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Predictive referral patterns for hospice care based on patient and physician characteristics

Kristin Berggren
George Fox University

This research is a product of the Doctor of Psychology (PsyD) program at George Fox University. Find out more about the program.

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Predictive Referral Patterns for Hospice Care Based on
Patient and Physician Characteristics

by

Kristin Berggren

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George Fox University
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Predictive Referral Patterns for Hospice Care

Based on Patient and Physician Characteristics

By

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has been approved

at the

Graduate Department of Clinical Psychology

George Fox University

As a dissertation for the PsyD Program

Approval

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Abstract

The amount of time spent in hospice is a primary factor predicting patient and family satisfaction with end-of-life care (Adams, Bader, & Horn, 2009). However, the trends in hospice referrals in the United States show that even though there has been an increase in the number of patients who use hospice services over the last 30 years, the length of time spent in hospice has declined (National Hospice, 2010). Though much research has been done on psychological factors limiting or slowing the referral process into hospice, little is known if patient or physician characteristics influence the timeliness of the referral process. Accordingly, this study examined the relationship between hospice referral patterns and various oncology patient and physician characteristics. In this study, 120 medical records of deceased patients from the Providence Portland Oncology Department (PPOD) were randomly selected and reviewed. Thirteen physicians at the PPOD were also emailed a questionnaire that solicited both qualitative and quantitative data regarding physician characteristics. While no new patient characteristics were
identified as hospice barriers, results indicated that physicians who were educated either during
or after medical school regarding hospice, self-reported referring more patients than those
physicians who had not received such training. Also, this study found that those oncologists who
identified as having a spiritual dimension in their lives, tended to make more hospice referrals.
Predictive Hospice Referral Patterns

Table of Contents

Approval Page .......................................................................................................................... ii
Abstract ................................................................................................................................. iii
List of Tables ........................................................................................................................... vii
Chapter 1: Background Information ....................................................................................... 1
   Physician Barriers .................................................................................................................. 5
   Patient Barriers ..................................................................................................................... 7
   Hospice Barriers ................................................................................................................... 7
   Purpose of the Study ............................................................................................................ 8
Chapter 2: Method .................................................................................................................... 10
Chapter 3: Results .................................................................................................................. 12
   Hypothesis 1 ......................................................................................................................... 16
   Hypothesis 2 ......................................................................................................................... 17
   Hypothesis 3 ......................................................................................................................... 18
   Hypothesis 4 ......................................................................................................................... 18
   Hypothesis 5 ......................................................................................................................... 19
   Hypothesis 6 ......................................................................................................................... 20
Chapter 4: Discussion .............................................................................................................. 22
   Implications ......................................................................................................................... 25
   Limitations ........................................................................................................................... 26
   Directions for Future Research ......................................................................................... 27
References .................................................................................................................................. 29
<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>Patient Variables Collected</td>
<td>32</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Physician Survey</td>
<td>34</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Informed Consent</td>
<td>37</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Physician Variables</td>
<td>39</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Curriculum Vitae</td>
<td>41</td>
</tr>
</tbody>
</table>
List of Tables

Table 1  Descriptive Statistics for Patient Continuous Variables.................................................. 13
Table 2  Patient-Related Data of Sample............................................................................................ 14
Table 3  Physician-Related Data ........................................................................................................ 15
Table 4  Correlations for Selected Patient-Related Data.................................................................... 17
Table 5  Correlations for Physician Data.......................................................................................... 20
Table 6  Correlations for Selected Physician-Related Data ............................................................... 21
Chapter 1

Background Information

Though most American’s indicate they would prefer to die at home, 75% of American’s will die in a hospital or nursing home (CBS News, 2010). Expensive, often uncomfortable, impersonal and unfamiliar, dying in a hospital or nursing home has become the path of least resistance for both patients and their families (CBS News, 2010). Over the last 20 years, it has remained consistent that about one quarter of Medicare’s outlays cover the last year of life (Hogan, Lunney, Gabel, & Lynn, 2001). In 2009, Medicare paid $55 billion dollars for doctor and hospital bills during the last two months of patients' lives. That's more than the budget for the Department of Homeland Security, or the Department of Education. And it has been estimated that 20 to 30 percent of these medical expenses may have had no meaningful impact. (CBS News, 2010, Page 1)

The increasing number of medical specialties often needed for the terminal illnesses being experienced by the patients, Medicare or commercial insurance companies can be individually billed for each visit, treatment and specialist only raising these costs (CBS News, 2010).

Research has shown that end-of-life care and home-based hospice programs specifically, can not only enhance the quality of life but also potentially decrease the costs for both patient and reimbursing insurance providers (Appleby, 2006). Patients suffering from terminal illnesses such as cancer, lung or heart disease, and HIV, as well as those challenged by the vagaries of old age have an increased need to be discussing end-of-life care. In order for these patients to
maximally benefit from hospice care services, understanding the referral process and current barriers is crucial. The United States continues to under-utilize end-of-life care services. This is possibly due to misunderstandings about this resource (McGorty & Bornstein, 2003).

Among the multiple forms of end-of-life care, two primary types are overarching: *palliative* and *hospice* care. Though similar in many regards, they differ greatly in the level of aggressive treatment of a patient’s disease (World Health Organization [WHO], 2010). Palliative care is a medical subspecialty found within health care systems around the world. Often overlooked, the treatment options within and benefits of palliative care are numerous for both the patient and the family. The World Health Organization (WHO; 2010) defines palliative care as treatment typically provided by a multidisciplinary team of professionals, and headed by a primary care physician; the team emphasis is on providing comprehensive physical, emotional, and spiritual care to both the patient and their loved ones. Palliative care is offered to patients at any time during their illness, including during curative treatment.

Hospice care is a type of palliative care, but it is provided exclusively for terminal stages of illnesses. There is no longer a curative treatment being sought or administered, and typically, the patient has a prognosis of six months or less to live (WHO, 2010). The hospice setting creates a philosophy of care that honors the notion that in the last days of a patient’s life, he/she deserves to feel at home, and comfortable with significant pain being managed (Teno et al, 2007). And the idea that hospice is a philosophy and not a location, means that hospice services can be done at any location; over 80% of patients opt for their care done in the location they call “home” (National Hospice, 2010).
Although hospice is one of the most widely used, federally funded programs for end-of-life care, hospice referrals are being made “too late” according to the bereaved family members (Adams et al., 2009). With typically a 6-month prognosis for survival, it is important that referrals to hospice are made in a timely fashion for this care to be beneficial (Adams et al., 2009). Numerous factors contribute to late referrals, such as the complexity in applying for admission to a hospice program, obtaining a physician’s referral, and extending the necessary background and finality of such a decision to a patient as an option.

Hospice referrals have been increasing steadily in recent years (Brikner et al., 2004). However, the median length of stay in hospice prior to death has been steadily decreasing (Schockett et al., 2005). This negative correlation between number of referrals and length of stay becomes concerning in light of the evidence that bereaved families’ satisfaction with hospice services is related to their perception of the timeliness of the referral for hospice care (Adams et al., 2009). According to Adams et al. (2009), three studies have documented that timing of hospice referrals was critical to patient’s/family’s ratings of quality of life and satisfaction with hospice care.

In a multi-site study, Miceli & Mylod (2003) measured perceived satisfaction of bereaved families who used hospice services. The Hospice Care Family Survey was mailed to primary caregivers between one and three months after the patient’s death. Responses were analyzed from 1,839 family caregivers in 17 different hospice agencies. Ninety-two percent of families perceived their loved ones were referred to hospice “at the right time;” 8% perceived the loved one was referred “too late.”
Timing of hospice referral and quality of care were measured in a collaborative effort between the National Hospice and Palliative Care Organization (NHPCO) and Brown Medical School for Gerontology (Teno et al., 2007). NHPCO member hospices \((N = 631)\) collected data from 106,514 bereaved family members one to three months after the patient’s death. From the sample, 11.4% of a sample of family members reported that hospice services were initiated “too late.” Similarly, Schockett et al. (2005) investigated bereaved family members perceptions of whether or not their loved ones were referred to hospice “too late” and identified reasons for late referrals. The study was completed using two not-for-profit hospices three to six months after the patients’ deaths. The sample was 237 family members, 32 (13.7%) of whom responded that the hospice referral was made “too late.” Physicians were identified as the most common (62.5%) reason for belated hospice referrals. Contributing to physicians’ late referrals included inaccuracy of prognosis, disagreement with the hospice philosophy, and oncologists desiring to pursue further treatment (i.e., clinical trials). Other reported causes of “too late” referrals were related to patient/family knowledge of and beliefs about hospice. (Adams et al., 2009, p. 2).

Follow-up research has also been conducted to evaluate possible reasons for delayed referral into hospice care. A study of Japanese cancer patients evaluated over 300 families who had received hospice care services (Lindsey, 2005). It was found that communication about end-of-life care is a determining factor in the referral process; 30% of the families researched felt that the referral was late and 19% felt it was made very late (Lindsey, 2005). Among the families who perceived the referral as late, only 55% reported having had discussions about end-of-life
care options. And though the research showed that about half of the patients’ families felt as though the timing was appropriate, 21% of those families reported having had no discussion about available options regarding end-of-life care (Lindsey, 2005).

Knowing that late referrals are a problem, it is important to identify barriers that may inhibit earlier referral. Barriers can be broken down into three categories: physician barriers, patient barriers, and the hospice administrative barriers of structure and requirements. Each barrier brings unique obstacles to a timely referral into hospice (Admission Criteria, 2009).

**Physician Barriers**

While physicians have become the gatekeeper to hospice services, there is very little research contrasting personal characteristics of physicians who refer in a timely fashion versus those who do not. One study conducted in 2004, examined referral patterns and found that female physicians younger than 45 years of age were more likely to make hospice referrals than younger male physicians (Sanders, Burkett, Dickinson, & Tournier, 2004).

Research conducted by McGorty and Bornstein (2003) analyzed data on late hospice referrals and organized the limiting factors for physicians into four categories: negative hospice perception, discomfort with negative communications, instrumental perspective, and timing of discussion. They found a lack of understanding and awareness on the part of physicians of what services are offered. Specifically, 15% of physicians surveyed reported a lack of knowledge about local hospice programs, only 24% had experience working with hospice, and 26% were unaware of the concept of hospice (McGorty & Bornstein, 2003). Misconceptions regarding hospice included physicians believing patients or family members might be perceiving hospice
as a cost saving measure, (Brikner et al., 2004) believing that hospice can overburden a
caregiver, and assuming such care provides poor pain control (Prigerson, 1991).

Hospice staff had been cited saying that one of the major deterrents in hospice referrals is
the physician’s ignorance of hospice admission criteria (McNeilly & Hillary, 1997). Even among
physicians who have been extensively educated in hospice resources and procedures, and who
better understand the value that hospice can have for both the patient who is terminally ill and
the family, the physician’s ability (and/or desire) to communicate the uncomfortable topic of
death seems to be a deterrent. According to McGorty and Bornstein (2003), two hurdles must be
overcome for a physician to be able to broach the topic of hospice: the physician must accept the
terminal nature of the patient’s illness and then he or she must be able to effectively
communicate the terminal timeline to the patient. For physicians, there may be a fear they will be
devalued by patients and families as they move to accepting the death of their patients (Gordon,
1998). For some, there is a general discomfort and difficulty talking about death and dying issues
(McGorty & Bornstein, 2003). Even if they could overcome these affective barriers, physicians
might still fear losing control when patients opt for hospice, which again points to the lack of
knowledge of the collaborative effort found in most hospice care (Lindsey, 2005). Another
limiting factor can simply be the challenge of accurately predicting patient mortality (McNeilly
& Hillary 1997); that is, physicians feel unable to adequately predict the length of time until the
patient’s death (Lindsey, 2005). Any one of these physician barriers may delay the process of
hospice referral. Additionally, patient characteristics also delay hospice referral.
Patient Barriers

The first hospice service opened its doors in 1974 and now there are over 5,000 programs around the United States (National Hospice, 2010). It appears that slightly over half of those using hospice services are female (53.8%), roughly 20% are of an ethnic minority, and 83.4% are covered by Medicare (National Hospice, 2010). Additionally, patients with cancer as their primary diagnosis accounted for 40% hospice-utilization in 2009. Average length of hospice stay in the United States was 21 days (National Hospice, 2010).

The interval between the time when patients are referred and the time they enter hospice care must be examined more closely. McGorty and Bornstein (2003) summarized the numerous studies that have focused on patient barriers to treatment either by report of the family or the referring physician. Examining five research studies since 1991, McGory and Bornstein (2003) discovered that consistently either the family or patient was not accepting of the prognosis, they were not ready to give up aggressive treatment, or they had not been informed of the hospice option.

Hospice Barriers

A third barrier to care is satisfying the requirements and completing the process for acceptance into hospice. Criteria such as being provided terminal timeline of illness, locating a local hospice service, the application process, and hospice funding are all pieces of information that must be obtained and worked through. Even if physicians make timely referrals, the hospice admission process can be lengthy and taxing for all parties involved. First, a physician must diagnose the patient with a terminal illness, which is defined as 6 months or less to live (Casarett & Quill, 2007). Then, acceptance of this prognosis by the patient and family must occur,
followed by the need to locate a hospice service before applying for admission and arranging the funding. It is evident that Medicare is the most common funding service used when applying for hospice (National Hospice, 2010).

If each step of this sequence is accomplished, additional challenges await the patient and family. Since most hospice care occurs at home, medical equipment, such as a bed, bed pads, medication and other accommodations caring for the patient at home may require, must be determined and ordered by caregivers, after obtaining approvals from insurance carriers.

**Purpose of the Study**

Because of the numerous barriers to use of hospice care, better understanding of how the referral process could be affected by patient and physician characteristics, may help aid others to improve utilization of hospice services. With cancer being the most common diagnosis for those receiving hospice placement, oncology is the medical subspecialty making the majority of referrals (National Hospice, 2010). Since there is a sparse literature indicating patterns of referrals for hospice care within oncology departments, the purpose of this research is to examine oncologists who make such referrals, as well as characteristics of their patients being referred to hospice.

This study aimed to add to the literature pertaining to the relationship between hospice referral patterns and various patient and physician characteristics. More specifically, the goal was to (a) identify patient characteristics that are more likely to lead to referral, (b) identify physician characteristics more likely to lead to referral, and (c) identify characteristics of patients and physicians that together predict patients at risk for being referred “too late.” If hospitals and programs were able to identify these “at risk” patients, it might be possible to minimize late
referral through targeted training, resulting in more hospice satisfaction by patients and their families. Specifically this study, it was hypothesized that there would be a greater proportion of hospice referrals for oncology patients who are (a) older, (b) on Medicare, and (c) physicians who have had a personal experience with hospice will self-report referring more often. Because these variables have been the focus of previous research efforts (National Hospice, 2010; Brikner et al., 2004) this study was designed to provide replication of and extension to prior findings. Other hypothesis unique to this study are that more hospice referrals will be self-reported by physicians who (a) identify as spiritual, (b) have had exposure to hospice education during or after medical school and that (c) patients with a more aggressive type of cancer will be referred more often.
Chapter 2
Method

This study consisted of an examination of 120 medical records of deceased oncology patients from the Providence Portland Oncology Department (PPOD). These patients were chosen at random from all deceased patients during 2009 (the most recent data available). No age limit was imposed for chart selection, in order to ensure representativeness of the sample. All types of cancers were accepted for chart review, again to ensure a representative sampling of the oncology department’s referrals.

After obtaining approval from George Fox University’s IRB Committee as well as the Providence IRB and Privacy Board, eligible charts were randomly selected from hospital records by a designated hospital staff member, and a list of patient names from the selected charts were put onto a limited access computer server. Hospital cancer support group leaders were then asked to review the list of names and identify whether or not the patients had received group support services. Their responses were recorded with other patient data. Following the list of names being reviewed by support group leaders, each patient’s name and patient number associated with a chart was de-identified by assigning a research number to insure anonymity. The patient identification number was entered onto the same data sheet (Appendix A) along with the other patient variables: number of days spent in hospice, referral date for hospice, date of hospice being accessed, religious affiliation, date of death, age, gender, marital status, family mention, presenting diagnoses, treatment intervention, date of last treatment, number of co-occurring
medical problems, type of insurance, hospice company used, the attending oncologist’s gender, date of first visit to the oncology department, and number of visits to the department. All these data were recorded directly from the chart; unavailable information was so noted. Throughout the study, all patient-related material remained in a secure area at the hospital to insure that no identifying information left the hospital site.

In order to better understand how experience within the field of oncology affected a physician’s use of hospice services, a questionnaire was emailed to 13 oncologists at PPOD using a SurveyMonkey™ Email Invitation from the PPOD Clinic Manager. The survey was configured to not save the email address or the IP address. The survey, found in Appendix B, accessed both qualitative and quantitative data self-reported average number of patients referred to hospice services, as well as physician’s age range, race, gender, general length of practice in medicine, general length of practice as an oncologist, average hours of previous training after medical school regarding end-of-life services, training during medical school, personal or familial relationship to individuals who have had terminal cancer and whether or not they have used hospice, physician’s personal spiritual identification, their relative referral pattern compared to their colleagues, and subjective view of Providence’s hospice referrals. Physician informed consent was first obtained (Appendix C) prior to survey completion.
Chapter 3

Results

The intent of this study was to determine if there is a relationship between hospice referral patterns and various patient and physician characteristics. More specifically, the goal was to (a) identify patient characteristics that are likely to lead to referral, (b) identify physician characteristics more likely to lead to referral, and (c) identify characteristics of patients and physicians that together predict patients at risk for being referred “too late” specifically within an oncology department.

Of the 120 charts that were randomly selected and reviewed, 119 were retained; one chart was excluded because of incomplete data resulting from a distant re-location of the client. Descriptive statistics regarding hospice sample characteristics are found in Table 1.

As noted with the skew and kurtosis values, age was normally distributed. However, days spent in hospice, number of visits to an oncologist, and number of co-occurring diagnoses were each significantly positively skewed and displayed significant amounts of kurtosis.

A number of demographic patient variables were recorded as nominal variables, and are found in Table 2.

The results found in Table 2 indicate that almost 61% of the patients whose charts were reviewed were male and married (57.5%), and mostly were seen by male oncologists (83%). Most patients (70.6%) lived within 20 miles of Portland, and 90% of the sample had not been identified as individuals who had used group supportive services through PPOD. Of the 119
patients, 67.5% were prescribed Chemotherapy alone for cancer treatment; 25.0% received both chemotherapy and radiation treatment. Lung cancer was the highest frequency of cancer (36.7% of the sample). Medicare/Medicaid were the primary insurances for 48.3%, and 50% of patients used a commercial carrier. Physicians within PPOD internally referred 67.5% of the hospice patients, and 60.8% percent of all patients referred to hospice (from both PPOD and other providers) chose to utilize the service. The medical charts mentioned the patient’s spouse 59.2% of the time, children 33.3% of the time and other family members 7.5% of the time.

Physicians’ data were coded into nominal variables and summaries of the findings appear in Table 3. Of the 13 physicians employed at PPOD, 11 responded (84.6%). Ten (90.9%) were Caucasian, and of those responding the majority were between 30-50 years old; the age distribution is shown in Table 3. Only one had been practicing medicine less than five years, but almost a quarter (27.3%) had been practicing oncology for less than five years. Table 3 shows

Table 1

Descriptive Statistics for Patient Continuous Variables

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days in Hospice</td>
<td>14.31</td>
<td>21.05</td>
<td>2.35</td>
<td>7.06</td>
</tr>
<tr>
<td>Age (years)</td>
<td>63.66</td>
<td>11.92</td>
<td>-.23</td>
<td>-.466</td>
</tr>
<tr>
<td>Total Visits to Onc</td>
<td>23.12</td>
<td>13.75</td>
<td>1.79</td>
<td>4.39</td>
</tr>
<tr>
<td># Co-Occur</td>
<td>4.10</td>
<td>4.31</td>
<td>1.74</td>
<td>3.87</td>
</tr>
</tbody>
</table>

Note. *N* = 119; *SE* of Skew = .22; *SE* of kurtosis = .44 for all variables; Onc = oncologist; # Co-Occur = The number of co-occurring diagnoses with cancer
Table 2

<table>
<thead>
<tr>
<th>Patient-Related Data of Sample</th>
<th>% of Sample</th>
<th>Variable</th>
<th>% of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospice Referral Source</td>
<td></td>
<td>Type of Treatment</td>
<td></td>
</tr>
<tr>
<td>Providence Oncology</td>
<td>67.5</td>
<td>Chemotherapy</td>
<td>67.5</td>
</tr>
<tr>
<td>Primary Care Physician</td>
<td>.8</td>
<td>Chemotherapy w/ radiation</td>
<td>25.0</td>
</tr>
<tr>
<td>Not referred</td>
<td>31.7</td>
<td>Experimental</td>
<td>7.5</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>Insurance</td>
<td></td>
</tr>
<tr>
<td>% Male</td>
<td>60.8</td>
<td>Medicare/Medicaid</td>
<td>48.3</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td>Commercial</td>
<td>50.0</td>
</tr>
<tr>
<td>Married</td>
<td>57.5</td>
<td>Self-pay</td>
<td>1.7</td>
</tr>
<tr>
<td>Single</td>
<td>17.5</td>
<td>Referred to Hospice</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>10.8</td>
<td>Yes</td>
<td>69.2</td>
</tr>
<tr>
<td>Widowed</td>
<td>6.7</td>
<td>No</td>
<td>30.8</td>
</tr>
<tr>
<td>Unknown</td>
<td>7.5</td>
<td>Utilized Hospice Services</td>
<td></td>
</tr>
<tr>
<td>Use of Supportive Services</td>
<td></td>
<td>Yes</td>
<td>60.8</td>
</tr>
<tr>
<td>Yes</td>
<td>10.0</td>
<td>No</td>
<td>39.2</td>
</tr>
<tr>
<td>No</td>
<td>90.0</td>
<td>Residence Near Portland</td>
<td></td>
</tr>
<tr>
<td>Spouse mentioned in chart</td>
<td></td>
<td>Within Portland</td>
<td>44.8</td>
</tr>
<tr>
<td>Children mentioned in chart</td>
<td>33.3</td>
<td>5-20 mile radius</td>
<td>25.8</td>
</tr>
<tr>
<td>Other family mentioned in chart</td>
<td>7.5</td>
<td>21-40 mile radius</td>
<td>13.6</td>
</tr>
<tr>
<td>Male Oncologists</td>
<td>83.0</td>
<td>41-60 mile radius</td>
<td>15.5</td>
</tr>
<tr>
<td>Type of Cancer</td>
<td></td>
<td>Lung</td>
<td>36.7</td>
</tr>
<tr>
<td>Skin</td>
<td></td>
<td>Skin</td>
<td>7.5</td>
</tr>
<tr>
<td>Breast</td>
<td></td>
<td>Breast</td>
<td>2.5</td>
</tr>
<tr>
<td>Pancreatic</td>
<td></td>
<td>Pancreatic</td>
<td>9.2</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>Other</td>
<td>44.2</td>
</tr>
</tbody>
</table>

*Note. N = 119.*
Table 3

**Physician-Related Data**

<table>
<thead>
<tr>
<th>Variable</th>
<th>% of Physicians</th>
<th>Variable</th>
<th>% of Physicians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
<td>Hospice Training During Medical School</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>90.9</td>
<td>Yes</td>
<td>18.2</td>
</tr>
<tr>
<td>Asian</td>
<td>9.1</td>
<td>No</td>
<td>72.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not Sure</td>
<td>9.1</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>Known someone who had terminal cancer</td>
<td></td>
</tr>
<tr>
<td>30s</td>
<td>36.4</td>
<td>Yes</td>
<td>72.7</td>
</tr>
<tr>
<td>40s</td>
<td>36.4</td>
<td>No</td>
<td>27.3</td>
</tr>
<tr>
<td>50s</td>
<td>27.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>Did that someone use hospice (N = 8)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>54.5</td>
<td>No</td>
<td>37.5</td>
</tr>
<tr>
<td>Female</td>
<td>45.5</td>
<td>Yes</td>
<td>62.5</td>
</tr>
<tr>
<td>Length of Practice</td>
<td></td>
<td>Practice a Religion (N = 11)</td>
<td></td>
</tr>
<tr>
<td>&lt;5 years</td>
<td>9.1</td>
<td>Yes</td>
<td>27.3</td>
</tr>
<tr>
<td>5-10 years</td>
<td>27.3</td>
<td>No</td>
<td>72.7</td>
</tr>
<tr>
<td>10-15 years</td>
<td>27.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;15 years</td>
<td>36.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of Practice in Oncology</td>
<td></td>
<td>Similar to peers</td>
<td>50.0</td>
</tr>
<tr>
<td>&lt;5 years</td>
<td>27.3</td>
<td>Refer &gt; peers</td>
<td>37.5</td>
</tr>
<tr>
<td>5-10 years</td>
<td>27.3</td>
<td>Refer &lt; peers</td>
<td>12.5</td>
</tr>
<tr>
<td>10-15 years</td>
<td>9.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;15 years</td>
<td>36.4</td>
<td>Hospice Referrals at Providence as a whole (N = 8)</td>
<td></td>
</tr>
<tr>
<td>Hospice Training After Med School</td>
<td></td>
<td>Under used</td>
<td>75.0</td>
</tr>
<tr>
<td>Yes – 2 hours</td>
<td>9.1</td>
<td>Used appropriately</td>
<td>12.5</td>
</tr>
<tr>
<td>Yes – 1 hour</td>
<td>27.3</td>
<td>Unsure</td>
<td>12.5</td>
</tr>
<tr>
<td>No</td>
<td>63.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* N = 11 unless otherwise indicated.
that a majority of these physicians had no hospice training, either during or after medical school. Of the 11 responding physicians, 72.2% claimed no training during med school, 63.6% claimed no training after med school, 27.3% estimated a total of one hour of training after med school, and 9.1% indicated they had received at least two hours of training after med school.

Most of the oncologists (72.7%) indicated they had known a close friend or family member with terminal cancer, and of those individuals 62.5% used hospice service for their end of life care. Though most of the physicians (75%) believed that hospice referral at PPOD was underused, 50% of the oncologists indicated they believed that they refer in a similar manner when compared to their colleagues.

Of the three physicians who indicated they did practice a religion, one physician reported practicing Judaism; one reported practicing Protestant Christianity and one reported being Roman Catholic. In contrast, when the 11 responding physicians evaluated their level of “spirituality” using a 6-point Likert scale (0 = not spiritual to 5 = very spiritual), 27.3% (n = 3) endorsed 0, 18.2% (n = 2) reported 1, 9.1% (n = 1) reported 2, 18.2% (n = 2) reported 3, 9.1% (n = 1) reported 4, and 18.2% (n = 2) indicated 5. Though all 11 physicians were willing to respond regarding their level of spirituality, the majority of the physicians (54.5%) endorsed values between 0 and 2 on the Likert scale.

**Hypothesis 1**

Hypothesis 1: There will be a greater proportion of hospice referrals for individuals who are older. Using point bi-serial correlation to evaluate the relationship between age and referral, a small positive correlation was found (r = .14) for the 68% of the sample that was referred to hospice, and is reported in Table 4. When the sample was divided into older and younger
referred subgroups using a median split (median = 62.5 years), no significant difference was obtained in the number of days spent in hospice for older vs. younger patients ($t (117) = .13, p = .89$). Therefore, there was no support for the hypothesis that referral frequency was related to patient age.

Table 4

<table>
<thead>
<tr>
<th></th>
<th>Days in Hospice</th>
<th>Referred Y or N</th>
<th>Age</th>
<th>Type of Insurance</th>
<th>Type of Cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.06</td>
<td>.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Insurance</td>
<td>.14</td>
<td>.16</td>
<td>.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Cancer</td>
<td>-.22</td>
<td>.27</td>
<td>.00</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.11</td>
<td>-.01</td>
<td>-.13</td>
<td>.07</td>
<td>.15</td>
</tr>
</tbody>
</table>

*Note. N = 119*

Hypothesis 2

Hypothesis 2: There will be a significant relationship between whether individuals were referred to hospice or not, and their insurance source, Medicare/Medicaid vs. commercial insurance. From record review, it was determined that of those clients referred to hospice, 48.3% were Medicare/Medicaid clients and 50.0% used commercial insurance. As noted in Table 4, there was a small and non-significant contingency coefficient correlation found between whether the patient was referred to hospice and their type of insurance ($r = .16$). Therefore, the evidence does not support Hypothesis 2.
Hypothesis 3

Hypothesis 3: There will be a significant relationship between whether individuals were referred to hospice or not, and whether individuals had a more aggressive types of cancer versus those with less aggressive types of cancer. Using a contingency coefficient correlation to exam the relationship between type of cancer and referral to hospice, a small correlation ($r = .27$) was obtained. Therefore, there was no support for the hypothesis that referral frequency was related to type of cancer.

Also, as noted in Table 4, no significant correlations were found between referrals and type insurance, or gender. However, of note, there was a significant moderate correlation found between age and type of insurance ($r = .39$, $p < .001$).

Hypothesis 4

Hypothesis 4: More hospice referrals will be self-reported by physicians who have had a personal experience with hospice. Of the 11 physicians surveyed, 8 indicated they had a close friend or family member with terminal cancer. Of those 8, 5 had used hospice. All 5 physicians who had used hospice found it to be a positive experience. A $t$-test was conducted between the self-reported numbers of referrals made by physicians who had a personal experience with hospice ($n = 5$, $M = 2.30$, $SD = 1.48$) versus those who did not ($n = 3$, $M = 3.17$, $SD = 1.76$). The results were non-significant ($t(6) = .75$, $p = .48$). Using a point bi-serial correlation, a small to moderate negative correlation was found between having had a close personal family member or friend with terminal cancer and an estimated number of hospice referrals made in 2009 ($r = -.33$). In other words, the number of referrals for oncologists who did not have a family member or friend with terminal cancer is greater ($M = 3.67$, $SD = 1.15$) than the oncologists who did have
a family member or friend with terminal cancer ($M = 2.63, SD = 1.53$). Contrary to what has been found by Brikner et al. (2004) regarding physician’s who have had a close friend or family member utilize hospice services, the discrepancy could be due to small sample size. However, it also might be due to specialty. Brikner et al. (2004) surveyed many types of physicians where as this study specifically examined oncologists.

**Hypothesis 5**

Hypothesis 5: More hospice referrals will be self-reported by physicians who identify as spiritual. As noted in the demographics above, spirituality was reported on a Likert scale ranging from 0-5 with higher numbers indicating greater spirituality. Using a Pearson product moment to evaluate the relationship between spirituality and the subjective estimate of the number of referrals made to hospice, a moderately positive correlation was indicated ($r = .39$), and is reported in Table 5. A $t$-test was also conducted between the average number of referrals made by physicians identifying as more spiritual (Likert endorsements of 3, 4, and 5; $n =5$, $M =3.50$, $SD = 1.50$) versus less spiritual (Likert endorsements of 0, 1, and 2; $n = 6$, $M = 2.42$, $SD = 1.36$). The difference between the subgroup means was found non-significant ($t(9) = -1.26$, $p = .24$). Therefore, Hypothesis 5 was not supported.

Data regarding oncologist’s beliefs about their patterns of referral relative to their peers could not be analyzed. This is because three out of the five oncologists who claimed a spiritual orientation did not answer the question regarding their relative referral patterns. Further, of the eight oncologists who did answer this question, seven claimed that they referred equally as or more than their peers.
Table 5

*Correlations for Physician Data*

<table>
<thead>
<tr>
<th></th>
<th># Referred/mo. estimate</th>
<th>Gender</th>
<th>Hrs. of Previous Training After Med. School Regarding Hospice 0-5</th>
<th>Trained on Hospice During Med. School?</th>
<th>Have you had a close friend of family member with terminal cancer</th>
<th>Spiritual? 0-5</th>
<th>Relative Hospice Referrals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hrs. of Previous Training</td>
<td></td>
<td>-.125</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After Med. School</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regarding Hospice 0-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trained on Hospice During Med.</td>
<td>-.392</td>
<td></td>
<td>-.203</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you had a close friend</td>
<td>-.333</td>
<td></td>
<td>-.510</td>
<td>.289</td>
<td>.289</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of family member with</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>terminal cancer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spiritual? 0-5</td>
<td>.387</td>
<td></td>
<td>.157</td>
<td>-.269</td>
<td>.391</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative Hospice Referrals</td>
<td>.826</td>
<td></td>
<td>.218</td>
<td>.000</td>
<td>.218</td>
<td>.436</td>
<td></td>
</tr>
<tr>
<td>Providence Hospice Referral</td>
<td>-.349</td>
<td></td>
<td>.577</td>
<td>.500</td>
<td>-.577</td>
<td>-.710</td>
<td>-.378</td>
</tr>
<tr>
<td>Pattern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* # = number; mo. = months; Hrs. = Hours; Med. = Medical.

**Hypothesis 6**

Hypothesis 6: More hospice referrals will be self-reported by physicians who have had exposure to hospice education either during or after medical school. Five physicians were found
to have had exposure to hospice education. A t-test between the average number of referrals made for physicians with training ($n = 5, M = 4.00, SD = 1.00$) and without training ($n = 6, M = 2.00, SD = 1.14$) showed that the number of referrals was significantly higher for oncologists who had been trained ($t(9) = 3.06, p = .01, d = 1.87$). Therefore, Hypothesis six was supported.

Table 6 displays correlations for the physician data. As expected, large correlations were found between (a) age and length of practice as an oncologist, (b) age and length of practice as a physician, and (c) between length of practice as an oncologist and length of practice as a physician. However, there were non-significant correlations between any of these three variables and the physician’s monthly estimate of how many patients he/she referred to hospice.

Table 6

*Correlations for Selected Physician-Related Data*

<table>
<thead>
<tr>
<th></th>
<th># Referred/mo. estimate</th>
<th>Age</th>
<th>Length of Practice as an Oncologist</th>
</tr>
</thead>
<tbody>
<tr>
<td># Referred/month estimate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of Practice as an Oncologist</td>
<td>-.165</td>
<td>.892</td>
<td></td>
</tr>
<tr>
<td>Length of Medical Practice</td>
<td>-.125</td>
<td>.932</td>
<td>.950</td>
</tr>
</tbody>
</table>

*Note. N = 11; # = number of patients referred; mo. = month*

Three-quarters of the physician respondents believed that hospice was under-utilized at PPOD, and there was a -.71 correlation between physicians endorsing low spirituality and the belief that hospice is under-utilized.
Chapter 4
Discussion

This study aimed to add to the literature pertaining to the relationship between hospice referral patterns and various patient and physician characteristics. Knowing cancer was the number one diagnosis for hospice patients in 2010 (National Hospice, 2010) an evaluative study examining PPOD’s referral patterns was of interest. Patients who have had the discussion centered on end-of-life care tend to opt for less expensive palliative care in a hospice or at home, rather than costly treatments that can occur in a hospital (Stern, 2009). If half of the estimated 566,000 American adult cancer patients who died in 2008 had an end-of-life discussion, a conservative projected savings was computed to be $77 million, according to a report published in the Archives of Internal Medicine (Stern, 2009).

More specifically, the goal was to identify patient and oncologist characteristics that were more likely to lead to hospice referral. Another goal was to identify characteristics of oncology patients and oncologists that together predicted patients at risk for being referred “too late.” If hospitals and programs could identify these “at risk” patients, it might be possible to minimize late referral through targeted training, resulting in more hospice satisfaction by oncology patients and their families.

Like research done by Brikner et al. (2004), three quarters of the oncologists felt hospice was underutilized at PPOD, but 87.5% of those oncologists believed they refer the same proportion or more than their peers.
Specifically for this research, it was hypothesized that there would be a greater tendency to make hospice referrals for oncology patients who are (a) older, (b) on Medicare/Medicaid, and for (c) physician’s who have had a positive personal experience with hospice. These variables have been found to be predictive of hospice referrals (Brikner et al., 2004; National Hospice, 2010). None of the hospice patient variables were found related to hospice referral in this investigation.

One explanation for the difference between this study’s results and most of the literature, is that the current sample, composed exclusively of oncology patients most of whom utilized hospice, is dissimilar from that used in other studies. The NHPCO Facts and Figures (2010) is based upon all hospice patients, only 40% of whom were cancer patients; adding non-cancer patients may have changed the relationship. Likewise, the current sample of physicians was not only much smaller in size, but was comprised of only one specialty (oncologists), whereas the study conducted by Brikner et al. (2004) looked at general physicians, hospital staffed physicians and residents, all of whom likely have differing levels of training and expertise than oncologists.

Unique to this study, it was hypothesized that more hospice referrals will be self-reported by oncologists who have had (a) higher reported spirituality, and (b) education regarding hospice either during or after medical school. In addition, it was also hypothesized that oncology patients who have a more aggressive type of cancer would be referred more regularly. There was no difference in referral patterns based on type of cancer diagnosed.

Possibly the most interesting finding pulled from the physician questionnaire was oncologists’ perceived level of spirituality and the inverse correlation with oncologists’ hospice referral patterns. That is, those oncologists who indicated they were more spiritual also tended to
believe that hospice was underutilized at PPOD, and tended to estimate their own number of monthly referrals as higher than their departmental colleagues. However, the correlation between identified level of spirituality and estimated number of hospice referrals was only low moderate at .39.

It may be possible that more spiritually-oriented physicians tend to subjectively make higher referral estimates. This finding may reflect a belief regarding an “after-life” that would make the process of confronting and dealing with death more acceptable. Accordingly, it is possible that physicians, who consider themselves more spiritual, believe that their patients would be more open to hospice referral. It is unfortunate that actual referral numbers were not available from the medical records, which would have provided an interesting comparison to physician subjective impressions.

“As cited by hospice staff, one major barrier to hospice discussions and referrals is lack of physician experience with and awareness of hospice and its benefit (Hyman & Bulkin 1991; McNeilly & Hillary 1997). Fifteen per cent of physicians admit to a lack of knowledge about local hospice programs (Weggel, 1999)” (McGorty & Bornstein, 2003 pg. 367). Supporting previously mentioned research (Hyman & Bulkin 1991; McGorty & Bornstein, 2003; McNeilly & Hillary 1997; Weggel, 1999) the current study showed that physicians who lacked formal training in hospice during and after medical school reported referring much less than their professional peers who did receive more training. Five of the 11 physicians indicated any hospice training either during or after medical school. Therefore, this research highlights the importance of physician training regarding options for end-of-life care.
Typically, skew and kurtosis can be cause for concern when using central tendency statistics. Therefore, one could ask why was there skew and kurtosis indicated for the length of stay in hospice and number of co-occurring diagnoses. National findings show that hospice referrals are being made “too late,” and following the trend of research it seems logical to assume that hospice patient-stays have continued to decrease, and the number of patients with extended stays in hospice have diminished (Schockett et al., 2005). In the current study, the pattern of late referrals was also evidenced by the skew and kurtosis present for the distribution of length of stay in hospice, meaning that the majority of oncology patients who had accepted hospice were present in hospice for less than a week. In 2003, 36.9% of enrollees died within 1 week of hospice care initiation (Schockett et al., 2005).

Implications

The complexity of the referral patterns for hospice became more evident while conducting this research. Recent research (Brikner et al., 2004; Casarett and Quill 2007; McGorty & Bornstein, 2003) indicates that physician, patients and hospice structures can all offer numerous barriers to a hospice referral. When examining the relationship between relevant patient and physician variables, very few correlations beyond a low-moderate level were obtained. Though no patient new variables were identified as being strongly related to their referral patterns, routinely incorporating in their charts a patient’s family information (e.g., spouse, proximity of family, estimate of family involvement), along with ethnicity and openness to the use of supportive services, would encourage a more holistic view of the patients. This information would be useful if available when considering end-of-life options, as well as offer important data for future research. An application from the current study would be a likely need
for relatively brief physician training that would help them know how to use this kind of information in a way that enhances end-of-life experiences for patients and their families.

This research has highlighted the importance of educating oncologists about hospice care. It becomes important to note that the oncologists who had indicated they had received training during or after medical school referred more often. Oncologists who had been trained in hospice care after medical school estimated their training to between 1-2 hours; nevertheless, this minimal training time significantly impacted the self-reported frequency of referrals. Therefore, it seems that implementing a brief training module for physicians during an early phase of employment (post med school), would positively impact frequency of hospice referral.

The content of such a module could focus on information such as identifying local services and hospice application pathways, as well as hospice application requirements. As importantly, the module’s content could also focus on attitudes by providing pre-recorded stories of successful hospice placements spoken by patient family members, to foster “permission” to have such conversations. Attitudes could also be focused on using a role-play exercise in end-of-life conversations, designed to make more transparent the physician’s own values and perspectives in this sensitive area.

**Limitations**

This study’s research findings should be interpreted cautiously. Because of the small physician sample, the physician identity of those who completed questionnaires could have been determined, and therefore the physicians may not have been completely transparent. Hospital policy was to ensure confidentiality by making it impossible to link the physicians who were responding with the patients whose charts were being reviewed. Consequently, physicians were
requested to estimate the number of monthly referrals, which could have yielded biased numbers. Had the charts been linked with the referring oncologists, actual referral data could have been collected. This limitation also prevented comparison of Providence-based versus US physician referral patterns other research had provided, most of which were objectivity obtained. Also, with the charts having been from 2009, requesting group supportive service providers, from two years prior, to remember past patients, likely introduced memory errors possibly decreasing the number of patients identified as having used supportive services.

**Directions for Future Research**

Further exploration of oncology patients’ use of group supportive services correlation with a patient’s or family’s willingness to accept hospice as a viable option would be interesting. Monitoring a year of patients who attend group supportive services would be a unique and interesting study. Comparing the number of days spent in hospice by oncology patients who utilized supportive services, with a random sample of patients who did not attend supportive services from the same clinic would offer insight regarding whether group supportive services might impact the patients desire to utilize hospice. This study would allow insight into additional benefits associated with group supportive services beyond general mental health usefulness.

The other direction for future research would be examining the effect of a training module, as proposed previously, to see if it had short- and long-term effects on hospice referral patterns within the clinic. This study has shown that physician lack of training around end-of-life care services seems to impact hospice utilization. Accordingly, PPOD fits the trend seen across the United States of referring “too late.” Therefore, future research should examine whether providing in-service hospice education to physicians and other clinical staff would increase the
rate of hospice referral, and thereby increase patient as well as family satisfaction associated with this difficult time for caregivers and care receivers.
References


McGorty, E., & Bornstein, B. (2003). Barriers to physicians decisions to discuss hospice:


Appendix A

Patient Variables Collected
Patient Variables Collected

- Patients' Research number
- Number of days spent in hospice
- Referral date for hospice
- Date of entry to hospice
- Date of death
- Age
- Gender
- Presenting diagnoses (type of cancer)
- Treatment intervention
- Date of last treatment
- Type of insurance
- Religious affiliation
- Number of co-occurring diagnosis
- Marital status
- Date of first visit into Oncology Dept
- Number of visits to oncology dept
- Family mentioned (yes/no)
- Family location mentioned (yes/no)
- Hospice company
- Gender of oncologist
- Support services (yes/no)
Appendix B

Physician Survey
Physician Survey (11-046B) Predictive Referral Patterns into Hospice Care Based on Patient and Physician Characteristics. PI: Kristin Berggren, MA

MD Study # __________

1. Age:
   □ 30 – 39 years old
   □ 40 – 49 years old
   □ 50 – 59 years old
   □ 60 and older

2. Ethnicity (*check those that apply)*:
   □ Asian
   □ Black/African American
   □ Caucasian/White
   □ Hispanic/Latino
   □ Multi-ethnic (*please specify)*:
   □ Native American
   □ Pacific Islander
   □ Other (*specify)*:

3. Gender:   M       F

4. How many years have you been practicing medicine?
   □ < 5 years
   □ 5 – 10 years
   □ 10 – 15 years
   □ > 15 years

5. How many years have you been practicing Oncology?
   □ < 5 years
   □ 5 – 10 years
6. How many educational/training hours have you had on Hospice Care after medical school? 0 being none and 5 being more than any other training I’ve had.
0 1 2 3 4 5

7. Were you trained on Hospice Care during medical school? □ Yes □ No □ Not Sure

8. About how many patients do you refer to hospice in a typical month (just a ball park guess please)? ______

9. Have you ever had a close family member or close friend die due to cancer? □ Yes □ No
   If yes: Did they use hospice services? □ Yes □ No □ Not Sure
   If yes: How positive experience was it? 0 being very negative 5 being very positive. 0 1 2 3 4 5

10. Do you consider yourself a spiritual person? Let 0 be not spiritual at all and 5 suggest that spirituality is very important in your life. (Circle your choice) 0 1 2 3 4 5

11. Do you practice a religion? □ Yes □ No
   If yes, what is it? _______________________________________

12. I believe I make hospice referrals more or less compared to my fellow oncologists (let 0 be less than all oncologists, and 5 be more than every oncologist).
0 1 2 3 4 5

13. My “rule of thumb” for when to suggest hospice care to my patient is:

14. Generally, I believe referral for hospice care by Providence Portland Hospital Oncology Department is currently
   □ Overused
   □ Underused
   □ Used with appropriate frequency
   □ Not Sure
Appendix C

Informed Consent
Dear Doctor,

I am a student at George Fox University and I am conducting a study for my PsyD Dissertation. The purpose of this study is to look at the relationship between hospice referral patterns and patient and physician characteristics. I would like to evaluate the trends in the use of hospice as an end-of-life resource by the Providence Portland Oncology Department.

This study has been approved by the Providence Health & Services IRB committee.

A survey is included with this letter. The survey should take approximately 20 minutes to complete. The validity of this study is dependent upon your honest responses. Therefore, please answer the questions presented in this survey candidly, reflecting your own perspectives.

There are no foreseeable risks to you by participating in this study. The survey is anonymous (your name will not appear on the survey you return to us, but it will have a MD Study Number and your responses to the questions will be treated as confidential. Your answers will only be used in aggregate, for group statistical purposes. The surveys will be kept under lock and key and then destroyed at the end of this study. When the results of the study are published, or presented at a meeting, your identity will remain anonymous.

Participation in this study is completely voluntary. Additionally, you are free to stop completing the survey at any point. You are also free to decline answering any question by skipping it. By completing and submitting the survey, you are voluntarily agreeing to participate.

You will not be paid to participate in this study.

If you have any questions in regards to this study or the attached survey, or would like to know the general results of this study, please contact Kristin Berggren, MA at Kristinberggren@gmail.com or Dr. Wayne Adams, PhD at wadams@georgefox.edu.

Thank you for your time and assistance.

Sincerely,

Kristen Berggren, MA
Appendix D

Physician Variables
Physician Variables

- Average number of patients referred to hospice services over a month
- Age Range
- Race
- Gender
- General Length of practice in Medicine
- General Length of practice as an oncologist
- Average hours of previous training after medical school regarding end-of-life services
- Personal or familial relationship to individuals who have had terminal cancer
- Personal religious orientation or spirituality
Appendix E

Curriculum Vitae
E D U C A T I O N

2008 - Present **George Fox University, Newberg, Oregon**
Doctor of Clinical Psychology Program: APA Accredited
M.A., Clinical Psychology – April 2010
Anticipated Psy.D., Clinical Psychology - April 2013
Cumulative GPA: 3.904

2002 - 2006 **Oregon State University, Corvallis, Oregon**
B.S., Major in General Science, Minor in Chemistry – June 2006
Cumulative GPA: 3.87, Summa cum Laude

S U P E R V I S E D C L I N I C A L E X P E R I E N C E

6/10 – Present **Portland Veterans Affairs Medical Center**

9/11 – Present **Homebased Primary Care at the Portland Veterans Affairs Medical Center**
Supervisor: Gregory Lonigan, PsyD.
- Conduct in home psychological evaluations, which include: psychosocial, cognitive, dementia, and capacity evaluations
- Work within a multidisciplinary team consisting of in-home nurses, social workers and psychiatrists to provide psychological services to veterans with chronic medical illness; many with co-occurring disorders (medical, cognitive and psychiatric)
- All patients are seen in conjunction with the supervisor, with supervision being provided before, during and after all assessments and therapy

9/11 – Present **Health Psychology Rotation at the Portland Veterans Affairs Medical Center**
Supervisor: Travis Lovejoy, Ph.D.
- Conduct health assessments, motivational interviewing, and cognitive-behavioral interventions to promote chronic illness management and other preventive health behaviors in and out of patient mental health setting
• Consult and work collaboratively with primary care physicians to maximize the quality of patient care and to promote patient adherence to both medical and behavioral prescriptions

6/10 – 9/11

**Neuropsychological Research Assessment Rotation at the Portland Veterans Affairs Medical Center**

Supervisor: Marilyn Huckans, Ph.D.

- Conducted clinical interviews and administered neuropsychological assessment batteries to participants in a research study examining the cognitive and neuropsychiatric effects of hepatitis C, antiviral therapy, and substance use
- Scored and entered data into research databases
- Worked in a small research team to conduct a longitudinal study that would help to determine whether individuals receiving antiviral therapy would evidence decline on the RIST
- Contributed in Data collection, analysis, writing and presentation. Data will be presented at the 2011 National Academy of Neuropsychology
- Attended journal club and research team meetings

6/11 – 9/11

**Outpatient Mental Health at the Portland Veterans Affairs Medical Center**

Supervisor: Malique Carr, Ph.D.

- Provided short term individual and couples therapy with diverse patient populations, ranges of symptomatology and severities, ages, and military experiences
- Gained knowledge and exposure to use of Emotionally Focused Therapy for couples work, as well as continued focus on Cognitive Behavioral Therapy for treating depression and imaginary exposure for specific phobias

1/11 – 6/11

**General Medicine Psychiatry Rotation at the Portland Veterans Affairs Medical Center**

Supervisor: Anders Goranson, Ph.D.

- Provided individual therapy and conducted psychological assessments with patients in an outpatient primary care setting. Presenting diagnoses varied widely and included depression, anxiety, chronic pain, personality disorders, bereavement/adjustment issues, post traumatic stress disorder, substance abuse, dementia and traumatic brain injury
- Studied and practiced Time-Limited Dynamic Therapy for patients with personality disorders
- Emphasized Acceptance and Commitment Therapy (ACT) for patients suffering from chronic pain and depression
• Gained knowledge and exposure to use of empirically supported
treatments (or the adaptation of these treatments) for complex
medical populations who often present with multiple medical and
psychiatric diagnoses
• Provided consultation services to medical providers, assisted with
treatment planning, and provided collaborative input into
psychiatric medication regimens as part of a multidisciplinary team

9/10 – 12/10

**Palliative/Long-Term Care Therapy Rotation at the Portland
Veterans Affairs Medical Center**
Supervisor: Kristen Payne, Ph.D.
• Conducted individual therapy as well as cognitive assessments
  with adults with terminal illnesses
• Attended team meetings, assisted with treatment planning, and
  provided feedback as part of a collaborative multidisciplinary team
• Gained exposure to evidence-based practices specifically targeted
  at geriatric populations
• Gained exposure and training on Motivational Interviewing
  specifically targeted toward behavior change
• Gained competency in utilizing an electronic medical record
  system (CPRS)

5/10

**Multicultural Assessment Experience**
Supervisor: Wayne Adams, Ph.D.
• Provided consultation and special education evaluations for 14
  children who seemed to be academically troubled at a missionary
  school in Tirana, Albania
• Administered selected cognitive and achievement tests, generated
  reports and created treatment plans for each child
• Worked with parents, teachers, and students to develop treatment,
  education, and parenting plans in facilitation of the children’s
  education

9/09 – 5/10

**North Clackamas School District**
Supervisor: Patrick Joyce, Psy.D.
• Within an urban school district, provided services to primary,
  middle school, and high school students as well as adults (ages 18-
  21) in an Adult Transition Program focused on transitional skills
• Attended Quarterly counselor training within the district
• Participated as a student advocate during IEP meetings
• Conducted individual therapy at local elementary, middle and high
  schools, as well as behavior observations for these students within
  their classroom
• Conducted an autism lunch group for children (ages 11-13) that worked on concrete social skills.
• Created and lead an all girl social skill group for research on the CAST curriculum
• Co-led and independently led behavioral management skills group \textit{(Beta)} for the year
• Conducted cognitive, achievement and behavioral assessments with children, adolescents and young adults

1/09 – 5/9 \textbf{Pre Practicum II (George Fox University)}
Supervisor: Clark Campbell, Ph.D.
• Conducted simulated psychotherapy with two undergraduate students (one male and one female) for one hour per week for ten weeks
• Received one hour of individual and one hour of group supervision per week throughout the term one hour

8/08 – 12/08 \textbf{Pre Practicum I (George Fox University)}
Supervisor: Clark Campbell, Ph.D.
• Conducted five simulated therapy sessions with classmates
• Obtained one hour per week of group oversight each week throughout the term

\textbf{RELEVANT EMPLOYMENT}

4/02 – Present \textbf{Staff Instructor for Thunder Elite All-Star Cheerleading}
• Coach and train approximately 100 children each year.
• Head coach of 20 nationally competitive cheerleaders who are two time back-to-back national champions at NCA Nationals in Dallas, TX
• Conduct training seminars for coaches state wide
• Offer private skills training for hundreds of children each year
• Travel with teams two to three times per year, for national competitions
• Maintain USASF level 5 certification

\textbf{RESEARCH EXPERIENCE}

2011 – Present \textbf{Research Assistant: Portland VA Medical Center}
Supervisor: Marilyn Huckans, Ph.D.
• Worked in small research team to conduct a longitudinal study that would help to determine whether individuals receiving antiviral therapy would evidence decline on the RIST
• Contributed in Data collection, analysis, writing and presentation
• Data has been accepted and will be presented at the 2011 National Academy of Neuropsychology

2010 – Present Dissertation Research: George Fox University
Supervisor: Wayne Adams, Ph.D.
• Conducting consultation research evaluating Providence Oncology and Hematology’s patient and physician’s predictive referral patterns for Hospice Care
• Data has been collected and will be evaluated by mid fall 2011

2010 Research Team: George Fox University
Supervisor: Wayne Adams, Ph.D.
• As second author contributed toward research design, data collection, analysis and final write-ups for a study that examined how athleticism of college athletes correlated with processing speed
• Data was presented at the 2010 National Academy of Neuropsychology

2010 Research Team: George Fox University
Supervisor: Dr. Mary Peterson, Ph.D.
• Administered consent forms, assent forms and pre- and post-tests (BASC-2 student, teacher ad children form; Physical Activity Scale; Sleep Habits Scale)
• Study examined teen-age females physical, mental and emotional well-being, before and after using the CAST curriculum

2008 – 2009 Research Team: George Fox University
Supervisor: Dr. Rodger Bufford, Ph.D.
• Worked in a small research team to investigate the need for stronger supervision guidelines within the APA ethical code
• Poster was presented at the 2009 Western Psychological Association

TEACHING EXPERIENCE

Teaching Assistant

2011 - Present Neuropsychology Teaching Assistant for Dr. Wayne Adams, Ph. D.
George Fox University
• Worked two hours per week teaching lectures and labs in the classroom to provide background instruction for the lab assignments
• Conducted the labs themselves each week by teaching the various neuropsychological administration of each test being emphasized over the week
• Worked between five to eight hours per week providing competency examinations for the administration of each test for all of the students.
• Helped write and edit, then grade, the neuroanatomy test for each student.

2005-2006

Anatomy Physiology Teaching Assistant
Oregon State University
• Worked six hours per week teaching lectures in the classroom to provide background instruction for the lab assignments
• Conducted the lab’s themselves each week
• Planned curriculum, then wrote and graded exams and quizzes
• Held two hours per week of office hours throughout the year
• Offered on hour per week of optional lab time to students who need additional support
• Data was presented at the 2010 National Association of Neuropsychology

Invited Lectures
2011
Introduction to Psychology, PSYCH 101, George Fox University, two lectures

PROFESSIONAL PRESENTATIONS


Supervision and the APA Ethical Code: Remediating an Oversight. Poster presentation at 
the April 2009 annual meeting of the Western Psychological Association Convention. 
Portland, OR.

**AFFILIATIONS, MEMBERSHIPS, AND LEADERSHIP**

<table>
<thead>
<tr>
<th>Year</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>2010 – Present</td>
<td>National Academy of Neuropsychology, Graduate Student Affiliate</td>
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<tr>
<td>2009 – Present</td>
<td>American Psychological Association, Graduate Student Affiliate</td>
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<tr>
<td>2009 – Present</td>
<td>Western Psychological Association, Graduate Student Affiliate</td>
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<tr>
<td>2009 – Present</td>
<td>Oregon Psychological Association, Graduate Student Affiliate</td>
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**HONORS & AWARDS**

- Oregon State University Dean’s List: 12 quarters
- National Society of Collegiate Scholars: 2002 – present
- Coached a four time National Championship Team 2006 – present
- Coached the first team from the Pacific Northwest to win at NCA Nationals (Feb. 2010 in Dallas, TX)
- Michael Warner Ministry and Service Award (May 2010; $818) George Fox University, 
  Newberg, OR - Ministry Award to conduct Learning Disability assessments to school-aged 
  missionary children in Tirana, Albania
- Christian Education for the International Community of Children (May 2010; $648) GDQ 
  School, Tirana, Albania - Ministry Award to conduct Learning Disability assessments to 
  school-aged missionary children in Tirana, Albania.

**VOLUNTEER WORK**

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
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<tr>
<td>2008 – Present</td>
<td>Homeless Shelter Food Preparation and Service</td>
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<tr>
<td>2004 - 2005</td>
<td>Pre-Dental Club: Chair Member</td>
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2004 - 2005  
**The Children’s Farm Home: Program Director for Short-Term Trial of Curriculum for Adolescent Females**  
- Mentored youth that had been placed in this residential care facility for emotionally disturbed children  
- Helped establish a program to develop positive self images for the behaviorally challenged teens  
- Selected and trained youth mentors who served as role models for at risk youth

2003 – 2004  
**Heartland Humane Society: Volunteer Vet-Tech**

2003 - 2004  
**Grade Schools in Corvallis Area: Reading Buddy**  
- Provided reading assistance to children in the classroom on a weekly basis

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**Clinical Trainings**

6/11  
Assessment of ADHD in Children and Adults: Steven J. Hughes, Ph.D., LP, ABPdN.  
George Fox University, Newberg, Oregon

3/11  
Neurobiological Effects of Trauma: Dr. Anna Berardi, Ph.D  
George Fox University, Newberg, Oregon

2/11  
Child Custody Evaluations: Not for Everyone. Review of Recent APA Practice Guidelines: Dr. Wendy Bourg Ransford, PhD.  
George Fox University, Newberg, Oregon

2/11  
Current Research and Best Practices for Treatment When Working with the LGB Population: Jennifer Bearse, M.A.  
George Fox University, Newberg, Oregon

10/10  
Best Practices in Multicultural Assessment: Dr. Eleanor Gil-Kashiwabara, Psy.D.  
George Fox University, Newberg, Oregon

10/10  
Trends and Opportunities in the Field of Professional Psychology: Dr. Judy Hall, Ph.D.  
George Fox University, Newberg, Oregon

10/10  
Primary Care Behavioral Health: Where Body, Mind, (& Spirit) Meet: Dr. Neftali Serrano, Psy.D.  
George Fox University, Newberg, Oregon
Outcomes Measures, Reimbursement, and the Future of Psychotherapy: Dr. Jeb Brown, Ph.D.
George Fox University, Newberg, Oregon

The Wechsler Memory Scale-4th Edition: Overview and Use with the Advanced Clinical Solutions for the Wechsler Scales: Dr. James A. Holdnack, Ph.D.
George Fox University, Newberg, Oregon

Current APA Guidelines in the Treatment of the Gay, Lesbian and Bi-sexual Population: Dr. Carol Carver, Ph.D.
George Fox University, Newberg, Oregon

Gratitude: Scientific, Clinical and Faith-based Perspectives
George Fox University, Newberg, Oregon

Crisis Response Team Training
Alder Creek Middle School, Clackamas Oregon

Multicultural Counseling – An Alternative Method: Carlos Taloyo, PhD.
George Fox University, Newberg, Oregon

Western Psychological Association 89th Annual Convention
Portland, Oregon

Understanding Learning Styles and Meeting the Needs of Students with Autism Spectrum Disorder: Gary Mesibov, Ph.D.
George Fox University, Newberg, Oregon

Patterns of Strengths and weaknesses in the SLD: What’s it all about? A Training in the Woodcock Johnson: Lee Ann Sharman, Ph.D.
George Fox University, Newberg, Oregon

WAIS-IV Module One - Verbal Comprehension and Perceptual Reasoning WEBINAR

International Psychiatry a Specialize Practice: David Kinzie, M.d.
George Fox University, Newberg, Oregon

Domestic Violence: Patricia Warford, PsyD
George Fox University, Newberg, Oregon

Substance Abuse: Robert Buckler, MD, MPH
George Fox University, Newberg, Oregon

Multicultural Issues in Psychotherapy: Derek McNeil, Ph.D.
Predictive Hospice Referral Patterns

George Fox University, Newberg, Oregon

9/08 Legal Issues in Psychology: Paul A. Cooney, Attorney at Law
George Fox University, Newberg, Oregon

TEST ADMINISTRATION AND SCORING TRAINING

Questionnaires

- Brief Attachment Screening Questionnaire (BASQ)
- Becks Depression Inventory (BDI-2)
- Becks Anxiety Inventory (BAI)
- Brief Pain Inventory (BPI)
- Behavior Rating Inventory of Executive Function – Adult Version
- Cognitive Failure Questionnaire (CFQ)
- Fatigue Severity Scale (FSS)
- Future Time Perspective Scale (FTPS)
- Generalized Anxiety Disorder Inventory (GADI)
- Healthy Behavior Readiness of Change Scale (HBRCS)
- Multidimensional Health Locus of Control (MHLC)
- Patient Health Questionnaire (PHQ-9)
- Strategies Used by Patients to Promote Health (SUPPH)

Adult Measures

- 16 Personality Factors – 5th Addition (16 PF)
- Behavior Rating Inventory of Executive Function – Adult Version
- Boston Naming Test – Revised
- California Verbal Learning Test – Second Edition (CVLT-II)
- Controlled Oral Word Association (COWA)
- Delis Kaplan Executive Function System – 20 Questions
- Delis Kaplan Executive Function System – Color Word
- Delis Kaplan Executive Function System – Sorting
- Delis Kaplan Executive Function System – Trail Making
- Grooved Peg Board
- House-Tree-Person Projective Drawing Technique (H-T-P)
- Halstead-Reitan – Aphasia Screening
- Halstead-Reitan – Booklet Category Test (A&I)
- Halstead-Reitan - Bilateral Simultaneous Sensory Simulation
- Halstead-Reitan - Finger Tapping
- Halstead-Reitan - Finger Tip Number Writing
- Halstead-Reitan - Grip Strength
- Halstead-Reitan - Seashore Rhythm Test
- Halstead-Reitan - Speech Sound Recognition
- Halstead-Reitan - Tactile Finger Recognition
Predictive Hospice Referral Patterns

- Halstead-Reitan - Tactual Performance Test (A&I)
- Halstead-Reitan - Trail A & B (A&I)
- Minnesota Multiphasic Personality Inventory-II (MMPI-II) (MMPI-Rf)
- Neuropsychological Assessment Battery
- Outcomes Questionnaire 45-Item (OQ-45)
- Personality Assessment Inventory (PAI)
- Peabody Picture Vocabulary Test – Fourth Edition (PPVT-4)
- Quality of Life in Alzheimer’s Disease
- Rey – O Complex Figure
- Repeatable Battery for Assessment of Neuropsychological Status (RBANS)
- Reynolds Intellectual Screening Test (RIST)
- Rorschach
- Rotter’s Sentence Completion Test
- Thematic Apperception Test (TAT)
- Test of Memory Malingering (TOMM)
- Wechsler Adult Intelligence Scale (WAIS – IV)
- Wechsler Memory Scale (WMS-IV)
- Woodcock Johnson 3 – Cognitive and Achievement
- Wide Range Achievement Test (WRAT)
- Wide Range Intelligence Test (WRIT)
- Wisconsin Card Sort (WCST)
- Wide Range Assessment of Memory and Learning – Second Edition (WRAML-2)

Child and Adolescent

- Achenbach System of Empirically Based Assessment
- Behavioral Assessment System for Children – Second Edition (BASC-2)
- Brief Rating Scale of Executive Function (BRIEF)
- Conners Rating Scales – Revised (CRS-R)
- Denver II
- Emotional Disturbance Decision Tree (EDDT)
- Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A)
- Piers-Harris Children’s Self-Concept Scale
- Roberts Apperception Test for Children (RATC)
- Wechsler Individual Achievement Test – Third Edition (WIATT – III)
- Wechsler Intelligence Scale for Children - Fourth Edition (WISC–IV)
- Wechsler Preschool and Primary Scale of Intelligence (WPPSI)
  Woodcock Johnson – Third Edition (WJ-III) (Achievement