

A new figure in oncology pathways: Oncology Nurse Navigator and his preliminary results in the San Benedetto del Tronto Surgery

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Abstract

Background

The role of the Nurse Navigator was developed in order to address the health disparities created by the social determinants of health, , being an expert, specialized and trained nurse who takes charge of the patient diagnosed with cancer and accompanies him throughout the treatment process, helping him to extricate himself from the labyrinth of the healthcare system. This figure was introduced and studied in the general surgery of the Madonna del Soccorso hospital in San Benedetto del Tronto.

Objective

Primary outcomes are the reduction of time interval between the first patient contact and each phase of the diagnostic and therapeutic pathway. Secondary outcomes are the assessment of the number and

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frequency of contacts between the patient and the ONN, as well as of the number and type of organized procedures, and patient satisfaction assessment.

Methods

A prospective cohort study was conducted with a historical control group represented by the same number of cancer patients treated in the same surgical unit in the previous year and not followed by an ONN. The patients' contacts were registered within a dedicated mobile number. A questionnaire on patient satisfaction with cancer care was completed and administered to patients in a blinded manner by a third party to avoid bias.

Results

The study group included 30 cancer patients. The average time from first contact to primary diagnostic test was 8 days versus 20 days in 2022 (control group). All patients underwent discussion by a multidisciplinary team (MDT), and the time to reach the MDT discussion was not different between the 2 groups. Five patients were deemed ineligible for surgery, and the average time to referral to a medical oncologist was 2 days in the study compared to 10 days in the control group. Twenty-five patients were eligible for initial surgery, and the mean time from first contact to surgery was 23 days after ONN establishment compared with 45 days in the control group. Each patient had an average of 10 phone calls with the ONN. For patients with a first diagnosis of cancer, the ONN organized an average of 4 tests. A patient satisfaction questionnaire achieved a response rate of 100%, with an average score of 85.2/90.

Conclusion

The data demonstrate that ONN service is effective and may improve the quality and outcomes of the management path of surgical oncology patients. The professional role of the ONN, with predefined technical and non-technical skills, should also be officially recognized by the healthcare system and hospital administration.

Overview of patient navigation: social determinants of health

According to the United States Department of Health and Human Services (U.S. HHS), "Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks." [1] Five key factors have been identified that can impact a person's health: economic stability, education, social and community context, health and healthcare, neighborhood and the built environment. [2] The term "underserved population" from a medical point of view is often used to

talk about populations at risk of poor health due to social determinants such as underinsured or uninsured people, people with low levels of education, rural populations, people who are unemployed or with a low socioeconomic status, as well as lesbian, gay, bisexual, transgender, and queer populations who may face greater health care challenges than others. [3]

Social determinants of health can lead to cancer-related health disparities, which the National Cancer Institute defines as “differences in cancer incidence (new cases), cancer prevalence (all existing cases), morbidity (cancer-related health complications), cancer mortality (deaths), cancer survival, and burden of cancer or related health conditions that exist among specific population groups in the United States.” [4] Ideally, we would like to see “equity” in health, which the World Health Organization defines as “the absence of avoidable or remediable differences between groups of people, regardless of whether those groups are defined socially, economically, demographically or geographically.” [5]

Patient navigation therefore emerged as a way to help address health disparities and achieve equity. This is an intervention that addresses barriers to standard quality care by providing personalized care to patients and their families. Patient navigation is performed by nurses called Nurse Navigators.

The first navigation program was started in 1990 by Harold P. Freeman in Harlem, New York. Dr. Freeman is a surgeon who decided to study the cases of his breast cancer patients and what factors might influence their survival. Dr. Freeman realized that the 5-year survival for these women was only 39%, and nearly half of them came to him with the disease already in stage 3 or 4. Dr. Freeman's actions stem from reading the Report of the American Cancer Society to the Nation on Cancer in the Poor in 1989 speaking about the obstacles faced by poor people affected by cancer. To address the health disparities seen in his patients, Dr. Freeman decided to do two things. First, he provided free, low-cost tests and mammograms, and second, he hired new people called “Patient Navigators” to help remove barriers to timely care. After doing these two things, 5-year survival went from 39% to 70%, and only about 20% of patients presented with advanced stages of the disease. [6]

Who is the Nurse Navigator

Patient navigation is relatively new in cancer. The Nurse Navigator is a clinically trained and specialized nurse responsible for identifying and removing barriers to timely and appropriate cancer treatment. Guides patients through the continuum of cancer care, from diagnosis through survivorship, identifies and removes barriers to treatment, educates patients and their families about the cancer journey and what to expect from treatment, protects the rights and wishes of patients, promotes equal access to care, organizes patient care activities and shares information among all healthcare professionals to help achieve safer and more effective care, assists patients in receiving

standard care, provides psychosocial resources and support, helps patients to communicate with their healthcare team.

Even though it is a topic only in recent decades, there is an immense literature on the subject. A recent June 2023 review by Raymond J. summarizes 2062 records from the Cochrane Central Register of Controlled Trials (CENTRAL), PubMed, Embase, Cumulative Index of Nursing and Allied Health (CINAHL), Epistemonikos and Prospective Register of Systematic Reviews (PROSPERO) and in gray literature databases from January 1, 2012 to April 19, 2022 and shows that patient navigation is effective in improving participation in cancer screening and in reducing the time between screening and diagnosis and between diagnosis and diagnosis. start of treatment. It also improves quality of life and patient satisfaction with care in the survivorship phase and reduces hospital readmission in the active treatment and subsequent phases of care. [7]

Need to measure results: metrics

Patient navigation has established itself as a vital feature and function in the cancer patient care process. For this activity to be recognized it is necessary to develop navigation evaluation metrics that reflect those aspects of diagnosis and treatment where navigators may have an impact on the specific program being evaluated. Monitoring navigation performance can help healthcare organizations make concrete improvements to their programs and demonstrate these improvements to various external stakeholders and their healthcare system administrators. [8]

The first discussions on the development of value-based metrics for oncology navigation took place in November 2015 at the annual conference of the Academy of Oncology Nurse & Patient Navigators (AONN+), a US association founded in 2009 with over 8900 members that constitutes the largest national specialist association promoting the role of oncology nurses and patient navigators.

A multidisciplinary project team of expert members was organized to create standardized navigation metrics focused on patient experience (PE), clinical outcomes (CO), and return on investment (ROI). The result of this work was the publication of 35 standardized and evidence-based oncology navigation parameters that derive from the 8 AONN+ navigation certification domains **Figure 1** which are recognized by the Commission on Cancer (CoC) and certify all areas of expertise in which navigators practice to provide quality care to patients and financial stability to their organizations. Creating these standardized national metrics to measure programmatic success is vital to coordinating high-quality team-based care and demonstrating the sustainability of navigation programs. The purpose is not to provide an all-inclusive list because there are no cookie-cutter navigation programs but each will have additional metrics to acquire relating to their program and will therefore only provide a basic starting point for a navigation program that is based on the literature, patient preferences and clinical practice. It is critical that oncology nurses and patient navigators understand

that active participation in data collection, analysis and reporting of results are not additional responsibilities but are already part of the professional role. [9]

The Nurse Navigator in Italy

The figure of the Nurse Navigator was born and developed in the USA. In Italy, however, it is present and recognized only at the IRCCS San Raffaele in Milan where there are 7 Nurse Navigators, one for each surgical specialty. In other Italian institutions there are "case manager" figures, who are not necessarily nurses, who support the coordinators in the management of oncology patients by carrying out only part of the activities of the Nurse Navigator, i.e. mainly covering the administrative activities of organizing exams and preparing for the intervention, leaving out everything that concerns the communicative, relational sphere, the assessment of needs and above all everything that concerns the follow up and therefore effectively abandoning the patient upon discharge.

The Nurse Navigator within the General Surgery Unit of San Benedetto del Tronto Hospital

In General Surgery department directed by Prof. Di Saverio of San Benedetto del Tronto Hospital, the figure of a Nurse Navigator was established in January 2023 who, in addition to being part of the nursing team of the department, follows and accompanies the patients along the path surgical-oncology from the discovery of the diagnosis to the first 30 post-operative days.

The patient is taken care of during the first surgical visit even if there is suspicion of cancer. Dedicated forms collect both data relating to the patient such as physical deficits, limitations, living situation, employment, awareness of the diagnosis, emotional condition, available caregivers and medical data such as basic pathologies, diagnosis, the laboratory/radiological tests already performed, those to be organized and the relevant discussions with the multidisciplinary team. The MDT team (MultiDisciplinaryTeam) in the hospital of San Benedetto del Tronto is carried out twice a month and collects both new cases and the re-evaluations of patients already known to be undergoing or concluded treatment, which are subjected to a discussion coordinated by the discipline that presents the case, between at least 1 surgeon, 1 oncologist and 1 radiologist; in addition, components of pathological anatomy, anesthesia and resuscitation, physical and rehabilitation medicine, nuclear medicine, radiotherapy and palliative care may be present. The Nurse Navigator is always present. The outcome of the discussion distinguishes the patient as "fit for surgery" or "not fit for surgery". If not fit, the patient will be accompanied by the Nurse Navigator towards the medical oncology path, remaining available regularly for follow-up during therapy. If fit, it is instead evaluated for the operation through the organization of pre-operative tests and necessary consultations such as nutritional or physiatric. **Figure 2** The figure of the ONN will however always be a point of reference

for the patient even during the hospital stay as he is constantly present in the ward. Before discharge, the necessary health education is carried out by the nurses of the department, the need for activation of social assistance and/or ADI at home is assessed and all the necessary consultations are carried out. Upon discharge, he is taken care of for checks by the divisional surgical clinic, made up of nurses who are experts in post-operation (wounds, drainage, stoma), the possibility of contacting the ONN in case of need is strengthened and follow ups are provided periodic telephone calls with the Navigator up to 30 days after discharge in which the various holistic dimensions of the patient are ascertained (ADL, nutritional status, emotional state, pain, surgical wound, mobilization and physiotherapy, medical device status, exam scheduling).

Results of the ONN 2023 experience in the general surgery unit of San Benedetto del Tronto

The first 6 months of activity at the San Benedetto del Tronto Surgery were analyzed to evaluate whether the use of an oncology nurse navigator for patients diagnosed with intra-abdominal cancer improved outcomes. [10] The primary specific objectives were the times that elapsed between the various phases of the diagnostic-therapeutic path, i.e. the time between the day of the first contact with the patient and the execution of the diagnostic tests, between the first contact and the discussion of the case at the MDT, the first contact and the surgical intervention or oncological management and then the start of therapy. The secondary objectives were the evaluation of the number of patient contacts with the ONN, the time slots, the number of services and consultations organised, and the evaluation of patient satisfaction.

To evaluate the times, a prospective cohort study was conducted with a historical control: since the introduction of the ONN service, the data and times of 30 cancer patients were recorded and compared with those of 30 patients treated before the introduction of the project whose information was taken from clinical documentation. The number and time slots of contact with the ONN were recorded through the use of a company mobile phone active 24/7 via phone calls and messages. The number of services and consultancies is known through the appointments and appointments organised. The satisfaction assessment was carried out through the use of the Patient Satisfaction With Cancer Care (PSCC) (Jean-Pierre et al., 2011), delivered by third-party personnel, other than the ONN, upon the patient's discharge from the hospital or in any case at end of the route. It is an 18-item measure that evaluates patient satisfaction with the care received: the response to each item occurred on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Data were collected by obtaining a total score from each questionnaire given by the sum of the scale scores. The patients in the control group, for the comparison on the primary objectives, were selected so as to have the

same demographic characteristics as the cases and the data were collected from paper and online documentation.

From the group of cases, 30 patients with an average age of 71 years (min 30-max 84) were analysed, of which 12 females and 18 males, all with a diagnosis of adenocarcinoma including 6 of the pancreas, 6 of the liver, 6 of the rectum and 12 in the colon. 21 patients came from a private freelance visit, from an emergency room admission, 3 from the Oncology department, 1 from a consultation with the Medicine unit, 1 patient was sent from Gastroenterology due to positive results of the colorectal screening test and 1 from a previous hospitalization in Surgery. Of these, 18 had already carried out the first diagnostic test either at external facilities or because it was recommended by the general practitioner, or because they came from another department in which they had undergone diagnostics or because they came directly from Oncology and therefore were already undergoing treatment. There were 12 patients for whom the first diagnosis was started: the average time between the first contact with the patient and the execution of the diagnostic test was 8 days in the cases compared to 20 days in the control group. All patients, both cases and controls, were discussed at the multidisciplinary level and the waiting time for the discussion remained unchanged between the two groups (average of 3 days). 5 patients were not candidates for upfront surgery and the average time taken for the first oncological visit was 2 days in the cases compared to 10 days in the controls.

25 patients were candidates for upfront surgery and the time from first contact to the operating session was 23 days compared to 45 in controls. **Figure 3**

Regarding the number of telephone contacts with the Nurse Navigator, each patient made an average of 10 telephone contacts. The most frequent time slot for calls was from 8am to 9am and from 7pm to 9pm and above all from patients over 70 years of age. The younger patients preferred the WhatsApp messaging app which was instead used by all patients for exchanging and sending small documentation. The email was used only to request the first visit appointment and to send complete documentation. 2 calls were recorded at 4am. For all patients accompanied at the first diagnosis, at least 4 radiological and laboratory tests were organized, both within the reference company and in other companies or private structures, based on availability to reduce waiting times and at least 1 consultation oncology in the location preferred by the patient based on home. For the others who already had a diagnosis, at least 2 tests were organized. All patients were provided with a post-hospital appointment for possible treatment after delivery of the histological report and the appointment was communicated within a maximum of 3 days. The satisfaction questionnaire **Figure 4** administered to the 30 patients was returned completed by all (100% compliance): the average score was 85.2 points out of 90.

Discussion and conclusions

Six months after the beginning the project, the ONN service introduced at the General Surgery Unit of the Madonna del Soccorso SBT Hospital has significantly improved the waiting times necessary between the various steps of the cancer patient's journey, both new and already known diagnosis. The figure of the Nurse Navigator, through the internal organization of the exam and the collaboration with the entire multidisciplinary team, has reduced the waiting times for the first 12-day diagnostic exam, the 8-day time for the first oncology visit and the intervention one 22 days surgery. The ONN contacted the service concerned by email or telephone within a maximum of 12 hours and waited for the appointment within a maximum of 48 hours, otherwise it diverted the request to another service compatible with the possibility of moving the patient. This was possible thanks to the numerous contacts that Prof. Di Saverio has in Italy and beyond and to the moderate quantity of patients followed compared to a high-volume center (currently however growing). The possibility of having a company phone with instant messaging app was fundamental for the organization of the service and the collection of data as it is rapid, documented and accessible to all. Patients are very satisfied with the completely free service that is offered to them and this is demonstrated both by the satisfaction questionnaire and by the opinions and faces of the patients. This means that the figure of the Nurse Navigator plays an important role in the oncology path, primarily for the patient who needs a figure to refer to in a dramatic moment in his life, that of the discovery of a tumor, a "mother" figure, a "reference point", a "safe haven" that helps and accompanies him from the moment of suspicion of the disease to recovery but also for the entire system and organization as it manages his path 100%, avoiding errors and therefore delays in communication of exams, in preparation for exams, in hospitalization management, in communication with caregivers, therefore speeding up times, ensuring correct execution of steps, presenting cases to the team, increasing satisfaction and therefore the affiliation of the patient and the his family to the structure and organization.

The figure of the Nurse Navigator should also be introduced in Italy as a recognized and framed figure as it currently is in the United States. Finally, to have maximum impact, patient navigation must be effective, widespread, and widely institutionalized with reimbursement mechanisms and training programs, and continually monitored and reevaluated as needed. This impact is also made clear by the data collected: the service has reason to exist and grow. The future perspective is to demonstrate through the choice and use of international metrics the need to create a profile of technical and non-technical skills necessary to fill the role of ONN with a recognized job description in order to also guarantee quality to the patient of the operator's competence in constant updating and development, in step with the reference associations and scientific research.

Declarations

Conflict of Interest

The Authors declare that there is no conflict of interest.

Figure 1

Table	AONN+ Navigation General Certification Domains
	Community Outreach and Prevention
	Coordination of Care/Care Transitions
	Patient Advocacy/Patient Empowerment
	Psychosocial Support Services/Assessment
	Survivorship/End of Life
	Professional Roles and Responsibilities
	Operations Management/Organizational Development/ Healthcare Economics
	Research/Quality/Performance Improvement

Figure 2

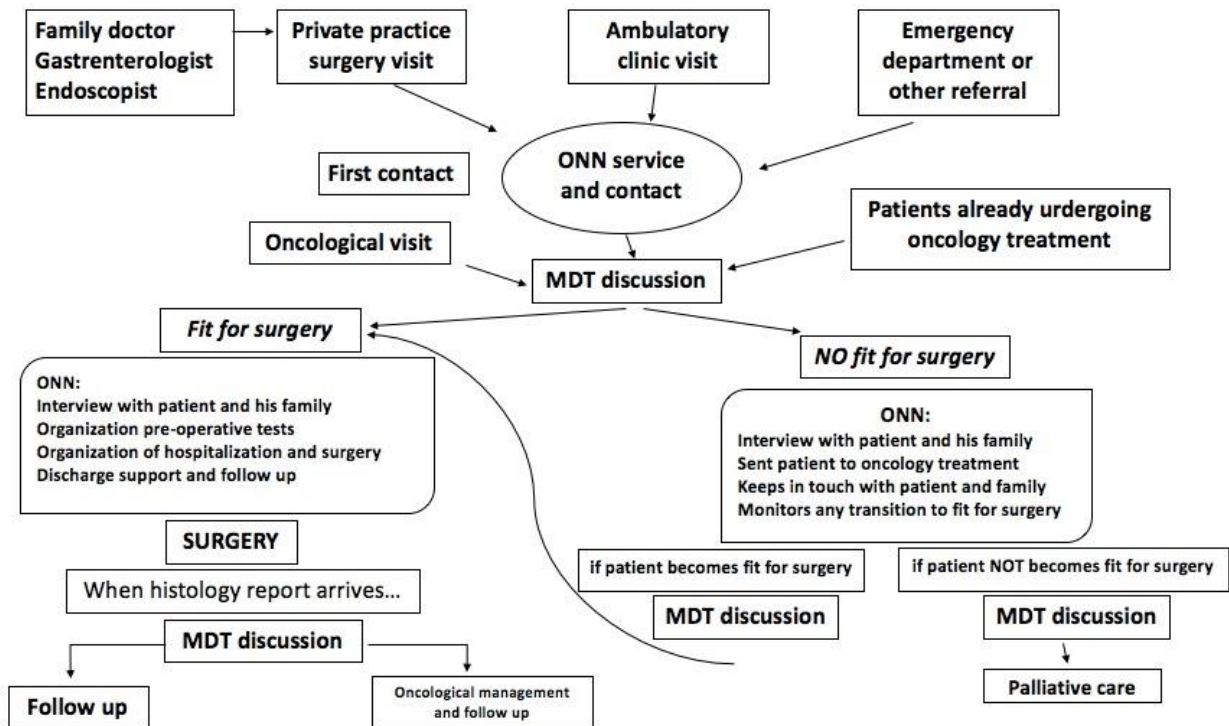


Figure 3

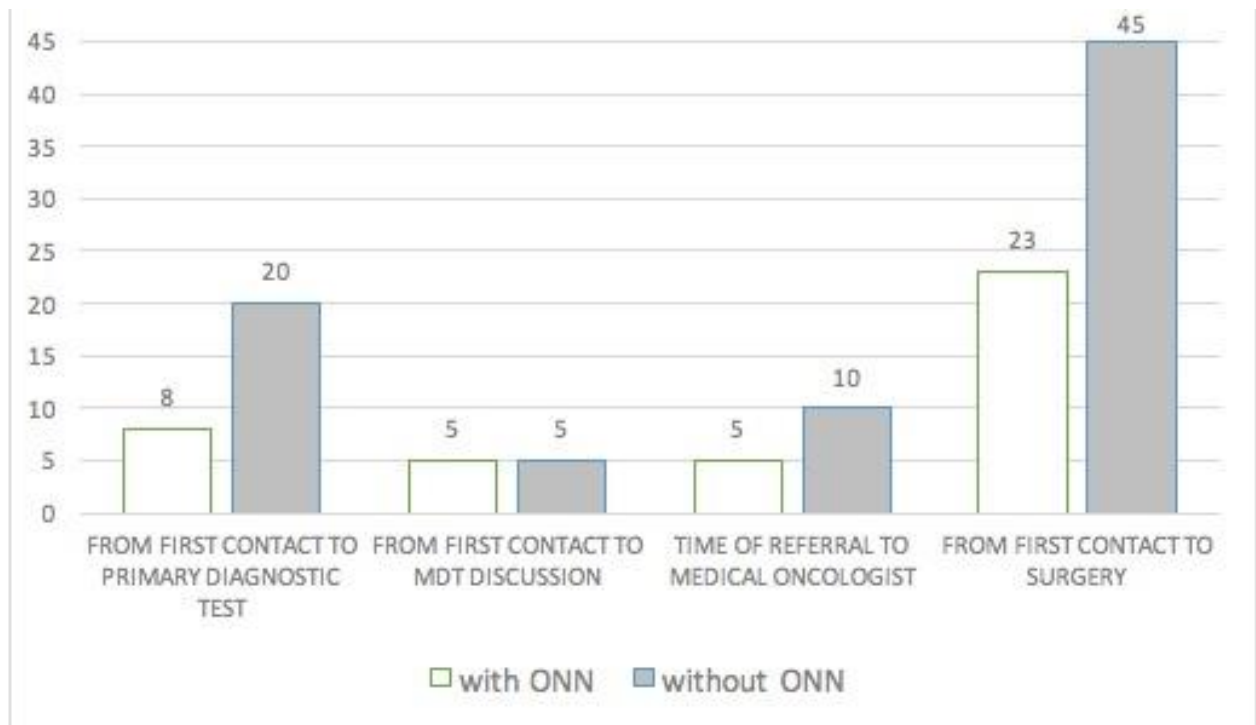


Figure 4

Oncology Nurse Navigator Satisfaction Questionnaire

Dear user, in relation to the experience with the Nurse Navigator service in San Benedetto del Tronto Hospital, we would like to submit you a satisfaction questionnaire. It is made up of 18 items to be answered on a scale from 1 to 5 (Strongly agree, agree, neutral, disagree, strongly disagree). The questionnaire constitutes a very important tool for obtaining information on the degree of user satisfaction and for identifying the aspects that require improvement actions. We thank you immediately for the contribution you wish to provide through your answers.

Completely agree

Not at all agree

1. I felt that my health problems were understood.					
2. I felt treated with courtesy and respect.					
3. I felt involved in decisions about my health.					
4. I was told how to take care of myself.					
5. I felt encouraged to talk about my personal health problems.					
6. I felt I had enough time with my doctor.					
7. My questions were answered satisfactorily.					
8. Making an appointment was easy.					
9. I knew what the next step in my care would be.					
10. I feel confident in how I deal with the healthcare system.					
11. I was able to get the advice I needed about my health problems.					
12. I knew who to contact when I had a question.					
13. I received all the services I needed.					
14. I am satisfied with the care I received.					
15. The doctors seemed to communicate my care well.					
16. I received high-quality care from my primary care physician.					
17. I received high-quality care from my specialists.					
18. My primary care doctor has been informed of the test results I received.					

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