

Final Report

Family Physician Integration with the Cancer System (FPICS)

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Executive Summary

Introduction

The care of cancer patients is characterized by multiple, complex, and often stressful interactions involving a wide range of care practitioners and settings, along the various stages of treatment (i.e., initial diagnosis, active treatment, follow-up therapy, survivorship, and palliative care). While there is a recognized need for a significant proportion of cancer care to be provided through specialized centers to achieve the best outcomes for patients, it is also very clear that for comprehensive care, especially during the early diagnostic and post-treatment phases, family physicians must be involved in order to manage continued non-cancer health care needs as well as provide supportive care in informational and psychosocial domains.

The importance of having better integration between the cancer care system and community providers has been identified as a key strategic objective of Cancer Care Ontario (CCO) and appears as a priority initiative in LHIN planning documentation. However, prior research has not informed the specifics of how to best integrate the provision of cancer care. While the need to address current gaps in cancer care processes has been identified, little direction on how to best integrate providers across the trajectory of illness has been provided

Integration between care providers has been defined as the process of creating and maintaining a common structure and connection between different providers for the purpose of coordinating patient care, while retaining each provider's unique role.

Integration is context specific and evaluating it requires development of instruments that reflect the unique nature of the disease model and care trajectory being examined.

In this study, integration between family physicians and a regional cancer program was assessed in the three domains identified by Cancer Care Ontario's (2007) Cancer System Quality Index initiative. These domains are:

- ***Clinical Integration***: the extent to which patient care services are coordinated across the various functions, activities, and operating units of the cancer system.
- ***Functional Integration***: the extent to which key support functions and activities are coordinated across operating units of the cancer system.
- ***Vertical (System) Integration***: the extent to which there is regional collaboration, coordination and leadership with respect to cancer services that is recognized as a “system.”

The recent development and implementation of Local Health Integration Networks (LHINs) in Ontario provided an opportunity to comprehensively and systematically study integration between community providers and a regional cancer program within the context of a representative health region. With respect to the three types of integration being examined, study investigators were interested in discerning the current practices of primary care physicians in the care of their cancer patients, the perceptions and knowledge of these practitioners regarding the processes of cancer care, and the extent to which they feel clinically and functionally linked to the various parts of the cancer care system. The ultimate goal of these studies is to identify opportunities for regional cancer

programs to better integrate family physicians in the care of cancer patients across the illness trajectory.

Methods

Study Site and Sample

This study was a cross-sectional survey of all practicing family physicians in the Local Health Integration Network (LHIN) 4 area in Ontario, which includes Hamilton, Niagara, Halton Norfolk, Haldimand, and Brant regions. The LHIN 4 region has a full range of cancer care organizations and services, including one large regional cancer centre, a diversity of rural and urban communities, and represents the full spectrum of organizational and compensation models for primary care practitioners.

Study Instrument

The data collection survey instrument was specifically designed to assess key aspects of integration with the regional cancer program from the perspective of community family physicians. Survey items were based on existing instruments that measure perceptions of family physicians in the care of cancer patients, the relevant literature, a service integration tool developed by CCO, and the judgment of the researcher team.

The survey was framed in reference to the LHIN 4 Regional Cancer Program (RCP), i.e., the Juravinski Cancer Centre and its regional providers of cancer care in the LHIN 4 area. When responding to the questions, family physicians were asked to think about

cancer patients they had cared for within the last 12 months. The survey questions covered the trajectory of care from peri-diagnosis (i.e., period from suspicion of cancer to start of active treatment) to palliative care.

Data Collection Procedure

A Dillman Tailored Design Method was followed to administer the mail survey with an added telephone contact stage for non-responders. An initial pre-notice was mailed in January 2008 inviting the family physicians to participate, followed by the questionnaire two weeks later.

Data Analysis Procedure

Analysis was primarily descriptive with item results presented as frequencies and proportions. Open-ended responses in the survey were reviewed for emergent themes. Explanatory analyses by demographic and other predictive factors (e.g., practice type, location within LHIN, etc.) were conducted using multivariate logistic regression to explore potential predictive factors for high or low activity areas of integration and system interaction. Key outcomes for this analysis included practitioner understanding of the process of referral to the RCP, role clarity and self reported care provision across the trajectory, and satisfaction with information exchange.

Results

Respondents

Of the 749 physicians in LHIN 4 currently practicing family medicine, 455 responded to the questionnaire representing an adjusted response rate of 61%. These practitioners represented a wide range of years in practice with a median duration of 25 years and 2/3 having practiced over 10 years in the LHIN 4 area. Proportionate representation was obtained from family physicians in all the major communities in the LHIN 4 area.

A majority of the family physicians practiced in a private office (as opposed to a walk-in clinic or community health centre) and about 1/3 worked in solo practices. The respondents most commonly reported practice sizes of between 1000 and 2000 patients. Most physicians had seen five or more patients in the past year who were newly diagnosed with cancer. Slightly over half of the doctors indicated that fee-for-service (FFS) was their primary source of remuneration for patient care. The remainder was largely paid through capitation or a mixed funding arrangement.

Key Integration Findings by Cancer Trajectory

Integration – Peri-diagnosis Stage

Nearly all the respondents indicated knowing how to initiate investigations of signs and symptoms for the nine main cancer disease sites mentioned as well as how to identify the appropriate referral specialist for suspected cancer types, except in the case of neuro-oncology and to some degree, head/neck cancer. Family physicians' perceptions of the ease with which their patients were connected to the cancer system varied, with 1/3 of respondents stating that cancer-related diagnostic tests were not

available in a timely fashion; mainly in reference to problems in obtaining MRIs and CT scans, as well as delays in biopsy results. Sixty percent knew the procedure for referring patients to the RCP, the most frequently cited problems being not knowing where to call, what tests to order prior to patient referral, and the appropriate reasons for referral.

Most practitioners responded that their patients were able to get appointments fairly quickly with surgeons, but slightly less so for medical oncologists and radiation oncologists. Only about half of the respondents reported that health care providers in the RCP were easy to reach by phone when dealing with the early stages of their patients' cancer diagnoses.

Almost half of the physicians surveyed felt that coordination and access to services for cancer patients needs to be improved during the peri-diagnostic stage. The main suggestions for improvement were: (1) the provision of specific information about the referral process, protocol, and/or contact person for linking patients to the RCP and (2) a better exchange of patient information among the specialists, RCP, and family physicians at this early stage to keep them "in the loop".

Most physicians agreed that some kind of a cancer system navigation program is required to help their patients access necessary medical and supportive care services. The majority (almost half) recommended a *Coordinator model* – in which the navigation program becomes responsible for coordinating appointments and the family physician practices are informed but not responsible for care. This was followed by recommendations by 1/3 of respondents for a *Shared model* – in which the navigation

program helps coordinate patient appointments and the family physician practices coordinate care. The least popular option was the *Advisor model* – where the navigation program provides family physicians with advice, and physician practices coordinate care and appointments.

Integration – Active Treatment Stage

A large percentage of the family physicians manage their patients' common symptoms related to cancer or its treatment as problems arise (e.g., pain and nausea) and nearly all continue to manage their patients' other medical issues. Just over half of physicians said that they provide their patients with information about their cancer and cancer treatments and about the same number reported that they are involved with their cancer patients in the decision making process about their cancer management.

When asked if RCP providers had been responsive when contacted about a patient issue in the active treatment phase, most physicians either concurred or said that they had not needed to contact these providers. Family physicians generally reported that they knew how to contact a provider within the RCP involved in their patients' care to go over questions or concerns, although some expressed difficulty in reaching these providers. About 1/5 of the family physicians felt inadequately informed by the RCP regarding either significant changes in their patients' health status, changes in patients' medications or treatments, or the next steps in the patients' care. The majority of respondents were satisfied with both patient reports and test results received from the RCP.

Integration – Post-treatment Follow-up

About 1/5 of the family physicians felt inadequately informed by the RCP regarding what is involved in the follow-up of their cancer patients (i.e., once the patient has been discharged from the care of the oncologist). However, most respondents stated that it is easy to connect patients back to the RCP if a recurrence of an initial cancer diagnosis is suspected. Nearly all of the practitioners stated that they encourage their cancer patients to follow-up at their practice upon the completion of treatment and that they continue to manage their cancer patients' other medical issues during this period.

Integration – Palliative Stage

Many of the respondents stated that they knew who to contact to obtain palliative care services for their patients. The local Community Care Access Centre was the most frequently cited resource used by family physicians' for their palliative care patients. Palliative care physicians, hospital palliative care, hospices, and a palliative care team /network were other commonly indicated resources.

Family Physician Role across the Care Trajectory

In response to their involvement with their patients at the peri-diagnosis stage of cancer, almost 3/4 of family physicians felt that their role in care was clear to them. Slightly less felt that this role was valued by other professions in the RCP. However, role clarity among family physicians dropped considerably once their patients' cancer treatments had begun and even fewer respondents felt that their role at this stage was

valued. Eighty percent of the practitioners stated that they remain involved with their cancer patients at this time, with 1/4 indicating that they would like to be more involved. Major barriers to greater involvement in care for their patients being seen at the RCP were perceived to be the limited access to patient information and/or the cancer treatment plan, a lack of professional interaction from the RCP and direction as to the appropriate role of the family physician, limitations in their own knowledge and skill in oncology, and their patients being too busy with specialist appointments to visit the family practitioner.

Role confusion was again expressed by family physicians in the follow-up period after their patients' treatment for cancer was completed with 1/3 of these practitioners being unclear as to their role in care at this point. Slightly more than 2/3 felt that this role was valued by other professionals in the RCP. Most of the physicians stated that they are involved with their cancer patients at this stage, with almost half indicating that they would like to be more involved. In comparison, 1/4 of respondents indicated no involvement in patient care at the palliative care stage of cancer. Slightly less than half wished greater involvement at this point in the disease trajectory.

Informational Support and Education

The majority of family physicians expressed satisfaction with the exchange of information between their practice and the RCP. Those who reported issues highlighted delays in receiving correspondence from the RCP or the general lack of (or poor) communication/information. Just under half of the respondents expressed an interest in

attending multidisciplinary case conferences on their cancer patients. Most family physicians reported having access to the Internet in their practice setting, but few used the regional cancer centre's Web portals for information. About half use electronic health records in their primary practice and only about 1/4 of the family physicians indicated that they access electronic health records from other providers such as hospitals.

Once again, many of the family physicians felt they would benefit from having guidelines on when and how to connect their cancer patients to the RCP. If such guidelines on the referral process were to be developed, the majority said that they preferred to receive this information on a one-page summary sheet, seconded by either pamphlet form or on the internet. In terms of improving their own skills, slightly less than 2/3 stated that they had attended educational sessions on cancer care.

Predictive Factors for Integration

Multivariate logistic regression was applied to explore the predictors of family physician responses pertaining to their involvement and understanding of the processes in patient cancer care, RCP perceptions, and other key factors of integration. Physicians who had either attended cancer care education sessions, had more years in practice, or had seen more newly diagnosed cancer patients in the past year, tended to have better role clarity, reported being more involved in cancer patient care, and were more likely to understand referral procedures to the RCP.

Greater number of years in practice predicted higher satisfaction with both information exchange and remuneration. Physician practice location in the LHIN did not emerge as a predictive factor for the physician care involvement or perceptions measured.

Evidence of Integration by Domain

Organizing the research findings from across the cancer care trajectory by the clinical, functional, and vertical domains of integration, both strengths and deficits were found in each between family physicians and the RCP. The presence of clinical integration, which pertains to the extent to which patient care services are organized at the provider level, was evidenced in most family physicians knowing how to initiate investigations of signs and symptoms and identify the appropriate referral and being involved in patient care across the care trajectory; although, less so at the palliative care stage. However family physicians' role uncertainty in cancer care, particularly while patients are undergoing treatment, indicated a gap at this level of integration.

Functional integration, the degree to which support functions and activities are coordinated, was apparent in most family physicians' being satisfied with the exchange of information between their practice and the RCP. However, the fact that few family physicians' used the regional cancer centre's Web portals for information and that many reported problems obtaining diagnostic tests, suggests impediments to achieving integration at this level.

Vertical integration, represented by the existence of regional collaboration, coordination, and leadership, was somewhat evident in family physicians' perceiving there to be generally good coordination of care between their practice and the RCP. However, integration at this broader level is greatly lacking in that many family physicians' felt system coordination and access to services for cancer patients following diagnosis needed improvement, as well as, many family physicians' not knowing the procedure for referring patients to the RCP and expressing the need for a cancer system navigation program.

Conclusions

This study provides the first detailed snapshot within a LHIN region of the gaps in care integration between primary care providers and the Regional Cancer Program (RCP) across the cancer trajectory. Family physicians self reported care provision and integration with the RCP was found to vary across the trajectory of care, with clear deficits in understanding care processes especially at the transition between community and specialty care. It is evident that improved communication between family physicians and the RCP is required and that interventions need to incorporate clear guidelines about provider roles and responsibilities. There appears to be broad support for navigation mechanisms, especially at the initial transition phase between the community and cancer system. Many practitioners indicated using information technologies to some extent in their practice settings, but there are likely significant barriers in the short term to the implementation of a technology-based communication strategy given the

reported variation in electronic medical record (EMR) platforms being used and the possible complexity in being able to link to other medical systems outside of the primary care practice settings. The results of this study serve as a baseline assessment of integration between family doctors and RCPs in a representative LHIN setting and will be a foundation for future research to inform interventions that may improve provider and system integration.

Knowledge Translation

The research team is planning a number of knowledge translation activities to ensure dissemination of our findings to the appropriate stakeholder groups. The Research Branch of the Ministry of Health and Long Term Care will play the role of knowledge broker by further disseminating study results throughout the Ministry. The study report will be forwarded to senior management at Cancer Care Ontario and LHIN 4 planning group, both of whom have been in regular communication with the study team during the research process.

Introduction

Background

The care of cancer patients involves multiple, complex, and stressful interactions with a wide range of care practitioners (Kristjanson & Ashcroft, 1994). Most patients experience numerous transitions between providers and settings while moving through the various stages of treatment (i.e., initial diagnosis, active treatment, follow-up therapy, survivorship, and palliative care). Patients and their families often report feeling overwhelmed and lost in a system that is increasingly difficult to navigate (Hudson, 2001; Sullivan, Dobrow, Thompson, & Hudson, 2004). These sentiments are also frequently expressed by their family physicians who report becoming increasingly isolated from the cancer care system and as a consequence, less effective in helping patients cope with the diagnosis and treatments (Kasperski & Ellison, 2007). Our previous research has demonstrated that cancer patients and their families continue to identify their primary care practitioners as critical providers of both medical and supportive care (Whelan et al., 2003). Similarly, a large body of research from Canada and abroad demonstrates the ongoing commitment of primary care providers to their cancer patients despite feeling marginalized by the cancer care system (Grunfeld, Mant, Vessey, & Fitzpatrick, 1995; Paradiso, Nitti, Frezza, & Scorpiglione, 1995; Worster, Bass, & Wood, 1996).

In 2005, the Institute of Medicine released a report entitled “Lost in Transition” which outlined the challenges in providing comprehensive care across the trajectory to cancer

patients. In particular, this report emphasized the importance of care providers communicating effectively, as well as, ensuring clarity between providers of the processes of care. The authors also outlined the need to raise awareness of the medical, functional, and psychosocial consequences of cancer and its treatment, as well as, providing a framework to define quality health care for cancer survivors and identify strategies to improve care delivery. Care integration between primary and cancer systems is proposed to support continuity of care, which in turn will lead to better support for patients and improvements in quality of care.

There is a recognized need for a significant proportion of cancer care to be provided through specialized centers to achieve the highest quality care and best outcomes (Hillner, Smith, & Desch, 2000). However, it is also clear that for comprehensive care, especially during the early diagnostic and post-treatment phases, community providers must be involved to manage continued non-cancer health care needs as well as to provide supportive care in informational and psychosocial domains. A recently published, large study of Medicare patients in the United States clearly illustrated that reductions of involvement by primary care practitioners was associated with inferior overall care and outcomes, especially in the management of non cancer related health conditions (Earle & Neville, 2004).

A review (Dworkind, Towers, Murnaghan, Guibert, & Iverson, 1999) of a number of qualitative studies suggested that some of the problem may reside in a lack of understanding on the part of primary care practitioners about processes of care (e.g., ordering tests, making referrals, flow through the cancer system, expectations at

discharge), communication with the cancer care system (e.g., timing, mode, and content of communication), and role confusion between the primary care providers and specialty providers (e.g., unclear as to who is involved in and coordinating various aspects of care).

There is emerging evidence from the United Kingdom and Denmark demonstrating that interventions targeting processes of care that are responsive to the needs of primary care practitioners (e.g., better communication methods) result in better integration, higher patient reported satisfaction with care, and improvements in meeting patients' and providers needs (Department of Health, 2000; Jefford et al., 2008; Nielsen, Palshof, Mainz, Jensen, & Olesen, 2003). These studies demonstrate the importance of informing the development of interventions within the context of the specific care environment. While there are some similarities between Ontario and the care systems included in these studies, differences in the funding and organizational models of primary care in Ontario limits the applicability of these findings.

The recent development and implementation of Local Health Integration Networks (LHINs) provides an opportunity to comprehensively and systematically study integration between community providers and a regional cancer program within the context of a representative health region. Care integration is a priority for the LHINs and projects to inform integration are of broad interest to healthcare planners and policy makers (Government of Ontario, 2007).

Understanding Gaps in Integration of Community & Specialized Cancer Care in Ontario

The importance of having better integration between the cancer care system and community providers has been identified as a key strategic objective of Cancer Care Ontario and appears as a priority initiative in LHIN planning documentation (Hamilton District Health Council, 2005; Sullivan et al., 2004). These documents identify the need to address current gaps, but provide no specific guidance on solutions. A recent report from the Institute for Clinical and Evaluative Sciences (ICES, 2006) demonstrates that at the population level, Ontario's family physicians continue to be involved in the care of patients with cancer despite ever increasing workloads and expectations. These findings are encouraging, demonstrating that patients remain linked to the community care system, but do not inform the specifics of how to best integrate providers across the trajectory of illness.

In a recent meeting co-hosted by the Ontario College of Family Physicians and Cancer Care Ontario entitled "Symposium on the Integration of Family Practices and the Cancer Care System" a broad range of participants convened to initiate discussions about how to bridge the gaps in care. The meeting summary identified a number of potential problem areas including communication, knowledge gaps, human resource limitations, role confusion, and "difficulties in selecting the most strategic interventions" to address the perceived gaps in care (Kasperski & Ellison, 2007).

Through participation in the symposium, the Supportive Cancer Care Research Unit (SCCRU) was identified as being uniquely positioned and having the necessary

expertise to provide high quality data to inform the provincial cancer care integration initiative. Specifically, it is recognized that although there are efforts underway to assess integration of providers working within the formal regional cancer programs, there is a lack of data on the aspects of integration that affect the primary care community (Canadian Institute for Health Information; 2006). The main objective of this project is to inform planners and policymakers at the local and provincial levels of the barriers and opportunities to achieving integration within the LHIN systems across the trajectory of cancer care.

Integration between care providers is defined as the process that involves creating and maintaining a common structure and connection between different providers for the purpose of coordinating patient care, while retaining each provider's unique role. Integration is context specific and evaluating it requires development of instruments that reflect the unique nature of the disease model and care trajectory being examined. (Contandriopoulos, Denis, Touati, & Rodriguez, 2003; Leatt, Pink, & Guerriere, 2000; Shortell, Gillies, Anderson, Erikson, & Mitchell, 1993).

In this study, integration between family physicians and a regional cancer program were assessed in the three domains employed by the Cancer Care Ontario's (2007) Cancer System Quality Index initiative. These domains, which share features with other prior evaluations of integration (Ahgren & Axelsson, 2005), are:

- ***Clinical Integration:*** the extent to which patient care services are coordinated across the various functions, activities, and operating units of the cancer system. Key items in this domain will probe knowledge of the

providers to work up newly diagnosed patients, clarity of provider role, and self-reported care provision across the care trajectory.

- **Functional Integration:** the extent to which key support functions and activities are coordinated across operating units of the cancer system. Key items in this domain will probe communication between providers and the regional cancer program.
- **Vertical (System) Integration:** the extent to which there is regional collaboration, coordination, and leadership with respect to cancer services that is recognized as a “system”. Key items in this domain will probe provider understanding of referral to the regional cancer program and system navigation.

Research Questions

Primary Question:

What is the extent of integration of primary care practitioners with the regional cancer program across the trajectory of cancer care?

Secondary Questions:

1. What are the current practices of primary care practitioners in the care of cancer patients across the trajectory of care?
2. What are the perceptions of primary care practitioners regarding the processes of caring for patients with cancer?
3. To what extent do primary care practitioners feel clinically and functionally linked to the various parts of the cancer care system?
4. What opportunities exist for regional cancer programs to better integrate family physicians in the care of cancer patients?
5. What are the current gaps in caring for cancer patients as perceived by family physicians across the trajectory of care?

Terminology Defined

Regional Cancer Program (RCP): the Juravinski Cancer Centre and its regional providers of cancer care in the LHIN 4 area (Local Health Integration Network: Hamilton, Niagara, Halton Norfolk, Haldimand, and Brant). See Figure 1.

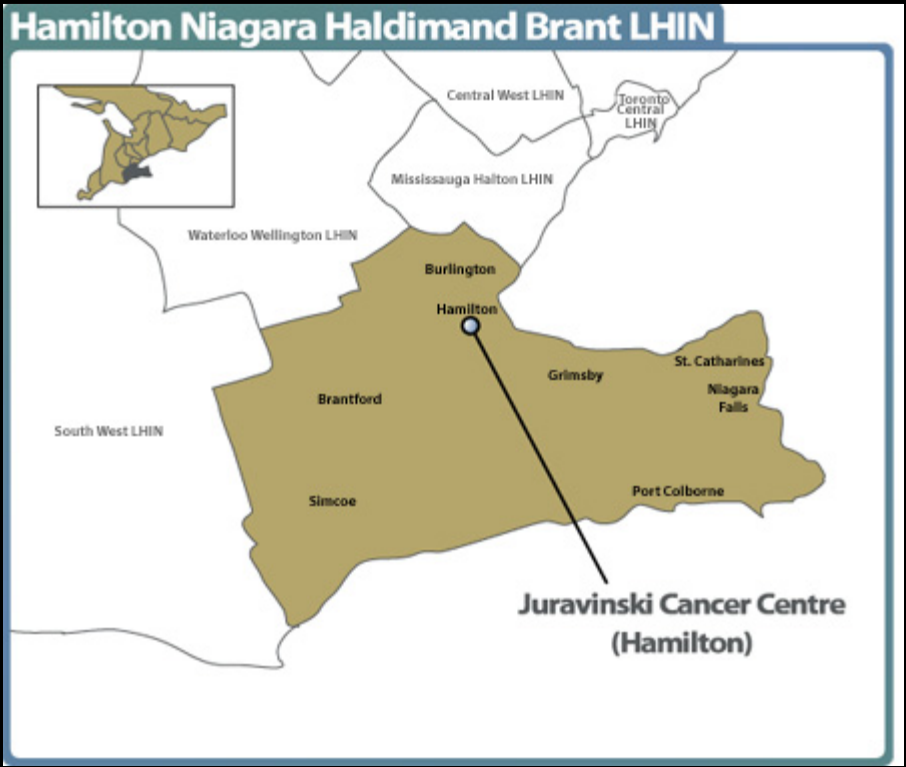
Peri-diagnosis stage: period from suspicion of cancer to start of active treatment

Active Treatment stage: period in which patient is undergoing treatment for cancer within a regional cancer program (includes surgery, chemotherapy, or radiotherapy)

Follow-up stage: post-treatment period

Palliative stage: no curative intent for patient’s cancer diagnosis

Figure 1: Local Health Integration Network (LHIN) 4



Source: Cancer Care Ontario.
Accessed at <http://www.cancercare.on.ca/english/csqi2008/csqi-lhinhome/csqi-hnhblhin/>

Study Methods

Study Design

This study involved a cross-sectional survey of all practicing family physicians in LHIN 4.

Study Setting

The Local Health Integration Network (LHIN) 4 area in Ontario includes Hamilton, Niagara, Halton Norfolk, Haldimand, and Brant regions, comprising a total area of 7,000 km² (Government of Ontario, 2008). The LHIN 4 region includes the full range of cancer care organizations and services, a diversity of rural and urban communities, and represents the full spectrum of organizational and compensation models for primary care practitioners.

The population of the LHIN 4 area is 1,353,000 people, 14.6% which are 65+ years (provincial level = 12.8%). The age-standardized mortality rate for neoplasms in this LHIN is 191 per 100,000, compared to 181 per 100,000 in the province. LHIN 4 contains one large regional cancer centre in Hamilton and five main affiliated sites in Brantford, Burlington, Niagara Falls, St. Catharines, and Welland.

Study Sample

The study sample included all identified active family physicians with office addresses within the LHIN 4 boundary. The research team used multiple sources to construct the study sample including professional databases (The Ontario College of Family Practice, the College of Physicians and Surgeons of Ontario, The Canadian Medical Directory) and local LHIN and Regional Cancer Program registries. The survey sample was verified by cross-referencing data sources and resolving discrepancies through contact with physician practices.

Study Instrument

The data collection survey instrument was specifically designed to assess key aspects of integration with the regional cancer program from the perspective of community family physicians. Instrument items were based on existing instruments that measure perceptions of primary care practitioners in the care of cancer patients, the relevant literature, and the judgment of the researchers. Sources from which survey items were derived were the Coordination and Integration of Cancer Services (CSI) Survey (Cancer Care Ontario, 2007), the Family Physician Questionnaire (Doll et al., 2005), the National Family Physician Survey (The College of Family Physicians of Canada, 2001), and the Family Physicians and Cancer Care Manitoba survey (Sisler, Brown, & Stewart, 2004). Expert opinion was sought with respect to the instruments' coherence and comprehensiveness. Pilot testing of the instruments was subsequently carried out on a sample of respondents who resembled the study participants.

The survey was framed in reference to the LHIN 4 Regional Cancer Program (RCP), i.e., the Juravinski Cancer Centre and its regional providers of cancer care in the LHIN 4 area. When responding to the questions, family physicians were asked to think about cancer patients they had cared for within the last 12 months. The survey questions covered the trajectory of care from peri-diagnosis (i.e., period from suspicion of cancer to start of active treatment) to palliative care. The study instrument was designed using an iterative process to include items that capture Clinical Integration, Functional Integration, and Vertical (System) Integration across the trajectory of care from the perspective of primary care providers in community settings (Cancer Care Ontario, 2007).

Item responses were categorical with yes/no/uncertain options, to facilitate straightforward summary and analysis of items using means and proportions. Open-ended response options were available for a number of the questions to capture aspects of care provision important to respondents not included in the existing categories, to provide for response elaboration and to ensure the broadest possible assessment of opportunities to improve integration between providers from the community perspective. All open ended questions were summarized using the constant comparative method with coding to allow the development and summary of response categories.

Questions were grouped by stage in the cancer trajectory (peri-diagnosis, active treatment, follow-up, and palliative) following the nomenclature of Cancer Care Ontario documentation. A section on demographics that followed the most commonly accepted

nomenclature for physician and practice organizational characteristics from previously conducted national surveys of family physicians was used. A copy of the final survey can be found in Appendix A.

Data Collection Procedure

A Dillman Tailored Design Method (2000) was followed to administer the mail survey (see Figure 2), with an added telephone contact stage for non-responders. Study materials sent to physicians through the process included a *pre-notice letter*, i.e., an invitation from the Cancer Centre Director and local Head of Family Medicine to participate in the up-coming survey, a *study letter*, i.e., a short explanation of the study purpose from the Principal Investigator and the Cancer Centre Director, an *information sheet* describing the study objectives, a *postcard reminder* to encourage non-responders to complete the survey, and a *faxed reminder* to encourage non-responders to complete the survey and which provided them the opportunity to request another copy of the survey. The initial pre-notice was sent in January 2008, followed by the questionnaire two weeks later.

Figure 2. Survey Process

Step	Process
1	Pre-notice mailed to all Family Physicians
2	Questionnaire, stamped return envelope, study letter, information sheet, and incentive mailed to all Family Physicians
3	Postcard reminder mailed to all non-responding Family Physicians
4	Questionnaire, stamped return envelope, study letter, and information sheet, re-mailed to all non-responding Family Physicians
5	Fax reminder sent to all non-responding Family Physicians
6	Telephone contact made with all non-responding Family Physicians
7	Questionnaire, stamped return envelope, study letter, and information sheet, couriered to non-responding Family Physicians upon request

Data Management

Response data were entered into a MS ACCESS database with a custom interface to ensure inputting of valid response options and to test for data anomalies such as missing values. A five percent data integrity check was carried out to verify accuracy of entry.

Data Analysis Procedure

Response data were analyzed using SAS version 9.1 and SPSS version 16. Analysis was primarily descriptive with item results presented as frequencies and proportions. Open-ended responses in the survey were entered into an MS Excel spreadsheet and reviewed for emergent themes by two researchers. Themes derived

from open-ended responses were transferred into SPSS for analysis. Results are organized and reported by the cancer trajectory groupings.

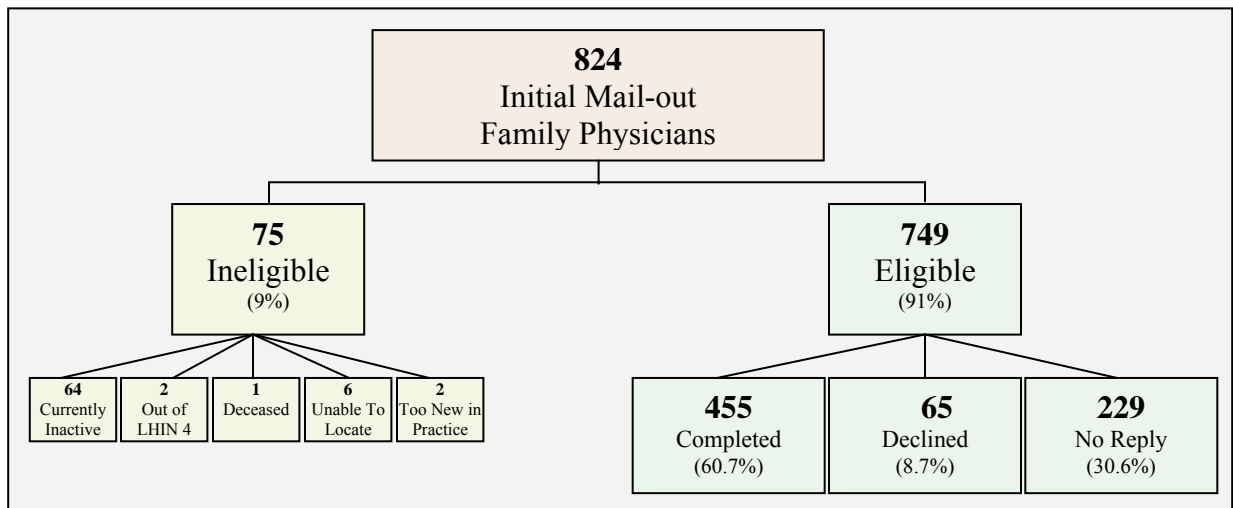
Explanatory analyses by demographic and other predictive factors (e.g., practice type, location within LHIN, etc.) were conducted using multivariate logistic regression to explore potential predictive factors for high or low activity areas of integration and system interaction. Key outcomes for this analysis included practitioner understanding of the process of referral to the RCP, role clarity and care provision across the trajectory, and satisfaction with information exchange.

Study Results

Family Physician Participation

A total of 824 family physicians were identified in LHIN 4 and mailed a study pre-notice. Of this initial population, 75 were determined to be not currently practicing family medicine in LHIN 4 and were removed from the study. Of the 749 eligible family physicians, 455 responded to the questionnaire representing an adjusted response rate of 61% (see Figure 3).

Figure 3. Family Physician Response Rate (N=824)



Participant Characteristics

The characteristics of the family physician respondents are presented in Table 1. Male and female physicians were evenly represented in the sample. These practitioners represented a wide range of years in practice with a median duration of 25 years and many (68%) having practiced over 10 years in the LHIN 4 area. Proportionate representation was obtained from family physicians in all the major communities in the LHIN 4 area. Table 2 summarizes the regional cancer program sites that respondents reported interacting with over the previous 12 months. A comparison of demographics between respondents and non-respondents revealed no significant differences between these groups based on years in practice and practice location. Female family physicians tended to have a slightly higher response rate than their male counterparts (i.e., female response sample inflated by 3.5% compared to population, $p < 0.05$).

A majority (88%) of the family physicians practiced in a private office (as opposed to a walk-in clinic or community health centre) and about a third (36%) worked in solo practices. The respondents most commonly reported practice sizes of between 1000 and 2000 patients (49%), and very few of the physicians (1%) indicated working as hospitalists with no regular patient roster. Most physicians (80%) had seen five or more patients in the past year who were newly diagnosed with cancer. Slightly over half (54%) of the doctors indicated that fee-for-service (FFS) was their primary source of remuneration for patient care. The remainders were largely paid through capitation (22%) or a mixed funding arrangement (9%).

Table 1. Family Physician Characteristics (N = 455)

Respondent Characteristics		N (%)
Gender		
Male		266 (58.5%)
Female		189 (41.5%)
Years since graduation	median	25 yrs
	range	1 to 51 yrs
Years of practice in Region		
0 to 4 years		71 (15.6%)
5 to 10 years		73 (16.0%)
11 to 20 years		107 (23.5%)
20+ years		203 (44.6%)
Solo Practice		165 (36.3%)
Practice settings		
Private office		398 (87.5%)
Walk-in clinic		32 (7.0%)
Community health centre		20 (4.4%)
Academic teaching unit		23 (5.1%)
Other		56 (12.3%)
Primary source of income*		
Fee-for-service (FFS)		243 (54.2%)
Capitation (CAP)		99 (22.1%)
Mixed†		41 (9.2%)
Salary		18 (4.1%)
Other		47 (10.5%)
Size of practice		
Less than 1000 patients		47 (10.3%)
1000 to 1999 patients		224 (49.2%)
2000 or more patients		170 (37.4%)

* source >80% of income for family medicine

†FFS and either CAP or Sessional Pay each ≥20% of income)

Table 2. Oncology Clinics in the LHIN 4 RCP family physicians reported working with (N=455).

Oncology Clinic	N	%
Hamilton (Juravinski Cancer Center)	327	71.9
St. Catharines (St. Catharines General Hospital)	101	22.2
Burlington (Joseph Brant Memorial Hospital)	68	15.0
Brantford (Brantford General Hospital)	45	9.9
Niagara Falls (Greater Niagara General Hospital)	36	7.9
Welland (Welland Hospital Site)	26	5.7

Note: Some respondents had multiple responses

Integration – Peri-diagnosis Stage

The family physicians were asked about whether they knew how to initiate investigations of signs and symptoms for nine main cancer disease sites and whether they knew the appropriate specialist for referral for suspected cancer types. Respondents indicated knowing how to initiate investigations (affirmation all above 90%) except in the case of neuro-oncology (84%). They also knew who to refer to (affirmation all above 85%) except again for neuro-oncology (57%) and to some degree, head/neck cancer (81%).

There was variation in family physicians perceptions of the ease to which their patients were connected to the cancer system. A third (35%) of respondents said that cancer-related diagnostic tests were not available in a timely fashion (see Table 3), the main problems were obtaining MRIs and CT scans, as well as delays in biopsy results (see Table 4). Surprisingly, relatively few physicians (60%) knew the procedure for referring patients to the RCP (see Table 3), the most frequently cited problems being not knowing where to call, what tests to order prior to patient referral, and the appropriate reasons for referral (see Table 5).

Table 3. Family Physician Perceptions of Regional Cancer Program (RCP) (N = 455)

Respondent Perceptions (Agree)	N (%)
Cancer related diagnostic tests are done in timely fashion	296 (65.1%)
Know procedure for referring patients to RCP	271 (59.6%)
Satisfied with patient reports received from RCP	387 (85.1%)

Table 4. Cancer Related Diagnostic Tests Family Physicians' Reported as Not Done in a Timely Fashion (N = 154)

Type of Test	N (%)
MRIs	119 (77.3%)
CT Scans	102 (66.6%)
Biopsies	77 (50.0%)
X-rays / Ultrasounds	25 (16.2%)
Endoscopies	15 (9.7%)
Other	10 (6.0%)

Note: Some respondents had multiple responses

Table 5. Aspects of Referring Patients to the RCP in which Family Physicians' Reported as Unclear (N = 172)

Item Unclear	N (%)
Where to call	105 (61.0%)
What tests to order prior to referral	101 (58.7%)
Appropriate reasons for referral	59 (34.6%)
Who to call	39 (22.7%)
Other	23 (13.4%)

Note: Some respondents had multiple responses

The practitioners were asked about how promptly their patients were able to get appointments with cancer specialists within the RCP, with most agreeing that appointments were made fairly quickly with surgeons (84%), but slightly less so for medical oncologists (78%) and radiation oncologists (73%). Fifty-three percent of the respondents reported that health care providers in the RCP were easy to reach by phone when dealing with the early stages of their patients' cancer diagnoses.

Almost half (45%) of the physicians surveyed felt that coordination and access to services for cancer patients needs to be improved during the peri-diagnostic stage. The

main suggestions for improvement were for the provision of specific information about the referral process, protocol, and/or contact person for linking patients to the RCP and a better exchange of patient information among the specialists, RCP, and family physicians at this early stage to keep them “in the loop” (see Table 6).

Table 6. Coordination and access to services for cancer patients need to be improved during the Peri-diagnostic stage (N=205).

Family physician (FP) main comments	N	%
Information needed about referral process, protocol, and/or contact person	34	16.6
Better exchange of patient information with FP at this stage	27	13.2
Timelier access to diagnostic tests and results for FPs	24	12.2
Timelier access to RCP service /oncologists	16	7.8
Timelier access to specialists	12	5.9
General process slow	11	5.4

Most physicians (79%) agreed that some kind of a cancer system navigation program is required to help their patients access necessary medical and supportive care services. Of these physicians, 14 percent recommended an *Advisor model* (i.e., navigation program provides family physician with advice, and the physician practices coordinate care and appointments), 36 percent recommended a *Shared model* (i.e., navigation program helps coordinate patient appointments, and the family physician practices coordinate care), and 48 percent recommended a *Coordinator model* (i.e., navigation program becomes responsible for coordinating appointments, the family physician practices are informed but not responsible for care).

Integration – Active Treatment Stage

Most (74%) of the family physicians manage their patients' common symptoms related to cancer or its treatment as problems arise (e.g., pain and nausea) and nearly all (98%) continue to manage their patients' other medical issues. Just over half (55%) of physicians said that they provide their patients with information about their cancer and cancer treatments and about the same number (54%) reported that they are involved with their cancer patients in the decision making process about their cancer management.

When asked if RCP providers had been responsive when contacted about a patient issue in the active treatment phase, most physicians either concurred (61%) or said that they had not needed to contact (30%) these providers (see Table 7). Family physicians generally reported (72%) that they knew how to contact a provider within the RCP involved in their patients' care to go over questions or concerns, although some (18%) expressed difficulty in reaching these providers. About a fifth of the family physicians felt inadequately informed by the RCP regarding significant changes in their patients' health status (21%), changes in patients' medications or treatments (17%), and the next steps in the patients' care (18%). The majority (85%) of respondents were satisfied with both patient reports and test results received from the RCP.

Table 7. When personally contacting RCP providers about a patient issue (other than at initial referral), they have been responsive to my requests (N=455).

Family physician (FP) main comment	N	%
Yes	279	61.3
Have not needed to contact RCP providers	136	29.9
Difficult to access / get a response from RCP providers	15	3.3
Other problem reported	10	2.2

Integration – Post-treatment Follow-up

About a fifth of the family physicians (21%) felt inadequately informed by the RCP regarding what is involved in the follow-up of their cancer patients (i.e., once patient has been discharged from the care of the oncologist). However, most respondents (84%) stated that it is easy to connect patients back to the RCP if a recurrence of an initial cancer diagnosis is suspected. Nearly all of the practitioners stated that they encourage their cancer patients to follow-up at their practice upon the completion of treatment (89%) and that they continue to manage their cancer patients' other medical issues (99%) during this period.

Integration – Palliative Stage

Many (75%) of the respondents stated that they knew who to contact to obtain palliative care services for their patients. Only about fifteen percent of the practitioners stated that the RCP was unresponsive to their requests for advice pertaining to this stage. The main resources family physicians' reported using for their palliative care cancer patients are listed in Table 8. The local Community Care Access Centre was by

far the most frequently cited resource, mentioned by almost half the physicians (49%). Palliative Care physicians, hospital palliative care, hospices, and a palliative care team /network were other commonly indicated resources. Interestingly, six percent of the family physicians listed themselves as the provider of palliative care services for their cancer patients.

Table 8. Main resources Family Physicians' reported using for palliative services for cancer patients (N=455)

Palliative Service Used	N	%
CCAC (Homecare)	221	48.6
Palliative Care Physician	136	29.9
Hospital Palliative Care	89	19.6
Hospice	71	15.6
Palliative Care Team / Network	47	10.3
Self	29	6.4
Other Physician or Colleague	24	5.3
RCP	23	5.1
Palliative Care Nurse /Visiting Nurse	20	4.4
Cancer Centre/JCC	16	3.5
Pharmacist	16	3.5
Cancer Clinic	14	3.1
Oncologist /Oncology Department	14	3.1
Literature / Courses /Books	12	2.6
Local Palliative Care Services	12	2.6
VON	10	2.2
Pain Management Clinics / Pain Specialist	9	2.0
Palliative Consultants	9	2.0
Non-Specified Specialists	7	1.5
Social Worker / Psychologist/ Counseling	5	1.1

Note: Some respondents had multiple responses.

Family Physician Role across the Care Trajectory

In response to their involvement with their patients at the peri-diagnosis stage of cancer, most (72%) family physicians felt that their role in care was clear to them (see

Table 9). Slightly less (67%) felt that this role was valued by other professions in the RCP.

Table 9. Family Physician Role in Cancer Related Care (N = 455)

Cancer Stage	Respondent Role Statement (Agree)	N (%)
Peri-diagnosis	Family physician role clear at this stage	322 (70.8%)
	Family physician role valued at this stage	303 (66.6%)
Active Treatment	Family physician role clear at this stage	290 (63.7%)
	Family physician role valued at this stage	272 (59.8%)
	Family physician involved in patient care at this stage	365 (80.2%)
	Family physician wishes to be <u>more</u> involved in patient care at this stage	117 (25.7%)
Follow-up	Family physician role clear at this stage	301 (66.2%)
	Family physician role valued at this stage	315 (69.2%)
	Family physician involved in patient care at this stage	405 (89.0%)
	Family physician wishes to be <u>more</u> involved in patient care at this stage	214 (47.0%)
Palliative	Family physician involved in patient care at this stage	337 (74.1%)
	Family physician wishes to be <u>more</u> involved in patient care at this stage	198 (43.5%)

However, only 64 percent of the family physicians felt that their role in care was clear to them once their patients' cancer treatments had begun. Even fewer respondents (60%) felt that their role at this stage was valued by other professionals in the RCP. Eighty percent of the practitioners stated that they remain involved with their cancer patients at this time, with a quarter (26%) indicating that they would like to be more involved. Major barriers to greater involvement in care for their patients being seen by the RCP were the limited access to patient information and/or the cancer treatment plan, a lack of professional interaction from the RCP and direction as to the appropriate

role of the family physician, limitations in their own knowledge and skill in oncology, and their patients' occupation with other appointments.

There was role confusion again expressed by family physicians in the follow-up period after their patients' treatments for cancer are completed, with only 66 percent having a clear idea of their role in care at this point. Slightly more (69%) felt that this role was valued by other professionals in the RCP. Most (89%) of the physicians stated that they are involved with their cancer patients at this stage, with half (47%) indicating that they would like to be more involved. In comparison, a quarter (26%) of respondents indicated no involvement in patient care at the palliative care stage of cancer. Slightly less than half (44%) wished greater involvement at this point in the disease trajectory.

Informational Support and Education

The majority of family physicians (84%) expressed satisfaction with the exchange of information between their practice and the RCP. Those who had issues highlighted delays in receiving correspondence from the RCP or the general lack of (or poor) communication/ information. Just under half (44%) of the respondents expressed an interest in attending multidisciplinary case conferences on their cancer patients (see Table 10).

Table 10 presents the reported preferences and behaviours of family physicians in accessing information about care for their cancer patients. Most (78%) have access to the Internet in their practice setting, but few (9%) have used the regional cancer centre's Web portals for information. About half (52%) use electronic health records in their

primary practice, with the most common platform being *Practice Solutions* (see Table 11). Only about a quarter (26%) of the family physicians indicated that they access electronic health records from other providers such as hospitals.

Table 10. Family Physician Preferences in Information Exchange (N = 455)

Respondent Preferences (Agree)	N (%)
Have Internet access	355 (78.0%)
Have accessed Cancer Centre's Web portals for information	39 (8.6%)
Use electronic health records in primary practice setting	235 (51.7%)
Access electronic health records from other providers (e.g., hospitals)	120 (26.4%)
Have attended educational sessions on cancer care	290 (63.7%)
Interested in attending multidisciplinary case conferences on patients	200 (44.0%)

As previously mentioned, many of the family physicians felt they would benefit from having guidelines on when and how to connect their cancer patients to the RCP. If such guidelines on the referral process were to be developed, most (62%) said that they preferred to receive this information on a one-page summary sheet, more so than in pamphlet form or on the internet (both each 34%). In terms of improving their own skills, 64 percent stated that they had attended educational sessions on cancer care (see Table 10).

Table 11. Electronic Health Records Platform used by Family Physicians' in their Primary Practice Setting (N = 235)

Electronic Health Records Platform	N	%
Practice Solutions	54	23.0
MacMedical	34	14.5
P&P Software	20	8.5
OSCAR	18	7.7
Healthscreen	16	6.8
Other	49	20.9
Not Specified	44	18.7

Note: Some respondents had multiple responses

RCP Coordination / Adequacy of Remuneration

The majority of family physicians (82%) felt that there was generally good coordination of care between their practice and the RCP. Slightly over half (52%) reported that they received adequate remuneration for the care provided to their cancer patients. For those who were dissatisfied with this compensation, the frequent reasons were that payments inadequately cover the time and effort spent with cancer patients and /or their family and that additional fee codes and increased fees are required to deal with the more time-intensive care cancer patients need (see Table 12). Many of the family physicians on capitation payment arrangements complained that their patients being seen by oncology associates at the RCP negated the roster fees the physician would normally receive.

Table 12. Family Physicians' Reported Reasons for Dissatisfaction with Remuneration Received for Their Care Provided to Cancer Patients (N = 199)

Reason	N (%)
Inadequate remuneration for time and effort spent with cancer patients and /or their family	82 (41.2%)
Additional fee codes /increased fees required	44 (22.1%)
Remuneration negated when rostered patients seen by oncology associates at RCP	29 (14.6%)
Inadequate remuneration for Phone Calls	22 (11.1%)
Inadequate remuneration for Home Visits	21 (10.6%)
Inadequate remuneration for Palliative Care	21 (10.6%)

Note: Some respondents had multiple responses.

Predictive Factors for Integration

Multivariate logistic regression was applied to explore the predictors of family physician responses pertaining to their involvement and understanding of the processes

in patient cancer care, RCP perceptions, and other key factors of integration (See Appendix C for odds ratio and p-value statistics). Physicians who had either attended cancer care education sessions, had more years in practice, or had seen more newly diagnosed cancer patients in the past year, tended to have better role clarity, reported being more involved in cancer patient care, and were more likely to understand referral procedures to the RCP.

Physicians who were paid for patient care by a mixed arrangement, rather than primarily by a Fee-for-Service or Capitation method, expressed greater satisfaction with their level of remuneration for patient care. However these physicians tended to be more dissatisfied with information exchange between their practice and the RCP and expressed less role clarity pertaining to the active treatment stage. Greater number of years in practice also predicted satisfaction with both information exchange and remuneration. Physician location in the LHIN did not emerge as a predictive factor for the physician practices or perceptions measured.

Discussion

The importance of the family physician in participating in the care of cancer patients has been extensively documented from the perspective of specialist providers of cancer care, patients, and by family physicians themselves (Paradiso et al., 1995; Whelan et al., 2003; Worster, Wood, McWhinney, & Bass, 1995; Zitzelsberger, Grunfeld, & Graham, 2004). Despite literature supporting the role of primary care providers (PCPs) in caring for patients with cancer across the trajectory of illness, numerous studies have demonstrated ongoing difficulties in the overall organization of cancer care and in particular, integration of services and service providers both within and outside the formal cancer care system (ICES, 2006; Institute of Medicine, 2005; Kasperski & Ellison, 2007; President's Cancer Panel, 2004; Thompson & Martin, 2004).

Integration as a system objective is important to support best quality care, system efficiency and to optimize the care experience of patients by having care delivered by the most suited provider in the most suitable location. The benefits of integrating primary care with cancer specialty providers have been documented across the trajectory – during screening where it is clear that programs must involve primary care to maximize screening benefits, during the post treatment surveillance period particularly in the development of survivorship planning and health maintenance and during the palliative phases of cancer care where primary care involvement is associated with better patient centered care and more appropriate use of resources. For

these reasons, having an in depth understanding of integration issues between PCPs and regional cancer programs is fundamental to supporting system improvement.

The concept of integration has been variably formulated and is used often without clear definition of explicit processes or expected outcomes of care. While no single accepted definition of care integration exists in general medical care or specifically for cancer care, the concepts of role clarity and communication between providers is pervasive and formed the basis of the instrument developed and used in this study. Most importantly, to align with the emerging constructs of functional and clinical integration developed by researchers at Cancer Care Ontario (2007), we were especially careful to develop questions that would be meaningful to system planners who are working towards the stated objective of improving the integration of all care providers during the care of cancer patients across the trajectory. Figure 4 maps questionnaire items to the three domains of integration and the main findings for each.

Figure 4. Study findings for each of the domains of integration examined

Domain of Integration	Definition	Indicators Measured	Findings
Clinical	Extent to which <u>patient care services</u> are coordinated across the various functions, activities and operating units of the cancer system	<ul style="list-style-type: none"> • PCP knowledge of how to work up newly diagnosed patients for main cancer disease sites • Clarity of PCP role across the care trajectory • Self-reported care provision by PCPs across the care trajectory. 	<p>PCPs indicated knowing how to initiate investigations of signs and symptoms and how to identify the appropriate referral, except in the case of neuro-oncology and to some degree, head/neck cancer</p> <p>PCP role uncertainty indicated, particularly while patients are undergoing treatment.</p> <p>Most PCPs indicated being involved in patient care across the care trajectory, but less so in the palliative care stage</p>
Functional	Extent to which key <u>support functions and activities</u> are coordinated across operating units of the cancer system	<ul style="list-style-type: none"> • Communication between PCPs and the RCP • Diagnostic tests are available in a timely fashion 	<p>Most PCPs satisfied with the exchange of information between their practice and the RCP, however some delays indicated. Few PCPs used the regional cancer centre’s Web portals for information.</p> <p>PCPs reported problems obtaining MRIs and CT scans, as well as delays in biopsy results.</p>
Vertical	Extent to which there is regional <u>collaboration, coordination, and leadership</u> with respect to cancer services that is recognized as a “system”	<ul style="list-style-type: none"> • PCP understanding of referral to the RCP and system navigation. • PCP perception of RCP coordination 	<p>Many PCPs did not know the procedure for referring patients to the RCP. Strong need expressed for guidelines on when and how to connect their cancer patients to the RCP. Most PCPs agreed that a cancer system navigation program is required.</p> <p>PCP felt there was generally good coordination of care between their practice and the RCP. However, many PCPs felt coordination and access to services for cancer patients following diagnosis needs to be improved.</p>

While patterns-of-care research has demonstrated that there is evidence of ongoing contact between PCPs and cancer patients across the care trajectory (ICES, 2006) there is little known about the nature of the encounters, to what extent providers work together, and the types and extent of gaps in care. This study represents the first effort to quantify these gaps specifically in the context of provider integration across the trajectory of care.

During the early phase of the trajectory when patients are being assessed for a possible cancer diagnosis, our findings suggest that for the most part, providers know how to initiate investigations in most disease sites with the exception of head and neck and neuro oncology. Respondents indicated that they find surgical specialists the easiest to connect with followed by medical oncology and radiation. This is not surprising, given that the initial trajectory of care for most cancers is surgical (for biopsy or initial surgical management). This point in the trajectory when patients are newly transitioning between providers is when aspects of vertical integration are most at play, namely the presence of a “system” of provision. The finding that over 40% of PCPs do not understand the process of how referrals are made to the regional cancer program is important for planners to consider if the primary care provider is to remain involved in the care of patients during this transition process. It is clear from our findings that basic information about where and whom to call and what diagnostic testing to have in place is not well understood. As processes are put in place to streamline patient transition into the cancer care regional programs, mechanisms to support informing primary care of the fundamental steps in making referrals need to be incorporated.

About half of the practitioners indicated using information technologies to some extent in their practice settings, which compares favorably with the findings of a recent large survey in the United States which found that only 17% of physicians had an electronic health record system in their practice (DesRoches, Campbell, Rao, Donelan, Ferris, et al., 2008). However, only about a quarter of the family physicians indicated that they access electronic health records from other providers such as hospitals. The reported variation in electronic medical record (EMR) platforms being used and the possible complexity in being able to link to other medical systems outside of the primary care practice settings may represent a barrier in the short term to the implementation of system-wide information solutions.

It would appear that using Web-based technologies has the potential to address PCP knowledge gaps in connecting patients to the RCP, but at this point, despite almost universal reported access to the internet, fewer than 10% of respondents indicated that they have used regional program web resources, many of which provide information about local system access. Systematic dissemination of referral guidelines in hardcopy, with reference to the RCP Web portal, would likely have the greatest uptake given that respondents indicated overwhelmingly a need for a simple chart or card outlining referral procedures and key contact information for the RCP.

This finding is congruent with the work of others, demonstrating that guidelines in general are considered useful in caring for cancer patients by primary care providers (Del Giudice, Verma, Piliotis, Harvey, & Grunfeld, 2007; Papagrigoriadis & Koreli, 2001; Zitzelsberger, Grunfeld, & Graham, 2004). Finally, most respondents indicated a

preference for some type of system navigation assistance to ensure smooth linkage to the cancer program.

There is emerging evidence that targeted informational support to primary care providers using a simple procedure that includes faxing a note of their patient's progress during the initial transition period better meets the information needs of these providers (Dunn & Dale, 1986; Ray et al. 1998). In a recent study (Jefford, et al., 2008) conducted in Australia, it was observed that this seemingly simple procedure lead to significant improvements in physician confidence in the management of patients, with communications with the cancer centres, and in satisfaction in shared care. The shared care finding is important when considering that in the current study over a third of respondents felt that their role was not valued across the trajectory of care, and particularly, in the peri-diagnostic and initial treatment phases. Interventions to better support community providers with specific information about the care of their patients and how to connect with the regional cancer program would be expected to help improve this situation, leading to better care integration. This is further reinforced by the observation that many of the family physicians in LHIN 4 desired ongoing contact with the appropriate teams in the regional cancer programs.

During active treatment, virtually all respondents indicated involvement in continuing care for non cancer medical problems in their cancer patients and most indicated that they managed some of the side effects of treatment as well. This finding is reassuring in light of a recent review that suggests that overall care by PCPs may be diminishing (Institute of Medicine, 2005). It is clear that there remain significant gaps in the provision

of fully integrated care in that 40% of respondents indicated that they did not provide information support to patients about cancer and treatment and that just over 50% of respondents indicated that they participate in supporting their patients cancer therapy decisions. Previous research by our group has shown that primary care providers remain the preferred informational support for patients across the trajectory of care (Whelan et al., 2003), thus methods to improve information sharing specific to the needs of these providers are essential to ensure that patients are able to receive this support.

We also observed that while most providers knew who to contact during active treatment about issues specific to shared patients, 20% of the time they felt inadequately informed about changes in the condition or treatment trajectory of these patients. This would clearly impair the ability to provide appropriate care by the PCP. Studies demonstrating the benefit of standardized written communications between PCPs and cancer specialists would inform interventions to address this gap in care. Finally, the observation that some respondents indicated an interest in attending a multidisciplinary case conference on their patients is important for system planners to consider with the expansion of case conferencing as part of the quality improvement initiative. Our findings suggest that it may be feasible to attempt broadening the mandate of case conference attendance, perhaps using videoconferencing technologies, to facilitate attendance by PCPs that in turn would support improvements in provider role clarity and patient care planning.

During the follow-up phase of cancer care, respondents once again indicated ongoing care provision for non cancer related problems but there remained gaps in

provision of survivorship care. This is demonstrated by the 21% of PCPs who indicated that they did not have a clear plan for care specific to cancer survivorship and that only 2/3 indicated that their role during the survivorship phase of care was clear. Once again, we found that a substantial proportion of providers did not feel that their role was valued during this phase in care. These obstacles must be overcome to ensure that PCPs are well positioned to support and execute survivorship plans for the ever increasing number of cancer survivors. Fortunately, for patients who have further cancer related problems during this period, most providers reported no problems in reconnecting them with the RCP.

Palliative care for cancer patients remains problematic with well described, chronic shortages of community based services and continued high utilization of acute care services, especially the emergency room (Barnes et al., 2007; Brazil et al, 2003; Burge, Lawson, & Johnston, 2003; Cancer Quality Council of Ontario, 2003; Dudgeon et al, 2008; Romanow, 2002). In our study it was clear that there is an ongoing commitment to the provision of palliative care and most PCPs indicated that they knew how to arrange basic services, yet 1 in 7 perceived that the regional cancer program was not responsive to their requests for advice regarding management of palliative care in cancer patients. Once again, guidelines were felt to be useful to support PCPs, especially in helping navigate resources in the community for patients in the palliative phase of cancer.

In an exploratory multivariable analysis, we found that PCPs indicated higher rates of important integration parameters such as familiarity with processes of referral, role

clarity, and feelings of being valued, with both increasing years of practice and attendance at educational events. These findings support the need for outreach and education by RCPs particularly around processes of care and especially for PCPs who are early on in their careers. We did not find associations between integration parameters and PCP demographic characteristics nor with models of compensation. However, we did observe that regardless of model, compensation for care of cancer patients was felt by many respondents to be inadequate. This latter finding concurs with the work from other research groups studying models of care integration that have determined the importance of financial incentives as a key element of success in care integration and patient outcomes (Wagner, 2004) a key consideration for health system planners.

This study provides the first ever detailed snapshot of the self reported practices and perceptions of primary care provider in a LHIN region in caring for cancer patients and interacting with a regional cancer program across the trajectory of care. There are two important preliminary observations to make when considering the overall results of this study. The first is that it is feasible to conduct this type of research as demonstrated by our response rate of 61%. The second observation is that the various aspects of care provision and integration between RCP and community providers do vary across the trajectory of care and that interventions are important to support gaps, especially in the peri-diagnostic and post treatment surveillance phases of care. Overall it is clear that in LHIN 4 there is ongoing commitment to caring for cancer patients and working with RCPs by primary care providers. It is also evident that communication between

community and RCP providers requires improvement and that interventions need to incorporate clear guidelines about roles and responsibilities for patient care.

By identifying the specific aspects of caring for patients from the perspectives of a large and representative sample of primary care practitioners within the LHIN structure in Ontario, this study represents an important first step towards informing the design of system interventions to improve integration that will ultimately lead to improvements in system functioning and a better care experience for cancer patients in Ontario.

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Appendix A: FPICS Survey Instrument



Supportive Cancer Care Research Unit
 Juravinski Cancer Centre
 699 Concession Street
 Level 4, Room 204
 Hamilton, Ontario
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A partnership of
 Canadian Cancer Society, Ontario Division
 Central West and Northwestern Regions
 Northwestern Regional Cancer Centre
 McMaster University, Department of Clinical
 Epidemiology and Biostatistics

Family Physician Integration with the Cancer System (FPICS) Survey

The purpose of this survey is to determine how the Regional Cancer Program can enhance the quality of care to cancer patients and to support the important role of family physicians in the cancer care process.

By the *Regional Cancer Program (RCP)* we are referring to the Juravinski Cancer Centre and its regional providers of cancer care in the **LHIN 4 area** (Local Health Integration Network: Hamilton, Niagara, Halton Norfolk, Haldimand, and Brant).

When responding to the following questions we ask that you think about patients you have cared for with **cancer** within the last 12 months.

Each section of this survey will focus on one of the following stages in your cancer patients' disease trajectory:

Peri-diagnosis:	Period from suspicion of cancer to start of active treatment
Active Treatment:	Period in which patient is undergoing treatment for cancer within a regional cancer program (RCP) (includes surgery, chemotherapy, or radiotherapy)
Follow-up:	Post-treatment period
Palliative:	No curative intent for patient's cancer diagnosis

To begin, please indicate from the following list of the Oncology Clinics in the **LHIN 4 RCP**, those which you work with the most often (*Check all that apply*):

- Brantford (Brantford General Hospital)
- Burlington (Joseph Brant Memorial Hospital)
- Hamilton (Juravinski Cancer Center)
- Niagara Falls (Greater Niagara General Hospital)
- St. Catharines (St. Catharines General Hospital)
- Welland (Welland Hospital Site)


SECTION A: *This set of questions will focus on the Peri-diagnostic stage.*

1. The following table lists nine (9) of the main oncology disease sites. When suspecting cancer in one of your patients, please indicate in the following table for each disease site whether you know:

(a) How to **Initiate Investigations of Signs and Symptoms**

(b) Which **Specialist** to refer to for further investigations and treatment

Oncology Disease Site	I know how to <u>Initiate Investigations of Signs and Symptoms</u>	I know which <u>Specialist</u> to refer to
Breast	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Gastrointestinal	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Genitourinary	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Lung	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Neuro Oncology	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Skin	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Haematology	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Gyne Oncology	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO
Head and Neck	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input type="checkbox"/> NO

2. When concerned about a possible new case of cancer, I can get tests done in a timely fashion.	<input type="checkbox"/> YES	<input type="checkbox"/> NO ↓
<input type="checkbox"/> X-rays / Ultrasounds <input type="checkbox"/> Biopsies <input type="checkbox"/> CT Scans <input type="checkbox"/> MRIs <input type="checkbox"/> Other: _____ <p style="text-align: center;">(Please Specify)</p>	If no, which are a problem?  (Check all that apply)	

3. I know the procedure for referring patients to the RCP.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<input type="checkbox"/> Who to call? <input type="checkbox"/> Where to call? <input type="checkbox"/> What tests to order prior to referral? <input type="checkbox"/> Appropriate reasons for referral? <input type="checkbox"/> Other: _____ (Please Specify)	↓ If no, what is unclear? ↩ (Check all that apply)	
4. If guidelines on the referral process to the RCP were to be developed, what would be the best way to provide you with this information? <input type="checkbox"/> Information Sheet <input type="checkbox"/> Pamphlet/Booklet <input type="checkbox"/> Internet website <input type="checkbox"/> Other: _____ (Please Specify)		
5. In general, I get appointments with the following cancer specialists in the RCP fairly quickly for my patients: Surgeons <input type="checkbox"/> YES <input type="checkbox"/> NO Medical oncologists <input type="checkbox"/> YES <input type="checkbox"/> NO Radiation oncologists <input type="checkbox"/> YES <input type="checkbox"/> NO		
6. RCP health care providers are easy to reach by phone to discuss questions that I have during the <i>Peri-diagnostic stage</i> .	<input type="checkbox"/> YES	<input type="checkbox"/> NO
7. It is clear to me what my role is in the care of my cancer patients during the <i>Peri-diagnostic stage</i> .	<input type="checkbox"/> YES	<input type="checkbox"/> NO
8. I have felt my role is valued by the health care providers within the RCP at this stage.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
9. I think that coordination and access to services for cancer patients need to be improved during the <i>Peri-diagnostic stage</i> .	<input type="checkbox"/> YES	<input type="checkbox"/> NO
_____ _____ _____	↓ If yes, please explain ↩	

<p>10. I think that a cancer system navigation program (i.e., having a designated individual to help patients access necessary medical and supportive care services) is needed by my patients during the <i>Peri-diagnostic stage</i>.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p><input type="checkbox"/> Navigation program gives me advice, my practice coordinates care and appointments (Advisor model).</p> <p><input type="checkbox"/> Navigation program helps coordinate appointments, my practice coordinates care (Shared model).</p> <p><input type="checkbox"/> Navigation program becomes responsible for coordinating appointments, my practice is informed but not responsible for care (Coordinator model).</p> <p><input type="checkbox"/> Other: _____ (Please Specify)</p>	<p>If yes, the best model would be:</p> <p>↩ (Check only one)</p>	

SECTION B: *This set of questions will focus on the **Active Treatment** stage.*


<p>11. I continue to see my patients during their <i>active cancer treatments</i>.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p>12. I encourage my cancer patients to follow up at my practice during their <i>active treatment</i>.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p>13. In general, I am involved with my cancer patients in the decision making process about their cancer management.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p>14. I manage my patients' common symptoms related to cancer or its treatment as they arise, such as pain and nausea.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p>15. I continue to manage other medical issues that my cancer patients may have during the <i>Active Treatment stage</i>.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p>16. I provide my patients with information about their cancer and cancer treatments.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO

17. When personally contacting RCP providers about a patient issue (other than at initial referral), they have been responsive to my requests.	<input type="checkbox"/> Haven't needed to contact	<input type="checkbox"/> YES	<input type="checkbox"/> NO ↓
<hr/> <hr/> <hr/>			If no, please explain ↩
18. I know how to contact a provider within the RCP involved in my patients' care to go over questions or concerns.		<input type="checkbox"/> YES	<input type="checkbox"/> NO
19. RCP providers are easy to reach by phone to discuss questions that I have during the <i>Active Treatment stage</i> .	<input type="checkbox"/> Haven't needed to contact	<input type="checkbox"/> YES	<input type="checkbox"/> NO
20. I have felt informed by the RCP about significant changes in my patient's health status.		<input type="checkbox"/> YES	<input type="checkbox"/> NO
21. I have been aware of the results of relevant tests that have been performed by the RCP.		<input type="checkbox"/> YES	<input type="checkbox"/> NO
22. I have been satisfied with the patient reports I have received from the RCP.	<input type="checkbox"/> Haven't needed any reports	<input type="checkbox"/> YES	<input type="checkbox"/> NO ↓
<input type="checkbox"/> Did not receive any reports or information from the RCP <input type="checkbox"/> Reports did not contain sufficient information <input type="checkbox"/> Reports were not provided in a timely manner <input type="checkbox"/> Reports contained inaccurate information <input type="checkbox"/> Reports were difficult to understand <input type="checkbox"/> Other: _____ <p style="text-align: center;">(Please Specify)</p>			If no, why not? ↩ (Check all that apply)
23. I have had to repeat tests that were probably done within the RCP because the results were not available to me.		<input type="checkbox"/> YES	<input type="checkbox"/> NO
24. I have felt informed about changes made within the RCP in my patients' medications or treatments .		<input type="checkbox"/> YES	<input type="checkbox"/> NO
25. I have felt informed by the RCP providers regarding the next steps in my patients' care.		<input type="checkbox"/> YES	<input type="checkbox"/> NO

26. It is clear to me what my role is in the care of my cancer patients during their <i>active treatment</i> .	<input type="checkbox"/> YES	<input type="checkbox"/> NO
27. I have felt my role is valued by the health care providers within the RCP at this stage.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
28. I would like to be more involved in the care of my patients during the treatment of their cancer.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
1. _____ 2. _____ 3. _____	↓ If yes, what are the <u>major</u> barriers? ↙	


SECTION C: *This set of questions will focus on the Follow-up stage:*

29. I encourage my cancer patients to follow-up at my practice during the <i>Follow-up stage</i> .	<input type="checkbox"/> YES	<input type="checkbox"/> NO
30. I would like to be more involved in the care of my patients during the <i>Follow-up stage</i> after their cancer treatment.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
31. I continue to manage other medical issues that my cancer patients may have during the <i>Follow-up stage</i> .	<input type="checkbox"/> YES	<input type="checkbox"/> NO
32. I have felt well informed by the RCP of what is involved in the follow-up of my cancer patients.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
33. It is clear to me what my role is in the care of my cancer patients during their follow-up .	<input type="checkbox"/> YES	<input type="checkbox"/> NO
34. I have felt my role is valued by the care providers within the RCP at this stage.	<input type="checkbox"/> YES	<input type="checkbox"/> NO

35. If a recurrence of an initial cancer diagnosis is suspected, it is easy for me to connect this patient back to the RCP.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<hr/> <hr/> <hr/>	↓ If no, please explain 	



SECTION D: *This set of questions will focus on the Palliative stage.*

36. I assume responsibility for the palliative care of my cancer patients.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
37. I would like to be more involved in the care of my palliative cancer patients.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
38. I know who to contact when seeking palliative care services .	<input type="checkbox"/> YES	<input type="checkbox"/> NO
39. The RCP is responsive to my requests for palliative care advice regarding my cancer patients.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<hr/> <hr/> <hr/>	↓ If no, please explain 	
40. Please list the main resources you use for palliative services for your cancer patients. <ol style="list-style-type: none"> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 		

SECTION E. General Practice Questions

<p>41. Please rank in terms of preference (with “1” being the most preferred) the means by which you would like to be provided / access information on your patients being treated within the RCP.</p> <p>___ Faxed Letter</p> <p>___ Telephone</p> <p>___ Web Portal, i.e., intranet to access electronic medical records</p> <p>___ Mailed Letter</p> <p>___ Other: _____</p> <p style="text-align: center;">(Please Specify)</p>		
<p>42. I have access to the Internet.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p>43. I have accessed the Juravinski Cancer Centre’s Web portals as a source of information.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p>44. I use electronic health records in my primary practice setting.</p> <hr style="border-top: 1px dashed black;"/> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p>	<input type="checkbox"/> YES ↓ If yes, list types 	<input type="checkbox"/> NO
<p>45. I access electronic health records / reports from other providers (e.g., hospitals, clinics) from my primary practice setting.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p>46. I have attended some educational sessions to increase my knowledge regarding cancer care for my patients.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
<p>47. I would be interested in attending multidisciplinary case conferences on my patients.</p>	<input type="checkbox"/> YES	<input type="checkbox"/> NO

48. In general, I am satisfied with the way information is exchanged between my practice and the RCP across the trajectory of care. (e.g., quality, timeliness, completeness, etc.)	<input type="checkbox"/> YES	<input type="checkbox"/> NO ↓
_____ _____ _____	If no, please explain ↻	
49. Overall, I have felt there is good coordination of care between my practice and the RCP.	<input type="checkbox"/> YES	<input type="checkbox"/> NO ↓
_____ _____ _____	If no, please explain ↻	

GENERAL INFORMATION

The following questions provide general information about yourself and your practice. Please select the best response for each question.

50. I am ...	<input type="checkbox"/> Male	<input type="checkbox"/> Female
51. Please indicate your year of graduation from medical school? _____		
52. Which of the following practice settings best describes where you practice medicine? <i>(Please check all that apply)</i> <ul style="list-style-type: none"> <input type="checkbox"/> Private office / clinic (excluding free-standing walk-in clinics) <input type="checkbox"/> Free standing walk-in clinic <input type="checkbox"/> Community health centre <input type="checkbox"/> Academic family medicine teaching unit <input type="checkbox"/> Other _____ <p style="text-align: center;">(Please Specify)</p>		

53. Which of the following **best** describes how your **MAIN** practice setting is **organized**?

(Please check only one)

- Solo practice
- Family physician group medical practice
- Family physician / specialist group medical practice
- Other _____

(Please Specify)

→ For **group practice** please indicate what is shared. *(Please check all that apply)*

- Office space
- Staff
- Expenses
- Patient records
- On-call duties

54. **How long** have you been in practice in the **LHIN 4** area?

- 0 to 4 years
- 5 to 10 years
- 11 to 20 years
- 20+ years

55. In the **last 12 months**, approximately what **proportion of professional income** did you receive from each of the following payment methods for **PATIENT CARE SERVICES**? (i.e., excluding income for teaching, research, administration, etc.)

TOTAL MUST EQUAL 100%

____% Fee-for-service ____% Sessional / hourly payments
 ____% Salary ____% Other: _____
 ____% Capitation **(Please Specify)**

56. My current method of remuneration **adequately** compensates me for the care I provide to my cancer patients.

YES

NO
↓

If no, please explain how this could be made fairer
↙

57. Approximately how many patients are in your own personal practice?

- 0 to 499
- 500 to 999
- 1000 to 1499
- 1500 to 1999
- 2000 to 2999
- 3000+

58. Approximately how many patients newly diagnosed with cancer did you see in the past year?

- None
- 1 to 4
- 5 to 9
- 10+

Thank you!

Your participation in this study and the time you spent completing this questionnaire is greatly appreciated.

Please return completed questionnaire in the stamped, self-addressed envelope provided As Soon As Possible.

Family Physician Integration with the Cancer System (FPICS)

Supportive Cancer Care Research Unit
Juravinski Cancer Centre
699 Concession Street
Level 4, Room 204
Hamilton, Ontario
L8V 5C2

Please return completed questionnaire in the stamped, self-addressed envelope provided As Soon As Possible.

Should you have any questions or concerns please contact:

Dr. Jonathan Sussman
1 (905) 387-9711 Ext. 64501

Or

Susan Schiff
Senior Research Coordinator
(905) 387-9711 Ext: 64506



Appendix B: FPICS Contact Materials

Pre-Notice Letter

Study Letter

Information Sheet

Postcard Reminder



Supportive Cancer Care Research Unit
 Juravinski Cancer Centre
 699 Concession Street
 Level 4, Room 204
 Hamilton, Ontario
 L8V 5C2



A partnership of
 Canadian Cancer Society, Ontario Division
 Central West and Northwestern Regions
 Northwestern Regional Cancer Centre
 McMaster University, Department of Clinical
 Epidemiology and Biostatistics

January xx, 2008

«Unique_ID»

Dr. X
 «Address»

Re: **Family Physician Integration with the Cancer System (FPICS)**

Dear Dr. X:

A few days from now you will receive in the mail, a request to complete a questionnaire for an important research project being conducted by the Supportive Cancer Care Research Unit, affiliated with the Juravinski Cancer Centre.

This research concerns how the **Regional Cancer Program (RCP)** can enhance the quality of care to cancer patients and support the essential role of **Family Physicians** in the cancer care process. The principal investigator of this research is Dr. Jonathan Sussman.

We are writing in advance because we have found that many of our colleagues appreciate knowing ahead of time that they will be contacted. The results of this study will be used to inform the RCP of the current gaps in care and how to best support its community partners.

Thank you for your time and consideration. It is only with the generous help of people like you that our research can be successful.

If you are **NOT** currently seeing patients as a **Family Physician**, please indicate this in the box below and simply return this letter to us by fax.

Yours respectfully,

Bill Evans, MD, FRCPC

President, Juravinski Cancer Centre, Hamilton, ON
 Regional Vice-President, Cancer Care Ontario
 Juravinski Cancer Centre, Hamilton, ON

David Price, MD, FRCPC

Chair, Dept. of Family Medicine, McMaster University
 Chief of Family Medicine, Hamilton Health Sciences

P.S. We will be enclosing a token of appreciation with the questionnaire as a way of saying thanks!

<input type="checkbox"/> Currently Inactive Please return letter by fax to (905) 575-6308



Supportive Cancer Care Research Unit
 Juravinski Cancer Centre
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Juravinski Cancer Centre
 A Cancer Care Ontario regional partner

A partnership of
 Canadian Cancer Society, Ontario Division
 Central West and Northwestern Regions
 Northwestern Regional Cancer Centre
 McMaster University, Department of Clinical
 Epidemiology and Biostatistics

January xx, 2008

«Unique_ID»

Dr. X
 «Address»

Re: **Family Physician Integration with the Cancer System (FPICS)**

Dear Dr. X:

We would like to invite you to participate in a study entitled **Family Physician Integration with the Cancer System (FPICS)**. The Supportive Cancer Care Research Unit, affiliated with the Juravinski Cancer Centre, is conducting this important research project to determine how the **Regional Cancer Program (RCP)** can enhance the quality of care to cancer patients and support the essential role of **Family Physicians** in the cancer care process.

To explore perspectives on cancer care provision, we are asking all actively practicing Family Physicians in the LHIN 4 area¹ (Hamilton, Niagara, Halton Norfolk, Haldimand, and Brant) to complete the enclosed questionnaire. Included with this letter are a project summary and a pre-addressed return envelope. We have enclosed a token of appreciation as a way of saying thank you for your help.

Your participation is essential for the success of this study. Your responses will be kept confidential. The results of this study will be used to inform the RCP of the current gaps in care and how to best support its community partners. This study is being funded by the Ontario Ministry of Health and Long Term Care.

Please return your completed questionnaire in the pre-addressed return envelope provided. If you are **NOT** currently seeing patients as a Family Physician, please indicate this in the box below and simply return this letter.

Should you have any additional questions or concerns regarding this study or your involvement, please do not hesitate to call the Study Coordinator, Susan Schiff at (905) 387-9711 Ext: 64506, or the Principal Investigator, Jonathan Sussman at (905) 387-9711 Ext: 64501.

Thank you in advance for your assistance.
 Yours respectfully,

Jonathan Sussman, MD CCFP FRCPC MSc
 Radiation Oncologist
 Associate Director
 Supportive Cancer Care Research Unit
 Juravinski Cancer Centre, Hamilton, ON

Bill Evans, MD, FRCPC

President, Juravinski Cancer Centre, Hamilton, ON
 Regional Vice-President, Cancer Care Ontario

¹ Local Health Integration Network (LHIN)

Currently Inactive
 Please return this letter by mail or fax (905) 575-6308

Project Summary for Family Physicians

Family Physician Integration with the Cancer System (FPICS)

Principal Investigator

Dr. Jonathan Sussman, MD,
CCFP, FRCP(c), MSc.
Radiation Oncologist
Associate Director:
Supportive Cancer Care
Research Unit
Juravinski Cancer Centre

Study Sponsor

Ministry of Health and Long
Term Care of Ontario



Supportive Cancer Care
Research Unit
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Level 4, Room 204
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L8V 5C2

Problem to be Addressed

- Patients with cancer and their families often report feeling overwhelmed and lost in a care system that is increasingly complex, multi-disciplinary, and difficult to navigate. These feelings are also frequently expressed by their family physicians who report becoming increasingly isolated from the cancer care system and as a consequence, less effective in helping patients cope with the diagnosis and treatments.
- Not surprisingly, the importance of having better linkage between regional cancer programs and community providers has been identified as a key strategic objective of Cancer Care Ontario and appears as a priority initiative in LHIN planning documentation.

Study Purpose and Objectives

Study Purpose

- To determine the extent of integration of family physicians with the regional cancer program across the trajectory of cancer.

Primary Objectives

- What are the perceptions of family physicians regarding the processes of caring for patients with cancer?
- To what extent do family physicians feel clinically and functionally linked to the various parts of the *Regional Cancer Program (RCP)*?



Secondary Objectives

- What are the current practices of family physicians in the care of cancer patients across the trajectory of care?
- What opportunities exist for regional cancer programs to better integrate family physicians in the care of cancer patients?
- What are the current gaps in caring for cancer patients as perceived by family physicians across the trajectory of care?

Methods and Design

- Cross sectional survey of all family physicians in the LHIN 4 area² (Hamilton, Niagara, Halton, Haldimand, and Brant).
- The survey takes approximately 20 minutes to complete. All responses will be treated as anonymous and confidential.

This study received final approval by the Research Ethics Board at McMaster University, December 4, 2007.

Family physicians will receive a gift certificate in appreciation of their participation.

**For More Information
Please Contact:**

**Dr. Jonathan Sussman
1 (905) 387-9711 Ext. 64501**



² Local Health Integration Network



Supportive Cancer Care Research Unit
Juravinski Cancer Centre
699 Concession Street
Level 4, Room 204
Hamilton, Ontario, L8V 5C2



A partnership of
Canadian Cancer Society, Ontario Division
Central West and Northwestern Regions
Northwestern Regional Cancer Centre
McMaster University, Department of Clinical Epidemiology
and Biostatistics

January 24, 2008

Re: **Family Physician Integration with the Cancer System (FPICS)**

Dear Dr X:

Last week a questionnaire was sent to you asking your opinions on how the **Regional Cancer Program (RCP)** can enhance the quality of care to cancer patients and support the essential role of **Family Physicians** in the cancer care process.

If you have already completed and returned the questionnaire, please accept our thanks. If not, please fill out the questionnaire and return it to us today. Your responses are important to informing the RCP of the current gaps in care and how to best support its community partners.

If you have not received a questionnaire or if it has been misplaced, then please call the Research Coordinator at (905) 387-9711 ex. 64515 (toll free 1-800-767-7674).

Thank you for your time and consideration.
Yours respectfully,

Jonathan Sussman, MD CCFP FRCPC MSc
Radiation Oncologist
Associate Director
Supportive Cancer Care Research Unit
Juravinski Cancer Centre, Hamilton, ON

Bill Evans, MD, FRCPC
President, Juravinski Cancer Centre, Hamilton, ON
Regional Vice-President, Cancer Care Ontario

Appendix C: Logistic Regression Tables

Predictor variables considered for logistic regression:

- Location of oncology clinic family physician works with
- Attends education sessions on patient cancer care
- Gender of family physician
- Years since graduation for medical school[‡]
- Years of practice in LHIN 4 area*
- Private office (as opposed to walk-in clinic)
- Solo practice (as opposed to group practice)
- Method of remuneration
- Number of patients in practice[§]
- Number of newly diagnosed cancer patients seen in last year[†]

Note: Only variables with model p-value significance of less than 0.1 are reported for each outcome.

A. Peri-diagnosis stage

Multivariable logistic regression outcome: Know procedure for referring patients to RCP

Predictor Variables	Odds Ratio (95% CI)	p value
Attends cancer education sessions	1.63 (1.06, 2.51)	0.027**
Years since graduation	1.03 (1.01, 1.05)	0.009**
Number of cancer patients seen	1.86 (1.40, 2.48)	<0.0001**

** . Statistically significant ($\alpha < 0.05$, two-tailed)

Multivariable logistic regression outcome: Family physician role clear at Peri-diagnosis stage

Predictor Variables	Odds Ratio (95% CI)	p value
Attends cancer education sessions	1.65 (1.05, 2.58)	0.029**
Years since graduation	1.02 (1.00, 1.04)	0.030**
Number of cancer patients seen	1.29 (0.97, 1.73)	0.085

** . Statistically significant ($\alpha < 0.05$, two-tailed)

[‡] An association exists between *Years since graduation* and *Years of practice in LHIN* (Pearson Correlation Coefficient: 0.68, p value: <0.0001), therefore only one of these variables was added to the multivariable regression, that being the stronger associated factor to predict the dependent variable (i.e., outcome).

[§] An association exists between *Number of patients in practice* and *Cancer patients seen per year* (Pearson Correlation Coefficient: 0.44, p value: <0.0001), therefore only one of these variables was added to the multivariable regression, that being the stronger associated factor to predict the dependent variable (i.e., outcome).

B. Active Treatment stage***Multivariable logistic regression outcome: Family physician role clear at Active Treatment stage***

Predictor Variables	Odds Ratio (95% CI)	p value
Attends cancer education sessions	1.49 (0.96, 2.31)	0.072
Years since graduation	1.04 (1.01, 1.06)	0.001**
Method of remuneration		0.015**
Fee for Service ($\geq 80\%$) vs. Other	2.27 (1.29, 3.98)	0.004**
Capitation ($\geq 80\%$) vs. Other	1.65 (0.86, 3.15)	0.132
Number of cancer patients seen	1.36 (1.02, 1.80)	0.036**

** . Statistically significant ($\alpha < 0.05$, two-tailed)

Multivariable logistic regression outcome: Family physician involved in patient care at Active Treatment stage

No multivariable model (i.e., no predictor variables identified)

C. Follow-up stage

Multivariable logistic regression outcome: Family physician role clear at Follow-up

Predictor Variables	Odds Ratio (95% CI)	p value
Attends cancer education sessions	1.63 (1.06, 2.51)	0.026
Years since graduation	1.03 (1.01, 1.05)	0.001**

** . Statistically significant ($\alpha < 0.05$, two-tailed)

Multivariable logistic regression outcome: Family physician encourages patients to Follow-up

Predictor Variables	Odds Ratio (95% CI)	p value
Attends cancer education sessions	2.67 (1.40, 5.11)	0.003**
Solo practice (vs. physician group)	2.18 (1.12, 4.23)	0.022**

** . Statistically significant ($\alpha = 0.05$, two-tailed)

D. Palliative cancer care stage

Multivariable logistic regression outcome: Family physician involved in patient care at Palliative stage

Predictor Variables	Odds Ratio (95% CI)	p value
Attends cancer education sessions	2.48 (1.50, 4.13)	0.0004**
Solo practice (vs. physician group)	2.47 (1.46, 4.19)	0.001**
Method of remuneration		0.002**
Fee for Service ($\geq 80\%$) vs. Other	0.33 (0.15, 0.73)	0.006**
Capitation ($\geq 80\%$) vs. Other	0.80 (0.31, 2.03)	0.632
Number of cancer patients seen	2.08 (1.48, 2.92)	<0.0001**

** . Statistically significant ($\alpha < 0.05$, two-tailed)

E. Perceptions of Regional Cancer Program

Multivariable logistic regression outcome: Satisfied with information exchange between practice and RCP

Predictor Variables	Odds Ratio (95% CI)	p value
Years since graduation	1.03 (1.01, 1.06)	0.019**
Method of remuneration		0.001**
Fee for Service ($\geq 80\%$) vs. Other	3.59 (1.83, 7.05)	0.0002**
Capitation ($\geq 80\%$) vs. Other	2.24 (1.02, 4.91)	0.044**

** . Statistically significant ($\alpha < 0.05$, two-tailed)

F. Satisfaction with remuneration

Multivariable logistic regression outcome: Current method of remuneration adequately compensates physician

Predictor Variables	Odds Ratio (95% CI)	p value
Years since graduation	1.02 (1.00, 1.04)	0.037**
Method of remuneration		0.020**
Fee for Service ($\geq 80\%$) vs. Other	0.45 (0.26, 0.79)	0.006**
Capitation ($\geq 80\%$) vs. Other	0.57 (0.30, 1.08)	0.084

** . Statistically significant ($\alpha < 0.05$, two-tailed)