Bristol Myers Squibb® | MACMILLAN CANCER SUPPORT

Understanding and advancing the adoption of prehabilitation in NHS cancer care

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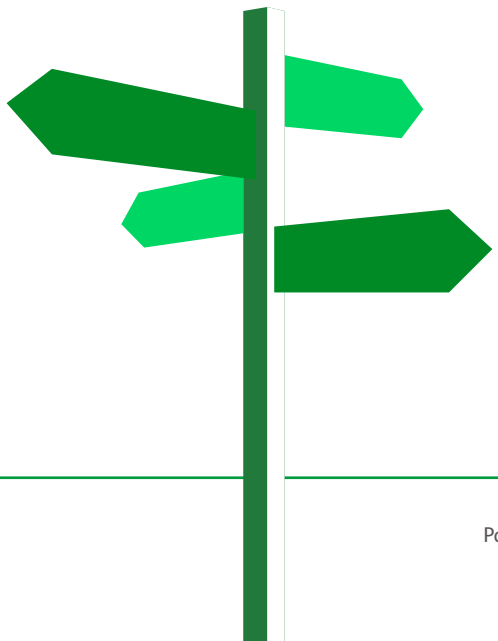


Foreword

Against the backdrop of a significant cancer treatment backlog and extensive waiting times, this partnership project between Macmillan Cancer Support (Macmillan) and Bristol Myers Squibb (BMS) set out to explore solutions to improve cancer outcomes, amidst the ongoing capacity challenges within the National Health Service (NHS).

In England, the current target is for 85% of patients to commence treatment within 62 days of being referred.[1] However, as Lord Darzi's independent investigation into the state of the NHS reiterated, this target has not been met since 2015.[2] The actual percentage for 2024/2025 in England was 68.4%, leaving roughly a third of patients without treatment more than two months after a treatment referral.[3] The equivalent statistics for Scotland, Wales and Northern Ireland are equally concerning. The percentage of patients waiting longer than the 62-day standard for cancer treatment has increased over the past 12 years in all of England, Scotland, and Northern Ireland, with a similar pattern in Wales over the past five years.[4]

Prehabilitation in cancer care - whereby patients are given psychological, exercise and dietary support prior to treatment - has been proven to deliver value in surgical settings[5] but remains at a nascent stage of research.[6] Recognising the potential as well as the barriers to adoption of prehabilitation in the NHS, Macmillan Cancer Support and BMS partnered with 11 NHS Trusts to provide a multi-methodological overview of the current and potential value of prehabilitation, with a particular interest in exploring non-surgical prehabilitation challenges.

These 11 NHS Trusts (see Recognition) committed to the project while still enduring the intense pressures of the COVID backlog and remained engaged partners through to the end. BMS and Macmillan are incredibly grateful for the contribution of every member who chose to support this collaboration. Their time and energy reinforce the strength of positive intent to embed prehabilitation into the national cancer care pathway.

This report summarises key insights about prehabilitation in practice from data collected through Trust profiling, a staff survey and staff-reported case studies. From novel statistical readouts to staff perceptions that illuminate the strength of positive sentiment behind prehabilitation approaches, this project's findings represent an updated stocktake of the current standing of prehabilitation in the UK.

Foreword

To provide a simple 'size of prize' estimate for the NHS, policy stakeholders and patients, this report also outlines a national projection of the downstream effects of scaling up prehabilitation services. Based on the methodology explained in the Report Highlights section, prehabilitation has the potential to unlock capacity to treat an additional 48,057 cancer patients per year in England alone.[7]

To embed prehabilitation services into the national cancer care pathway, it will be essential that all stakeholders and decision-makers are:

- **Communicating the value of scaling up and sustaining prehabilitation services** by sharing best practice – through case studies - and illustrating the evidence case, as done in this report.
- **Ensuring a proactive approach and earlier referrals through screening to prehabilitation programmes,** both before and during treatment, through improved pathways, improved awareness and uptake of existing programmes and workforce upskilling.
- **Recognising the importance of a holistic approach and multimodal interventions** (nutrition, exercise, psychological support and behaviour change) as part of prehabilitation.
- **Continuing to develop the evidence base for the value of prehabilitation** through future data gathering and sharing among Trusts providing prehabilitation services.

Realising the full value of prehabilitation can support healthcare and policy leaders locally and nationally by unlocking capacity. With the repatriation of executive functions to the Department of Health & Social Care and the forthcoming National Cancer Plan, BMS and Macmillan look forward to sharing the findings and recommendations of this report with interested stakeholders to support forthcoming major policy decisions.

Recognition

Macmillan and BMS would like to thank all members of staff who supported this project across the following NHS Trusts:

- Gloucestershire Hospitals NHS Foundation Trust
- Guy's and St Thomas' NHS Foundation Trust
- Mount Vernon Cancer Centre, East and North Hertfordshire NHS Trust
- NHS Grampian
- North Bristol NHS Trust
- Portsmouth Hospitals University NHS Trust
- Royal United Hospitals Bath NHS Foundation Trust
- Somerset NHS Foundation Trust
- University College London Hospitals NHS Foundation Trust
- University Hospitals Bristol and Weston NHS Foundation Trust
- University Hospitals Sussex NHS Foundation Trust

These 11 organisations were crucial partners in this project, collaborating to provide on-the-ground insights and invaluable feedback via frequent drop-in sessions and expert working group meetings. Macmillan and BMS are extremely grateful to all individuals involved and for their support, including the wider expert working group members who consulted and supported on the project.

Introduction

What is Prehabilitation?

Prehabilitation is a needs-based multi-modal intervention, implemented before and during cancer treatment. It aims at optimising physical, nutritional and psychological status, enhancing readiness for and tolerance of treatments, and improving recovery and/or quality of life.[8] Prehabilitation involves screening and needs-based assessment, enabling individualised prescription of exercise, nutrition and psychological interventions supported by behaviour change techniques. Prehabilitation has a strong relationship to rehabilitation, both forming part of the wider post-treatment pathway.[8]

Prehabilitation in the NHS has been shown to improve recovery times after surgery, and being fitter before surgery can reduce the chances of complications after the surgery. In addition to this, being physically active has been proven to help withstand side effects from cancer treatments, decrease the risk of reoccurrence, and decrease subsequent need for appointments.[5,6]

The aim of this project was to better understand the current frontier of prehabilitation and explore how prehabilitation could:

1. **Improve patients' experience and outcomes** by better preparing them for treatment and by improving their tolerance of treatment.

2. **Reduce pressure on cancer teams, wider clinical teams and hospital beds,** by enabling a more efficient flow of patients, and reducing unplanned care contacts, unlocking capacity that can be directed to both new patients entering the system and to those requiring additional support.

As part of the methodological approach, the project also set out to explore how existing prehabilitation programmes are being carried out around the country, their successes and challenges, and what the obstacles to sustainable implementation are.

Methodology: Summary

To establish a baseline understanding of current prehabilitation services and help steward the project, 11 NHS cancer service providers across the United Kingdom, primarily in England, joined the pilot program and an expert working group. A site profile survey, which collected data surrounding the teams delivering the service, the nature of the prehabilitation delivered, and site governance and integration (e.g. use of electronic records and integration with data teams), was developed to establish a baseline for potential levers for success.

Following this, three distinct approaches were conducted across the 11 sites; due to time constraints faced by NHS sites, not all could engage with each approach.

An overview of the involvement of the sites is outlined below:

1. **Analysis of patient-level data from 5 NHS pilot sites,** comprising 1,934 prehabilitation patients, to provide an understanding of the geographic variation in care delivery.[7]

2. **A survey of 38 clinical staff members involved in prehabilitation services across all 11 NHS pilot sites,** providing a detailed view of the daily operations of prehabilitation services, with a focus on the challenges and potential for improvements.[9]

3. **Development and review of 29 anonymised staff-authored patient case-studies from 8 NHS pilot sites**[i] to sensitively capture the experiences of patients who have undertaken prehabilitation.[10]

Full descriptions of our methodological approach, findings and discussion points can be found in the Deep Dive section 1, section 2 and section 3.

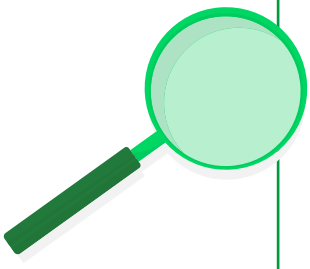
A detailed overview of our formal methodology for patient-level data capture can be found in annex 2.

i. Gloucestershire Hospitals NHS Foundation Trust, North Bristol NHS Trust, Somerset NHS Foundation Trust, University College London Hospitals NHS Foundation Trust, University Hospitals Sussex NHS Foundation Trust, Royal United Hospitals Bath NHS Foundation Trust, Mount Vernon Cancer Centre - East and North Hertfordshire NHS Trust, Guy's and St Thomas' NHS Foundation Trust

Report Hightlights

Sharing the NHS's commitment to improve cancer services and outcomes, Macmillan and BMS have worked in collaboration with the NHS between 2022 and 2024 to review existing wrap-around cancer support services, vital to meeting the changing needs of cancer patients accessing innovative treatments.

This report forms the culmination of this project co-delivered by Macmillan, BMS, and 11 NHS Trusts, to understand and advance the role of prehabilitation in cancer treatment pathways.



This report's key findings provide initial insights into prehabilitation's potential to improve patient experiences, by:

1. **Providing the psychological and physical support needed** to increase confidence and motivation[9]

2. **Improving outcomes** by promoting healthy lifestyle choices and behaviour change[9,10]

3. **Identifying opportunities for further support** needed by patients, empowering patients with greater self-management, and, in some cases, providing patients with a support network[10]

Prehabilitation may also add significant value to NHS cancer service delivery and the National Cancer Plan, by:

1. **Easing capacity pressures on NHS Trusts** by reducing the number of bed-days needed by patients across the whole NHS, improving efficiencies in care delivery, and by releasing capacity within NHS services to the benefit of patients.[7]

2. **Contributing to a reduction in the cancer backlog and lengthy cancer waiting times** by preventing same-day operation cancellations and enabling more patients to be seen faster.[7]

Scaling Up prehabilitation

Using mean duration of stay data for prehabilitation vs non-prehabilitation patients in the 5 pilot site Trusts that were able to share these data[ii], a top line sum of the potential national value of scaled up prehabilitation can be estimated. If the changes that were implemented across the NHS Trusts were successfully delivered to all cancer patients cared for by the NHS in England during 2023/24, there would be a decrease in length of stay by 0.12 days for each of a patient's hospital stays, resulting in a total of 374,845 days saved across the NHS in England annually, equivalent to £187m of value in terms of the standard excess day tariff.[7] If this time saving were realised in England, this would be equivalent to treating an additional **48,057 cancer patients annually**, close to half the total number of patients that had to wait longer than the 62-day referral to treatment target in 2024/25 (103,669).[7,3]

If the changes were to be successfully delivered in Wales, there would be 16,851 days saved across the NHS in Wales based on the same proportionate decrease of Welsh cancer patients' average length of stay.[7] Due to data limitations, we are unable to calculate this figure specifically for Scotland or Northern Ireland.

To realise these potential benefits, however, there is a clear need to find ways to push forward the nascent frontier of prehabilitation with joined up system working and central policy support. NHS staff, when asked how important they (as individuals) perceived prehabilitation as part of the cancer pathways, 82% of respondents answered that they see prehabilitation as an "extremely important" part of the cancer pathway. However, only 11% of those that responded felt their organisation saw prehabilitation as "extremely important".[9]

While the advancement of prehabilitation in the NHS currently remains largely down to Trusts and Cancer Alliances,[11] which face intense resource-related challenges,[12] the National Cancer Plan is an opportunity to provide central support and coordination for the wider rollout of prehabilitation services. In the context of failed waiting time targets and endemic capacity challenges, the recommendations of this project should serve as a beacon towards which policymakers and NHS leaders should set a decisive course.

ii. Gloucestershire Hospitals NHS Foundation Trust, North Bristol NHS Trust, Somerset NHS Foundation Trust, University College London Hospitals NHS Foundation Trust, University Hospitals Sussex NHS Foundation Trust.

Reccomendations

Based on the findings of this collaborative project, and to further grow the body of evidence of prehabilitation as an acceleratory intervention in cancer care, BMS and Macmillan are calling on Government and NHS leadership to ensure every eligible cancer patient has access to prehabilitation services as part of their NHS treatment, by:

1. **Embedding and expanding the frontier of prehabilitation in the cancer pathway nationwide,** for the benefit of patients, clinicians and the NHS as part of a coordinated programme of NHS renewal.

2. **Supporting healthcare organisations to leverage prehabilitation services in support of relevant national plans including England's 10-Year Plan and the National Cancer Plan,** promoting their potential contribution to easing capacity pressures and waiting times.

3. **Encouraging the proliferation of best practice,** enabling the value of prehabilitation to be visible by all relevant levels of decision making in the NHS.

4. **Continuing to gather new and standardised qualitative and quantitative data,** to build on the growing evidence base of the benefits of prehabilitation,[6] with an emphasis on health economic data and quality of support data. (See suggestions for future research in Deep Dive 1.)

5. **Developing a standardised set of validated screening, assessment, adherence, efficacy and outcome measures** for quality assurance, including working with relevant professional groups to define a competence and training framework for professionals in prehabilitation.

6. **Pursuing a prehabilitation evaluation agenda in partnership with relevant stakeholders** including: National Institute for Health Research (NIHR), Cancer Research UK (CRUK) and the National Cancer Research Institute (NCRI).

Review of Findings

1. Improving Patient Experiences

Patients' perspectives (derived from patient-level data[7] and case studies[10])

Reviewing patient-level data across 5 NHS sites, patients who experienced prehabilitation had a lower mean length of stay of 0.47 compared to 0.50 days for patients who did not have prehabilitation.[7] Moreover, planned care contacts for prehabilitation patients were both more common and shorter, compared to patients who were not on a prehabilitation care pathway.[7]

Individual patient case studies, provided by staff on behalf of their patients, reflected a similar picture, highlighting the goals of prehabilitation services for patients as reportedly:[10]

1. **Improving the confidence and agency** of patients to engage with their care and to communicate their needs.
2. **Improving patient education,** in particular to better-prepare patients to undergo treatment and to commit to exercise and mental health support programmes.
3. **Improving the overall patient experience,** both by facilitating the flow of the patient through the care pathway, reducing their recovery time after treatment, and reducing acute hospitalisations and attendances at Accident and Emergency departments (A&E).

To achieve these goals, physical and psychological prehabilitation support was offered across the pilot sites. This included exercise classes and physical activity advice, dietary guidance, mindfulness classes, as well as mental health guidance and talking therapies. Anonymised patient case studies, written and submitted by Trust staff members, indicated the progress being made by prehabilitation patients.[10]

Physical Outcomes

Examples of physical improvements included the following observation from a staff member, reflecting on a patient's improvements, in one of the case studies submitted:

"On commencing Chemo, the fatigue became almost intolerable [...] Each week I was expecting her expectations to have dwindled. However, she remained engaged and reported that as 'awful' as she could feel at times, she was adamant that had she not remained engaged, her symptoms would have been more significant.[10]"

~ Quote taken from anonymised patient case study written by pilot site staff

Psychological Outcome

Many psychological improvements were also mentioned across the programme, with staff highlighting improvements to their patients' confidence and mental health literacy.

"Psychology provided much valued need to process emotions, develop helpful coping mechanisms, and support her to care for herself and receive the medical treatment she needed.[10]"

~ Quote taken from anonymised patient case study written by pilot site staff

Other examples referenced the overlap between the mental health support and the confidence exercise provided in building strength and preparedness for treatment, both psychologically and physically – continued from the quote above:

"After 3 psychology sessions, patient started attending regular prehab exercises after previously declining exercise. Patient also started building social support network with those attending exercise class. Significantly improved psychological wellbeing, no further suicidal ideation. Patient lost the necessary weight and went on to have planned hysterectomy surgery.[10]"

~ Quote taken from anonymised patient case study written by pilot site staff

Prehabilitation staff perspectives (derived from staff survey results)[9]

Our interactions with NHS sites through both anonymised case studies and staff survey responses unearthed positive indications of the efficiencies that prehabilitation brings to Trust services. We found that those closest to the delivery of prehabilitation programmes (e.g. oncology nursing staff, physiotherapists) generally understood the immense benefits and advantages of prehabilitation through their first-hand experience, but perceived their managers as being less receptive to the advantages and more focussed on the costs and resourcing demands. (The staff survey received 38 responses from a range of organisations and seniority levels.)[9]

For example, when hospital staff were asked "What is the value of Prehabilitation for staff at your hospital?", 76% of the 38 respondents said they saw increased engagement between departments, 66% noted an increased efficiency of services, and 63% said improved workforce satisfaction (figure 1).[9]

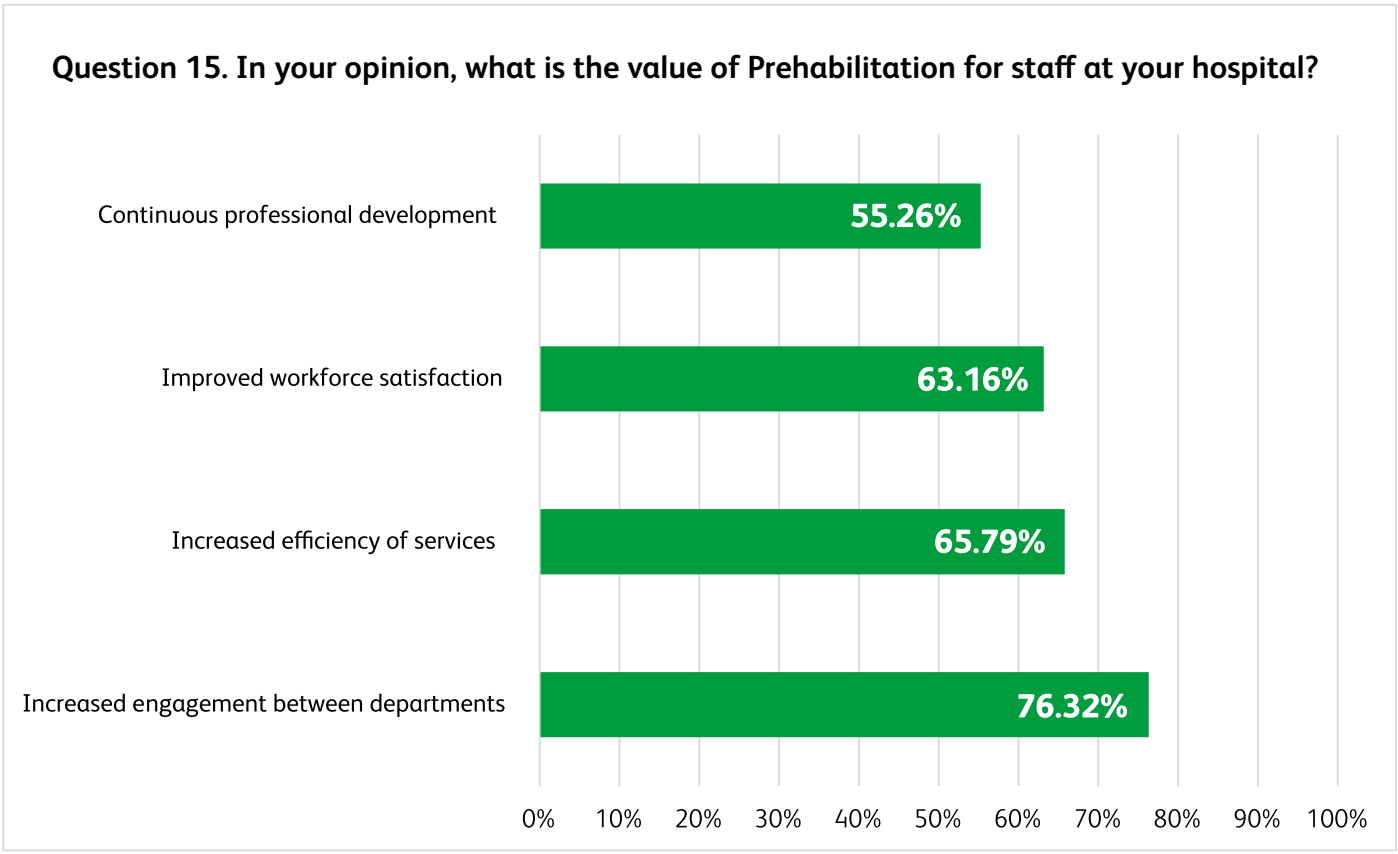


Figure 1: Value of Prehabilitation for NHS Hospital Staff [9]

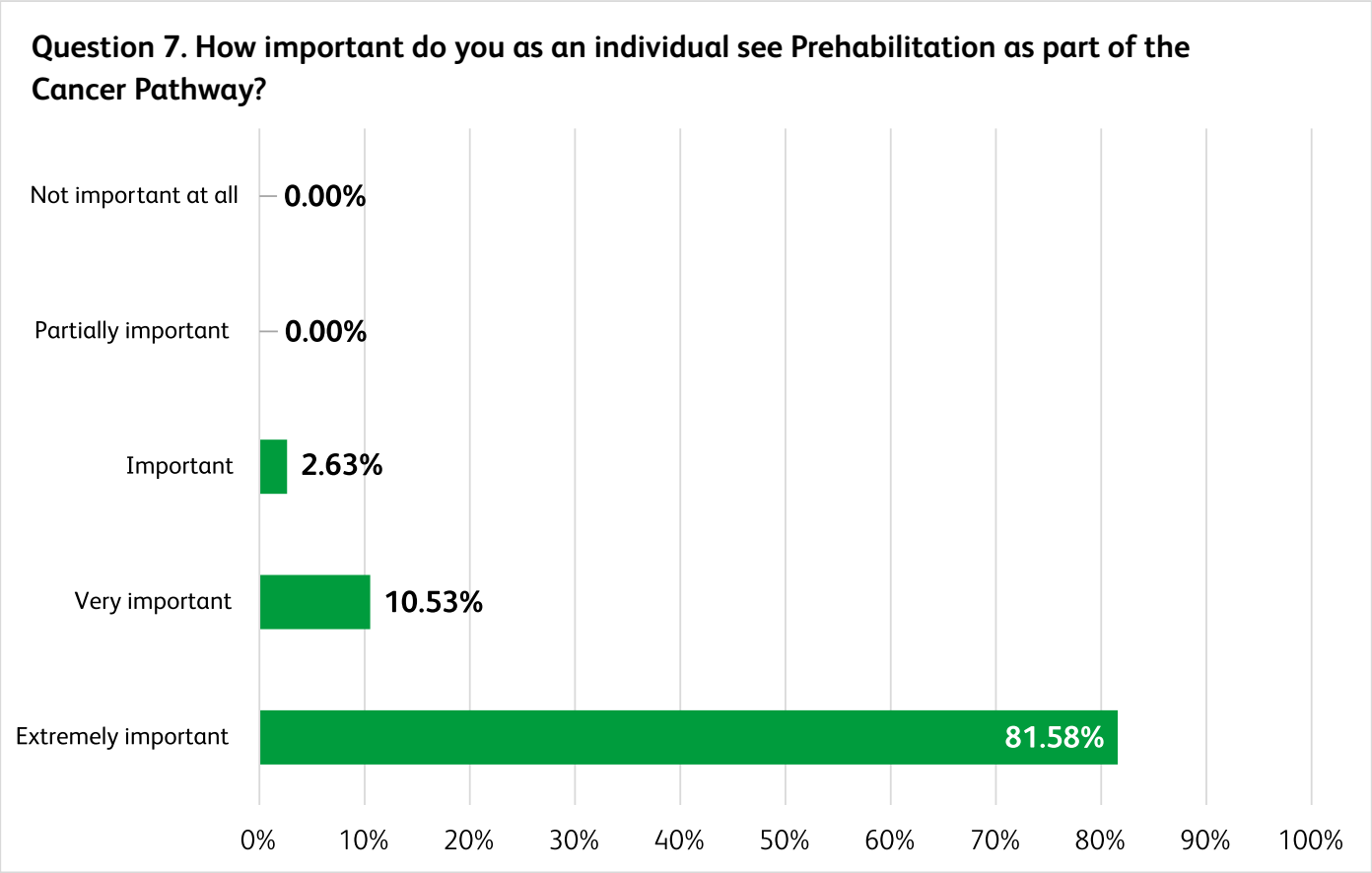


Figure 2: Importance of prehabilitation at the individual level [9]

When asked how important they (as individuals) perceived prehabilitation as part of the cancer pathways, 82% of respondents answered that they see prehabilitation as an *"extremely important"* part of the cancer pathway. However, only 11% of those that responded felt their organisation saw prehabilitation as *"extremely important"* (figure 2). [9]

This suggests a need for more senior buy-in from Trust-level employees and emphasises the importance of internally communicating the benefits and value of prehabilitation.

Responses to the questions *"What would make prehabilitation more important to you?"* and *"What would make prehabilitation more important to your organisation?"* reflect this, with staff responses focussing on implementation and patient experiences, whilst staff describe the perceived attitude of the Trust management as prioritising the value of the service, funding, and the evidence to support the benefits of prehabilitation.[9]

2. Divergent Views on Prehabilitation and the Need for Greater Supporting Evidence

It is understood from these responses that there is an appetite for more evidence to demonstrate the value of prehabilitation. Staff outline this as critical to securing buy-in from senior stakeholders and the wider NHS staff body, and necessary to support the sustainability of funding for prehabilitation services.

Similarly, across all levels and pilot sites, there are fears of being unable to commit to prehabilitation delivery - both in the long-term, due to uncertainties in funding, and in the short-term (owing to the availability of staff and resources).[9]

Workforce and training capacity (i.e. the time needed to upskill each member of NHS staff to deliver prehabilitation programmes) was also discussed in the survey.[9] This was referenced in terms of finding enough staff to deliver the service, as well as ensuring the correct skills and knowledge-mix.[9] The structure of the referrals system was also mentioned, describing how some patients are referred too late to receive the best treatment. The combination of concerns about funding and workforce capacity is reflective of the broader issues facing the NHS.[9]

3. Reducing Downstream Costs for the NHS

Alongside improvements to the patient experience, patient-level data and individual patient case studies illustrated that prehabilitation services have the potential to improve efficiencies for the NHS.[7]

Across all care events, patients that experienced prehabilitation had a lower mean length of ward stay: 0.47 days compared to 0.50 days for patients who did not have prehabilitation (defined as the time from recorded patient admission to patient discharge).[7] If this proportionate time reduction for admissions was seen for all NHS cancer patients cared for in England in 2023/24, it would result in a decrease of 0.12 days for each of a patient's hospital stays.

"[The patient] was able to go home in a timely manner and we could provide support services at home for recovery.[10]"

~ Quote taken from anonymised patient case study written by pilot site staff

Both the quantitative data from our pilot site profiling and the qualitative findings from the patient case studies and staff surveys, provide a promising foundation for future investment into prehabilitation based on downstream efficiencies which may alleviate capacity pressures and improve patient experience.[7,9,10]

Deep Dive 1 – Analysis of Patient-level Data and Insights[7]

Patient level data was collected from 5 sites. The combined cohort across the 5 sites comprised 1,934 patients who underwent prehabilitation and 64,319 patients who similarly had a relevant cancer diagnosis but were either not offered prehabilitation or did not take it up.

Respondents indicated a number of reasons why prehabilitation is not taken up by patients, including clinical (too frail), emotional (feeling too overwhelmed; reduced motivation to change behaviour), or logistical (too far to travel; having too many other appointments; parking issues). The services had a wide range of experience in care delivery, with some having seen no or few patients per month (or ever), and others dozens (and, in one case, many hundreds).

The data provided ranged from 2019 through to March 2024, though most sites were only able to share data from the 12 months between April 2023 and March 2024. Across the combined cohort, women made up a slightly larger percentage of the cohort of patients aged 59 or under, whilst men made up the majority for patients aged 60 and over. This is similarly reflected in the group of patients that experienced prehabilitation. Please note that each site had a slightly different offering for prehabilitation. Some offered it for all patients while others offered it in accordance with specific cancer types or groupings.

Patients with a range of cancer diagnoses were included in the cohort, as shown below in figure 3.

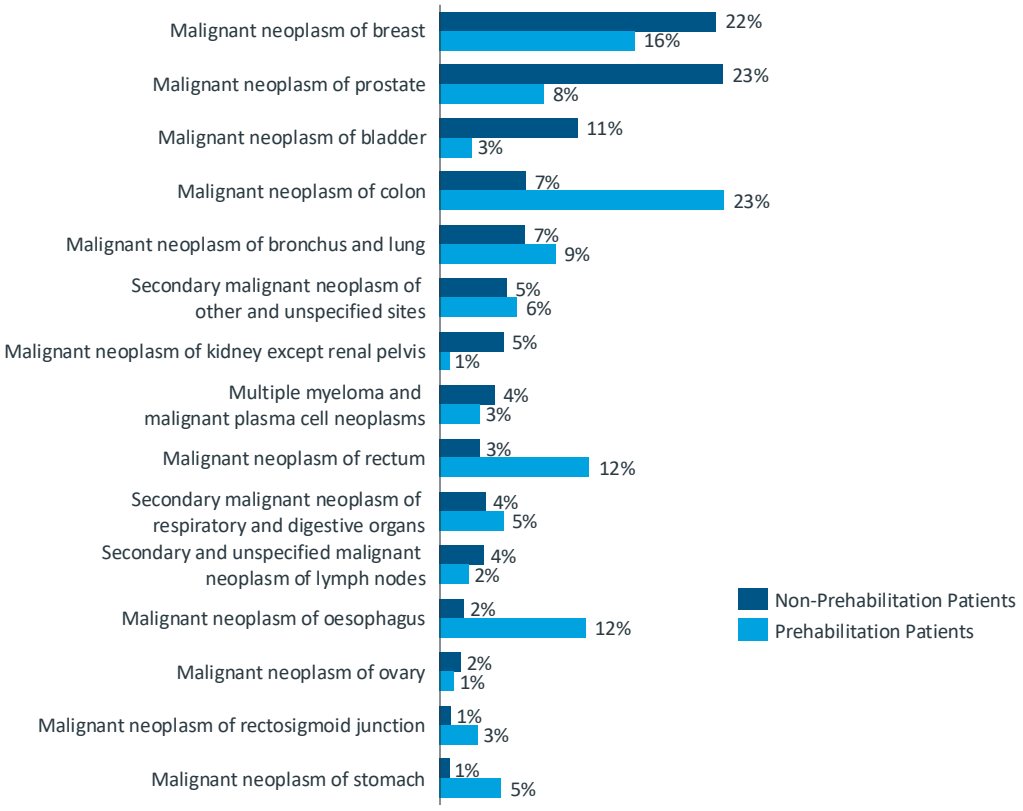


Figure 3: Patient cancer diagnosis as proportion based on prehabilitation status of patients (top 15)

Cancer patients have touchpoints with several specialities, depending on their tumour type and the treatment delivered, but these touchpoints are influenced by their participation in prehabilitation.

For example, recorded physiotherapy is completely dominated by prehabilitation patients, suggesting that little to no physiotherapy is delivered to patients not on a prehabilitation pathway; or, alternatively, that proactive prehabilitation recruitment enrols all patients that attend physiotherapy.[7]

Recorded length of stay across the two cohorts was analysed broadly across all care events. Across all care events, patients that experienced prehabilitation have a lower mean length of stay; 0.47 compared to 0.50 days.[7]

There are also differential impacts of prehabilitation on patient pathways depending on the type of cancer a patient is diagnosed with. Colon, lung, and multiple myeloma patients have approximately half the average length of inpatient stay when they are on a prehabilitation pathway, while oesophageal and renal cancer patients have an even greater difference (1.67 versus 0.7 days on average for prehabilitation oesophageal cancer patients, and 0.63 versus 0.21 days for renal patients with prehabilitation).[7]

The origin of this difference may lie in events that take place in the pathway – for example, lung cancer patients are more likely to have both prehabilitation and surgery. Those that have prehabilitation and surgery have a drastically shorter average length of stay (1.52 vs 0.18 days), resulting in an overall total pathway length of stay difference of 6.5 fewer days for lung cancer patients with prehabilitation and surgical treatment.[7]

More moderate differences can similarly be seen for colon (0.9 average days less total length of stay overall), multiple myeloma (2.1 days less), rectal (0.9 days) and renal (0.5 days) cancers where the patients have prehabilitation and a surgical treatment.[7]

Patients aged 70+ are the most likely to benefit from prehabilitation, averaging a 30% decrease in length of hospital stay (the average length of stay for patients aged 70+ experiencing prehabilitation is 0.544 days, and the same figure for those that don't experience prehabilitation is 0.772.)[7] Impact is not as pronounced for other age groups, with younger patients (<40 year olds) having an equitable average length of stay.[7]

Pilot Site Case Study: Gloucestershire Hospitals NHS Foundation Trust[7,9,10]

Prehabilitation was offered at Gloucestershire Hospitals NHS Foundation Trust between 2021 and 2025, with a universal approach of capturing talk therapy and offering group exercises. There is a mix of dedicated prehabilitation staff and collaborative colleagues pulled from other specialties (including allied health professionals [e.g. dieticians, physiotherapists, and speech and language therapists], psychologists, and broader support workers) with a defined care pathway for the entire organisation despite it being located at a community site.

Leadership from Gloucestershire were able to complete a site profile which outlined the nature of the prehabilitation offering, and shared data covering patients that were, or could have been, offered prehabilitation for the 2023/24 financial year.

At Gloucestershire, prehabilitation was offered to patients immediately upon suspected diagnosis, as well as by the post-operative team.

Prehabilitation at Gloucestershire was not tumour specific, as patients being offered this service have presented at the site with a range of diagnoses. Despite this, aggregate data from prehabilitation patients has showed a reduced average length of hospital stay (from 1.7 to 1.5 days for non-prehabilitation relative to prehabilitation patients, respectively), with accentuated differences observed for specific types of cancers. Such differences were observed for colon (3.0 and 2.0 days for non-prehabilitation and

prehabilitation patients), lung (1.9 and 1.3 days, respectively), and multiple myeloma (0.5 and 0.2 days, respectively).[7]

When surgery is not part of the patient treatment pathway, there is an average length of stay of 1.2 days for prehabilitation patients compared to 1.7 days for those who did not have prehabilitation.[7]

The results from Gloucestershire indicate a prehabilitation programme that is integrated well within the wider Trust, as well as linked to a number of care pathways. These results also illustrate the positive impact on patient experiences, including both physical and psychological outcomes, as seen in the quote below.

"After 3 psychology sessions, patient started attending regular prehab exercises after previously declining exercise. Patient also started building social support network with those attending exercise class. Significantly improved psychological wellbeing."

~ Quote taken from anonymised patient case study written & submitted by a staff member at Gloucestershire Hospitals NHS Foundation Trust[10]

Opportunities to Scale Results

Cancer treatment has a large impact on patients, staff, and the NHS as a system. As mentioned above, were the changes in length of stay seen in the prehabilitation cohort delivered across all cancer patients cared for by the NHS in England during 2023/24 (as defined by a cancer-related diagnosis recorded in Hospital Episode Statistics data), there would be a decrease of 0.12 days for each of a patient's hospital stays, resulting in a total of 374,845 days across the NHS for the year (potentially priced at £187m using the standard excess day tariff).[7]

Savings at individual sites have been previously studied, including evidence that the costs involved in delivering prehabilitation are covered by the capacity released on a recurrent basis,[13] though financial data on sites was not available to corroborate in this evaluation.

Any length of stay reduced within the NHS does not generally result in empty beds, and is thus not cash-releasing, but perhaps more intuitively can have its potential impact recognised by the allocation of this care for others. By looking at the total days that may be saved across all cancer patients and relating it to the average amount of time a cancer patient spends in hospital, we find a notional capacity-releasing effect equivalent to 48,057 additional patients annually that could potentially be treated from backlogs and waiting lists.[7] This is based on the real-world data of all cancer patients for the year 2023/24,

scaled by the average change in care for prehabilitation patients and the amount of time this could free for other patients.[7]

Alongside these findings, we also identified opportunities to widen this report's impact and address challenges in data sharing amongst NHS sites. Opportunities uncovered by this project include:

- Updating the processes which outline how data can be shared, and with whom, when the appropriate data privacy and protection regulations are followed, to enable the sharing of best-practices among NHS Trusts
- Update Trust-level data infrastructure to accommodate deeper analyses of potential causes behind lengths of stays, and the clinical contexts of patients undertaking prehabilitation
- Further analysis of trends which emerge across Trusts, such as the greater use of telephone appointments in prehabilitation, the timing of prehabilitation services offered to patients, and the criteria by which prehabilitation services are offered to patients

These findings represent broad bounds of possibility for the impact of prehabilitation services being rolled out. While there are already sites offering prehabilitation, this is of variable maturity and fidelity to guidelines which have yet to be established. While the implementation of prehabilitation services will impact their effect, these all represent opportunities for further exploration, and to build upon the evidence outlined in this report.

Deep Dive 2 – Staff Survey[9]

The prehabilitation staff survey ran from November 2023 to January 2024, and was created to gain a detailed understanding of the day-to-day activities of the NHS pilot sites, to glean successes and challenges, and to understand perceptions of prehabilitation at both staff and Trust levels.

It also aimed to understand where improvements can be made on current practices by gathering feedback from staff actively involved in prehabilitation, with those closest to the project in the best place to offer both long and short-term improvement advice and suggestions. The results will also contribute to Macmillan's ongoing work in disseminating best practice in prehabilitation.

The survey contained 21 questions (annex 4), capturing topics including: what is working well with their Trust's prehabilitation services; the perception of the value of the programme; possible short and long-term improvements; the current training for prehabilitation; and "the outcomes that staff would like to see from the Macmillan-BMS prehabilitation project".

The survey had a high response rate with at least one response from all 11 pilotsites and a total of 38 responses across the country.[9] There was a spread of the job roles of the respondents, as well as seniority variance.[9]

One of the most striking themes in the qualitative analysis of the staff responses was that 82% of respondents answered that they, individually, see prehabilitation as an *"extremely important"* part of the cancer pathway, whereas only 11% of those that responded felt their organisation supported that view. Responses from staff that showed the extreme importance of prehabilitation, ranged from consultants, psychologists, physiotherapists, and dietitians.[9]

Those working directly within prehabilitation services understand the immense benefits and advantages of prehabilitation through their first-hand experience.[9]

Qualitative staff responses suggest a perception that prehabilitation, while considered valuable in principle, faces resistance due to broader financial pressures:

"I believe [prehabilitation] is important, but I have to justify it to others in the face of competing demands for funding".

~ Quote taken from anonymised pilot site staff response to the survey[9]

Deep Dive 3 – Prehabilitation Case Studies[10]

To build on the staff and system insights gleaned from the staff survey and to provide qualitative data on how prehabilitation is delivered, Macmillan and BMS also asked the NHS pilot staff sites to share case studies on patients' experiences of prehabilitation. Each case study provides a unique insight into the experiences of prehabilitation, outcomes, and impacts.[10]

The case study project ran from December 2023 – March 2024, and aimed to provide:

- Patient experience data, shared by staff
- Learnings for the future of prehabilitation work
- Recommendations for national guidelines underpinning prehabilitation

To ensure the case studies were able to output valuable data, each site was provided with uniform templates into which case studies were inputted by the relevant healthcare professionals, split into three sections across **patient situations and targets; specific prehabilitation activities; and the impact of prehabilitation on the patient experience.**

29 submissions were received from 8 out of 11 pilot sites.

Summary of the Key Findings:

1. Identifying Patients for Prehabilitation

Referrals

72% of responses reported that patients were identified for their prehabilitation programme through a referral from a specialist, while a smaller portion of responses noted patients were identified through specific screening or through programmes such as ChemoCare (an electronic chemotherapy prescribing system).[10]

Patients identified through screening tended to be referred at a later stage in the patient journey, indicating a need to further bolster screening programmes to ensure more referrals at the initial diagnosis stage.[10]

Responses received (from staff involved in prehabilitation delivery) to the question *"Why was the patient identified for prehabilitation?"* highlighted the importance of early referrals to prehabilitation programmes, with a particular focus on the need to improve screening processes to accelerate patient access.[10]

Physical vs Psychological Support

Responses received from staff indicated that patients are identified for prehabilitation within two main categories: physical and psychological.

Physical characteristics vary between patients; where some were underweight as a result of the stress of their diagnosis, others were advised to lose weight to better prepare physically for treatment.[10] In both cases, input from a dietitian as well as guidance on exercise was highlighted as part of their prehabilitation programme.[10]

For all patients receiving support in the 'physical' category, staff responses stated the purpose was to improve tolerance of surgery and/or chemotherapy treatment to increase the likelihood of successful recovery.[10]

Meanwhile, patients falling into the 'psychological' category received support relating to mental health and their mental preparedness for treatment. Anxiety and depression in particular, were frequently identified in patients referred for prehabilitation. This may be independent of the patients' condition or catalysed by their diagnosis.[10]

While patients generally fall into these two categories, they are not binary in practice. Oftentimes patients required support across both areas, and support in one category was often linked to goals in the other (e.g. reduced motivation to exercise as a result of low mood).[10] This was seen in several of the anonymised case studies shared by staff members:

"[This patient is] at risk of poor healing/outcomes due to diabetes, deconditioned, decreased confidence and fear in exercising independently, requiring behavioural change to support to healthy lifestyle choices." [10]

"[This patient is] overweight, high fatigue burden, not aware of the benefits of exercise during cancer treatment. Low mood and motivation to exercise, had stopped exercising since diagnosis due to low mood and fear." [10]

2. The Goals of Prehabilitation

Tolerance and Preparation for Treatment

In the case studies, there was strong emphasis from staff on improving patients' tolerance to treatment and the optimisation of care as a major goal of prehabilitation.[10] This related both to reported patient experiences of treatment as well as improved recovery outcomes, judged according to one or more of the following criteria:[10]

- *"[Improving] strength and cardiovascular endurance to tolerate radiotherapy"*
- *"Avoiding dose reduction of treatment due to intolerance"*
- *"Reducing treatment side effects"*
- *"Helping with recovery post-surgery"*
- *"Reducing length of stay in hospital post-surgery".*

This theme of preparation for treatment could also be seen in the psychological objectives of prehabilitation delivery, reported by staff to include:[10]

- *"Giving information on what to expect"*
- *"Allowing consideration of treatment options"*
- *"Coping with symptoms"*
- *"Providing communication strategies pre- and post-surgery"*
- *"Processing and coming to terms with diagnosis".*

Notably, one case study mentioned a hope that "engaging with exercise would help [the patient to maintain normality] from a physical and psychological perspective".[10]

Confidence and Agency

The prioritisation of personal agency and improvements in confidence was identified as a key goal for psychological prehabilitation programmes.

Example goals received included an ambition to: *"empower patients to actively engage with health optimisation"*, *"improved communication of needs"*, and *"raise [patient's] awareness of need to alert chemo nurse if struggling to eat or noticing weight loss during chemo"*.[10]

Education

The importance of patient education to help prepare for treatment was highlighted as a priority of both psychological and physical prehabilitation; oftentimes, case studies mentioned that a key goal is the "mindset shift" to increase the likelihood of patient commitment to the exercise and mental health support programmes.[10] Beyond this, the qualitative evidence suggests a bolstering in patient self-management and personal advocacy, highlighting the value of holistic care.

Examples of the education goals set for patients included *"to educate on benefits of exercise on fatigue and treatment tolerance*". One staff member reported that *"on reading one of our information leaflets [the patient] became increasingly interested in the evidence base around exercise and chemotherapy and was thoroughly invested"*.[10]

Patient-to-Patient Considerations

Whilst the prehabilitation programmes delivered by the different Trusts followed similar themes, the goals of the participants, as reported by staff members, appeared to vary significantly, from *"maintenance or improvement in fatigue so [as to be] able to carry out day to day task"* to more complex aims such as *"reducing suicidal thoughts"*. This points to the importance of individualised and tailored considerations within any prehabilitation programme for a specific patient.[10]

Staff Required

Data concerning the staff required for prehabilitation programmes illustrates that a large majority of allied health professionals (that included dietitians, occupational therapists, physiotherapists, speech and language therapists, and therapeutic radiographers) are required for each programme, with 45% of the prehabilitation programmes delivered including one of the staff in the allied health professional category.[10]

Support workers and nurses are the next most-frequently included within prehabilitation programmes, at 21% and 14% respectively. Finally, doctors, psychologists, pharmacists, and others make up the final 20% of the staff required for the programme. (Full results can be found in Figure 5).[10]

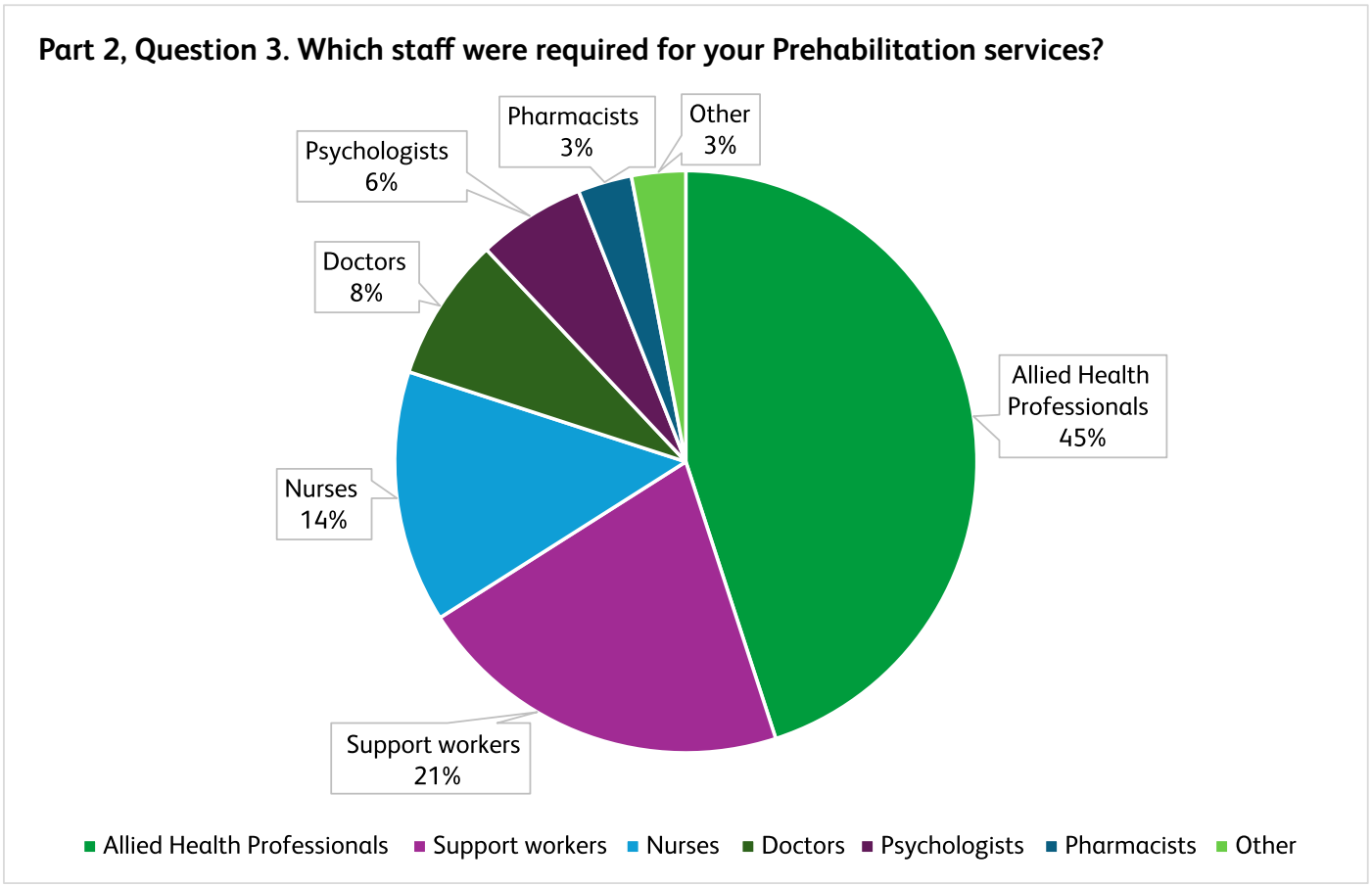


Figure 5: Staff Required for Prehabilitation

4. Qualitative Outcome Measurement

Pathway and Resources

A common theme highlighted in the case studies was the aim to streamline the pathway and referrals system for prehabilitation patients, with many case studies correlating early referral to prehabilitation programmes to improved outcomes.[10]

Several case studies mentioned that prehabilitation sessions beginning a minimum of two weeks before the treatment would provide the basic amount of time for improvements, however many also noted challenges in identifying and referring patients in a timely manner: [10]

"The patient was seen close to operation date. Ideally patients should be seen a maximum of 2 weeks prior to treatment. Unfortunately, due to lack of appointments / staff / resources we were unable to facilitate this." [10]

~ Quote taken from anonymised patient case study written by pilot site staff

Delivery of Prehabilitation

Differing viewpoints on the topic of in-person versus virtual prehabilitation sessions emerged from the case studies, which included anecdotes both of those who benefitted greatly from the community-feel of in-person and group sessions, and those who reportedly found it difficult to travel and thus favoured virtual settings.[10]

Reported improvements in measurable physical and psychological outcomes identified in responses received from staff, highlighted the success of the programmes in relation to the initial goals outlined. For example, a case study noted that the patient felt *"really well prepared and supported and this helped with recovery post-surgery."*[10]

Another case study explained that following prehabilitation, the patient *"was able to go home in a timely manner and we could provide support services at home for recovery".*[10]

There are also significant mentions of the system benefits in streamlining care and reducing bed-days, as well as learnings for the Trust on how to deliver prehabilitation programmes, including resource preparation and Trust-communication improvements.[10]

Delivering Change

Macmillan and BMS would again like to thank the prehabilitation pilot site collaborators, who joined the project from:

- Gloucestershire Hospitals NHS Foundation Trust
- Guy's and St Thomas' NHS Foundation Trust
- Mount Vernon Cancer Centre, East and North Hertfordshire NHS Trust
- NHS Grampian
- North Bristol NHS Trust
- Portsmouth Hospitals University NHS Trust
- Royal United Hospitals Bath NHS Foundation Trust
- Somerset NHS Foundation Trust
- University College London Hospitals NHS Foundation Trust
- University Hospitals Bristol and Weston NHS Foundation Trust
- University Hospitals Sussex NHS Foundation Trust

This project would not have been possible without their enthusiasm, insight and commitment throughout this project. We hope that the findings highlighted in this report help to underpin the case for funding and prehabilitation implementation locally in line with Macmillan's *Principles and guidance for prehabilitation within the management and support of people with cancer*, which can be found on their website.

With a government motivated to establish a new strategic footing for the NHS, and with cancer outcomes at the forefront of health policy discourse in the UK, now is the right time for stakeholders to join forces to realise and to continue to build the baseline of evidence for the value of prehabilitation. Getting this right could unlock transformational change for future cancer patients nationwide while potentially also reducing downstream costs and inefficiencies, a perfect alignment of aims with the national political agenda for the NHS.

Macmillan and BMS look forward to taking forward the aims of this project with national and local NHS decision-makers and central government.

Annex 1: The organisations behind this report

This report forms the principal output of a collaborative working project between Bristol Myers Squibb and Macmillan Cancer Support.

Macmillan Cancer Support

Macmillan is one of the largest British charities and exists to help improve the lives of people affected by cancer - those with cancer and their families, carers and communities. Macmillan helps anyone affected by cancer navigate through the system to get what they need, and acts as a force for change. Their work is focussed on improving cancer care through running public campaigns, building partnerships, and influencing decision-makers on all cancer-related policies at UK-wide, national and local levels.[14] Macmillan collaborated with the Royal College of Anaesthetists, the National Institute for Health Research Cancer and Nutrition Collaboration to develop principles and guidance for prehabilitation in cancer.[15]

Macmillan, with its vast expertise and skills within cancer policy and delivery as well as the major investments it has made into cancer workforce and service improvements, innovations and system redesign, has contributed to the design and delivery of the pilot project, offering its reach and subject matter expertise to support the pilot sites and advise on the strategic direction of the project.

Bristol Myers Squibb

BMS is one of the largest global biopharmaceutical companies in the world, focused on discovering, developing and delivering innovative medicines for patients with serious diseases. In the UK, BMS employs approximately 1,000 people across every UK region who share a single vision – to transform patients' lives through science. BMS is leading on ensuring the NHS provide wraparound support to ready patients for the physical and emotional impact of cancer treatment.

IQVIA

IQVIA is a leading global provider of advanced analytics, technology solutions, and clinical research services to the life sciences industry. They create intelligent connections across all aspects of healthcare through analytics, transformative technology, big data resources and extensive domain expertise.

IQVIA has been responsible for working with the NHS pilot sites to collect and analyse the data from the NHS pilot sites. This data forms a key part of the findings presented in this report. All NHS pilot sites involved in the project have entered into Data Sharing Agreements with IQVIA to ensure all data shared follows data protection standards.

Lexington Communications

Lexington is a leading independent strategic consultancy, supporting healthcare organisations to deliver positive change for patients and the health service.

Lexington has provided project and logistics support for the prehabilitation project and has worked with the pilot sites to collect the staff survey data and patient case studies included in this report. They will also be responsible for amplifying the project findings nationally, with the hope of prehabilitation being integrated into national cancer pathways.

Annex 2: Patient-level data capture and analysis methodology[7]

Aligning data capture during this project with the normal ways of business within Trusts, as well as their prehabilitation evidence needs, was a central tenet of the methodological design. The underlying data structure was designed to largely match routinely captured data. Further, it was hypothesised that the data request would encourage more and improved working relationships between Trust business analysts and clinical teams, providing an in-built encouragement for improved sustainability.

Evaluation and analysis were structured within a quality improvement framework,[16] establishing the overall objectives as an aim within which to observe changes over time. Measures were designed to link the aim to specific activities or pathway approaches, utilising an initial "action effect diagram"[17] to translate the programme theory to a theory of change and data specification.

Data specification was planned to match routine collections to assist monitoring after the closure of the project, with specific analyses and measures aligned to the evidence needs of Trusts to establish the impact of prehabilitation at a site level. More specifically, Trusts were requested to share patient-level episodic data relating to care delivered to patients with cancer diagnoses, including those patients that did and did not receive prehabilitation. This data was to include a number of data points including demographic information, high level care delivery information including diagnoses, procedures, and speciality of care, and dates to determine length of stay. Broadly this matched submissions and fields included in Secondary Uses Service (SUS) data (which is also then processed into Hospital Episode Statistics, HES, data).

Approaches including care and support delivered to patients diagnosed with cancer to improve their ability to have cancer treatment or experience improved outcomes were involved. As a result, "prehabilitation" included a number of conditions being covered, care settings included, and model of universality or specialism. This element of the project was designed to capture the impact

of prehabilitation, including varied delivery designs. Impact was defined by an alignment to pathway process measures (e.g. length of stay, number of assessments, etc) as aligned to the *Donabedian* definition of structure, process, and outcome measures in care quality evaluation.[18]

Trusts were engaged with Data Sharing Agreements and Data Protection Impact Assessments signed to enable data flow to secure servers for analysis. Individual Trusts shared patient-level data, largely aligned to monthly secondary use data (e.g. Hospital Episode Statistics) submissions. A data specification requested episodic information for all patients with a relevant cancer diagnosis that may have led to prehabilitation being offered at the Trust. All Trust activity with the patient was to be captured, with detail shared on the care setting, admission method, and whether the patient received prehabilitation (not routinely captured in standard data).

Patient level care interactions with the Trust (known as episodes) were aggregated to establish lines of inquiry. Patient pathways and care metrics were calculated to understand and characterise care differences.

Specific evaluations were built according to overall aims, i.e. reductions in unplanned care and inpatient admissions, impacts on patient experience of care, and impact on downstream care, but were impacted by the availability of relevant data. Other evaluations were based on explorations of the data following submission.

An overview of data gathered from pilot sites can be found in Annex 3.

Annex 3: Overview of data and insights[7]

Patient level data was collected from 5 sites (see table 1 below). The combined cohort across the 5 sites comprised 1,934 patients who underwent prehabilitation and 64,319 patients who similarly had a relevant cancer diagnosis but were either not offered or did not take it up. Further investigation into the reasons for such a low rate of uptake would be a valuable future research activity.

Please note that adherence could not be included in any figures scaling up the impact of prehabilitation. Given the rate of prehabilitation adherence is included at the pilot sites, it is assumed this will impact a scaled-up figure for potential national figure in the same way.

Site	Prehabilitation Patients	Non-Prehabilitation Patients
Gloucestershire Hospitals NHS Foundation Trust	447	6,065
North Bristol NHS Trust	1,157	52,458
Somerset NHS Foundation Trust	104	-*
University College London Hospitals NHS Foundation Trust	25	-*
University Hospitals Sussex NHS Foundation Trust	201	5,796
Total	**1,934**	**64,319**

*Table 1: Patient volumes by site and prehabilitation status *Null entries denote where data was not available during profiling process.*

The data provided ranged from 2019 through to March 2024, though most sites were only able to share data from the 12 months between April 2023 and March 2024. Across the combined cohort, women made up a slightly larger percentage of the cohort of patients aged 59 or under, whilst men made up the majority for patients aged 60 and over. This is similarly reflected in the group of patients that experienced prehabilitation (figure 7).

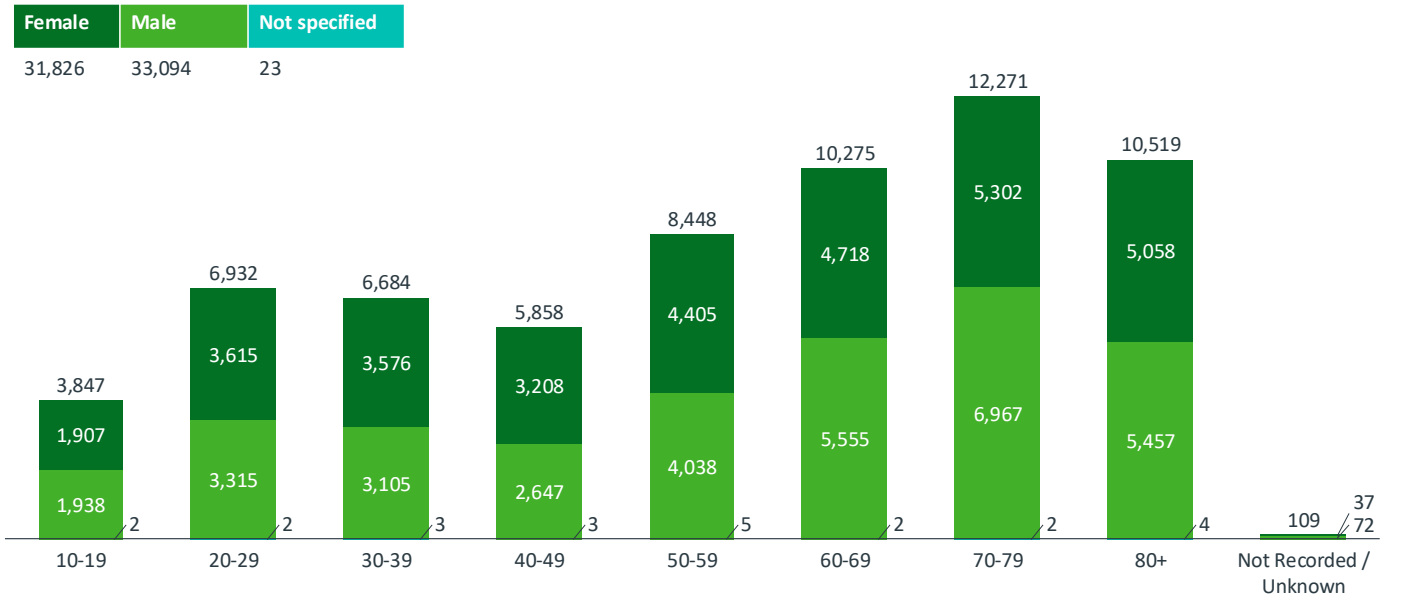


Figure 6: Patient Counts, all patients

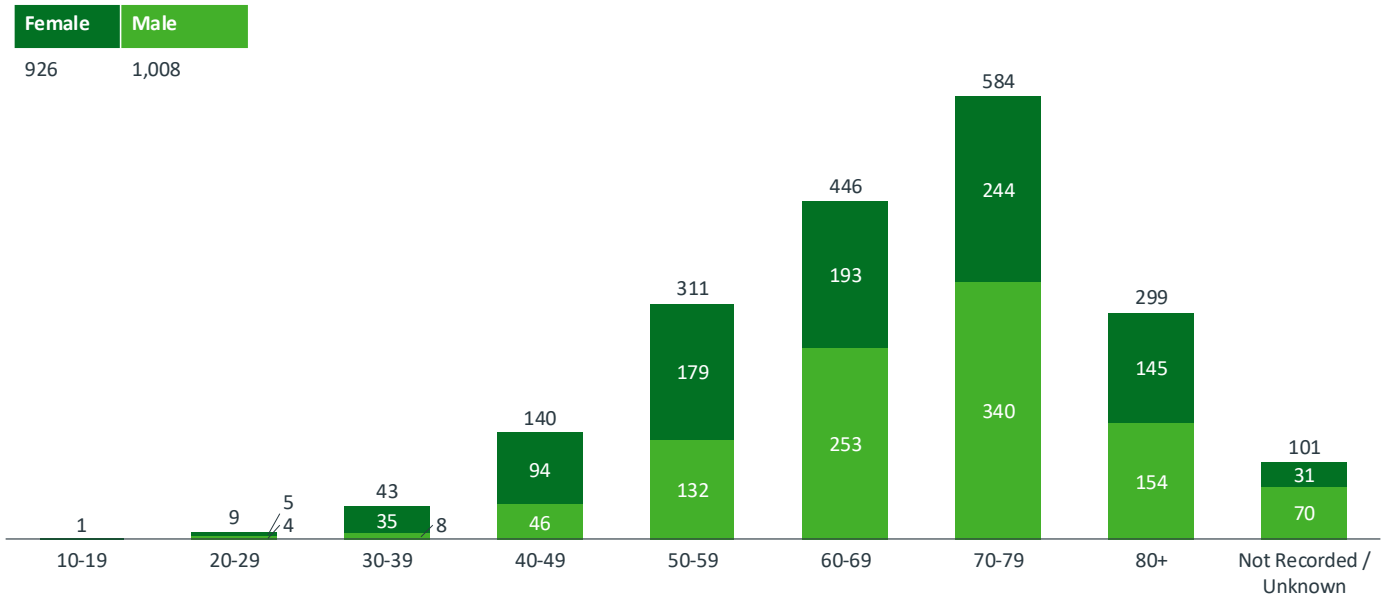


Figure 7: Patient Counts, prehabilitation patients only

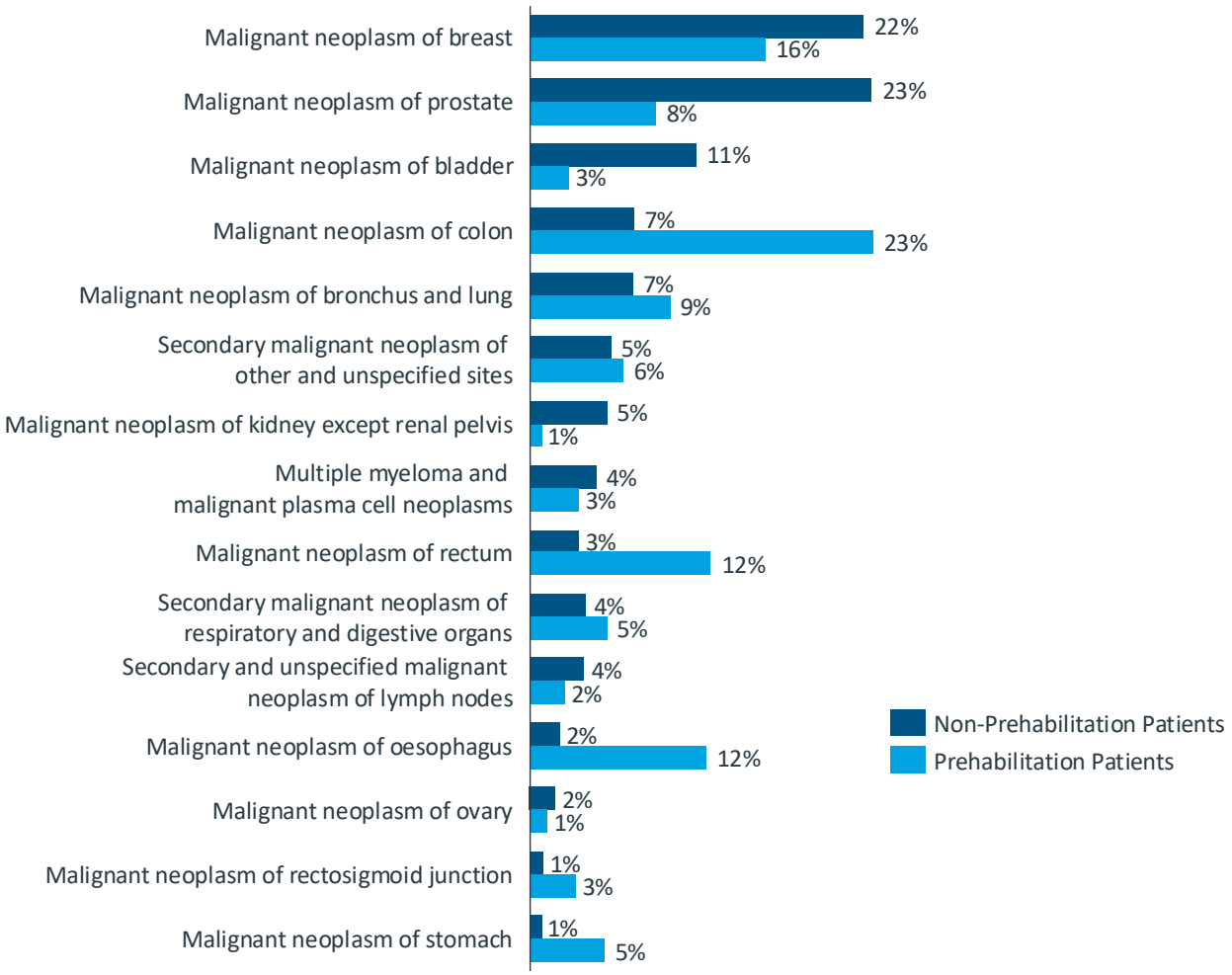


Figure 8: Patient cancer diagnosis as proportion based on prehabilitation status of patients (top 15)

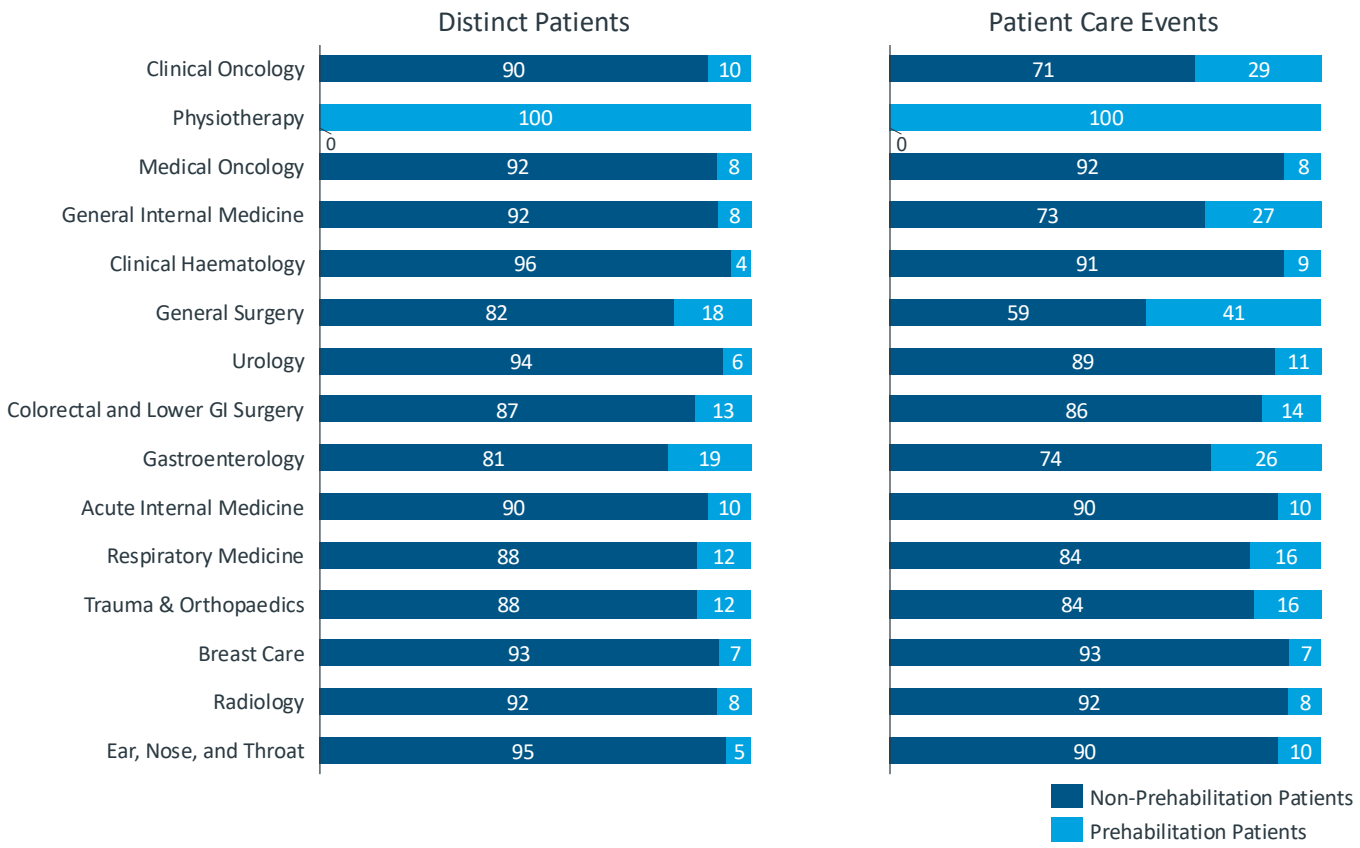


Figure 9: Patient & Activity proportions within speciality, by speciality (top 15)

Cancer patients have touchpoints with several specialities, depending on their tumour type and the treatment delivered, but these touchpoints are influenced by their participation in prehabilitation.

For example, recorded physiotherapy was seen to be completely dominated by prehabilitation patients, suggesting that little to no physiotherapy is delivered to patients not on a prehabilitation pathway; or, alternatively, that proactive prehabilitation recruitment enrols all patients that attend physiotherapy.[7]

We also saw an increased rate of surgery for prehabilitation patients (18% of patients but 41% of surgical speciality contacts for prehabilitation patients).[7] This may reflect the provenance and more-widely understood evidence base of prehabilitation being offered in advance of surgery, and for cancer - particularly as it relates to lung cancer.

Recorded length of stay across the two cohorts was analysed broadly across all care events, and also with a focus on unscheduled care or non-elective events. Across all care events, patients that experienced prehabilitation have a lower mean length of stay, 0.47 compared to 0.50 days.[7] When focusing on unplanned and unscheduled care events with an overnight hospital stay,

patients that took up prehabilitation showed a slightly increased length of stay, a mean of 3.73 days compared to 3.61 days for patients that did not have prehabilitation.[7] This latter data point may be explained by the fact that patients with worse initial health profiles (as a result of lifestyle, age or comorbidities) might be more likely to be offered prehabilitation.[7]

We saw differential impacts of prehabilitation on patient pathways depending on the type of cancer a patient is diagnosed with. Colon, lung, and multiple myeloma patients have approximately half the average length of inpatient stay when they are on a prehabilitation pathway, while oesophageal and renal cancer patients have an even greater difference (1.67 versus 0.7 days on average for prehabilitation oesophageal cancer patients, and 0.63 versus 0.21 days for renal patients with prehabilitation).[7]

The origin of this difference may lie in events that take place in the pathway – for example, lung cancer patients are more likely to have both prehabilitation and surgery. Those that have prehabilitation and surgery have a drastically shorter average length of stay (1.52 vs 0.18 days), resulting in an overall total pathway length of stay difference of 6.5 fewer days for lung cancer patients with prehabilitation and surgical treatment.[7]

More moderate differences can similarly be seen for colon (0.9 average days less total length of stay overall), multiple myeloma (2.1 days less), rectal (0.9 days) and renal (0.5 days) cancers where the patients have prehabilitation and a surgical treatment.[7]

Patients aged 70+ were seen to be are the most likely to benefit from prehabilitation, averaging a 30% decrease in length of hospital stay.[7] Impact is not as pronounced for other age groups, with younger patients (<40 year olds) having an equitable average length of stay.[7]

Planned care contacts for prehabilitation patients were seen to be both more common and shorter, compared to patients that are not on a prehabilitation care pathway.[7] Due to the scheduled nature of these planned care contacts, we infer from our data that prehabilitation could also contribute towards a reduced burden and associated costs for Trusts. We also infer that prehabilitation could support greater health and wellbeing improvements by supporting patients through a more-planned pathway of care contacts with lower acuity or more supportive interactions.[7]

Annex 4: Staff survey questions[9]

1. Employing organisation (optional)
2. Role title (optional)
3. Within your organisation do you have (or have you had) a Prehabilitation Service for people with cancer this year?
4. If no – please specify the reason(s) why you do not have a service
5. What is your role in the Prehabilitation service?
6. Are you a (potential) pilot site on the Macmillan BMS Prehabilitation Collaborative Working Project?
7. How important do you as an individual see Prehabilitation as part of the Cancer Pathway?
8. What would make it more important to you?
9. How important does your organisation see Prehabilitation as part of the Cancer Pathway?
10. What would make it more important to your organisation?
11. What is working well?
12. If things were to stay the same what would be your concerns for the future?
13. Are there any quick short-term solutions that would improve your Prehabilitation Service within 6 months?
14. Are there any longer-term solutions that would improve your Prehabilitation Service in 12 months or longer?
15. In your opinion, what is the value of Prehabilitation for staff at your hospital? (Tick as many as apply)
16. If you were looking for resources on Prehabilitation, what type of resource would you look for first?
17. Are there any gaps in resources, materials, guidelines etc on Prehabilitation?
18. If yes – please expand here, including any training and education you may require
19. Are you aware of any training, education, and/or development courses on Prehabilitation?
20. What training, education, and/or development have you had in Prehabilitation?
21. Finally – what are the outcomes you would like to see from the Macmillan - BMS Prehabilitation Project?

Sites participating in the pilot programme, responding to the survey:

1. Gloucestershire Hospitals NHS Foundation Trust
2. Guy's and St Thomas' NHS Foundation Trust
3. Mount Vernon Cancer Centre, East and North Hertfordshire NHS Trust
4. NHS Grampian
5. North Bristol NHS Trust
6. Portsmouth Hospitals University NHS Trust
7. Royal United Hospitals Bath NHS Foundation Trust
8. Somerset NHS Foundation Trust
9. University College London Hospitals NHS Foundation Trust
10. University Hospitals Bristol and Weston NHS Foundation Trust
11. University Hospitals Sussex NHS Foundation Trust

Annex 5: Patient case studies[10]

Macmillan-BMS: Prehabilitation Collaborative Working Project Patient Case Study Template

Macmillan and BMS have partnered to expand Prehabilitation health services into non-surgical settings in primary, secondary and social care across the UK.

Objectives:

Macmillan and BMS are gathering 3-5 anonymised patient case studies per pilot site, to understand how Prehabilitation is being received by patients and to gain insights of the outcomes from Prehabilitation health services in the non-surgical setting. These case studies will feed into the wider project objectives and will be used to further illustrate the benefits of Prehabilitation.

Case Study structure:

This case study document is based on the STAR methodology and is structured as follows:

Situation / Target:

What was the 'Situation' of the patient at your organisation before they were prescribed to your Prehabilitation service? What was the 'Target' of the Prehabilitation interventions?

Action

What Prehabilitation 'Actions'/ services did your patient receive?

Impact

What are the 'Results' that your organisation has observed from your Prehabilitation offering?

Instructions:

This document is designed to collect responses relevant to a specific patient who has received Prehabilitation services within your organisation through the pilot project. Before completing the sections below, we would recommend thinking about a particular patient for whom the information is available for. We would be very grateful if each pilot site could share 3-5 patient case studies, each using this template. This will allow us to gain a varied picture of how different patients respond to Prehabilitation.

The majority of the sections below are made up of multiple-choice options for you to select. There are also open-ended sections included where you can expand the below text boxes. Please share as much detail as you are able to describe in your answer.

We would like to thank you in advance for your engagement with this project and for your time in completing this case study template.

Case Study Questions:

Part 1: Situation/Target

Please describe the situation and target by selecting from the options below:

1. **What characteristics did your patient have?**
   a. **Age band:**
      - ☐ 18-25
      - ☐ 26-34
      - ☐ 35-49
      - ☐ 50-69
      - ☐ 70-79
      - ☐ 80-89
      - ☐ 90+

   b. **Gender:**
      - ☐ Male
      - ☐ Female
      - ☐ Not Specified
      - ☐ Not Known

   c. **Tumour type (Please describe below):**
      Click or tap here to enter text.

   d. **Long-term / pre-existing conditions (Please describe below)**
      Click or tap here to enter text.

2. **What were the social characteristics of your patient? For example, their:**
   a. **Employment status:**
      - ☐ Employed
      - ☐ Unemployed and actively seeking work
      - ☐ Undertaking full (at least 16 hours per week) or part-time (fewer than 16 hours per week) education or training as a student and not working or actively seeking work
      - ☐ Long-term sick or disabled, those receiving government sickness and disability benefits
      - ☐ Looking after the family or home as a homemaker and not working or actively seeking work
      - ☐ Not receiving government sickness and disability benefits and not working or actively seeking work
      - ☐ Unpaid voluntary work and not working or actively seeking work
      - ☐ Retired
      - ☐ Not Stated (PERSON asked but declined to provide a response)

3. **Is there any known history of cancer in the patient's family?**
   - ☐ No
   - ☐ Yes (Please describe below)

   Click or tap here to enter text.

4. **How was your patient identified for Prehabilitation? For example:**
   - ☐ Through specific screening
   - ☐ Through referral from a specialist
   - ☐ Other (Please describe below)

   Click or tap here to enter text.

5. **What were the known risk factors of the patient? (Please describe below)**

   Click or tap here to enter text.

6. **Why was the patient identified for Prehabilitation? (Please describe below)**

   Click or tap here to enter text.

7. **What was the goal of the patient's Prehabilitation treatment? (Please describe below)**

   Click or tap here to enter text.

8. **What outcomes were you hoping to see / observe from the Prehabilitation interventions? e.g., improved system level outcomes / patient experience. (Please describe below)**

   Click or tap here to enter text.

Part 2: Action

Please describe your organisation's actions / services by selecting from the options below:

1. **What Prehabilitation was offered / taken by the patient?**
   a. **Universal Prehabilitation:**
      - ☐ Nutrition
      - ☐ Exercise
      - ☐ Psychosocial support
      - ☐ Behaviour change

   b. **Targeted Prehabilitation:**
      - ☐ Nutrition
      - ☐ Exercise
      - ☐ Psychosocial support

   c. **Specialist Prehabilitation:**
      - ☐ Nutrition
      - ☐ Exercise
      - ☐ Psychosocial support

2. **How were your Prehabilitation services structured for the patient? For example:**
   - ☐ In person one to one
   - ☐ Virtual one to one
   - ☐ Group face to face
   - ☐ Group virtual

3. **Which staff were required for your Prehabilitation services? For example:**
   - ☐ Doctors (e.g., surgeons, anaesthetists, oncologists, GPs)
   - ☐ Nurses (e.g., clinical nurse specialists, primary care nurses)
   - ☐ Allied Health Professionals (e.g., dietitians, occupational therapists, physiotherapists, speech and language therapists, therapeutic radiographers)
   - ☐ Support workers (e.g., cancer support worker, therapy assistant, rehabilitation assistant, health and wellbeing coach, care coordinator, social prescriber)
   - ☐ Psychologists
   - ☐ Pharmacists

Part 3: Impact

Please describe the results / impact of the Prehabilitation by selecting from the options below:

1. **What were the outcomes following the Prehabilitation interventions? Universal Prehabilitation:**
   a. **For the patient:**
      i. What was the patient's experience? (Please describe below)
      Click or tap here to enter text.
      ii. What feedback did they provide? (Please describe below)
      Click or tap here to enter text.
   b. **What was the impact on the organisation's resources required to treat the patient due to Prehabilitation? Nutrition**
      - ☐ Reduced planned appointments
      - ☐ Reduced stays or unplanned patient appointments
      - ☐ Reduced staff capacity
      - ☐ Increased staff capacity
      - ☐ Increased time taken to develop different skills and knowledge required
      - ☐ Other work having to be paused
      - ☐ Changes in clinical priorities
      - ☐ Other (Please describe below)

      Click or tap here to enter text.
2. **Looking back, would you have done anything differently?**
   a. **Are there any changes you could have made to the Prehabilitation process to improve the patient's experience? (Please describe below)**
   Click or tap here to enter text.
   b. **Are there any skills, capabilities, knowledge or capacity requirements you were missing? (Please describe below)**
   Click or tap here to enter text.

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