Feature Article

# An Evaluation of Time and Cost Variability in Hospice Interdisciplinary Group Meetings and Comparative Clinical Quality Outcomes

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This study involved a community-based, multisite hospice program serving 7 distinct communities in the greater Washington, DC, metropolitan area. The objectives were to compare time and costs among hospice interdisciplinary group (IDG) meetings and resultant select clinical outcomes in order to establish a benchmark for best practices within a large multisite hospice provider. A standardized data collection tool was used at all practice sites during multiple team meetings to determine staffing by discipline and numbers, types and number of patient reviews (new patients, patient deaths, simple vs complex plan-of-care revisions), time involved, resultant costs, and clinical key quality-of-care outcome measures, including pain relief, patient and family satisfaction, and crisis prevention and rates of disruptions in care (unscheduled medical visits, transfers to emergency departments and/or hospital). A point system devised by the authors was used to normalize the data in order to account for differences in case mix (complexity, admissions, deaths). This novel approach has not been previously described, but was a necessary innovation in order to create apt comparisons among groups of patients and their respective interdisciplinary teams. Although all IDGs met Medicare Conditions of Participation standards, appreciable differences existed in all measured variables among the 7 community sites, leading to significant disparity in resultant costs associated with conducting IDG meetings across distinct communities served by this hospice agency. Significant increases in costs were not justified by commensurate improvements in clinical quality outcomes. In fact, the lowest-cost IDG also had as favorable or higher ratings on discrete clinical outcome measures as higher-cost IDGs. We conclude that IDGs differ substantially in performance, and through a comparative analysis, an optimal model was discerned, comprising lowest overall costs without compromising quality of care.

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The hospice interdisciplinary group (IDG) has been adopted as a key structural element of hospice practice in the United States. Consisting of the core disciplines of nursing, medicine, social work, and counseling/chaplaincy, the IDG structure and its role in care planning have been defined by the Centers for Medicare & Medicaid Services Conditions of Participation (COP) (§418.56 Interdisciplinary group, care planning, and coordination of services).[1] In this document, the standard states that "The hospice IDG (in collaboration with the individual's attending physician, if any) must review, revise, and document the individualized plan as frequently as the patient's condition requires, but no less frequently than every 15 calendar days. A revised plan of care must include information from the patient's updated comprehensive assessment and must note the patient's progress toward outcomes and goals specified in the plan of care."

Additional purposes of the IDG meeting include assurance of clinical excellence by discussing and comparing clinical outcomes with quality goals, optimizing team member communications and maximizing use of limited resources through collaborative care planning, and maximizing team cohesiveness and morale through supportive interactions and mutual problem solving.[2] Variables within team meetings include number and disciplines of staff present; number and types of patients to be reviewed (ie, deaths, admissions, ongoing care); acuity, complexity, and clinical status of patients under care; and nondirect patient care activities or issues requiring time and attention (eg, staff support and continuing educational or skill-building needs, administrative tasks, etc).

In the United States, most hospice care is provided in an individual's home, paid for through a carve-out of Medicare Part A, the Medicare Hospice Benefit (MHB), at a per-diem rate. Because all indirect costs of operating the hospice and all direct patient-related costs must be covered under the per diem (about $150 per day), gathering hospice professionals together for in-person meetings is a time-consuming and expensive proposition. Therefore, it is surprising that a literature

review uncovered no investigations specifically designed to evaluate IDG effectiveness on patient-specific outcomes, nor studies evaluating efficiency (cost vs benefit).

The literature is rife with practical and theoretical studies focused on enhancing communication and family member involvement in IDG meetings.[3] Furthermore, review of the literature does provide some insights into some of the limitations that absence of formalized processes creates. For instance, in a study of hospice IDG interactions and communications, Demiris et al[4] concluded that "Two specific areas in need of enhancement were noted, improvement in team member support and communication effectiveness. Future interventions targeting these areas of need may increase coordination of services, which results in patient and family satisfaction and reduced overall health care costs."[4(p376)] In another study observing IDG interactions, Dugan[5] concluded, "There was no mutual understanding of the purpose for team meetings, no recognition of the need to reflect on team process, or common definition of leadership."[5(p53)]

In the absence of a validated benchmark for IDG meeting staffing, time, or costs and based on a strategic goal to reduce unwarranted variability in significant processes of care in order to improve outcomes and optimize limited resources, we engaged in a prospective comparative evaluation of IDG time and costs, with interteam comparisons of key clinical quality measures as an internal process assessment and improvement initiative.

## METHODS

Capital Caring is a not-for-profit hospice and palliative care provider serving 7 distinct communities in the greater Washington, DC, metropolitan area. Each community-based program is led by a general manager, lead physician, and nursing supervisor, who together oversee 1 or more IDGs. Communities served include Prince George's County, Maryland, the District of Columbia, and the cities, townships, and areas surrounding Arlington, Alexandria, Falls Church/Merrifield, Leesburg, and Manassas, Virginia. At the time of this study, each setting had an average daily census between 125 and 200 patients. All sites have met or exceeded standards set by Medicare COPs for IDG processes, and the organization has been accredited by the Community Health Accreditation Program (CHAP). In addition, Capital Caring has established additional internal standards for clinical outcomes expected of all sites and their respective IDGs (see below). As such, this study sought to determine if there were more efficient approaches to conducting IDG meetings, given their relatively uniform compliance with Medicare COPs, CHAP accreditation, and compliance with internal standards for quality outcomes.

For the purposes of this study, only home- or residence-based hospice patient data are reported. As a quality improvement initiative, under Department of Health and Human Services guidelines (45 CFR 46.102(d)), this project was exempt from institutional board review (http://answers.hhs.gov/ohrp/questions/7286; accessed April 5, 2014).

Capital Caring programs adhere to a core set of values, key outcome metrics, and clinical practice guidelines (2) to direct team meetings and clinical practices and to measure performance. The Capital Caring organizational structure lends itself to comparative analyses of specific practices and outcomes among locales and IDGs, including evaluations of justified and unwarranted variability among these practice sites' IDG meeting staffing patterns, time, costs, and outcomes. By tracking variables over the course of several team meetings across all 7 Capital Caring sites, we sought to determine a "best practice" model from within the agency's many IDGs, thereby establishing a benchmark from which to systematically normalize and optimize practices throughout the Capital Caring system. Figure 1 represents the tool used to gather data at team meetings, and Figure 2 defines categories of patient complexity.

General managers and nursing supervisors were instructed in the use of these tools and committed to completing them for at least 2 team meetings over the course of 1 month. At the conclusion of the data-gathering period, site-specific data were collated. To normalize variables in order to determine and equitably compare performance among different teams, a weighted scale was used to create a point system based solely on the type, complexity, and number of patients discussed at each team meeting:

- new patients or major revisions to an existing plan of care = 3 points
- review of a death or minor revision to an existing plan of care = 1 point
- no revision to an existing plan of care = ½ point

Although somewhat arbitrary, this point system is empirically based and has face validity. It was created by the authors because a literature search revealed no comparable approach to normalizing variance among IDG case loads. The strength of this point system is that when it is used consistently to adjudicate data within and across all sites, it provides unbiased, objective comparisons among the heterogeneity of patients at each site. With that variable normalized, the more directly accounted-for and objective variables of total time spent and number and type of staff present complete cost calculations.

Lastly, once the cost calculations were completed, comparisons were made of the key clinical quality domains of pain relief, crisis prevention and rates of disruptive transitions (ie, hospitalizations or emergency medical visits), and family satisfaction in order to attach a putative value of the IDG meeting process to meaningful outcomes from a patient-/family-centered perspective. The key metrics and quality measures program at Capital Caring is a rigorous electronic health record–based active inquiry process that has been in effect since 2007. An adjunct to process and outcome measures that are captured, recorded, analyzed, and reported out daily to

Hospice Site: DATE: __ / ____ / 2013 Meeting Leader: _____

| Scheduled Start | Actual Start | Scheduled End | Actual End | Total Time | HOURS | MINUTES |
|---|---|---|---|---|---|---|
| In Attendance | RNs | MDs | SWs | CHs | CNAs | Others |
| Order of Business by 15 min blocks (check) | Pts who died | New pts | POC no revision | POC minimal revision | POC major revision | # of patients reviewed in each 15 min block |
| 1st 15 min | | | | | | |
| 2nd 15 min | | | | | | |
| 3rd 15 min | | | | | | |
| 4th 15 min | | | | | | |
| 5th 15 min | | | | | | |
| 6th 15 min | | | | | | |
| 7th 15 min | | | | | | |
| 8th 15 min | | | | | | |
| 9th 15 min | | | | | | |
| 10th 15 min | | | | | | |
| 11th 15 min | | | | | | |
| 12th 15 min | | | | | | |
| TOTAL # of Pts. reviewed | | | | | | |
| Other Topics | | | | | | |
| MINI INSERVICE EDUCATION | | | | | | |
| Invited Guests | | | | | | |

**FIGURE 1.** Data-gathering tool for interdisciplinary group efficiency. Abbreviations: CH, chaplain; CNA, certified nurse assistant; MD, medical doctor; POC, plan of care; pt, patient; RN, registered nurse; SW, social worker.

senior leadership, clinical supervisors, and staff are twice-daily telephonic outgoing calls to patients/caregivers. These serve a myriad of purposes, including early detection and prevention of crises.

## RESULTS

During the study period, there were 2025 patient reviews from 7 community sites, coded as sites A, B, C, D, E, F, and G for convenience. Table 1 summarizes raw data by site from a total of 27 IDG meetings, including types of patients reviewed.

Table 2 portrays the variability of time and cost on a per-patient basis across sites, with performance values created by use of the weighted point system to account for differences in patient mix across sites. Costs were determined by calculating and totaling the per-hour compensation of paid staff attending IDG meetings for the duration of time spent at the meetings. Time spent in transit by staff was not accounted for in this model.

Using this approach, the most efficient performance is exemplified by site C, because it has the lowest dollar-per-point figure. Whereas site C also had the lowest cost per minute spent during IDG and the lowest cost per patient reviewed at IDG, these latter variables did not necessarily run in parallel across all sites, reinforcing the necessity of the weighted point system in order to determine optimum use of time and resources.

Minor Revision

1) Assessment is complete.

2) Patient/Family needs are identified, addressed, and met.

3) The Care Plan in place needs few changes or adjustments.

4) Upcoming visits are scheduled by readily identifiable staff, volunteers or consultants

5) All documentation is in place and has been checked and double-checked to assure accuracy and completeness.

6) Hospice eligibility descriptions and narrative are complete and the patient meets (or no longer meets) criteria for eligibility under the provisions of the Medicare Hospice Benefit (if this is a Medicare Beneficiary). If the patient no longer meets eligibility criteria for hospice, a transition and discharge plan is in place.

Major Revision in Plan of Care

For patients who have issues that are not adequately addressed by the current plan of care, and for whom minor adjustments have not or will not meet goals of care, sufficient time and appropriate staff, volunteers and consultants should be available and sufficient time should be allocated to obtain input and refine the Plan of Care. This requires pre-meeting thought and preparation, to define the complex issue(s) and seek solutions. This will promote focused discussion, input, and updating the Plan of Care, scheduled visits, potential change in level or and location of care, and documentation.

**FIGURE 2.** Guidance for defining minor and major revision in plan-of-care patient categories.

**TABLE 1 Interdisciplinary Group Meeting Data: Percentage of Patients Reviewed by Type and Site of Care (N= 2025 Patient Reviews)**

| Variable | Community Site | | | | | | | Mean[a] |
|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | |
| No. of meetings | 4 | 2 | 6 | 3 | 4 | 4 | 4 | |
| Total patient reviews | 302 | 177 | 329 | 260 | 417 | 285 | 255 | 292 |
| Deaths (%) | 0 | 16 | 8 | 7 | 12 | 13 | 9 | 9 |
| New patients (%) | 13 | 14 | 13 | 12 | 20 | 14 | 13 | 14 |
| No POC revision (%) | 60 | 41 | 44 | 61 | 67 | 63 | 61 | 55 |
| Minor POC revision (%) | 24 | 21 | 30 | 17 | ? | 10 | 17 | 20 |
| Major POC revision (%) | 4 | 8 | 5 | 4 | ? | 1 | 0 | 4 |

*Abbreviation: POC, plan of care.*
*[a]Means for no revision, minor revision, and major revision do not include site E, because of lack of specificity on report forms for minor and major revisions.*

**TABLE 2 Interdisciplinary Group Meeting Data: Variance in Efficiency by Site**

| Variable | Community Site | | | | | | | Mean |
|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G | |
| Patients | 302 | 177 | 329 | 260 | 417 | 285 | 255 | 289 |
| Points[a] | 276 | 213 | 284 | 259 | 460 | 269 | 233 | 299 |
| Points per patient | .92 | 1.2 | 1.2 | 1.0 | 1.1 | .94 | .91 | 1.0 |
| Total time (min) | 450 | 390 | 735 | 495 | 930 | 675 | 630 | 615 |
| Minutes per point | 1.6 | 1.8 | 1.9 | 1.9 | 2.0 | 2.5 | 2.7 | 2.1 |
| $ per point | 15.58 | 13.69 | 11.49 | 14.88 | 15.05 | 22.49 | 23.00 | 16.60 |
| $ per patient | 14.24 | 16.48 | 13.41 | 14.82 | 16.60 | 21.23 | 22.02 | 16.97 |
| $ per minute | 9.55 | 7.48 | 6.00 | 7.79 | 7.44 | 8.96 | 8.51 | 7.96 |

*Abbreviation: POC, plan of care.*
*[a]Points assigned = weighted by intensity of task: 0.5 = POC no revision, 1 = POC minor revision or review of death, 3 = new patient or POC major revision.*

Table 3 demonstrates the appreciable variance among the 7 community sites. There is a 2-fold difference in normalized cost for IDG meetings between the most efficient site and the least efficient. The most efficient site (site C) is operating at almost 31% below the average cost of IDG meetings across the Capital Caring system, and 2 sites (sites F and G) are operating at more than 35% over the average cost.

Upon comparing internal outcome measures of quality across these sites by evaluating the categories of pain control, crisis prevention and disruptive transitions, and patient satisfaction with care, site C exceeded the 90% performance standard for those key outcome measures, equaling or exceeding those quality performance measures in the other 6 sites. Again, all sites being evaluated had met Medicare COPs and had attained CHAP accreditation, making them comparable with respect to conventionally accepted standards of clinical proficiency.

Based on this approach, we concluded that site C had established a benchmark for best practice of IDG cost-benefit basis within our system. The typical structure of this site's IDG meeting consisted of a 2.5-hour block of time, with 55 patients reviewed, including all deaths, new admissions, recertifications, and plan-of-care revisions. This time frame also included a 15- to 30-minute period for announcements, a continuing education session, or an in-service training. Staffing consisted of either 4 RNs or 3 RNs and 1 LPN, 1 physician, 2 social workers, and a chaplain, with "as needed" volunteer staff in attendance (eg, community pharmacist, Reiki therapist, etc).

## DISCUSSION

Most hospice care in the United States is paid for on a per-diem basis by the Medicare Part A carve-out, the MHB. The greatest costs are direct patient-related expenditures for clinical staff. Interdisciplinary group meetings are necessary and important, but they consume a significant amount of clinical staff time. Logic would dictate that there would be a best-practice model for IDG meeting time and structure in order to optimize effectiveness and maximize efficiency so that as much staff time as possible could otherwise be focused on direct patient care and family support needs. In the absence of such an industry standard or benchmark, the comparative quality assessment and improvement exercise described above provide some useful guidance going forward.

**TABLE 3 Percentage Above or Below Average and Most Efficient Cost on a Per-Weighted Point Basis**

| Variable | Community Site | | | | | | |
|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | G |
| % above the mean | | | | | | 35.48 | 38.55 |
| % below the mean | 6.14 | 17.53 | 30.78 | 10.36 | 9.34 | | |
| % above the most | 35.60 | 19.15 | | 29.50 | 30.98 | 95.73 | 100.17 |
| Efficient site (site C) | | | | | | | |

The results suggest several things. First, even in an organization that provides ongoing training, works from a common set of clinical practice guidelines, and has well-established key quality indicators, there exists significant variability in IDG performance among community program sites. This variability is not justified by incremental improvement in those clinically meaningful patient and family-center outcomes we measured, leading to the conclusion that adaptation of a more uniform approach to conducting IDG meetings can redirect clinical staff time to more productive purposes. For instance, the time saved could be used to provide additional direct patient care and family support, serve greater numbers of patients by identifying and admitting additional eligible patients, expand services to at-need underserved populations, or provide greater staff support and continuing education.

Comparing the least and most efficient and effective outcomes from this study, the following model is constructed based on usual compensation (including benefits) for staff, and with patients being reviewed at least once every 14 days (ie, a minimal average annualized review rate of 26 reviews per patient per year). This is a conservative estimate because this calculation does not include travel time or expenses to and from IDG meeting sites.

- Estimated annualized cost of IDG meetings per patient (Table 2) is as follows:
  - Average (mean) level of efficiency = mean cost per patient ($16.97) × 26 reviews per year = $441.22
  - Most efficient is program C (lowest cost per patient): $13.41 × 26 reviews = $348.66

Multiplied by the total census, the difference between average and optimal levels of performance provides a realizable annual cost savings that can be reallocated to other purposes as noted above. For Capital Caring, with an average census of 1200 patients at the time of this study, the potential cost savings ([$441.22 − $348.66] × 1200) would be $111 072.

This is not a definitive econometric study, suffering many limitations that prevent generalization across all the variously sized hospice programs that exist. For instance, we had only 1 recorder for each group, with no external monitor or auditor. Furthermore, even though large cohorts of patients were reviewed, the range of patients evaluated at sites was broad, between 177 (site B) and 417 (site E), and constituted between 2 and 6 team meetings per site (Table 1). But, as a demonstration of what can and should be measured, among the more necessary and costly processes of the hospice care model, it serves as the first of its kind approach toward establishing a benchmark for proficient IDG meetings within a multisite health system and one that might reasonably serve as an example and comparator for others.

As such, our findings suggest that hospice programs would benefit from evaluating their IDG practices and, perhaps, compare their structure and outcomes with those described herein. Because hospice care is largely paid for under the aegis of a public trust (MHB) and community philanthropy, hospice programs have a responsibility to provide the best care to all eligible beneficiaries at the lowest cost. The model presented here comports with the so-called "Triple Aim" propounded by the Centers for Medicare & Medicaid Services: improving the individual experience of care, improving the health of populations, and reducing the per capita costs of care for populations.[6]

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