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Implementing a Health-Related Quality of Life Assessment Tool in an Outpatient
Hematology/Oncology Clinic: A Pilot Quality Improvement Project

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NURS 982 – DNP Project III

University of New Hampshire

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Abstract

BACKGROUND: Although overall and disease-free survival remain the goals of cancer care, health-related quality of life (HRQOL) during and after treatment is increasingly acknowledged as vital to the patient's outcomes. The purpose of this project was to identify and implement a valid, reliable HRQOL assessment tool into daily clinical practice in an outpatient hematology/oncology clinic at a 25-bed critical access hospital in rural New Hampshire.

METHODS: This project used a methodological design. Descriptive and inferential statistics, plus qualitative analysis were used to determine results. Three nurses and seven patients participated in this quality improvement project.

INTERVENTIONS: The interventions for this project included identifying a valid, reliable HRQOL assessment tool; educating direct care providers on the use of the HRQOL assessment tool; and capturing HRQOL data in the patient's electronic medical record (EMR).

RESULTS: The FACT-G was identified and implemented into daily clinical practice.

Limitations of the licensing agreement prevented the project team from incorporating the FACT-G into the EMR. Three nurses were educated on the use of the FACT-G. Seven patients completed the assessment during the pilot period. Focus group results revealed the FACT-G helped patients identify their symptoms and communicate their needs to providers.

CONCLUSIONS: Implementing a valid, reliable HRQOL assessment tool into daily clinical practice at an outpatient hematology/oncology infusion suite at a critical access hospital in rural New Hampshire was feasible and endorsed by both patients and providers. More data is needed to determine if HRQOL assessments improve outcomes for cancer patients receiving treatment in the outpatient setting.

Keywords: health-related quality of life, hematology, oncology, outpatient, quality improvement

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Implementing a Health-Related Quality of Life Assessment Tool in an Outpatient
Hematology/Oncology Clinic: A Pilot Quality Improvement Project

Cancer is the second leading cause of death in the United States and a significant public health problem worldwide (Siegel et al., 2021). Medical advancements and the development of evidence-based medicine have increased rates of survival and the overall quality of care delivery for hematology/oncology patients (Sibeoni et al., 2018). As a result, cancer is now viewed as a chronic disease, and patients must learn to cope with ongoing or cumulative side effects of treatment while engaging in activities of daily living (Fragola, 2020). Although overall and disease-free survival remain the goals of treatment for many patients and providers, health-related quality of life (HRQOL) during and after treatment has become an increasingly important consideration in oncology care (Sitlinger & Zafar, 2018). Research demonstrates patients often make treatment decisions based on their perceived HRQOL (Fragola, 2020). Thus, oncology providers must incorporate valid, reliable HRQOL measures into their daily practice to ensure treatment plans focus on the person rather than the disease (Fragola, 2020).

Problem Description

HRQOL is increasingly acknowledged as critical to the patient's overall outcomes (Sitlinger & Zafar, 2018). These measures are essential for prioritizing problems, understanding what matters to the patient, and assessing changes the patient is experiencing (Fragola, 2020). Capturing the patient experience through valid, reliable HRQOL measures is especially valuable (Bridge et al., 2019). Research suggests a positive correlation between patient experience and health outcomes, adherence to treatment and medications, preventative care, and health care utilization rates. As a result, HRQOL data are often used to drive quality improvement efforts in cancer care delivery and services (Bridge et al., 2019).

Observation data for a rural critical access hospital indicate the organization did not previously perform an HRQOL assessment on patients who receive treatment in their outpatient hematology/oncology clinic (M. Miller, personal communication, June 3, 2021). Implementing a valid, reliable HRQOL measure into daily clinical practice aligned with previous organizational efforts to improve care delivery for this patient population. Additionally, the assessment scores provide a baseline measure to support future quality improvement endeavors (M. Miller, personal communication, June 3, 2021; S. Patton, personal communication, August 19, 2021). For example, the HRQOL assessment scores can now be used to validate the need for dedicated care management and palliative care services for these patients, both of which are nursing priorities within the organization (S. Patton, personal communication, August 19, 2021).

Available Knowledge

To assess the current research on this issue, a literature search was performed using MEDLINE and CINAHL, electronic databases covering all areas of nursing and allied health care literature. Key search terms included “quality of life,” “health-related quality of life,” “patient experience,” “oncology,” “hematology,” “cancer care,” “ambulatory care,” “outpatient treatment,” “systematic review,” “quality improvement” and any combination of these terms. The search parameters were refined so that only full-text, peer-reviewed articles published from 2008 to the present were included. Twelve articles were chosen for full-text review based on the following inclusion criteria: the article discussed quality of life or health-related quality of life measures, focused on the patient experience, and applied the intervention to cancer patients receiving treatment in the ambulatory setting. Articles were excluded if they discussed quality of life assessment in pediatric, inpatient, or non-oncology patient populations. Following a full-text review, five articles were eliminated because they did not meet inclusion criteria. The remaining

seven articles included a literature review (Shrestha et al., 2019) plus six articles relevant to the design of this project (Atallah et al., 2021; Bridge et al., 2019; Fragola, 2020; Hilarius et al., 2008; Sibeoni et al., 2018; Sitlinger & Zafar, 2018). Finally, information on cancer statistics for 2021 was gathered from *Cancer*, the journal published by the American Cancer Society.

Following this analysis, it is clear significant research data exists regarding the value of using HRQOL assessments in ambulatory hematology/oncology settings. Most of the articles focused on the link between quality of life and patient outcomes. One of the articles evaluated the use of HRQOL assessments in daily clinical oncology nursing practice (Hilarius et al., 2008), while another examined the feasibility of implementing a validated HRQOL measure in cervical cancer patients receiving outpatient care (Atallah et al., 2021). A third article analyzed the relationship between HRQOL and disease-related morbidity and mortality (Sitlinger & Zafar, 2018). Two of the studies used qualitative methodologies to report the lived experience of patients receiving outpatient cancer treatment and its impact on their quality of life (Bridge et al., 2019; Sibeoni et al., 2018). The final article focused on patient-reported outcomes and quality of life assessment in multiple myeloma patients (Fragola, 2020).

Despite differences in purpose, population, and methodology, Hilarius et al. (2008), Fragola (2020), and Sitlinger and Zafar (2018) concluded the availability of standardized HRQOL data enhanced patient-provider communication, improved provider awareness of patients' problems, resulted in higher levels of patient satisfaction, and improved adherence to treatment regimens. Shrestha et al. (2019), Bridge et al. (2019), and Sibeoni et al. (2018) recognized that patients with cancer face difficult treatment decisions and must be involved in their care to endure the impact treatment has on their quality of life. These studies also acknowledge there is a growing need to understand the patient experience through HRQOL

measures to drive improvements in cancer services and care delivery. Finally, Atallah et al. (2021) determined it is feasible and acceptable to both patients and providers to implement a validated HRQOL measure in an ambulatory oncology clinic. Together, these findings demonstrate that gathering and evaluating HRQOL data is an essential component of providing cancer care and improving patient outcomes in the ambulatory setting.

Rationale

Plan-Do-Study-Act (PDSA) was the quality improvement (QI) methodology for this project. Using the PDSA cycle promoted a small-scale, iterative approach to test interventions, which enabled rapid assessment and provided flexibility to adapt interventions as needed to ensure acceptable, fit-for-purpose solutions were developed and implemented (Taylor et al., 2014).

Specific Aims

The primary aim of this project was to identify and implement a valid, reliable HRQOL assessment tool in an outpatient hematology/oncology clinic at a small critical access hospital in rural New Hampshire by the end of the pilot period. A secondary aim was to educate clinic providers on the HRQOL assessment tool and integrate its use into the clinic's daily workflow. A final goal was to incorporate the HRQOL assessment tool into the organization's electronic medical record by the end of the pilot period.

Context

Setting

The facility where the project took place is a 25-bed critical access hospital in central New Hampshire (NH). Critical access hospital (CAH) status is awarded by the Centers for Medicare and Medicaid Services (CMS) to qualifying rural hospitals that meet specific eligibility

criteria. Namely, the facility must have 25 or fewer acute care inpatient beds, be located more than 35 miles from another hospital, maintain an average length of stay of 96 hours or less for acute care patients, and provide emergency services 24 hours per day, 7 days per week (Centers for Medicaid & Medicare Services [CMS], 2013). Organizations with CAH status receive cost-based reimbursement from Medicare. Thus, CAH designation reduces the financial vulnerability of rural hospitals and improves access to health care by keeping essential services in rural areas (CMS, 2013). As a CAH, the hospital provides primary care and specialized clinical services to 15 communities in the Lake Sunapee region. Additionally, the organization has a collaborative agreement with Dartmouth-Hitchcock Medical Center (DHMC) and is part of Dartmouth Health (D-H), the state's only academic health system (New London Hospital, 2021).

The primary site for this intervention was the hospital's hematology/oncology infusion suite, an outpatient clinic located within the main hospital complex in New London, NH. The clinic has an open floor plan with four chairs, separated by partitions, where individuals receive treatment, plus a small private room in the back for immunocompromised patients and their families. The clinic is open Monday through Friday from 8 am to 4:30 pm and is always staffed by two registered nurses (RNs) who are trained to administer chemotherapy and biotherapy agents. Five to ten patients are treated each day, most days of the week (M. Miller, personal communication, June 3, 2021). All told, approximately 250 patients access services through the hematology/oncology infusion suite each year (Amber Bailey, personal communication, September 17, 2021).

Staff Characteristics

Each patient is cared for by a multidisciplinary team, which consists of the attending physician, an RN, and a pharmacist. Patients also have limited access to supportive services such

as care management, social work, and palliative care when needed based on their unique circumstances. Finally, in addition to the direct care providers mentioned above, a host of other staff also interact with patients every visit including administrative personnel, dietary, housekeeping, and volunteers (M. Miller, personal communication, June 3, 2021).

The leadership team includes the associate chief nursing officer, who provides clinical support to the hematology/oncology infusion suite, and the clinical nurse supervisor, who oversees day-to-day operations in the clinic and provides direct patient care. There is one attending physician on staff. He sees patients in the clinic every Monday. Tuesday through Friday he is available by telephone for any issues that arise. Additionally, the full patient care team meets every Thursday to review current patients and discuss any changes to their treatment plan (M. Miller, personal communication, June 3, 2021).

The clinic employs three full-time RNs. Additional nursing and supportive care services are provided by medical assistants (MAs) as needed. Most of the nursing staff work four nine-hour shifts per week. The skill mix of the staff is varied. Some are just off orientation, while others have years of experience caring for hematology/oncology patients. The nursing staff are responsible for all care coordination and delivery during the patient's visit as well as telephone triage services outside of the appointment (S. Patton, personal communication, September 16, 2021). In general, the culture is one of shared responsibility and teamwork. It is a warm, welcoming environment, and the nursing staff try to help one another as much as possible.

Patient Characteristics

The hematology/oncology infusion suite provides comprehensive medical care to adults with cancer, blood disorders, and specific non-cancer-related conditions such as multiple sclerosis. When a new diagnosis is made, patients who live in the Lake Sunapee region are

referred to the hematology/oncology infusion suite by their primary care provider, hematologist, oncologist, or nurse case manager. The amount of time each patient spends in the infusion suite per visit varies based on their diagnosis and treatment plan, as does the total number of visits needed. Some patients spend just a few minutes in the clinic and only require one visit, while others are there for several hours' multiple times each week. Patients may or may not see the attending physician during their visit. Most patients are followed by healthcare providers in the wider D-H system and receive infusions or injections at the hematology/oncology infusion suite because it is closer than traveling to the main D-H campus in Lebanon to receive care. All patients seen in the hematology/oncology infusion suite are over the age of 18 (M. Miller, personal communication, June 3, 2021).

Cost Benefit Analysis/Budget

An HRQOL assessment tool in the public domain was selected so there were no copyright or usage fees associated with adopting the measure. Nursing staff working in the hematology/oncology infusion suite received training on how to utilize the HRQOL assessment tool during regular business hours so there were no training costs associated with the project, either (S. Patton, personal communication, September 17, 2021). As such, there were no costs associated with implementing the intervention. Finally, although the hospital did not receive direct monetary gain by implementing the HRQOL assessment tool, adopting the measure has improved communication regarding HRQOL issues between hematology/oncology patients and the providers in the outpatient infusion suite. Additionally, the assessment scores provide a baseline measure for future quality improvement projects within the organization.

Interventions

The interventions for this project included:

- Creating a project team consisting of the chief nursing officer, associate chief nursing officer, director of quality and safety, and the clinical nurse supervisor of the outpatient hematology/oncology infusion suite to examine the issue of HRQOL assessment in hematology/oncology patients.
- Searching the existing nursing and allied health care literature for valid, reliable HRQOL assessment tools.
- Identifying a valid, reliable HRQOL measure in the public domain that was easy to administer, took less than 10 minutes to complete, and produced a quantitative score that could be tracked over time.
- Educating direct care providers in the hematology/oncology infusion suite on the use of the HRQOL measure and the rationale behind collecting HRQOL data.
- Capturing HRQOL data in the patient's electronic medical record (EMR).
- Collecting quantitative data related to the number of HRQOL assessments performed within the first six-weeks post-intervention along with qualitative information regarding ease of use and barriers to implementation.
- Developing a policy, procedure, and job aids to sustain and standardize administration of the assessment.
- Measuring the success of the intervention through patient-level review, weekly data reviews, and progress towards the project goals.
- Using the assessment scores as a baseline measure to support future quality improvement initiatives within the organization.

- Disseminating the intervention to other outpatient hematology/oncology infusion suites within the D-H system, as appropriate.

Study of the Interventions

The design for this project was a methodological literature review. Strict inclusion and exclusion criteria were applied to identify a valid, reliable HRQOL assessment tool. For this project, the outcome of interest was health-related quality of life (HRQOL). The population of interest was adult cancer patients receiving treatment in the outpatient hematology/oncology infusion suite at a CAH in rural NH. The primary interventions were the identification of a valid, reliable HRQOL assessment tool followed by an education session for direct care providers on HRQOL measures, implementation of the HRQOL assessment tool into daily clinical practice, and the development of a policy, procedure, and job aids to standardize use of the assessment. Chart reviews were conducted at specific intervals by RNs in the hematology/oncology infusion suite in the first six weeks post-implementation to determine if HRQOL assessments were being conducted on eligible patients. Qualitative data from the nursing staff and a hematology/oncology patient was also collected via a focus group to identify ease of use and barriers to implementation. These results were used to further refine the implementation process and establish organizational benchmarks regarding HRQOL assessments and specific nursing interventions for follow-up care in the population of interest.

Measures

Health-related quality of life (HRQOL) is recognized as a multidimensional concept. HRQOL includes domains related to physical, psychological, and social functioning. It represents the patient's perception of how disease and treatment affect their sense of overall function and well-being (Office of Disease Prevention and Health Promotion [ODPHP], 2021).

For this project, HRQOL was defined as an individual's perceived physical and mental health over time (Centers for Disease Control and Prevention [CDC], 2021).

The outcome measure for this project was assessment of health-related quality of life in cancer patients. This outcome measure is designed to capture the percentage of eligible cancer patients who complete a self-reported health-related quality of life assessment with or without assistance using a valid, reliable HRQOL assessment tool at least once per calendar year. The numerator for this measure is the number of eligible patients, treated at the organization's hematology/oncology infusion suite, who complete the assessment with or without assistance at least once per year. The denominator for this measure is the total number of patients receiving treatment at the organization's hematology/oncology infusion suite annually, minus those individuals who meet exclusion criteria. The measure is calculated by dividing the numerator by the denominator, then multiplying the result by 100 (National Quality Forum [NQF], 2017). A similar measure, assessment of health-related quality of life in dialysis patients, was endorsed by the National Quality Forum (NQF) in 2017.

The target population for this measure was adult cancer patients receiving treatment in the outpatient setting. Patients were excluded from the assessment if they did not have a cancer diagnosis, were under the age of 18, were unable to complete the assessment due to mental status that could invalidate the results, were non-English speaking/reading and no native language translation or interpreter was available, or they declined to complete the assessment (NQF, 2017).

Analysis

Descriptive statistics were used to calculate the percentage of eligible patients with a completed HRQOL assessment within the first six-weeks post-implementation. Inferential

statistics, specifically the dependent *t*-test was used to assess improvement in the nursing staff's knowledge surrounding (a) the importance of capturing HRQOL data in adult hematology/oncology patients undergoing outpatient treatment and (b) use of the HRQOL assessment tool. Qualitative data was gathered via a focus group. The focus group data was transcribed so relevant themes could be identified and summarized. Finally, overall improvement was measured by calculating the number of eligible patients undergoing HRQOL assessment at baseline and comparing it to the number of eligible patients undergoing HRQOL assessment post-implementation.

Ethical Considerations

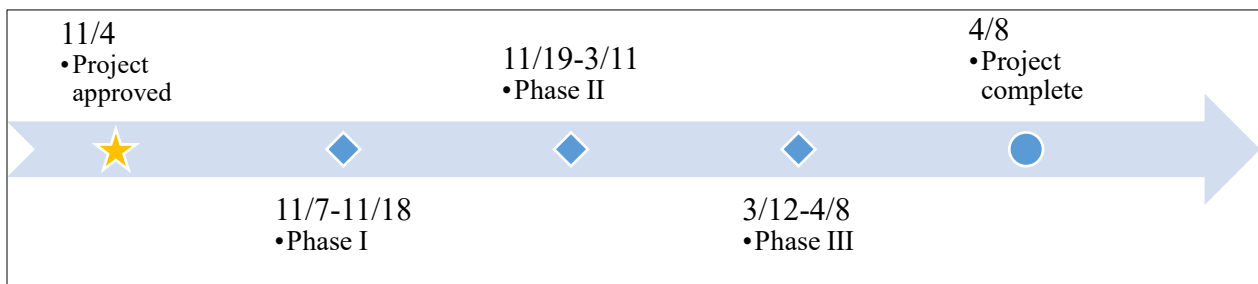
Ethical considerations for this project included the protection of personal health information. Each patient authorized consent to treat on arrival to the hematology/oncology infusion suite and was, therefore, protected by the Health Insurance Portability and Accountability Act (HIPAA). All project-related data was collected according to the standards of privacy and confidentiality outlined in the organization's internal policies and procedures. Due to the nature of this project, special considerations such as HIV/AIDS status, substance abuse, sexually transmitted diseases, and genetic testing results were not applicable. Data was coded so that participants could not be identified, and no patient-identifying information left the building. Data was stored on a password protected device that could only be accessed by the project team. Finally, to ensure the project met the standards of a quality improvement initiative, not research, a project proposal was submitted to and approved by the University of New Hampshire's Quality Improvement Review Board as well as the quality improvement team at the participating organization.

Results

The project was divided into three phases. Figure 1 summarizes the project timeline. Phase I involved searching the existing nursing and allied health care literature and identifying a valid, reliable HRQOL assessment tool. During Phase II, RN staff in the outpatient hematology/oncology infusion suite were educated on the assessment tool, it was implemented into the daily workflow of the clinic, and patients who met the inclusion criteria were assessed. Phase III involved creating a policy, procedure, and job aids to standardize use of the HRQOL assessment tool and sustain the project.

Figure 1

Project Timeline



Phase I – Identifying a HRQOL Assessment Tool

Three valid, reliable HRQOL assessment tools in the public domain were reviewed by the project team. After careful consideration, the Functional Assessment of Cancer Therapy – General (FACT-G) was identified as the best HRQOL assessment tool to implement into clinical practice within the outpatient hematology/oncology infusion suite. The FACT-G (Appendix A) was chosen due to its ease of use, and simple, straightforward questions. The assessment is self-administered by the patient, takes approximately five minutes to complete, and consists of 27 questions that measure four key domains – physical well-being, social/family well-being,

emotional well-being, and functional well-being – using a 5-point Likert-type numeric ranking system (Functional Assessment of Chronic Illness Therapy [FACIT] Group, 2021).

The FACT-G is one of the most widely used patient-reported HRQOL outcomes measures in cancer research. It measures HRQOL in cancer patients undergoing treatment and can be used with patients who have any type of malignancy. Patients mark their response to the questions in each domain based on the symptoms they have experienced in the past seven days. Although patients can skip items, they are encouraged to complete every item in order without skipping any to produce the most accurate scores (FACIT Group, 2021).

The assessment produces both a total score and four subscale scores that can be tracked over time. Scoring is completed manually by the provider once the patient has finished the assessment. Some of the items are reverse scored. To improve ease of use and accuracy, an Excel spreadsheet was created with imbedded formulas to reverse score items and calculate each subscale score as well as the overall assessment score. Patients who score highly on each subscale as well as the overall assessment have a higher level of well-being and increased quality of life (FACIT Group, 2021).

Originally, the project team was going to create a custom note template for the FACT-G assessment and score sheet in the organization's EMR prior to implementing it into daily clinical practice. However, as part of the licensing agreement with the Functional Assessment of Chronic Illness Therapy [FACIT] Group (2021), which developed the FACT-G assessment, the hospital discovered it was not possible to incorporate the FACT-G assessment into its EMR. The licensing agreement with the FACIT Group (2021) states the license is for the licensee's use only and may not be used by software vendors with access to the licensee's EMR. Since the hospital's EMR is managed by a third-party vendor, Epic Systems, this clause in the licensing agreement

required the project team to pivot and administer the assessment on paper. To ensure all providers had access to the results, completed FACT-G assessments were scanned into the patient's medical record. Additionally, the date the FACT-G assessment was administered, along with the patient's subscale scores and their overall assessment score, was recorded in the narrative note for each patient's encounter in the EMR.

Phase II – Implementing the FACT-G

The project team determined the FACT-G should be administered to eligible patients at least three times during the treatment process – once prior to the initiation of treatment to establish a baseline; once during treatment; and once at the conclusion of treatment to track the patient's HRQOL over time.

Prior to implementing the FACT-G assessment, a 15-question HRQOL survey was administered to the RN staff of the outpatient hematology/oncology infusion suite (n = 3). The survey was designed to assess their knowledge of HRQOL measures in cancer patients and determine if they consistently incorporated assessment of HRQOL measures into their daily practice. Per the results, 66% of the respondents were comfortable asking hematology/oncology patients about HRQOL measures (Table 1) and 100% of respondents stated they felt knowledgeable about HRQOL measures in hematology/oncology patients (Table 2). Despite this, only 33% of respondents indicated they always ask patients if they are content with the quality of their life during treatment (Table 3). Additionally, none of the respondents indicated they consistently ask patients about key quality of life indicators such as acceptance of their illness (Table 4) or how they are coping with their illness (Table 5).

Table 1

RN Comfort with Asking Cancer Patients About Health-Related Quality of Life Measures.

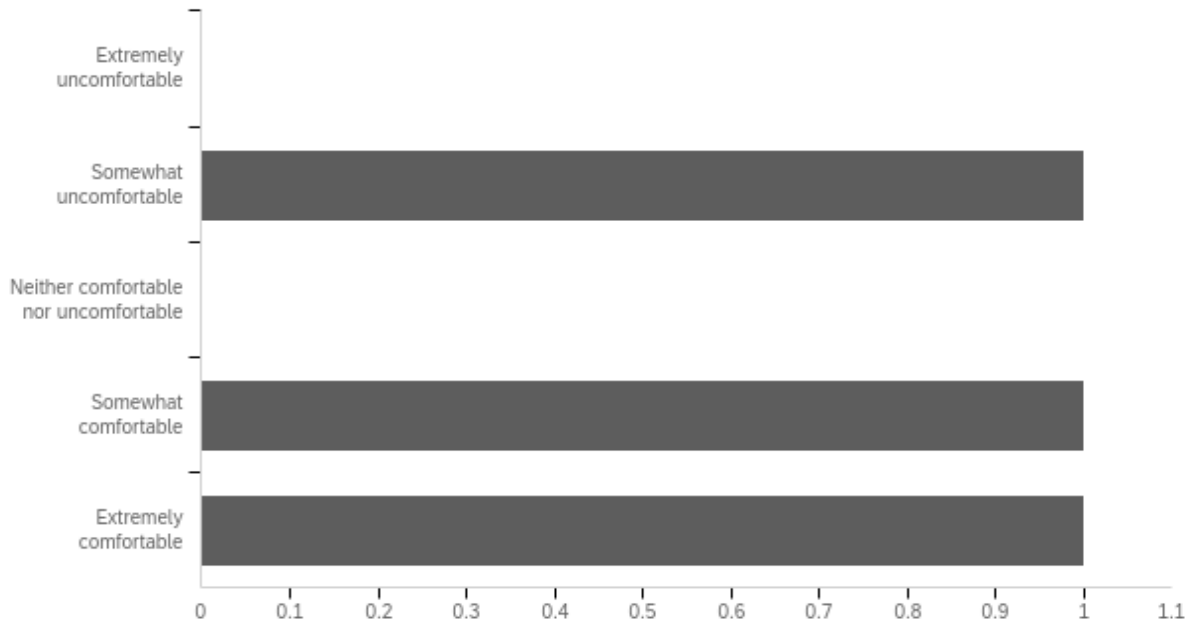


Table 2

RN Knowledge About Health-Related Quality of Life Measures for Cancer Patients.

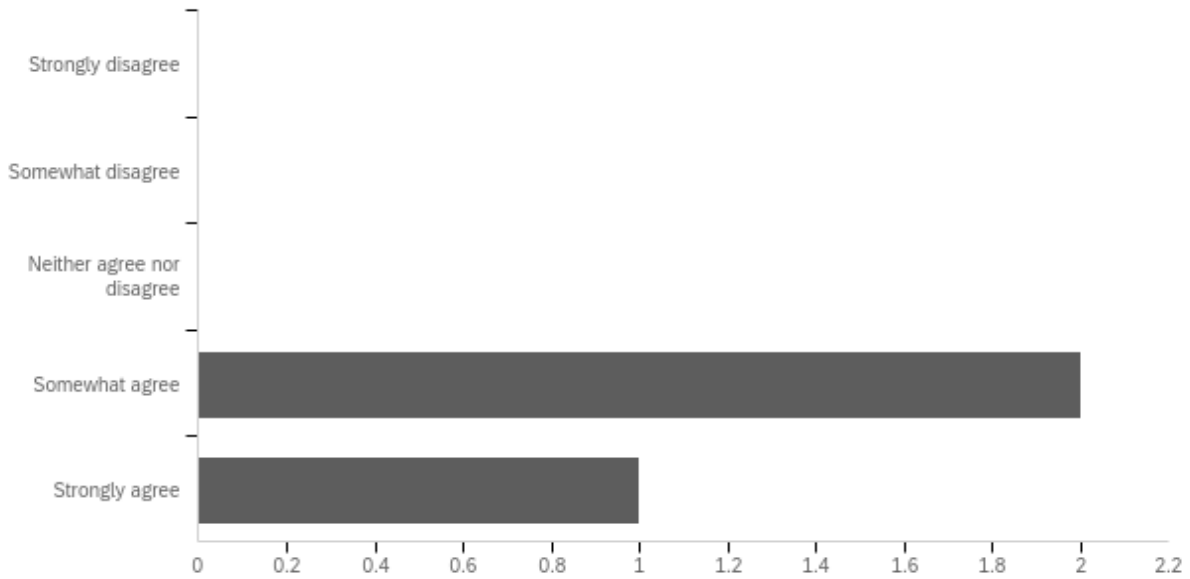


Table 3

Frequency of Assessing Cancer Patients Contentment with Their Quality of Life During Treatment.

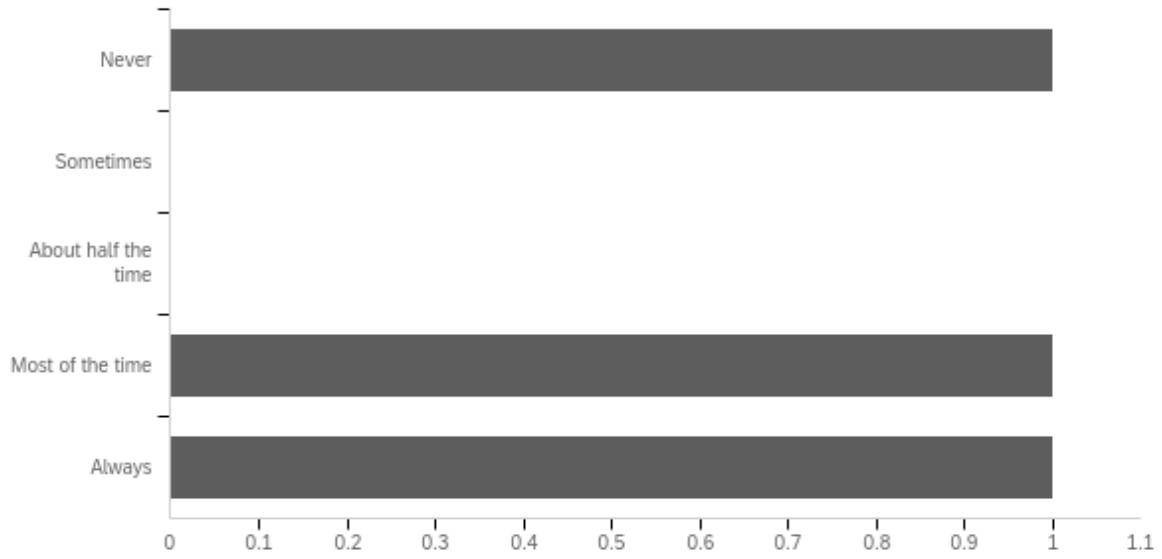


Table 4

Frequency of Assessing if Cancer Patients Have Accepted Their Illness.

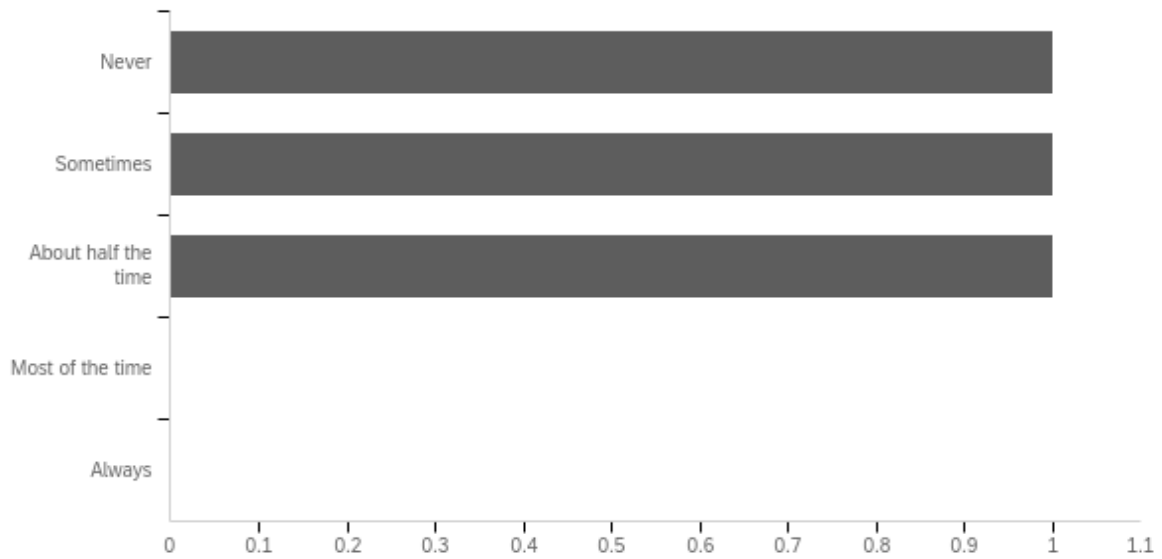
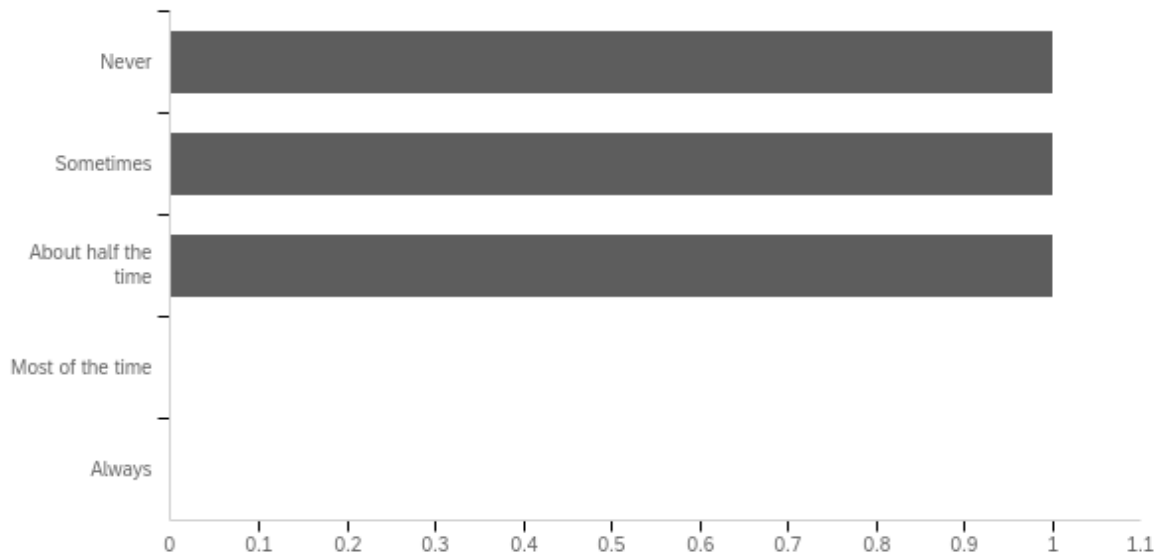


Table 5

Frequency of Asking Cancer Patients if They Are Satisfied with How They Are Coping with Their Illness.



Following the survey, a training was held for the RN staff of the outpatient hematology/oncology infusion suite (n = 3). The training defined HRQOL, outlined the importance of gathering HRQOL data for patients undergoing cancer treatment, described the FACT-G assessment, explained why it was chosen, and instructed the providers on how to administer the assessment and calculate the subscale and overall assessment scores.

Use of the FACT-G launched on January 24, 2022. A total of seven patients (n = 7) met the eligibility criteria during the 6-week pilot period and completed the assessment. The assessment was administered by the RN staff of the outpatient hematology/oncology infusion suite. There was no missing data. All patients completed the assessment in full, without skipping any items. Two patients (n = 2) received the assessment twice during the pilot period. Both patients showed improvement in their subscale scores and overall FACT-G assessment score over baseline. Table 6 shows the comparison between both patient’s overall FACT-G score on

the first assessment versus the second assessment. Table 7 shows the FACT-G assessment scores for all seven patients.

Table 6

FACT-G Score 1 vs. FACT-G Score 2

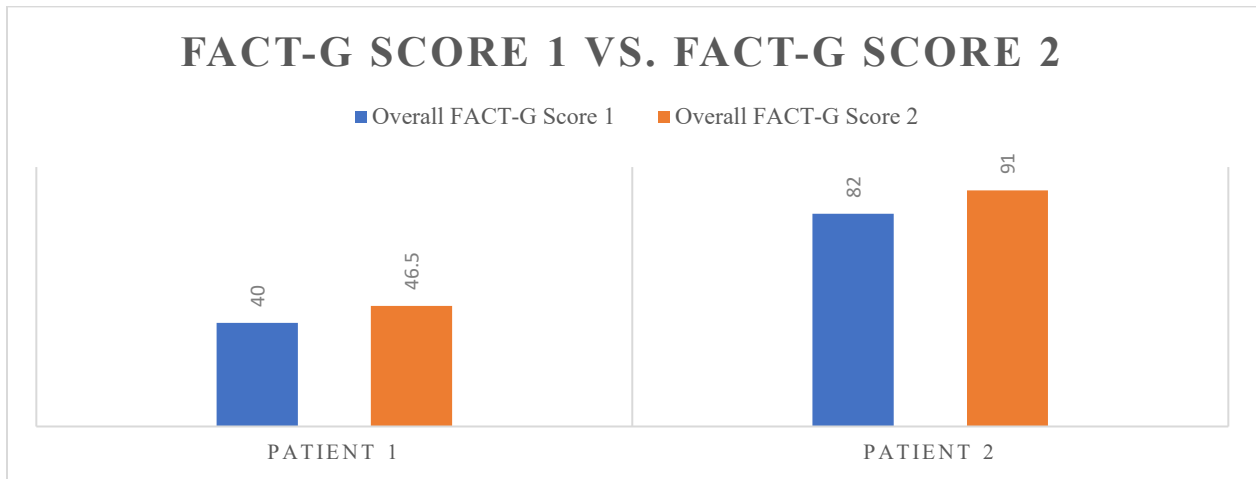
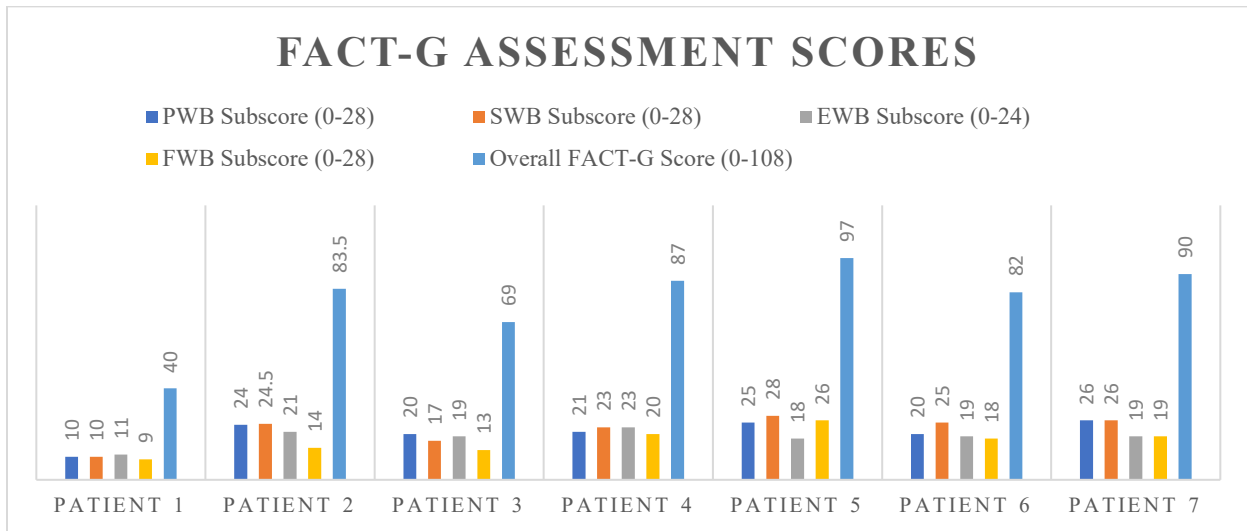


Table 7

FACT-G Assessment Scores



Patient 1 scored very low on each subscale as well as the overall assessment. The patient’s low score prompted the project team to develop a set of benchmarks around each subscale score and identify nursing interventions (Appendix B) so patients who score below a

specific threshold can receive appropriate follow-up care. These nursing interventions also prompted the establishment of a referral pathway to connect outpatient hematology/oncology patients to care management services, which was an organizational priority at the beginning of the project.

Phase III – Sustaining the Project

Following the 6-week pilot period, the RN staff of the outpatient hematology/oncology infusion suite (n = 3) completed the same 15-question HRQOL survey to determine if their knowledge and consistent assessment of HRQOL measures in cancer patients had changed. Interestingly, the responses on the post-test showed no difference from the pre-test baseline, which was unexpected.

A focus group was conducted to determine what went well with the implementation and identify barriers to continued use of the FACT-G assessment. The focus group consisted of the RN staff of the outpatient hematology/oncology infusion suite (n = 2) and a patient (n = 1) who had completed the FACT-G assessment. Themes from the focus group included (1) implementation of the FACT-G went smoothly, (2) the FACT-G assessment is easy to use and understand, and (3) the FACT-G helps patients identify their symptoms and communicate their needs to providers. Remembering to administer the assessment was identified as the only barrier to its continued use.

The final phase of the project also involved creating a FACT-G Assessment Policy (Appendix C), a FACT-G Assessment Procedure (Appendix D), and a FACT-G Assessment Job Aid (Appendix E) to standardize the use and administration of the assessment tool and ensure its sustainability within the organization.

Summary

The primary aim of the project was to implement a valid, reliable HRQOL assessment tool in an outpatient hematology/oncology infusion suite at a small critical access hospital in rural New Hampshire. Following a search of existing nursing and allied health care literature, the FACT-G assessment tool was identified and implemented into daily clinical practice at the project site. Seven patients met the inclusion criteria and completed the assessment during the pilot period. The project team also created benchmarks around patient scores and identified specific nursing interventions to ensure patients who score low on the assessment receive appropriate follow-up care. Finally, the team developed a policy, procedure, and job aid to establish a standardized approach to HRQOL assessments at the project site. These tools will help replicate the project's success at other similarly sized hospitals with outpatient hematology/oncology infusion suites within the D-H network.

A secondary aim was to educate the RN staff of the outpatient hematology/oncology infusion suite on the importance of gathering HRQOL assessment data on cancer patients undergoing treatment to facilitate patient-provider communication and better identify the patient's difficulties and needs. Interestingly, the pre-test and post-test HRQOL survey data did not show a change in RN knowledge or assessment of HRQOL measures. However, the focus group results revealed the FACT-G assessment tool has helped patients identify their symptoms and communicate their needs to providers. Additionally, the collection of HRQOL data has prompted the development of a referral pathway to connect outpatient hematology/oncology patients to care management services, which was an organizational priority at the beginning of the project.

The final aim of the project was to incorporate the FACT-G assessment tool into the hospital's EMR. Unfortunately, the licensing agreement with the organization that created the FACT-G assessment tool, the FACIT Group, prevented the project team from incorporating the FACT-G assessment into the EMR. Instead, the project team pivoted to administering the assessment on paper, scanning completed assessments into the medical record and documenting the patient's assessment scores in the narrative note for each encounter.

Overall, the project's strengths included a project team that was committed to adopting an HRQOL assessment tool into daily clinical practice and developing structures to support its continued use. Another critical strength was using a small-scale iterative approach to test interventions, which enabled rapid assessment of solutions and provided flexibility to make changes as needed.

Interpretation

The direct involvement of the hematology/oncology infusion suite staff was instrumental in achieving the project's primary outcome. As care providers to the population of interest, their input was critical in helping the project team identify potential barriers to successfully implementing an HRQOL assessment tool and developing solutions to address these challenges. Specifically, they assisted the project team in developing a work-around to the unexpected issue of being unable to incorporate the FACT-G assessment and score sheet into the hospital's EMR. They were also instrumental in helping the project team develop nursing interventions to accompany each subscale score on the FACT-G Benchmarks and Interventions Job Aid (Appendix B). Moreover, they played a crucial role in establishing the referral process with care management to ensure appropriate follow-up for patients who score low on the social/family well-being and emotional well-being subscales.

Selecting a valid, reliable HRQOL assessment tool that is easy to understand, takes less than 10 minutes to complete, and produces a quantitative score was also a significant factor in achieving the project's primary outcome. This intervention is supported by Atallah et al. (2020) and Fragola (2020). They report that implementing an HRQOL assessment in an ambulatory oncology clinic is feasible if the questionnaire is easy for patients to understand and complete.

Establishing a policy, procedure, and job aids to support using the HRQOL assessment tool was also important. Specifically, the development of nursing interventions for each subscale score to ensure patients who score low on the assessment receive appropriate follow-up care. Atallah et al. (2020) support this intervention. They indicate it is paramount for providers to develop actionable policies and interventions that correspond to symptom burden to improve clinical care and the patients' quality of life.

Adopting an HRQOL assessment tool in the public domain was another critical factor in achieving the primary outcome of the project. Since the HRQOL assessment tool was public, there was no cost associated with adopting the measure. This cost-effective strategy ensures that other small, rural hospitals within the D-H system with outpatient hematology/oncology infusion suites can implement this project.

Finally, after implementing the HRQOL assessment tool at the project site, both patients and providers reported increased patient-provider communication regarding HRQOL issues and improved provider awareness of patients' problems. These findings are consistent with studies published by Hilarius et al. (2008) and Atallah et al. (2020). They also note that the use of an HRQOL assessment in daily clinical oncology nursing practice resulted in improved communication between patients and providers and increased nursing awareness of patients' levels of daily activity, pain, and overall quality of life.

Limitations

There are several limitations of this project which must be acknowledged. First, the project site serves a small number of patients with a wide variety of hematologic and oncologic malignancies. The objective of this project was to implement a generic HRQOL assessment tool into daily clinical practice. Therefore, the evaluation of disease-specific HRQOL assessment tools for each malignancy treated in the outpatient hematology/oncology infusion suite was not part of the project. Second, the number of RN staff employed in the outpatient hematology/oncology infusion suite is small, which impacted the ability to determine if a statistically significant difference existed in the pre-test and post-test scores on the HRQOL survey. Third, this was a pilot project. Therefore, the project team was unable to assess the longitudinal impact of the HRQOL assessment tool on clinical encounters and symptom management.

Conclusions

In conclusion, implementing a valid, reliable HRQOL assessment tool into daily clinical practice at an outpatient hematology/oncology infusion suite at a critical access hospital in rural New Hampshire was feasible and endorsed by both patients and providers. The FACT-G was found to be clinically relevant, identify areas of need, and facilitate patient-provider communication. Other outpatient hematology/oncology clinics within the D-H system should consider implementing the FACT-G to improve patient-centered care. More data is needed to determine if this strategy will improve outcomes for hematology/oncology patients receiving treatment in the outpatient setting.

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Appendix A: FACT-G Assessment Tool

FACT-G (Version 4)

Below is a list of statements that other people with your illness have said are important. **Please circle or mark one number per line to indicate your response as it applies to the past 7 days.**

<u>PHYSICAL WELL-BEING</u>		Not at all	A little bit	Some-what	Quite a bit	Very much
GP1	I have a lack of energy	0	1	2	3	4
GP2	I have nausea	0	1	2	3	4
GP3	Because of my physical condition, I have trouble meeting the needs of my family	0	1	2	3	4
GP4	I have pain	0	1	2	3	4
GP5	I am bothered by side effects of treatment	0	1	2	3	4
GP6	I feel ill	0	1	2	3	4
GP7	I am forced to spend time in bed	0	1	2	3	4

<u>SOCIAL/FAMILY WELL-BEING</u>		Not at all	A little bit	Some-what	Quite a bit	Very much
GS1	I feel close to my friends	0	1	2	3	4
GS2	I get emotional support from my family	0	1	2	3	4
GS3	I get support from my friends	0	1	2	3	4
GS4	My family has accepted my illness	0	1	2	3	4
GS5	I am satisfied with family communication about my illness	0	1	2	3	4
GS6	I feel close to my partner (or the person who is my main support)	0	1	2	3	4
Q1	<i>Regardless of your current level of sexual activity, please answer the following question. If you prefer not to answer it, please mark this box <input type="checkbox"/> and go to the next section.</i>					
GS7	I am satisfied with my sex life	0	1	2	3	4

FACT-G (Version 4)

Please circle or mark one number per line to indicate your response as it applies to the **past 7 days**.

<u>EMOTIONAL WELL-BEING</u>		Not at all	A little bit	Some-what	Quite a bit	Very much
GE1	I feel sad	0	1	2	3	4
GE2	I am satisfied with how I am coping with my illness.....	0	1	2	3	4
GE3	I am losing hope in the fight against my illness.....	0	1	2	3	4
GE4	I feel nervous.....	0	1	2	3	4
GE5	I worry about dying.....	0	1	2	3	4
GE6	I worry that my condition will get worse	0	1	2	3	4

<u>FUNCTIONAL WELL-BEING</u>		Not at all	A little bit	Some-what	Quite a bit	Very much
GF1	I am able to work (include work at home)	0	1	2	3	4
GF2	My work (include work at home) is fulfilling.....	0	1	2	3	4
GF3	I am able to enjoy life.....	0	1	2	3	4
GF4	I have accepted my illness.....	0	1	2	3	4
GF5	I am sleeping well	0	1	2	3	4
GF6	I am enjoying the things I usually do for fun	0	1	2	3	4
GF7	I am content with the quality of my life right now.....	0	1	2	3	4

Appendix B: FACT-G Assessment Benchmarks and Interventions



New London Hospital

Dartmouth-Hitchcock

Job Aid Title:	FACT-G Assessment Benchmarks and Interventions – Job Aid	Job Aid ID:	
Keywords	FACT-G, hematology/oncology, assessment, outpatient, health-related quality of life, HRQOL		

<p>Physical Well-Being Benchmark: Score of 0-10 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Referral to PCP and Palliative Care for symptom management • Follow-up by Oncology Provider and Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of physical well-being using FACT-G • Documentation of score and interventions in patient’s medical record 	<p>Physical Well-Being Benchmark: Score of 11-19 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Follow-up by Oncology Provider and Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of physical well-being using FACT-G • Documentation of score and interventions in patient’s medical record 	<p>Physical Well-Being Benchmark: Score of 20-28 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Continued assessment of physical well-being using FACT-G • Documentation of score and interventions in patient’s medical record
<p>Social Well-Being Benchmark: Score of 0-10 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Referral to Community Health Worker (Office of Care Management) for coordination of counseling and emotional support services • Follow-up by Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of social well-being using FACT-G • Documentation of score and interventions in patient’s medical record 	<p>Social Well-Being Benchmark: Score of 11-19 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Follow-up by Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of social well-being using FACT-G • Documentation of score and interventions in patient’s medical record 	<p>Social Well-Being Benchmark: Score of 20-28 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Continued assessment of social well-being using FACT-G • Documentation of score and interventions in patient’s medical record

<p>Emotional Well-Being Benchmark: Score of 0-8 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Referral to Community Health Worker (Office of Care Management) for coordination of counseling and emotional support services • Follow-up by Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of emotional well-being using FACT-G • Documentation of score and interventions in patient's medical record 	<p>Emotional Well-Being Benchmark: Score of 9-16 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Follow-up by Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of emotional well-being using FACT-G • Documentation of score and interventions in patient's medical record 	<p>Emotional Well-Being Benchmark: Score of 17-24 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Continued assessment of emotional well-being using FACT-G • Documentation of score and interventions in patient's medical record
<p>Functional Well-Being Benchmark: Score of 0-10 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Referral to Physical Therapy and Occupational Therapy for assistance with activities of daily living and working • Follow-up by Oncology Provider and Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of functional well-being using FACT-G • Documentation of score and interventions in patient's medical record 	<p>Functional Well-Being Benchmark: Score of 11-19 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Follow-up by Oncology Provider and Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of functional well-being using FACT-G • Documentation of score and interventions in patient's medical record 	<p>Functional Well-Being Benchmark: Score of 20-28 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Continued assessment of functional well-being using FACT-G • Documentation of score and interventions in patient's medical record

<p>Total FACT-G Score Benchmark: Score of 0-36 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Referral to services identified above as needed • Follow-up by Oncology Provider and Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of health-related quality of life using FACT-G • Documentation of score and interventions in patient's medical record 	<p>Total FACT-G Score Benchmark: Score of 37-72 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Follow-up by Oncology Provider and Infusion Suite RN for ongoing assessment of symptoms • Continued assessment of health-related quality of life using FACT-G • Documentation of score and interventions in patient's medical record 	<p>Total FACT-G Score Benchmark: Score of 73-108 <u>Interventions:</u></p> <ul style="list-style-type: none"> • Continued assessment of health-related quality of life using FACT-G • Documentation of score and interventions in patient's medical record
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Appendix C: FACT-G Assessment Policy



Policy Title:	FACT-G Assessment Policy	Policy ID:	
Keywords	FACT-G, hematology/oncology, assessment, outpatient, health-related quality of life, HRQOL		

Purpose:

To establish a standardized, centralized approach to the assessment of health-related quality of life (HRQOL) measures in hematology/oncology patients receiving treatment at New London Hospital’s outpatient hematology/oncology infusion suite.

Policy Scope:

Adult cancer patients, age 18 and older, receiving care at New London Hospital’s outpatient hematology/oncology infusion suite are eligible for assessment using the Functional Assessment of Cancer Therapy – General (FACT-G).

Patients will be excluded if they:

- Do not have a hematology/oncology diagnosis.
- Are under the age of 18.
- Are unable to complete the assessment due to mental status that could invalidate the results.
- Are non-English speaking/reading and no native language translation or interpreter is available.
- Decline to complete the assessment.

Definitions:

- **Health-Related Quality of Life (HRQOL):** Health-related quality of life is a multidimensional concept that includes physical, psychological, and social functioning. It is defined as an individual’s perceived physical and mental health over time (Centers for Disease Control and Prevention [CDC], 2021).
- **HRQOL Assessments:** HRQOL assessments capture the patient’s perception of how disease and treatment affect their sense of overall function and well-being (Office of Disease Prevention and Health Promotion [ODPHP], 2021). HRQOL assessments are an essential component of providing comprehensive cancer care and establishing goals of treatment (Fragola, 2020).
- **Functional Assessment of Cancer Therapy – General (FACT-G):** The FACT-G is one of the most widely used patient-reported HRQOL outcomes measures in cancer research.

It is self-administered by the patient and takes 5 minutes to complete. The FACT-G produces a quantitative score that can be tracked over time using a 5-point Likert-type numeric ranking system and assess four (4) key domains – physical well-being, social well-being, emotional well-being, and functional well-being (FACIT Group, 2021).

Policy Statements:

- Patient's make treatment decisions based on their perceived HRQOL. Therefore, HRQOL assessments are critical to the patient's overall outcomes (Fragola, 2020).
- HRQOL assessments are essential for prioritizing problems, understanding what matters to the patient, and assessing treatment-related changes the patient is experiencing (Fragola, 2020).
- Research shows HRQOL assessments positively impact the patient's overall sense of well-being, improve patient-provider communication and the patient-provider relationship, adherence to treatment regimens, and decrease unnecessary health-care utilization via preventative care (Bridge et al., 2019).

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Appendix D: FACT-G Assessment Procedure



New London Hospital

Dartmouth-Hitchcock

Procedure Title:	FACT-G Assessment Procedure	Procedure ID:	
Keywords	FACT-G, hematology/oncology, assessment, outpatient, health-related quality of life, HRQOL		

Purpose:

To standardize the administration of the Functional Assessment of Cancer Therapy – General (FACT-G) health-related quality of life (HRQOL) assessment measure in hematology/oncology patients receiving treatment at New London Hospital’s outpatient hematology/oncology infusion suite.

Procedure Scope:

Adult cancer patients, age 18 and older, receiving care at New London Hospital’s outpatient hematology/oncology infusion suite are eligible for assessment using the Functional Assessment of Cancer Therapy – General (FACT-G).

Patients will be excluded if they:

- Do not have a hematology/oncology diagnosis.
- Are under the age of 18.
- Are unable to complete the assessment due to mental status that could invalidate the results.
- Are non-English speaking/reading and no native language translation or interpreter is available.
- Decline to complete the assessment.

Definitions:

- **Health-Related Quality of Life (HRQOL):** Health-related quality of life is a multidimensional concept that includes physical, psychological, and social functioning. It is defined as an individual’s perceived physical and mental health over time (Centers for Disease Control and Prevention [CDC], 2021).
- **HRQOL Assessments:** HRQOL assessments capture the patient’s perception of how disease and treatment affect their sense of overall function and well-being (Office of Disease Prevention and Health Promotion [ODPHP], 2021). HRQOL assessments are an essential component of providing comprehensive cancer care and establishing goals of treatment (Fragola, 2020).

- **Functional Assessment of Cancer Therapy – General (FACT-G):** The FACT-G is one of the most widely used patient-reported HRQOL outcomes measures in cancer research. It is self-administered by the patient and takes 5 minutes to complete. The FACT-G produces a quantitative score that can be tracked over time using a 5-point Likert-type numeric ranking system and assess four (4) key domains – physical well-being, social well-being, emotional well-being, and functional well-being (FACIT Group, 2021).

Equipment:

- FACT-G Assessment
- FACT-G Scoring Sheet
- FACT-G Data Sheet

Procedure:

1. Determine if the patient meets inclusion criteria when they arrive for their scheduled appointment at the New London Hospital outpatient hematology/oncology infusion suite.
2. If the patient meets criteria, locate the FACT-G Assessment.
 - a. Ideally, the FACT-G Assessment will be administered three (3) times:
 - i. Once at the beginning of an eligible patient’s treatment cycle.
 - ii. Once at the midpoint of an eligible patient’s treatment cycle.
 - iii. Once at the end of an eligible patient’s treatment cycle.
 - b. At a minimum, the FACT-G Assessment should be administered once per calendar year.
3. If the patient meets criteria, obtain the patient’s verbal consent to administer the FACT-G Assessment.
4. Apply the patient’s ID label to the FACT-G Assessment.
5. Ask the patient to read the brief directions at the top of each page of the FACT-G Assessment.
6. After the patient’s understanding has been confirmed, encourage the patient to complete every item in order without skipping any items.
7. Ask the patient to circle the response that is most applicable to their symptoms for the past seven (7) days. For example, if a patient is not currently receiving treatment, they should circle “not at all” to the question “I am bothered by the side effects of treatment.”
8. Once the patient has completed the FACT-G Assessment, calculate the score using the FACT-G Scoring Sheet, which is an Excel spreadsheet available on a shared drive.
 - a. Record answers in the “item response” column on the FACT-G Scoring Sheet in Excel.
 - i. If the patient did not answer a specific item, do not include a value for that item.
 - ii. Perform reversals as indicated and sum individual items to obtain a score.
 1. For example, if a patient circles “very much” (which produces a score of 4) to the question “I have a lack of energy” then the provider would subtract this value from 4 to give an overall score of 0 for this question.

- a. All the questions in the subscale Physical Well-Being (PWB) are negatively stated as are most of the items in subscale Emotional Well-Being (EWB).
 - i. The formulas for these calculations are already built into the FACT-G Scoring Sheet in Excel.
 - b. Multiply the sum of the item scores by the number of items in the subscale, then divide by the number of items answered to produce the subscale score.
 - i. The formulas for these calculations are already built into the FACT-G Scoring Sheet in Excel.
 - c. Add the subscale scores to derive the total FACT-G score.
 - i. The formulas for these calculations are already built into the FACT-G Scoring Sheet in Excel.
 - d. The higher the score, the better the patient's quality of life.
9. Document on the FACT-G Data Sheet, which is an Excel spreadsheet available on a shared drive.
 - a. Patient last name
 - b. Patient first name
 - c. Patient medical record number
 - d. Patient date of birth
 - e. Date the FACT-G Assessment was administered
 - f. Score for each subscale
 - g. Overall FACT-G Assessment score
10. Initiate referrals and additional interventions as indicated based on the patient's score for each subscale and the patient's overall FACT-G Assessment score (see FACT-G Benchmarks and Interventions – Job Aid).
11. Document that the FACT-G Assessment was administered, and any referrals or other actions taken in the patient's encounter note.
12. Send the completed FACT-G Assessment to medical records so it can be scanned into the patient's chart under the Media tab.

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Appendix E: FACT-G Assessment Job Aid



Job Aid Title:	FACT-G Assessment – Job Aid	Job Aid ID:	
Keywords	FACT-G, hematology/oncology, assessment, outpatient, health-related quality of life, HRQOL		

