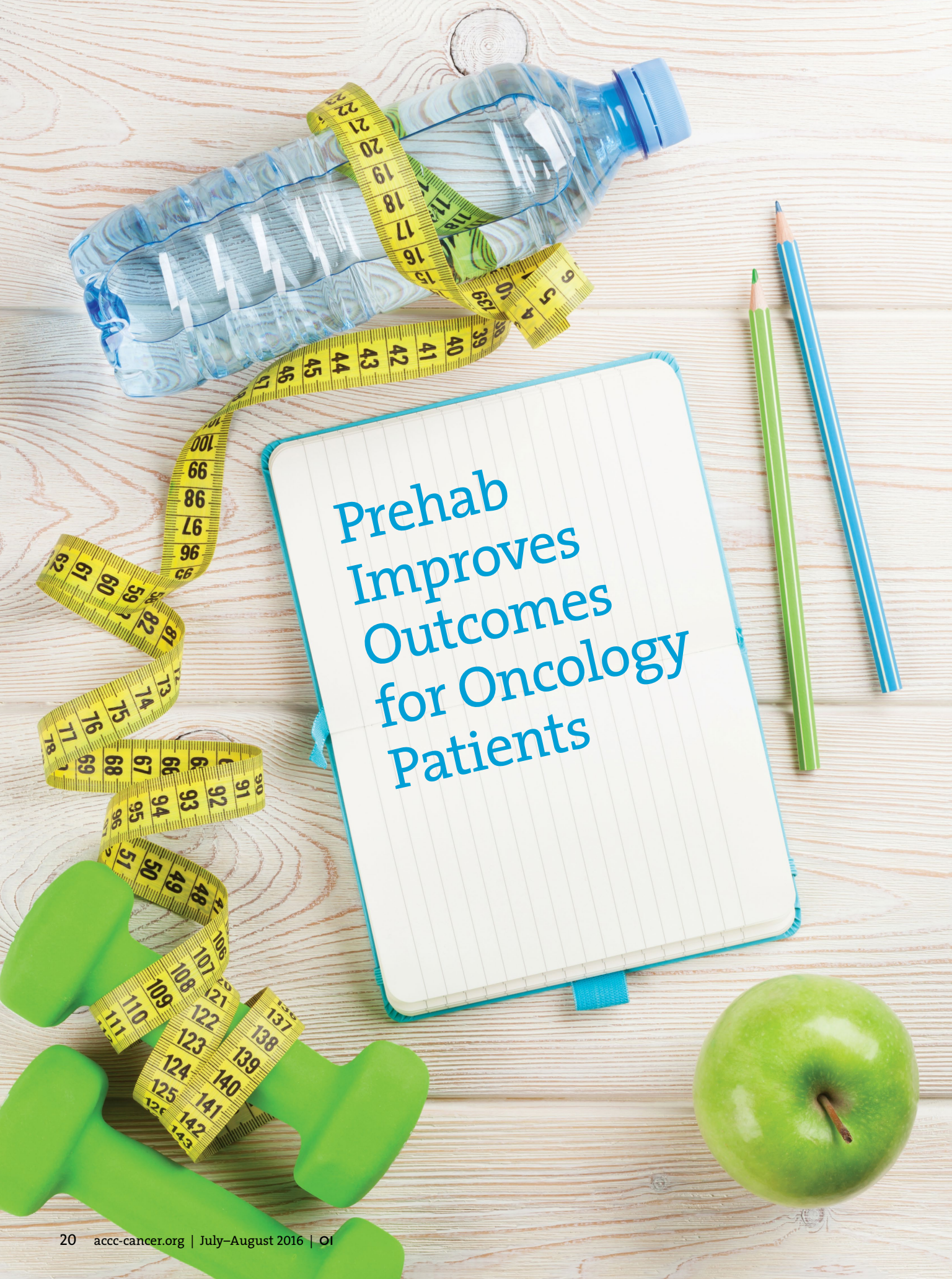

Prehab Improves Outcomes for Oncology Patients

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For some newly-diagnosed cancer patients, decreased functional status and comorbidities can impact treatment options. A focused prehabilitation (prehab) program couples physical therapy with holistic care that includes nutritional support, stress reduction strategies, and nurse navigator intervention. Integrating prehabilitation can not only improve patient outcomes post-surgery, it can also decrease hospital length of stay (LOS).

Physical Impairment & Cancer Patients

According to the literature, about 65 to 90 percent of cancer patients have a physical or functional impairment.[1-5] These impairments include difficulty walking, difficulty swallowing, immobility in a limb, or muscle weakness. One 2015 study looked at 529 older adults with cancer and found that 65 percent had a potentially modifiable deficit and needed physical therapy (PT), occupational therapy (OT), or a speech consult, but only 9 percent received these treatments.[4] Another study looked at 163 women with metastatic breast cancer, finding that 92 percent of those women had some type of modifiable impairment.[1] The study also found that 530 of the impairments were documented in the patient chart, but less than 2 percent of patients received treatment for the impairment.[1]

With so many of our cancer patients living with functional impairments, early recognition and intervention can have a positive impact on their overall health outcome.

As providers, we know the treatments and potential side effects of cancer, so we can often predict the types of impairments our patients may develop. Mary Washington Hospital, Fredericksburg, Va., looked to prehabilitation to prevent or reduce the severity of these physical impairments.

Why Prehab?

Cancer prehabilitation is a part of rehabilitation medical care. Prehab is not merely handing out exercises or information on how to stay healthy, but rather an intervention-based program to improve certain outcomes. For patients with cancer, prehab occurs in the time between diagnosis and the start of treatment. At a prehab appointment, patients undergo a physical and a psychological assessment to determine their baseline function level and to identify any issues upfront. Armed with the patients' baseline information, providers assess how patients are deviating from that baseline and intervene if they start to develop impairment(s) during treatment. This assessment is also an opportunity to address any psychological or psychosocial issues and connect patients to the appropriate supportive services upfront.

> We believed that adding prehab services would allow us the opportunity to educate patients immediately after diagnosis—before they even begin treatment—to obtain their baseline assessments, and start the necessary interventions.

By narrowing the focus on specific outcomes, prehab allows clinicians to intervene earlier—sometimes before the physical impairments manifest—and also monitor patients throughout the cancer treatment process. This type of care may:

- Improve health outcomes
- Reduce patient rehab visits after cancer treatment
- Decrease hospital LOS
- Decrease costs
- Improve patient quality of life (QOL).

Getting Started

The first step in our prehab implementation process was to look at our own patients. In 2014, we conducted a functional impairment survey of approximately 100 cancer patients, and found that 79 percent of these patients did indeed have some type of functional or physical impairment. Our team went a step further and looked at how many of these 100 patients underwent physical therapy, occupational therapy, or a speech therapy consult. Only 12 percent had received these supportive care services, so imme-

diately we recognized an opportunity to intervene and improve our patient outcomes.

During patient encounters, our patients were telling us about their cancer-specific side effects. Among the issues raised by patients were lack of ability to focus at work, trouble swallowing, difficulty gaining weight, experiencing "chemo-brain," etc. While these were familiar stories, we realized we had a new opportunity to identify these issues early on. We incorporated physical functioning in our distress screening tool so that our nurse navigators could screen patients for psychosocial needs, psychological issues, and physical functioning. We believed that adding prehab services would allow us the opportunity to educate patients immediately after diagnosis—before they begin treatment—to obtain their baseline assessments, and start the necessary interventions.

From Rehab to Prehab

Mary Washington Regional Cancer Center launched a cancer-focused rehabilitation program in 2013, finding a physician champion in thoracic surgeon J. Timothy Sherwood, MD. Dr. Sherwood soon approached our rehabilitation team about the possibility of treating his lung cancer patients prior to surgery. He said that by the time lung cancer patients reached the surgery stage, many were experiencing debilitating functional issues to the point that they were not good surgical candidates. Their impairments made them a high-risk population for complications, and most would need to go to a nursing facility post-treatment. For these reasons, the decision was made to pilot the prehab program with our lung cancer patients. (Our cancer center sees between 250 to 275 lung cancer cases per year.)

Our cancer center used the Survivorship Training and Rehabilitation (STAR) Program (starprogramoncologyrehab.com) to develop our prehabilitation services. STAR Certification for rehabilitation requires cancer centers to implement a prehab protocol consisting of five components:

1. General and targeted therapies with a PT, OT, or speech therapist
2. Smoking cessation
3. Nutrition and dietitian services
4. Stress reduction therapies via navigation
5. Integrated medicine program for complementary therapies.

We worked with the STAR program and Dr. Sherwood to develop a prehab protocol and pathway for our lung cancer patients, and identify outcome measures. We would use a movement assessment log; patients with higher baseline numbers had more physical or functional impairments. After prehab, patients would be measured again to see if they improved in the following areas:

- Distance walked
- Time to up-and-go, which is their sitting to standing time
- Ability to climb steps
- Their score on a FACT-G quality of life (QOL) questionnaire, which measures a patient's overall physical and emotional well-being.

Oncology-trained therapists conduct baseline physical and psychological assessments prior to treatment and provide targeted interventions personalized for each patient to reduce incidence and severity of current and future impairments.

The Pilot Program

By October 2013, our first patients were moving through the prehab program. Dr. Sherwood began screening all of our lung cancer patients after diagnosis, assessing their functional level and identifying any physical limitations or severe deconditioning that would put them at increased risk for surgery. Dr. Sherwood referred these at-risk patients to the lung prehab program, which was tailored to meet individual patient needs. Most patients were seen two to three times per week for three to four weeks; some only needed to come in once or twice a week. After prehab, Dr. Sherwood re-assessed patients and, if they showed improvement, scheduled the procedure.

After surgery, patients had an average hospital length-of-stay of three days, and were discharged home with rehabilitation. Patients generally returned for rehab about three times a week for three to four weeks—again the rehab was tailored to the patients' individual needs. As our pilot project progressed, we found that some of our lung cancer patients were doing so well they did not have to return for rehabilitation services.

One of the questions we are often asked about the prehab program is, "Are you concerned with the delays in surgery due to prehab?" Dr. Sherwood's answer is an emphatic "No." The prehab program works to improve patients' chances of being good surgical candidates, while also increasing their chance of better post-operative outcomes. This, in turn, can reduce the cost of care post-treatment.

The normal schedule from diagnosis to surgery at Mary Washington is two weeks, but with the addition of prehab, this time frame is now six to eight weeks from diagnosis to surgery. When discussing treatment options with patients, staff educates patients about the value and medical reasoning behind prehabilitation.

Pilot Program: A Case Study

Our very first lung cancer prehab patient, Ms. A, had stage IA lung cancer. She came to us with quite a few co-morbidities: osteoarthritis, limited mobility, and dyspnea. She'd had previous surgeries for knee and back pain and was deconditioned. Dr. Sherwood assessed Ms. A, concluding that she would likely experience poor outcomes from surgery and would probably need to go to a nursing facility post-procedure. After hearing about the possibility of a stay at a nursing facility, Ms. A agreed to go to prehab. After six weeks of balance training, body and function strengthening, and aerobic endurance, Ms. A returned to Dr. Sherwood to be re-assessed for surgery. Based on the outcomes measures discussed previously, Dr. Sherwood deemed the patient fit for surgery.

After her lung resection, Ms. A returned home after only three days in the hospital. She received four weeks of physical therapy before transitioning to her local YMCA exercise program.

In the words of Ms. A, "*I felt very secure in Dr. Sherwood sending me to the STAR Program, and I tried to do everything they told me to do. I wasn't worried about the delay in surgery, because I was in the best hands. I just wanted to stay out of that nursing home. Dr. Sherwood picked the right words to motivate me!*"

Ms. A's baseline movement assessment score was 91; after prehab, she saw a 53 percent decrease in her functional impairment. Specifically, Ms. A improved her walking distance and her dyspnea had resolved. Generally cancer patients are healthy at diagnosis and then their health declines due to cancer treatment. It was shocking to see the opposite effect in Ms. A—all due to prehab. The team felt it had truly demonstrated that prehab can have a positive impact on patients' health status by decreasing their surgical risks and hospital length of stay.

Key to the success of our pilot prehab program: physician engagement and an experienced physical therapy team, plus a physician champion spearheading the effort, who could explain the benefits to other physicians.

Patient Outcomes & Reimbursement

During our pilot project, 12 patients were referred to prehab over a 17-month period, with 6 patients completing the full program. Pilot program outcomes included:

- A 21 percent improvement in patients' ability to walk, or the distance they were able to walk.
- A 40 percent decrease in patients' hospital LOS. (Looking at 2009-2012 registry data, our lung patients who had surgical resection had an average post-op LOS of five days; the average LOS for patients in the prehab pilot was three days.)

Through our prehab pilot program, we've been able to reduce the number of rehabilitation visits needed post-treatment. Interestingly, during the pilot program, we were also able to reduce the number of prehab visits needed. At the start of the pilot program, patients had about 13 prehab visits; by 2015, processes and efficiency improved to the point that most patients now had only 9 sessions. This metric was particularly important, as payers—including Medicare—will only reimburse for a certain number of rehabilitation visits.

Left: Physician champion in thoracic surgery, J. Timothy Sherwood, MD. Right: The STAR Program requires an interdisciplinary team—physicians, nurses, therapists, nutritionists, and more—from both the inpatient and outpatient setting to develop and execute protocols that are specific for cancer diagnoses.

With regards to reimbursement, there is no order for prehab. Instead cancer programs must focus on the specific issues being treated, ensuring appropriate documentation for payers. In other words, reimbursement is linked to the use of ICD-10 codes for treatment of muscle weakness, lumbago, difficulty walking, difficulty swallowing, pain in limb, etc. Bottom line: prehab is treating the same conditions that are treated in rehabilitation, but earlier in the care trajectory so that we can decrease—or possibly even prevent—physical impairments post-treatment.

Measuring Programmatic Success

Mary Washington Healthcare has identified five pillars of excellence as indicators to measure the success of the organization. Looking at these pillars specific to our prehab program we found:

- ***Pillar 1. Quality.*** We showed that prehab services improve patient outcomes.
- ***Pillar 2. Safety.*** We showed that prehab improved functionality for the patients.
- ***Pillar 3. Service.*** Adding prehab services improved the patient experience by preventing and/or reducing the severity of physical impairments in an efficient and effective manner.
- ***Pillar 4. Growth.*** More cancer patients were referred to prehab, increasing access to these services.
- ***Pillar 5. Finance.*** We showed that prehab could help reduce the cost of care by decreasing hospital LOS.

Prehab provides clinicians the opportunity to help patients make a lifestyle change, reinforcing the value of being healthy and continuing to exercise. Moreover, cancer patients often must take time off from work and cut back or stop other activities. When cancer treatment is complete, these patients want to get back to their "norm," and prehab can help them do so sooner.

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