Justifying Oncology Nurse Navigator Roles in Canada:  
An Integrative Literature Review on Quality Indicators, Evaluation Metrics, and 
Measurable Patient Outcomes.

Submitted by:  
Renée Hartzell, RN, BScN, CON (C)

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Project Supervisor:  
Deborah Sally Thoun, RN, BN, MN, PhD, Associate Professor, School of Nursing, University of Victoria

Project Committee:  
Anastasia A. Mallidou, RN, PhD, Assistant Professor, School of Nursing, University of Victoria
Abstract

Research has demonstrated that patient navigation interventions that have been led by nurse navigators are an effective way of improving continuity of care and the overall quality of care delivery to persons living with cancer. However, Canadian cancer programs struggle to justify the need for more nurse navigator positions. The purpose of this literature review was to explore the patient navigation movement and the known quality indicators and measurable patient outcomes available to measure the impact of implementing patient navigation initiatives that have been led by nurses. The current state of the science examining patient navigation interventions and evaluation metrics was reviewed following the integrative literature review framework. The findings are summarized in five overarching meta-themes: system efficiency, patient satisfaction, healthcare usage, return on investment, and survival. Oncology nurse navigators engender positive outcomes in oncology care. The identification of quality ambulatory oncology nursing indicators, evaluation metrics, and measurable patient outcomes may help facilitate discussions concerning the value of oncology nurse navigators and provide organizations with the tools to measure the impact of implementing nurse navigators. Patient navigation is understudied and more nursing research is needed to define oncology nursing navigator interventions and associated outcomes.

Keywords: nurse navigator, indicators, oncology, outcomes, quality, patient navigation
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Justifying Oncology Nurse Navigator Roles in Canada: An Integrative Literature Review on Quality Indicators, Evaluation Metrics, and Measurable Patient Outcomes.

Harold Freeman, an American surgical oncologist, established the concept of patient navigation in the late 1980s to promote improved access to quality cancer-related care for marginalized communities (Cantril & Haylock, 2013; Fillion et al., 2009; Pedersen & Hack, 2011). The intent of Freeman and colleagues’ first patient navigation program was to reduce healthcare disparities and to expedite diagnostic and treatment services for African-American women in Harlem, New York, with abnormal breast screening results (Cantril & Haylock, 2013; Fillion et al., 2009; Pedersen & Hack, 2010). The program was a community-based initiative led by volunteers and focused on health promotion and empowerment (Cantril & Haylock, 2013; Fillion et al., 2009). Freeman’s model for patient navigation relied on peer-to-peer relationships, rather than provider-client relationships, to improve access to care for poor, uninsured, underinsured, and underserved populations, by helping reduce cancer-related care disparities such as lack of time, money, transportation, or childcare, as well as inconvenient hours, long waits in clinics, fear of treatment, language barriers, health literacy, various cultural norms and beliefs, cancer misconceptions, and inadequate communication and information (Brown et al. 2012; Cantril & Haylock, 2013; Koh, Nelson, & Cook, 2011). A review of the program suggested a significant increase in breast cancer survival rates and earlier stages of cancer at diagnosis, thus initiating an international oncology patient navigation movement (Case, 2011; Fiscella et al., 2011; Pedersen & Hack, 2010).

In Canada, patient navigation programs and initiatives have been emerging rapidly since 2000; emphasizing the provision of timely access to cancer-related care, the
empowerment of patients with information and education, coordination of care, and the
development of links to community resources (Case, 2011; Pedersen & Hack, 2010;
Pedersen & Hack, 2011). Although fundamental disparities, such as access to care for
poor, uninsured, underinsured, or underserved populations, are not a primary challenge in
the Canadian health care system, numerous gaps in the context of cancer-related care
services have been identified (Cantril & Haylock, 2013; Pedersen & Hack, 2011). For
example, Fillion et al. (2012) stated, “patients with cancer and their families experience
dissatisfaction with service fragmentation, delays, lack of information, and lack of
coordination and often complain about a sense of isolation, feelings of powerlessness,
and a lack of guidance” (p. 58). The BC Cancer Agency (2005) reported that the current
Canadian system of care lacked communication, coordination, and continuity, resulting in
fractured care, unmet needs, and compromised outcomes of patients with cancer.

Currently, patient navigation is a widely accepted strategy intended to address the
current gaps and complexities of the cancer care system (BC Cancer Agency, 2005;
Canadian Partnership Against Cancer Corporation, 2010; Fillion et al., 2012). In Canada,
the nursing community has inherently assumed the role of navigator. Nurse navigator
(NV) roles have been developed and implemented across Canada to accompany patients
and families throughout their cancer-related care experiences. Nurse navigators assess
and manage patient and family needs, teach and provide information, provide support,
and coordinate and ensure continuity of care (Skrutkowski et al., 2008). Nurse navigators
help patients navigate the cancer care system. However, it can be argued that various
professionals could assume this role. Many authors have reported patient navigation
initiatives led by social workers, laypersons, community workers, and volunteers
Nevertheless, it has been well documented that the majority of navigation interventions for patients with cancer and their families requires specialized oncology nursing knowledge and competencies, clinical oncology expertise and judgment, and decision-making (Skrutkowski et al., 2011). Many authors insist that nurses are the best suited for assuming this role because of the required scope of the position and the need for dedicated study of oncology education and research (Desmini et al., 2011; Pedersen & Hack, 2010).

The patient navigation movement has defined the new *gold standard* model of care for patients with cancer. However, the literature lacks a consistent description of patient navigation and a variety of models and approaches are currently being utilized in Canada (Fillion et al., 2012; Pedersen & Hack, 2013). Furthermore, minimal research exists that justifies and supports the further development and implementation of NV positions in Canada (Cantril & Haylock, 2013; Fillion et al. 2012; Pedersen & Hack, 2011). There is very little consensus as to the actual activities and responsibilities of professional NVs and the components of a successful navigation program are not well understood (Fillion et al., 2012).

**Project Purpose and Objectives**

This study had two purposes: (1) to explore the literature on the patient navigation movement and (2) to explore the literature on the known patient navigation quality indicators, evaluation metrics, and measurable patient outcomes. In addition, the goals of this project were to acquire a better understanding of the value of NVs and to provide organizations with a summary of the known evaluation metrics available to measure the
impact of implementing patient navigation initiatives that have been led by nurses.

The specific objectives for this project were (1) to present an overview of the literature pertaining to known quality indicators, evaluation metrics, and measurable patient outcomes that may be sensitive to navigation, (2) to contribute to the definition of the Canadian oncology NV, (3) to inform the wider community about the benefits of this role, and (4) to make recommendations for practice, policy, and future research associated with oncology NVs.

**Review Method**

This project adheres to Whittemore and Knafl’s (2005) integrative literature review framework. The framework consists of five distinct stages: problem identification, literature search, data evaluation, data analysis, and presentation (Mallidou, 2014; Whittemore & Knafl, 2005). The inclusion criteria for the review were: 1) articles published in Canada or the United States in either French or English, 2) articles published after the year 2000, 3) articles dedicated to both layperson navigators and professional navigators in oncology, and 4) articles focused on quality indicators and outcomes of patient navigation. Articles that did not meet the inclusion criteria were excluded. I used the term *patient navigation* to refer to the concept of navigation in general. The term *patient navigator* includes both layperson navigators (volunteers, community workers, peers) and professional navigators (nurses, social workers). The term *nurse navigator* is specific to a nurse-led model of navigation.

**Problem Identification**

Research has demonstrated that patient navigation is an effective way of improving continuity of care and the overall quality of care delivery for persons living
with cancer; however, Canadian cancer programs struggle to justify the need for more NV positions (Fillion et al., 2009; Skrutkowski et al., 2008). Furthermore, outlining the actual job description and responsibilities of professional NVs in the cancer care system and linking them to measurable outcomes has proven to be difficult (Battaglia et al., 2011; Guadagnolo, Dohan, & Raich, 2011; Fiscella et al., 2011). The identification of quality ambulatory oncology nursing indicators, evaluation metrics, and measurable patient outcomes may help facilitate discussions on the value of oncology NVs.

**Literature search**

The literature search was initially conducted using two electronic databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Medical Literature Online (MEDLINE). In consultation with the University of Victoria School of Nursing librarian, the terms for the search included: navigation, nurse navigator, patient navigator, cancer, oncology, pivot nurse, case manager, outcome, assessment, quality, and indicators. ‘Patient Navigator’ was the preferred term in both databases but only a subject heading from 2013 in MEDLINE and not before 2014 in CINAHL. The search was limited to studies conducted in Canada and the Unites States where the navigator title had been utilized in a more standardized fashion. I had anticipated including articles written in English and French because the province of Quebec has conducted groundbreaking work in an effort to integrate navigation in their cancer control strategic plan; however, articles written in French were not found as they had been translated into English for publication. Publications dedicated to layperson navigators were considered to provide a better overview of the known measurable outcomes, evaluation metrics, and quality indicators that may be sensitive to navigation. Having a specific focus on patient
navigation in oncology facilitated the literature search; the inclusion criteria reduced the potentially relevant sources from 358 to 24 reports. The ancestry approach—examining the reference lists of other articles—complemented the search yielding 10 additional reports (Whittemore & Knafl, 2005). The 34 potential reports were carefully reviewed and critically examined for alignment with the inclusion criteria to obtain the final sample of 22 reports (Appendix A).

**Data evaluation**

The final sample for this integrative review included 22 empirical and theoretical reports. The data included published systematic reviews, critical analysis reports, program evaluations, and a variety of both qualitative and quantitative studies. Due to this diverse representation of primary sources and as per the Whittemore and Knafl (2005) framework, reports were evaluated according to three quality criteria relevant to this review: methodological rigour, applicability to the Canadian context, and data relevance on a two-point scale (high or low). I chose to include the applicability to the Canadian context because the majority of the reports that addressed the economic impact of navigation were specific to the American private healthcare system. Furthermore, my experience working as a NV in two different provinces assisted in the determination of the applicability of my data to the Canadian context. No report was excluded based on this data evaluation rating system; however, the score (high or low) was used to facilitate the appraisal of the primary data sources. To date, there is no national consensus on evaluation measures or quality indicators addressing the desired outcomes of patient navigation that are considered to be sensitive, reliable, and valid. This literature review summarizes the outcome measures, evaluation metrics, and indicators currently being
used by organizations and suggests approaches to oncology patient navigation outcome evaluation.

**Data analysis**

The data analysis phase of this review consisted of a constant comparison method that facilitated the conversion of the extracted data into categories. The first phase of *data reduction* included the classification of the primary sources into 4 subgroups: 1) quantitative and qualitative designs, 2) program evaluations, 3) systematic reviews, and 4) critical analyses reports (Appendix B). Subsequently, I utilized data reduction techniques, such as color-coding the recurring concepts, to extract and code the data from the primary sources in order to organize the data into a manageable framework (Whittemore & Knafl, 2005). The following initial subgroups emerged from the process: 1) system efficiency, 2) patient experience/patient satisfaction, 3) provider experience, 4) continuity of care, 4) healthcare usage, 5) quality of life, 6) return on investment, 7) empowerment, and 8) survival. A *data display* in the form of a matrix was developed for each subgroup to assemble the data from the primary sources (Appendix C) (Whittemore & Knafl, 2005). The subgroups were examined and iteratively compared during the *data comparison* phase to identify patterns, themes, and relationships. The original subgroups were reduced to 5 overarching metathemes: 1) system efficiency, 2) patient satisfaction, 3) healthcare usage, 4) return on investment, and 5) survival (Appendix D). The primary sources were reviewed to substantiate the accuracy of the new conceptualizations.

**Presentation**

A summary of the findings is presented in a table to comprehensively portray the potential quality indicators and measurable outcomes available to evaluate patient
navigation interventions (Appendix E). Explicit details and evidence from the primary sources are presented in the literature review section of this paper. In addition, implications for practice, research, and policy are discussed.

**Professional Navigation in Canada**

Since the inception of patient navigation in the late 1980’s many individuals have assumed the role of patient navigator including volunteers, individuals with a previous diagnosis of cancer, social workers, community outreach workers, community health representatives, and care coordinators (Campbell et al., 2010; Cantril & Haylock, 2013; Pedersen & Hack, 2010). Professional nurse navigation is not well documented before the year 2000. Cantril and Haylock (2013) stated, “nurse’s involvement in navigation appeared late in the evolutionary process” (p. 77). Unlike the American evolution of patient navigation, most of the existing Canadian literature on patient navigation is focused on a professional nurse-led model of navigation (Fillion et al. 2012; Thorne & Truant, 2010).

Currently, there are two permanent provincial nurse navigator models in Canada, one in Nova Scotia founded in 2001 and one in Quebec founded in 2005 (Fillion et al. 2012; Pedersen & Hack, 2010; Skrutkowski, Saucier, Ritchie, Tran, & Smith, 2011). Cancer Care Nova Scotia originally created the role of cancer patient navigators (CPNs) to improve timeliness in diagnosing breast abnormalities (Pedersen & Hack, 2010). Today the CPNs manage five healthcare districts across the province through an extensive navigation system (Pedersen & Hack, 2010). The CPNs are based mainly in the community and are closely linked to the tertiary cancer program multidisciplinary teams (Fillion et al., 2012). Similarly, the cancer control strategy of the Quebec government
established the “infirmière pivot en oncologie”, or pivot nurse in oncology to facilitate coordination of the cancer services network and to support cancer patients throughout the care trajectory (Fillion et al, 2012; Pedersen & Hack, 2011). Cancer Care Ontario and the British Columbia Cancer Agency have also piloted navigation projects and implemented NVs in numerous facilities. The Canadian Partnership Against Cancer (CPAC) stated that most professional navigation initiatives across Canada focus on newly diagnosed adult patients and span the trajectory from treatment to survivorship or death; the majority of NVs work with a particular population or cancer site (head & neck, gynecological, hematology) (CJP, 2012; Skrutkowski et al., 2011).

Two navigation frameworks have been developed to support the professional nurse navigator role in Canada: 1) the British Columbia Patient Navigation Model (BCPNM) and the Professional Navigation Framework (PNF). The BCPNM is a practical model developed from a psychosocial perspective and proposes six service delivery components informed by patient and family needs and the known gaps in cancer-related care: 1) provision of information, 2) emotional support, 3) facilitating decision making, 4) creating linkages to resources, 5) provision of practical experience, and 6) identifying and developing community supports (Cantril & Haylock, 2013; Pedersen & Hack, 2011). This model also addresses the concepts of social support, coping behaviors, stages of change, self-efficacy, and patient preparedness (Pedersen & Hack, 2011). The PNF is a bi-dimensional framework that consists of two dimensions and six concepts. The first dimension corresponds to the construct of continuity of care and is divided into three foci (information, management, and relational continuity) and a set of organizational functions (Fillion et al., 2012). The second dimension is related to the construct of patient
empowerment and encompasses active coping, cancer self-management, and social support (Filion et al., 2012). A qualitative descriptive study was conducted to validate the PNF in a Canadian context; the study involved a community setting in Nova Scotia and both a tertiary hospital and a community setting in Quebec (Filion et al., 2012).

The CPAC stated that professional navigators must draw on a range of clinical, mental, and psychosocial competencies, and have extensive cancer knowledge (Cancer Journey Portfolio (CJP), 2012). Professional navigators “must be able to facilitate a coordinated approach, provide emotional and psychological support, engage in caring and therapeutic communication and relationships, and enable education and information sharing” (CJP, 2012, p. 13). Similarly, Skrutkowski and colleagues (2011) examined intervention patterns of oncology nurse navigators and concluded that the vast majority (90%) of navigation interventions for patients with cancer and their families required specialized oncology nursing knowledge and competencies, clinical oncology expertise and judgment, and decision-making.

The Canadian Association of Nurses in Oncology (CANO) defines the specialized oncology nurse as a registered nurse whose primary focus is caring for patients with cancer and their families. This nurse has “enhanced specialty knowledge and skill, and practices in an environment where the majority of individuals have a diagnosis of cancer or are at risk of developing cancer” (CANO, 2006, p. 1). Furthermore, the CANO (2011) published practice standards and competencies for the specialized oncology nurse based on the Canadian Nursing Association (CNA) Oncology Nursing Certification list of competencies.
Evaluating Patient Navigation Interventions

Patient navigation is a relational process that involves interpersonal dimensions and innate psychological principles of social cognition and interaction (Jean-Pierre et al., 2013). Patient navigators initiate and maintain a constant relationship with patients and families throughout the entire cancer-related care continuum. Jean-Pierre and colleagues (2012) stated, “both patients and navigators bring to the navigation dyad their personal set of adaptive psychosocial beliefs and values that are intrinsic parts of their humanity” (p. 528). This interpersonal dimension of navigation has the potential to influence patients’ experiences with their cancer related care and affect how they perceive and act upon the navigation process (Jean-Pierre et al., 2012). Jean-Pierre et al. (2012) confirmed this theory by examining the impact of better-rated navigators on patient satisfaction with cancer-related care. The study results concluded that navigators with more highly rated interpersonal relationships with patients improved outcomes for patients in terms of their experiences with cancer-related care (Jean-Pierre et al., 2012). This demonstrates that the effect of the intervention may not only be related to the intervention itself but also to the contextual, communicative, and relational aspects surrounding the intervention (Paterson et al., 2009). The evaluation of patient navigation is complex due to the individualized experience of the person.

Patient navigation interventions are complex and identifying appropriate, meaningful, and feasible methods with which to evaluate the value of NVs is challenging. It is within this context that a review of the reported indicators and outcomes currently available to evaluate navigation programs are presented.
Review Findings

Meta-theme 1: System Efficiency

One of the major goals of patient navigation in cancer-related care is to facilitate the coordination of cancer services and maximize efficiency to improve patient experiences with the cancer care system. It has been reported that the challenge of care coordination, including lack of collaboration and fragmentation, is detrimental to patient experiences and outcomes (Fillion et al., 2009; Freund et al., 2008; Thorne & Truant, 2010). Nurse navigators facilitate continuity of care to create a logical and connected experience of care for patients with cancer. Fillion et al. (2012) reported that professional navigators are responsible for information, management, and relational continuity. Nurse navigators work towards improving the continuity of the information and knowledge of patient and family needs to the interdisciplinary team by conducting comprehensive and ongoing physical and psychosocial screening and needs assessments that take account of the patient experience (Fillion et al., 2012).

To measure the impact of patient navigators on system efficiency, the literature suggested evaluating the reduction of time-to diagnostic resolution and the time-to initiation of cancer treatment before and after the implementation of patient navigation (Battaglia et al., 2011; Campbell et al., 2010; Desimini et al., 2011; Donaldson et al., 2012; Freund et al., 2008; Koh, Nelson, & Cook, 2011). Time-to diagnostic resolution was defined as the time interval between the date of original screening (such as an abnormal clinical breast exam) and the completion of diagnostic tests that resulted in a cancer diagnosis. The time-to initiation of cancer treatment was the time interval between the cancer diagnosis and the actual start of treatment (chemotherapy, biotherapy,
radiation, or surgery). Patient navigators addressed barriers such as wait times and scheduling between the discovery and delivery of life saving cancer-related care services (Battaglia et al. 2011).

Battaglia et al. (2011) reported common prevention and early detection outcome metrics that fit within the constructs of screening, diagnostic outcomes, and process data elements. However, in Canada, patients are generally not assigned a NV until they have a defined cancer diagnosis. The metrics chosen by an organization to evaluate navigation must be contextualized to reflect those aspects of diagnosis and treatment on which the navigator may realistically be able to have an impact (Guadagnolo, Dohan, & Raich, 2011). The collection of baseline sociodemographic data, disease-specific data, and time data for all relevant cancer events should ideally be captured in a standardized format to facilitate the comparison across organizations. Guadagnolo, Dohan, and Raich (2011) stated that time-to variables such as time-to initial oncology consult, time-to diagnostic resolution, and time-to initiation of cancer treatment were critical for providing the best-quality cancer-related care. However, documenting and evaluating time-to data before and after the implementation of NVs can be resource intensive and is often beyond the capacity of most organizations.

Patient navigation attempts to address the gaps in the quality of care delivery to persons with cancer. Quality indicators are currently being developed as a means to establish descriptors of the care patients should receive and to allow for quantitative assessment of adherence rates to those indicators (Chen et al., 2010). For example, the American Society of Clinical Oncology’s National Initiative for Cancer Care Quality developed a set of 36 Breast Cancer Care Quality Indicators (BCCQI) that are explicit
and describe specific clinical scenarios and the recommended interventions (Chen et al., 2010; Weber et al., 2012). The BCCQI are categorized into pathology reporting, diagnostic evaluation, staging, surgery, systemic adjuvant therapy, and respect of patient preferences and inclusion in decision-making domains (Weber et al., 2012). Some of these indicators can be utilized to evaluate NV efficiency within this population. For example, Weber et al. (2012) studied 10 BCCQIs and reported an improvement in the percentage of patients in adherence with the quality indicator following the initiative of the patient navigation program for all 10-quality indicators. One of those indicators was the performance of mammographic follow-up within the first 12 months following a mastectomy for stage I-II breast cancer for patients with a navigator. Chen et al. (2010) reported similar results. However, a set of general quality indicators specific to nursing navigation is not available currently.

The importance of evaluating process measures that are intended to measure whether or not patient navigation was delivered as planned or designed was suggested throughout the literature (Battaglia et al. 2011; Crane-Okada, 2013; Freund et al., 2008; Guadagnolo, Dohan, & Raich, 2011). In addition, it was recommended that program documentation include which phases of the cancer continuum patient navigators address, clinical appointment data to report measures related to adherence to scheduled clinical visits, the number of patients navigated over a specified time period, and the time spent with individual patients. This ensures a way of attributing the system efficiency outcomes to the navigation program (Battaglia et al. 2011; Guadagnolo, Dohan, & Raich, 2011).

Resolving barriers to care, mobilizing resources, and coordinating services can
improve clinical outcomes through influencing timeliness between diagnosis and
treatment and promoting adherence to treatments regimens (Campbell et al., 2010).
Freund et al. (2008) recommended a patient navigator activity log to document the work
of navigators with patients including identification of barriers to care and actions taken by
navigators to address these barriers. This log can include a predefined list of identified
patient barriers, interventions, time spent addressing the issues, and the extent to which
the barrier was resolved by the time patients initiated their first treatment (Freund et al.,

Similarly, Crane-Okada (2013) suggested evaluation measures that assess whether
navigation is being implemented as intended. These can include descriptive categories of
activities such as: number of contacts with patients, duration of contacts, number of
requests from professional colleagues for assistance with patients, and types of services
delivered (Crane-Okada, 2013). The potential for information gathering was extensive.
Determining the goal of the navigation program and the needs of the organization in
advance enabled programs to define the sought evaluation measures and establish a
manageable format for collecting and tracking such data (Crane-Okada, 2013). The
regular summation of these data can provide organizations with valuable information on
caseloads, time management, and appropriate NV-patient ratios (Crane-Okada, 2013;

**Meta-theme 2: Patient Satisfaction**

The literature suggested that patient navigation enhances patient satisfaction and
quality of life (Campbell et al., 2010; Chen et al., 2010; Fiscella et al., 2011; Freund et
al., 2008; Jean-Pierre et al., 2013; Koh, Nelson, & Cook, 2011). For example, Fillion and
colleagues (2009) reported an association between the presence of the NV and higher patient satisfaction and empowerment (fewer cancer-related problems and better emotional quality of life) for patients with head and neck cancers. They collected data from mailed questionnaires to participants were comprised of three sections: 1) socio-demographical characteristics, 2) satisfaction using the EORTC-SAT32 (European Organisation for Research and Treatment of Cancer [EORTC]-Satisfaction with care) questionnaire, and 3) adjustment to cancer using a combination of the Inventory of Recent Life Experiences-for Cancer patients (IRLE-C), the Supportive Care Needs Survey (SCNS), and the quality of life questionnaire EORTC-QLQ-C30 (Filion et al., 2009).

Patient-reported outcomes (PROs), measures completed by patients to capture outcomes that are meaningful and valued by the patients, were the most sensitive measure to assess quality of life, patient satisfaction and experience, psychological distress, pain, and self-efficacy (Fiscella et al., 20011). According to Guagagnolo, Dohan, and Raich (2011), PROs were important tools for measuring the quality of health care. The data were generally obtained through self-administered questionnaires in person, by telephone, via postal mail, or online. However, standardizing a core set of PROs for research and evaluation in patient navigation remains challenging because there are hundreds of PRO assessment tools available and there are few data to indicate which measures are likely to prove most sensitive to patient navigation (Fiscella et al., 2011).

Currently, there is no consensus within the literature on the most appropriate measure to evaluate the effect of patient navigation on patient satisfaction and quality of life. Jean-Pierre et al. (2013) utilized the Patient Satisfaction with Cancer-Related Care
(PSCC) scale—a psychometrically validated 18-item measure designed to assess patient satisfaction with the cancer care received and Freund et al. (2008) suggested the Impact of Events Scale (IES) as a validated measure of health-related quality of life post cancer diagnosis. To measure patient self-efficacy in dealing with cancer and related health services Freund et al. (2008) suggested the Communication and Attitudinal Self-Efficacy Scale (CASE) measure. Koh, Nelson, and Cook (2011) used the Satisfaction with Hospital Care Questionnaire to measure patient satisfaction with the overall cancer-related care experience.

Although there are many measures of patient satisfaction and quality of life, only one tool that directly assessed patient satisfaction with the navigator was found: the Patient Satisfaction with Interpersonal Aspects of Navigator (PSN-1) scale (Jean-Pierre et al., 2013). The PSN-1 is a psychometrically validated nine-item measure designed to assess patient satisfaction of interpersonal relationships with navigators. The National Cancer Institute Patient Navigation Research Program (PNRP) is currently validating a navigation focused measure that will assess satisfaction with various aspects of care on which navigation may be expected to have an impact (Freund et al., 2008; Fiscella et al., 2011). Continued research and consistent use of measures related to navigation and patient satisfaction are needed to strengthen the case for the justification of additional NV positions in Canada.

**Meta-theme 3: Healthcare Usage**

Some studies have demonstrated that nursing navigation improves health service utilization and treatment adherence (patient compliance with screening, diagnostic testing, treatment, and/or palliative recommendations) because one of the primary
activities of NVs includes teaching and providing information to make informed
decisions. For example, Fillion et al. (2009) reported significantly fewer hospitalizations
among head and neck cancer patients who received nursing navigation compared with a
historical control group who did not receive navigation services at their institution in
Quebec, Canada. Documenting healthcare usage such as reduction in rates of missed
appointments, number of unscheduled visits to the oncology clinic, number of
hospitalizations, number of emergency visits, and treatment interruptions can capture the
benefits of a nurse navigator for the patient and highlight the potential financial return on
investment for the organization (Crane-Okada, 2013; Desmini et al., 2011; Guadagnolo,
Dohan, & Raich, 2011). For example, cancer patients in Quebec, Canada have access to
a NV from diagnosis to the end of treatment via telephone or in person. The NV is
available to assess and manage physical and psychosocial needs and symptoms as they
arise, provide support and information (including complementary and alternative
therapies), and ensure continuity of care, which reduces the need for the patient to use
other healthcare resources (emergency department, family physician, unscheduled clinic
visits, pharmacists, and so on).

Meta-theme 4: Return on Investment

To advocate for more oncology NVs, it is essential to justify the cost of
navigation services and the return on investment. Ramsey et al. (2009) argue, “it is
particularly important to evaluate the cost-effectiveness of publicly funded navigator
programs, because funding for these programs typically comes [sic] from global health
budgets that are fixed in the short run with many competing needs” (p. 5396). Cost-
effectiveness analysis compares alternative interventions to evaluate the added costs of a
new intervention such as navigation versus the status quo for the given target populations (Pratt-Chapman & Willis, Ramsey et al., 2009). However, evaluating the economic impact of launching navigation programs is challenging because organizations are unlikely to have the capacity or the interest in calculating cost-effectiveness over a long period of time (Cantril & Haylock, 2013; Pratt-Chapman & Willis, 2013).

Furthermore, as a measure, cost-effectiveness is difficult to assess because of the heterogeneity of patient navigation, the complexities in cancer-related care, the difficulty collecting uniform data, and the identification of multiple variables involved with healthcare costs (Cantril & Haylock, 2013; Pratt-Chapman & Willis, 2013; Ramsey et al., 2009). Freund et al. (2008) suggested a cost-effectiveness analysis that compared the costs of care using a patient navigation model with usual care against estimates of quality-of-life years. In a review article by Ramsey et al. (2009), the conceptual and practical issues of assessing patient navigation in terms of commonly accepted thresholds like the quality-adjusted life-year (QALY) were discussed. They concluded that despite the challenges to evaluating cost-effectiveness of navigation programs it can provide valuable information for local decision makers who allocate limited resources to navigation programs (Ramset et al., 2009).

The sustainability of patient navigator programs depends on the ability to demonstrate economic value and the establishment of common cost measures. Whitley et al. (2011) proposed five categories of core and optional cost measures including: 1) program costs, 2) human capital costs, 3) direct medical costs, 4) direct non-medical costs, and 5) indirect costs. They provided an extensive list of cost metrics for each category; however, the metrics were tailored to the American healthcare system. Limited
information was available on the cost-effectiveness of patient navigation in Canada and no cost measures were defined in the literature.

**Meta-theme 5: Survival**

Improving survival is the primary goal of any cancer-related intervention (Guadagnolo, Dohan, & Raich, 2011). Similarly, the goal of patient navigation is to improve overall quality of health care delivery and patient outcomes such as earlier stage of cancer at presentation, improvements in diagnostic follow-up, minimizing treatment interruptions, and patient satisfaction with care. Many authors hypothesized that patient navigation indirectly improved survival; although, more evidence was needed to establish that patient navigation consistently improves survival outcomes (Battaglia et al., 2011; Guadagnolo, Dohan, & Raich, 2011; Freund et al., 2008). For example, Battaglia et al. (2011) contended that there was a direct mortality benefit when abnormal screening was followed by prompt diagnosis and treatment. They further argued that, “mounting evidence suggested that the delivery of prevention and early detection services was [sic] responsible for a substantial portion of the documented reduction in both cancer incidence and mortality in the United States” (Battaglia et al., 2011, p. 3553).

Guadagnolo and colleagues (2011) put forth that patient navigation improved survival outcomes by affecting a stage-shift toward earlier stage at presentation. Freund et al. (2008) hypothesized that because navigation improved rates of completion of therapy, which played a role in effectiveness of treatment, navigation in turn improved survival. Due to the challenges of studying the effects of patient navigation on survival no conclusive data exist at this time.
Discussion

The purposes of this integrative review were to explore the literature on the patient navigation movement and to provide organizations with a summary of the known quality indicators, evaluation metrics, and measurable patient outcomes available to measure the impact of implementing patient navigation initiatives. The final sample for this integrative review included empirical and theoretical reports such as systematic reviews, critical analysis reports, program evaluations, and a variety of both qualitative and quantitative studies. The findings of this review were presented in five categories: 1) system efficiency, 2) patient satisfaction, 3) healthcare usage, 4) return on investment, and 5) survival.

The suggested metrics intended to measure the impact of NVs on system efficiency were mostly related to time and to specific cancer site quality indicators. The collection of these data can be resource intensive because the required information must be collected over long periods of time. Patient satisfaction and healthcare usage evaluation metrics were the most applicable options available to Canadian organizations to measure the impact of implementing patient navigation initiatives and to help determine optimal NV caseloads. The majority of organizations already collect healthcare usage data and conduct basic patient satisfaction and patient reported outcome surveys.

There is an increasing amount of information available related to the cost-effectiveness of patient navigation in the United-States. However, the information is not applicable to the Canadian public healthcare system. Justifying the cost of Canada’s publically funded navigation services needs to be further addressed to evaluate the sustainability of this new model of care. On the other hand, comparing provincial cost
data to inform best practice is difficult because of the heterogeneity of patient navigation, the complexities in cancer-related care, the difficulty collecting uniform data, and the identification of multiple variables involved with health care costs (Cantril & Haylock, 2013; Pratt-Chapman & Willis, 2013; Ramsey et al., 2009).

There are many quality indicators and measurable patient outcomes available that may successfully measure the impact of patient navigation; however, there is no national consensus on the measures or quality indicators that are sensitive, reliable, and valid. The potential for information that needs to be gathered to successfully measure the impact of navigation interventions is extensive. The literature does suggest that organizations should evaluate whether patient navigation is being implemented as intended, and delivered as planned or designed. Determining the goal of the navigation program and the needs of the organization in advance enables programs to identify the sought evaluation measures and to establish a manageable format for collecting and tracking such data. However, it can be argued that these data will not provide evidence that nurses are the best suited to assume the role of navigator. Organizational and program goals are not necessarily reflective of patient or nurse goals (D. S. Thoun, personal communication, January 5th, 2015).

Many authors discuss the potential benefits of oncology patient navigation on overall survival (Battaglia et al., 2011; Guadagnolo, Dohan, & Raich, 2011; Freund et al., 2008). Unfortunately, due to the challenges of studying the long-term effects of any complex intervention, proving this benefit for Canadians with cancer will be difficult. The documentation and the collection of data relating to the justification of the NV role in Canada is very resource intensive and most likely beyond the capacity of most
organizations. However, continued interest in navigation by researchers will be imperative for the future of the navigation movement.

**Implications and Recommendations for Nursing Practice and Policy**

It was apparent in the literature that the Canadian nursing community is inherently assuming the role of navigator. Cancer care programs across the country are introducing and implementing oncology nurse navigators to improve the patient experience through all phases of the cancer-related care continuum. Although there have been some attempts to standardize the nurse navigator role, there is no specific professional experience, degree, or certification that entitles a nurse to be classified as an oncology navigator. It can be argued that various professionals could assume this role; however, it has been well documented that oncology navigators require a person who has a comprehensive body of knowledge, including pathophysiology of cancer, treatment modalities, disease progression, and systems management, who is a skilled communicator, and who can provide holistic care, providing patients with education and knowledge about their illness (Desimini et al., 2011; McMullen, 2013; Pedersen & Hack, 2010). Many authors insist that nurses are the best suited for assuming this role because of the required scope of the position and the need for dedicated study of oncology education and research (Desmini et al., 2011; Pedersen & Hack, 2010). Most importantly, human experience and quality of life are the preeminent focus of professional nursing practice wherein nurses are guided by the goals and wishes of persons themselves (D. S. Thoun, personal communication, November 17, 2014).

The provinces of Ontario and Quebec have recently initiated oncology nurse navigator education programs to help standardize the NV role. While this is an
improvement, continued work on the development of a national standard of oncology nurse navigator qualifications is required to further establish the role and improve evaluation data. A set of specific nurse navigator standards and competencies similar to the Canadian Association of Nurses in Oncology (2011) *standards and competencies for cancer chemotherapy nursing practice* is needed. The benefits of implementing oncology nurse navigators are well documented; however, justifying the implementation of more oncology nurse navigators is challenging because there is a lack of specific nursing evaluation measures and indicators. Standardizing the role will benefit the establishment of evaluation strategies and contribute to the generalization of the findings. Simultaneously, developing an evaluation framework will be imperative for the future of and justification for this role.

In regards to policy, organizations are in need of provincial caseload benchmarks to ensure that navigation is being utilized as intended. Implementing an insufficient number of NVs will defeat the purpose of the navigation movement, that is, improving the quality of care delivery to Canadians with cancer. Jean-Pierre and colleagues (2012) reported that navigators with highly rated interpersonal relationships with patients improved cancer-related care experiences for patients. Developing a highly rated interpersonal relationship with patients requires adequate resources, time, and professionals who have the necessary knowledge, skills, and attitudes. The effects of navigation are not related solely on the intervention itself but also on the contextual, communicative, and relational aspects surrounding the intervention (Paterson et al., 2009). Finally, it is imperative that organizations continue to evaluate and adjust to the evolving navigation needs of the communities they serve.
Future Research

Increased quantitative and qualitative research into the content and processes of navigation work is needed to support or contest the perspective that specialized oncology nurses are the best suited to assume the role of navigator. Also, further research is needed to explore how to successfully implement nurse navigators into the cancer care system, how to differentiate this role from other nursing roles in the cancer-related care continuum (systemic therapy nurse, radiation oncology nurse, inpatient oncology nurse, primary care oncology nurse), or how to restructure current oncology nursing roles that are often designed to serve oncologists or treatment services rather than patients.

Additionally, more research and consistent use of measures related to system efficiency, patient satisfaction, healthcare usage, return on investment, and survival are needed to find appropriate, meaningful, and feasible methods with which to evaluate whether or not patient navigation causes or facilitates a positive health-related change. Patient navigation interventions are complex, and identifying appropriate, meaningful, and feasible methods with which to evaluate the value of NVs is challenging. Evaluating complex interventions such as patient navigation requires viewing the patient as an active participant in one’s own treatment strategy within the complex of contextual factors (Campbell et al., 2006; Paterson et al., 2009). Therefore, on-going research is required in order to ensure that NVs are honoring the uniqueness of each patient rather than addressing the needs of the cancer care system alone. The complexities inherent in studying patient navigation (meaning, process, and outcomes) and quantifying the invisible work of nurses require multiple research approaches and methods.
Limitations

The primary limitations of this integrative review were inherent in the complexities of combining diverse methodologies and synthesizing evidence from multiple studies. The Whittemore and Knafl (2005) framework guided this review to minimize bias during the selection of the studies and during the data analysis; however, the risk for bias was not eliminated. The potential for incorrectly extracting and interpreting the data was present at all stages of the review. A large number of reports were specific to the American private healthcare system and although the inclusion of these reports provided a good overview of the work being done to develop the navigation role they didn’t necessarily apply to the publicly funded healthcare system of Canada, which was built on the principles of public administration, comprehensiveness, universality, portability, and accessibility. In addition, many reports did not specify who the navigator was, or they included a combination of navigator backgrounds (healthcare worker, nurse, layperson). Therefore the review findings are not specific to a professional nurse navigator model. Although reports dedicated to NVs were scored higher on the data relevance quality criteria two-point scale during the data evaluation stage, the publications dedicated to layperson oncology navigators complemented the findings of this review. Lastly, due to the individualized experience of the person and the interpersonal dimensions of navigation, applying the findings and outcomes of one study to another context may not be useful.

Conclusion

The patient navigation phenomenon in Canada has led to the development and implementation of NVs who can accompany patients and families throughout their
cancer-related care experiences. Finding appropriate, meaningful, and feasible methods to evaluate the effectiveness of NVs is a prevalent question in navigation research today. The purpose of this project was to explore the literature on the patient navigation movement and the known patient navigation quality indicators, evaluation metrics, and measurable patient outcomes available to measure the impact of implementing patient navigation initiatives that have been led by nurses. Theoretical and empirical literature that examined patient navigation interventions and evaluation metrics was reviewed following Whittemore and Knafl’s (2005) integrative literature review framework. The findings were summarized in five overarching metathemes: system efficiency, patient satisfaction, healthcare usage, return on investment, and survival. Patient satisfaction and healthcare usage metrics were the most applicable options available to Canadian organizations that evaluated the implementation of patient navigation initiatives and helped to determine optimal NV caseloads. The collection of system efficiency, return on investment, and survival data is resource intensive and most likely was beyond the capacity of most organizations.

More research is needed to support or contest the perspective that specialized oncology nurses are the best suited to assume the role of navigator. Furthermore, research into the content and process of navigation work is required to ensure that NVs are addressing the needs of the patient and the cancer care systems for which they work. A national consensus on the required qualifications and education of NVs is needed to standardize this new nursing role. Maximum NV caseloads need to be determined to ensure that navigation initiatives are being utilized and implemented as intended. In conclusion, a national navigation framework and consistent use of evaluation measures
related to system efficiency, patient satisfaction, healthcare usage, return on investment, and survival are needed. This review of the literature may help facilitate discussions concerning the value of oncology nurse navigators and may help to justify the further creation of this new role in Canada.
References


Canadian Association of Nurses in Oncology (2006). Practice standards and competencies for the specialized oncology nurse. Author. Vancouver, BC.


Appendix A
Literature search method

Electronic databases: CINAHL and MEDLINE

Search terms: navigation, nurse navigator, patient navigator, cancer, oncology, pivot nurse, case manager, outcome, assessment, quality, and indicators.

358 results

Inclusion criteria applied

24 results

Ancestry approach applied

10 results

34 potential reports were carefully reviewed and critically examined for alignment with the inclusion criteria

Final sample: 22 reports

Inclusion Criteria

• Articles published in Canada or the United States in either French or English
• Articles published after the year 2000
• Articles dedicated to both lay person navigators and professional navigators in oncology
• Articles focused on quality indicators and outcomes of patient navigation
### Appendix B
Data Evaluation

#### 1. Quantitative/Qualitative Designs

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Purpose/Objective</th>
<th>Design</th>
<th>Findings (QI and/or MO)*</th>
<th>Limitations</th>
<th>2 point scale High or Low**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skrutkowski, M., et al. (2008).</td>
<td>To examine the impact of nursing care delivered by a pivot nurse in oncology on symptom relief and outcomes for patients with lung or breast cancer.</td>
<td>Randomized controlled trial in which participants were randomly assigned to an intervention group (n=93) with care by a pivot nurse or to a control group (n=97) with usual care only</td>
<td>Symptom distress</td>
<td>Unable to achieve target sample size of 400. Data on usual care were not collected.</td>
<td>High Canadian Study NV</td>
</tr>
<tr>
<td>Fillion, L., de Serres, M., Cook, S., Goupil, R. L., Bairati, I., &amp; Doll, R. (2009).</td>
<td>To discuss professional cancer navigation roles, models, implementation process and outcomes of patients and families dealing with head and neck cancers.</td>
<td>Cross sectional non equivalent group design</td>
<td>Indicates an association between the presence of nurse navigators with continuity of care (increased satisfaction and shorter hospitalization) and empowerment (fewer cancer-related problems, including body</td>
<td>Non equivalent Design, participants recruited at one hospital, single time measurement</td>
<td>High Canadian Study NV</td>
</tr>
<tr>
<td>Authors</td>
<td>Study Objective</td>
<td>Study Design</td>
<td>Findings</td>
<td>Recommendation</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------</td>
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</tr>
<tr>
<td>Jean-Pierre, P., et al. (2013).</td>
<td>To examine the impact of better-rated navigators on patient’s satisfaction with cancer-related care.</td>
<td>Randomized Control Trial (navigation or standard of care)</td>
<td>Patients who were navigated by better-rated navigators were more likely to report better satisfaction. Measure: Patient Satisfaction with Navigation-Interpersonal (PSN-I).</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Weber, J., Mascarenhas, D., Bellin, L., Raab, R., &amp; Wong, J. (2012).</td>
<td>To analyze the impact of a patient navigator program on the adherence to specific breast cancer care quality indicators (BCCQI).</td>
<td>Retrospective cohort design</td>
<td>In all ten indicators evaluated, there was an improvement in the percentage of patients in compliance from pre and post implementation of a patient navigator program.</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Jennings-Sanders, A., &amp; Anderson E. (2003).</td>
<td>To describe how older breast cancer clients perceive community-</td>
<td>Qualitative: randomized prospective trial</td>
<td>Positive Outcomes: increased coping skills, Small, similar sample (white older women)</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Aim</td>
<td>Methodology</td>
<td>Results</td>
<td>limitations</td>
<td>Design</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
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<td>--------</td>
</tr>
<tr>
<td>Freund, K., et al. (2008)</td>
<td>To assess the process and outcomes of patient navigation in diverse settings, compared with concurrent continuous control groups.</td>
<td>Cross reference study with National Cancer Institute Patient Navigation research program</td>
<td>Time to diagnostic resolution, time to initiation of treatment, patient satisfaction, cost effectiveness. Results pending.</td>
<td>Limitations inherent in research addressing dissemination of programs within community settings (mix of RCT and quasiexperimental). Lack of power to address stage at diagnosis and survival outcomes.</td>
<td>High</td>
</tr>
<tr>
<td>Fillion, L., et al. (2012)</td>
<td>To elaborate, refine, and validate the professional navigation framework in a Canadian context.</td>
<td>Qualitative descriptive study. Two-step approach; empirical and iterative-consultative.</td>
<td>Results support a bi-dimensional framework and define key role functions. For each dimension, Majorit of participants were women. Specific groups were small, majority of participants were</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>
related concepts were illustrated from data. Examples of outcomes were also suggested.

2. Program Evaluations

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Purpose/Objective</th>
<th>Setting</th>
<th>Quality Indicators or Outcome Measures</th>
<th>Results</th>
<th>2 point scale High or Low**</th>
</tr>
</thead>
</table>
• Resolution of barriers (patient navigator log, NCI)  
• Patient Satisfaction (Satisfaction with Hospital Care Questionnaire) | • Not statistically significant  
• 71% of barriers were resolved  
• Patients were highly satisfied | High |

• Patient satisfaction | Patients who received navigation services responded more positively | High |
<table>
<thead>
<tr>
<th>Study</th>
<th>Objective</th>
<th>Participants</th>
<th>Methods</th>
<th>Findings</th>
<th>Cost Effectiveness Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donaldson, E. et al. (2012)</td>
<td>To assess the cost effectiveness of a colorectal and breast cancer patient navigation program over the period of 1 year compared to standard of care.</td>
<td>Ralph Lauren Cancer Center 3 Community Hospitals United States Low income populations</td>
<td>Program efficiency parameters (adherence to screening, diagnostic follow up, treatment) Cost effectiveness (annual colorectal and breast cancer attributable costs compared to patient navigation costs)</td>
<td>Implementing patient navigation is cost effective (needing to avert only 4 cancer deaths to be cost-saving) Improved timely diagnostic resolution.</td>
<td>Low Rational: specific to US healthcare cost structure, in non-Medicare recipient s</td>
</tr>
<tr>
<td>Desimini, M. et al. (2011).</td>
<td>To discuss the benefits, outcomes, and return on investment of professional oncology nurse navigators (vs lay persons).</td>
<td>Henrico Doctors’s Breast Care Nurse Navigation Model</td>
<td>Return on investment Empowerment Patient satisfaction Timely access to care/diagnosis</td>
<td>Implementing entire continuum nurse navigation improved timely access to care,</td>
<td>High</td>
</tr>
</tbody>
</table>
3. Systematic Reviews

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Key Focus Area</th>
<th>Quality Indicators or Outcome Measures (Major headings)</th>
<th>Notes</th>
<th>2 point scale High or Low**</th>
</tr>
</thead>
</table>
| Crane-Okada (2013)     | To review evaluation and outcome measures, including patient-reported outcomes, for assessing the impact of patient navigation. | • Task evaluation measures  
• Baseline data (community needs assessment)  
• Cost-effectiveness | • American focus  
• Focuses on patient navigation by an oncology nurse.  
• Suggests need for clear framework, defined desired outcomes and being selective in choosing measures that are consistent with outcome goals. | Low                                                        |
| Pratt-Chapman, M., &   | To discuss the value of patient navigation to a | • Cost/Benefit  
• System efficiency  
• Patient satisfaction | American focus  
Good overview | Low                                                        |
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Reference Year</th>
<th>Study Title</th>
<th>Outcomes/Measures</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willis, A.</td>
<td>2013</td>
<td>Community cancer center and suggestion of ways to measure navigation outcomes to justify it as a critical component of cancer care.</td>
<td>• Decreasing barriers to care</td>
<td></td>
</tr>
<tr>
<td>Case, M. A. B.</td>
<td>2011</td>
<td>To explore the presence of oncology nurse as navigator on measurable patient outcomes.</td>
<td>• Time to diagnosis and appropriate treatment • Effect on mood states • Satisfaction • Support • Continuity of care • Cost outcomes</td>
<td>High</td>
</tr>
<tr>
<td>McMullen, L.</td>
<td>2013</td>
<td>To discuss the role and challenges of the oncology nurse navigator working within a multidisciplinary team caring for patients with various types of cancers.</td>
<td>• Improved communication • Continuity of care • Cost effectiveness</td>
<td>High</td>
</tr>
<tr>
<td>Fiscella, K. et al.</td>
<td>2011</td>
<td>To suggest patient-reported outcome measures to capture outcomes that are meaningful and valued by patients. Measures recommended based on face validity, responsiveness to navigation,</td>
<td>• Treatment adherence • Perceived barriers to care • Satisfaction with cancer care • Satisfaction with patient navigation services • Working alliance with patient navigator • Perceived knowledge/competence/self-efficacy</td>
<td>American Cancer Society’s National Patient Navigation Leadership Summit Paper.</td>
</tr>
</tbody>
</table>
| Nurse Navigator | Whitley, E. et al. (2011). | To examine cost data relevant to assessing the economic impact of patient navigation and to propose common cost metrics. | • Program costs  
• Human capital costs  
• Direct medical costs  
• Direct non-medical costs  
• Indirect costs | American Cancer Society’s National Patient Navigation Leadership Summit Paper. | Low Specific to American model of care |
| --- | --- | --- | --- | --- | --- |
|  | Battaglia, T., et al. (2011). | To make recommendations for common clinical metrics specific to the prevention and early detection phase of the cancer care continuum. | Recommendations:  
• Clearly document key program characteristics  
• Use a set of core data elements to form the basis of your reported metrics  
• Prioritize data collection using methods with the least amount of bias | American Cancer Society’s National Patient Navigation Leadership Summit Paper. | Low: No defined metrics |
|  | Guadagnolo, A., Dohan, D., & Ranch, P. (2011). | To make recommendations for core metrics for assessing the efficacy of patient navigation in cancer diagnosis and treatment. | • Sociodemographic data and baseline cancer-related data  
• Metrics for patient navigation during diagnosis of cancer  
• Metrics for outcomes, treatment aspects, and care quality  
• Patient-reported metrics on care processes | American Cancer Society’s National Patient Navigation Leadership Summit Paper. | High |
4. Critical Analyses

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Purpose/Objective</th>
<th>Setting</th>
<th>Conceptual or Theoretical Framework</th>
<th>Quality Indicators or Outcome Measures</th>
<th>2 point scale High or Low**</th>
</tr>
</thead>
</table>
• Improved patient self-efficacy  
• Greater patient satisfaction with health care  
• Reduced patient use of emergency resources and specialist | High                        |
Reports were coded according to three quality criteria relevant to this review: methodological rigour, applicability to the Canadian context, and data relevance on a two-point scale (high or low).
Appendix C

Data Display: Recurring Concepts and Themes

<table>
<thead>
<tr>
<th>Color Code (post it flags)</th>
<th>Concept/Theme Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navy Blue</td>
<td><strong>System Efficiency</strong></td>
</tr>
<tr>
<td></td>
<td>• Diagnostic Wait times</td>
</tr>
<tr>
<td></td>
<td>• Time to diagnosis and treatment</td>
</tr>
<tr>
<td></td>
<td>• Time from screening to diagnosis</td>
</tr>
<tr>
<td></td>
<td>• Prevention and early detection</td>
</tr>
<tr>
<td>Light Blue</td>
<td>• Patient experience/<em>Patient Satisfaction</em></td>
</tr>
<tr>
<td></td>
<td>o With the diagnostic phase</td>
</tr>
<tr>
<td></td>
<td>• Decrease in symptom severity</td>
</tr>
<tr>
<td></td>
<td>• Decrease in problems experienced</td>
</tr>
<tr>
<td>Bright Blue</td>
<td>• Provider Experience and Satisfaction</td>
</tr>
<tr>
<td>Yellow</td>
<td><strong>Survival</strong></td>
</tr>
<tr>
<td></td>
<td>• Improvement/Advantage</td>
</tr>
<tr>
<td></td>
<td>• Mortality</td>
</tr>
<tr>
<td></td>
<td>• Survivorship</td>
</tr>
<tr>
<td>Grey</td>
<td>• Continuity of care</td>
</tr>
<tr>
<td></td>
<td>• Resolution of barriers</td>
</tr>
<tr>
<td></td>
<td>• Communication</td>
</tr>
<tr>
<td>Green</td>
<td>• Cost Outcomes</td>
</tr>
<tr>
<td></td>
<td>• <strong>Return on investment</strong></td>
</tr>
<tr>
<td>Pink</td>
<td>• Empowerment (patient and family)</td>
</tr>
<tr>
<td></td>
<td>• Fewer cancer related problems</td>
</tr>
<tr>
<td></td>
<td>• Better emotional quality of life</td>
</tr>
<tr>
<td></td>
<td>• Quality of life</td>
</tr>
<tr>
<td></td>
<td>• Informed decision making</td>
</tr>
<tr>
<td></td>
<td>• Self efficacy</td>
</tr>
<tr>
<td>Purple</td>
<td><strong>Healthcare Usage</strong></td>
</tr>
<tr>
<td></td>
<td>• Improved treatment adherence</td>
</tr>
<tr>
<td></td>
<td>• Symptom severity</td>
</tr>
<tr>
<td></td>
<td>• Decreased admittance to emergency</td>
</tr>
<tr>
<td></td>
<td>• Preventable hospital admissions</td>
</tr>
<tr>
<td></td>
<td>• Shorter hospital stays</td>
</tr>
</tbody>
</table>
Appendix D: Data Comparison

<table>
<thead>
<tr>
<th>Metatheme</th>
<th>Quality Indicators/Evaluation Metrics/Outcome Measures</th>
</tr>
</thead>
</table>
| System Efficiency              | • Diagnostic wait times  
|                                |   • Time from screening to diagnosis  
|                                |   • Time from diagnosis to treatment  
|                                |   • Prevention  
|                                |   • Early detection  
|                                |   • Communication  
|                                |   • Continuity of care  
|                                |   • Resolution of barriers                                                                                           |
| Patient Satisfaction/Empowerment | • Patient self reported experience with the cancer care continuum  
|                                |   • Decrease in symptom severity and problems experienced  
|                                |   • Resolution of barriers  
|                                |   • Patient and family empowerment (self-efficacy)  
|                                |   • Provider experience  
|                                |   • Impact of navigation on patient experience/satisfaction  
|                                |   • Quality of life  
|                                |   • Decision making                                                                                                  |
| Healthcare Usage               | • Improved treatment adherence  
|                                |   • Decreased symptom severity  
|                                |   • Admittance to emergency department  
|                                |   • Use of care (specialties, system)  
|                                |   • Shorter hospitalizations                                                                                            |
| Return on Investment           | • Cost outcomes                                                                                                       |
| Survival                       | • Improvement/Advantage  
|                                |   • Mortality  
|                                |   • Survivorship                                                                                                       |
Appendix E: Presentation

<table>
<thead>
<tr>
<th>Metatheme</th>
<th>Potential Indicators and Outcomes Available to Evaluate Navigation Interventions</th>
</tr>
</thead>
</table>
| System Efficiency       | • Time-to initial oncology consult  
                          | • Time-to diagnostic resolution  
                          | • Time-to initiation of cancer treatment  
                          | • Cancer site specific quality indicators (ex: BCCQI)  
                          | • Process measures  
                          | • Adherence to treatment regimens  
                          | • Adherence to scheduled clinical visits  
                          | • Time spent with individual patients  
                          | • Navigator activity log: barriers to care and actions taken  
                          | • Number of contacts with patients  
                          | • Number of requests from professional colleagues for assistance with patients  
                          | • Types of services delivered |
| Patient Satisfaction    | • Patient reported outcomes questionnaires  
                          | o Patient satisfaction  
                          | o Quality of life  
                          | o Patient experience  
                          | o Psychological distress  
                          | o Pain  
                          | o Self-efficacy |
| Healthcare usage        | • Number of hospitalizations  
                          | • Rates of missed appointments  
                          | • Number of unscheduled visits to the oncology clinic  
                          | • Number of emergency visits  
                          | • Treatment interruptions |
| Return on Investment    | • Cost effectiveness analysis  
                          | • Program costs  
                          | • Human capital costs  
                          | • Direct medical costs  
                          | • Direct non-medical costs  
                          | • Indirect costs |
| Survival                | • Prevention and early detection of cancer  
                          | • Stage of cancer at presentation  
                          | • Prompt diagnosis and treatment  
                          | • Timely diagnostic follow-up |