

QUALITY IMPROVEMENT

Integration of an APP-Led Supportive and Palliative Oncology Care Program: A Quality Improvement Project

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Authors' disclosures of conflicts of interest are found at the end of this article.

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Abstract

Patients with advanced cancer have been found to demonstrate severe symptoms and low quality of life at diagnosis; therefore, it is imperative that they have early access to palliative care services along the continuum of care. Oncology advanced practice providers are uniquely poised to serve as champions for primary palliative care integration within their practice. The purpose of this quality improvement project was to develop and implement an APP-led supportive and palliative oncology care (SPOC) program within routine cancer care. The project design utilized the Plan-Do-Study-Act (PDSA) methodology as the guiding framework for development, implementation, and analysis of the SPOC program. Across 49 participants, there were a total of 239 SPOC encounters during the studied period. Participants had a mean of 4.9 visits ($SD = 3.5$) with the APP. There was a high prevalence of patient-reported symptom burden, the most frequent of which included pain at 44 (90%), fatigue at 36 (74%), appetite loss at 29 (59%), and weakness at 27 (55%) instances. Ninety-four percent of participants ($n = 46$) had a structured and documented goals of care conversation with the APP during their participation within the program. A total of seven patients completed their advance directives while receiving SPOC care, which was a 25% completion rate. There was a significant demand for interdisciplinary resources ($n = 136$). Integration of SPOC principles into routine oncology practice is an opportunity to improve the patient and family experience while demonstrating the value of APPs at the clinical and organizational level.

Patients with advanced cancer have been found to demonstrate severe symptoms and low quality of life at diagnosis (Siemens et al., 2020). Advanced or metastatic cancer refers to disease that is unlikely to be cured or controlled with treatment. Treatment goals for this stage of illness are palliative in nature, to reduce tumor burden, slow cancer cell growth, or to relieve symptoms. In 2017, the

American Society for Clinical Oncology (ASCO) recommended concurrent palliative care alongside usual oncology care for all advanced cancer patients. Palliative care is specialized medical care for patients living with serious illness (Ferrell et al., 2017). It consists of an interdisciplinary team of specialists whose goal is to improve quality of life through relief of symptoms, care coordination, and high-quality communication to facilitate patient understanding of their illness and to guide patient-centered medical decision-making (Center to Advance Palliative Care, 2021).

The American Society of Clinical Oncology recommends the integration of specialized palliative care within 8 weeks of an advanced cancer diagnosis, although access to such services remains limited due to a lack of resources. For this reason, it is recommended that oncology teams adapt primary palliative care skills and devote at least 1 hour per month with a focus on symptom management, psychosocial-spiritual assessment, and goals of care. The benefits of integrative palliative care services have been found to include improved quality of life, symptom management, cost savings, and survival advantages (Kaasa et al., 2018; Walling et al., 2017).

The benefits of palliative care have been studied and proven across various populations of patients living with serious illness; however, there is no consensus with regard to a standardized approach to early integration (Lau et al., 2014). Although specialized multidisciplinary palliative care is considered the gold standard, access remains limited. Kamal and colleagues (2014) highlighted the importance of integrated palliative care quality measures into oncology practice to further connect quality care with improved patient outcomes. The impact of primary palliative care provided by oncology advanced practice providers (APPs) has been cited for its convenience, continuity of care, cost effectiveness, and improved referral pathway to specialized palliative services (Desai et al., 2018; Hui, 2019; Walling et al., 2017).

PROBLEM

This supportive and palliative oncology care (SPOC) quality improvement (QI) project sought to develop and implement APP-led primary palliative care within routine oncology practice, focused on patients living with advanced cancer. The project

was implemented at one ambulatory cancer center within a large health-care delivery system in the Pacific Northwest. The unique infrastructure of this organization, unlike fee-for-service organizations, allowed for access to various multidisciplinary supports for its members. Without specialized supportive and palliative care services within the region, there existed a clinical gap in the evaluation and management of physical and psychosocial concerns among patients with advanced cancer. With the recent integration of APPs into the oncology care model, there was an opportunity to develop and integrate primary palliative care services to improve the patient and family experience while demonstrating value at the organizational level.

OBJECTIVES AND AIMS

The purpose of this QI project was to develop and implement an APP-led SPOC program within routine cancer care for advanced cancer patients. The project aimed to (1) improve patient access to visits with a primary palliative care focus, (2) improve patient-reported symptom burden, (3) increase goals of care discussions and advance directive completion (living will and durable attorney for health care), (4) integrate interdisciplinary referrals for patient-centered, multimodal approaches to care, and (5) expand the role of the oncology APP role to encompass primary palliative care skills across the service line throughout the continuum of cancer care.

METHODS

Project Design

The project design used the Plan-Do-Study-Act (PDSA) methodology as the guiding framework for the development, implementation, and analysis of the SPOC program. The focus of the project was to expand the role of the APP to increase access to primary palliative care for patients living with advanced cancer.

Setting

The project setting was one ambulatory cancer center within a large health-care delivery system in Washington state. Staffing consisted of one APP, four oncologists, nursing, ancillary staff, and specialized pharmacists. The clinic was located within a community-based medical center with access to primary, specialty, and urgent care ser-

vices. Oncology care was delivered through office visits or remotely as indicated through video or telephone encounters.

Participants

Patients were referred to the SPOC program by medical oncologists and clinical staff. Eligibility included patients over 18 years old with newly diagnosed advanced cancer. Established oncology patients with earlier stage or chronic stable illness were allowed to participate when complex symptom management or psychosocial needs were identified.

Ethical Approval

In addition to receiving institutional support, this project met the Simmons University Institutional Review Board (IRB) criteria for declaration of exemption from further IRB review, as it did not meet the current descriptions for human subject research.

Methods

The first PDSA cycle focused on project feasibility and communication with key leaders to explore the breadth of the clinical problem and to determine system resources and organizational impact. At project outset, the APP conducted a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis to identify clinical gaps and determine the feasibility of the SPOC program (see Figure 1). There was immediate buy-in from service-line leadership who offered access to the data management server and insight into key stakeholders who would be integral to the development and implementation of the program. It became evident that metrics surrounding advanced cancer diagnoses and health-care utilization at the end of life were not actively captured. Meetings were held with

diverse health delivery partners such as palliative care, behavioral health, social work, and the community resource specialist to clarify pathways to referrals. The integrated health system afforded access to external interdisciplinary resources such as acupuncture, massage therapy, naturopathy, and specialized palliative care.

During the second PDSA cycle, clinical processes were developed to support the SPOC program. Through collaboration with interdisciplinary resources, specialty-specific flow sheets for symptom evaluation, prognostic assessment, and advance care planning activities were discovered within the electronic medical record (EMR), which allowed the APP to develop a documentation template for SPOC encounters. This template allowed standardization across visits and pulled retrievable flow sheet data (assessment tools and prognostic scales) into encounters.

After the initial logistical groundwork had been completed, the APP began communication with on-site clinical and administrative staff to discuss clinical processes surrounding referrals, scheduling, and billing. Referral and eligibility criteria were developed and disseminated to schedulers and clinical staff. Visit duration was aligned within the clinical template, with 60 minutes allocated for consultations and 30 minutes for follow-ups. Due to lifted restrictions for telemedicine during the COVID-19 pandemic, opportunities for video and telephone encounters were possible. The APP met with the department billing and coding specialist to identify best practices to ensure compliance with organizational requirements.

During the third cycle, the APP created patient-friendly flyers and received approval for distribution through the appropriate organizational

Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> Integrated health system Access to care Organizational IDT resources 	<ul style="list-style-type: none"> Disease-focused care Lack of IDT involvement No internal palliative care services within the region Providers lack time/primary palliative training 	<ul style="list-style-type: none"> ARNP expertise and bandwidth Palliative care expansion Build partnerships with IDT 	<ul style="list-style-type: none"> Organizational culture Provider trust/understanding of service Referral processes Scheduling prioritization

Figure 1. SWOT analysis. IDT = interdisciplinary team; ARNP = advanced registered nurse practitioner.

channels. These were then distributed, along with eligibility criteria, to administrative, clerical, and clinical staff. Telephone scripting was developed for the scheduling staff to enhance their understanding of the program and to facilitate explanation to patients with regard to the breadth of services that would be provided. In order to place a referral, clinical staff were encouraged to send a dual message within the EMR to the APP as well as schedulers for awareness and follow through.

The final PDSA cycle involved the implementation of the SPOC program. This allowed for real-time modifications when challenges and opportunities presented themselves. As more patients gained access to the program, the APP was able to evaluate the quantity and quality of referrals, which highlighted the clinical team's understanding of palliative services. This allowed for on-the-spot education to clarify the intent of SPOC program and clinical expectations. Documentation templates and tools were adjusted for increased efficiency. Toward the end of the cycle, manual data retrieval was performed to evaluate outcomes with respect to project aims.

Data Collection

The APP conducted structured chart reviews to collect all descriptive and quality measure data. This was inclusive of patient demographics, cancer type, diagnosis, and date from diagnosis to SPOC consultation.

Quality measures included evaluation of consultations and subsequent visits, along with visit modality (face-to-face vs. telemedicine). Each visit was evaluated individually to review overall visit topics (advance care planning, care coordination, symptom management, and referrals), managed symptoms, and external interdisciplinary referral submissions. Each patient encounter was considered as a sum total of the visits the patient had with the APP to demonstrate the cumulative breadth of services provided over time. Advance care planning activities were documented within SPOC progress notes as applicable and imported into a retrievable location within the EMR.

Privacy, Data Storage, and Confidentiality

Data were stored electronically on a password-protected encrypted network computer. The project

authors had sole access to the data. No protected health information was used in the project.

Data Analysis

All data were inputted into Microsoft Excel for data analysis. Data analysis included descriptive statistics for demographics and project outcome measures. A run chart was also created to illustrate consultations and encounters over a 9-month project period.

RESULTS

Participant Demographics

A total of 49 patients participated in the SPOC program from September 2020 to May 2021. Patients were predominantly Caucasian (95.9%) with a mean age of 72 years (standard deviation [SD] = 8.2). Table 1 provides the breakdown of participant demographics, including cancer stage and type. Table 2 highlights the top reasons for SPOC referral, which were pain management (36.7%, $n = 18$) followed by goals of care (30.6%, $n = 15$). The majority of referrals were submitted by primary oncologists (83.7%, $n = 41$), while the APP was able to opportunistically recommend SPOC consultation during routine oncology follow-up visits (12.2%, $n = 6$).

Outcome Measures

Throughout the development and implementation phase of the SPOC program, referrals and visit encounters steadily increased. Over the measured 10 months, 49 patients received a SPOC consultation, with a total of 239 encounters, 116 face-to-face visits, and 123 telemedicine visits. Figure 2 demonstrates program uptake over time. Patients in the SPOC program had a mean of 4.9 visits ($SD = 3.5$) with the APP.

Participants received a comprehensive symptom evaluation at initial consultation and a more focused evaluation during subsequent encounters. Symptoms were documented utilizing validated assessment tools within the EMR, as well as within the body of the visit progress note and treatment plan. Table 3 highlights the prevalence of patient-reported symptom burden, the most frequent of which included pain at 44 (90%), fatigue at 36 (74%), appetite loss at 29 (59%), and weakness at 27 (55%) instances.

Table 1. Sample Characteristics (n = 49)

Characteristic	n	%
Age (yr), M, SD (range)	72.1, 8.2 (48-93)	
SPOC encounters, M, SD (range)	4.9, 3.6 (1-17)	
Sex		
Female	29	59.2
Male	20	40.8
Race		
White	47	95.9
Hispanic	1	2.0
Asian	1	2.0
Cancer stage		
IV	39	79.6
II/III	8	16.3
Unknown	2	4.1
Cancer type		
GI	9	18.4
GU	8	16.3
Hematologic	7	14.3
Lung	7	14.3
ENT	6	12.2
Breast	4	8.2
Gynecologic	4	8.2
Neuroendocrine	2	4.1
Melanoma	1	2.0
Unknown	1	2.0

At consultation, no patients had a documented goals of care conversation, and 21 had an advance care planning document (advance directive or durable power of attorney for health care) within the EMR. Ninety-four percent of patients ($n = 46$) had a structured and documented goals of care conversation with the SPOC APP during their participation within the program. A total of seven patients completed their advance directives while receiving SPOC care, which was a 25% completion rate. Of the 16 patients who died during the program, 13 (81%) were admitted to hospice, with an average length of stay of 27.8 days. Of those who died without hospice services, two died at home and one succumbed to an acute complication that led to hospitalization. Table 4 demonstrates outcomes surrounding advance care planning and end of life.

Table 2. Supportive and Palliative Oncology Care Consultation (n = 49)

Characteristic	n	%
Referral reason		
Cancer pain	18	36.7
Goals of care	15	30.6
Symptom management	8	16.3
Supportive care	7	14.3
Care coordination	1	2.0
Referral source		
Physician	41	83.7
Self	6	12.2
Clinical staff	2	4.1

A total of 136 interdisciplinary referrals were submitted during the study period, with 45 participants having received at least one referral to an interdisciplinary specialty (see Figure 3). The top referrals included specialty palliative care ($n = 16$, 36%), therapy services including physical, speech, and occupational therapy ($n = 16$, 36%), hospice ($n = 13$, 29%), community resource specialist ($n = 13$, 29%), social work ($n = 11$, 24%), behavioral health ($n = 10$, 22%), and integrative medicine ($n = 10$, 22%). Integrative services included holistic services such as naturopathy, acupuncture, and massage therapy. Four patients requested information surrounding Death with Dignity, an end-of-life option available within Washington state.

DISCUSSION

The SPOC program demonstrated increased demand that was sustained throughout the duration of the study period. It was not until formalized development of the program did referrals become more consistent. Over time, it became apparent that each medical oncologist had a different understanding of how the SPOC program could support their patients and when to integrate the APP into their care. Unsurprisingly, the physical manifestations of disease and treatment were the reason for the highest volume of referrals. Goals of care also ranked high as a reason for referral, as patients with advanced disease, high symptom burden, and poor performance status posed a challenge when disease-directed therapies were no longer deemed beneficial. The

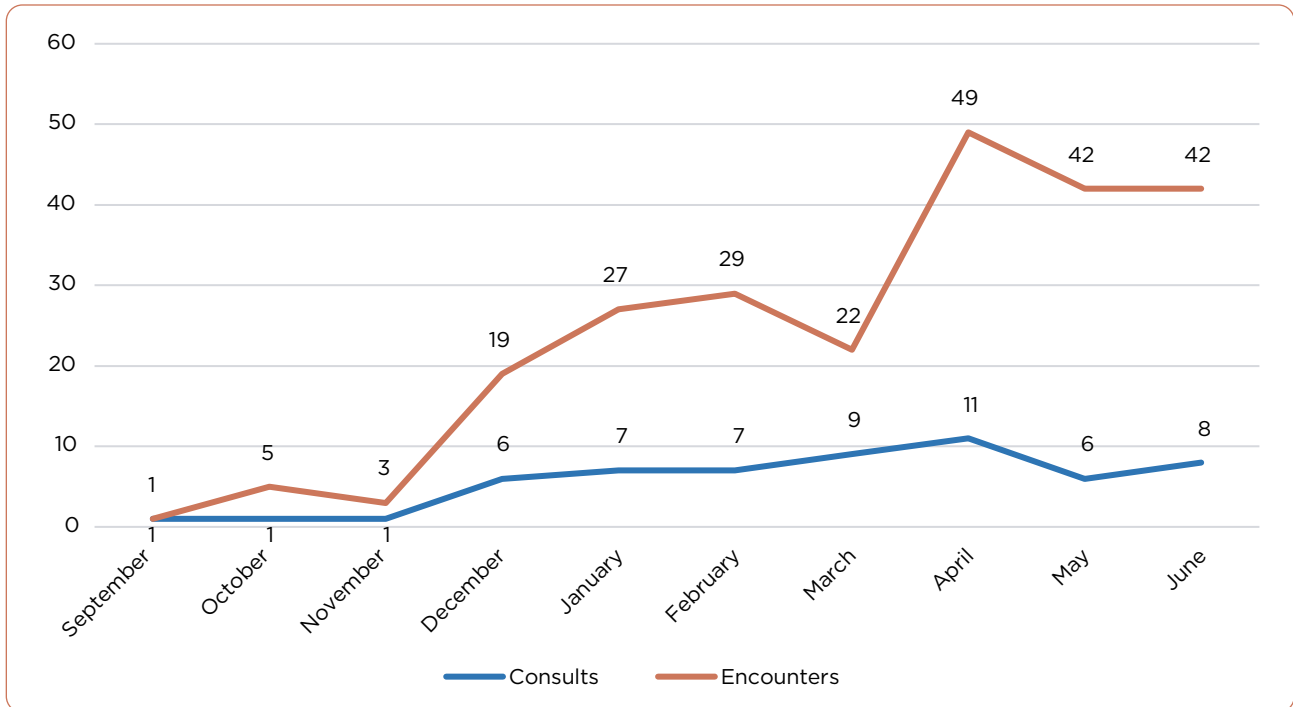


Figure 2. Supportive and palliative oncology care encounters ($n = 239$).

volume of consultations and follow-up was dependent on APP and physician schedules within the project site, which was variable due to the influx of new providers and routine scheduled time off. When the APP was unavailable, the primary oncologists provided coverage and support of the APP's SPOC treatment plans, which were clearly documented within the medical record.

Through systematic symptom evaluation, the APP was able to provide comprehensive management of physical and psychosocial concerns. The use of validated screening and assessment tools was beneficial at consultation but tended to be more burdensome at subsequent visits due to time constraints. Although not utilized during this QI project, implementation of a pre-visit questionnaire, electronically or manually at the time of visit, could have facilitated more consistent use of the aforementioned assessment tools. Telemedicine encounters provided opportunities for therapeutic drug monitoring and medication adjustments in a timely manner. The program would have been further enhanced with dedicated oncology social workers, who are adept at psychosocial assessments, distress screening, and emotional support. Although the health system granted access to be-

havioral resources, the majority of these referrals were outside of the organization, which posed a challenge for scheduling and communication.

Supportive and palliative oncology care encounters were conducive to advance care planning activities, as evidenced by the high completion rate of structured and documented goals of care conversations. Comprehensive goals of care conversations focused on medical goals of treatment, prognostic disclosure, and evaluation of the patient's goals and values in the face of their serious illness. This allowed the APP to provide tailored recommendations to promote goal-concordant care. Due to the flexibility of the in-visit modality (office vs. telemedicine encounters), there were opportunities for family meetings for goals of care conversations prior to initiation and throughout disease-directed treatment. The hope was that advance care planning activities would facilitate the completion of advance directives, although this was not the case. The lack of on-site support staff such as social workers and notaries was a barrier to this particular programmatic aim. Time constraints were also significant, with broadly focused visits that demonstrated competing factors such as acute treatment-related toxicities, treatment planning,

Table 3. Patient-Reported Concerns From Most to Least Reported

Symptom	<i>n</i>	%
Total symptoms, <i>M, SD</i> (range)	7.2, 2.9 (1-14)	
Pain	44	89.8
Fatigue	36	73.5
Appetite loss	29	59.2
Weakness	27	55.1
Constipation	22	44.9
Shortness of breath	22	44.9
Weight loss	21	42.9
Adjustment disorder	17	34.7
Nausea	17	34.7
Memory changes	16	32.7
Sleep disturbance	16	32.7
Depression	13	26.5
Anxiety	12	24.5
Drowsiness	10	20.4
Diarrhea	7	14.3
Dizziness	7	14.3
Dysphagia	7	14.3
Financial stressors	7	14.3
Cough	4	8.1
Family stressors	4	8.1
Anticipatory grief	1	2.0
Substance use disorder	1	2.0

and palliative aims. Although there was high hospice utilization among the SPOC deceased, this transition posed a greater challenge than initially anticipated. Member cultural considerations, the organizational model, and lack of primary palliative care training among physicians was conducive to prolonged disease-directed therapies, even when deemed inappropriate and non-beneficial by the medical oncologists.

Interdisciplinary referrals were diverse and shed light on the complex needs of the SPOC participants. Although patients were authorized by their insurance for these referrals, timely scheduling was the biggest barrier to patient engagement. Nutrition and interventional pain management access was particularly constrained, with consultations scheduled 6 to 8 weeks from referral placement.

Table 4. Advance Care Planning and End of Life

	<i>n</i>	%
Advance care planning		
Advance directive at SPOC consult	21	42.9
Updated advance directive during program	7	25.0
Goals of care prior to SPOC consult	0	0.0
Goals of care during program	46	93.9
End of life		
Deaths	16	32.7
Hospice admission	13	81.3
Location of death		
Home	15	93.8
Hospital	1	6.3
Characteristic		
SPOC encounters, <i>M, SD</i> (range)	3.4, 0.5 (1-10)	
Hospice length of stay (days), <i>M, SD</i> (range)	27.8, 34.3 (3-104)	

IMPLICATIONS FOR THE ADVANCED PRACTICE PROVIDER

Advanced practice providers are uniquely positioned to serve as champions for primary palliative care integration within their oncology practices. As integral members of the care team, they are involved throughout the continuum of cancer care, and this extension of their current role is a natural evolution of their scope of practice. Elements of the SPOC program are adaptable across oncology settings, from rural and community-based clinics to larger medical institutions. With an increased focus on palliative care principles, there is an opportunity to improve patient and family engagement and improve role satisfaction. The oncology APP can support meaningful conversations surrounding expectations for the future, with and without treatment and enhance goal-concordant care. Within this capacity they can have a direct impact to alleviate symptom burden, improve quality of life, and help facilitate timely care transitions as patients approach end of life. Integration of SPOC principles into routine oncology practice is an opportunity to improve the patient and family experience while demonstrating the value of APPs at the clinical and organizational level. ●

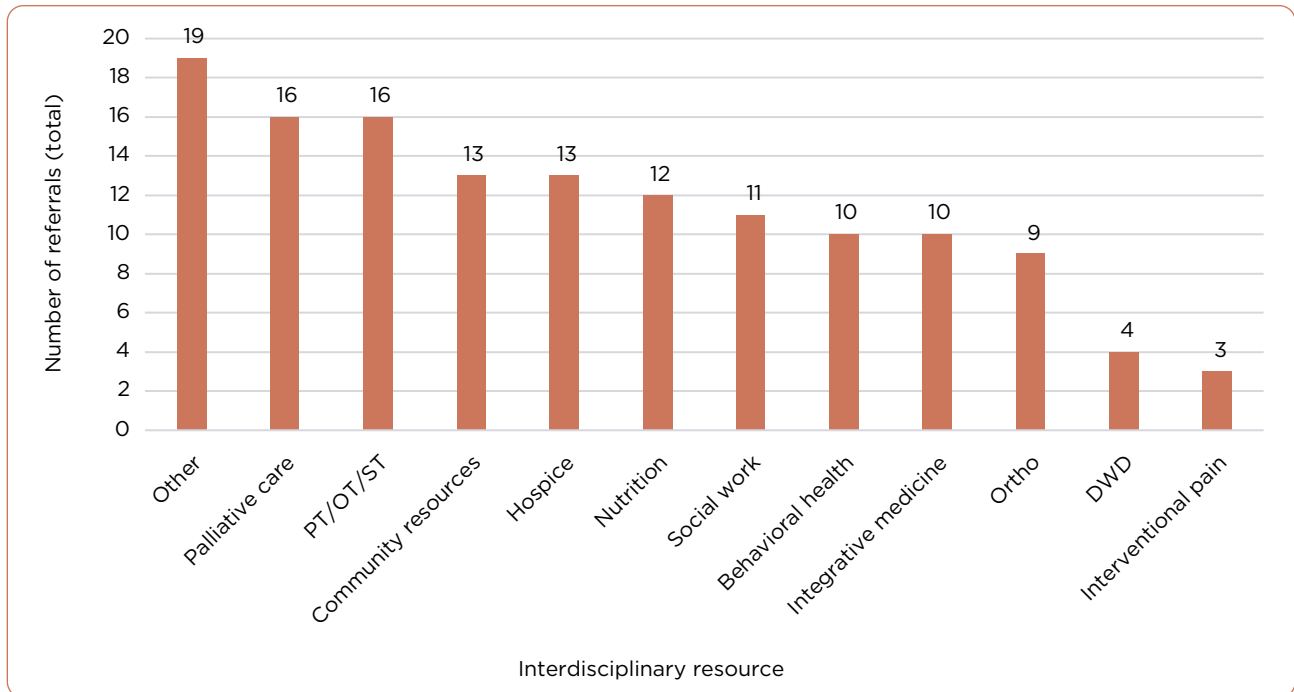


Figure 3. Interdisciplinary referrals ($n = 136$). PT = physical therapy; OT = occupational therapy; ST = speech therapy; ortho = orthopedics; DWD = Death with Dignity.

Disclosure

The authors have no conflicts of interest to disclose.

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