionals:** Various AHP roles are recognised as crucial for supporting patients requiring specialist and to a certain degree, targeted interventions, namely physiotherapist, dietitian, and speech and language therapist. Although the support from occupational therapists (OT) was limited in the programme, some stakeholders highlighted the significant role an OT can play in assessing patients' physical, emotional, and practical needs before treatment, helping create personalised plans including physical and cognitive interventions to address these needs, recommending adapting strategies and equipment, etc.
- **Support workers:** These roles are essential in delivering administrative support to CNS and AHP teams, providing direct patient care, and promoting positive behaviour change. In the Northern Trust, they were also instrumental in collecting patient outcome data. There is further opportunity to expand their role within cancer prehabilitation. For instance, in Scotland, Band 4 support workers are involved in assessing and referring cancer patients to appropriate prehabilitation interventions, using validated tools under CNS supervision, to help alleviate CNS resource constraints.
- **An agreed outcome data framework and data analyst input** are considered essential to ensure the same key performance measures are collected across the region to demonstrate the effectiveness and impact of prehabilitation for funding purposes.

Unintended outcomes and emerging challenges

This regional programme has underscored the significant resource constraints faced by partner organisations and the challenges of implementing a new intervention without appropriate funding. While clinical staff wildly supported the concept of prehabilitation, many were not able to continue

their involvement on goodwill alone. Similarly, councils struggled to justify maintaining cancer-specific programmes in the absence of targeted funding.

Patients treated outside their home Trust, such as at regional centres in the Belfast or South Eastern Trusts, may receive limited prehabilitation support if local provision is lacking. At the time of writing this report, no formal pathways existed for these centres to refer patients back to their local prehabilitation services. It was hoped that encompass, the new integrated care record system, will help address this gap.

These issues have contributed to a postcode lottery, as previously highlighted in the report, where access to prehabilitation is determined more by geography than clinical need, leading to notable variations in cancer care and outcomes across NI.

Conclusions and recommendations

Conclusions

The evaluation of the Macmillan Northern Ireland Regional Integrated Cancer Prehabilitation Programme aimed to explore the key learnings of the programme's implementation, identify the impact of prehabilitation interventions on patients, staff and the wider system, and provide insights and recommendations for the future rollout and sustainability of cancer prehabilitation in NI. Overall, the success of the programme was measured against four outcomes, with the paragraphs below presenting a summary based on the evaluation findings.

Outcome one: Support 3,000 people living with cancer across NI through the provision of personalised, early-intervention prehabilitation, and a further 13,500 people affected by cancer, transforming both outcomes of treatment and patient experience.

By the end of December 2024, over 1,300 patients had been referred to cancer prehabilitation across the four Trusts that provided monitoring data. Although, on the face of it, the programme has failed to meet this target, it is crucial to highlight that not all Clinical Project Managers started at the same time, with the earliest in post from September 2022 and the latest starting in December 2023.

A key learning is that developing and embedding a prehabilitation programme requires time, sustained effort and adequate resourcing. With the exception of the South Eastern Trust, all participating Trusts were building services from the ground up. Most were also operating with limited resources, which constrained their ability to implement and scale effectively. The Northern Trust was the only Trust to secure additional non-recurrent funding for dedicated AHP and support worker posts, significantly enhancing its capacity to deliver prehabilitation more effectively and equitably.

Outcome two: Establish a model of equitable access to this support for colorectal cancer patients across NI, ensuring equity of access through the integration of standards across all pathways.

All five Trusts have successfully established a prehabilitation model for colorectal cancer patients although the consistency in service delivery is hindered by the discontinuation of the Macmillan Move More Programme, which had provided condition-specific community-based support, as well as by the lack of dedicated prehabilitation AHP resources. There were undoubtedly concerns over the programme's ability to provide equitable access to relevant support for this patient cohort. The absence of a standardised regional model also meant that each Trust has developed their own way of working, based on the resource available.

Outcome three: Develop prototypes for the delivery of this support for up to five further tumour groups (two in each trust) - lung, upper Gastrointestinal and Hepatobiliary, head and neck, breast, and gynaecological cancers.

The programme has achieved some degree of success in this respect, with four out of five Trusts offering prehabilitation to patients with other tumour sites, including lung, head and neck, and

haematology. Most of these tumour sites are among the most commonly diagnosed cancers in Northern Ireland, making them appropriate and impactful targets for service expansion. The key learning, as emphasised in previously in this report, is that what works for one tumour site will not necessarily work for another. The different patient cohorts often present very different needs, and therefore the referral pathways and relevant service provision should be adapted accordingly.

Outcome four: Demonstrate evidence of impact on patient outcomes, patient experience, and cost-benefit to support a business case with recommendations for future investment such as commissioning to deliver this support sustainably.

Patient outcome measures collected by Trusts successfully demonstrated the positive impact prehabilitation interventions can have on improving patients' physical conditions and mental wellbeing pre-treatment. Patient feedback through surveys and interviews highlighted the value of the personalised approach and their appreciation for support given. Some indicated that prehabilitation helped shorten their hospital stay and speed up their recovery.

It was determined with Macmillan, from the early stage of the evaluation, that the key focus was to assess how prehabilitation can work and work well in NI, rather than provide a cost-benefit analysis to prove a business case, as wider evidence has suggested that well-structured cancer prehabilitation programmes can be cost-effective and reduce overall healthcare costs.

Recommendations

1. Funding and resource allocation

Securing sustainable and recurrent funding is essential to ensure the continuity of prehabilitation and to improve the equitability of the service. Driven by the ambitions of the cancer strategy, Trusts are committed to providing consistent, high-quality support to all individuals diagnosed with cancer. Achieving this vision requires dedicated, ringfenced resources not only within Trusts but also across community settings, including local councils.

This investment should prioritise critical roles, such as CNSs, AHPs, and support workers, as well as community-based programmes that make services more accessible and inclusive. At the same time, organisations should **review and adapt existing work practices and resources** to maximise their contribution to prehabilitation delivery and sustainability.

2. Integration into routine care

Prehabilitation must be **embedded into routine cancer care** and not to be treated as an additional service, so it can continue to be offered to patients as part of 'business as usual'. Leadership from the government, health agencies, senior management within the Trusts and councils, cancer services including clinical leads, health improvement teams, and AHP leads from various disciplines will need to work together to ensure that prehabilitation remains a priority. A standardised regional model will also help facilitate this integration.

There is also value in drawing on established programmes, such as cardiac rehabilitation, for best practices in shared standards and procedures, cross-Trust referral processes, shared databases, and

pathways into community services. These models offer valuable insights for building a more integrated and sustainable approach to cancer prehabilitation.

3. Workforce development and knowledge sharing

To enhance staff confidence, ensure consistency in care, promote equity in service delivery, and foster collaboration, it is essential to **standardise induction, training, and knowledge-sharing resources**. Additionally, expanding the Band 4 support worker role should be considered to better support CNSs in screening and referring patients to appropriate prehabilitation interventions, and to assist AHPs in delivering these interventions effectively.

4. Early intervention and innovation

Introducing prehabilitation at the endoscopy stage for colorectal patients, **prior to their cancer diagnoses**, has positively impacted on patient uptake. In turn, patients benefit from having a longer intervention period before their treatment or surgery. It is worth considering **how this principle could be adopted for other tumour groups and perhaps involve primary care**.

For instances, in Wales, GPs within the Cardiff and Vale University Health Board area can refer patients on Urgent Suspected Cancer Pathway to cancer prehab. Similarly, in the Swansea Bay University Health Board area, pharmacist-led prehabilitation clinics are conducted at the Rapid Diagnostic Centre to provide medication and lifestyle advice.

In parallel, there is a need to develop tailored interventions for patients with a very short window between diagnosis and treatment. Identifying how best to deliver meaningful support in these cases is essential to maximising the impact of prehabilitation across all patient pathways.

5. Community engagement and local partnerships

Trusts and local councils need to re-engage and agree on practical solutions to support cancer prehabilitation in the community. Delivery partners should consider engaging with the Chief Culture and Leisure Officers Association (CLOA) to provide strategic leadership and endorsement. The CLOA can play a significant role in cancer prehabilitation by leveraging their expertise in promoting physical activity, mental well-being, and community engagement.

6. Performance monitoring and evaluation

Establishing a standardised set of key performance indicators (KPIs) to be reported and monitored routinely across the region will significantly enhance performance and quality management. By providing clear and measurable benchmarks, KPIs enable comparative analysis, fostering a culture of continuous improvement and shared learning. Additionally, they can support future funding decisions by demonstrating the effectiveness and needs of the programme.

The KPIs could include:

- Patient referral and participation rates
- Prehabilitation completion rate
- Functional capacity measures such as the 6-Minite Walk Test, 30 Second Sit to Stand test
- Patient-Reported Outcome Measures (PROMs) such as EQ-5D-5L, health thermometer

- Secondary care data including reduction of hospital length of stay post-surgery and postoperative complications
- Patient and staff feedback

To support this, implementing a shared database or CRM system across all Trusts, feeding into a centralised dashboard using tools such as Microsoft Power BI or Tableau, would be an effective way to share intelligence, enable deeper analysis, and support cross-organisational discussions. To maximise the value of this approach, the frequency of KPI reporting should also be reviewed, as some indicators (e.g. PROMs or secondary care outcomes) may be more appropriate for quarterly or annual reporting, while others (e.g. referral rates) could be monitored more frequently.

Appendix A: Evidence review

Policy context

Northern Ireland's Department of Health launched a **10-year Cancer Strategy** in March 2022. The aims of the Strategy are threefold:

- to reduce the number of people diagnosed with preventable cancers.
- to improve survival.
- to improve the experience of people diagnosed with cancer.

The strategy suggests that people who have developed cancers linked to "behavioural" factors (e.g., smoking, being overweight/obese, drinking at harmful levels, diet, and exposure to UV without protection) worry about the cancers returning if behavioural changes are not introduced. A key action, therefore, is for people diagnosed with cancer in Northern Ireland (NI) to be offered appropriate and targeted information and support to "live well" [8]. Prehabilitation is also presented as an important way of preparing people for cancer treatment and will include assessment and needs-based prescribing for healthy behaviours and follow-up. Key components of prehabilitation programmes are conceived of as including exercise, nutritional management, and psychological support. Services are envisaged to be led and delivered by a range of Allied Health Professionals (AHPs).

Key components of prehabilitation, as outlined in the NI strategy, include:

Multimodal Prehab: Implementing exercise, nutritional, and psychological interventions to prepare patients physically and mentally for treatment, aiming to improve treatment tolerance and recovery. Prehab, involving physical, behavioural, and psychological interventions, enhances patients' readiness for treatment and supports better recovery outcomes.

Personalised Care Plans: Developing tailored prehabilitation plans that address individual patient needs, promoting patient enablement and empowerment.

Collaborative Implementation: Encouraging partnerships among healthcare professionals, Allied Health Professionals (AHPs) providers, local councils, charities, and academic institutions to deliver comprehensive prehabilitation services.

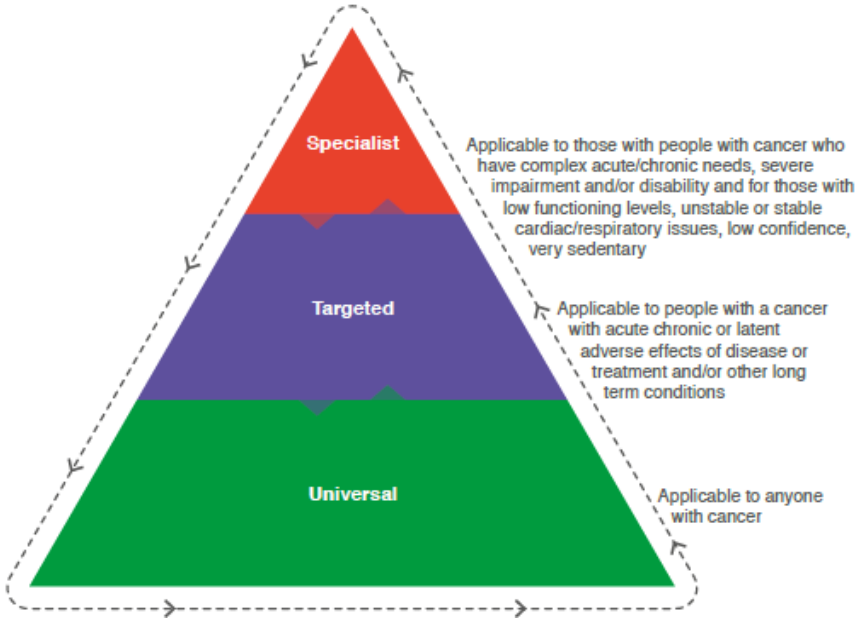
Evidence-Based Practices: Utilising current research to inform prehabilitation strategies, ensuring interventions are effective and aligned with best practices.

The NI Cancer Strategy relies on, what is described as "strong international evidence about the benefits and cost effectiveness of prehabilitation", suggesting that prehabilitation has potential to reduce length of hospital stays, need for Intensive Care Unit (ICU) and High Dependency Unit (HDU) admissions, medication and post-treatment complications, whilst enhancing recovery and quality of life overall. However, others are more cautious about reaching conclusions about the existing evidence and point out that prehabilitation has been under-researched for many cancers [35].

Stewart and colleagues point out that people with lower health literacy, from minority ethnic groups and socio-economically disadvantaged backgrounds have been reported to be less likely to engage, despite often having worse outcomes. They suggest that there is a need for coherent UK and NI policies to be developed that address the inequalities faced by people diagnosed with cancer in accessing prehabilitation services and that prehabilitation services must be implemented carefully to avoid widening inequalities (the NI strategy is clearly concerned with addressing health inequalities). The PARITY Evaluation - Prehabilitation for Cancer Surgery: Quality and Inequality, funded by the National Institute for Health and Care Research (NIHR), seeks to examine these issues in greater detail [39].

Collaborations between organisations such as Macmillan Cancer Support, the Royal College of Anaesthetists, and the National Institute for Health Research has produced guidance documents to assist healthcare professionals who will be implementing prehabilitation into cancer care pathways [28]. See Figure 15 for the universal-targeted-specialised conceptual framework they have endorsed [2].

Figure 15. Three levels of cancer prehabilitation intervention



Interventions are defined at three levels: universal (suitable for all those with cancer), targeted (applicable to people with a cancer diagnosis with acute chronic or latent adverse effects of disease or treatment) and specialist (applicable to those who have complex needs, severe impairment and/or disability) [28].

Some UK collaborations, like the Wessex Cancer Alliance, have also developed prehabilitation and rehabilitation toolkits aligned with national guidance to improve care and services for people with cancer. Their toolkit is designed to promote equality and reduce health inequalities, facilitating the integration of prehabilitation services across various healthcare settings [28]

Examples of other prehabilitation initiatives across NI

Despite these strategies and initiatives, prior to the funding of the Macmillan Cancer Prehabilitation Programme, only ad hoc pathways, pilot initiatives and models were developed for some tumour groups, include the following:

- The South Eastern Health & Social Care Trust was the first of the five HSCTs in NI to introduce a **Cancer Prehabilitation Programme Pilot**, focusing on exercise, nutrition, and emotional well-being (no specific cancer mentioned). This initiative is a collaboration among the Trust, local councils, Macmillan Cancer Support, and Ulster University, reflecting a commitment to holistic patient-centred care. The aim is to also include signposting to support services such as Stop Smoking and Substance Misuse Support. The pilot laid a strong foundation for the Trust's role in the wider NI cancer prehabilitation programme.

  The qualitative evaluation of the pilot describes a universal and targeted exercise pathway aims to have patients completing 3 high intensity training (HIIT) sessions per week, and the specialist pathway involved a physiotherapist-led bespoke cardiovascular and strengthening session per week with prescribed home exercise for alternate days. Universal emotional support was provided by Macmillan Move More Coordinators (MMCs) who had Level 4 Personal Training alongside generalist emotional support training; with targeted and specialist pathways delivered by counsellors/assistant or clinical psychologist respectively if required. Similarly, universal nutritional advice was provided by Macmillan MMCs focusing on healthy eating and recognising weight loss, with targeted pathway delivered by dietetic support worker and specialist tier receiving input from dietitian to provide complex assessment and bespoke dietary prescription. Smoking cessation support was provided when necessary, taking a motivational interviewing approach and providing advice on pharmacotherapies. Substance misuse liaison provided alcohol advice, education, and signposting to referral services for patient as indicated.

  Recruited stakeholders included medical; clinical nurse specialist (CNS); smoking cessation and alcohol liaison team; AHPs to include dietitian, speech and language therapist and physiotherapist and Macmillan MMCs. It was also important to recruit participants from a system-wide perspective, therefore sampling include participants with administration roles within the South Eastern Trust, local councils, and Macmillan Cancer Support. patients, who were purposefully selected to maximise variation in terms of gender, engagement (dropouts and completers) and tumour group [2].

- Physiotherapists in the Belfast Trust have developed the **Continence Prehabilitation Programme** focusing on continence prehabilitation for men awaiting prostate cancer surgery. This initiative provides verbal and written advice on continence management before surgery, aiming to improve postoperative quality of life [6]. Other prehabilitation services in the Belfast Trust include upper GI prehabilitation clinic, breast pre-op education sessions, ovaria prehabilitation clinic, and head & neck radiology prehabilitation programme.

- **Exercise Programmes for Advanced Prostate Cancer**: Researchers at Queen's University Belfast conducted a study to assess the feasibility and efficacy of exercise programmes for men with advanced prostate cancer and assess impact on survival rates (Queen's University Belfast).

- The Northern Ireland Ovarian Cancer Prehabilitation Project offers a dedicated prehabilitation clinic that was established to assess frailty in patients with advanced ovarian cancer and implement tailored interventions to improve fitness before surgery and chemotherapy (Northern Ireland ovarian cancer prehabilitation project | BMJ Open Quality).

Case studies of other programmes being delivered across the UK can be found on the PRosPer - Cancer Prehabilitation and Rehabilitation programme, funded by Health Education England and Macmillan Cancer Support **UK Case Studies.**

Impact of cancer prehabilitation on patients

Prehabilitation has been championed as a key component of early recovery in people diagnosed with cancer and is a term that has been traditionally used to describe interventions that seek to optimise cardiopulmonary fitness prior to cancer surgery, with the aim of improving post-operative recovery outcomes [5][32][34]. The Royal College of Anaesthetists (RCoA) has led the field of prehabilitation before cancer surgery for many years. Their perioperative medicine programme is delivered through the multi-specialty, multi-professional national Centre for Perioperative Care (CPOC) in the UK [28]**.** However, it has been suggested that there has long been scope for greater targeting to include nutrition and psychoeducational components to surgical prehabilitation programmes [9]. Novel studies suggest that a multimodal approach that incorporates both physical and psychological prehabilitation interventions may be more effective than a unimodal approach that addresses just one or the other [28].

Multimodal Cancer Prehabilitation Programmes (MCPP) have been used to target the pre-treatment period to improve chemotherapy adherence [16], reduce anxiety [37] and to provide a stronger platform for post-treatment rehabilitation aimed at managing or reversing treatment-related side effects and symptoms (e.g., fatigue and pain during adjuvant therapies), managing comorbidities [18] and enhancing longer-term health-related quality of life [1][3][31][33].

Studies evaluating the efficacy of MCPP have identified patient benefits even when implemented for just two weeks prior to treatment [9]. Patient benefits have been reported to include improved physiological function through cardiorespiratory fitness and emotional resilience, shorter recovery time, reductions to peri-operative complications, gaining a sense of control over uncertainties ensued from a cancer diagnosis, improving quality of life and positive impacts on long-term health through behaviour change [9][38].

There are frequent references to the belief, among health professionals and delivery stakeholders, that cancer diagnosis is potentially a 'teachable moment' regarding improving support for self-management of physical and mental health conditions, along with obesity, smoking, and substance use. Some researchers are exploring how support for self-management, which might include patient education, skills development, and self-monitoring interventions, enabling people to take control of their health following a cancer diagnosis [40]. There has been suggestion that prehabilitation is likely to be most useful in older cancer patient cohorts, who are more likely to have complex co-morbidities as well as sensory, balance or cognitive impairment with reduced functional abilities [9].

The extent of benefits of cancer prehabilitation varies based on cancer type and individual patient factors [7][19][23]. Some studies have identified barriers such as access and patient motivation can also hinder the effectiveness of MCPPs. Patients who understand the purpose and benefits of the programme have been reported to have shown more commitment to programmes, with the converse also evident [2]. Understanding these dynamics is crucial for policymakers to design effective prehabilitation programmes that can be integrated into secondary care settings [29].

Summary of positive impacts for patients

1. **Improved physical function and fitness**
    - Prehabilitation programmes, particularly those involving exercise, enhance **cardiorespiratory fitness, muscle strength, and endurance** before treatment.
    - Patients show **better post-surgical recovery** and a **reduced decline in physical function** following chemotherapy or radiotherapy.

      [19].
2. **Reduced postoperative complications**
    - Studies indicate that prehabilitation reduces the risk of **postoperative complications**, such as infections, pneumonia, and prolonged hospital stays.
    - Patients undergoing colorectal, lung, and upper gastrointestinal cancer surgeries show **faster recovery** with fewer complications.

      [12]
3. **Enhanced psychological wellbeing**
    - Prehabilitation programmes that include **mental health support, mindfulness, and stress management** reduce anxiety and depression.
    - Some studies find that patients report **greater emotional resilience and better coping mechanisms** during treatment when prehabilitation is offered. One study examined the effects of a prehabilitation and recovery program on the emotional wellbeing of individuals undergoing cancer surgery. The program, which included physical activity, wellbeing, and nutritional support, positively impacted patients' emotional wellbeing during the perioperative period.

      [26]
4. **Improved tolerance to cancer treatment**
    - **Enhanced nutritional status and muscle preservation** lead to better tolerance to chemotherapy and radiotherapy.
    - Reduced treatment delays or interruptions due to **better overall health and functional reserves**.

      [10]

5. **Better quality of life**
    - Improved mobility, independence, and reduced treatment-related fatigue enhance overall quality of life.
    - Patients report **greater self-efficacy and motivation** in managing their condition.

      [10]

Adverse outcomes for patients

Evidence that prehabilitation translates into better long-term patient outcomes beyond the initial thirty days post-treatment complications is currently lacking [9] [14]. There is also a lack of

comprehensive data on adverse effects of MCPPs [17]. A few discussions have noted potential concerns about the risk of exercise-induced injuries, increased fatigue, or psychological stress due to intensive prehabilitation programmes (e.g. [19]). Guidance on prehabilitation suggests that there should be caution where cancer has spread to bone and during treatment associated with reduced immunity or reduction in normal blood counts [28].

Acceptability to patients

There has not been detailed exploration of the acceptability of cancer prehabilitation programmes to patients, though a few qualitative studies have begun to discuss this in recent years. One such study found that patients with ovarian cancer welcomed the concept of prehab, however a blanket approach was not suitable to meet the needs of a demographically diverse cohort. These accounts suggest that components of prehabilitation must be tailored to individual needs, with attention to existing mindset about cancer and the patients' support systems, building on preparations that women are already making for surgery. Flexible delivery options also were crucial to the acceptability and effectiveness of the programme [29].

Preparing mentally for surgery by seeking formal psychological counselling was perceived by patients to be the most controversial component of prehabilitation [29]. Those who were not offered this intervention, or declined psychotherapy, displayed uncertainty around its benefits. Discussion also explored the dilemma of whether prehabilitation ought to be delivered remotely or in person. For patients who lived further from their treatment centre, or, who suffered with adverse side effects, a remote programme was considered more convenient and practical to attend. Some patients receiving neo-adjuvant chemotherapy at the specialist cancer centre reflected on the amount of time they spent in hospital attending appointments, so therefore, welcomed the opportunity to engage with any related cancer programme at home.

Impact on secondary care services

Cancer prehabilitation has been associated with several positive impacts on secondary care services. One review suggests that prehabilitation not only benefits individual patients, in terms of physical and psychological wellbeing, but may also lead to reduced pressures on secondary care and broader healthcare systems by decreasing the need for intensive interventions [31].

Positive impacts on secondary care

1. **Reduced length of hospital stay**: Prehabilitation programmes can decrease the length of hospital stays by enhancing patients' physical and psychological readiness for surgery. This reduction not only benefits patients but also alleviates bed occupancy pressures within secondary care facilities [24].

2. **Decreased postoperative complications**: By optimising patients' physiological reserves before surgery, prehabilitation has been linked to a reduction in postoperative complications. This improvement leads to fewer readmissions and lessens the burden on secondary care resources [10].

3. **Enhanced resource allocation:** Effective prehabilitation allows for better planning and utilisation of healthcare resources. For example, the Prehab4Cancer and Active Against Cancer services

collaborated to standardise outcome measures, facilitating consistent assessments across secondary care providers (Bristol, North Somerset and South Gloucestershire Integrated Health Board Case Study accessed 17/03/25 Demonstrating the impact of cancer prehabilitation - NHS SCW Support and Transformation for Health and Care).

4. **Improved patient outcomes:** Patients engaging in prehabilitation programmes often experience better recovery trajectories, which can translate to reduced demands on secondary care services post-surgery. A study analysing data from 186 clinical trials involving 15,700 patients found that those who exercised before surgery had a 50% lower risk of complications, leading to shorter hospital stays [12].

5. **Reduced healthcare costs:** Prehabilitation programmes may lower healthcare costs by reducing length of stay hospital readmissions, complications, and length of stay [18]. Further details are discussed below under 'cost effectiveness of prehab'.

Facilitators for delivery of cancer prehabilitation programmes in secondary care

Programme delivery is critically dependent on the effective integration between community, primary and secondary care [28]. The latter guidance provides recommendations in relation to service redesign, workforce, quality assurance and improvement, clinical leadership, and research. Prehab, it is stated, should be delivered by a multidisciplinary team working within a described framework (see below) using a combination of registered professionals (e.g. dietitians, occupational therapists, physiotherapists, psychologists) and unregistered professionals (e.g. prehabilitation/therapy support workers, healthcare assistants, fitness instructors) where there is scope to delegate some responsibilities (as well as care givers, family, wider support networks). Others have included oncology nurses, cancer care managers or other 'navigators' in training to deliver prehabilitation services (e.g. [30][31]).

One study identified key facilitators for delivery stakeholders included having knowledge that MCPP can positively impact patients' functional and emotional outcomes, which promoted successful implementation of MCPP. However, complexities were identified surrounding timing of the MCPP and its delivery timeframe. MCPP was most often introduced to patients at their initial cancer diagnosis consultation. While agreed by all stakeholders that this was a necessary timepoint to maximise the prehabilitation timeframe, delivery stakeholders perceived patients to be often emotionally overwhelmed at the point of diagnosis with little capacity to process further information. Delivery stakeholders also reported pressure incorporating an introduction to the MCPP into an already busy clinical conversation. Key skills to facilitate the delivery of prehabilitation services included interpersonal, facilitation, motivational interviewing techniques and providing emotional support [2].

Potential negative impacts on secondary care

While cancer prehabilitation is associated with positive outcomes, some discussions consider the potential negative impacts on secondary care. These are summarised as follows:

1. **Resource allocation and implementation challenges:** Implementing prehabilitation programmes requires significant resources, including personnel, training, and infrastructure. This can strain existing healthcare systems, particularly if not adequately planned or funded (e.g., [4][30]).

2. **Inconsistent evidence base:** The evidence supporting prehab's effectiveness is perceived, by some, to be inconsistent, making it challenging to standardize practices across secondary care settings. This inconsistency can lead to variability in patient outcomes and uncertainty among healthcare providers [35].

3. **Limited patient engagement:** Not all patients may be willing or able to participate in prehabilitation programmes, potentially leading to disparities in care and outcomes. This variability can complicate care planning and resource allocation within secondary care [4].

4. **Potential for overwhelming healthcare services:** Introducing prehabilitation programmes without proper integration into existing care pathways may overwhelm healthcare services, leading to logistical challenges and potential delays in treatment [4].

Potential negative impacts are explained by variability in implementation and accessibility across healthcare systems [20][21]. Others have highlighted the challenges posed by the limited time frame between diagnosis and treatment, making it difficult to intervene meaningfully in that time [15]. Consideration of workable solutions includes suggestions of clinicians taking on a greater leadership to transform care and raise awareness/ reduce scepticism in healthcare professionals and patients [13].

These findings suggest that while prehabilitation has been viewed as having many potential benefits, careful consideration and planning are essential to mitigate potential negative impacts on secondary care.

Cost effectiveness of prehab

Set-up costs vary from service to service. For example, the costs of setting up a Physical Activity Behaviour Change Care Pathway varied at Guys, where the service could be built on an existing project. This meant set-up costs were relatively insignificant compared to services that had to be set up from scratch. Lincolnshire and Dorset's set-up costs, for example, included a substantial investment (£9k and £15k respectively) in IT systems (Evaluation of the Macmillan Physical Activity Behaviour Change Care Pathway). For all services, staff costs represent a substantial proportion of the running (and total) costs but again varied by type of intervention and the level of stakeholder involvement required to support delivery. Some services have found it challenging to provide information on the full costs of delivery. There has been suggestion that costs may be 'hidden,' or difficult for those delivering to disentangle, particularly when a service is embedded within another service [22].

Several international studies and reports have examined the **cost benefits** of cancer prehabilitation programmes. Well-structured cancer prehabilitation programmes have been presented as being cost-effective, reducing overall healthcare costs by minimising complications and readmissions [20]. However, precise cost benefits vary, depending on current services in local areas and how prehabilitation services are configured. One systematic review on the cost-effectiveness of prehabilitation prior to elective surgery found that cost-effectiveness depended on the population and intervention, with certain groups (e.g. cancer- or high-risk patients) and programmes (e.g. shorter, home-based prehab) resulting more frequently in benefit. However, review authors warn that results should be interpreted with caution as most included studies were found to be of considerable risk of bias and/or low methodological quality [27].

Selected examples of calculated cost benefits for UK cancer prehabilitation programmes

- One UK study evaluated the impact of a digital prehabilitation programme on health-related quality of life (HRQoL) and associated costs. The programme led to a 23% improvement in HRQoL, with an estimated cost of £300–£400 per patient [11].
- The Prehab4Cancer evaluation (UK) also calculated the cost per participant (colorectal cancer patients) to be approximately £400. This included costs for non-recurring set up costs and staffing costs, including one WTE Band 7 (Agenda for Change) healthcare professional to provide clinical input to the team, liaison with NHS clinical referring teams, ongoing programme leadership and some elements of delivery (i.e., exercise physiology, complex cases). Estimated provider efficiencies per patient were £1,244, based on bed days released, critical care beds released ED attendances prevented, ED readmissions prevented. There was suggestion of lower demands for GP consultations, psychological support services, and reduced requirement for other community services are other pathway efficiencies achieved throughout the programme, but this was hard to quantify [25].
- Another UK study (England) highlights how prehabilitation can lead to cost savings in the healthcare system by preventing treatment-related complications, which consequently alleviates secondary care burdens and enhances patient outcomes. They assessed the impact of prehabilitation on hospital costs specifically within the context of gastrointestinal cancer surgery. Patient weighted average cost savings from prehabilitation was £785, excluding ICU costs. Breakdown of cost savings include £178.6 from reduced length of hospital stay, £214.8 and £434.5 cost savings originating from reductions in minor and major complications, respectively (excluding ICU complication costs). ICU cost savings from prehabilitation were £1,620. For the NHS, based on 237,000 annual surgical procedures, this amounts up to £186,082,321 in cost savings, from a reduction in complications and 421,840 hospital days, and £52,761,227 from ICU stay [36].
- A recent report explored the potential health economic benefits of prehabilitation in Scotland. It estimated that a reduction of two days in hospital stay for patients undergoing colorectal procedures could save approximately £1.02 million annually, based on a general ward bed cost of £352 per day [24].

These studies suggest that prehabilitation programmes have the potential to be cost-effective by improving patient outcomes and reducing healthcare costs. However, further high-quality economic evaluations are necessary to strengthen the evidence base and guide the implementation of these programmes in clinical practice.

It should also be noted most economic analyses typically consider only **direct costs** of delivery for interventions. They do not consider the costs to the service users (for example, travel costs) or any implications for NHS resource use (for example, any resulting effects on GP and hospital visits), which may have important implications for engagement and effectiveness of interventions [22].

Appendix B: Evaluation activities

Rapid literature review

A rapid literature review was carried out to understand the wider context and evidence related to cancer prehabilitation interventions within Northern Ireland and the UK. Rapid reviews aim to provide a timely synthesis of evidence. For this review, generative artificial intelligence was used as an initial step to speed up the process of identifying potentially relevant sources. Chat GPT developed by OpenAI and launched in 2022 based on the GPT-4o large language model (LLM) was used as the first step to identify, and obtain links to, literature, followed by the use of the more specialised Scite.AI to search scholarly Open Access and paywalled content using a Smart Citations database that includes abstracts. As AI can make mistakes, each link to a source was reviewed separately by one reviewer (i.e. each journal paper was opened and the abstract read) to decide on whether to include or exclude for full extraction.

A snowballing search methodology, using references in included literature, and those used in the texts the evaluation team had agreed were key to the evaluation, was then used as part of the search strategy. Broader searches of PubMed, Google Scholar and Google were also used to identify any other potentially important evidence that may have been missed by the above. Below summarises the topic, search settings and instructions for AI generated searches and search terms in reviewer-generated searches. A total of 124 abstracts were screened and 44 literature sources, from 2010 onwards, were finally included and reviewed. Findings from the review have been incorporated into this report.

Topic	Details
1. Policy context of cancer prehabilitation in Northern Ireland and/ or the UK. **2. Impact of cancer prehabilitation (positive and negative) on patients.** **3. Impact of cancer prehabilitation (positive and negative) on secondary care.** **4. Impact of cancer prehabilitation (positive and negative) on wider healthcare systems.** **5. Costs and cost benefits of cancer prehabilitation.** **(the above is applicable to all searches below)**	**Chat GPT instructions** **What traits should Chat GPT have?** Write in a precise, concise and scientific language. Do not limit the number of instances you generate when I ask for a comprehensive list of relevant evidence. The results of relevant evidence must be exhaustive. Keep disclaimers such as "I am only a language model ..." to a minimum. Provide a URL, or other links to literature, spelling out the full address and ensure it is not broken or leads to an incorrect page. **Commands used to identify literature:** 1. Generate literature (studies, reports, journal papers, briefings and any other documents) that discuss the policy context of cancer prehabilitation in Northern Ireland and/ or the UK. 2. Generate literature (studies, reports, journal papers, briefings and any other documents) that provide insights into the impact of cancer prehabilitation (positive and negative) on patients. 3. Generate literature (studies, reports, journal papers, briefings and any other documents) that provide insights into the impact of cancer prehabilitation (positive and negative) on secondary care. 4. Generate literature (studies, reports, journal papers, briefings and any other documents) that provide insights into the impact of cancer prehabilitation (positive and negative) on wider healthcare systems.

	5. Generate literature (studies, reports, journal papers, briefings and any other documents) that provide details about the costs and cost benefits of cancer prehabilitation.
	Scite.AI instructions **Settings:** Search Journals. Always use references; Abstracts only; Use table mode; Reference year range 2010 to 2025; Citation style APA; Model GPT4 03-mini (new); Publications to consult 100. 1. Generate literature (studies, reports, journal papers, briefings and any other documents) that discuss the policy context of cancer prehabilitation in Northern Ireland and/ or the UK. 2. Generate literature (studies, reports, journal papers, briefings and any other documents) that provide insights into the impact of cancer prehabilitation (positive and negative) on patients. 3. Generate literature (studies, reports, journal papers, briefings and any other documents) that provide insights into the impact of cancer prehabilitation (positive and negative) on secondary care. 4. Generate literature (studies, reports, journal papers, briefings and any other documents) that provide insights into the impact of cancer prehabilitation (positive and negative) on wider healthcare systems. 5. Generate literature (studies, reports, journal papers, briefings and any other documents) that provide details about the costs and cost benefits of cancer prehabilitation.
Policy context of cancer prehabilitation in Northern Ireland and/ or the UK.	**General searches (generated by the reviewer)** Cancer strategy or policy for United Kingdom (UK); Cancer Strategy or policy for Northern Ireland (NI) (also searched for all other devolved nations). Policy on cancer prehabilitation (searches for UK, Northern Ireland and devolved nations). UK plans, debates, and discussions on cancer prehabilitation.
Impact of cancer prehabilitation (positive and negative) on patients.	Patient experience of cancer prehabilitation; patient acceptability of cancer prehabilitation; positive impacts of cancer prehabilitation for patients; adverse or negative or unknown effects or impacts of cancer prehabilitation on patients. Qualitative studies + patients + cancer prehabilitation.
Impact of cancer prehabilitation (positive and negative) on secondary care.	Impact of cancer prehabilitation on services; impact (or effects or positive impact or effect or negative impact or effect or no impact or effect or adverse outcomes) of cancer prehabilitation on secondary care (hospitals, healthcare, community services, mental health care, specialist clinics, healthcare workers (professionals, specialists, delivery partners/ stakeholders).
Impact of cancer prehabilitation (positive and negative) on wider healthcare systems.	Cancer prehabilitation + wider healthcare systems + impacts (or effects or positive impact or effect or negative impact or effect or no impact or effect or adverse outcomes).
Costs and cost benefits of cancer prehabilitation.	Economic evaluation + cancer prehabilitation; costs of delivery + cancer prehabilitation; cost benefits + cancer prehabilitation; savings + per patient + cancer prehabilitation; calculations + costs + cancer prehabilitation.

Programme data analysis

Prehabilitation referral data was collected monthly between January and December 2024, using a pre-defined template co-designed with Clinical Project Managers. The data was reported by tumour site, by the three levels of prehabilitation interventions, and by different prehabilitation services. It should be noted that due to personnel changes in the Clinical Project Manager role in some Trusts, only the Northern and the South Eastern Trusts were able to provide a full 12 months of monitoring data.

Table 14. Referral data period provided by each Trust

HSCT	Time period covered
Belfast	No data provided
Northern	January - December 2024
Southern	January - August and December 2024
South Eastern	January - December 2024
Western	January - October 2024

The demographic profile of the patients referred to prehabilitation can be seen in the table below. Data for haematology has not been included due to the very small patient base (n=8 out of 14 considered suitable for prehab).

Table 15. Demographic profile of patient referral data

	Colorectal		Long		Head and Neck	
	Count	%	Count	%	Count	%
Gender						
Male	167	51%	104	46%	35	59%
Female	146	49%	132	54%	24	41%
Total	313	100%	236	100%	59	100%
Age						
18 - 24	0	0%	0	0%	0	0%
25 - 34	1	1%	0	0%	0	0%
35 - 44	9	2%	3	1%	5	8%
45 - 54	25	7%	12	6%	3	5%
55 - 64	80	21%	40	19%	19	32%
65 - 74	97	33%	90	34%	23	39%
75+	100	36%	90	40%	9	15%
Total	312	100%	235	100%	59	100%

Source: Macmillan Clinical Project Managers

Other secondary data sources considered for this report included:

- Patient outcome data and analysis, presentations, internal reports and patient feedback provided by individual Trusts.
- Macmillan Move More Programme activity data reported by local councils, covering the period from January 2022 to February 2024.
- Patient feedback provided by one local council.

Patient survey

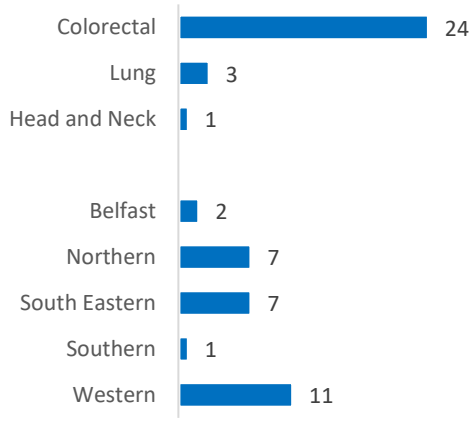
Empty postal survey packs, including a covering letter, a 7-page patient survey, an information sheet and an M·E·L freepost envelope, were prepared by M·E·L Research. Patients also had the options to take part in the survey online or over the phone by contacting M·E·L. The postal surveys were distributed between January 2024 and February 2025 by the Clinical Project Managers. Patients who have been referred to prehabilitation since January 2023 and have had at least a 3-month gap since diagnosis were invited to take part in the survey. No personal information was exchanged between the Trusts and M·E·L. Patients who wished to take part in any follow-up research activities related to this evaluation could indicate so in the survey and provide their contact details.

By 14th March 2025, M·E·L received 142 patient surveys in total. Four surveys were excluded from the analysis because over 75% of the questions were left unanswered. It is also worth noting that patients indicating treatment in the Belfast Trust could have received their diagnosis from another Trust (see Figure 16).

Follow-up research with patients

Patients who expressed their willingness to participate in either an interview or the online community in the postal survey were subsequently followed up by M·E·L. Support from the Western Trust staff also helped boost patient engagement. Overall, 28 patients took part in the follow-up research activity, with the majority being colorectal patients (see Figure 14).

Figure 16. Participant profile (n=28)



In-depth interviews

A discussion guide was used to explore patients' experience with prehab, its impact and areas for improvements. In total, 26 interviews were conducted throughout the evaluation, with 10 of them being carried out by Macmillan Peer Facilitators.

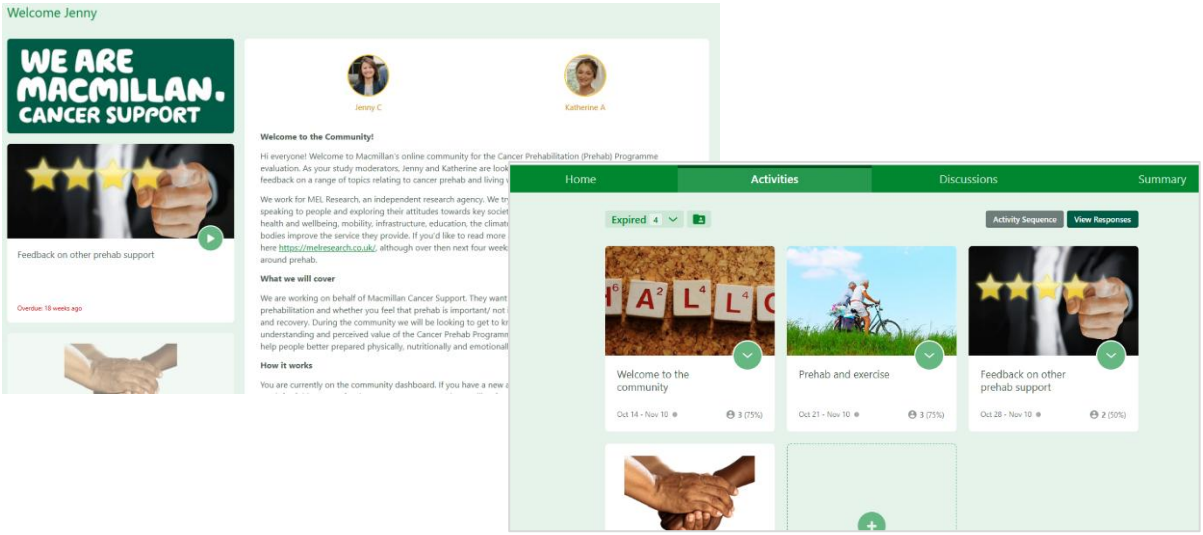
As part of the evaluation, 8 patient stories were created based on the interviews to visually present their experience with prehab, including the outcomes and impact.

Patient interviews were carried out mainly over the phone as this was the preferred method. With consent, the interviews were recorded digitally, then entered into a thematic analysis grid for further exploration.

Online community (discussion board)

The online community was conducted over a 4-week period during October and November 2025, enabling respondents to complete the activities in their own time. Initially, five patients signed up, but only two people completed all the activities. Participants were asked to complete various tasks each week which took approximately 60 minutes to complete in total. Two moderators from M·E·L Research were available during office hours to engage with participants and ask questions.

The online community offered an alternative method to gather patient feedback on their prehabilitation experience and for M·E·L to explore personal motivations and barriers for people living with cancer in adapting a healthy lifestyle before and after their treatment.



Professional stakeholder interviews

Stakeholders involved in the planning, implementation, and delivery of the prehabilitation programme were invited to participate in interviews to share their experiences, explore the outcomes, impact, and wider lessons from the regional programme. A discussion guide was used to ensure all key topics were covered during the interviews. In total, 51 interviews were conducted with 45 professional stakeholders, with some being interviewed more than once during the evaluation. A breakdown of the stakeholder types can be found in Table 15 below.

Table 16. Numbers and types of stakeholders engaged in the evaluation

HSCTs (n=28)	Councils (n=10)	Wider stakeholders (n=7)
▪ Senior manager x7 ▪ Prehabilitation Clinical Project Manager x 7 ▪ Consultant/surgeon x 1 ▪ Clinical Nurse Specialist x 3 ▪ Allied Health Professional x 6 ▪ Supporter worker/staff x 4	▪ Senior manager x 6 ▪ Macmillan Move More Coordinator x 4	▪ Commissioner/funder x 4 ▪ Senior manager x 3

Appendix C: Theory of Change

Rationale ***The problem you're trying to address***	In Northern Ireland almost 10,000 people in NI are diagnosed with cancer each year, according to the latest Cancer Strategy 2022-2032, and the number of cancer cases is expected to rise.[4] Cancer is frequently related to or caused by factors such as tobacco use, alcohol consumption, unhealthy diet, physical inactivity, etc.[5]	
Objectives ***What the project intends to achieve***	To embed personalised, early-intervention support into an integrated pathway for adults diagnosed with cancer in Northern Ireland, establishing prehabilitation as a cornerstone of the cancer pathway for the first time in NI.	
Inputs ***The resources delivering the programme***	▪ Macmillan funding + wider input ▪ District council funding + wider input ▪ Health and Social Care Trust input ▪ Macmillan Clinical Project Managers ▪ Macmillan Move More Coordinators ▪ Programme steering groups	▪ Various referral routes into prehabilitation service ▪ People living with cancer across NI ▪ People affected by cancer across NI ▪ Community of practice ▪ Cancer Experience Panel ▪ Evaluation

4 https://www.health-ni.gov.uk/sites/default/files/publications/health/doh-cancer-strategy-march-2022.pdf
5 World Health Organisation. https://www.who.int/news-room/fact-sheets/detail/cancer (Last accessed on 05/10/2022)

People living with cancer

Activities	Outputs	Outcomes / Impact	
The tasks needed to reach your outcomes	*The measures of activity*	*Short term*	*Mid term*
▪ Referrals from hospital trusts to Macmillan Move More Coordinators ▪ Assessments of people living with cancer at various points of their cancer journey ▪ Personalised care plans and support ▪ Group or one-to-one physical activity sessions ▪ General psychological support ▪ Signposting to other services, e.g., stop smoking and substance misuse support ▪ Programme monitoring systems and programme evaluations	▪ No. of referrals vs. No. of eligible patients ▪ No. of referrals to specialist prehabilitation support ▪ No. of patients taking part in prehab ▪ No. of patients attended recommended physical activity sessions ▪ No. of memberships signed up by patients involved in prehab ▪ No. of memberships signed up by friends/family members involved in prehab ▪ No. of other services sign posted and attended ▪ Secondary care data to be determined, e.g. ICU stay, length of hospital stay after surgery.	▪ Improved adoption of long-term healthy behaviours, e.g. smoking cessation and alcohol reduction ▪ Timely access to personalised support that best meets each individual's holistic needs ▪ Reduced feeling of anxiety and uncertainty during preparation for treatment ▪ Improved feelings of confidence and self-efficacy, feeling empowered and in control of their treatment, and better able to self-manage ▪ Better able to manage side effects of treatment ▪ Improved physiological and psychological wellbeing prior to, throughout, and beyond treatment ▪ Enhanced recovery from treatment, accelerated return to normal function ▪ Reduced length of stay in hospital ▪ Improved perception of quality of life ▪ Friends and family members better informed, engaged, and supportive of patients' prehabilitation ▪ Overall feel empowered and have control over their health and lifestyle choices	▪ Sustained healthy behaviours ▪ Influencing family and friends to sustained healthy behaviour change ▪ Sustained confidence and self-efficacy in living with and beyond cancer ▪ Improved physiological and psychological wellbeing ▪ Live as much as possible a healthy and normal life beyond cancer treatment

Staff

Activities	Outputs	Outcomes / Impact	
The tasks needed to reach your outcomes	*The measures of activity*	*Short term*	*Mid term*
▪ Ongoing awareness and staff training sessions ▪ Appropriate funding and resource in place ▪ Macmillan Move More Coordinators in posts ▪ Programme monitoring systems and programme evaluations	▪ No. of appropriate professionals in posts within each Trusts ▪ Screening tools and Assessments used ▪ Types of training provided to staff ▪ No. of staff trained ▪ No. of referrals vs. No. of eligible patients ▪ Uptake and engagement of patients following Prehabilitation communication from: Surgeon/Consultant/ CNS/ AHP or Macmillan MMC	▪ Effective assessment and stratification of need, with patients seen by the appropriate level of professional. ▪ Understanding of resource need for specialist support from nurses, Allied Health Professionals (AHPs) and Psychologists at Universal, Targeted and Specialist level. ▪ Confidence in the prehabilitation programme and its delivery model in NI ▪ Improved job satisfaction, ownership and empowerment of cancer care professionals	▪ Improved staff satisfaction and retention ▪ Impact on patient satisfaction/confidence if MM/Physio/CNS/Exercise Ass/etc undertaking screening ▪ More effective utilisation of staff resource within prehabilitation and wider teams

System

Activities	Outputs	Outcomes / Impact	
The tasks needed to reach your outcomes	*The measures of activity*	*Short term*	*Mid term*
▪ Collaborative working between HSCTs, councils, and community partners ▪ Appropriate funding and resource in place ▪ Steering group meetings ▪ Programme monitoring systems and programme evaluations ▪ Referral pathways in place ▪ Information sharing mechanisms in place	▪ Develop a sustainable regional NI model, service standards and specification for colorectal cancer prehabilitation ▪ Support 3,000 people living with cancer across NI and a further 13,500 people affected by cancer ▪ Development of Trust-level models, service standards and specification for up to five tumour sites (e.g. lung, head and neck, Upper GI, breast, and gynaecological cancer), two in each Trust. ▪ No. of Macmillan Move More Coordinators in post in each council ▪ No. of appropriate prehabilitation professionals in posts within each Trusts ▪ Demographic and geographic profile of patients involved in the programme vs. those who are eligible ▪ Ways of sharing information and learning and best practice ▪ Steering group team meeting notes and agreed action plans ▪ Funding in place beyond March 2024	▪ All regions in NI delivering the same service standard and specification for colorectal prehab. ▪ Equitable and consistent access to prehabilitation services ▪ Improved referral and collaborative working across the range of partners and stakeholders ▪ Promotion of good practice throughout all Trusts relating to cancer prehabilitation ▪ Impact on cost per patient in relation to reclaimed bed days and reduced referral for higher level support needs	▪ Appropriate prehabilitation professionals in place to provide prehabilitation support. ▪ Commitment to rollout and embed prehabilitation in other cancer pathways ▪ Transform both outcomes of cancer treatment and patient experience ▪

Appendix D: Overview of the programme in each HSCT

HSCT	Prehabilitation start date	Tumour site offering prehab	Funded prehabilitation resource	Resource provided in-kind /non-funded
Belfast	December 2023 but soon paused due to the vacancy of the Clinical Project Manager post. Prehabilitation resumed in early summer 2024 with a primary focus on rectal cancer patients undergoing neo-adjuvant chemotherapy.	▪ Colorectal	▪ Clinical Project Manager (band 8a at 0.6 WTE), although the post became vacant in January 2024. A new project manager was appointed in November 2024 with a key focus to scope out how prehabilitation can be delivered across all tumour sites in Belfast HSCT.	▪ CNSs' time in screening and referring patients to prehab
Northern	November 2022	▪ Colorectal ▪ Lung ▪ Haematology	▪ Clinical Project Manager (band 8a at 0.6 WTE) ▪ Posts funded by Charitable Trust Funds (non-recurrent): ▪ Prehabilitation Physiotherapist (band 7 at 1 WTE) ▪ Prehabilitation Dietitian (band 7 at 1 WTE) ▪ Physiotherapy Assistant (band 4 at 0.5 WTE) ▪ Dietetic Assistant Practitioner (band 4 at 0.5 WTE)	▪ CNSs' time in screening and referring patients to prehab ▪ Rooms in various hospital outpatient settings to host prehabilitation clinics
Southern	November 2023	▪ Colorectal ▪ Lung	▪ Clinical Project Manager (band 8a at 0.6 WTE), although the post became vacant in September 2024. A new project manager was appointed in December 2024 with a key focus to scope out how prehabilitation can be delivered across all tumour sites in Southern Trust	▪ CNSs' time in screening and referring patients to prehab ▪ 0.2 Band 7 physiotherapist who offered 2 face-to-face patient slots per week.

				▪ A room in the local leisure centre in Newry, Mourne and Down was utilised due to the unavailability of a suitable location within the Trust's facilities.
South Eastern	March 2021 (Clinical Project Manager in post from September 2022)	▪ Colorectal ▪ Lung ▪ Head and Neck	▪ Clinical Project Manager (band 8a at 0.6 WTE)	▪ CNSs' time in screening and referring patients to prehab
Western	Formally started in February 2024 after a pilot with the colorectal team between May and November 2023	▪ Colorectal ▪ Head and Neck	▪ Clinical Project Manager (band 8a at 0.6 WTE) although the post became vacant in December 2024.	▪ CNSs' time in screening and referring patients to prehab ▪ Personalised Care Facilitator's contribution of 2 to 5 hours a week providing telephone based support, including associated admin tasks

Appendix E: Screening and intervention details

Northern Trust

Eligibility

Colorectal: Available to patients aged 18 and older who are undergoing curative treatment. Those identified with a tumour at endoscopy, whether confirmed or highly suspicious of cancer, are also eligible.

Lung: Available to patients aged 18 and older who are undergoing treatment for lung cancer.

Haematology: Available to patients aged 18 and older who will receive autologous stem cell transplant or CAR-T treatment.

Referral criteria

Those with a confirmed or suspected diagnosis of cancer are reviewed in an MDT meeting. The Colorectal and Haematology CNSs conducts the prehabilitation screening process and refers patients to the prehabilitation team and/or other appropriate services. For patients with lung cancer, the prehabilitation team accept a blanket referral; the prehabilitation team complete the screening, assessment and deliver the prehabilitation intervention.

Prehabilitation interventions:

	Universal	Targeted	Specialist
Physical activity Screening tool: Rockwood Frailty Scale	Rockwood Frailty score: 1 to 3 • Self-managed approach with supporting materials provided (DIY prehabilitation booklet and NHSCT colorectal prehabilitation cancer services website). • Motivational interviewing / brief Intervention approach.	Rockwood Frailty score: 4 • 1-2-1 support initially from Physio and/or Physio Assistant. • Motivational interviewing / brief Intervention approach. • Supporting material provided (DIY prehabilitation booklet and NHSCT colorectal prehabilitation cancer services website).	Rockwood Frailty score: 5 to 9 • Physiotherapy team to determine person-centred plan dependent on individual need. • Patients who will have temporary stoma formation (i.e. with planned reversal) or are undergoing long course chemo-radiotherapy will

	• Macmillan Move More referral if appropriate/requested.	• Macmillan Move More referral if appropriate/requested.	also be referred to Trust physio via this pathway. • Supporting material provided (prehabilitation booklet and NHSCT colorectal prehabilitation cancer services website).
Nutrition Screening tool: Patient Generated Subjective Global Assessment (PGSGA)	PGSGA score: 0 to 1 (low risk) • Self-managed approach with supporting materials provided (DIY prehabilitation booklet, Macmillan 'Healthy Eating' booklet and NHSCT colorectal prehabilitation cancer services website). • Encourage patients to follow the NHS Eatwell Guide.[6] • CNS continues to monitor patient.	PGSGA score: 2 to 4 (moderate risk) • Supporting material provided (DIY prehabilitation booklet and NDR-UK 'Eating Better, Feeling Better' booklet and NHSCT colorectal prehabilitation cancer services website). • Macmillan GI dietitian to assess and determine person-centred plan dependent on individual need.	PGSGA score: 5 to 36 (high risk) • NDR-UK 'Eating Better, Feeling Better' booklet. • Prehabilitation Dietitian to assess and determine person-centred plan dependent on individual need.
Emotional Wellbeing Screening tool: Distress Thermometer and EQ-5D-5L	Distress Thermometer score: 0 to 3 • Supported provided by CNS and/or Macmillan MMC • DIY prehabilitation booklet • Motivational interviewing / brief Intervention approach. • Macmillan Information and Support team referral as required.	Distress Thermometer score: 4 to 6 • Interventions include Key Worker support, counselling via CNS and/or psychology services • DIY prehabilitation booklet • Macmillan Information and Support team referral as required.	Distress Thermometer score: 7 to 10 • Specialist team to assess and determine person-centred plan dependent on individual need. • Macmillan Information and Support team referral as required.
Smoking cessation	All patients will be asked if they smoke during initial holistic and prehabilitation assessment and will be given advice, literature, or referred to Smoking Cessation Team if appropriate.		

6 https://www.nhs.uk/live-well/eat-well/food-guidelines-and-food-labels/the-eatwell-guide/

Alcohol reduction Screening tool: alcohol use disorders identification test consumption (AUDIT C)	Patients who consume higher levels of alcohol will be encouraged to reduce their intake to an appropriate level and can be referred to the Trust's addiction service if appropriate.

South Eastern Trust

Eligibility

Colorectal: Available to patients aged 18 and older who are undergoing curative treatment, suitable for surgery or receiving neoadjuvant therapy for rectal cancer. Those identified with a tumour during endoscopy, whether confirmed or highly suspicious of cancer, are also eligible.

Lung: Available to patients aged 18 and older who are undergoing curative treatment or palliative treatment for lung cancer.

Head and Neck: Available to patients aged 18 and older who are undergoing curative treatment, with surgery being the primary treatment.

Referral process

Those with a confirmed or suspected diagnosis of cancer are reviewed during the MDT meeting to determine their eligibility for prehab. The CNSs conduct the screening process at the Results Clinic or via telephone consultation, and refers patients to appropriate services via the prehabilitation electronic referral form.

Prehabilitation interventions

	Universal	Targeted	Specialist
Physical activity Screening tool: Rockwood Frailty Scale	Rockwood Frailty score: 1 to 3 • Self-managed exercise prescription with supporting materials provided, i.e. prehabilitation information pack.	Rockwood Frailty score: 4 to 5 • Supervised exercise prescription with supporting materials provided, i.e. prehabilitation information pack.	Rockwood Frailty score: 6 to 9 • Physio to determine person-centred plan dependent on individual need.

	• Referral to Macmillan MMC	• Including colorectal cancer patients on a neoadjuvant chemotherapy/deep X-ray (DXT) treatment plan • Referral to Macmillan MMC	• Rectal cancer patients on a long course chemotherapy/deep X-ray (DXT) treatment plan with temporary stoma are also supported by Specialist Pelvic Health Physiotherapist. • Patients provided with prehabilitation information pack.
Nutrition Screening tool: Malnutrition Universal Screening Tool (MUST)	MUST score: 0 (low risk) • Referral to Macmillan MMC • Patients provided with prehabilitation information pack.	MUST score: 2 (medium risk) • 121 support from Dietetic Support Assistant • Patients provided with prehabilitation information pack.	MUST score: >2 (high risk) • Specialist Dietitian to assess and determine person-centred plan dependent on individual need. • Patients provided with prehabilitation information pack. • Including all suitable head and neck patients
Emotional Wellbeing Screening tool: Distress Thermometer	Distress Thermometer score: 0 to 3 • Referral to Macmillan MMC • Patients provided with prehabilitation information pack. • Referral to Macmillan Information and Support Services unless opt out	Distress Thermometer score: 4 to 10 • Targeted: Referral to Macmillan Information and Support Services for counselling if appropriate • Specialist: Mental Health Services/Clinical Psychologist interventions if required. • Patients provided with prehabilitation information pack.	
Smoking cessation	All patients will be asked if they smoke during initial holistic and prehabilitation assessment and will be given advice, literature, or referred to Smoking Cessation Team if appropriate.		
Alcohol reduction Screening tool: alcohol use disorders identification test consumption (AUDIT C)	Patients who consume higher levels of alcohol will be encouraged to reduce their intake to an appropriate level and referred to Alcohol Misuse Team if appropriate.		

Appendix F: Patient stories

Patient story: Craig

About Craig

Craig, in his late 50s and working at an accountancy firm, visited A&E in December 2023 for a hamstring injury. During his visit, he mentioned experiencing occasional bleeding following bowel movements. He was promptly advised to undergo a Faecal Immunochemical Test (FIT), which led to a colonoscopy where two tumours were identified. Craig then embarked on an extensive treatment plan, including radiotherapy, chemotherapy, and ultimately surgery in November 2024.

Health and Social Care Trust: Northern

Tumour Site: Colorectal

How was prehab introduced?

Craig was soon contacted by the prehab team for assessments and tests, which he welcomed as he was always keen to monitor his own health and it provided him an opportunity to ask questions. He understood that the prehab support was designed to help him prepare both physically and mentally for his treatment and recovery.

> ***"That's what I understood. It was going to be, you know, the body being ready for it and being prepared and being able to cope with everything I was going to have to put up with the next sort of nine to ten months."***

Prehab support received

Craig appreciated the advice given on physical activity and was motivated to keep being active during radio and chemo therapies. Craig was also referred to his local Move More Coordinator but preferred to manage his own activities by walking on his treadmill or around the neighbourhood.

Craig also received some counselling and holistic therapies from Macmillan during chemotherapy when his mother passed away.

Impact of prehab

He was contacted by the prehab team post-chemo for another assessment and was encouraged by the improved results which motivated him to 'get his head back in the game'.

> ***"Whilst I didn't feel as healthy, it forced my body to tell me, 'No, you can still do this'. It's 'You need to head back in the game,' type of thing."***

Adapting to living with cancer

Prior to hamstring and calf injury, Craig was very active and ran several times a week. He is keen to build up his fitness again as soon as his surgery wound heals after several infections.

> ***"Hopefully I'll be cancer free, so it's really just managing things like the, you know, the stoma and the bag. As I venture back into the world again, I just think getting back to fitness is a key thing to get a bit more of myself again."***

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Patient story: Gwynneth

About Gwynneth

Gwynneth is in her late 50s and works in the benefits system. She experienced irregular bowel movements and intermittent bleeding in 2022. Following a positive result from a Faecal Immunochemical Test (FIT), her GP referred her for a colonoscopy. The procedure led to a diagnosis of bowel cancer. Gwynneth's treatment plan included both chemotherapy and radiotherapy, followed by a surgery to remove part of her bowel and the creation of a colostomy in January 2023. In August 2023, she underwent a successful stoma reversal surgery.

Health and Social Care Trust: Northern

Tumour Site: Colorectal

How was prehab introduced?

Gwynneth's colorectal cancer nurse explained the benefits of going to the gym before her operation. However, still reeling from the shock of her diagnosis, Gwynneth found it difficult to absorb this information while also trying to keep up with her hospital appointments.

"I did not really understand. I was just on a rollercoaster of appointments."

Prehab support received

Gwynneth had a session with a Move More Coordinator who took her through several apparatus at the gym that would be beneficial for her legs and abdomen. While she felt one session was sufficient, she would have liked to have more sessions at the gym, but there was not enough time before her surgery.

"I had one session. It was enough but I would have liked it to be longer before my surgery."

Impact of prehab

Gwynneth found the exercises recommended by the Move More Coordinator effective in enhancing her fitness level before surgery. She also felt that the prehab support she received was tailored to her needs. Now, she maintains a healthy diet and enjoys regular walks.

Adapting to living with cancer

Gwynneth is still working and trying to recover from the treatment. She enjoyed the holistic therapies offered by Charis Cancer Care. She suffers from low anterior resection syndrome (LARS) and is learning to better manage the condition by being careful with what she eats.

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Patient story: Evelyn

About Evelyn
Evelyn, now in her late 70s, is a keen sailor and previously served as the commodore of a local yacht club. She felt something in her right side of her abdomen in October 2023. She was referred by her GP for a CT scan and colonoscopy, which revealed a tumour. Evelyn's treatment plan involved a surgery followed by chemotherapy.

Health and Social Care Trust: South Eastern

Tumour Site: Colorectal

How was prehab introduced?

Evelyn's surgeon introduced prehab to her and encouraged her to get as fit as possible before the surgery. She felt it was introduced to her by the right person at the right time.

Prehab support received

Ten days before her surgery, Evelyn visited her local Move More Coordinator. Recognising her already active and healthy lifestyle, the coordinator recommended she continue her daily routine. She found the coordinator very thorough and appreciated the important information that was provided on what to expect after the surgery, and the specific abdominal exercises to aid her post-op recovery.

She was given some reading materials around nutritional advice but was happy that she was already following a healthy diet.

"I was frightened but I felt very well supported."

Impact of prehab

Evelyn feels very self-motivated and has maintained a healthy diet. She felt that she was given all the information she needed and the support she received was tailored to her needs.

Adapting to living with cancer

Evelyn still worries a little about staying cancer free but she feels strong psychologically and well supported by hospital staff and her family.

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Patient story: Daniel

About Daniel
Daniel, in his early 70s and retired, visited his GP due to erratic bowel movements. He was referred for a colonoscopy, which revealed a growth in his bowel. A follow-up CT scan confirmed the cancer diagnosis. In April 2023, he underwent surgery to remove the tumour, followed by chemotherapy.

Health and Social Care Trust: South Eastern

Tumour Site: Colorectal

How was prehab introduced?

The colorectal cancer nurse referred Daniel to prehab support. He understood that it was an exercise programme to help him get fit for his surgery. He felt that it was introduced to him in the right way and at the right time.

Prehab support received

The Move More Coordinator guided Daniel through exercises beneficial for both preparing for his surgery and aiding his recovery. Although he was invited to join an exercise class, he preferred to follow his own routine with his wife.

Additionally, the cancer nurse provided him with nutritional advice and a booklet, both of which he found easy to follow.

"I felt that all staff concerned were attentive to me before and after my surgery. It was all well explained and I just accepted what was to happen."

"I felt that they were appropriate for me and focused on my needs and the type of surgery I was about to undergo."

Impact of prehab

Daniel had a very positive experience with prehab and felt that it helped him recover quickly. He continues to follow a balanced diet and remains motivated to stay active by walking daily.

"I felt that I got all the support I needed from prehab trainer [Move More Coordinator], Macmillan staff, to all the hospital staff. There is nothing I can find to criticise."

Adapting to living with cancer

Moving forward, Daniel feels confident in managing his condition and believes he doesn't need additional support.

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Patient story: Betty

About Betty
Betty, in her late 70's, is a retired lady who enjoys spending time with her family. She was diagnosed with a thymoma in January 2025 and referred for surgery. She has a previous history of anxiety and was recently experiencing some 'dizziness', which she found very distressing.

Health and Social Care Trust: Southern

Tumour Site: Lung

How was prehab introduced?

Prehab was introduced by the Prehabilitation Clinical Project Manager in a phone call, following discussion with Betty's Consultant about her suitability for Prehab.

Prehab support received

When, she was contacted initially, Betty's Mental health was her main issue. Anxiety and stress were high, due not just to her diagnosis but to other external stressors.
She had a supportive conversation with the Clinical Project Manager, also an Occupational Therapist, who provided her with strategies around managing her stress. This was followed up with a Prehabilitation DIY toolkit, providing written advice on 'calming' techniques as well as management of her diet and exercise. She declined referral to the Move More Programme but agreed to continue with her daily walk.

"I appreciated the initial conversation I had – that was what I needed at that time to help me see things more clearly."

Impact of prehab

Betty stated that she found the supportive conversations helpful and felt encouraged by the advice. She acknowledged that once she spoke to others around her about it, that, her anxiety began to be less overwhelming.

Adapting to living with cancer

Post operatively, Betty made a good recovery and was back doing her daily walk. She continued to use the DIY Toolkit as a reference for healthy lifestyle advice.

"I still have some anxiety, but life events are contributing to this. I am feeling more positive and supported in general. "

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Source: Southern Trust

Patient story: Lucy

About Lucy

Lucy is in her late 60s and suffers from arthritis. She visited her GP due to a stomach pain but never suspected any problems with her bowel until the GP suggested further tests. She was diagnosed with rectal cancer in August 2024. Her treatment plan involved chemo and radiotherapy, followed by a surgery in early 2025.

Health and Social Care Trust: Western

Tumour Site: Colorectal

How was prehab introduced?

Lucy wasn't sure who introduced prehab to her but it was done within a few days after her diagnosis. She had some idea of the benefits of prehabilitation from arthritis. She was also aware of optimising one's health through exercise before the operation but she didn't know how that would be for cancer until it was explained to her by the Macmillan Personalised Care Facilitator.

"I find her very easy to talk to, and she acts very professionally. She gave a lot of information on how I can optimise my health. She told me what our relationship will be like in the next few weeks."

Prehab support received

Lucy has always been an active person and does exercise classes regularly. She joined the exercise classes run by her local Move More Coordinator for prehab and has continued to.

The Personalised Care Facilitator also provided nutritional advice and emotional support to Lucy. She felt relieved to be able to talk openly about her diagnosis with someone, knowing that they can actually handle it without needing to worry about causing them distress.

"It's nice to go along to a class. People stay around to have a chat and a cup of tea. There's no need to be afraid of talking about cancer as everyone has it."

"We had a good laugh she and I. She always made a point of being available. I didn't realise at the time how much it would mean to me. It's quite a bombshell in your life to get news like that. She helped me through it. "

Impact of prehab

Lucy appreciated the weekly phone call from the Personalised Care Facilitator and to keep track on the activities they discussed.

"It sort of became like that, a friend though who was giving a constructive guideline for your life and was checking in to see whether you've been following."

Adapting to living with cancer

At the time of her interview with M·E·L Research, Lucy felt comfortable going into surgery in early 2025 and was optimistic about her recovery.

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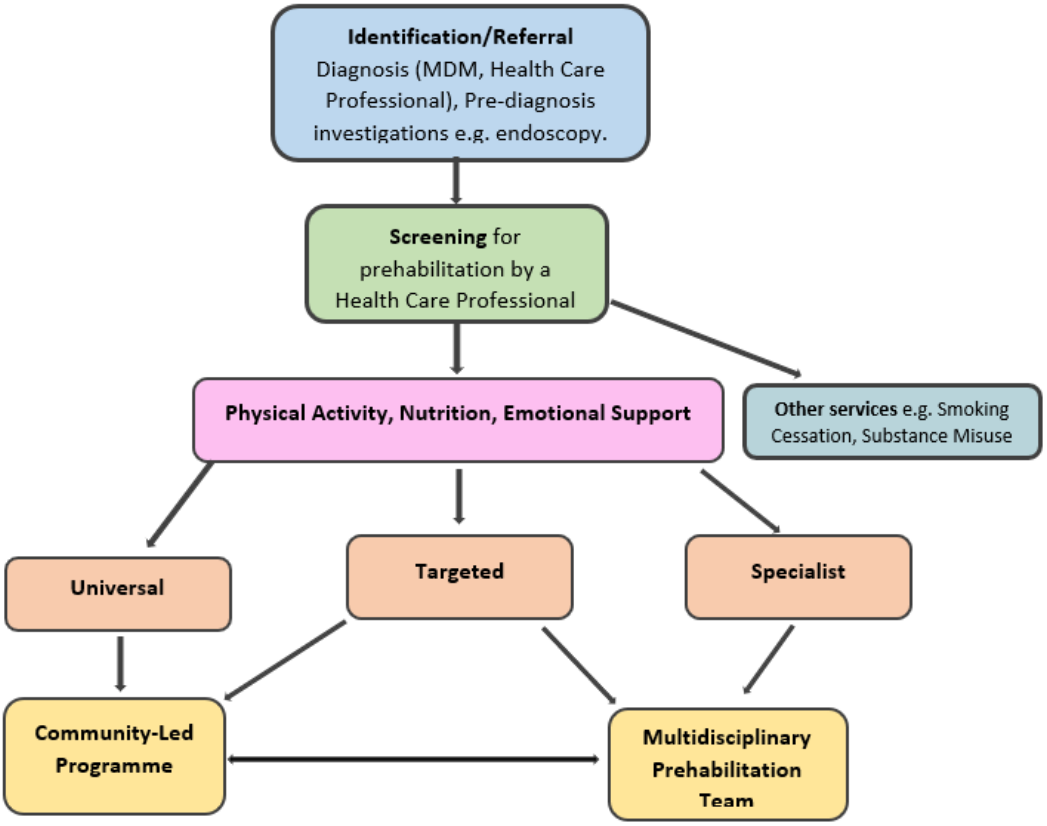
Appendix G: Patient quotes

Feedback on the offer and introduction of prehab
▪ “By limiting information and almost drip feeding rather than giving all info at once. Everything was very fast.” – interview participant ID 6, male, aged 65-74, colorectal ▪ “Did not really understand- I was just on a rollercoaster of appointments." – interview participant ID 9, female, aged 55-64, colorectal ▪ “I have never heard the term ‘prehabilitation’ but my surgeon told me to get myself as fit as possible before the operation.” – interview participant ID 13, female, aged 75+, colorectal
Feedback on the usefulness of prehab
▪ "I found it very positive. I tried to look after myself and put myself first for a change. The advice and support was very much tailored to my own needs." – ID 24, female, aged 65-74, colorectal ▪ "Very useful; it might not work for everybody but it worked for me. It made me stronger in terms of preparing for the surgery." – interview participant ID 18, female, aged 65-74, colorectal ▪ “The trainer asked about the type of surgery I was having and took me through several apparatus at the gym that would be beneficial for my legs and abdomen.” – interview participant ID 9, female, 55-64, Colorectal
Feedback on the impact of prehab
▪ “It helped me immensely to focus on what I needed to get me through surgery and to have a good recovery.” – interview participant ID 2, male, aged 55-64, colorectal ▪ "I felt that I got all the support I needed from prehab trainer [Macmillan Move More Coordinator], Macmillan staff, to all the hospital staff. There is nothing I can find to criticise.” – interview participant ID 8, male, aged 65-74, colorectal ▪ “There was so little time between my diagnosis and actually starting everything, but it didn't really matter to me because I was pretty fit and healthy. I think for others that maybe a different situation. Maybe you need a longer prehab sort of period to get them prepared for what's to come.” – interview participant ID 21, male, aged 55-64, colorectal ▪ “My surgery happened soon after I was introduced to the programme and I was unable to be involved in the activities. I found the support I did receive was helpful and encouraging for now and in the future.” – survey respondent ID 61, female, aged 75+, Colorectal
Feedback on the overall experience of prehab
▪ "The support I got was beyond what I expected. I really did not think it was available and available to the extent that I received…… Go for it. To take it at your own pace. To use to your best advantage and don’t be afraid to ask question and to be open. It’s a wee room you have all to yourself and the support you get back is unmeasurable. I would thoroughly recommend prehab." – interview participant ID 20, female, aged 55-64, colorectal ▪ " My fitness kept improving and that was really down to him [physiotherapist]….I was in the hospital on the 23rd of July [to remove half a lung] and was home on Thursday [in two days]. I think it was all down to prehab.”– interview participant ID 7, female, aged 55-64, Lung ▪ “A very professional & person centred service. I felt valued as an individual & reassured/supported through the service. An example of great care! I would recommend to anyone!” – Lung (source: Northern Trust internal patient feedback survey)

Feedback on the Macmillan Move More Programme
▪ “The exercise class offers a chat and a coffee; not just exercise but to have peer support and to share experiences. The classes were brilliant!” – interview participant ID 17, female, aged 65-74, colorectal ▪ "It was so nice to meet people who are going through the same thing. The whole thing about it was just lovely. You didn’t feel alone. People completely understood what you are going through. It’s such pity that it’s [Macmillan Move More Programme] gone." – interview participant ID 25, female, aged 55-64, Lung
Feedback on the Personalised Care Facilitator at the Western Trust
▪ “At start it was horrible – I was very anxious every day. Your [Personalised Care Facilitator’s] calls were totally helpful and helped me through this and have put me ease.” – male, colorectal (Source: Western Trust) ▪ "The weekly contact with her [Personalised Care Facilitator], who was able to direct me what to do, help set the goals. And if it didn’t work out that week, it wasn’t a big problem. We will reset again.“ – interview participant ID 20, female, aged 55-64, colorectal

Appendix H: Regional model in development

DRAFT 4: High Level Proposed Regional Prehabilitation Pathway



Note: This is a summary guide only. It is expected that Health Care Professionals will exercise their clinical judgement as well as standardised, validated tools to make decisions appropriate to the individual patient.

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