Implementing and Evaluating an Online Educational Resource for Veterans with Cancer

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With the elderly population in the United States growing rapidly, the number of newly diagnosed cancer cases and the subsequent treatment-associated side effects have increased greatly. Geriatric patients—and their family members—should receive vetted, age-appropriate information about diagnosis, treatment, side effects, and support interventions.[1] In 2018, a multidisciplinary cancer care team at Robley Rex VA Medical Center in Louisville, Kentucky, initiated a quality-improvement (QI) project to develop and evaluate an online resource that educates veterans with cancer about chemotherapy side effects and symptom management. The QI project also aimed to evaluate whether this resource can meet the informational needs of veterans with cancer and improve their symptom management skills. Our article seeks to answer the following question: In adult veterans with cancers treatable by chemotherapy who are newly diagnosed or who have started a new intravenous or subcutaneous chemotherapy regimen, what is the impact of a web-based education intervention when offered in addition to standard oral and written chemotherapy education, and does this web-based resource improve the ability of these patients to manage their symptoms?

Oncology nurses play an integral role in educating patients and their families. But in a busy chemotherapy unit, it can be difficult for nurses to find adequate time to teach patients about their treatments and potential side effects. At Robley Rex VA Medical Center, we have also found that the verbal instructions and handouts we use as patient education tools are insufficient on their own. As a result of delivering insufficient patient education and frequently providing too much information at once, our veterans were often unaware of the nature of their chemotherapy side effects and would repeatedly seek care in emergency departments (EDs) when those side effects occurred. To avoid these potentially unnecessary ED visits, nurses in the chemotherapy unit at Robley Rex VA Medical Center sought to design new ways to tackle the problem of getting enough information and support to their patients undergoing chemotherapy when and where they needed it.

The number of patients calling the oncology nurses in our chemotherapy unit with questions about treatment and side effects indicated that we were falling short of providing sufficient pre-treatment patient education. Because our patients' informational needs were not being met by our current chemotherapy education processes, we sought other avenues that could more effectively reach our patients. We observed a large number of veterans using their phones to access information and social media while in the VA clinics. Could we use that technology to reach our patients and expand our current chemotherapy education process? If so, how?

We first looked at how our education was currently being delivered and when and where this was taking place. An examination of our methods indicated that our veterans were receiving information about their diagnoses, treatments, side effects, and medications in printed form from health professionals, mainly oncology nurses, after patients had been diagnosed.[2] We felt that the timing immediately after diagnosis may inhibit a patient's ability to comprehend or remember information. Instead, we decided to give patients a basic understanding of their treatment, side effects, and medication before the start of chemotherapy to improve their ability to cope with their illness and increase adher-

ence.[3,4] During treatment, most cancer patients experience at least one emergency.[2] Online education and resources have increasingly become a way for patients with cancer to identify support, information, and treatment options that can help them avoid such emergencies. With resources on the Internet available 24 hours a day, providing education and support to veterans with cancer via an educational webpage seemed a perfect way to provide information on chemotherapy and its side effects—which are often the reason why chemotherapy patients seek care in emergency departments.

Understanding that the Internet is a vast source of health information immediately available to patients, caregivers, and family members, we wanted to use this resource to make chemotherapy education available during off-duty hours and weekends, when patient questions are most likely to occur. Having immediate access to information on intravenous and subcutaneous chemotherapy side effects could decrease patient anxiety, provide reassurance to patients and their families, and encourage patients to participate in their own care. Giving patients easy access to information about their diseases, treatments, and symptom management is essential to providing person-centered cancer care. We decided that developing a vetted educational webpage for veterans with cancer would be the best method for meeting our patients' educational needs.

Chemotherapy Education Objectives

The overall goal of this QI project was to improve the chemotherapy education process at the Robley Rex VA Medical Center by developing a chemotherapy education webpage for veterans. Our secondary goal was to evaluate our new web-based education pathway to assess its effectiveness as an adjunct to standard chemotherapy education for veterans with cancers treatable with chemotherapy who are starting intravenous or subcutaneous treatment. To make goals more attainable, we developed the following objectives.

Objective 1. Evaluate Current Chemotherapy Education

With the expansion of cancer therapies in recent years to include intravenous, subcutaneous, and oral forms, the nature of chemotherapy education has changed, and the need for a process that responds to those changes was necessary. Evaluating the current educational needs of our veterans and oncology staff and providers was essential. Our process of delivering chemotherapy education had become stagnant despite ongoing demands for its expansion.

Objective 2. Develop Hematology/Oncology Webpage

We reviewed many different types of potential educational pathways for our newly diagnosed veterans. The majority of our chemotherapy education was provided by our oncology nurses, whose patient care responsibilities made it difficult for them to dedicate sufficient time to educating patients about their chemotherapy treatments. We wanted to design an education format that could take some of the time spent teaching and re-teaching away from already overburdened nurses. Putting chemotherapy education resources online would require less direct teaching from the nurses on the unit and allow veterans to learn and review at their own pace. An educational webpage would be an appropriate option for meeting the needs of both veterans and the oncology staff members who serve them.

Objective 3. Evaluate the Webpage

We wanted to evaluate the new patient education webpage after the first six months of its launch to ensure that it was meeting the objectives we set for it. We asked veterans who were just starting intravenous or subcutaneous chemotherapy to conduct the evaluation. Because these patients would be receiving their first chemotherapy dose while in the unit, they could evaluate the new resource in-house and make any recommendations about their experience. We developed for these first users a written survey of 10 questions asking for demographic data and feedback.

Meeting Our Objectives

Because the Veterans Administration (VA) puts restrictions on using social media for education purposes, and due to the risk of privacy violations that accompany social media outlets, we quickly eliminated this option as a vehicle for patient education. Developing a webpage located off the VA homepage seemed a much more feasible option and would enable access for family members and caregivers as well. We obtained buy-in from staff and management by talking to the chief of oncology, the unit manager, and providers on the unit about the benefits of having additional chemotherapy education that veterans and caregivers could access at home, decreasing the amount of time that oncology nurses and/or nurse navigators spent teaching and re-teaching patients.

Our first step was to ensure that we had the technical and practical resources to develop our own webpage. We made contact with a webpage designer for the VA who educated us about the VA's rules for web design. We learned some practical information, including the fact that photographs had to be taken professionally, photographs of individuals performing tasks were the most desirable, videos were not permitted (although links to videos were), and obtaining the written consent of all photographed people was required. We wanted to house the information on the Internet rather than on the VA's intranet, so more people could access it. Once we knew the practical aspects of what was required, we had to decide what information would populate our webpage.

Our second step was to gather information on topics of importance to our veterans receiving chemotherapy. Specifically, we wanted to address:
- Pre-chemotherapy questions
- Side effects of chemotherapy
- Nutrition information
- Palliative care information
- Information on how cancer care is monitored
- Information on ports
- Explanations about different types of radiation therapy
- Contact information for providers in the hematology/oncology unit.

We sought input from the experts on our multidisciplinary cancer care team, including oncology nurses, pharmacists, nutritionists, and social workers, to address these topics. We also added information to answer a host of potential patient questions on everything from missed chemotherapy appointments to survivorship.

A VA photographer took professional photos of our chemotherapy rooms, the entrance to the unit, and members of our staff. We put together the information we gathered into a question and answer format and delivered it to the webpage designer, who constructed and launched the page (see Figure 1, below). A final review of the page by staff and providers helped refine information and make any needed adjustments or additions.

To help our oncology nurses become familiar with the new webpage, we developed a scavenger hunt exercise in which we challenged the nurses to locate the answers to a list of questions about items on the page. We enlisted staff members to become active partners in spreading the word about the new resource by providing continual reminders about the webpage's usefulness and updates on new information as it was added.

To spread awareness about our new webpage among our veterans and their family members, we created a sticker that provides directions for accessing the page, which we placed inside the hematology/oncology treatment folders we give patients prior to starting chemotherapy. A group of veterans who agreed to serve as reviewers of the new resource were given tablets and instruction on how to navigate to the webpage. After these patients reviewed the page, participants were given a survey of nine multiple choice questions and one open response comment area. The questions sought information about when and where the page was accessed, its ease of use, and suggestions for improvement. We used the responses to further tailor the webpage to meet the

Figure 1. Screenshot of Educational Webpage

needs of veterans preparing to start chemotherapy treatment, with the goal of making the webpage a major component of our chemotherapy education process. Hematology/oncology webpage survey results (see Figures 2-8, pages 62-65) indicate that our patients are satisfied with their experience using the webpage. Ninety percent reported that they found the page easy to navigate.

Lessons Learned

In the development and implementation of this project, several barriers emerged. Ease of Internet access at Robley Rex VA Medical Center was our greatest barrier to implementation and testing. When the veterans were reviewing the resource in clinic, we had to use Wi-Fi hot spots in order for participants to be able to access the webpage. The connection would sometimes be interrupted, which was especially problematic when reviewers were watching the short educational videos the webpage linked to. We gave patients tablets to access the webpage, which allowed them to zoom in or out of the text, helping with visual deficits. A downside of tablet use was that it decreased the volume, making videos difficult to hear. Going forward, we have plans to improve Internet access, provide headphones, and add additional tablets or iPads to ensure that the webpage continues to be an effective means of education for our patients while they are at Robley Rex VA Medical Center.

Patients with cancer have a significant need for information, especially soon after diagnosis and when beginning treatment. Being able to adequately meet this need increases quality of life and decreases anxiety.[1] Our hematology/oncology webpage designed for veterans with cancer has proven to be an effective adjunct to our traditional chemotherapy education process. The time has come for us to empower patients with cancer with knowledge prior to the start of chemotherapy, leading to the improved efficacy of drugs, medication adherence, and coping skills.[4] ◼

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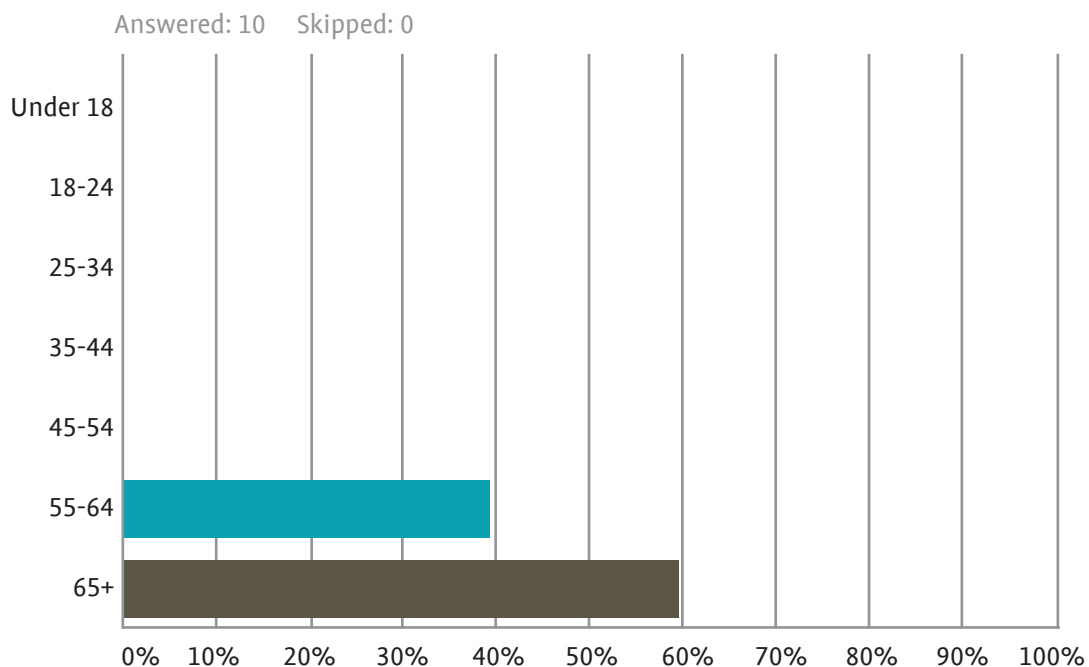
Figure 2. Survey Question: What is Your Age?

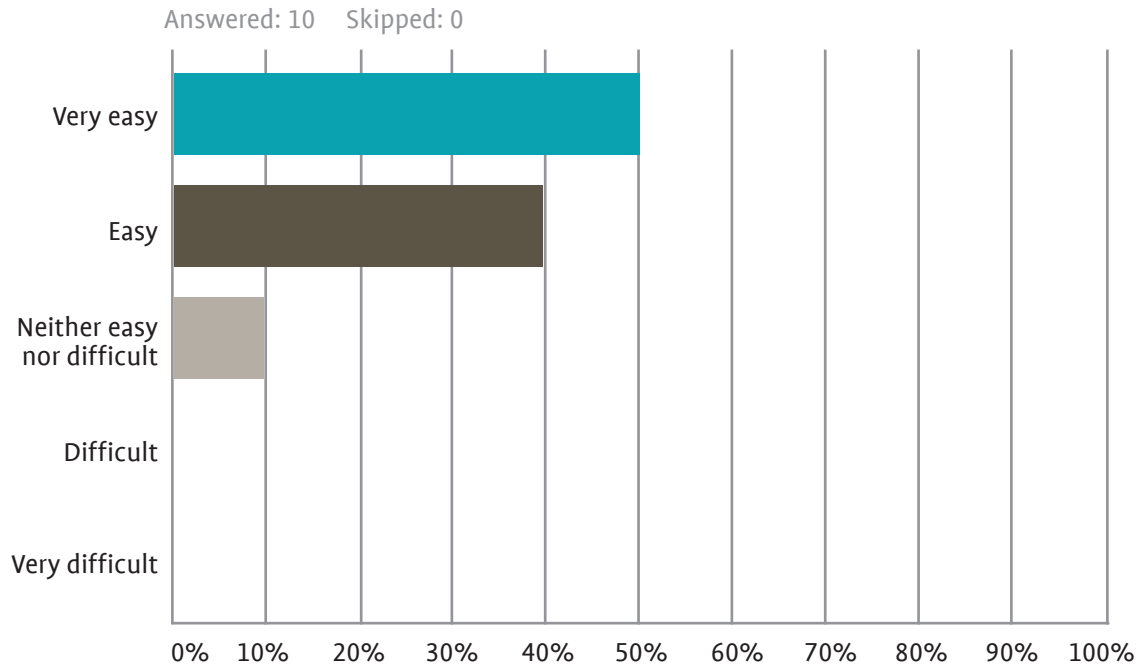**Figure 3. Survey Question: How Easy was It to Locate Information on the Webpage?**

Answered: 10   Skipped: 0

Figure 4. Survey Question: What is Your Gender?

Answered: 10   Skipped: 0
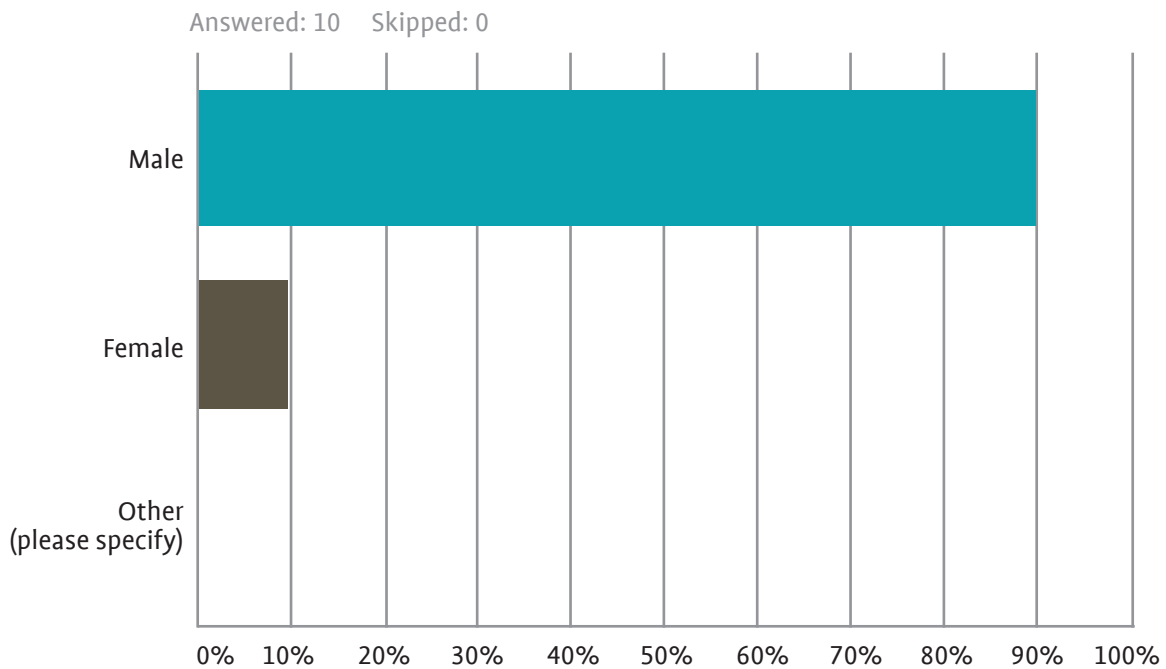
Figure 5. Survey Question: Type of Cancer

Answered: 9   Skipped: 1
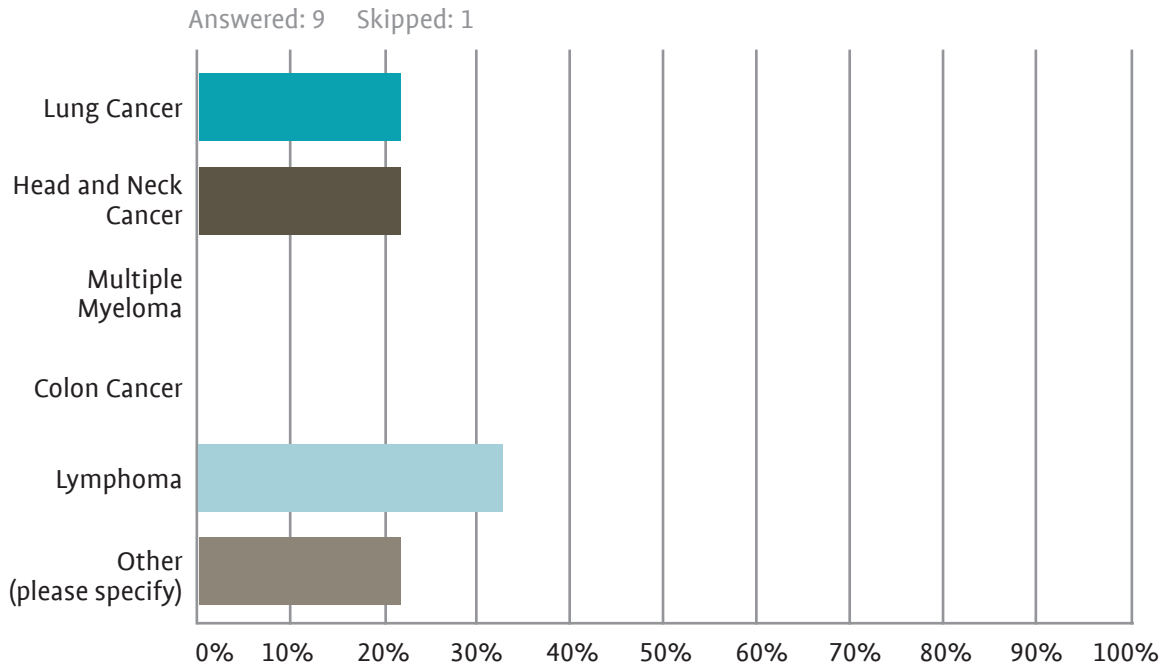
Figure 6. Survey Question: On a Scale of 0-10 (0=Not Helpful, 10=Very Helpful), I Found the Information...

Answered: 9   Skipped: 1
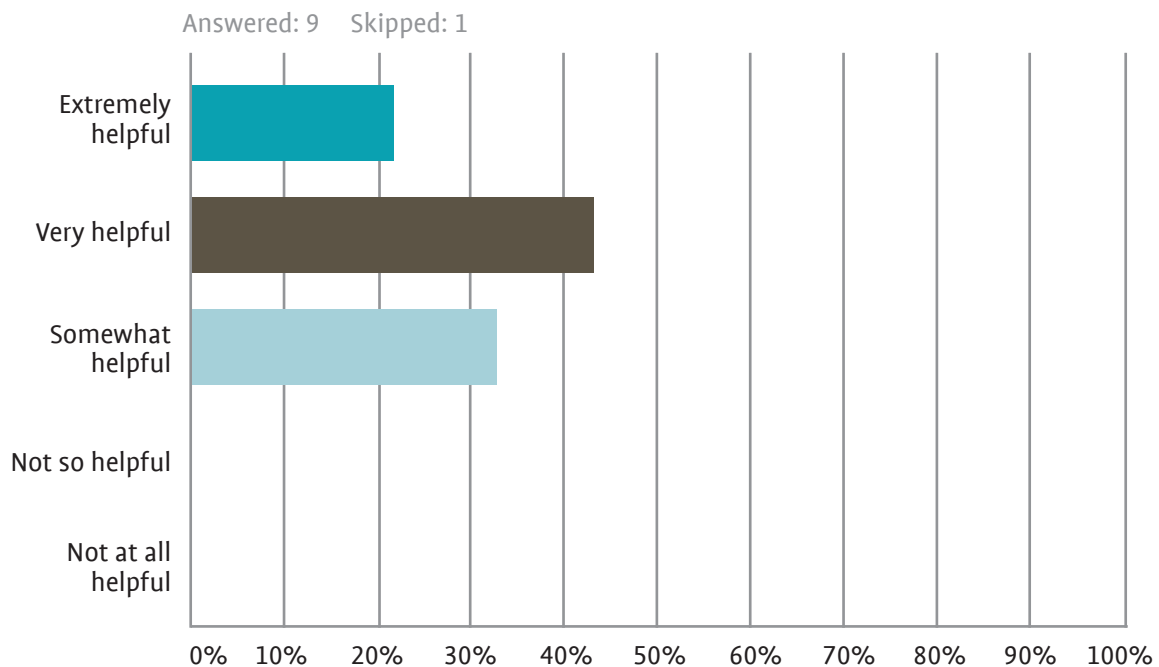
Figure 7. Survey Question: Overall, How Satisfied were You with the Experience?
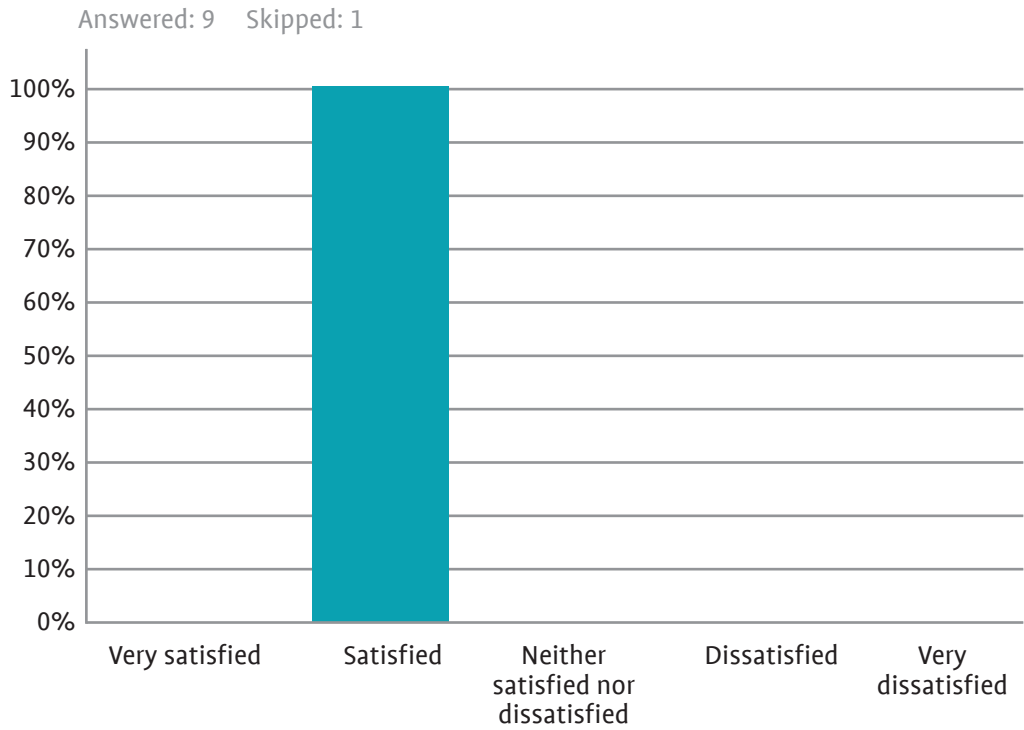
Answered: 9   Skipped: 1

Figure 8. Survey Question: Would You Recommend the Webpage to Another Person with Cancer?

Answered: 9   Skipped: 1