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Research Article

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# The Process of Oncology Nurse Practitioner Patient Navigation: A Grounded Theory Approach

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## Abstract

*Nurse practitioner (NP) navigation, in general, has been shown to achieve cost effective quality care, while saving millions of dollars [1]. Research though scant has shown that oncology nurse practitioner navigators' improve clinical outcomes [2]. For purposes of this proposal, oncology NP navigators are nurse practitioners with a certification in oncology who utilize navigation processes to care for cancer patients along any aspect of the cancer care continuum. Navigation process is defined as "a series of actions or steps taken in order to achieve a particular end" [3].*

*To date there are no standard measures of the process of oncology patient navigation or related clinical outcomes. Development of process and outcome measures is critically important in that the development of these measures is necessary for navigator program evaluation. The purpose of the study is to answer the question: What processes do oncology NP navigators use in caring for cancer patients? Twenty oncology nurse practitioner navigators were interviewed though the use a semi-structured interview utilizing grounded theory methodology. This resulted in a well-defined set of concepts and theoretical framework for the process of ONP navigation which lays the groundwork for program evaluation and role delineation.*

## Background of the Study

The cancer care delivery system was declared to be in a crises state by the Institute of Medicine (IOM) in 2013. The IOM (2013) [4]. maintains that the complexity of the cancer care system can be overwhelming for the newly diagnosed cancer patient, due to the biology of the cancer, involving multiple specialists, in an aging population with multiple comorbidities, resulting in care that is fragmented and providers that are not prepared to meet needs of the patient on a patient centered level.

To magnify these issues is that fact that there is an increased need for cancer care and a dwindling number of oncologists to fill this need. The demand for cancer care is expected to rise rapidly, due to the aging factors and increase in the population, along with improvements in cancer survival rates. The Center for Disease Control and Prevention (2018) reports that it is expected that between 2010 and 2020, that the number of new cancer cases in the United States will rise to about 24% in men, and 21% in women reaching more than 1 million and 900,000 cases per year respectively [5]. At the same time there is a shrinking workforce of oncologists. In a study publication by the American Association of Clinical Oncology (ASCO), the demand for cancer care is expected to rise 48% between 2005 and 2020. The supply of oncologist services is predicted to reach a slower rate of approximately 14%, based on the current age distribution and practice patterns of oncologists and the number of physicians going into fellowship positions. Excluding alterations based on changes in practice patterns, services used, or cancer treatments, this predicts a shortage of 9.4 to 15.0 million visits, or 2,550 to 4,080 oncologists; roughly one-quarter to one-third of the 2005 supply [6].

Similarly the American Nurses Association (ANA) in a white paper, cite the lack of care coordination to be due to the misalignment between the many independent elements of U.S. healthcare that are high quality and the financial and structural incentives that restrict the potential for better patient care outcomes and resource allocation [1]. One solution that has been operationalized is the initiation of the Doctoral of Nursing Practice degree, the thrust of which is to promote evidenced based outcomes focused nursing practice [7].

In efforts to address these inconsistencies in care, the Affordable Care Act (ACA) signed by President Obama in 2010 proposes patient navigation programs as a novel solution to address the minorities, underserved in efforts to eliminate barriers to care, through the promotion of timely efficient care [8]. Currently this is the thrust of the Oncology Care Model, (OCM), a new healthcare delivery model that was designed to provide cost effective quality care for chemotherapy patients. Services focus upon care coordination, navigation, and national benchmark treatment guidelines for cancer care [9].

Definitions and programs for patient navigation have evolved since their origination in 1990, during which time Dr. Freeman, the pioneer and his associates developed a navigation program at Harlem

Hospital in response to the need to address access to cancer care for the poor and underserved in America [10,11].

The most current definition of an Oncology Nurse Navigator (ONN) as a "professional RN with oncology-specific clinical knowledge who offers individualized assistance to patients, families, and caregivers to help overcome healthcare system barriers. Using the nursing process, an ONN provides education and resources to facilitate informed decision making and timely access to quality health and psychosocial care throughout all phases of the cancer continuum" [12].

The Commission on Cancer (CoC) of the American College of Surgeons publishes accreditation standards that govern the wide range of cancer care. Standard 3.1 mandates that a patient navigation process be put in place which is driven by a Community Needs Assessment every three years. The purpose of the process is to address disparities and barriers to cancer care. The CoC advocates navigators whose role is to not only provide personalized guidance and support, but to assist care providers to navigate the hospital system throughout their care [12].

Nurse practitioner (NP) navigators, in general, have been shown to achieve cost effective quality care, while saving millions of dollars [1]. A systematic literature review was conducted to ascertain current knowledge related to oncology nurse practitioner navigation, with complete findings published elsewhere [2]. It was found that research is emerging that shows benefit in using an oncology nurse practitioner navigator for ensuring timely care and patient and staff satisfaction [2]. Studies are continuing to emerge which identify advanced practice nurses practicing oncology utilizing navigator roles such as establishing a pediatric leukemia care pathway, and facilitating shared decision making in advanced cancer [14,15].

Processes and outcomes influence each other. One study described a preliminary framework, and found that patient outcomes were influenced by patients, navigators, navigation process, and external factors [16]. Likewise the Donabedian model (1966) has stressed the critical linkage between the role that processes have in determining outcomes, and the challenges that are involved in determining cause and effects of these organizational components [17]. Although few systematic studies define standardized outcome measurements for nurse practitioners in the oncology setting, consortiums are in place that are serving to define these metrics on a global basis [2,18,19].

## Introduction

To gain insight as to the practice of oncology NP navigators this study was created which centered on the following research question: What processes do oncology nurse practitioner (ONP) navigators use in caring for cancer patients?

For purpose of this study, oncology NP navigators are nurse practitioners with a certification in oncology that utilize navigation processes to care for cancer patients along any aspect of the cancer care continuum [20]. Process is a series of action or steps to take in order to achieve a particular end [3].

"Patient navigation in cancer care refers to individualized assistance offered to patients, families, and caregivers to help overcome health care system barriers and facilitate timely access to quality medical and psychosocial care from pre-diagnosis through all phases of the cancer experience" [21].

Grounded theory was the methodology used for this study. Grounded theory was chosen because it is a systematic inductive method of analysis leading to the development of a hypothesis [22]. The end result of this methodology is the origination of a theory which describes the main focus of concern of the population, and the solution and process of the concern [23]. The goal was either a coded set of propositions, or a set of conceptual categories embedded within a theory which would detail the navigation process [22]. It was chosen for this study because it useful in providing rigorous insight into areas that little is known about [24]. It has been determined that nurse practice navigators practicing oncology make a difference in improving patient outcomes, yet neither the definition nor navigation processes are well defined. The crux of the theory is, is that groups have shared social interpretations that are not always well defined. This research process has well defined guidelines that link theory with practical application resulting in the discovery of a theoretical explanation [25]. Thus this framework is a good fit for the emergence of theory relating to nurse practitioner patient navigation.

## Methods

### Population

The study participants are recruited from all areas of the United States. To be eligible for the study the nurse practitioners must be working as navigators and meet the following criteria: 1) license to practice as an NP in their respective state; 2) certification to practice as an oncology nurse; 3) minimum of 5 years full time experience in oncology nursing; and 4) English speaking. These criteria were used in order to recruit a sample of experienced NPs that would provide a detailed description of the navigation process.

### Sample Strategy Process

Institutional Review Board (IRB) was obtained for the study. A convenience snowball sampling framework was utilized to recruit 20 oncology NPs who worked in in-patient and/or out-patient settings. The recruitment strategies were diverse and included: 1. word of mouth networking with peers – nurse practitioners were asked if they know of any oncology NPs in the area that meet the study criteria; 2. soliciting volunteers through public announcements at professional nursing conferences; 3. contacting authors of oncology NP navigation articles appearing in newsletters or convention pamphlets via telephone or e-mail; 4. posting information soliciting oncology NP volunteers on blogs or websites of professional organizations with organizational director approval; and, 5. recruiting by snowball sampling, i.e., asking oncology nurse practitioner (ONP) navigators and other nurses to volunteer names of ONP navigators who may be interested in the study. A recruitment letter and flyer were given to the participant once initial interest was shown which described the study. Informed consent then obtained.

### Interview Guide

The research protocol involved an interview script. The lead question was: describe your role as an NP navigator when caring for a cancer patient? A total of fourteen other questions with probes were asked if necessary to answer the research question. The goal of the interview was to understand the navigation process that the NP utilized in practice.

### Sample

Navigator work experience is depicted in Table 1. The mean age

for the sample was 52 years; all were female; average years worked in nursing 25; average years worked in oncology nursing 19. This number was averaged for 19 participants, as one participant left the question blank. Average years worked as a navigator were seven. Eighteen participants worked in the hospital, two worked in radiology diagnostic centers. Twelve had non-teaching affiliation, eight with teaching affiliation. Fourteen worked in the outpatient setting. The sample consisted of ONP's from various areas of the United States as shown in Table 2. Types of oncology certifications that were held by the navigators are listed in Table 3. Work setting distribution by certification is shown in Table 4.

**Table 1: Nursing Experience**

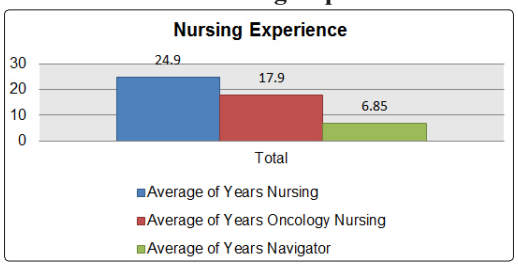


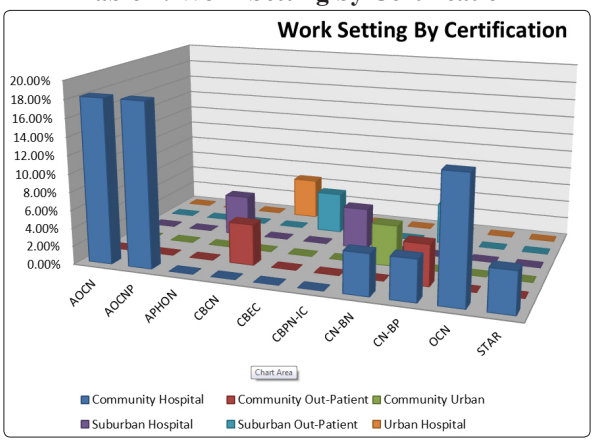

**Table 2: State Licensure of N = 20 ONP's**

| NP License State | |
|---|---|
| Arkansas | 1 |
| California | 5 |
| Florida | 2 |
| Illinois | 5 |
| Kentucky | 1 |
| Massachusetts | 1 |
| Michigan | 1 |
| New York | 2 |
| New Jersey | 1 |
| South Dakota | 1 |

**Table 3: Oncology Certifications**

| Certifications | Count |
|---|---|
| Certified Breast Patient Navigator CBPN-IC | 1 |
| Advanced Oncology Certified Nurse practitioner AOCNP® | 4 |
| Advanced Oncology Certified Nurse AOCN® | 5 |
| Oncology Certified Nurse OCN® | 3 |
| Survivorship Training and Rehabilitation STAR | 1 |
| Certified Navigator Breast Provider CN-BP | 3 |
| Certified Breast Care Nurse CBCN®… | 2 |
| Certified Navigator Breast RN CN-BN | 3 |
| Association of Pediatric Oncology Certified Nurses APHON® | 1 |
| Clinical Breast Examination Certification CBEC | 1 |

**Table 4: Work Setting by Certification**




## Data Collection

### Data Collection Procedures

Data collection procedures were generated by the emerging theory and mutually agreed upon by student and chair. Data collection was in the form of interviews using an initial interview script via the telephone. The researcher utilized memoing during the interview process which was included as part of the data for analysis. Detailed information of the data collection procedures is depicted in Appendix A.

## Appendix A

### Data Analysis

| Techniques | Process | Results |
|---|---|---|
| Open Sampling | Script reviewed for events that explained concepts | Line by line concept coding(Glaser, 1978) with NVivo software<br>Memoing used in data analysis<br>Returned to site to find answers to questions (Corbin & Strauss, 2008) |
| Constant Comparison | Constantly compared incidents in the research process Noted ways in which the data was the same or different from previous incidents | Variations classified using NVivo (Corbin & Strauss, 1990) |
| Open Coding | "breaking data apart and delineating concepts to stand for blocks of raw data" (Corbin & Strauss, 2008, p.195 | Interview #7<br>Seventy-two concepts emerged |
| Axial Coding | Concepts linked into conceptual families (Corbin & Strauss, 2015 | Interview #10<br>Theoretical saturation; eleven thematic categories |
| Selective Coding | Formulation of relationships between concepts into theoretical frameworks | Core category identified Collapsed into seven categories Cross- referenced with literature Basic Social Process identified (Corbin & Strauss, 2015)<br>Interview nineteen: diagram Interview twenty: process confirmed with only NP to navigate to survivor stage |

## Trustworthiness

Credibility, transferability, dependability, and confirmability were utilized to ensure trustworthiness in the research process as shown in Appendix B [26,27].

## Appendix B

### Trustworthiness

| Credibility | Information congruent with reality | Well established research technique of grounded theory Trusting relationship with participants stressing confidentiality |
|---|---|---|
| Transferability | Findings can be applied to other studies | Core category explaining navigation Demographic questionnaire and participant inclusion criteria designed to recruit highly experienced ONPs from various settings |
| Dependability | Detailed reporting of processes | Accuracy of taped transcriptions rechecked Use of NVivo software |
| Confirmability | Data is true to participant experience | Data reviewed with research chair Audit trail |

Gupta (1981); Shenton (2004)

The goal of grounded theory is to generate a theory that describes and reflects behavior that is occurring. In all grounded theory, a basic social process (BSP) centers on a core category [28]. The core category has the function of integrating the theory. It stands alone in that it always appears in the phenomenon, and does not process out or end. This core category was "expediting care along the cancer continuum". This was the goal of the process, in that failure to carry this out would result in treatment delays and patients more or less being "stuck in the system". The navigator does this by conducting a barrier focused assessment, triaging needs, pulling in resources, guiding the patient to the next step, tracking, and program development. The navigator is in a nurse patient relationship, and a center for care for the patient, and this relationship simultaneously encompasses the facility and community. The navigator interfaces in this navigation process with in the facility and community. A basic social process in grounded theory centers on the core category [28]. In this study this process was that of connectivity and defined as "staying connected to the patient and to the system". Through interfacing with the patient/facility/community, the navigator was a center for care for all those involved in the patient's cancer journey. Appendix C illustrates the seven selective codes with their categories representing the core processes of ONP patient navigation. Figure 1 below depicts the model that illustrates the ONP navigation process:

## Appendix C

| Core Process with Selective Codes |
|---|
| **Core Process- EXPEDITING PASSAGE ALONG THE CANCER CONTINUUM** |
| **Basic Social Process STAYING CONNECTED OT THE PATIENT AND TO THE SYSTEM** |
| Comprehensive Assessment |
| Needs Assessment |
| Triaging Care to Ensure Timely Access |
| Navigation goal |
| Care Coordination/Pulling in Resources |
| Key Contacts |
| Tracking |
| Tracking along the Continuum |
| Guiding Survivorship Care |
| Survivorship Connection |
| Guiding the Patient to the Next Step |
| Supportive Care in General |
| Program Development/Carving a Role |
| Navigation Role |

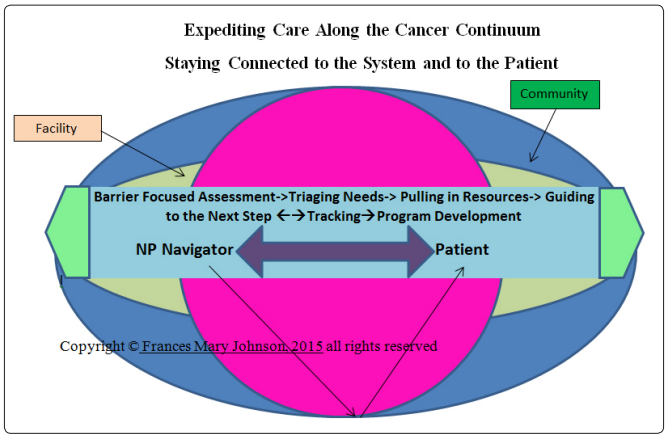



**Figure 3.2:** The Process of Oncology Nurse Practitioner Navigation Model

### Barrier-focused Assessment

The overall goal for the navigator was to expedite patient care. This begins with a barrier focused assessment addressing factors on an individual, facility, and community level that influence patient care.

### Patient Assessment

The patient assessment was characterized as being global in nature. …Nurses are taught to think holistically. Physicians are taught to think medicine. We are taught to look at the social dynamics. We are thought to think about things in addition to the medicine. I have a note template that kind of covers everything from what their diagnosis is to their treatment plan. It covers their dietary, psychosocial and all those specialties so that I am sure that as their navigator I am covering all of those issues for the patient, and then their follow-up.

One navigator states:

Well informed…educated about their disease and the process of what's happening. Quality…that they receive the correct care… quality care…holistic care…diet, nutrition, symptom management… financial counseling, transportation assistance…get all of your bases covered…maximize everything you could do so the patient can be compliant and successful with their treatment…working with the palliative care team and hospice when we need to.

### Facility Assessment

The facility assessment included not only knowledge of the facility resources but finding ways to expedite and coordinate care. This was done through the development of key connections amongst the staff. One of the most widely used means of implementing assessing patient needs to expedite facility care was through multidisciplinary team collaboration.

It's called a multi-disciplinary neuro oncology clinic where I work with the neuro surgeon, the radiation oncologist and the medical oncologist. We also meet with the neuro radiologist and the pathologist along with social work, other mid-level practitioners from the neuro surgery. We sit down, and we discuss the patient

cases, we look at their images, we review their brain imaging or spine imaging, and we discuss the best course of action to treat somebody's tumor whether it's malignant or benign using surgery, radiation or chemotherapy techniques.

On a weekly basis the whole team meets and discusses cases, and reviews the plan of care, so I think that that helps a lot with communication, making sure that everyone is on the same page with what the plan of care is for the patient. I think that communication is probably one of the biggest challenges.

### Community Assessment

Assessment of the community resources as relates to patient utilization was a major focus of the navigation process, especially as relates to addressing patient barriers to care. All of the navigators acknowledged that knowledge of community resources and interconnectedness with the community was important. Strategies such as marketing the role to the community especially to local providers were commonly utilized to expedite and coordinate timely care. Public educational assessments for program development both within the hospital and in community were widely employed to address the community needs as a whole.

You have to know your community. You really have to be able to assess your community and know what their needs are in this role too because again I am responsible for community education… Your navigation process is dictated by your community…my role as a navigator is going to be different from somebody else's role in the town over…there were two new thoracic surgeons that I am having to go out and meet…and being a provider I am not used to being a marketing person…I feel like I am a sales person…and I am not really good at that…it felt awkward to me…

Another thing that I do is community education…so I went and did a talk…we had 6 people there that were working on quitting smoking there, so they asked if I could start a group there, so we moved one from the hospital out to ... which is a couple of suburbs over so that kind of gives a broader area, so two support groups a week. We do individual counseling.

### Triaging Needs

There is an order to the cancer care due to the correlation between untimely diagnostic workup, treatment initiation and disease progression. Untimely care means disease progression which results in a reduction in remission, cure and long term disease free survival. Therefore there is a triaging process which is defined as an expedited and timely order of the cancer care for processing a patient through a diagnostic work-up, and along the cancer continuum (Johnson, 2018). Intricate to this process is knowledge of natural course of the disease which guides the work-up. Because oncology NP's have prescriptive authority, this process is facilitated; as in a lot of cases, the step of alleviating a physician's order is bypassed. Thus the barriers to care must be addressed in the manner that is most logical for facilitating timely access. This triaging process occurs on the patient/facility/community level, and in all phases of the cancer continuum [29].

### Examples are
### Patient Triaging

Patient triaging flows from the initial comprehensive assessment, and is part of the patient program which in essence is intertwined within the context of the facility and community program/programs. Triaging involves expert knowledge of all of the factors that are influencing the patients care, as well as utilization of the navigators' connectivity to contacts within the facility and community whom will assist in overcoming barriers to care.

To try to help them with their fears, show them how to learn about what's going to be happening, and then giving them a timeframe on you're going to see your surgeon first, and then, you're going to see the medical oncologist before your surgery, and this is what's going to happen next for you.

I would take care of the issues myself….and/or bring in other people….I work with a social worker and she deals with the practical issues that come up such as transportation problems…or if a patient has financial issues and they need resources…or if they need just somebody to listen to them ….you know if there are emotional issues…

### Facility Triaging

The barrier to the navigation process that was cited as as problematic for all of the navigators was lack of time. This was especially an issue for those navigators that had clientele that had heavy navigational needs. To offset the barriers navigators often utilized a triage process which identified and gave priority to patients that were at high risk for stagnating within the system and/or not completing their care as a result of these needs.

I am usually up around 6…and I review all of the patients sometimes; there can be as few as 20, and sometimes 40-50…every day I am going through all of the patients…tracking them…is there anyone that has had a referral?…I have all of the oncologists in the area that I have as my leads…so that if they are seeing patients I review their patients…I triage…and see which patients need more help…and this is the hospital go to…and I prioritize throughout the day……to identify people that maybe don't have any resources, as far as they don't have any family help or they have a very limited help. If they have barriers like they don't drive, or, they're in a financial mess. So at least some of those rise to the top, and they will get more help than someone that is very squared away, and can sort of self-navigate.

### Community Triage

The triage process was also evident as the navigator looked at the make-up of the community, and triaging target populations for enhanced navigation intervention. Some of the populations addressed in this sample were high risk areas endemic for lung cancer, those with literacy problems, and minority populations.

We noticed that, you know less than 5% of outpatients that came in for screening mammography were Hispanic, and less than 5% were Asian. We identified the Hispanic population as being kind of a target population that we wanted to try to reach here in this area: So we actually wrote a grant to the Coleman Foundation and were able to hire a –she's a lay outreach coordinator. You could almost call her a navigator…she actually goes out in the community, you know, teaches about, the importance of –screening mammography, checking your breast. She's from Mexico, she's a native Spanish speaker, but she teaches—taught Spanish in the public schools here for years. So she's very bilingual and has lots of contacts in the community. So we've been able to reach, you know, a considerably more, larger group of our Hispanic population.

Another thing that I do is community education…so I went and did a talk…we had 6 people there that were working on quitting smoking there, so they asked if I could start a group there, so we moved one from the hospital out to ... which is a couple of suburbs over so that kind of gives a broader area, so two support groups a week. We do individual counseling.

### Pulling in Resources

Pulling in resources involved care co-ordination; a central process employed by the navigator as depicted as resources were sought for the patient. Care-coordination was facilitated by the navigator between departments and specialists, appointment setters, family systems, research teams, insurance companies, state health departments, community resources for transportation, care providers in other states and others. In addition to guiding the patient to the resources, the navigator needed to facilitate this process to avoid treatment delays. This process was closely intertwined with in the facility and community and therefore was carried out synergistically. For example ineffective processes of getting patients the appropriate resources resulted in treatment delays on both the facility and community level. Implicit in this process are good communication skills and well ironed out flow processes of getting the patient the needed help.

### Pulling in Resources in a Patient Context

That's one thing that I really; really stress is the fact that you need to look at all actions for that patient. You need to look at all of your resources that you can draw from, and that's sometimes difficult for people who aren't accustomed to being able to do that work. I get NPs or NP students who have worked in family practice offices and when they come, and they want to start doing something like this. They just don't know how many things are involved in getting the patient from point A to point B.

…we call and see how they are doing and offer them navigation and provide support, and make sure—see what they've been told by the physician and go over the path report with them if they want, and help them get appointments usually with the surgeon to start. Then we have a wonderful—a new patient packet that we put together with resources, information about breast cancer and hospital like community resources for patients with breast cancer that we send to them…

### Pulling in Resources in a Facility Context

You know, you get sales reps, you get patients, you get doctors, you have your peers, and a lot of people depend on you for information because they feel like you should have that information about oncology because you are tracking. So you have to be very thorough and learn how to talk to the different people, because I wouldn't necessarily talk to a physician like I would talk to a patient.

…Primary care physicians, pulmonologists, medical oncology, radiation oncology, other nurse practitioners in most groups, other nurses, especially the lung cancer patients get chemo radiation at the same time concomitant therapy, so coordinating, making sure that we know when they are starting so that their chemotherapy is set up to be started. Social work is a big one, dietary, the dietician because a lot of them have dietary needs. Coordinating between inpatient and outpatient, because oftentimes patients can get admitted. Lung cancer patients have a lot of comorbidities and end up getting admitted to the hospital for various reasons. Palliative care, the majority of them are not curative so palliative care is huge.

### Pulling in Resources in a Community Context

So some community outreach and community navigation as well. That's how I kind of see that, as a community navigator. I sit on some administrative committees, there's a women's' service line, an oncology service line. They have an annual oncology update and community educational presentation, and sometimes I speak at those.

…I think that many years of experience has helped me, and I know a lot of people in the area because I have worked in the area my whole life, so…good references, as far as knowing where to send people.

### Guiding to the Next Step

Guiding to the next step was a phrase used by many of the navigators. Once the barriers to care were sorted out and the resources were pulled in, the patient was given guidance as the next part of their care was identified. For the most part the process of barrier focused assessment, triaging needs, pulling in resources was ongoing in that the navigators (N = 13) repeated the process along the cancer continuum i.e., from diagnosis to survivorship. In this case contact with the patient took place from diagnosis to death. For other navigators, contact was done in a specific phase of the cancer continuum such as the diagnostic or survivorship phase (N = 7) and there was a hands off to a provider that would see the patient through to the next step.

### Guiding to the Next Step within a Patient Context

On the day that the patient came in for the biopsy, we would meet, with them before that biopsy, talk about the procedure, that they are going to have and what the follow-up would be, and do a physical exam with them that day, so the patient is aware of who they are going to be connecting with so to speak.

Well we actually start at the very beginning when the patient finds out that they're going to be biopsied, and so our role is to talk to them, tell them what's going to happen, kind of prepare them for the next step.

### Guiding to the Next Step within a Facility Context

**ME: The survivorship program, is that a primary care provider? Yes ME: great!** She actually is going to be speaking at the NCBC this year…so she does what is called primary care oncology, and she sees them if they have symptoms related to their diagnosis or treatment of cancer. She also does osteoporosis management for patients who are on AI's that need injections of Prolea…

We are just starting also to interject a little bit into survivorship and treatment summaries. So as patients are kind of through with their active surveillance after GYN cancers we are working on summarizing their care, and letting their referring GYN or primary care doctor know the plan, or recommend follow up for their patients. You know, sending the patient and the referring doctor a letter... letting them know, you know, your patient is doing well. We're sending her back to you for ongoing care. This is the follow up scheduled we recommend.

### Guiding to the Next Step within a Community Context

I also arrange transportation, which is a big issue in our community to help them with transportation issues/concerns which they might

have. I am the one that makes sure that they get to where they need to be; hopefully pre-treatment, during treatment, post treatment.
…also work with three navigators from three local offices, so that does help me out because they work with surgeon's offices, and they are the three most common offices that I use, so that helps me out, the fact that there are navigators in the three surgeons offices that I use most frequently.

## Tracking

### Metrics and Navigation Tools

The major goal for the navigation process was high outcomes. Outcomes were measured by metrics. Closely intertwined with the metrics were navigation tools which facilitated the tracking of these metrics. Metrics fell within two categories which were patient metrics, and system metrics which included both the hospital system and community. Tracking and metrics were utilized throughout any phase of the navigation process in any stage of the cancer continuum.

### Patient metrics

Examples included distress ratings, patient satisfaction, risk scores, referrals, lost to follow-up rates, treatment decisions, pathology report notification, out migration, insurance authorization, quality of care and survivorship care. Patient satisfaction was a major goal, and the Press Ganey® (2018) system frequently employed. In some instances focus groups were held in the community both to determine need and gain feedback regarding patient satisfaction with care.

### Facility Metrics

Quality care was sought by following expert consensus guidelines, and programs were built with these guidelines serving as their backbone. These included The National Comprehensive Cancer Network (NCCN®), American Society of Clinical Oncology (ASCO®), Institute of Medicine (IOM), National Accreditation Program for Breast Centers® (NAPBC), Commission on Cancer (COC®), American College of Obstetrics and Gynecologists (ACOG®), and American Cancer Society (ACS®) [4, 30-36]. Though these guidelines included patient metrics these were not mutually exclusive with system metrics because the two are closely intertwined due to the fact that the navigation process works synergistically between the patient hospital system and community. Thus parts of the metrics indicated in these guidelines were applicable to program development and rendered system guidelines. Diagnostic metrics were a major focus for the ONP navigator, and these incorporated timely care such as in reporting pathology to patient and/or provider, ordering staging tests in a timely manner, as well as treatment consults. The focus of navigation for a large number of these navigators was in the diagnostic phase, and the fact that there was no need to obtain physician referral orders due to NP prescribing privileges made this a good fit for this process. Other institutional metrics included patient lost to follow-up percentages, STAR Program® rehabilitation referrals, number of patients seen, point along the cancer continuum, number of procedures/referrals, number of procedures, QA indefinable indicators such as sentinel node biopsies and ductal carcinoma in situ (DCIS), timely initiation of appointments, consistency of practice, face to face visits, phone calls, resource referrals, how long the case is open, admissions, discharges, number and types of interactions.

### Community Metrics

A glimpse of the far reaching implications of the navigation process was gleaned from a survivorship navigator who references survivorship care plan which is in its pilot stages:
…it has been individualized (template) and it's a challenge to spend the time going through the medical record and gleaning this information from multiple sources, so I get to work with a department that does pull that together for the state anyways, and we have tried to develop a template so that information can cross over, but that has been our biggest challenge.

### Navigation Tools

Navigation tools served as guides for tracking as well as process development tying the patient to the system

### Patient Tools

Examples of patient tools included chart review, templates, Gail Model for Breast Cancer Risk (2018) assessment lung nodule screening criteria, triage protocols, and Press Ganey® (2018) scores [36,37]. Less formal tracking tools included spreadsheets, task point, note template, sticky notes, informal face sheets, chart reviews, excel spreadsheets, PowerPoint tools, care coordination master schedule, Outlook alerts, and triage protocol.

We have an intake and referral sheet. It's a 2 page form. Even though the hospital has an electronic medical record we're still using paper form and paper charting because the electronic health record doesn't have a navigation piece to it, and we need to be able to track when to follow-up with patients and when the patient's surgery is and when to call them back, for example. We need to be able to see at a glance what's happening with this patient.

### Facility Tools

Examples included sophisticated computer systems, leadership meetings for program evaluation, quality assurance (QA) initiatives, multidisciplinary meetings, process tools, pamphlets describing the navigator role with contact information, QA initiatives, multidisciplinary meetings for consensus opinions regarding treatment planning. Professional standards were used as guidelines for metrics, and served as evaluative criteria for ongoing program development. Some of these included NAPC® (2018), COC© (2018), NCCN®(2018), and ACOG®(2018) [30, 33, 34]. Computer tracking systems were utilized in most instances as a means of communication between the systems The Cancer Journey Forward (n.d.) was popular for use in survivorship. Human trackers included RN data specialists. Administrative tools for system analysis and goal formation included process maps, picture representation of program, specific navigation guidelines such as the National Consortium of Breast Centers (NCBC, 2018) navigation steps. One program through the use of a National Comprehensive Cancer Center Control Program flowchart strove to standardize the navigation process amongst the different navigators within the system [38].

Other programs included Practice Partner, ARIA®, EQUICARE CS™, BEACON/EPIC, ASPEN, ACT (2017), and Cordata, as well as homegrown tailored computer software programs were utilized [39-46]. One navigator states:

"I am entering every step of the way for them behind the scenes, so everything from their diagnosis, imaging, abnormal imaging, biopsy and continuation from there, has all been populated all along the way…"

### Community Tools

These included marketing tools, group meetings, and community resource binders. In several instances there was mention of coordination of state and facility programs for cancer control through the use of a shared data base.

In summary the major goal for the navigation process was high outcomes. Outcomes were measured by metrics. Closely intertwined with the metrics were navigation tools which facilitated the tracking of these metrics. Tracking and metrics were used in all phases of the navigation process of assessing, triaging, needs, pulling in resources, and guiding to the next step, in all phase of the cancer continuum. Utilization of metrics expedited patient passage through the cancer continuum. Tracking and tracking tools were the means by which the navigator facilitated staying connected to the patient and system.

### Program Development

All of the navigators participated in the development of the navigation program. Intrinsic to this process was the development of novel and unique alliances tailored for the system, the goal of which was to expedite the navigation process or care, none of which were the same in any of this sample. Carving the role involved more of developing a "navigation system" in lieu of one navigator. This occurred simultaneously in all phases of navigation though the cancer continuum on the patient, facility, and community level.

### The Patient Program

I have had an intern that was a nurse that was a lay navigator. I have had her as an intern for a semester, and she followed with me for probably the first few days and she would come in with me, and I would do the NP part and she was very good with coming up with a plan for helping them with their anxiety, pre-op fears, she would do a stress reduction session with them for maybe 10 minutes or something, and that was unique to her because that was her kind of specialty. I guess that's what I would do with an NP who wanted to become a navigator.

There's always something new that you learn, whether it's about the process in general, or a new disease, or it's a therapy that we're going to use. The other thing is that despite the stuff that we can have—given the experience of each of the patients when they walk in the door, we become a novice in - in learning about them, knowing about them, and learning and - and we grow. We have to - we have to grow and continue to expand our knowledge and our patient and family interaction.

### Facility Program

Yeah it will be a combination of ADN's with OCN®'s with MSN's as nurse practitioners who will be…. I guess it could be called a patient navigator who can be an ADN or a BSN as long as they have on OCN, and then they will be working with a nurse practitioner who will be doing a lot of the follow-up care of that patient. So that once they leave the diagnostic division they will go into the cancer division; and the navigator from diagnostics will be handing that on to the navigator from cancer; and I will be handing them off from me to the nurse practitioner over in the cancer side; and then they will be working very closely with those patients of getting them to all the right places.

So part of our role I think is teaching the fellows how to do chemo well too. You know they come in and they haven't done that, and they're suddenly writing chemo orders where we've been doing it…they are learning about surgery too, so they have to be skilled both surgically and pick up all the MED ONC stuff, and sometimes they're stronger surgically than they are at like getting people through treatment. So it's a nice model to where the nurse practitioner could help to really get those fellows up to speed so they will be good attendings…a nice role.

### Community Program

So anyway, we developed a program; I worked together with a cardiac pulmonary nurse which I think is a perfect marriage, if you call it that. She develops the cardiac pulmonary end which is very much smoking related, and all the things that happen there, and I do the cancer end, so we work together with classes, support groups, there were no support groups in the area before we started it, we do two…we even moved one to … recently, so that we could get people closer in that area so that we could get more members that participated. I thought that that would be a good move so we did that.

So we actually wrote a grant to the Coleman Foundation and were able to hire a –she's a lay outreach coordinator. You could almost call her a navigator. She probable functions more like a navigator that I do, but she actually goes out in the community, you know, teaches about, the importance of —screening mammography, checking your breast. She's from Mexico, she's a native Spanish speaker, but she teaches—she taught Spanish in the public schools here for years. So she's very bilingual and has a lot of contacts in the community. So we've been able to reach, you know, a considerably more, larger group of our Hispanic population.

### Discussion/Implications for Practice and Research

A navigation process has been gleaned for ONP's utilizing grounded theory consisting of a barrier focuses assessment, triaging needs, pulling in resources, guiding to the next step, tracking and program development. This process is performed simultaneously on the patient, facility and community level. The core process that connects this theory is "expediting care along the cancer continuum". This was the goal of the process, in that failure to carry this out would result in treatment delays. The basic social process that centered on the core category was staying connected to the patient and to the system. Through interfacing with the patient/facility/community, the navigator was a center for care for all those involved in the patient's cancer journey. The identification of this navigation process is important in that research has indicated that process is intrinsically linked to outcomes and vice versa. For example in a study by Gardner, Gardner, and O'Connell (2013), the Donabedian framework was shown to be useful in evaluating structure, process and outcomes of nurse practitioner services [47]. Data was collected on structure, process and outcome evaluation of NP services using a mixed method design. Data was collected on stakeholder surveys (n = 36), in-depth interviews (11 patients and 13 nurse practitioners) and medical records on service process. It was found that the framework provides a useful model for planning, putting together, and evaluating a health service evaluation. They concluded that an understanding of the structure and process requirements for planning a care innovation is the basis for safe and effective patient care. Implications for further research would center upon further defining the categories of this navigation process for program development. This would involve developing standardized metrics and tools for the patient/facility/community components of the process [2,14,15,53]. For example in reference to assessment of barriers to research

recruitment, the National Cancer Institute Community Cancer Centers Program (NCCCP) addressed barriers to recruitment of patients for research studies through the use of an information technology system which is a web-based tool that collected groups of screening data entered by sites for National Cancer Institute (NCI) trials [38,52]. Web based assessment tools such as this could be used as a screening tool which would assess barriers to care across the three realms of this navigation process. Additionally this type of tool could be used as a triage mechanism which would identify those at risk of not receiving and/or completing care, and barriers could be addressed accordingly in a systems fashion. Oncology related triage tools are of crucial importance as failure of the best of care plans can be thwarted by an inept triage process [48-51]. Additionally research has indicated a need to define the value of the NP role in terms of delivering patient outcomes, and that a recent literature review indicated a paucity of studies that define standardized outcome measurements for nurse practitioners in the oncology setting, though studies are continuing to emerge [11-13,53]. Thus each of the components of this navigation model can be refined to streamline outcomes in terms of the patient, facility, and community. Definition of standardized outcome measures will serve to promote interprofessional collaboration on a global basis. Most importantly this would necessitate that the ONP's have direct input in reference to matching evaluative processes of facility metrics with community, state, and universal metrics for evaluation of their impact on cancer control [48-51].

The findings of this study indicate that not all of the navigators though titled navigators within their facility guided the patient entirely through the survivorship phase to end of life. For example some guided only through the diagnostic or survivorship phase, or only up until survivorship. This indicates that the term navigator is not always strictly adhered to in accordance with the definition of patient navigation which has evolved as "a professional RN with oncology-specific clinical knowledge who offers individualized assistance to patients, families, and caregivers to help overcome healthcare system barriers. Using the nursing process, an ONN provides education and resources to facilitate informed decision making and timely access to quality health and psychosocial care throughout all phases of the cancer continuum" [12].

Regular review of success of metrics in reference to care transitions between phases of the cancer continuum, such as timeliness of care, and reduction of ER visits is of paramount importance (Johnson, 2018), in order to document the presence of streamlined timely safe care. Additionally not all of the navigators were supported in utilizing their advanced practice skills. Practicing to the highest level of their licensure, and clearly defining the role is important in terms of providing continuity of care, and consistency within the role definition [48-51]. According to Grainne, Plummer, O'Brien, and Boyd (2011), defining what NPs do professionally promotes nursing in the global context, and helps raise the profile of nursing as a profession [53]. This definition of navigation processes can serve to promote clarification of the navigation role, and serve as the basis for nurse practitioner training and development. Finally the basic social process that centered on the core category was staying connected to the patient and to the system. Factors identifying barriers to navigation care and system connectivity are in need of further definition.

## Strengths and Weaknesses

The strengths of this study are that it is the first of its kind to document a patient navigation process for ONP navigation. Limitations are that being a qualitative study it is at level VI (I-VII) of the evidence hierarchy of designs for research [54]. Thus further research perhaps utilizing a correlation design would be the next step [55-64].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