
Breast Cancer Navigation

Using physician and patient surveys to explore nurse navigator program experiences

Ellis C. Dillon, PhD, Paul Kim, MS, Martina Li, MPH, Qiwen Huang, MS, Natalia Colocci, MD, PhD, Cynthia Cantril, RN, MPH, OCN®, CBCN®, and Dorothy Y. Hung, PhD, MA, MPH

BACKGROUND: Patient navigators can improve patient experiences of care and outcomes, but little is known about how navigation programs may affect physician workflows and experience.

OBJECTIVES: This study aimed to understand patient and physician experiences with a breast cancer navigation (BCN) program using Lean design principles.

METHODS: Surveys were developed and distributed from 2019 to 2020 to 255 patients diagnosed with breast cancer and 128 physicians in primary care and cancer-related specialties. Descriptive analyses were conducted.

FINDINGS: Eighty-three physicians and 94 patients completed the survey. A large majority of physicians reported that the BCN program “made their day easier” and improved flow, care coordination, and patient experience. A large majority of patients reported receiving the right level of support during diagnosis communication and high satisfaction in other domains measured.

KEYWORDS

nurse navigation; cross-sectional surveys; physician satisfaction; patient satisfaction

DIGITAL OBJECT IDENTIFIER

10.1188/21.CJON.579-586

EVIDENCE SUGGESTS THAT PATIENT NAVIGATORS CAN IMPROVE patient access to cancer care and experience of care. To receive cancer care, individuals must often seek care from various specialists, such as medical oncologists, radiologists, and surgeons, and navigate different healthcare systems and environments, including hospitals, clinics, and infusion centers. Given this complexity, cancer care has been critiqued for being fragmented and not patient-centered (Levit et al., 2013). Patient navigation was first adopted in the 1990s to reduce barriers and disparities in cancer care (Burhansstipanov et al., 2018). Research demonstrates that navigation helps make cancer care more patient-centered and accessible and may reduce costs (Riley & Riley, 2016; Rocque et al., 2017).

Breast cancer is the most frequently diagnosed invasive cancer, with an estimated 276,480 patients diagnosed and 42,170 dying in 2020 in the United States (Surveillance, Epidemiology, and End Results Program, 2021). Despite various definitions and implementations of navigation, patient navigation in breast cancer is now widespread. Most research analyses of navigation’s impact have focused on outcomes such as screening rates, time to diagnosis, timeliness of cancer care, and financial benefits (Bernardo et al., 2019; Riley & Riley, 2016). Community-based breast cancer navigation (BCN) has been found to improve patient outcomes, often by overcoming barriers in access to care and timeliness of care for uninsured or underrepresented populations (Baik et al., 2016; Henderson et al., 2020). Some analyses have found that navigated patients also have lower anxiety or distress (Harding, 2015) and increased satisfaction (Yackzan et al., 2019). However, other research has found no differences in satisfaction between navigated and non-navigated patients (Post et al., 2015; Wells et al., 2016).

There is some evidence suggesting that nurse navigation improves patient retention inside healthcare systems (Cantril, Moore, & Yan, 2019; Kline et al., 2019), particularly with advanced practice nurses in the navigator role. Few studies have looked at physician satisfaction with a nurse navigator program (Campbell et al., 2010; Gordils-Perez et al., 2017; Hunnibell et al., 2012), and no other studies surveyed an entire team of physicians involved in cancer management. Because cancer management

is fragmented and interprofessional, integrating the different specialties involved is critical to better care coordination. Therefore, it is essential to understand whether primary care physicians (PCPs) who refer patients for mammograms and biopsies and the cancer specialists who follow up with patients after a breast cancer diagnosis believe that nurse navigators improve patient care and experience and do not increase physician workload.

Background

The Palo Alto Medical Foundation (PAMF) in California initiated a new BCN program using Lean design principles to bridge gaps in care. Lean is a process and quality improvement methodology that is increasingly being adopted in healthcare settings (Hung et al., 2021; Shortell et al., 2021). It provides a road map for maximizing value while minimizing “waste,” which is defined in the context of health care as anything that does not provide value to patients (e.g., long patient wait times, lapses in information exchange between care providers, duplication of services such as medical testing or procedures). Lean concepts that directly address the need for value creation and waste reduction, combined with reinforcing tools and processes to optimize healthcare professionals’ daily work, are well suited to current needs for transforming cancer care. By mapping out the connections and pathways among multiple clinicians and settings, locations of broken processes or inefficiencies can be better identified and targeted for improvement.

In cancer care at PAMF, patients and physicians identified communication lapses after biopsy and workflow variations to coordinate care. A breast cancer nurse navigator was then introduced as the primary point of contact for patients after their breast biopsy, and standard workflows were developed to guide patients from biopsy to consultation and surgery, if needed. The breast cancer nurse navigator relayed the biopsy results to patients; outlined the next steps in their care; connected them to surgeons, medical oncologists, and radiation oncologists; and provided additional resources as needed. To avoid the added distress some patients report experiencing when receiving a breast cancer diagnosis via an unexpected telephone call (Cantril, Moore, & Yan, 2019), the nurse navigator’s default workflow was to have an in-person meeting to relay a positive breast cancer diagnosis. The BCN program was launched in one geographic area in California in 2016 and was then rolled out to two additional areas in California in 2018.

Although some research has begun to quantify the impact of BCN on patient satisfaction and other outcomes of interest, very little research measures physician satisfaction with navigation. This project’s goal was to understand physician and patient experience with the BCN program and understand satisfaction with communication, care coordination, and overall experience with breast cancer nurse navigators.

“Physician satisfaction with the breast cancer navigation program was high among all specialties.”

Methods

Survey Development

The physician and patient surveys were developed by a team of cancer care physicians and researchers. The physician survey was designed with input from the breast cancer nurse navigators and physician stakeholders from medical oncology, radiology, surgery, family medicine, internal medicine, and obstetrics-gynecology. However, questions were not tested for validity or reliability. Physicians in different specialties were asked slightly different questions based on their role in diagnosis and treatment. Physician survey questions focused on support provided by the BCN program, communication with breast cancer nurse navigators, and suggestions for improving the flow of the BCN program.

The patient survey was based on a cancer support services patient experience survey from 2016 (Cantril, Moore, & Yan, 2019). It included selected questions from the National Cancer Institute (NCI) Patient Satisfaction With Logistical Aspects of Navigation (PSN-L) scale and Patient Satisfaction With Navigator Interpersonal Relationship (PSN-I) scale (Jean-Pierre et al., 2012). The survey focused on five areas: communication of diagnosis, resources on care and treatment options, logistical support received from nurse navigators, interpersonal relationships with nurse navigators, and overall experience with nurse navigators. Both surveys included open-ended questions asking for suggestions or comments about the BCN program. This project was approved as a quality improvement project by the Sutter Health Institutional Review Board.

Survey Distribution

Surveys were sent to physicians practicing at clinics where the BCN program was available in medical oncology, radiology, surgery, and primary care (family medicine, internal medicine, or obstetrics-gynecology) departments. Included PCPs had referred patients for at least one breast biopsy from January to July 2019. Physician satisfaction surveys were sent by email to 128 physicians from August to November 2019.

Patients diagnosed with breast cancer from January to July 2019 with known encounters with a breast cancer nurse navigator

were identified. Patient satisfaction surveys were sent by mail and email to 255 patients from October 2019 to May 2020. Patient breast cancer diagnosis information, demographic information, and evidence of encounters with breast cancer nurse navigators were retrieved from the electronic health record and breast cancer nurse navigator documentation.

Analysis

Descriptive analyses were conducted to characterize the sample and frequencies of responses to individual survey questions. Individuals who responded “n/a” to survey questions were excluded from the denominator for those questions for analysis. Written comments included with surveys were read by three research team members and categorized by topic. Examples are shared to illustrate the spectrum of emotions and experiences reported.

Results

Among physicians, 83 of 128 (65%) completed the survey. Among patients, 94 of 255 (37%) completed a survey. Tables 1 and 2 summarize the characteristics of survey participants.

Physician Experience

Physician experience with the BCN program was measured in three domains: impact on physician workload, care coordination (flow and communication), and perception of patient experience. Responses to survey questions are reported in Table 3.

Concerning workload, 47 of 50 physicians involved in relaying diagnosis, which included PCPs and radiologists, agreed that the BCN program “made my day easier with regard to the delivery of a cancer diagnosis.” All seven medical oncologists agreed that the program “made my day easier with regard to caring for” patients with breast cancer. Five of six surgeons said the program “made my day easier with regard to treating” (83% agreed) patients with breast cancer. One PCP wrote that they “love this program—[it] has made breast cancer diagnosis and initial care so much less painful for me and my patients.”

Physicians also reported high satisfaction with the impact of the BCN program on care coordination and communication with the nurse navigator. Fifty-seven of 60 PCPs and 21 of 23 medical oncologists, radiologists, and surgeons said that the BCN program improved flow and communication. Among all physicians, 76 of 83 reported satisfaction with the nurse navigators’ interactions, including updates from, communication with, and handoffs in care.

Physicians’ perceptions of patient experience were also positive, with all seven medical oncologists and five of six surgeons agreeing that patients are more prepared for their initial visits. Among physicians, 76 of 82 agreed that “patients seem to be better taken care of by the entire clinical team.” One surgeon

TABLE 1.
PHYSICIAN SURVEY RESPONDENT
CHARACTERISTICS (N = 83)

CHARACTERISTIC	n
Sex	
Female	55
Male	23
Prefer not to answer or no response	5
Age (years)	
Younger than 36	6
36–45	22
46–55	29
56–65	16
Older than 65	4
Prefer not to answer	6
Specialty*	
Primary care	60
Internal medicine	28
Family medicine	25
Radiology	10
Medical oncology	7
Obstetrics-gynecology	7
General surgery	6
*Participants could choose more than 1 response.	

wrote: “[Nurse navigator name] is wonderful. The patients always show up far better informed than those who come from outside PAMF. So far, this is working great.”

The survey also asked physicians for suggestions for improving the BCN program, and there were some challenges. One radiologist noted, “I am concerned that, early in the program, the nurse navigator would communicate the results prior to radiologist evaluation of whether the lesion was concordant or not.” Another medical oncologist highlighted communication challenges:

Sometimes, I think the navigator sees patients too soon, and they are not ready to absorb what she says. Also, it is critical that during chemo, all patient issues be sent to the oncology practice nurse [so as] not to confuse the patient.

Patient Experience

Patients diagnosed with breast cancer reported high levels of satisfaction with how they received their breast cancer diagnosis. Of 91 patients, 71 received their diagnosis in person and 20 by telephone. Eighty-three of 91 reported being given the right support during diagnosis communication. Sixty-one of 70 patients found receiving their diagnosis in person helpful versus 14 of 19 who received their diagnosis by telephone. Most patients (71 of 91) reported having the right amount of time to

have their initial questions answered during the diagnosis communication (versus 13 reporting too much time and 7 not having enough time). When asked about their experience with the nurse navigator helping with specific matters, 83 of 86 patients agreed they were satisfied with making medical appointments, 81 of 87 were satisfied with getting health information, and 81 of 85 were satisfied with understanding care information. The lowest level of satisfaction (66 of 83) was reported for “learning about services in the community that are available to you” (see Table 4).

TABLE 2.
PATIENT SURVEY RESPONDENT CHARACTERISTICS
(N = 94)

CHARACTERISTIC	n
Age (years)	
Younger than 46	10
46–55	24
56–65	22
66–75	25
Older than 75	13
Race/ethnicity	
White	48
Asian	30
Hispanic	5
Black	1
Unknown	9
Other	1
Insurance type	
PPO/FFS	44
Medicare FFS	27
HMO	16
Medicare HMO	5
Medicaid/Medi-Cal	2
Preferred language	
English	88
Other	6

FFS—fee-for-service HMO—health maintenance organization; PPO—preferred provider organization
Note. Patients were aged a mean of 61.9 years (SD = 12.3).

Patients were very positive in their comments about the BCN program. Patients highlighted the nurse navigator’s support: “My nurse navigator was unbelievably supportive. She was my ‘guardian angel.’ She is knowledgeable about every aspect of the cancer department and got me through this.” One patient contrasted her experience to that of a friend receiving care without a nurse navigator:

I have a friend going through treatment similar to my own at present. Her program does not offer a nurse navigator, and she is really struggling with understanding, feeling as though she’s heard, and so on. I am so grateful for [name], the nurse navigator who helps me walk through this process.

Several patients reported that the nurse navigator helped alleviate anxiety:

I could not have gotten through the first few months of treatment without my [nurse navigator]. She was, by far, the reason I was able to deal with the stress and anxiety of being diagnosed and interpreting results and the overwhelming amount of information.

Only 3 of 94 patients disliked that their nurse navigator communicated their breast cancer diagnosis. One patient said, “The navigator should be support, not the primary contact at the beginning of the process. Again, a doctor should have met with me first. All the bad news was delivered by a navigator, not my doctor.”

Several patients also critiqued the need to wait for the in-person visit with the nurse navigator rather than hearing their diagnosis earlier by telephone: “When the test results are out, I would like to know ASAP via a phone and not have to wait for my appointment, especially when I called and asked.” A few patients also expressed confusion about who the nurse navigator was or what fell within the scope of the nurse navigator’s role. Several patients wrote comments describing problems with other aspects of cancer care, such as infrequent communication from the nurse navigator, limited options for surgeons, concerns about billing, and issues with their PCPs.

Discussion

This study assessed patient and physician satisfaction with a BCN program and included PCPs and cancer specialists (medical oncologists, surgeons, and radiologists). Physician satisfaction with the BCN program was high among all specialties, similar to

provider satisfaction scores reported elsewhere (Gordils-Perez et al., 2017). Across all questions, satisfaction was highest among PCPs. Because of the complicated nature of cancer diagnosis and treatment and PCPs' limited time, the survey suggests that a BCN program might alleviate some of the burden that PCPs feel when

TABLE 3.
PHYSICIAN SURVEY RESPONSES BY GROUP

SURVEY QUESTION	PCPs (N = 60)			RADIOLOGISTS (N = 10)			ONCOLOGISTS (N = 7)			SURGEONS (N = 6)		
	N	\bar{X}	SD	N	\bar{X}	SD	N	\bar{X}	SD	N	\bar{X}	SD
Workload												
This program has made my day easier with regard to the delivery of a cancer diagnosis.	44	4.77	0.75	6	4.67	0.52	-	-	-	-	-	-
This program has made my day easier with regard to caring for patients for breast cancer.	-	-	-	-	-	-	7	4.71	0.49	-	-	-
This program has made my day easier with regard to treating patients for breast cancer.	-	-	-	-	-	-	-	-	-	6	4.33	1.21
Care coordination—flow												
This program has contributed to an easier flow each day in coordinating cancer care.	60	4.82	0.65	-	-	-	-	-	-	-	-	-
This program has contributed to a more seamless flow of communication among me, my patients, and other physicians involved with care.	-	-	-	10	4.5	0.53	7	4.71	0.49	6	3.83	1.47
Care coordination—communication												
I am satisfied with the regular updates provided by the breast cancer nurse navigator.	60	4.72	0.74	-	-	-	-	-	-	-	-	-
I am satisfied with my communications with the breast cancer nurse navigator.	-	-	-	10	4.4	0.7	-	-	-	-	-	-
The navigator keeps me informed of important developments in the patient's care.	-	-	-	-	-	-	7	4.71	0.49	-	-	-
I am satisfied with the handoffs in treating patients with breast cancer.	-	-	-	-	-	-	-	-	-	6	4.33	1.21
Patient preparedness												
This program has made patients more prepared for their visit with me to discuss diagnosis and systemic treatment options.	-	-	-	-	-	-	7	4.71	0.49	-	-	-
This program has made patients more prepared for their initial visit with me.	-	-	-	-	-	-	-	-	-	6	4.5	0.84
Patient experience												
With this program, patients seem to be better taken care of by the entire clinical team.	59	4.78	0.67	10	4.3	0.67	7	4.86	0.38	6	4	1.55

PCP—primary care provider

Note. Responses varied by question from N = 44 to N = 60 for PCPs and N = 6 to N = 10 for radiologists. Questions were rated on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Respondents selecting the option "n/a" were excluded from the denominator for response calculations. PCPs included obstetrician-gynecologists, internists, and family medicine physicians. Most questions were asked to all physicians in all 3 geographic areas, but only 2 geographic areas had radiologists.

TABLE 4.
PATIENT SURVEY RESPONSES

QUESTION	n
How were you informed of your breast cancer diagnosis? (N = 94)	
In person	71
Via telephone	20
Other	3
I found receiving my results in person (N = 70)	
Helpful	61
Somewhat helpful	5
Not helpful	4
I found receiving my results on the telephone (N = 19)	
Helpful	14
Somewhat helpful	5
Was there enough time to have your initial questions answered? (N = 91)	
Just right	71
Too much	13
Not enough	7
Were you given the level of support you needed during the communication of your diagnosis? (N = 91)	
Yes	85
No	8
Were you given any resources to help you navigate your treatment options? (N = 90)	
Yes	86
No	4
How would you rate your overall experience with your breast cancer nurse navigator? (N = 89)	
Satisfied	82
Neutral	5
Dissatisfied	2
I would recommend this service to others. (N = 90)	
Somewhat agree/agree	85
Neutral	3
Disagree/somewhat disagree	2

Continued in the next column

TABLE 4. (CONTINUED)
PATIENT SURVEY RESPONSES

QUESTION	n
I valued working with the breast cancer nurse navigator. (N = 89)	
Somewhat agree/agree	86
Neutral	2
Disagree/somewhat disagree	1
I understand the role of my breast cancer nurse navigator. (N = 89)	
Somewhat agree/agree	84
Disagree/somewhat disagree	4
Neutral	1

transitioning patients from primary care to the oncology setting. Among cancer specialists, medical oncologists showed the highest satisfaction as compared to surgeons and radiologists. The BCN program’s benefit may be highest to medical oncologists, who are typically leading patient cancer care management. Physician survey written comments suggest that the BCN program eased medical oncologists’ burden by assuming care coordination work.

There were some initial workflow issues in the BCN program related to sharing diagnostic information with patients in a location where pathology was conducted at a laboratory outside this healthcare system. Although the issue was resolved, it suggests that BCN programs may need to adjust to each region’s unique workflows. Lastly, two surgeons were dissatisfied with the BCN program, one commenting that the quality varied a lot depending on the nurse navigator, suggesting that further standardization of nurse navigator work and quality is warranted (Cantril, Christensen, & Moore, 2019). Patient satisfaction with the BCN program was uniformly high and comparable to other studies (Gordils-Perez et al., 2017). A high majority of patients stated that they were given the level of support needed during communication of diagnosis, were given resources on treatment options, were satisfied with the overall experience of the BCN program, valued working with the breast cancer nurse navigator, and understood the breast cancer nurse navigator role.

Consistent with research on patient preferences concerning diagnosis communication (Cantril, Moore, & Yan, 2019), more patients found it helpful to receive biopsy results in person as opposed to by telephone. However, a few patients commented on the survey about their desire to hear results by telephone because that would enable them to hear sooner. This finding may suggest that patients could be offered diagnosis communication

by telephone as an option at their biopsy appointment, with a careful explanation of the advantages and disadvantages to set their expectations about what may happen. Several patients also desired to hear about their cancer diagnosis from a physician rather than the nurse navigator. Among all questions asked, the nurse navigators were rated highest for accessibility and respectfulness. It was also surprising to find that, although most patients noted having the “just right” amount of time to have initial questions answered about their new diagnosis of breast cancer, some noted having too much time.

Limitations

Because this study lacks a comparison group of patients and physicians who did not work with the BCN program, it is impossible to attribute the reported high satisfaction to the BCN program directly. More studies with comparison groups are desirable. The patient response rate (37%) was lower than that of physicians (65%). Physician participation may have been higher because of their more prolonged exposure to and engagement with the BCN program, as well as clinical leadership encouraging participation in the survey. Patient participation may have been lower because of the effects of the COVID-19 pandemic and because some patients may not have received or read the emails and mailed letters about the survey. The physician survey itself had several limitations because its questions were not assessed for validity, reliability, and internal consistency, and questions asked varied by physician specialty and location. The study's patient sample does not represent the general population and is limited to insured patients who were primarily English speakers and who were using one health system in the northern California Bay Area.

Implications for Research

This research raises some questions that future research may explore, such as whether navigation influences overall satisfaction with cancer care. Existing patient satisfaction surveys can be leveraged to understand this relationship better (Roth et al., 2020). With a larger, more diverse sample, it would also be possible to explore any differences in patient satisfaction by age, race/ethnicity, socioeconomic status, social support, insurance type, or cancer stage. Although most recent research examines nurse navigation for breast cancer, it will be crucial to analyze patient and provider experiences with these programs as navigation expands to include an array of different cancer types. Developing validated physician survey questions would facilitate cross-cancer type and cross-specialty analysis.

Implications for Nursing

This survey suggests that BCN programs can help to ensure timely and supportive care, but these programs would benefit from customizing workflows to varying local conditions, ensuring that navigators have sufficient training and are well suited to

IMPLICATIONS FOR PRACTICE

- Implement breast cancer navigation for important benefits to primary care and cancer care physicians and to improve workflows and work experience.
- Emphasize benefits to patients and physicians because they may be essential in expanding navigation across sites and cancer types.
- Customize local workflows and consider patient preferences for communication about the diagnosis as ways to benefit nurse navigator work.

navigation work, and communicating with patients at the time of biopsy to present guidance about and options for diagnosis communication (i.e., by telephone or in person). Based on this survey, current and future navigation programs may benefit from focusing on site-specific implementation and further consideration of how to manage care coordination and communication between physicians and patients. Lean concepts may help programs undertake quality improvement work to improve patient care quality, experience, costs, and healthcare worker well-being (Bodenheimer & Sinsky, 2014).

Conclusion

This survey suggests that patient navigation may improve patient experience and access to care. Surveyed physicians reported high satisfaction and that the BCN program reduced their workload, improved care coordination, and improved the patient experience. The potential for navigation to enhance patient cancer care and physicians' work experiences could justify expanding navigation across various cancer types and along the care continuum.

Ellis C. Dillon, PhD, is an assistant scientist in the Center for Health Systems Research at Sutter Health and the Palo Alto Medical Foundation Research Institute in Palo Alto, CA; **Paul Kim, MS**, is a medical student in the Frank H. Netter MD School of Medicine at Quinnipiac University in North Haven, CT; **Martina Li, MPH**, is a project manager, and **Qiwen Huang, MS**, is a statistical analyst, both in the Center for Health Systems Research at Sutter Health and Palo Alto Medical Foundation Research Institute; **Natalia Colocci, MD, PhD**, is the chair of medical oncology at the Palo Alto Medical Foundation in California; **Cynthia Cantril, RN, MPH, OCN®, CBCN®**, was, at the time of this writing, director of Cancer Support Services and Patient Navigation at Sutter Health in Santa Rosa, CA; and **Dorothy Y. Hung, PhD, MA, MPH**, is the director of the Center for Lean Engagement and Research in the Department of Health Policy and Management at the University of California, Berkeley. Dillon can be reached at dillone@sutterhealth.org, with copy to CJONEditor@ons.org. (Submitted February 2021. Accepted April 29, 2021.)

The authors gratefully acknowledge the breast cancer nurse navigators, Jennifer Glover, RN, MS, CBCN®, Melanie Harvey, RN, BSN, OCN®, CBCN®, Christine Tran-Robbins, RN, and Michelle Crowell, BSN, RN, who assisted in this work, as well as the many patients and providers who completed the surveys.

The authors take full responsibility for this content. This research was supported by funding from Sutter Health and the Palo Alto Medical Foundation. The article has been reviewed by independent peer reviewers to ensure that it is objective and free from bias.

REFERENCES

- Baik, S.H., Gallo, L.C., & Wells, K.J. (2016). Patient navigation in breast cancer treatment and survivorship: A systematic review. *Journal of Clinical Oncology, 34*(30), 3686–3696. <https://doi.org/10.1200/JCO.2016.67.5454>
- Bernardo, B.M., Zhang, X., Beverly Hery, C.M., Meadows, R.J., & Paskett, E.D. (2019). The efficacy and cost-effectiveness of patient navigation programs across the cancer continuum: A systematic review. *Cancer, 125*(16), 2747–2761. <https://doi.org/10.1002/cncr.32147>
- Bodenheimer, T., & Sinsky, C. (2014). From triple to quadruple aim: Care of the patient requires care of the provider. *Annals of Family Medicine, 12*(6), 573–576. <https://doi.org/10.1370/afm.1713>
- Burhansstipanov, L., Shockney, L.D., & Gentry, S. (2018). History of oncology patient and nurse navigation. In L.D. Shockney (Ed.), *Team-based oncology care: The pivotal role of oncology navigation* (pp. 13–42). Springer. https://doi.org/10.1007/978-3-319-69038-4_2
- Campbell, C., Craig, J., Eggert, J., & Bailey-Dorton, C. (2010). Implementing and measuring the impact of patient navigation at a comprehensive community cancer center. *Oncology Nursing Forum, 37*(1), 61–68. <https://doi.org/10.1188/10.ONF.61-68>
- Cantril, C., Christensen, D., & Moore, E. (2019). Standardizing roles: Evaluating oncology nurse navigator clarity, educational preparation, and scope of work within two healthcare systems. *Clinical Journal of Oncology Nursing, 23*(1), 52–59. <https://doi.org/10.1188/19.CJON.52-59>
- Cantril, C., Moore, E., & Yan, X. (2019). Diagnosis disclosure: Patient preferences and the role of the breast nurse navigator. *Clinical Journal of Oncology Nursing, 23*(6), 619–626. <https://doi.org/10.1188/19.CJON.619-626>
- Gordils-Perez, J., Schneider, S.M., Gabel, M., & Trotter, K.J. (2017). Oncology nurse navigation: Development and implementation of a program at a comprehensive cancer center. *Clinical Journal of Oncology Nursing, 21*(5), 581–588. <https://doi.org/10.1188/17.CJON.581-588>
- Harding, M. (2015). Effect of nurse navigation on patient care satisfaction and distress associated with breast biopsy. *Clinical Journal of Oncology Nursing, 19*(1), E15–E20. <https://doi.org/10.1188/15.CJON.E15-E20>
- Henderson, V., Tossas-Milligan, K., Martinez, E., Williams, B., Torres, P., Mannan, N., . . . Watson, K.S. (2020). Implementation of an integrated framework for a breast cancer screening and navigation program for women from underresourced communities. *Cancer, 126*(Suppl. 10), 2481–2493. <https://doi.org/10.1002/cncr.32843>
- Hung, D.Y., Truong, Q.A., & Liang, S.Y. (2021). Implementing Lean quality improvement in primary care: Impact on efficiency in performing common clinical tasks. *Journal of General Internal Medicine, 36*(2), 274–279. <https://doi.org/10.1007/s11606-020-06317-9>
- Hunnibell, L.S., Rose, M.G., Connery, D.M., Grens, C.E., Hampel, J.M., Rosa, M., & Vogel, D.C. (2012). Using nurse navigation to improve timeliness of lung cancer care at a veterans hospital. *Clinical Journal of Oncology Nursing, 16*(1), 29–36. <https://doi.org/10.1188/12.CJON.29-36>
- Jean-Pierre, P., Fiscella, K., Winters, P.C., Post, D., Wells, K.J., McKoy, J.M., . . . Kilbourn, K. (2012). Psychometric development and reliability analysis of a patient satisfaction with interpersonal relationship with navigator measure: A multi-site patient navigation research program study. *Psycho-Oncology, 21*(9), 986–992. <https://doi.org/10.1002/pon.2002>
- Kline, R.M., Rocque, G.B., Rohan, E.A., Blackley, K.A., Cantril, C.A., Pratt-Chapman, M.L., . . . Shulman, L.N. (2019). Patient navigation in cancer: The business case to support clinical needs. *Journal of Oncology Practice, 15*(11), 585–590. <https://doi.org/10.1200/JOP.19.00230>
- Levit, L.A., Balogh, E., Nass, S.J., & Ganz, P. (2013). *Delivering high-quality cancer care: Charting a new course for a system in crisis*. National Academies Press. <https://doi.org/10.17226/18359>
- Post, D.M., McAlearney, A.S., Young, G.S., Krok-Schoen, J.L., Plascak, J.J., & Paskett, E.D. (2015). Effects of patient navigation on patient satisfaction outcomes. *Journal of Cancer Education, 30*(4), 728–735. <https://doi.org/10.1007/s13187-014-0772-1>
- Riley, S., & Riley, C. (2016). The role of patient navigation in improving the value of oncology care. *Journal of Clinical Pathways, 2*(1), 41–47.
- Rocque, G.B., Pisu, M., Jackson, B.E., Kvale, E.A., Demark-Wahnefried, W., Martin, M.Y., . . . Partridge, E.E. (2017). Resource use and Medicare costs during lay navigation for geriatric patients with cancer. *JAMA Oncology, 3*(6), 817–825. <https://doi.org/10.1001/jamaoncol.2016.6307>
- Roth, L., Tirodkar, M., Friedberg, M., Smith-McLallen, A., & Scholle, S.H. (2020). Assessing cancer patient experience of care in outpatient oncology practices in the United States. *Medical Care, 58*(8), 744–748. <https://doi.org/10.1097/MLR.0000000000001339>
- Shortell, S.M., Blodgett, J.C., Rundall, T.G., Henke, R.M., & Reponen, E. (2021). Lean management and hospital performance: Adoption vs. implementation. *Joint Commission Journal on Quality and Patient Safety, 47*(5), 296–305. <https://doi.org/10.1016/j.jcjq.2021.01.010>
- Surveillance, Epidemiology, and End Results Program. (2021). *Cancer stat facts: Female breast cancer*. U.S. Department of Health and Human Services, National Institutes of Health. Retrieved April 2, 2021, from <https://seer.cancer.gov/statfacts/html/breast.html>
- Wells, K.J., Winters, P.C., Jean-Pierre, P., Warren-Mears, V., Post, D., Van Duyn, M.A.S., . . . Freund, K.M. (2016). Effect of patient navigation on satisfaction with cancer-related care. *Supportive Care in Cancer, 24*(4), 1729–1753. <https://doi.org/10.1007/s00520-015-2946-8>
- Yackzan, S., Stanifer, S., Barker, S., Blair, B., Glass, A., Weyl, H., & Wheeler, P. (2019). Outcome measurement: Patient satisfaction scores and contact with oncology nurse navigators. *Clinical Journal of Oncology Nursing, 23*(1), 76–81. <https://doi.org/10.1188/19.CJON.76-81>