

Research Article

## The Hospitalist-led Model of Oncology Inpatients in an Academic Health System: Perspectives of Hospitalists and Oncologists

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### Abstract

**Objectives:** The purpose of this study was to compare the perspectives of Hospitalists and Oncologists on Hospitalist-led inpatient oncology care.

**Methodology:** We developed two related surveys, one for Oncologists and one for Hospitalists. These surveys focused on perspectives, communication, and coordination of care. All Hospitalists and Oncologists in our academic health system were invited to participate in this study.

**Results:** A joint total of fifty-two hospitalists and oncologists completed the survey. Oncologists and hospitalists generally agreed that solid tumor patients should be admitted to an oncologist-led service and that the oncologist should lead the discussion of cancer-related concerns, although there appeared to be a misalignment with what happens in practice. Hospitalists indicated that most of the solid tumor patients admitted to their service were “end-of-life” and should have been in palliative/hospice care, while most oncol-

ogists reported that they only “occasionally” transitioned these patients to hospice in the in-patient setting. Overall, only 37% of hospitalists rated their overall experience of taking care of solid tumor patients as positive. Ratings indicated they wanted more input from the oncologists.

**Discussion:** The hospitalist-led model for managing solid tumor inpatients has been adapted in many cancer institutions across the United States. This study revealed that there is room for improved coordination of care and communication between hospitalists and oncologists, especially with end-of-life care. It would be very insightful to have both oncologist and hospitalist-led services and compare metrics for length of stay, mortality, readmission rates, transition to hospice care and physician and patient satisfaction.

**Keywords:** Hospitalist-led Model; Oncology

## 1. Introduction

### 1.1 Objectives

The primary purpose of this study is to assess the perspectives of both the hospitalists and the oncologists on the management of solid tumor patients. The secondary aim is to evaluate the satisfaction of both the hospitalist and oncologist on their respective communication and perceived level of involvement.

### 1.2 Study background

The hospitalist model for oncology patients has been shown to result in excellent quality of care which is cost effective [1]. Hospitalists are experts in high-acuity and emergent medical problems and are also knowledgeable about the operation of the hospital enabling efficiency in patient care [1]. A comparison of a hospitalist-led to an oncologist-led team in lung

cancer patients showed that both teams were comparable in terms of quality of care, average length of stay (ALOS), 30-day readmission rate and cost for patients discharged from both services [1]. Fanuci and colleagues reported a similar ALOS and in-hospital mortality when comparing a traditional oncology service model to a hematology/oncology subspecialist hospitalist model, but they found a lower 30-day readmission rate and higher rate of hospice referrals in the hospitalist model [2].

In a survey conducted in a tertiary cancer institute, oncologists agreed that hospitalists can diagnose and manage toxicities of cancer therapy and communicate with the patients and the respective oncologist in a competent manner [3]. This study also found that 70% of the oncologists believed that caring for inpatients with cancer was not an efficient use of their time and that having the hospitalist managing their inpatients allowed them to pursue other interests. The care provided by hospitalists is thought to be at least comparable to that of an oncologist in the inpatient solid tumor patient. From a value perspective, this allows oncologists to maximize their time in the ambulatory setting and active cancer treatment [4]. Benefits for the hospitalists for admitting oncology patients include RVUs (Relative Value Units) and teaching medicine residents and medical students [3].

A hospitalist model is most effective if there is close collaboration between the hospitalists and the oncologists. Improved patient safety and efficient care by the hospitalist have been shown to be affected by communication between the two services, and the implementation of a standardized handoff from the oncologist to the hospitalist led to improved communication between both services and satisfaction amongst

the hospitalists, and subsequent care of the patients improved [5]. The input of the oncologist for their patients, is imperative as studies have shown that high unplanned readmission rates in advanced cancer patients that are related to complications of the cancer would be reduced if patients are transitioned by their oncologist to palliative care [6]. Cancer patients with advanced disease who discuss end of life issues and understand their prognosis are less likely to receive life sustaining interventions and admissions by the Hospitalist and have a better quality of life [7]. Denes [8] and colleagues performed a study showing that a designated oncologist for in-patients improved patient satisfaction, teaching and faculty utilization and lends itself to developing clinical trials of oncology-led service inpatient care in academic centers. The perspectives of hospitalists and oncologists on the hospitalist-led model of inpatient care delivery at this academic health system with a tertiary cancer center are unknown. Therefore, this study was designed to understand the opinions of both the oncologists and the hospitalists with regards to inpatient care by hospitalists, with the goal of creating a work environment where the safety and patient outcome and quality of care is optimized.

## **2. Methodology**

We developed two related 10-item questionnaires, one for solid tumor oncologists and one for hospitalists, to assess perspectives on care, communication, and coordination of care in a hospitalist-led service for oncology inpatients. The questionnaire was based on (a) prior validation surveys about physician views of hospitalist care [9, 10], and (b) topics specific to cancer care. All questions were formatted with a 5-point Likert-type response scale. The questionnaires were distributed electronically using an online survey platform to all 32 solid tumor oncologists (including

oncologists who have their outpatient practice in satellite locations) and all 31 Hospitalists (excluding nocturnists) associated with our academic health system. This academic health system consists of two inpatient facilities, a 560-bed tertiary hospital, and a 40-bed cancer facility. This study was exempted by our local IRB.

For analytic and display purposes, we reduced the responses to a three-point scale and combined the percentages for the top two ratings (e.g., strongly agree and agree) and the bottom two (e.g., disagree and strongly disagree). Eight of the 10 questions and response options are displayed in Table 1. The other two questions differed slightly for hospitalists and oncologists. The hospitalists were assessed on their comfort level (very comfortable to very uncomfortable) with 1) managing acute cancer-related complications and 2) diagnosing and managing complications related to chemotherapy. Oncologist were asked to evaluate their views on hospitalist competency in managing patients with acute cancer related complications (strongly agree to strongly disagree) and their comfort level with hospitalists diagnosing and managing cancer patients with complications related to chemotherapy (very comfortable to very uncomfortable). From this, potential conclusions were derived from the perspectives of the Oncologists and the Hospitalists on inpatient Oncology care.

## **3. Results**

Twenty-nine hospitalists and 23 oncologists completed the survey (a 93.5% and a 71.9% response rate respectively). The first two questions focused on the comfort level of the hospitalist and the confidence level of the oncologist with the hospital-led model. Fourteen of the hospitalists (48.2%) were either comfortable or very comfortable with managing acute

cancer related complications, however only six hospitalists (20.7%) were comfortable or very comfortable with diagnosis and managing patients with complications related to chemotherapy. Fourteen oncologists (60.9%) either agreed or strongly agreed that hospitalists were competent in managing patients with acute cancer related complications, however only seven oncologists (30.4%) were comfortable or very comfortable with hospitalists managing complications related directly to chemotherapy.

Table 1 displays the results for the rest of the questions. Most hospitalists (65.5%) and oncologists (52%) agreed that solid tumor patients should be managed by an oncology-led service. Both hospitalists (100%) and oncologists (87%) agreed that the oncologist should handle discussing tumor or chemotherapy status (progression, no change, or improvement) with inpatients and their family. The perspectives of the hospitalists and oncologists differed on communication. Whereas 32.1% of hospitalists reported that they were very

frequently or always aided/guided by the oncologist with the acutely ill solid tumor patient for the entirety of their hospital stay, 73.9% of oncologists reported doing so. The figures for patients being admitted at the end-of-life were notably high. Among hospitalists, 86% reported that the solid tumor patients admitted to their service should be in palliative/hospice care. Of the surveyed oncologists, 87% reported the transition to hospice care in the inpatient setting did occur at least occasionally or very frequently. The experiences of the hospitalist and the oncologist differed as to whether managing solid tumor patients was a positive experience: 38% of hospitalists reported an overall positive experience in taking care of solid tumor patients, while 70% of oncologists reported that their overall experience with hospitalists taking care of their patients has been positive. Hospitalists in this study has fewer years of experience with 46% of the hospitalists being within three years post-residency completion and 70% of the oncologists having greater than ten years post-oncology fellowship experience.

Survey questions and response option* H=Hospitalist, O=Oncologist	Hospitalists (N=29)	Oncologists (N=23)
Solid tumor patients should be managed by an oncology-led service?		
Strongly agree/agree	19 (65.5%)	12 (52.2%)
Neither agree nor disagree	8 (27.6%)	7 (30.4%)
Disagree/strongly disagree	2 (6.9%)	4 (17.4%)
H: How often do you try to notify the primary oncologist directly when their patient is admitted to your service?		
O: How often do you get notified as the primary oncologist by the hospitalist when your patient is admitted?		
Always/very frequently	20 (69.0%)	12 (52.2%)
Occasionally	8 (27.6%)	5 (21.7%)
Rarely/never	1 (3.4%)	6 (26.1%)
H: How satisfied are you with the input of the oncologist? (N=28)		
O: How satisfied are you with your input into the management of your solid tumor		

inpatients?		
Very satisfied/satisfied	12 (42.9%)	14 (60.9%)
Neutral	12 (42.9%)	5 (21.7%)
Unsatisfied/very unsatisfied	4 (14.3%)	4 (17.4%)
H: Does the oncologist assist/guide you with the management of your acutely ill cancer patient for the entirety of the inpatient stay? (N=28) O: Do you assist/guide the hospitalist with the management of your acutely ill cancer patient for the entirety of the inpatient stay?		
Always/very frequently	9 (32.1%)	17 (73.9%)
Occasionally	14 (50.0%)	4 (17.4%)
Rarely/never	5 (17.9%)	2 (8.7%)
H/O: Oncologists should handle discussing tumor or chemotherapy status with inpatients and/or their family?		
Strongly agree/agree	29 (100%)	20 (87.0%)
Neither agree nor disagree		1 (4.3%)
Disagree/strongly disagree		2 (8.7%)
H: How often do you admit cancer patients that you believe should be in palliative/hospice care? O: How often do your cancer patients transition in the hospital setting to hospice care?		
Always/very frequently	25 (86.2%)	3 (13.0%)
Occasionally	3 (10.3%)	17 (73.9%)
Rarely/never	1 (3.4%)	3 (13.0%)
H: My overall experience taking care of solid tumor inpatients has been positive. O: My overall experience with hospitalists taking care of my patients has been positive.		
Strongly agree/agree	11 (37.9%)	16 (69.6%)
Neither agree nor disagree	15 (51.7%)	4 (17.4%)
Disagree/strongly disagree	3 (10.3%)	3 (13.0%)
How many years are you post-internal medicine residency/post-oncology fellowship completion?		
More than 10 years	4 (13.8%)	16 (69.6%)
3-10 years	12 (41.4%)	6 (26.1%)
Less than 3 years	13 (44.8%)	1 (4.3%)

\*Response options with a zero response rate are not displayed in the table

**Table 1:** Responses to Survey Questions for Hospitalists and Oncologists.

#### **4. Discussion**

The hospitalist-led model for delivering acute care to solid tumor patients has been adapted in many cancer institutions across the United States. In this study on the perspectives of the hospitalists and the oncologists on inpatient solid tumor cancer care, there were some areas of agreement but perspectives from the hospitalists and oncologists were also noted to differ on some pertinent issues. Though most of our hospitalists (65%) and oncologists (83%) believed that solid tumor patients should be admitted to an oncology-led service, several studies have shown that a hospitalist-led service may have better outcomes and may allow oncologist to spend their time more efficiently [3]. The oncologists and the hospitalists held differing views on the aspect of communication, particularly about “Notifying the oncologist” and “Being guided with inpatient care.” The hospitalists were largely not satisfied with the level of involvement of the oncologist with their inpatients and wanted more input. Improved patient safety and efficient care by the hospitalist has been shown to be impacted by communication between the two services, and the implementation of a standardized handoff from the oncologist to the hospitalist has been shown to lead to improved communication between both services and subsequently improved patient care [5]. Manzano [1] also showed that seamless communication between the two physician groups was necessary to ensure that the process of assigning patients was proper and efficient, and to ensure optimal patient handoffs. The vast majority of both the oncologists and the hospitalists agreed that the discussion of tumor/chemotherapy status and disease activity should be directly communicated by the oncologist.

Since most oncologists indicated that solid tumor patients should be managed by an oncology-led

service rather than a hospitalist-led service, it would be very insightful if we could have both services concurrently and measure and compare the metrics for length of stay, complications, mortality, readmission rates, transition to hospice care, and physician and patient satisfaction. The overwhelming majority of hospitalists reported that the solid tumor patients admitted to their service should have been in palliative/hospice care, and this is supported by the fact that most oncologists reported transitioning these patients to hospice care in the in-patient setting. Increased discussions with the Oncologists and their patients on end-of-life issues and involving palliative care would potentially reduce these admissions numbers significantly. Most of these patients would not seek emergent in-patient care, but comfort/hospice care. This is imperative as studies have shown that high unplanned readmission rates in advanced cancer patients that are related to complications of the cancer would be reduced if patients are transitioned by their oncologist to palliative care [6]. Furthermore, it was shown that cancer patients with advanced disease who discuss end of life issues and understand their prognosis are less likely to receive life sustaining interventions and admissions by the hospitalist and have a better quality of life [7].

Most hospitalists in this study did not find the experience of taking care of solid tumor patients to be positive. This is likely multifactorial in nature. First, most hospitalists did not feel fully supported by the oncologist with their solid tumor, acutely ill patients. Second, most hospitalists reported that the solid tumor patients admitted to their service should be in palliative/hospice care. Third, the hospitalists in this study had significantly fewer years of clinical experience than the oncologists. This study has limitations. This

study was conducted within one health system. We thus cannot assume our results have generalizability and applicability to other health systems.

## 5. Conclusions

Based on the results of this survey, the recommendations for this academic health system and other programs facing similar challenges are to develop a framework for discussion between the Oncology division and the Hospital Medicine division to enable efficient, optimal and a joint collegial approach to the care of these patients. Specific recommendations include:

1. Improved and seamless communication between the hospitalist and the oncologist to ensure standardized handoff to optimize patient care.
2. The transition from in-patient to hospice care occurs much too often. Cancer patients who discuss end-of-life issues with their respective prognosis receive life-sustaining therapies less often and have better quality of life near the end of life. Thus, increased discussions with the oncologists and their patients on end-of-life issues and involving palliative care in the out-patient setting would reduce these hospitalizations significantly.
3. Since most oncologists and hospitalists in this academic health system with a tertiary cancer center believe that solid tumor patients should be managed by an oncology-led service rather than a hospitalist-led service, it would be very insightful if we could have both services and measure and compare the metrics for length of stay, complications, mortality, readmission rates, transition to

hospice care, and physician and patient satisfaction.

4. The fact that hospitalists have fewer years of clinical practice in this institution than the oncologist should be factored in and there should be more involvement from the oncologist with their inpatients.

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