The SCOOP Program

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Introducing supportive care and enhanced navigation into the curative treatment of cancer

Numerous studies have demonstrated the impact of the early introduction of palliative care for patients with advanced cancers.[1-4] One landmark study of patients with metastatic non-small cell lung cancer revealed not only an improvement in quality of life but also a two-month improvement in survival among patients receiving supportive care in addition to standard care.[5] Also noted in the study, care for these patients may have been less costly due to earlier introduction of hospice services and less chemotherapy prescribed and used. In a similar manner, the addition of nurse navigation has been shown in a randomized study to impact favorably on the patient.[6]

We hypothesized that introducing supportive care management and enhanced electronic aids to nurse navigation in selective curative cases could result in cost savings and enhanced patient experience for patients with advanced disease.

Improving Our Multidisciplinary Care Model

Christiana Care's Helen F. Graham Cancer Center and Research Institute, located in northern Delaware, is one of the busiest cancer centers in the region, with 3,300 new analytic cases a year. A high priority is placed on the multidisciplinary practice of oncology, with multidisciplinary clinics established for 14 different tumor sites. In our traditional multidisciplinary care model, patients were initially seen by a nurse navigator and physicians representing the three major oncologic specialties—medical, radiation, and surgical—with other support staff consulted as needed. Prior to 2016 our supportive and palliative care service had been generally uninvolved with curative cases as part of the multidisciplinary team.

In addition, under our traditional multidisciplinary care model, nurse navigators did not have access to electronic aids to promote effective care coordination. Unfortunately, because our nurse navigators were challenged with managing patient needs in a fragmented system, barriers to care coordination sometimes occurred, resulting in missed appointments, unaddressed nutritional and psychosocial needs, and unmanaged symptoms.

We hypothesized that introducing supportive care management and enhanced electronic aids to nurse navigation in selective curative cases could result in cost savings and enhanced patient experience for patients with advanced disease. To test this hypothesis, we developed and implemented the Supportive Care of Oncology Patients (SCOOP) Program, introducing a clinical pathway as the key program component in November 2016. Our pathway committee—comprised of leaders from Organizational Excellence, Medical Oncology, Radiation Oncology, Inpatient Oncology Nursing, Supportive and Palliative Care, and Psycho-

social Oncology—believed that all patients receiving concurrent chemotherapy and radiation with curative intent would most likely benefit from this type of program due to their substantial risk for medical complications like inanition, uncontrolled pain, and respiratory distress. However, due to resource limitations and for the purposes of data collection, we limited the SCOOP Program to patients receiving radiation and chemotherapy at the Helen F. Graham Cancer Center who were diagnosed with potentially curable thoracic, colorectal, or head and neck malignancies in our multidisciplinary clinics. Because a number of patients with these diagnoses with combined modalities were not seen initially in the multidisciplinary clinics and therefore received standard care, these patients were able to function as contemporary controls for the purposes of analysis. Patients seen in the multidisciplinary clinics prior to the initiation of the SCOOP Program functioned as historical controls.

Developing Our Clinical Pathway

In 2016 Christiana Care Health System established a formal structure based on a service line model. Senior administration felt that the traditional department organization would be inadequate to prepare the institution for a risk-based reimbursement environment, and nine different service lines were established. The departments retained their educational and credentialing responsibilities, but clinical strategy and tactics were passed to the service lines. Each service line was tasked with developing a clinical pathway. These pathways were not intended to be National Comprehensive Cancer Network guidelines but instead were viewed as an interdisciplinary effort to meet the triple aim of improving the patient experience, delivering better care, and reducing healthcare costs.[7] Accordingly, Christian Care Health System established a clinical value council that included the service line leaders as well as the chief clinical officer. The council's purpose is to maintain accountability for the clinical pathways and to disseminate and share information about these pathways for mutual benefit.

Within the cancer service line, the service line leadership team approved the SCOOP clinical pathway, and an integrated practice team was put together to develop and implement the pathway. Figure 1, right, illustrates the pathway governance structure. A pathway integration team was established at the institutional level to provide all of the necessary support to integrate the clinical pathway.

The solar system diagrams in Figure 2, page 22, illustrates the relationships within the integrated practice team and the pathway integration team services that are available to this team. Section heads within the Helen F. Graham Cancer Center made up the core members of the integrated practice team. Four team leaders were selected, including the associate service line leader, a project manager from organizational excellence, and chiefs of nurse navigation and care management. The pathway integration team provided critical expertise in areas such as data on admission, readmissions, and emergency department (ED) visits; educational tools; information from patient advisors; and data from patient charges.

The integrated practice team met on a regular basis, initially biweekly and then monthly. Core team members developed a current state process map of the opportunities for improving patient experience and quality of care from the time the patients were seen in the multidisciplinary clinic until one month following completion of their radiation therapy. Examples of the inadequacies noted included:

- Lack of standardized medical history forms
- Redundant visits
- Incomplete task performance by nurse navigators
- Insufficient involvement of supportive and ancillary services
- Poor ED communications
- Poor communication on discharge from the hospital and admission to non-cancer floors.

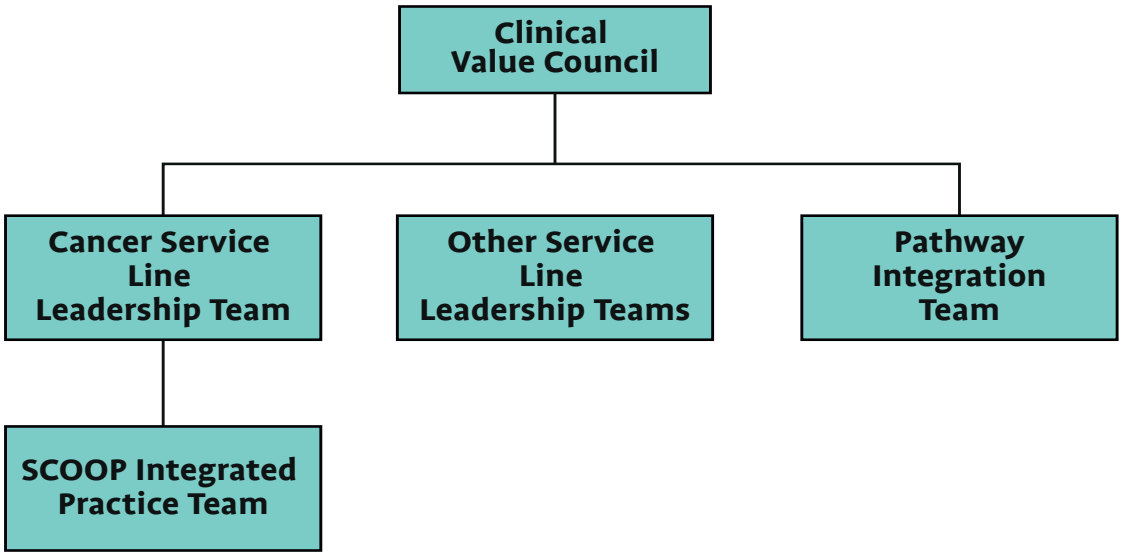
In discussion of the opportunities for enhancing the patient experience, it became obvious that our integrated practice team would have—in some instances—little short-term effect. For example, without restructuring the entire bed board assignments system, it was unlikely that the integrated practice team could influence patient admission to the cancer nursing unit. To counter this effect, the team developed an impact control matrix (Figure 3, page 23), identifying interventions in the top left as activities that the team felt would have the biggest impact on the patient and over which the team would have the most control. Our top priorities identified opportunities 1, 2, 3, 7, and 9 for our initial interventions. These included:

- Ensuring that all patients who will be receiving concurrent chemotherapy and radiation for either thoracic, head and neck, or colorectal malignancies with curative intent are screened by a member of the supportive and palliative care team at the time of the initial multidisciplinary visit.
- Developing a checklist for nurse navigation.
- Developing an enhanced electronic aid for navigation.
- Implementing a process by which palliative and supportive services such as nutrition, health psychology, and dentistry are automatically contacted to evaluate a patient unless nurse navigators opt out of such services at the time of the multidisciplinary visit.
- Developing an educational journal for patients that would help them self-navigate and reduce their anxiety.

Implementing the Clinical Pathway

Once these priorities were identified, the integrated practice team delegated implementation responsibilities to providers with feedback and education from appropriate integrated practice team members. Initially, ensuring that all eligible patients were placed on the clinical pathway proved challenging. Discussion with clinicians provided key insights. First, navigators were not aware that eligible patients were not being placed on the clinical pathway. Additionally, many eligible patients were not being referred to

Figure 1. Clinical Pathway Governance



the multidisciplinary clinics and instead were beginning treatments directly after consultation with the radiation and/or medical oncologist. Our initial analysis of compliance six months after clinical pathway implementation revealed a disappointing compliance rate of only 50 percent, mostly due to bypassing the multidisciplinary clinics. Nurse navigator consciousness was raised by repetitive reminders.

We countered the omission of multidisciplinary clinic referral by creation of a "re-entry" clinical pathway managed by the radiation oncology nurses, as well as substantial feedback to the physician providers. Radiation oncology nurses received a list of all SCOOP patients and were asked to compare it to their list of potentially eligible patients beginning treatment to identify discrepancies. If an eligible patient was determined to be off the pathway, he or she would be referred promptly to the newly created SCOOP multidisciplinary clinic, where patients would be seen by nurse navigators and relevant supportive care services early on in treatment but without the physician oncologic specialists whom they had already seen in consultation. As a result of these various interventions, the current overall participation of eligible patients is now 92 percent.

Next, we developed a checklist for nurse navigators that prescribed communication dates with the patient, captured scheduled visits, and assessed unmet needs among other mandatory tasks, such as opting out of individual supportive care interventions. We implemented the checklist and improved coordination of care using a platform called Aerial (Medecision, medecision.com). Intended primarily as an electronic platform for population health case management, the Christina Care Health System IT team—under the direction of the SCOOP integrated practice team—adapted the platform to assure task completion in a timely fashion by the nurse navigators. The electronic checklist helped nurse navigators improve care coordination and decrease gaps in care. These tasks include coordination of consults with oncologic physicians and other ancillary providers such as social work, behavioral health, nutrition, speech pathology, occupational and physical therapy, supportive care providers, and dental providers (when applicable). Collaborative communication occurs from the start of the electronic checklist. Tasks are automatically generated at various points based on the date of clinical pathway creation, treatment start, and treatment completion to correlate with disease and treatment needs.

The electronic checklist provides an automatic workflow versus manual entry, which decreases omission and error. The first step in the process is to enter patient characteristics in drop-down menus on the home page, thus initiating the electronic checklist.

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Figure 2. The SCOOP Integrated Pathway Team and Pathway Integration Team Partnership

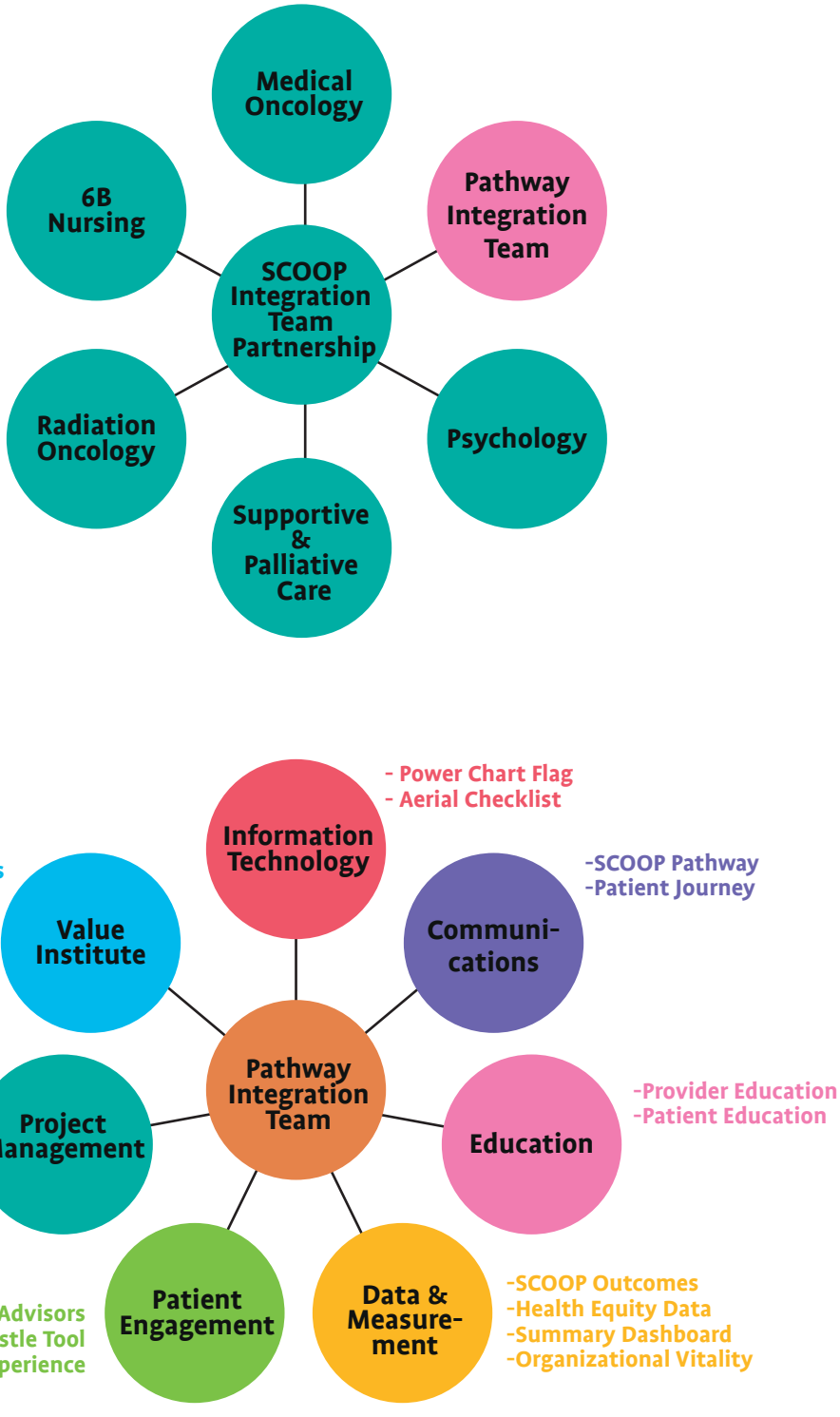
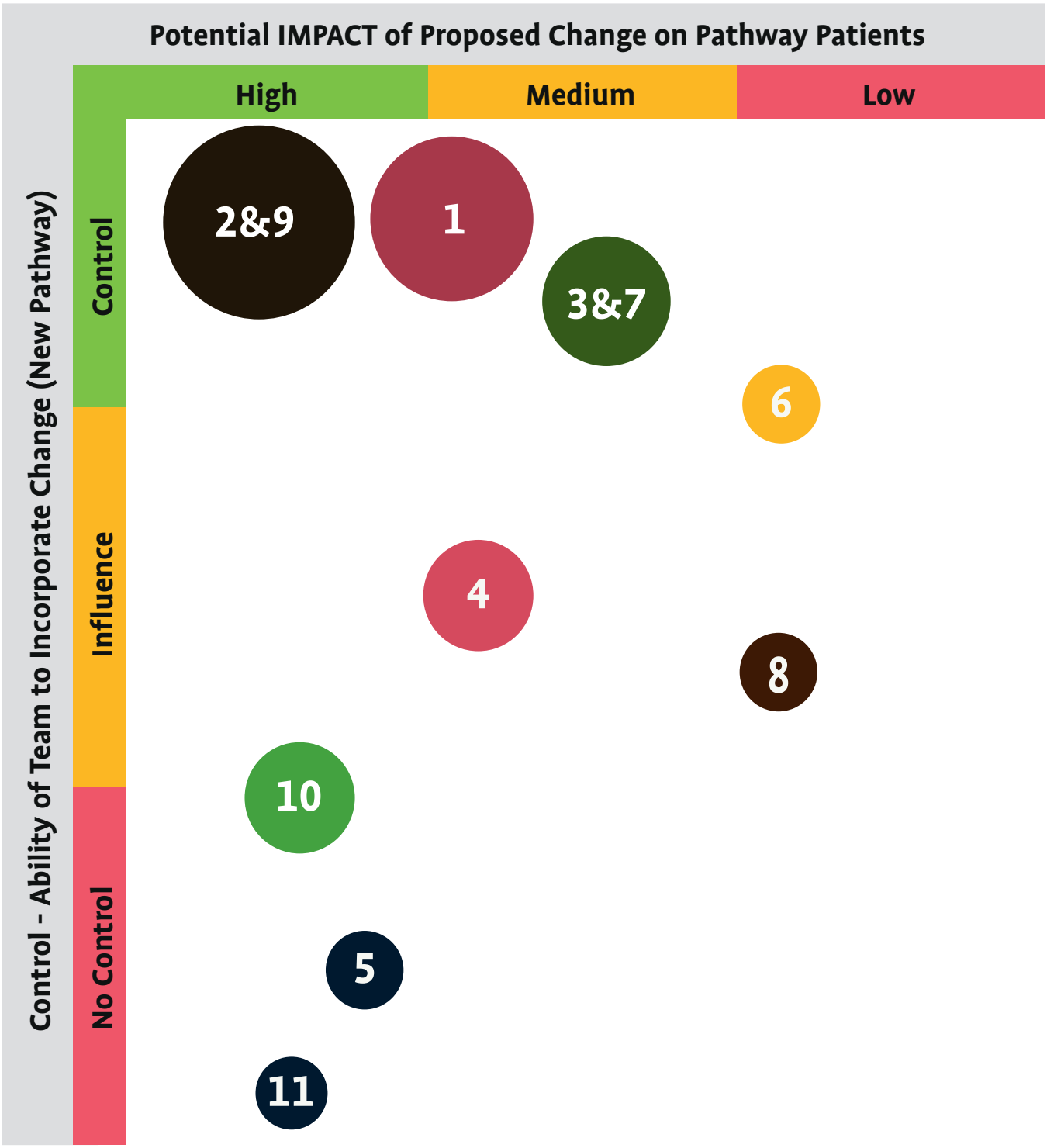


Figure 3. Impact Control Matrix for Proposed Change



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Once the required fields are completed, the software automatically generates a checklist that is patient specific and time driven. The checklist includes a series of tasks for nurse navigators to manage and complete. Though tasks may be delegated to and completed by certain consulted providers, navigators receive electronic notification of its completion and the task is not removed from their list prior to this notification. The electronic checklist and software provide navigators with a daily list of patient tasks. By clicking on individual patients, navigators become aware of necessary patient interventions.

In addition, the Aerial platform communicates with the hospital information system about clinical pathway patients and the navigator (as well as the oncologists) receives notification of ED visits, admission, and discharges when they are flagged by the information system. Once a discharge occurs, nurse navigators are tasked with reviewing patient discharge data, calling the patient, and assuring a smooth transition of care back to the outpatient oncology team. Figures 4 and 5, right, illustrate Aerial output of both task summaries and task details.

Finally, we collaborated with patient advisors to redesign our education journal to address unmet patient needs, such as what symptoms to expect from treatment, the goals of treatment, coping with unwanted emotions, and resources available in the cancer center to help patients through their treatment journey. Table 1, below, outlines the sections included in the revised patient education journal.

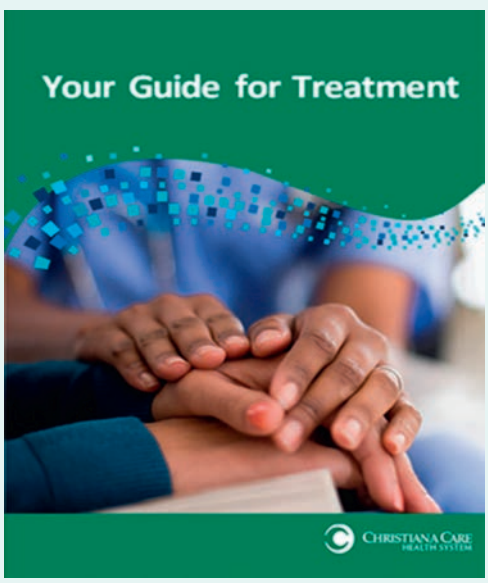
Our Results

When we examined our primary outcomes of ED visits, hospital admissions, and 30-day readmissions, it was clear from the outset that our SCOOP patients benefited from this multifactorial intervention. Table 2, page 26, shows data from the first year of the SCOOP Program, revealing striking differences between SCOOP patients and the contemporary controls (defined as SCOOP-eligible patients who were not on the clinical pathway). Moreover, current monthly data suggest that these results continue to be sustainable.

Nurse navigator task compliance was aided by the electronic platform. Already excellent (94 percent) at the onset of the SCOOP Program, over the course of the first 16 months, compliance increased to close to 100 percent (Figure 6, page 27).

Cost data were obtained from the pathway integration team, who were able to provide actual expenses incurred by the institution based on procedural charge codes. These cost data did not include reimbursement from the patient or third parties. Thus, these can be viewed as societal cost savings and would represent institutional savings in a capitated or bundled reimbursement environment but do not necessarily represent institutional savings in a fee-for-service environment. Table 3, page 26, shows the average cost savings for a SCOOP patient compared to a control patient (defined as SCOOP-eligible but not on the clinical pathway). Table 4, page 26, shows the average cost savings for a SCOOP patient since the start of the clinical pathway (Nov. 1, 2016. to May 31, 2018).

Table 1. SCOOP Patient Education Journal



- Welcome
- Map and How to Get Around the Campus
- Understanding Your Multidisciplinary Care Clinic Visit
- Your Treatment
  - Radiation
  - Chemotherapy and Medications
  - Surgery
  - Supportive and Palliative Care
  - Primary Care
- Coping and Emotions
- Nutrition and Well-being
- Symptoms and Side Effects
- Appointments
- My Medications
- After Treatment is Over

Figure 4. Aerial Daily Nurse Navigator Tasks

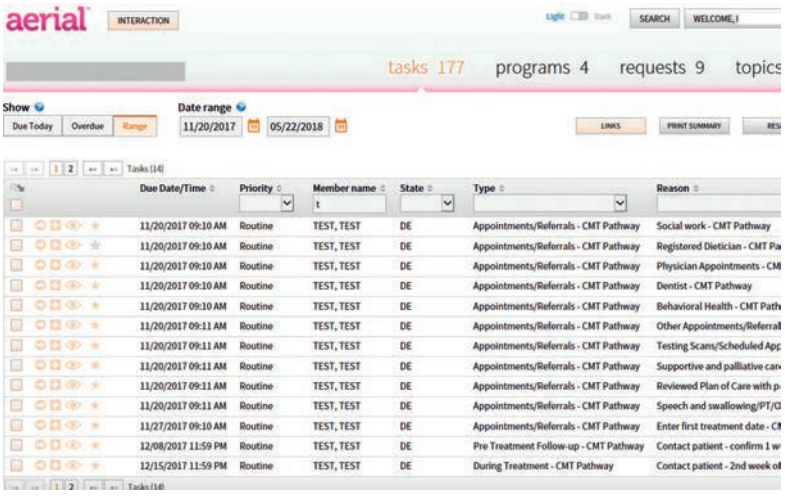
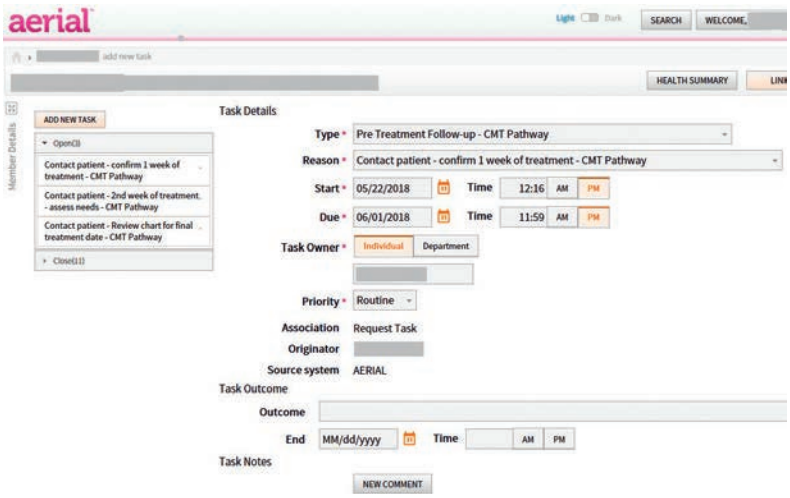


Figure 5. Aerial SCOOP Checklist Task Selection



Wrap-Up and Future Directions

Eighteen months ago, the Helen F. Graham Cancer Center and Research Institute instituted a program designed to provide the kind of supportive care services generally reserved for patients with advanced solid tumors into a population of patients being treated with curative intent but with sufficient acuity to suggest that they could also benefit from more intensive interventions. These interventions were combined with enhanced nurse navigation aided by an electronic platform. Our results with regard to prevention of ED visits, admission, and readmission strongly suggest a substantial benefit in the quality of life from a more intensive psychosocial approach for these cases. Not surprising, the decrease in admission and ED visits resulted in less procedural expense incurred and represented a substantial societal cost savings for these patients, likely improving relevant outcomes in a value- and risk-based environment.

We would like to expand the program to all patients with high acuity seen in our multidisciplinary clinics rather than limit the intervention to a select group of combined modality patients

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Table 2. SCOOP vs. Control Visit Data One Year After Program Implementation

ED Visits		
	SCOOP	**Control**
All patients	59	56
Number of ED patients	19	30
Total number of ED visits	37	63
Percentage of patients in ED	32.2	53.6
Hospital Admissions		
	SCOOP	**Control**
All patients	59	56
Number of patients admitted	15	19
Total number of admissions	25	34
Admission percentage by patients	25.4	33.9
Readmissions		
	SCOOP	**Control**
Number of 30-day readmissions	5	11
Number of admissions	25	34
Percentage of readmissions	20	32.4

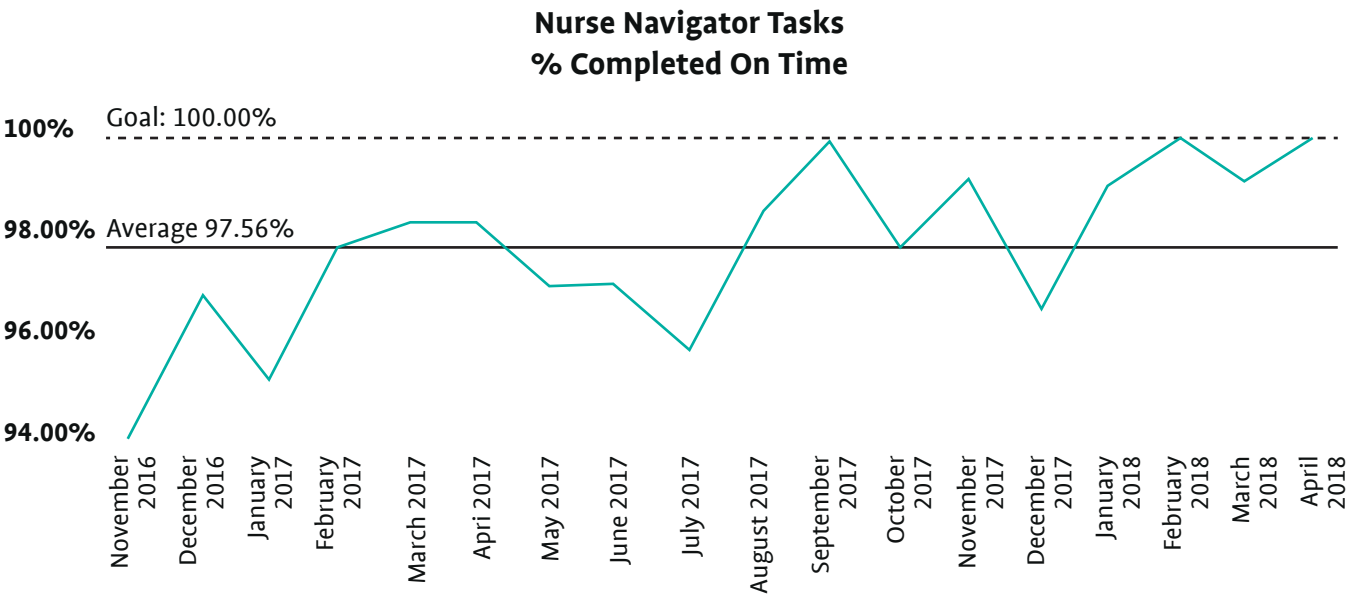
Table 3. SCOOP vs. Control One-Year Cost Analysis

	Control	**SCOOP**	**Delta**
Number of patients	54	57	—
Total cost	$371,640.00	$302,256.00	—
Cost per patient	$6,888.21	$5,337.83	$1,544.41

Table 4. SCOOP Program Annual Cost Savings

Year	**Total Cost Savings**	**Number of SCOOP Patients**	**Average Number of Patients per Month**
2016	$16,988.51	11	5.5
2017	$140,541.31	91	7.6
2018	$63,320.81	41	8.2
Total	$220,850.63	143	7.9

Figure 6. SCOOP Nurse Navigation Task Compliance



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being treated curatively. To do so would require greater staffing in our supportive care services and the institution of an objective measurement of individual patient acuity. We have also recently introduced a medical support unit manned daily by a nurse practitioner and allowing for urgent referrals, which we hope will further reduce ED visits and hospital admissions. OI

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