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ORIGINAL RESEARCH

Provider Expectations and Experiences of Comanagement

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BACKGROUND: Hospitalist comanagement of complex surgical and medical specialty patients is increasingly common, but it is unclear how provider expectations and experiences under the collaborative practice model differ from those of traditional consultations.

METHODS: We analyzed survey data examining expectations and experiences on a medical hepatology comanagement service. Participating hospitalists, nonphysician providers (NPPs), hepatologists, and fellows completed a Baseline Survey that addressed preferences for decision-making under comanagement. Repeated Surveys, administered to each unique team of comanagers, addressed their experiences with decision-making on their rotations on the service between April and October 2008.

RESULTS: All 43 providers completed the Baseline Survey. Among these, 32 providers who rotated on the service completed 79% (177/223) of Repeated Surveys. The majority of respondents indicated understanding their role. More providers of every professional role indicated their preference for hospitalists to participate in every management decision and for hepatologists not to participate in every management decision. Most indicated that they both preferred and experienced the direction of management issues by a single physician leader. Almost all indicated at baseline that comanagement tends to improve patient care (hospitalists 94%, hepatologists 83%, NPPs 100%, fellows 100%), although fewer NPPs (40%) and fellows (50%) felt comanagement actually improved care following their rotations.

CONCLUSIONS: Preferences and experiences about provider roles are not uniform under comanagement, and conflicting preferences exist around decision-making processes. Providers generally agreed that comanaging hospitalists should participate broadly in management decisions. *Journal of Hospital Medicine* 2011;6:401–404.

Comanagement is common in hospital medicine practice. And yet, there is no consensus about how comanagement is different from traditional consultative practice. At its core, hospitalist comanagement is a practice arrangement wherein hospitalists and other specialists manage complex patients collaboratively. Beyond this, Huddleston et al. distinguish comanagement from traditional consultations in the comanaging hospitalists' prerogative to provide direct medical care in addition to consultative advice.[1] Siegal focuses on the shared responsibility and authority among partnering providers in the comanagement model.[2] Whinney and Michota see comanagement as patient care referral at the onset of a care episode, in contrast to consultations that are activated to address emergent problems.[3] In a recent study that found the growing adoption of medical comanagement in Medicare beneficiaries (as much as 40% of surgical hospitalizations in 2006), comanagement was defined as an intensive form of consultation involving a claim for evaluation and management services on greater than 70% of inpatient days.[4]

In addition to the intensity, frequency, timing, responsibility, and authority of care, comanagement may be described by participating physicians' roles. With recent attention on multidisciplinary teams and an increasing focus on collaborative care, many of the hierarchical relations among healthcare providers are breaking down.[5] Several studies of multidisciplinary teams suggest that more egalitarian, rather than hierarchical, problem-solving and decision-making among team members are beneficial to patients.[6–7] However, neither the intended nor natural team structure under comanagement is known. We sought to shed some light on provider interactions by characterizing the expectations and experiences of providers of a comanaged service. The findings yielded an opportunity to generate an evolving, but conceptually supported definition of comanagement.

SETTING

We conducted a survey study of providers participating in a comanaged inpatient hepatology service at the University of Chicago Medical Center, a 572-bed urban teaching hospital. The service was created in 2006, partly to address staffing problems related to housestaff work hour restrictions and partly to improve the care of candidates and recipients of liver

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transplantation. Nonsurgical floor patients with liver diseases were managed on the service by two collaborating teams of providers. The hepatology team consisted of an attending physician and a fellow, while the hospitalist team consisted of a hospitalist and one or two nonphysician providers (physician assistant or nurse practitioner). The practice model is characterized as comanagement because of the highly interdependent nature of the team's daily tasks and the norms of intensive communication, through formal joint daily rounds and informal direct exchanges of instructions and updates. Hepatologists were mainly responsible for coordinating admissions, managing issues related to liver dysfunction, communicating with transplant surgeons if necessary, and arranging postdischarge care. Hospitalists were responsible for admitting patients, managing routine (eg, ordering daily labs) and urgent issues (eg, responding to critical lab values) during hospitalizations, coordinating with ancillary and consultative staff, and discharging patients. Occasional meetings between the hepatology and hospital medicine groups were used to clarify assignment of responsibilities. Floor nurses received in-servicing at the commencement of the service. Additional details about the service are described elsewhere.[8]

DATA COLLECTION AND ANALYSIS

For the purpose of our analysis, we defined interactions between any member of the hospitalist and hepatologist teams as pertinent to comanagement. The hospitalist–
nonphysician provider (NPP) and hepatologist–fellow relationships are governed by the more traditional hierarchical dynamics based on supervision and authority according to laws and regulations. At the beginning of the study period, each participant completed nine items of a Baseline Survey that addressed respondents' expectations and preferences for the management of an ideally comanaged service. Responses were solicited using a 4-point Likert-type scale and were dichotomized such that ''agree'' and ''somewhat agree'' were grouped, while ''disagree'' and ''somewhat disagree'' were grouped for data analysis. Items were generated to address the salient issues of comanagement after reviewing the pertinent literature.

Subsequently, participants were asked to complete Repeated Surveys immediately before each change in membership of the comanaged team between April and October 2008. The surveys were hand delivered by one of the authors (K.H.) on the last day of each team's rotation and were often completed immediately. The seven items of the Repeated Survey reprised items from the Baseline Survey that were rephrased to allow respondents to report their direct experiences on specific teams. Because all providers rotated on the service more than once during the study period, the average value for each Likert-type response across multiple surveys completed by a single provider was calculated before being dichotomized at the midpoint (<2.5, agree; ≥ 2.5, disagree). We reported proportions of respondents in agreement with survey item statements.

TABLE 1. Survey Response Rates by Provider Roles

	Baseline Survey, Completed/ Administered (%)	Repeated Surveys, Completed/ Administered (%)	Respondents Completing Repeated Surveys, n	Repeated Surveys Completed per Respondent, Median (IQR)
Hospitalists	18/18 (100)	36/43 (84)	15	2 (2, 3)
NPPs	5/5 (100)	92/97 (95)	5	20 (18, 20)
Hepatologists	6/6 (100)	26/42 (62)	6	7 (3.75, 8)
Fellows	12/12 (100)	23/42 (55)	6	7 (5.5, 8.5)
Total	43/43 (100)	177/223 (79)	32	4.5 (2, 8.25)

Abbreviations: NPPs, nonphysician providers; IQR, interquartile range.

Comparison statistics across providers were generated using the chi-square test. Differences in proportions between related items of the Baseline and Repeated Surveys were compared using the two-sample test of proportions. All analyses were conducted using a statistics application (STATA 10.0, College Station, TX) with alpha equal to, or less than, 0.05 considered significant. The Institutional Review Board of the University of Chicago approved this project.

RESULTS

All 43 providers completed the Baseline Survey. During the study period, 32 of these participants rotated on the service and completed 177 of the 233 Repeated Surveys (79%) administered. The responses describe team interactions on the 47 unique combinations of providers comprising the comanaged teams. Details of the response rates are shown in Table 1.

As shown in Table 2A, items 1–3, more members of the hospitalist team preferred to be informed about every management decision compared to members of the hepatologist team. Conversely, more of members of the hepatologist team than the hospitalist team preferred their comanaging partners to participate in every decision. A statistically similar proportion of respondents in each of the professional roles indicated desire for greater influence in directing management decisions (Table 2B, item 1).

For the majority of surveyed areas, there was concordance between expectations and experiences of providers on comanagement. Most providers, regardless of professional role, agreed that there should be a single physician leader to direct the overall management (Table 2A, item 5). The majority perceived that a single physician directed the overall management of the patients' hospital course, although fewer hospitalists did so compared with baseline expectations (Table 2B, item 3). Many respondents felt at baseline that physician consensus should govern every management

TABLE 2. Proportion of Respondents Agreeing with Survey Item Statements

A. Baseline Survey	Hospitalists, % (n = 18)	NPPs, % (n = 5)	Hepatologists, % (n = 6)	GI Fellows, % (n = 12)	*P*-value
1. I prefer to be informed about every decision.	83	100	17	42	<0.01
2. I prefer to participate in every decision.	67	100	33	50	0.11
3. I prefer that my comanager participate in every decision.	22	20	50	75	0.02
4. I prefer to have the final say in every decision.	50	80	50	33	0.38
5. There should be one physician leader to direct the overall management of the patients' hospital course.	89*	100	67	83	0.43
6. Physician consensus should always be sought in every clinical decision.	22	40	50	67	0.11
7. I have a clear understanding of my role on the comanagement service.	61	80	83	75	0.66
8. I have as much a sense of ownership of patients on the comanaged service as on a non-comanaged service.	61	60	83	50	0.60
9. Comanagement tends to improve patient care.	94	100*	83	100*	0.47

B. Repeated Surveys	Hospitalists, % (n = 15)	NPPs, % (n = 5)	Hepatologists, % (n = 6)	GI Fellows, % (n = 6)	*P*-value
1. I would have liked greater influence in directing the overall management.	40	60	0	17	0.12
2. I was responsible for work in clinical areas I was not comfortable managing.	0	0	0	0	NA
3. There was one physician leader to direct the overall management of the patients' hospital course.	60*	80	67	83	0.70
4. Physician consensus was always sought in every clinical decision.	40	40	50	67	0.72
5. I (have/had) a clear understanding of my role on the comanagement service.	73	80	100	83	0.57
6. I had as much a sense of ownership of patients on the comanaged service as on a non-comanaged service.	53	80	100	67	0.20
7. Patients on my service received better care than they would have without comanagement.	93	40*	67	50*	0.06

Abbreviations: GI, gastrointestinal; NPP, nonphysician provider.
*Statistically significant difference between Baseline and Repeated Survey response defined by $P \leq 0.05$.

decision, and a similar proportion actually experienced consensus-seeking on service.

We found that the proportion of providers reporting an understanding of their role increased slightly, though not significantly, from before (Table 2A, item 7) to after rotating on the comanaged service (Table 2B, item 5). Although not statistically significant, there was a trend towards hospitalists and gastrointestinal (GI) fellows reporting a lack of patient ownership, both before and after serving on the comanaged service. Finally, nearly all respondents reported that comanagement should improve care quality, although only the attending hospitalist and hepatologist felt that their experience on the comanaged service actually improved patient care (Table 2B, item 7).

DISCUSSION

In this survey of providers participating on a comanaged medical service, most reported understanding their role in the collaborative arrangement and had an initial perception that comanagement should improve patient care quality. We found that hospitalists preferred and were expected to participate in care globally, while hepatologists themselves preferred and were expected not to focus on every management decision. The prevalence of desire for ultimate authority across the professional roles suggests tensions that exist in this care model around how decisions are made. The majority of providers preferred and experienced a single physician leader under comanagement, but many also experienced consensus-seeking for every management decision.

From these findings, we conclude that decision-making processes are not uniform under comanagement and that some role ambiguity is present, but there appears to be a pattern of natural roles. This pattern can be defined by focus (general for hospitalists vs specialty-specific for hepatologists), rather than by responsibilities for managing particular medical problems. The preference among both generalists and specialists for the broader involvement of hospitalist comanagers suggests an implicit recognition of the need for integrated management to overcome the silo-effect within the comanagement structure.[9] Although details about how such integration was achieved are not available in our data, we found that comanagement may be distinct from traditional consultative practice in that the consultants (hospitalists in this case) manage not only general medical problems, such as diabetes or hypertension, but hospitalizations more generally. From a mission-based standpoint, comanagement may be seen as a collaborative management of complex patients by two or more clinical experts with distinct knowledge, skills, or focus enacted for the purpose of improving care quality.

The focus of comanagement on improving quality is in line with the founding charge of the hospital medicine specialty to raise hospital care quality.[10] In fact, the distinction between comanagement and consultation may be meaningful only if comanagers can work with specialists to implement evidence-based practice, process improvement, and address quality and cost concerns. But as seen in NPPs and fellows' skepticism of improved quality under comanagement, there is still clearly work to be done to validate this model

through measurable improvement in patients' experiences and outcomes. Proving the advantages of comanagement as a platform for practice improvement remains future work.[11]

Collaborative arrangements create natural tensions related to team function.[5] This is seen in the similar proportion of hospitalists and hepatologists indicating desire for final decision-making authority. Although comanagement evokes assumptions about egalitarian provider interactions involving shared decision-making and responsibility, it seems to function empirically under hierarchical as well as consensus-seeking forms of decision-making. Providers at the top of hierarchical teams typically experience their work as interdependent and collaborative, and report more positive interactions with other care providers.[12] Based on the fact that no hepatologists wanted more influence over decision-making, we assume that hepatologists were the physician leaders for most of the studied comanaged teams. Under situations characterized by high levels of complexity and interdependence, a team governed by a single leader may often be more effective than one governed by shared authority.[8] However, even under hierarchical models, a more participatory than supervisory leadership can help avoid alienating partners through a pattern of "we decide, you carry it out" that is often associated with ineffective leadership styles.[13–14] In fact, this alienating effect on providers in subordinate roles (ie, NPPs and fellows) may have contributed to the negative perception of the team's function on improving patient care.

This study is limited in the following ways. We did not have 100% participation in the Repeated Surveys. Attitudes and experiences of participants in a single comanagement practice are not representative of all comanaging providers. However, the goal of this study—to collect unique survey data from providers themselves to inform an evolving definition of comanagement—is modest enough in scope to not require a generalizable sample. Because this study unearthed differences in expectations and experiences within a single site, they may serve as a lower bound for the extent of differences across and within multiple sites. In addition, comanagement enacted for complex medical patients is not as common as the comanagement of surgical patients. Moreover, comanagement models in academic hospitals may have structural features and priorities not found in community settings. Whether or not these disparate models share enough in common to be categorized under a single rubric is a valid question.

Although the teamwork structure and provider roles within comanagement vary, the practice arrangement's preoccupation with quality can be seen as its defining feature. Limited evidence, to date,[1,15–19] and the rapid proliferation of the model, suggest that quality and efficiency advantages can be obtained from an effective implementation of comanagement. As in any team-based care model, a common understanding of roles and expectations are essential to enhancing teamwork. Our interpretation of the mission of comanagement may further enhance teamwork through an explicit articulation of shared goals.

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