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Palliative Care in California:
The Business Case for Hospital-Based Programs

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Palliative Care in California:
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by
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About the Foundation

The **California HealthCare Foundation,** based in Oakland, is an independent philanthropy committed to improving California's health care delivery and financing systems. Formed in 1996, our goal is to ensure that all Californians have access to affordable, quality health care. For more information about CHCF, visit us online at www.chcf.org.

Contents

I. Introduction

The California HealthCare Foundation has commissioned *The State of Palliative Care in California Hospitals* to alert, educate, and advise health care administrators, and in particular hospital executives and their boards of trustees, about the fundamentals of palliative care and the operational requirements for launching a hospital-based palliative care program. The project is an important step toward increasing the number of hospital-based palliative care programs and thereby improving the overall quality of care for seriously ill Californians. The authors, members of the Palliative Care Program at the University of California, San Francisco and nationally recognized leaders in palliative care training and education, have created a series of reports, each dedicated to a different aspect of the substance and structure of palliative care programs.

This report describes the business case for hospital-based palliative care services. It explains the costs and benefits to hospitals of operating a comprehensive palliative care service and shows how those benefits can be demonstrated. As with all program plans, financial projections should be reviewed with the organization's finance and compliance officers.

Previous reports in the series introduced the concept of palliative care, explained the structures of hospital-based palliative care services, discussed challenges and barriers to creating and sustaining such services, and reviewed innovative programs and best practices in the field in California and the nation.

A more complete description of the entire project may be found in the series' *Overview of Hospital-Based Programs.* That overview includes an exposition of the need for hospital-based palliative care services in California, an analysis of the state of palliative care in California hospitals, and a comprehensive synopsis of the other three reports in the series.

II. The Business Case for Hospital-Based Palliative Care

The primary purpose of creating a hospital-based palliative care service is to improve the quality of care delivered to patients with serious, life-threatening, or terminal illnesses. The main goal is not to save money. However, it is usually the case that tailoring care to reflect patient and family preferences has the secondary effect of reducing hospital costs. Shorter hospital and intensive care unit (ICU) stays, lower daily inpatient care costs, and increased use of hospice and non-acute care resources are all means by which palliative care services help hospitals reduce costs. The business case for palliative care is built on the premise that the reductions in hospital costs resulting from the palliative care intervention will meet or exceed the cost of staffing and running the service. The payer mix and resource use patterns common to populations of patients who would benefit from palliative care are such that "cost avoidance" is almost always an appropriate, reasonable, and scalable means of justifying allocation of the resources needed to support a hospital-based palliative care service.

MISPERCEPTION #1: **It Costs Lots of Money to Start a Palliative Care Service**

As this report explains in detail, this is simply not the case. Consultative programs in particular require relatively little start-up funding. While most, and preferably all, palliative care team members will need salary support, the investment is entirely scalable. In a large urban hospital setting, two to four full-time equivalents (FTEs) might be needed to run a palliative care service that sees 200 to 400 patients in its first year of operation. However, such a service would generate cost savings proportionate to the number of patients it sees, and could expect to cover all expenses through avoided costs. Palliative care services at small hospitals see fewer patients, and generate less savings, but need fewer FTEs and require less funding.

The Cost of Caring for Patients with Serious, Life-Threatening, or Terminal Illness

National data indicate that enormous resources are being invested in the care of patients with serious, life-threatening, or terminal diseases. More than 25 percent of Medicare program expenditures are directed to the care of people in the last year of life, with half of those dollars being spent in the 60 days immediately preceding death.[1] In 2002, 5 percent of Medicare beneficiaries accounted for 48 percent of annual program spending and the costliest quartile accounted for 88 percent.[2] These high-cost beneficiaries tended to be patients with multiple chronic conditions, those with acute care admissions, and those who were in the last year of life. A similar pattern exists in California, with a minority of seriously ill patients consuming a disproportionate share of health care resources.[3] As shown in Table 1, average length of stay (ALOS) and average charges per case for patients who die in the hospital, and for patients who have similar clinical conditions, are significantly higher than average charges for all other stays.

The link between high cost of care and severity of illness is easily explained. Room and care costs resulting from long inpatient stays, in particular long stays in critical care beds, are key cost drivers for seriously ill patients. So, too, are the high costs of the goods and ancillary services associated with high intensity care, which reflect extensive use of pharmaceuticals, supplies, materials, laboratory studies, diagnostic and interventional radiology, and respiratory care services. The treatment process drives costs associated with managing these patients' often complex and multifaceted conditions even higher. Preventing or managing complications, such as hospital-acquired and ventilator-associated pneumonias, pulmonary emboli and deep vein thromboses, catheter-related blood stream infections, ICU neuropathy, malnutrition, pressure ulcers, and other complications common to patients with extended, high intensity stays, adds to the burden of illness and the cost of care.

While differences in ALOS, costs per case, and costs per day are most dramatic when data from all live-discharges are compared to data from mortality cases, elevated resource use is also common in patients with serious, life-threatening, or terminal illnesses who are discharged alive. Palliative care-appropriate patients who are discharged alive tend to have the same conditions seen in patients who die in the hospital (advanced cancer, advanced liver or kidney disease, heart failure, etc.), and typically account for about half the population seen by a palliative care service.[5] Use in this palliative care-appropriate, live-discharge population is modeled in Table 1 by presenting data on patients discharged alive who were assigned to one of the 25 most common diagnosis-related groups (DRGs) seen in patients who died in the hospital. Though daily costs in this group are lower than those of mortality cases, average costs per case are higher and ALOS is longer than those seen in the general live-discharge population.

Because resource use analyses typically focus on specific clinical conditions or clinical service lines (e.g., cardiothoracic services, liver transplant, oncology, etc.), many hospital administrators have never considered palliative care-appropriate patients, specifically "patients who die" and "patients with serious, life-threatening, or terminal illnesses,"

Table 1. Resource Use among 2.7 Million Adult Patients Discharged from California Acute Care Facilities, 2004

	DEATHS	PATIENTS DISCHARGED ALIVE WITH 25 MOST COMMON DEATH DRGs	ALL OTHER LIVE DISCHARGES
# Cases	71,078	477,998	2,115,217
% Age 65+	72%	63%	32%
ALOS (days)	9.21	6.54	3.74
Average Charges per Case*	$112,075	$53,641	$33,633
% All Adult Cases	3%	18%	79%

*Based on 2,347,594 adult discharges with reported charges (88 percent of all adult cases in the dataset).

Source: Authors' analysis of Office of Statewide Health Planning and Development (OSHPD) California Patient-Discharge Data: January to December 2004.[4]

as a distinct population. However, such patients, referred to in this report as the palliative care "target population," have distinct resource use patterns characterized by frequent admissions, long lengths of stay, and high costs per case. They also have a common set of needs, including clarifying treatment goals, expert pain and symptom management, and help accessing care across multiple settings. Palliative care services can help meet the needs of target-population patients and, in doing so, alter the volume and types of resources used by this group.

How Palliative Care Influences Resource Use

The skills and services provided by a palliative care team—expertise in symptom management, proactive communication, and complex discharge planning—not only help to assure the patient's comfort, but also reduce unnecessary resource use. A hallmark of palliative care is provider willingness and ability to discuss with patients and their families the expected progression of disease and the quality-of-life costs and benefits associated with possible interventions. Many clinicians, even those who frequently care for terminally ill patients, are uncomfortable or unskilled at discussing these critical issues.

Palliative care teams couple expertise in assessing and managing uncomfortable symptoms with a clinical perspective that prioritizes patient comfort and discourages providing redundant or unproductive care. Hospital-based care is largely designed to diagnose and cure disease, and the management of uncomfortable symptoms is often a forgotten or under-pursued goal. Critically reviewing each provided service both assures high-quality care (e.g., adequate dosing of medications to ensure optimum pain control) and reduces hospital costs (e.g., discontinuing daily lab tests or facilitating transfer from a critical care bed when those services do not further treatment goals).

A Proactive Approach to Improve End-Of-Life Care in a Medical ICU for Patients with Terminal Dementia[6]

Investigators at Detroit Receiving Hospital (Detroit, MI) studied the effects of a proactive case-finding approach to end-of-life care facilitated by an inpatient palliative care service. The study focused on critically ill patients with terminal dementia admitted to a medical ICU. Once patients were identified, the palliative care team worked with patients or their surrogates to clarify goals of care, assisted with discussions of prognosis and treatment options, and helped implement palliative care strategies when treatment goals changed. Intervention group outcomes were compared to those of historical controls (26 patients in each group). The proactive case-finding approach decreased both average hospital LOS (12.1 ± 1.6 vs. 7.4 ± 1.4 [mean ± SE], $p < 0.007$) and average ICU LOS (6.8 ± 0.98 vs. 3.5 ± 0.5, $p < 0.004$). Intervention group patients were also more likely to adopt comfort measures only (CMO) goals at the same time that the first do-not-resuscitate (DNR) order was written ($p < 0.001$). The proportion of in-hospital mortalities in the two groups was not significantly different. The Therapeutic Intervention Scoring System (TISS) was used to measure resource use. TISS scores decreased significantly after the DNR order was written in both the control and intervention groups, but scores in this post-DNR order period were significantly lower for intervention group patients, an indication that the palliative care intervention led to larger reductions in daily costs once treatment goals changed (16.89 ± 1.8 vs. 8.65 ± 1.5, $p < 0.001$). The intervention was deemed to be an effective means of reducing the use of non-beneficial resources while providing the patient and family increased comfort and emotional support.

In addition to having the skills and knowledge necessary to tailor treatments to patient needs and preferences, palliative care providers are able to influence care because they have the time to do so. Workloads in the typical acute care facility are such that many providers have difficulty finding the 60 to 90 minutes required for a family meeting at which goals of care are thoroughly discussed. Members of a dedicated palliative care team, on the other hand, expect to spend their time initiating and managing such interactions and allocate their time accordingly.

The benefits of such communication-focused interventions often extend beyond a single hospital admission, as clarifying plans of care can reduce family anxiety, which might in turn reduce the frequency of emergency readmissions.[7] Moreover, because most palliative care teams follow patients throughout the course of the hospital stay, they are able to assess and respond to changes in patient status that signal a need to modify the plan of care. At times, patients for whom death was thought to be imminent improve to a degree that discharge to home, a skilled nursing facility (SNF), or inpatient hospice becomes the preferred course of care. The availability of a palliative care team to make the necessary disposition arrangements can avoid discharge delays and unnecessary hospital days. Alternately, in cases where decline in patient function might otherwise delay discharge from the acute care setting, the palliative care team has the knowledge and skills necessary to rapidly arrange for the home, hospice, or SNF-based services needed to keep patients comfortable.

MISPERCEPTION #2: **Costs Always Go Down in the Days Preceding Death**

For a typical acute care stay, it is very often the case that costs go down in the final days of the hospital stay. Major diagnostic and therapeutic tests, and critical care, typically occur early in the hospital stay, with intensity of care and costs declining as the patient is readied for discharge. This pattern is not, however, typical of patients who die in the hospital. For example, for patients who die at the University of California, San Francisco's Moffitt-Long Hospital, costs in a patient's final days in the hospital are typically quite high. They are dramatically lower, however, when the palliative care service (PCS) is involved. Using data from 2002 to 2004, the palliative care team compared average daily variable costs for the final three days of stay for 718 patients who died and spent no time on the PCS, to average daily variable costs for 153 patients who died and spent the entirety of their final three hospital days under the care of the PCS. Table 2 shows the tremendous difference between PCS daily costs and usual care daily costs.

Table 2. Average Daily Variable Costs, Final Three Days Preceding Death

COST CATEGORY	NON-PCS CASES	PCS CASES	DIFFERENCE
Room and Care	$837	$412	($425)
Pharmacy	$793	$31	($762)
Other Services	$616	$16	($600)
Supplies	$230	$24	($206)
Laboratory	$138	$7	($131)
Radiology	$57	$2	($55)
All Costs	$2,671	$492	($2,179)

Source: Authors' analysis of hospital use data.

Hospital Revenues and Costs

Hospital-based palliative care programs are not designed to attract new revenue-generating business. Rather, they provide services to patients who have already been admitted to the hospital, and clinical revenues for those cases typically do not change as a result of the palliative care intervention. Instead, palliative care programs contribute to the bottom line by improving the efficacy and efficiency with which complex cases are managed, contributions that usually reduce the quantity of goods and services consumed during a given hospital stay. Cost avoidance works as a basis for the palliative care business case because the high resource use common among patients who would benefit from palliative care is typically coupled with a revenue structure that does not vary according to the volume and cost of services provided in the course of a particular hospital stay. Compensation for acute care services is such that hospitals are generally rewarded for controlling costs, either by reducing expenses within a given stay or, in some cases, by avoiding admissions entirely.

Revenue Models for Inpatient Care

Different facilities use different methods for evaluating the interplay of number of patients seen, types of services rendered, revenues collected for those services, and the net effect of reducing the cost of inpatient care. For present purposes, two categories of acute care hospitals are considered: those with fixed "global budgets," where funding does not vary according to the volume of services provided in a discrete time period; and those with "utilization-based budgets," where revenues vary according to the number of patients who access hospital services, the types of services provided, and the mix of payers who compensate the hospital for those services.

Global budgets. Some hospitals, notably the Veterans Health Administration facilities and some integrated health delivery systems (such as Kaiser Permanente), operate under a global-budget structure. Rather than collecting payments for each care episode, individual facilities receive a fixed amount of funding (from the federal government or parent organization) that is intended to cover all operational expenses in a given time frame.[8,9] The funds allocated to individual facilities are based on the number of patients the site expects to care for and the types of services it expects to provide, adjusted (at times radically) according to the resources the larger organization makes available for distribution. Individual sites must then allocate these fixed resources to match patient needs, regardless of volumes or costs.

Hospitals operating under a global-budget structure are particularly incented to manage resource use. Reductions in costs associated with one type of service (e.g., pharmaceuticals supplied to patients who die in the hospital) create the opportunity to shift resources to other services (e.g., a hospital-based palliative care team, prenatal care, or heart failure clinic), allowing the hospital or health system to better meet the needs of the populations they serve. Because money saved in one setting is redirected to other settings, services like palliative care that improve the efficiency of care delivery are often considered revenue neutral, but still excellent investments in that quality is improved at no additional cost.

A Randomized Controlled Trial of an Inpatient Palliative Care Service[10]

Investigators at Kaiser Permanente recently conducted a randomized controlled trial of an inpatient palliative care service. Outcomes were evaluated for 512 patients enrolled in three regions. Patients were randomized to receive care from an inpatient palliative care service (IPCS) consisting of a palliative care physician, nurse, social worker, and chaplain, or usual care from a hospitalist. Subjects were followed for six months after the index hospital admission. There were no differences in survival between the IPCS and usual care groups. However, IPCS patients reported better pain management as well as greater satisfaction with symptom management, control over their health care choices, and communication with their health care providers. They also completed significantly more advance directives at hospital discharge.

Compared to controls, IPCS patients had significantly:

- Fewer ICU stays ($p = 0.04$);
- Longer hospice lengths of stay ($p = 0.01$);
- Lower costs for hospital readmissions ($p = 0.001$);
- Lower costs for outside referrals (provider services outside of the health plan, such as, durable medical equipment, oxygen services, radiology, and physician consultations) ($p = 0.03$).

Compared to IPCS patients, usual care patients had significantly:

- Fewer home health visits ($p = 0.02$)
- Fewer outpatient visits ($p = 0.001$)
- Lower outpatient pharmacy costs ($p = 0.04$)
- Lower outpatient costs ($p = 0.05$).

Overall there was a $65.18 per patient per day ($p = 0.07$) cost savings for IPCS patients (roughly $2,280 in total cost savings per enrolled patient). IPCS teams are now operating as ongoing, inpatient consultative services at all three sites.

Utilization-based budgets. For most institutions, compensation for acute hospital care comes from a variety of sources. Some care is paid for by publicly administered programs such as Medicare and Medi-Cal, and hospitals that care for large numbers of financially disadvantaged uninsured patients receive some funding from public sources to offset the cost of care. A sizable proportion of other care is covered by private insurance. Within this budget context, hospitals contract with individual payers to determine the amount of compensation provided for each service unit. Contracts vary in how the service unit is defined (by hospital admission, by day, by patient, by procedure) and in the amount paid for each unit. Also, in a small number of "self-pay" cases, patients pay, or at least are responsible for, costs incurred for their care. This combination of revenue streams, known as the "payer mix," and the range and volume of services provided, determines the revenues the institution collects.

Payers

Medicare

Traditional "fee-for-service" Medicare coverage uses a prospective payment system, where a fixed amount ("case rate") is paid for all hospital services provided during a stay. To determine payment, hospital administrative data describing the patient's clinical condition and the services rendered during the hospitalization are used to assign each case to a DRG. Each of the nearly 500 DRGs represents a set of conditions that are clinically similar and have similar levels of expected resource use. The compensation rates for each DRG are based on national data describing average lengths of stay and average costs for that DRG, adjusted for regional differences. Except in cases where incurred costs are extraordinarily high, DRG payments are not influenced by the actual cost of a given hospitalization. For a small number of exceptional high-cost cases (about 5 percent of all Medicare claims), however, hospitals can receive supplemental "outlier payments"[11,12] that cover a portion of costs in excess of a fixed-loss threshold (a dollar amount by which the cost of a case must exceed the fixed payment). Under the case-rate prospective payment system, hospitals at risk for expenses in excess of the fixed DRG payments are financially rewarded for controlling costs for Medicare admissions.

Medi-Cal

About half of California's more than 6 million Medi-Cal enrollees are covered under a fee-for-service system; the rest are in managed care programs.[13,14] For both types of programs, payments to hospitals typically are less than the cost of providing inpatient care. Because of this low compensation rate, hospitals are rewarded for controlling costs for Medi-Cal admissions.

Commercial Insurance

Many patients, including Medicare beneficiaries and Medi-Cal recipients enrolled in the managed care options, rely on commercial health care insurance. A very small percentage of commercial payers offer indemnity or pure fee-for-service coverage, where hospital charges are paid in full. The vast majority of commercial coverage in California is administered in a managed care model,[15] in which payers contract with hospitals to provide care to covered patients. Payment rates are negotiated with each hospital or health system and typically reflect a discount on the hospital's usual charges. The most common commercial insurance payment mechanisms are described below.[16]

> **Case rates.** As with the Medicare DRG system, case-rate compensation is structured according to fixed rates, which reflect the expected cost of providing care for particular types of diseases or procedures. Negotiated payments are based on a payer-specific fee schedule or Medicare reimbursement rate (e.g., 105 percent of DRG rate, 95 percent of DRG rate, etc.). As with Medicare, the amount of payment does not vary according to actual resource use or hospital costs. Because they are at risk for expenses in excess of the fixed payment amount, hospitals are rewarded for controlling daily costs and

minimizing LOS when services are reimbursed on a case-rate basis.

Negotiated per diem. In this model, payment is based on a contracted daily rate, which might be adjusted according to the intensity of care provided. Because payments are fixed, hospitals are rewarded for monitoring resource use during the stay. Also, payers may deny payment for days they deem to not meet criteria for acute care services, a control designed to motivate hospitals to monitor LOS. While palliative care interventions that shorten hospital stays result in reduced hospital revenues, these losses might be offset by a reduction in the number of target-population bed days that per diem payers decline to cover. Typically, palliative care teams are adept at supplying thorough and informed documentation of patient status and care needs. A palliative care chart note that documents the continuous assessment and management needs of a gravely ill patient who is unstable for transport is much more likely to provide the information needed to justify the hospital day than is the all too common "condition unchanged, continue comfort measures" notes by non-palliative care physicians often found in the charts of target-population patients.[17]

Capitation. In this model, the hospital provides a defined portfolio of services to covered patients in exchange for per-member/per-month payments. Payments are based on actuarial estimates of average health care costs for defined populations over time. Payments are made on a monthly basis and are not directly linked to service volumes, actual costs, or a fee schedule. Because per-patient revenues are fixed, the hospital is at risk for the cost of health care services and is rewarded for controlling costs. Relatively few hospitals have large, full-risk populations, but those that do generally support services like palliative care that are designed to control resource use while maintaining or improving the quality and scope of care.

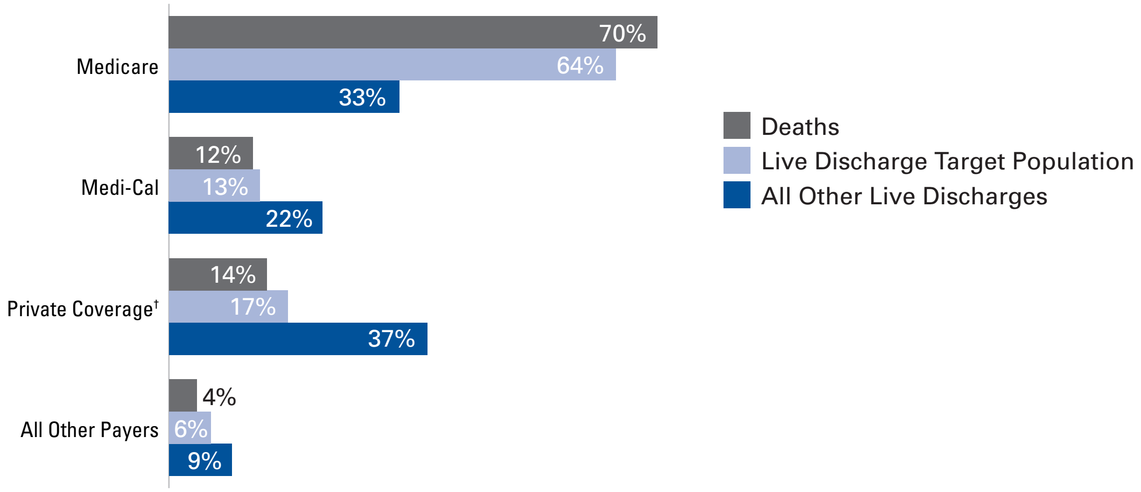
Discounted fee-for-service (DFFS). In this model, hospitals are paid a percentage (typically 30 to 80 percent) of usual charges. Because revenues are tied to resource use, fiscal benefits resulting from a palliative care intervention are typically limited to those derived from increasing hospital capacity. For example at an institution that is turning away cases because of limited ICU capacity, transferring palliative care patients out of critical care beds to a lower intensity setting would create revenue-generation opportunities. This payment model is rare among major payers.

MISPERCEPTION #3: **Cost-Avoidance Won't Work for Us Because We See Lots of Fee-for-Service Patients.**

Even in hospitals where a substantial percentage of patients carry fee-for-service insurance, the payer mix for palliative care-appropriate patients almost always differs from that of the general hospital population. Patients with advanced, complex illnesses tend to be older, meaning that Medicare is by far the most common payer for these patients. As shown in Figure 1, a full 70 percent of patients who die in California hospitals have Medicare as a primary payer, as do over 60 percent of palliative care-appropriate live discharge patients. An analysis of the business case for a palliative care service should always include review of the payer mix for the palliative care "target population" — a simple exercise that can dispel misperceptions about revenue losses that would result from reducing costs.

With the exception of indemnity insurance and discounted fee-for-service, the cost-revenue relationship created by the above-described payment models is such that hospitals are rewarded in one way or another for controlling the cost of acute care services. Further, the payer mix for palliative care target-population patients tends to be enriched for Medicare (Figure 1), so even at sites where indemnity insurance or DFFS contracts account for a significant share of all hospital admissions, this is not likely to be the case for most patients cared for by a palliative care service.

Figure 1. Payer Mix for Adults Discharged from California Acute Care Facilities: Deaths, Live-Discharge Target-Population Patients* and All Other Live Discharges



*Patients discharged alive who were assigned to one of the 25 most common DRGs for patients who died in the hospital. About half of the patients seen by a hospital-based palliative care service come from this group.

†Payment covered by private, nonprofit, or commercial health plans, whether insurance or other coverage. Excludes workers compensation, county indigent programs, and other government payers, all of which are included in the "All Other Payers" category.

Source: Authors' analysis of OSHPD California Patient Discharge Data: January to December 2004.[18]

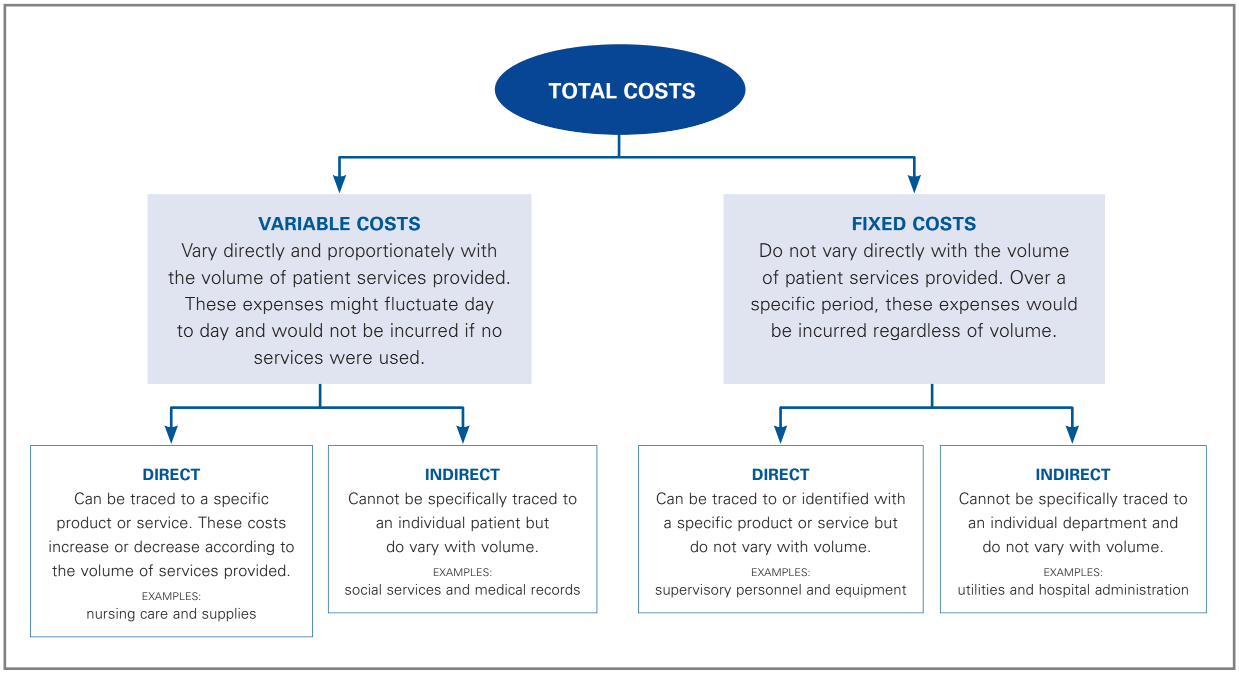
Hospital Costs and Palliative Care Services

None of the above-described reimbursement models includes a mechanism for paying hospitals specifically for palliative care services. Rather, hospitals receive payment according to the DRG fee schedule or terms of a negotiated contract, and it is expected that those monies will cover all rendered services, curative or palliative. The palliative care business case is based on the rationale that the benefits derived from reducing costs in the setting of fixed reimbursements will more than offset the expense of running the program.

In this regard, it should be noted that only a portion of avoided costs will be available to offset service expenses. As shown in Figure 2, total hospital costs include two major components: fixed costs, which do not vary directly with volume; and variable costs, which vary directly and proportionately with the volume of services provided. For example, the total cost of administering a dose of antibiotics will include the cost of the drug and the effort of the individuals who prepared and administered it (variable costs). Added to those costs are, among other things, a portion of the cost of purchasing and running the refrigerator the drug was stored in, and a portion of the salary of the hospital administrator who oversees purchasing (fixed costs). If the order to administer the drug is cancelled (as with a palliative care intervention), the hospital saves the money it paid the supplier for one dose of antibiotics (or the hospital sells that dose to someone else), but it still incurs the capital and labor costs of maintaining a drug storage and administration infrastructure.

Most palliative care services are not large enough to influence expenses associated with the larger hospital infrastructure (i.e., fixed or indirect costs). Therefore, at most sites cost savings estimates are based on the variable or direct component of hospital costs, which typically reflect 40 to 60 percent of total costs. Many hospital accounting systems are able to track and report costs by major component. Sites with less robust accounting systems use calculated ratios to estimate the variable or direct portion of total costs

Figure 2. Components of Hospital Costs



(e.g., charges × 0.50 = total costs; total costs × 0.55 = variable costs).

Medicare Outlier Payments and Palliative Care Services

Some administrators worry that the financial benefits of incrementally reducing the costs associated with extended-stay and high-use Medicare cases will be wiped out by an accompanying reduction in revenues. They fear that total case costs will still be high, but not high enough to meet criteria for Medicare outlier payments. Hospitals should consider lost outlier payment revenues when analyzing the net benefits conveyed by a palliative care service. But because outlier payments are meant to cover only a portion of incurred costs, in most cases lowering costs still delivers a significant financial benefit, even if doing so leads to a slight reduction in revenues. Review of a hypothetical case (see below), based on the "Outlier Example" presented on the Centers for Medicare and Medicaid Services (CMS) Web site,[19] can help illustrate this point.

Outlier Payments and Palliative Care: a Hypothetical Case Study

In the CMS Web site's Outlier Example, approved Medicare charges totaled $125,000, with a DRG payment of $23,254. The calculated loss was large enough to qualify for an outlier payment of $6,946, which covered 17 percent of the difference between hospital costs and the usual DRG payment.

Hospital Costs*	– $63,750
DRG Payment	$23,254
Outlier Payment*	+ 6,946
Total Payment	$30,200
Hospital Loss (calculated costs – total payment)	– $33,550

*Calculated using standard CMS methods.

Outlier Payments and Palliative Care: a Hypothetical Case Study, continued

Considering how costs were most likely distributed throughout the hospitalization can help demonstrate how a palliative care service intervention might improve the bottom line, even if revenues are reduced. The CMS example doesn't offer this detail, but assume the patient was admitted to the medical ICU, had a ten-day hospital stay, and died in the hospital. OSHPD data show that ALOS for mortality cases is 9.2 days and average costs-per-case are $112,000, so these estimates seem reasonable. Day one costs were probably elevated, due to expenses incurred in the emergency department and for tests done on admission. Costs for days two through nine, spent in the ICU, were a bit lower. Assume that late on day nine the medical team notified the family that "nothing more can be done," and that on day ten the patient was transferred to an acute care bed, where he died shortly before midnight.

Day One Cost (most expensive day)	$8,000
Average Daily Cost, Days Two through Nine (all spent in the ICU)	$6,500
Day Ten Cost (in an acute care bed)	$3,750

Now compare an alternative scenario, where on the evening of day five the attending physician called for a palliative care (PC) consultation, which occurred the following morning. The PC team evaluated the patient, spoke with the attending physician, and had an extended discussion with the patient's family, after which it was agreed that the patient would be transferred to an acute care bed in the palliative care unit. By day eight, the patient's symptoms were fully controlled, an effective regime for maintaining comfort had been identified, and the family agreed to have the patient discharged to a SNF with a palliative plan of care, which occurred on day nine.

Assume that average daily costs were 50 percent lower after transfer to the PC unit (this is a conservative estimate for patients transferred from the ICU; Smith et. al.[20] reported a 79 percent reduction in such cases). Hospital costs for days one through five would be unchanged. Hospital costs for day six, the day of transfer, would be somewhat lower, reflecting the fact that half the patient's day was spent in the ICU, and half the day was spent on the PC service.

Total Costs, Days One through Five	$34,000
Day Six Cost (transfer day; half day spent in ICU, half on PC service)	4,875
Total Costs, Days Seven through Nine (all days spent on PC service)	+ 9,750
Total Cost with PC Intervention	$48,625

Because the patient was discharged on day nine, day ten costs were eliminated. Assuming for purposes of this example that the hospital is busy, but not near capacity, the PC intervention can be credited with saving 25 percent of the day ten costs (assumes that 75 percent of the costs came from nursing and other labor expenses, which might be hard to recover given the occupancy rate).

Loss (cost with PC – DRG payment)	– $25,371
Credit (25 percent of day ten cost)	+ 938
Adjusted Loss	– $24,434

Assuming further that 50 percent of the losses incurred in both scenarios represent variable costs, it can be seen that the hospital is better off lowering expenses and foregoing the outlier payment.

Variable Portion of Loss	
…with Outlier Payment	– $16,775
…with PC Intervention and No Outlier Payment	– $12,217
Difference	$4,558

The hospital could have enjoyed significantly greater benefit had the palliative care team become involved in this patient's care earlier in the course of illness. Patients with serious illnesses often have multiple hospital admissions in the last year of life. Had the palliative care team been consulted prior to the terminal admission, the patient might have been admitted directly to the palliative care unit instead of the ICU, or the admission might have been avoided,[21] changes which would have reduced or eliminated the $12,000 loss.

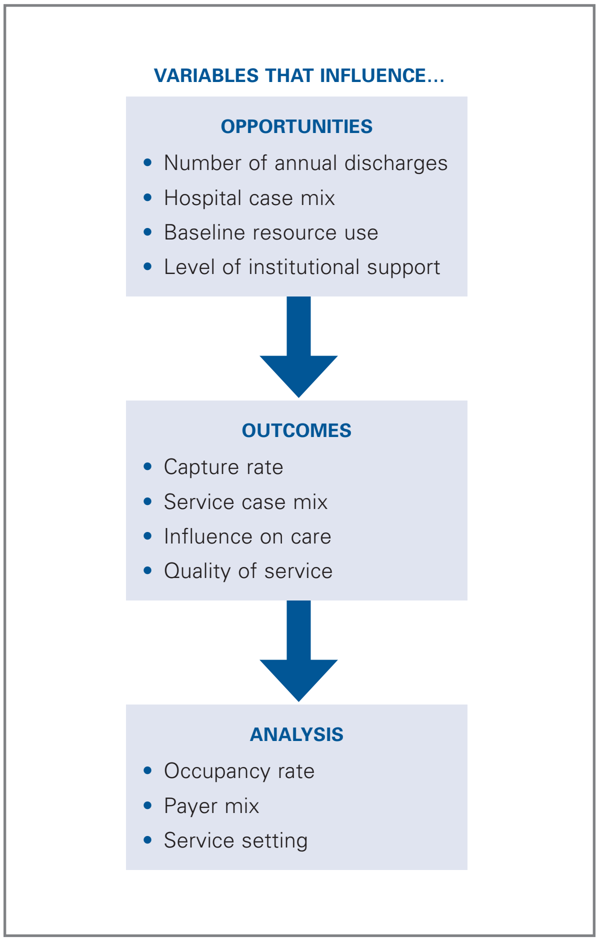
Analyzing Financial Outcomes Related to Palliative Care

Variables that Influence Financial Results

The degree to which a palliative care service is able to influence resource use and reduce hospital costs will vary from site to site. Such variation is the result of differences in the volume and magnitude of possible change (opportunity), the degree to which change is realized (outcomes), and the organizational characteristics that influence the value assigned to those changes (analysis) (Figure 3).

Opportunity. A palliative care service's financial opportunity—that is, the amount of cost savings it could achieve—depends on the number of patients in the target population and the "usual" level of resource use for that population. This opportunity factor is most influenced by institutional and patient population characteristics. The number of discharges per year is the most significant determinant of the number of target-population patients a palliative care service might see. Case mix also has an effect, as severity of illness tracks to LOS, intensity of resource use, and need for palliative care. Baseline resource use, which reflects both severity-of-illness and site-specific practice patterns, is also key. The longer the "usual-care" ALOS, the greater the potential savings in bed days and room and care costs. A trend of lengthy ICU stays, for example, indicates an opportunity to facilitate transfers to a lower intensity environment, while high daily costs regardless of setting indicate an opportunity to reduce use of laboratory tests, pharmaceuticals, radiology studies, and other ancillary services.

Figure 3. Variables that Influence Financial Results



Opportunity is the product of volume and magnitude. Cost reductions sufficient to support a service can be achieved by having a significant effect on relatively few cases, a modest effect on many cases, or a mix of both. Because they tend to have longer ALOS and higher daily costs, mortality cases often offer the greatest opportunities for cost reduction, and savings generated from such cases can "pay for" services provided to target-population patients whose baseline resource use is less elevated.

The level of institutional support also influences opportunity. Though palliative care services staffed largely with "volunteer effort" might enjoy short-term success, unfunded or under-funded services will have a much harder time achieving and maintaining the level of visibility, availability, and engagement necessary to attract referrals or effect real changes in patient care. That is to say, a service that has staffing adequate to consult on 100 patients a year will be able to provide comprehensive, timely service to those patients, regardless of the size of the target population.

Outcomes. This concept describes the degree to which a service is able to take advantage of opportunities. Capture rate, the proportion of target-population patients the service actually sees, along with the severity-of-illness and baseline resource use of those patients, are key outcome drivers. If the service sees relatively few patients, or if patients are seen very late in the hospital stay (e.g., the day before discharge or death), reduction in resource use is likely to be minimal. Outcomes also reflect the degree to which the team is able to influence the course of care after the referral takes place, a variable of particular concern to consultation services, as recommendations that are not followed will have no impact. Team composition (number of disciplines represented, in particular the presence of a physician) and referring provider perceptions of the palliative care team's clinical expertise might also affect the number of patients referred, and the willingness of the referring providers to follow recommendations. Palliative care team staffing can also affect outcomes: A well-staffed service is able to see patients earlier in their hospital stays, thereby increasing the interval during which the team can influence care.

Marketing, Education, and Responsiveness

Marketing and educational efforts aimed at the providers most likely to refer patients to the palliative care service can be an effective means of maximizing capture rate and influence. Providers who care for large numbers of target-population patients need to be educated about the benefits palliative care can offer them (e.g., a reduction in the amount of time they will have to invest in managing complex discharge arrangements) and their patients. Being mindful of the needs and concerns of referring providers will increase the likelihood of repeat referrals, earlier referrals, and adoption of recommendations. For palliative care consultation services, perceptions of service availability and responsiveness will be heavily influenced by service staffing. In addition to being more visible on hospital wards, services with seven-day-a-week staffing are able to respond to referral requests sooner than can those where staffing is more limited.

Many palliative care services have successfully guaranteed a minimum number of referrals or increased their capture rates by adopting policies that trigger palliative care consultation whenever certain criteria are met. Examples of such triggers include orders for feeding tube placement for patients with dementia, a seven-day or greater stay in a critical care unit, more than 96 hours of mechanical ventilation, or at some sites any admission to certain clinical services (e.g., radiation oncology.) Palliative care teams that work with case managers or committees that monitor patients with extended stays often find that many if not most of these patients are appropriate palliative care referrals.

Outcome Data for a Hospital-based Palliative Care Consultation Service[22]

Leaders of the palliative care consultation service based at Montefiore Medical Center (New York, NY) reported impressive outcomes achieved by their service in its first 18 months of operation. The service is staffed by three palliative care physicians, two specialist nurse practitioners, two social workers, and a pastoral care worker. Outcomes were evaluated for the 592 patients cared for by the service between November 2000 and March 2002. Standardized medical record reviews indicated that over 90 percent of palliative care team recommendations were acted on by the primary team. These recommendations addressed advance care planning, pain management, advance directives, discharge plans, and symptom management and resulted in significant financial outcome benefits: review of hospital charges showed substantial reductions in charges for ancillary tests ($p < 0.001$), ventilator charges ($p < 0.001$), and total charges ($p < 0.001$) after palliative care consultation. The service also positively impacted satisfaction. Of family members who responded to a caregiver satisfaction survey, 95 percent reported that they would recommend the palliative care service to others. Referring providers also reported high satisfaction and the service now sees over 20 percent of the patients who die in their hospital.

Analysis. The methods used to assign value to resource use changes vary according to the occupancy rate, payer mix, and service setting of the institution that is conducting the analysis. Sites that have high occupancy rates and a significant investment in improving patient flow tend to be keenly interested in analyses that demonstrate LOS reductions. Sites with open beds and a relatively short baseline ALOS usually look elsewhere for financial benefits. Differences in payer mix also influence the net benefit of cost and LOS reductions. For example, a community hospital with a high occupancy rate and a payer mix that is enriched for case-rate contracts realizes both operational and fiscal benefits when target-patient LOS is reduced (improved patient flow and filling of empty beds with revenue-producing patients). On the other hand, a busy county facility, where patients might have to wait a long time in the emergency department for a hospital bed, might be very interested in the operational benefits LOS reductions promise, but might realize no revenue benefits if the emptied beds are filled by patients who have no health insurance. For integrated systems, the value assigned to the palliative care intervention might incorporate an analysis of changes in use across multiple settings. For example, the inpatient palliative care intervention might result in earlier or more frequent referrals to hospice, which conveys financial benefits in both the acute care and hospice settings.

Reducing Costs with a High-Volume, Specialist Palliative Care Unit[23]

Leaders of the Thomas Palliative Care Unit at Virginia Commonwealth University's Massey Cancer Center (Richmond, VA) recently reported financial outcomes achieved by their inpatient palliative care unit (PCU) in its first six months of operation. The dedicated 11–bed inpatient unit is staffed by palliative care specialists. Clinical practice guidelines and order sets are used to standardize care. Outcomes were evaluated by comparing daily charges and costs for days prior to PCU admission to charges and costs incurred during the PCU stay, and with a case-control study that matched 38 PCU patients by diagnosis and age to comparable patients who died outside the PCU and were cared for by other medical or surgical teams. Chart reviews verified that disease status, predictability of death, and type of treatment (e.g., medical vs. surgical) were similar in the case and control groups. For the 123 patients with both non-PCU and PCU days, daily charges and costs were reduced by 66 percent overall, and reduced 74 percent in "other" cost categories (medications, diagnostics, etc.) after transfer to the PCU ($p < 0.0001$). Case-control study findings showed significant savings for patients who died in the PCU: daily charges were 59 percent lower ($5,304 ± 5,850 vs. $2,172 ± 2,250 [mean ± standard deviation, $p = 0.005$), direct costs were 56 percent lower ($1,441 ± 1,438 vs. $632 ± 690, $p = 0.004$), and total costs were 57 percent lower ($2,538 ± 2,918 vs. $1,095 ± 1,153, $p = 0.009$).

Calculating Cost-Avoidance Benefits

Analyzing financial outcomes for most health services is a relatively unambiguous process: Revenues generated by a clinical service are compared to the costs of providing care, with the difference denoting the profit or loss. Evaluating financial outcomes for palliative care is less straightforward. Because palliative care is commonly provided to patients who have already been admitted to the hospital, there is a need to distinguish changes in the course of care that can be attributed to the palliative care intervention from changes that are typical of usual care practices. For example, most patients admitted to the ICU are eventually transferred to acute care beds, and in most cases daily costs go down (at least a little) once treatment goals change. Cost-avoidance benefits are achieved when such changes occur more frequently, rapidly, or to a greater degree following the palliative care intervention.

Most cost-avoidance analyses include the following three steps:

Step 1: Evaluate usual care and palliative care cases to identify changes in resource use that can be attributed to the palliative care intervention. Resource use changes are typically measured in two ways: intra-admission comparisons where use before the palliative care intervention is compared to use after the intervention; and comparison of palliative care patient outcomes to those of comparable usual-care patients.

Step 2: Assign value to resource use changes using actual cost or charge data, or by assigning monetary values to data abstracted from medical records. Value assignments might consider differences in daily costs before and after the palliative care intervention, profitability analyses that consider costs and revenues, benefits associated with LOS reductions, or a combination of these.

Step 3: Calculate net benefits by adjusting value estimates to reflect service payer mix or cost/revenue changes incurred in other settings, as needed.

The process might work through a variety of models, depending on the nature of the institution, the size and scope of the palliative care service, and the institution's accounting practices and capabilities. Variants in the process, plus a number of the operative models, are set out in detail and explained in Appendix A to this report, "Methods for Calculating Financial Outcomes."

Generating Savings Estimates for a Proposed Service

In some cases, new palliative care services are launched without major consideration being given to expected financial performance. Rather, alignment with system or institutional mission, a feeling that palliative care is the "right thing to do," is considered ample justification for funding the service. However, many hospitals and systems will not provide institutional support for a proposed service in the absence of evidence that it is likely to be revenue neutral or revenue positive. It is, therefore, often necessary to generate estimates of probable financial outcomes. The same variables that influence actual financial results (opportunities, outcomes, and analysis) should be considered when generating estimates of financial performance for a proposed service

Estimating the Number of Target-Population Patients

Estimating the number of patients a proposed service might see begins with generating an estimate of the total number of target-population patients.[24] As shown in Table 3, several methods can be used. Most estimates are based on the assumption that all or most of the patients who die in the hospital are in need of palliative care services, such that 75 to 100 percent of inpatient deaths can be included in the target population. This number is doubled to generate a total target-population volume estimate, a

Table 3. Methods for Estimating the Number of Target-Population Patients

METHOD	COMMENTS
Number of deaths × 2	Assumes all patients who die in the hospital would benefit from a palliative care intervention, and that the proposed service will see an equivalent number of live discharges.
Number of deaths × 75% × 2	Assumes that some mortality cases (e.g., those with very short stays, some trauma admissions) would not be referred to the proposed service, but still assumes mortality cases would comprise about half of all referrals.
Percentage (5–10%) of all discharges	Assumes that a certain percentage of all discharges, regardless of disposition or diagnosis, have symptom control and advance care planning needs that would merit involvement of a palliative care team.
50% of all cases with a principle diagnosis of cancer and an equivalent number of non-oncology cases	Assumes that half of oncology patients who are admitted to the hospital have advanced disease and would benefit from a palliative care intervention, and that patients with cancer comprise half of all service patients.

step that accounts for the fact that about half of the patients seen by palliative care services are discharged alive (the actual percentage varies according to site specific characteristics such as acuity of patient population, practice culture, and availability of hospice services).[25] Some sites instead base their estimates on a percentage of all discharges (e.g., 5 to 10 percent of all patients seen), or on specific diagnoses (e.g., half of all oncology cases and a different but equivalent number of non-oncology cases).

Processing Target-Population Data

Once the target population has been defined, hospital administrative data describing population demographics, clinical characteristics, and baseline resource use can be collected and evaluated. Appendix B details administrative data commonly used to evaluate financial outcomes for actual or proposed services. It is generally helpful to gather data on all deaths as well as on patients discharged alive with similar clinical conditions (as defined by DRG, principal diagnosis, or severity-of-illness or risk-of-mortality scores).

Estimating Capture Rate

First year capture rates, the proportion of target-population patients the service actually sees, are typically in the 20 to 40 percent range. Variables that influence capture rates include total hospital ALOS (the shorter the ALOS, the harder it might be to capture referrals), the proposed staffing model (services that are staffed seven days a week have more opportunities to capture referrals), the quality and intensity of marketing and educational efforts, and the presence of referral triggers. A less quantifiable but equally important consideration is the degree to which senior clinical and administrative leaders and front-line staff members are supportive of the proposed service. If attending physicians and hospital staff are sold on the benefits a palliative care service can provide, both to patients and to themselves, then the referral rate is likely to be high. Staff frustration with care currently provided to target-population patients (perceptions that care is often futile, that symptom control is poor, or that care plans are not clear) might help create an environment that is conducive to a high referral rate.

The reputations of individual palliative care team members might also influence capture rate. Teams that are led by individuals who already command the respect of hospital colleagues will be likely to have greater initial success than teams that are led by individuals who are new to the institution or who have yet to establish themselves as excellent clinicians and leaders.

Capture rates for well-run services tend to rise over time. A hospital-based service can expect to see relatively fewer patients in its first year of operation, when staff time will be heavily invested in educational efforts, marketing, outreach, and other program development tasks. Services that prove responsive to referring-provider needs can expect repeat business and an increase in referral rates over time. Further, as programs mature, referrals tend to come earlier in the course of illness, creating an opportunity to see patients over the course of multiple admissions.

Estimating "New Consultations per Week"

One fairly simple way for team members and administrators to check the reasonableness of the projected capture rate for a new program is to consider the number of new consultations per week that would be generated, based on the estimated yearly census. An estimate of a target population of 500 and a 25 percent capture rate in the first year would result in 125 new consultations per year, or about 2 to 3 per week.

Identifying Cost-Avoidance Opportunities and Estimating Savings

Estimates of the degree to which interventions by a hospital-based palliative care service will influence resource use should begin with a review of administrative data. Average costs per case, ALOS, use of critical care beds, readmission rates, distribution of costs across hospital departments, frequency of outlier cases (very long LOS or very high costs), and other encounter-level data can provide a useful picture of resource use among target-population patients. In addition, data describing hospitalwide variables such as occupancy rate for all beds, occupancy rates in critical care units, and ALOS in critical care units, can help determine the degree to which enhanced hospital capacity should be evaluated as a potential financial benefit.

Findings from analysis of aggregate data are typically supplemented with more detailed analysis of data describing daily costs by hospital department, and/or with analysis of data derived by reviewing the charts of a representative sample of target-population patients. Such chart reviews often reveal instances where a palliative care team intervention likely would have changed the course of care (e.g., high costs resulting from a very long hospital stay, itself the result of suboptimal communications with the patient family, a problem likely to have been addressed by a palliative care team). Similarly, review of physician orders might identify cases where diagnostic or therapeutic interventions could have been eliminated in the setting of imminent death or of treatment goal changes.

Evaluating costs generated by each type of hospital service — room and care, pharmaceuticals, radiology, laboratory, etc. — makes it possible to connect probable changes in clinical care to estimates of cost avoidance. For example, aggregate data might show that average daily pharmaceutical cost for target-population cases was $300. Review of the specific charges might indicate that eliminating drugs that did not further treatment goals (as those goals might have been redefined with the help of a palliative care team) could have reduced average daily pharmaceutical costs by $250. Such analyses can be used to generate estimated post-intervention day costs. Actual outcomes will vary significantly from site to site, but most programs report daily savings per patient in the $300 to $1,300 range.[26]

Average number of post-intervention days also should be estimated. As shown in Figure 4, such estimates are usually generated by evaluating the current ALOS for target-population patients and estimating how long such patients would be in the hospital before referral to palliative care is likely to occur.[27] This figure is adjusted depending on the absence or presence of automatic referral triggers and/or a staffing structure that would be expected to delay response to some consultation requests (e.g., service staffed only Mondays, Wednesdays and Fridays). Further, if target-population baseline ALOS is relatively long (e.g., ten days), then the post-intervention ALOS estimate should be adjusted to include an expectation of overall LOS reduction.

Figure 4. Sample Estimate of ALOS of Target-Population Patients on Palliative Care Service[28]

As shown in Table 4, estimating total avoided costs is ultimately a matter of combining several specific calculated estimates (described above) about the number of patients the service is likely to see, the number of days those patients would be on service, and the savings generated by the difference between baseline and post-intervention daily costs.[29]

Table 4. Sample Estimates of Total Cost-Avoidance Savings

Number of target-population patients	500
Capture rate (program year 1)	25%
Number of cases (target population × 25%)	125
Days on service per case	4.5
Total expected days on service (all patients) (125 patients × 4.5 days)	563
Variable cost savings per day	$400
Variable cost savings per year (563 days × $400/day)	$225,200

Cost of Staffing and Running a Service

Most palliative care services are designed so that the cost of staffing and running the service is less than the total costs avoided as a result of the service's efforts. For both consultation services and inpatient units, salary and benefit costs for the clinical team and administrative support staff are the largest expense. Other expenses include costs of advanced clinical training for the palliative care team, developing and disseminating marketing and educational materials for referring providers, developing and disseminating patient education materials, and patient amenities. Such expenses should be included in program budgets and adjusted as needed to account for staff turnover and program growth. Nearly all costs are scalable, meaning that sites that see relatively few patients and generate modest savings require proportionately less financial support to staff and run a service.

Consultation Services

The number of patients a consultation service sees and the number of days those patients spend on the service are key variables in determining staffing needs. For proposed services, capture rate estimates can also be used to affect staffing decisions. Service volume and expected ALOS estimates can be used to generate an average daily census estimate (number of cases per year × ALOS ÷ 365), which can then be used to estimate staffing needs.

The number of disciplines included on the consultation team, the service structure, and the team's ability to leverage existing hospital resources influence costs of staffing a consultation service. Services should include representatives from multiple disciplines, including physicians, nurses or advanced practice nurses, and social workers. In addition, most teams include bereavement or pastoral care counselors, and often include pharmacists, rehabilitation (physical and occupational) therapists, psychiatrists or psychologists, and patient advocates. The amount of dedicated effort needed from each team member and the amount of dedicated funding required to cover that effort varies according to how core service tasks are distributed among team members. For example, referral requests might be triaged by a physician, advanced practice nurse, nurse, or social worker. In cases where referrals are deemed appropriate, any one of several team members might perform the initial patient evaluation. When estimating staffing needs for a proposed service, a two-step projection might be most useful: First, consider projections of average daily service census figures across a range of possible capture rates, then, project effort needed from each discipline, taking into account the role defined for that individual in the proposed service model. Time allocated for patient care should include the effort needed to participate in daily multidisciplinary patient care rounds. Non-patient care tasks that should be included in estimates include time needed for developing and maintaining a service database, developing and maintaining a coverage schedule, and arranging and attending team meetings.

In some cases, administrators who are not comfortable providing permanent budgeting for dedicated palliative care full-time equivalents are willing to restructure job descriptions of existing staff members to include dedicated availability for a palliative care service. Such arrangements are often used in the early stages of a service's development, when the referral base is not large enough to generate the savings needed to cover the cost of multiple FTEs.

Inpatient Units

Start-up and fixed operating costs for inpatient palliative care units are much higher than those for a consultation service. Staffing levels need to be higher, and must be maintained 24 hours a day, seven days a week.[30] Units, however, have the advantage of collecting patient care revenues (vs. professional fee revenues only) for the services they provide. They also enjoy more control over patient care, making it possible to consistently influence daily use and LOS. Having access to a central location also makes it easier for the palliative care service to train unit staffers, use guidelines and order sets, and use rooms specially designed to maximize patient and family comfort.

Unit size influences costs and profitability. Typically, units need to have at least eight to ten beds and operate at 70 to 80 percent occupancy in order to be cost-efficient. Most services find that 50 percent of the patients referred to palliative care are appropriate candidates for transfer to an inpatient unit.[31] The enrichment for Medicare case-rate payments that is typical of palliative care patient populations means that cost efficiency diminishes as LOS increases, particularly for patients transferred to the unit after a prolonged stay in another hospital care setting. Conversely, patients directly admitted to palliative care units have costs that are reliably lower than expected values.

The relatively large number of target-population patients needed to generate enough admissions to support an inpatient unit means that such units are less common in small hospitals. When the hospital patient population is not large enough to support an inpatient unit, swing beds or "virtual units" can provide many of the benefits conferred by dedicated units without the high fixed costs. Swing beds are preferentially made available to palliative care patients but may be used by any acute care patient if the palliative care census is low. Swing-bed units typically do not operate under a dedicated budget; rather they are integrated into an existing hospital unit (e.g., a medical-surgical ward), such that unit staffing and operational costs are carried by the unit as a whole. Sharing unit beds with other services (e.g., oncology) is another way of protecting against losses incurred when beds are empty.[32]

Professional Fee Billing

Professional fee billing can be an important revenue source for palliative care providers and programs.[33] Physicians can bill for consultations and follow-up visits using standard Current Procedural Terminology (CPT) procedure/service codes and International Classification of Diseases-Ninth Revision Clinical Modification (ICD-9 CM) diagnosis codes. Collection rates for palliative care services are usually equivalent to those of other local consultative services. Nurse practitioners who provide care in the inpatient setting can generally bill in the same manner, with payments typically calculated as a percentage of physician rates (e.g., 85 percent of Medicare).

Procedure and service codes. "Evaluation and Management Codes" are used for billing most palliative care services. Codes are selected according to type of service provided (e.g., initial or subsequent visit) and the intensity or complexity of the exam. More complex and time-intensive exams are compensated at a higher rate. If more than 50 percent of a patient/physician interaction consists of counseling and providing information, as is often the case with palliative care patients, code selection might be based on the duration of the exam. "Prolonged service" codes (99356–99357) might be used to bill for services that last longer than the time allotted to standard initial and subsequent visit codes.[34]

Diagnosis codes. Palliative care providers typically use ICD-9 codes that reference symptom management or other needs distinct from the primary diagnosis ICD-9, which is generally used by the attending/referring physician (Table 5). Two physicians of the same specialty (Internal Medicine, for example) may bill on the same day (concurrent management), even using the same CPT code, so long as different ICD-9 codes are used and the need for services is adequately documented.[35] The Center to Advance Palliative Care (CAPC) Web site has information and tools to assist with appropriate billing for palliative care (www.capc.org).

Table 5. Diagnosis Codes Frequently Used by Palliative Care Providers[36]

Agitation	307.9
Anorexia	783
Anxiety	300
Cachexia	799.4
Coma	780
Confusion	298.9
Constipation	564.1
Cough	786.2
Debility	799.3
Delirium	293
Diarrhea	558.9
Dyspnea	786.1
Fever	780.6
Headache	784
Hemorrhage	459
Hiccups	786.8
Inanition	263.9
Malaise	780.8
Mental status change	780.1
Nausea	787
Nausea & vomiting	787
Pain: abdomen	789.1
Pain: arm or foot	729.5
Pain: back	724.2
Pain: bone	733.9
Pain: chest	786.5
Pain: hip	719.5
Pain: muscle	729.1
Pain: neck	723.1
Pain: non-specified	781
Pain: sacroiliac	724.6
Pruritus	698.9
Sleep disturbance	780.5
Vomiting	787
Weakness	780.7
Weight loss	783.2

III. Managing Institutional Responses to Financial Estimates

Providing data estimating the positive, or at least neutral, financial effects of instituting a hospital-based palliative care service might be met with skepticism or resistance regardless of how well-founded and well-documented the data are. It is therefore important for those who wish to initiate a palliative care service to anticipate such resistance, and to formulate effective responses to it.

Responses to Cost-Avoidance Estimates

Much of the analysis of a palliative care service's potential for cost avoidance is based on, and ultimately consists of, estimates—of the degree to which daily costs might be reduced, the number of patients who will be referred, the degree to which the palliative care team's recommendations will be followed, and so on. The number of variables leads some financial leaders to conclude that cost-avoidance estimates are "too soft" to justify supporting a proposed service. Conceptual objections to cost avoidance can also be a barrier. That is, financial leaders simply might not believe that avoided costs truly benefit the institution (as one chief financial officer put it, "I can't spend avoided costs.").[37]

Such objections often can be overcome by a simple review of historical cost data, which is likely to show that the institution has routinely spent millions of dollars on target-population patients, that these individuals consume far more resources than other patients, and that in the absence of an intervention designed to alter the way these patients are managed, such spending is likely to continue indefinitely. It is also often useful to supplement estimates of total predicted cost savings with an estimate of minimum success required to cover program costs. For example, if average variable costs for an ICU day are $900 more than average variable costs for an acute care day, the palliative care team would have to "avoid" only 100 such days to cover a $90,000 hospital investment in the program. If historical data show that many patients in the target population have ICU stays in excess of ten days, the team might be able to achieve those savings by influencing the care of only a few dozen patients.

Responding to Skepticism about Cost Avoidance

- **Review historical spending:** The numbers usually show that improvement is possible, and needed.
- **Calculate minimum savings needed to cover program costs:** The team might need to influence the care of only a few dozen patients to create enough savings to cover program costs.
- **Find out what would be convincing:** Ask administrators what type of data (for example, outcomes from a small pilot palliative care service) they would find persuasive, then obtain those data.

Differences between Expected and Actual Outcomes

Overestimates of Avoided Costs

There are several reasons why actual financial outcomes might fall below expectations. The problem might lie with lower than expected actual capture rate. If so, marketing and educational efforts might need to be intensified, and consideration should be given to adopting referral triggers. Surveying potential referring providers about why they are not using the service, or surveying providers who have not made repeat referrals after an initial encounter, can provide valuable information about possible service improvements. If service volume is adequate, then records should be reviewed to determine the degree to which service recommendations are being followed. If primary providers are not complying with recommendations, then the service should try to increase follow-up contacts. Alternately, it might be that assumptions were wrong about the types of patients who would be referred. Predicted outcomes might have been based on the assumption that half of all referrals would come from high-intensity environments. Savings will be lower than expected if most of the actual referrals are coming instead from non-intensive care settings. Increased efforts to broaden the referral base might remedy this problem, as might efforts to encourage earlier referrals.

Underestimates of Program Volume

While some programs initially struggle to attract referrals, many sites might be overwhelmed by rapid growth. In such situations, rapid intervention to increase service staffing is needed, as staffing deficiencies can lead to program failure. Insufficient resources can limit the palliative care team's ability to engage with and follow patients, which diminishes the service's ability to influence clinical care, which, in turn, results in reduced financial impact. Equally damaging is referring physicians having to wait several days for their patients to be seen, or the palliative care team lacking adequate time to assess and meet patients' needs. In either situation, referrals would probably decline or disappear.

In most cases, higher-than-expected volume will yield increased fiscal benefits, so data-based requests for additional funding in these situations are typically well received. The hospital administration should be alerted that if volume estimates are low, or if the initial funding request was only partially met, that staffing levels might quickly fall below needed levels. Hospitals could mitigate the difficulty of accurately predicting service volume and the consequences of understaffing by agreeing to review the program's funding as soon as certain milestones are hit, even if this occurs in the middle of a budget cycle.

Operational and Non-Financial Benefits

Palliative care teams should stress operational and non-financial benefits when making their presentations to hospital leaders regarding the business case for palliative care. Improved patient satisfaction and quality of care are commonly referenced measures of a palliative care program's value. Improved clinical outcomes and patient satisfaction do not directly convey financial benefit, but most hospital leaders care deeply about such measures and are pleased to support programs that create improvements.

Shortened LOS typically conveys operational benefits, even in settings where financial benefits are marginal. Sites with very high occupancy rates often will embrace any strategy designed to improve patient flow, recognizing the toll emergency department and ICU back-up can take on quality of care, and on staff and patient satisfaction.

Palliative care services might also point to increased physician satisfaction, an outcome that is of particular value in areas where occupancy rates are low and hospitals compete for admissions. Physicians who see their patients receiving high-quality care, and who are able to delegate time-consuming communication and assessment tasks to the palliative care team, might favor directing admissions to sites with palliative care services.

Finally, palliative care services can improve staff satisfaction. While many variables influence staff satisfaction, eliminating frustration resulting from providing futile or disorganized care can certainly contribute to more satisfied nurses and staff physicians.

IV. Conclusions

Many hospital administrators have recognized the clinical value palliative care services provide to patients with advanced illness and their families. However, because these services do not generate new revenue, and because some start-up costs are required, financial considerations have acted as a barrier to creating palliative care services at some sites. Fortunately, clinicians and others seeking to create and maintain a dedicated palliative care service can develop data to make the business case for hospital-based palliative care. The payer mix and resource use patterns common to populations of patients who would benefit from palliative care are such that supporters of a proposed hospital-based service can usually demonstrate cost avoidance sufficient to justify allocation of the resources needed to support the service. Moreover, nearly all service costs are scalable, with sites that expect to see relatively few patients and to generate relatively modest savings requiring proportionately less financial support to staff and run a service. This means that even for smaller hospitals, or for those that serve fewer patients, the establishment of a palliative care service can be not only a clinically wise but also a financially sound institutional decision.

Appendix A. Methods for Calculating Financial Outcomes

Cost-avoidance analyses used to quantify palliative care service financial contributions typically include the following three steps:

1. Evaluation of usual care and palliative care outcomes to identify changes in resource use that can be attributed to the palliative care intervention.
2. Assignment of value to those changes by using actual cost or charge data, or by assigning monetary values to resource use data abstracted from medical records.
3. Calculation of net benefits by adjusting value estimates to reflect service payer mix or cost/revenue changes incurred in other settings, as needed.

Documenting Changes in Resource Use

Resource use changes are typically measured in the following two ways: intra-admission comparisons where use before the palliative care intervention is compared to use after the intervention and comparison of palliative care patient outcomes to those of comparable usual-care patients.

Intra-admission comparisons. If the hospital cost accounting system can generate daily cost values, as many do, analyzing costs before and after the palliative care intervention can be easy. Such systems also can usually report distribution of daily expenses across major use categories (room and care, pharmaceuticals, diagnostic and interventional radiology, etc.), and such data can be used to link cost reductions to palliative care practice (e.g., judicious use of pharmaceuticals, laboratory studies, and any type of invasive intervention).

When detailed cost data are not available, it is possible to document daily resource use by reviewing medical records, using an abstraction tool to track acuity of care, physician orders, interventions, diagnostic testing, etc. When data must be collected manually, it is usually most efficient to incorporate the variables needed to measure financial outcomes into a rounding tool that can also serve as a clinical care resource. If bedside data collection is not possible and data must be collected retrospectively, abstractions are often limited to a random selection of representative cases (e.g., sampling referrals received from different hospital locations or services) or to discrete time periods (e.g., evaluating all referrals from alternate months).

While abstractions that measure all provided services are preferable, focused abstractions that track only the services thought to have the most influence on cost of care (e.g., unit type and pharmacy orders) can be used instead. More comprehensive datasets will describe the following:

- LOS in ICU, step-down or telemetry units, and acute care units;
- Use of mechanical ventilation, Bilevel Positive Airway Pressure/Continuous Positive Airway Pressure (BiPAP/CPAP) and other respiratory care services;
- Total parenteral nutrition (TPN and tube feeding);
- Number and type of medication orders;
- Number and type of radiology studies; and
- Number and type of laboratory tests.

At a minimum, data should be collected for the day immediately prior to the palliative care intervention and for the entirety of the post-intervention period. Differences in use in the pre- and post-intervention periods can be expressed as differences in the number and types of resources used, or resources can be counted to generate estimated daily cost values.

Control group comparisons. Because palliative care patients have serious and often terminal illnesses, patients included in comparison groups must have similarly complex and severe conditions. Some combination of the below listed variables are usually considered when matching controls to palliative care patients:[38]

- DRG (readily available, but an imprecise measure of severity-of-illness);
- Disposition (e.g., death);
- Age (generally in 5 to 10 year cohorts);
- Major illness type (e.g., metastatic cancer, cardiac disease, neurological disorders);
- Number of co-morbidities and/or complications;
- Number of organ systems involved;
- All Patient Refined DRGs (a disease classification system that includes severity-of-illness and risk-of-mortality indices).[39]

Matching according to DRG is convenient, but DRGs alone are poor measures of severity-of-illness.[40] More precise matching can be achieved if DRG assignment is coupled with variables like age or disposition, but even then medical record data should be reviewed to ensure equivalency. All Patient Refined DRGs (APR-DRGs), which use the number and significance of secondary diagnoses to assign severity-of-illness and mortality-risk values, generate more precise matches.[41] However, not all hospitals have the software needed to generate APR-DRGs, and even medium-sized hospitals might have difficulty matching palliative care patients to a statistically significant number of usual care patients with equivalent APR-DRG assignments and severity-of-illness scores. Limiting the analysis to patients who died (palliative care patients compared with all others) is the easiest and most accessible means of matching cases.

Once an appropriate comparison group has been identified, "usual care" resource use can be determined. Average costs per day, ALOS in critical care units, and readmission rates are commonly used as comparison points. For example, if on average comparison group patients spend three days in a critical care unit, then a portion of the savings generated when a patient is directly admitted to a palliative care unit could be described as the difference between the cost of three ICU days and the cost of three palliative care unit days.

Even when the control and palliative care groups have similar demographic and clinical characteristics, simple comparisons of average total costs per case are rarely useful and are often misleading. Palliative care patients often spend many days, weeks, or even months in the hospital before the service is called, and high costs incurred prior to the intervention will mask palliative care contributions if comparisons are based on the entire hospital stay. Comparing the post-intervention portion of the stay for palliative care patients (e.g., the final three to five days) to the same period for the control group will offer more useful information.

Use changes for patients who are discharged alive, particularly those with less advanced disease, are often evaluated by measuring total expenses incurred over a period of months following the initial palliative care contact. Such an analysis might identify cases where palliative care-facilitated advance care planning resulted in subsequent admissions that were shorter or less costly. Some admissions could be avoided entirely. For example, acute care costs for the last three months of life for heart failure patients where death occurred three or more months after the initial palliative care intervention could be compared to total costs for the last three months of life for heart failure patients who received usual care.

Assigning Value to Changes

Once changes in resource use have been measured, values can be assigned to those changes and net benefits can be calculated. To a large extent, hospital accounting system capabilities determine the method used. Sites whose accounting systems can track daily variable costs, or that use severity-of-illness calculations to generate expected daily cost values, have more options than do sites that must base cost estimates on manually collected use data. Further, the nature of the palliative care intervention (consultation service or unit, direct admission, or mid-admission transfer) determines whether the net benefit calculation can be based on revenues vs. costs, benefits associated with LOS reductions, benefits derived from cost avoidance, or a combination of such methods.

Acting on Assigned Value Calculations

Financial and clinical leaders usually collaborate to identify the most appropriate method for assigning value to palliative care service contributions, and when deciding on the amount of funding needed to staff and operate the program. If variable or direct costs are used to generate saving estimates, then most hospitals are comfortable with a 1-3:1 savings-to-funding ratio. Administrators typically have little interest in directly profiting from the service. Rather, the withheld portion of estimated savings acts as protection against errors in the assumptions that led to the savings calculations and works to ensure revenue neutrality.

Profit/loss analyses. In cases where patients are directly admitted to a palliative care unit, or when a consultation service becomes involved in care soon if not immediately after admission, financial outcomes can be calculated by doing a simple comparison of revenues and costs. Direct admission/early involvement cases often account for a substantial portion of the palliative care service case load, and in such cases it is not uncommon for costs to be substantially lower than revenues.

LOS reductions. At sites where palliative care intervention results in a reduction in LOS, the estimated value of avoided hospital days can be incorporated into the financial outcome calculation. Here, palliative care patient LOS is compared to LOS for clinically- and demographically-similar cases, matched according to diagnosis (DRG or APR-DRG), severity of illness, disposition, age, and other appropriate variables. Because of the sometimes substantial lag between hospital admission and palliative care referral, average time prior to intervention needs to be considered. For example, assume that on average the interval between hospital admission and palliative care intervention is ten days. The comparison analysis would need to address the question, "Once we reach the ten-day mark, what is the difference in LOS for the two groups from that point until discharge?"[42] As a result, only cases and controls with a total LOS of more than ten days might be included in the analysis. Often this analysis is run for each major disease category or referring service, in order to identify differences in ALOS and practice patterns. Variation is common; for example, the pulmonary team might call for a palliative care consult on average six days after admission, while average time to consultation for the cardiac team might be 20 days.

The value of the LOS reduction is expressed as "number of avoided days times average cost per day." If hospital occupancy rate is low, this analysis is typically limited to instances where case-rate payment is expected. Conversely, if the hospital occupancy rate is high, and there is a reasonable expectation that the bed freed up by the palliative care intervention will be filled by a new, revenue-generating patient, cases from all payers could be used in the analysis. The total number of avoided days can be divided by the hospital ALOS, and the financial benefit expressed as "number of additional admissions made possible times expected profitability."

Cost-avoidance analyses. Estimates of avoided costs are commonly used to calculate financial outcomes for all types of palliative care interventions (units, primary services, and consultation services). Calculations are based on a comparison of costs before and after the palliative care intervention, a comparison of palliative care costs vs. control group costs, or a combination of the two. Because such calculations typically generate estimates rather than precise measures of avoided costs, some sites conduct two types of calculations and use the average of the two when reporting financial outcomes.

The methods for estimating cost-avoidance savings presented below are representative of common practices, but can and should be modified to reflect site-specific circumstances and characteristics. Unless otherwise specified, all cost values refer to average daily variable costs.

COST-AVOIDANCE ANALYSIS METHOD 1. Combining Intra-Admission Cost Reductions with Results from a Comparison of Palliative Care vs. Control Group Costs

Description. This method uses the difference between pre- and post-PC intervention costs in combination with the difference between palliative care and control group costs to estimate total avoided costs. First, actual cost data are used to calculate the difference between the average cost of a pre-PC intervention day and the average cost of a post-PC intervention day for all palliative care patient deaths. The difference between those two values is assumed to represent savings for the first post-PC intervention day. Next, daily costs are analyzed for a "palliative care" control group, which includes patients who received "palliative care" but without the involvement of the palliative care team. Control group patients all died in the hospital, spent the entirety of their stay on an acute care unit (no critical care or step down unit days), had no anesthesia or operating room charges, and had no procedures indicative of life-sustaining measures (e.g., no closed chest massage, heart countershock, cardiopulmonary resuscitation, etc.) The difference between average daily costs for control group patients and average daily costs of a post-PC intervention day is assumed to represent savings for all subsequent post-PC intervention days, from day two through discharge.

Calculation. **First-day savings:** (average pre-intervention day cost − average post intervention day cost) × number of cases

Subsequent day savings: (average control group day cost − average post-PC intervention day cost) × (total bed days − number of cases)

COST-AVOIDANCE ANALYSIS METHOD 2. Comparing Actual Costs to Expected Costs[43]

Description. Savings are estimated by comparing expected daily costs (as generated by the hospital accounting system) to actual daily post-PC intervention costs. Expected costs are calculated by the All-Payer Severity Adjusted DRG (APS-DRG) system, which evaluates severity of illness and generates an expected cost value based on costs incurred by all patients with a similar severity of illness score seen at that site. Savings calculations are limited to the first five post-intervention days. This cap is imposed because of the difficulty of projecting differences between palliative care and usual care outcomes over extended periods. The day of discharge, which might not be representative of usual daily costs, is also excluded from the analysis. For surgical patients, costs specifically attributed to the procedure are subtracted from the expected cost value. This is done because in most cases major surgeries reflect the reason for the admission, not management practices prior to palliative care team involvement (so including these costs might artificially inflate the difference between palliative care and usual care daily costs.) The total savings estimate (sum of calculated savings from all cases) is multiplied by the percentage of admissions where case-rate compensation is expected.

Calculation. (expected cost per day − actual cost per post-intervention day) × percent cases where case-rate payment mechanism is expected

- Limit analysis to first five days on service;
- Exclude day of discharge;
- For surgical patients, subtract surgical procedure-associated costs from the expected cost values.

COST-AVOIDANCE ANALYSIS METHOD 3. Comparing Actual Costs to Likely Alternatives[44]

Description. This method uses the difference between pre- and post-PC intervention costs in combination with the difference between palliative care and control group costs to estimate total avoided costs. However, as opposed to Method 1, different calculations are used to estimate savings depending on patient disposition (death or discharged alive) and pre-intervention location.

GROUP A: Consultation Patients and Patients Transferred to the Inpatient Palliative Care Unit from Another Hospital Location Who Are Discharged Alive

Calculation. (actual cost for the day prior to consultation or transfer [whichever is earlier] − average cost for each of up to five post-intervention days, excluding day of discharge)

- If the day prior to transfer is the first day of stay, actual costs attributed to surgery are subtracted, if applicable;
- The earlier of consultation or transfer date is used because the palliative care team starts to influence costs as soon as it becomes involved in care;
- Costs incurred on the date of consultation or transfer are not used in the calculation because they reflect a blend of pre- and post-intervention practice patterns.

GROUP B: Live-Discharge Patients Directly Admitted to the Inpatient Palliative Care Unit

Description. Severity of illness (likelihood of admission to ICU or acute care unit) of patients transferred to the palliative care unit from other hospital locations is assumed to be comparable to severity-of-illness of patients directly admitted to the palliative care unit. Thus, values describing pre-intervention use in Group A (above) are used to represent what costs would have been had Group B patients not been directly admitted to the palliative care unit.

Calculation. (average cost for the day prior to transfer for patients who are admitted to the palliative care unit from other hospital locations [as calculated above, for Group A] − actual cost for each of up to five post-PC intervention days, excluding day of discharge)

GROUP C: All Deaths

Description. Average actual costs for intervention patients are compared to average actual costs for patients who were not seen by the palliative care service. This death control group includes only cases with a minimum LOS of three days.

Calculation. (average cost for the day prior to transfer or consultation − average cost for the first post-intervention day) + (average cost for the final three days of stay for death control group patients - average cost for the final three post-intervention days for palliative care patients) × number of subsequent post-intervention days

- If the day prior to transfer is the first day of stay, actual costs attributed to surgery are subtracted, if applicable;
- Day of discharge is excluded from the analysis;
- The number of subsequent days used in the analysis is capped at four (so the service is credited with savings generated in up to a total of five days, i.e., the first post-intervention day and up to four subsequent days).

COST-AVOIDANCE ANALYSIS METHOD 4. Comparing Estimated Post-Intervention Costs to Control Group Costs

Description. Use data abstracted from medical records are used to generate an estimated average cost for post-intervention days. Hospital charge data are used to generate estimates for average usual per day care costs in three acuity settings: ICU, step-down or telemetry unit, and acute care unit. Costs directly associated with major surgery are removed prior to calculating the average daily cost values.

Calculation

Group A: Final pre-PC intervention day spent in the ICU:

First-day savings: (average ICU day cost − average post-PC intervention day cost) × number of Group A cases

Subsequent day savings: (average acute care day cost − average post-PC intervention day cost) × (total Group A bed days − number of Group A cases)

Group B: Final pre-intervention day spent in a step-down or telemetry unit:

First-day savings: (average step-down or telemetry unit day cost − average post-PC intervention day cost) × number of Group B cases

Subsequent day savings: (average acute care day cost − average post-PC intervention day cost) × (total Group B bed days − number of Group B cases)

Group C: Final pre-intervention day spent in an acute care bed:

All savings: (average acute care day cost − average post-PC intervention day cost) × total Group C bed days

Appendix B. Admin Data Commonly Used in Financial Outcome Analyses

DATA ELEMENT	SIGNIFICANCE/USES
Patient Population	
All patients who died	Patients who die in the hospital are an important part of the palliative care target population. While no PC program can expect to see all patients who die, most consider seeing 75 percent of these cases a legitimate goal for their service. Such data are often used when estimating the number of target-population patients a proposed program might see. For established programs, these data are useful for creating denominators needed to analyze percent of target population seen by the service, an indicator that is usually tracked longitudinally.
All patients assigned to same DRGs) seen in patients who died	Many patients with the same conditions (DRGs) as patients who die have complex symptom management and goals of care clarification needs similar to those seen in mortality cases. Many of these patients will be likely to benefit from a palliative care consultation. Strategies for identifying the subset of patients in this population who would benefit from palliative care include limiting data extraction to include only patients with certain demographic characteristics (i.e., cases with patients age 65 or older) or resource use patterns (i.e., cases with two or more admissions in the prior 12 months) or clinical histories (i.e., pneumonia cases only if with a secondary diagnosis of cancer or chronic obstructive pulmonary disease.) Such data are often used to estimate baseline resource use and magnitude of improvement opportunities for palliative care patients who are discharged alive.
Encounter Level Data	
Age	Generally, patients in the target population are older than the overall hospital population. Age data can be used as a surrogate marker for payer mix (patients over age 65 assumed to have Medicare coverage). Age data are also used as a matching variable when constructing control groups.
Payer	It is almost always the case that the payer mix for palliative care target-population cases differs from the payer mix for the institution as a whole. Palliative care target-population patients nearly always include more Medicare cases, and the resulting enrichment for case-rate payments bolsters the cost-avoidance-based business case. Also used as a matching variable when constructing control groups.
LOS	LOS for patients who die is almost always significantly longer than LOS for patients who are discharged alive. LOS for target-population patients who are discharged alive is also typically longer than the institutional live-discharge average. The extended LOS for target-population patients is a major contributor to cost per case and represents a significant cost-avoidance opportunity. LOS is also used as a matching variable when constructing control groups.
Number of critical care days	In addition to having generally longer LOS, palliative care target-population patients commonly spend more days in critical care beds. Reducing use of this high-cost, and often scarce, resource is another key cost-avoidance opportunity, and carries the added benefit of making such beds available to other patients.
Discharge disposition	Allows tracking of mortality rates, rates of referral to hospice, etc., in specific groups (e.g. patients discharged from the Medical service, patients with congestive heart failure, patients over age 65). Also used as a matching variable when constructing control groups.
Location/acuity at discharge	Many deaths occurring in critical care beds, particularly if these deaths were preceded by long critical care unit stays, indicate a cost-avoidance opportunity. Also used as a matching variable when constructing control groups.

DATA ELEMENT	SIGNIFICANCE/USES
Encounter Level Data, continued	
Attending (primary) service	A useful tool for targeting internal marketing and staff education. In addition, understanding which services are caring for large segments of the palliative care target population can contribute to estimates of probable initial referral rates. Higher referral rates can be expected from services where high volume admitting clinicians are receptive to the palliative care team. Fewer referrals can be expected from services where attending physicians seem skeptical of the need for/benefits of involving a palliative care team in patient care. Also used as a matching variable when constructing control groups.
Attending (primary) physician	This data element can be useful for directing educational and outreach efforts at sites where a relatively few high-volume admitting clinicians manage a substantial portion of target-population patients. Also useful for tracking program penetration (percent of admitting physicians who have referred patients to the program, percent of referring physicians with multiple referrals).
DRG	In combination with the attending service, a useful means of describing the clinical conditions common to actual or target-patient populations. Also useful for creating control groups of patients when evaluating differences between usual care costs and palliative care costs.
Principal diagnosis	Useful means of refining datasets of target-population patients and control groups.
Principal procedure	Useful means of identifying patients who might benefit from a palliative care consultation, e.g., principle procedure of percutaneous endoscopic gastrostomy (PEG) performed on a patient with a primary diagnosis of dementia. Also used as a matching variable when constructing control groups.
Date of principal procedure	Useful for identifying patients whose principle procedure occurs very late in the stay, in some cases (particularly mortality cases) an indicator of potential resource use savings if goals or care are clarified earlier in the course of the hospital stay.
Total costs	Useful for creating gross estimates of resources expended on palliative care patients, and as a point of comparison between palliative care and non-palliative care cases. Also useful for tracking the incidence of very high cost cases (outliers), for the entire institution and within discrete groups (certain DRGs or clinical services).
Variable, direct, or variable direct costs (if available)	Best data for generating cost-avoidance estimates. Actual fiscal benefit of avoided costs will typically be expressed as "estimated avoided variable (or direct or variable direct) costs."
Expected or actual reimbursement (if applicable)	Useful in conjunction with cost data to evaluate proportion of cases where costs exceed revenues, palliative care population vs. others, deaths vs. patients discharged alive. Also useful to compare across payer groups.
Daily Cost Data	
Date cost incurred	As most palliative care teams become involved in care after the patient has been in the hospital for several (or many) days, knowing the date a particular cost was incurred allows for the development of "pre-palliative care" and "post palliative care' daily cost figures.
Service or department	The service or department (pharmacy, laboratory, nursing, respiratory care, etc.) that generated the cost. Review of costs at this level helps identify areas where palliative care can or did make a difference (e.g., reduced room and care costs caused by transfer out of critical care bed, reduced pharmacy costs associated with modification of care plan).
Product (for very detailed data)	The specific product or service provided (e.g., arterial blood gas test, total parenteral nutrition order). Though analysis of data at this level of detail is unusual, such work can help define exactly which products/services are driving costs. This information can be useful when identifying which costs were or would be avoided following PC team involvement in care.
Total costs; variable, direct, or variable direct costs (if available)	See above

Appendix C: Resources

The authors have found the following resources to be useful across the spectrum of information available for palliative care operational models, clinical services, and educational opportunities. This list is representative but by no means exhaustive, and the authors do not attest to the accuracy of all the information contained in each resource.

Advance Directives

California Coalition for Compassionate Care
www.finalchoices.calhealth.org/advance_health_care_directives.htm

California's Physician Continuing Education in Pain and End-of-Life Care Requirement (AB487)

California Business and Professions Code
www.leginfo.ca.gov/cgi-bin/displaycode?section=bpc&group=02001-03000&file=2190-2196.5

California Coalition for Compassionate Care
www.finalchoices.calhealth.org/C4_textfiles/ab_487_bill_20011005_chaptered.pdf

Designing Hospital-Based Palliative Care Services

Center to Advance Palliative Care (CAPC) www.capc.org/

End-of-Life Data Sets

Epidemiology of Dying and End-of-Life Experience
www.edeledata.org/search/home.html

Epidemiologic Data About Deaths / Death in California

Brown Atlas of Dying. "Facts on Dying: California State Profile," www.chcr.brown.edu/dying/caprofile.htm

Educational Resources

American Academy of Hospice and Palliative Medicine (AAHPM) www.aahpm.org
Resources: www.aahpm.org/resources/
UNIPAC Book Series: Hospice/Palliative Care Training for Physicians, A Self Study Program: www.association-office.com/aahpm/etools/products/index.cfm
Primer in Palliative Care: www.association-office.com/AAHPM/etools/products/products.cfm

Americans for Better Care of the Dying (ABCD)
"Clinicians—to Improve Daily Practice":
www.abcd-caring.org/tools/actionguides.htm#clinicians

Disseminating End-of-Life Education to Cancer Centers (DELEtCC) http://deletcc.coh.org/

Education in Palliative and End-of-Life Care (EPEC)
www.epec.net

End-of-Life Nursing Education Consortium (ELNEC)
Curriculum: www.aacn.nche.edu/elnec/curriculum.htm

End of Life/Palliative Education Resource Center (EPERC)
www.eperc.mcw.edu/
"Fast Facts": www.eperc.mcw.edu/ff_index.htm

National Internal Medicine Residency Curriculum Project
www.mcw.edu/pallmed/html/about1.html

Ian Anderson Continuing Education Program in End-of-Life Care www.cme.utoronto.ca/endoflife/

Expertise in Palliative Care

Chaplain Expertise

Association for Clinical Pastoral Education Inc. (ACPE)
www.acpe.edu/

Curricula / Competencies

AAHPM Core Curriculum www.aahpm.org/resources/

American Board of Hospice and Palliative Medicine (ABHPM) www.abhpm.org/

Department of Veterans Affairs Interprofessional Fellowship Program in Palliative Care
www.va.gov/oaa/fellowships/Palliative.asp

EPEC Faculty Development Conference www.epec.net

Harvard Medical School Center for Palliative Care Program in Palliative Care Education and Practice Faculty Development
www.hms.harvard.edu/cdi/pallcare/

Hospice and Palliative Nurses Association (HPNA)
www.hpna.org/

Open Society Institute and Soros Foundations Network Project on Death in America (PDIA) Faculty Scholars Program www.soros.org/death/fs_announcement.htm

PDIA Social Work Leadership Development Awards
www2.soros.org/death/socialrfa.htm

Stanford Faculty Development Center for Medical Teachers www.stanford.edu/group/SFDP/

Nurse Expertise

ELNEC www.aacn.nche.edu/ELNEC/

HPNA www.hpna.org/

National Board for Certification of Hospice and Palliative Nurses www.nbchpn.org/

Physician Expertise

ABHPM www.abhpm.org

EPEC Faculty Development Conference www.epec.net

Harvard Medical School Center for Palliative Care Program in Palliative Care Education and Practice Faculty Development Course www.hms.harvard.edu/cdi/pallcare/

PDIA Faculty Scholars Program www2.soros.org/death/faculty_scholars_program.htm

Stanford Faculty Development Center for Medical Teachers www.stanford.edu/group/SFDP/

Social Work Expertise

PDIA Social Work Leadership Development Award www.swlda.org/archive/

Smith College School for Social Work www.smith.edu/ssw/geaa/academics_cecertificate.php

Guidelines

Published standards, guidelines, professional recommendations, position or consensus papers, principles of professional practice for palliative care include:

Agency for Health Care Policy and Research. "Cancer Pain Management Guidelines" (1994).

American Academy of Neurology. "Palliative Care in Neurology" (1996), www.aan.com/about/ethics/Palliative%20Care.pdf

American Academy of Pain Medicine. "Quality Care at the End of Life" (1998), www.painmed.org/productpub/statements/pdfs/quality_care-end_of_life.pdf

American Geriatric Society. "The Care of Dying Patients" (1994; revised 2002), www.americangeriatrics.org/products/positionpapers/careofd.shtml

American Medical Association (AMA). Report from the Council on Scientific Affairs: "Good Care of the Dying Patient." *Journal of the American Medical Association (JAMA)* 1996; 275:474–478.

AMA. "Optimal Use of Orders-Not-to-Intervene and Advance Directives," www.ama-assn.org/ama/pub/category/8462.html

AMA Council on Ethical and Judicial Affairs. "Guidelines for Appropriate Use of Do-Not-Resuscitate Orders." *JAMA* 1991; 265:1868–71.

American Nurses Association. "Pain Management and Control of Distressing Symptoms in Dying Patients" (1991; revised 2003), www.nursingworld.org/readroom/position/ethics/etpain.htm

American Pain Society. "Principles of Analgesic Use in the Treatment of Acute and Cancer Pain" (5th edition), www.ampainsoc.org/pub/principles.htm

American Society of Pain Management Nurses. Position statement: "Treatment of Pain at the End of Life" (1997; revised 2006), www.ampainsoc.org/advocacy/treatment.htm

American Thoracic Society. "Withholding and Withdrawing Life-Sustaining Therapy" (1991), www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=1892317 Society of Critical Care Medicine Ethics Task Force.

Cassel, C.K., and Foley, K.M. "Principles for Care of Patients at the End of Life: An Emerging Consensus Among the Specialties of Medicine" (1999), Milbank Memorial Fund, www.milbank.org/endoflife/index.html

Cherny, N.I., Coyle, N., and Foley, K.M. "Guidelines in the care of the dying patient." *Hematol Oncol Clin North Am* 1996;10: 261–86.

Consensus Report on the Ethics of Forgoing Life-Sustaining Treatments in the Critically Ill. Critical Care Medicine 1990;18:1435–1439

HPNA. "Statement on the Scope and Standards of Hospice and Palliative Nursing Practice" (2000), www.hpna.org/Publications_Home.aspx

Institute of Medicine. "Approaching Death: Improving Care at the End of Life" (1997), www.nap.edu/readingroom/books/approaching/

National Consensus Project for Quality Palliative Care. "Clinical Practice Guidelines for Quality Palliative Care," www.nationalconsensusproject.org/

NHPCO and the National Hospice Work Group. "End Report on the Alpha and Beta Pilots of End Result Outcome Measures" (1998-2000), www.nhpco.org/files/public/OCFFINALRPT.pdf

NHPCO. "A Pathway for Patients & Families Facing Terminal Illness" (1997). www.nhpco.org/public/articles/FOR.pdf

Oncology Nursing Society and Association of Oncology Social Work. "Joint Position on End-of-Life Care" (1998; revised 2003), www.aosw.org/docs/pos-ons.pdf

Teno, J.M. et al. "Toolkit of Instruments to Measure End-of-Life Care (TIME)," www.chcr.brown.edu/pcoc/Advanc.htm

Weissman, D. *Improving End-of-Life Care: A Resource Guide for Physician Education.* Medical College of Wisconsin, 1998 www.mcw.edu/display/router.asp?DocID=196

World Health Organization. “Palliative Care,” www.who.int/cancer/palliative/en/

Marketing Materials

CAPC www.capc.org/building-a-hospital-based-palliative-care-program/implementation/marketing

Medicare Fee-for-Service Policies

Centers for Medicare and Medicaid Services www.cms.hhs.gov/home/medicare.asp

Norms / Standards of Practice, Accreditation

California Hospice & Palliative Care Association (CHAPCA) www.calhospice.org

Canadian Hospice Palliative Care Association (CHPCA) www.chpca.net/home.htm
  Norms of Practice:
    www.chpca.net/initiatives/norms-general.htm

Joint Commission www.jointcommission.org

National Hospice and Palliative Care Organization (NHPCO) www.nhpco.org
  Hospice Standards of Practice:
    This material is no longer available to view online, but you may purchase it at: http://iweb.nhpco.org/iweb/Purchase/ProductDetail.aspx?Product_code=711077

State of Palliative Care Research

National Institutes of Health State-of-the-Science Conference. “Statement on Improving End-of-Life Care,” http://consensus.nih.gov/2004/2004EndOfLifeCareSOS024html.htm

Crosswalk of JCAHO Standards and Palliative Care, CAPC www.capc.org/jcaho-crosswalk

National Quality Forum www.qualityforum.org

University HealthSystem Consortium. Palliative Care Benchmarking Project (2004), www.uhc.edu/

U.S. News and World Report. “Best Hospitals 2006,” www.usnews.com/usnews/health/best-hospitals/tophosp.htm

Tools for Analyzing Financial Outcomes and Developing a Business Case

CAPC www.capc.org/

Use of Acute Care Services in California

Office of Statewide Health Planning and Development www.oshpd.cahwnet.gov/

Appendix D: Endnotes

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