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# On-Call Supervision and Resident Autonomy: From Micromanager to Absentee Attending

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In 1984, Libby Zion, an 18-year-old woman, died in a New York hospital of what was determined to be an adverse drug reaction; the grand jury investigating her death found contributing causes to be resident exhaustion and inadequate supervision. Although the resulting media spotlight focused on duty hour regulations, little attention has been paid to formalizing or regulating supervision provided to physicians-in-training. Despite subsequent revision of the New York State health code mandating reduced work hours and increased clinical supervision, little effect has been observed in the amount and quality of resident supervision, especially in the overnight period when residents are often admitting new patients.<sup>1</sup>

In addition to preventing resident fatigue, providing adequate supervision is a fundamental aspect of ensuring safe patient care in teaching hospitals. Attending physicians in a supervisory capacity may be held accountable for patient outcomes; an on-call capacity may be sufficient to establish a patient-physician relationship and duty to supervise.<sup>2</sup> Given that they employ physicians-in-training for clinical care, sponsoring hospitals may be held vicariously liable for adverse outcomes caused by residents acting in accordance with their job description.<sup>3,4</sup> As a result of the duty hour regulations, many programs

are requiring more residents to staff clinical services, yet these issues of liability raise concerns regarding care provided by physicians-in-training.

Previous studies have suggested that physicians-in-training prefer a collaborative approach to supervision, coupled with constructive feedback.<sup>5</sup> Kennedy et al<sup>6</sup> recently described a conceptual model for clinical oversight ranging from monitoring routine activities to intervening to provide direct patient care. However, little work has been done to describe physicians-in-training and attending physicians' perceptions of clinical supervision. The aims of this study are to describe clinical supervision preferences for attending physicians and residents during times of critical clinical decision-making, specifically during the on-call period; identify clinical scenarios that residents and attending physicians perceive as those requiring supervision; and provide physician-in-training descriptions of the attributes of effective clinical supervisors.

## MATERIALS AND METHODS

### Design

The general medicine service at University of Chicago Medical Center consists of 4 teams, each with 1 attending physician, 1 resident, 2 interns, and, often, 1 fourth-year student sub-intern. Overnight call occurs every fourth night, admitting a maximum of 10 patients. Attending physicians are available to their team at night via pager or telephone and often provide their senior

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residents with contact information including home and cellular telephone numbers. A mandatory “contact once per call” policy is revisited with attending physicians and residents at the beginning of their month-long rotation, including written materials provided to the attending physician.

### Data Collection

The university institutional review board approved this study. Between January and November 2006, all eligible internal medicine residents and attending physicians at a single academic tertiary care institution were interviewed and surveyed within 1 week of their final call night of the general medicine rotation. Oral consent was obtained before the beginning of the interview, and all interviews were performed by 1 investigator and audiotaped for clarity and transcribed for analysis. The names of the participating physician and specific references made to individuals or patients were de-identified. Interviews were conducted at the conclusion of the rotation to prevent influence on resident and attending physician behavior. Each resident and attending physician was interviewed only once during the 11-month data collection; if either physician had a second general medicine rotation during the 11-month period, he/she was approached a second time for data collection.

The critical incident technique was used to elicit information about resident and attending physician roles in patient care decisions made throughout the call night. Used in the investigation of aviation accidents, this technique allows the documentation of infrequently occurring events via the use of personal observation and experience.<sup>7,8</sup> Further probes were used to elicit perspective on current and effective supervision practices.

At the time of the interview, residents and attending physicians received an 18-item survey describing general and specific clinical scenarios likely to emerge during the on-call period to assess the likelihood of the resident soliciting supervision or the attending physician’s desire to supervise. General supervision items included such issues as contact during the on-call night and setting expectations on when contact was required. Specifically, residents and attending physicians were queried regarding whether they would initiate contact or expect the initiation of contact outside of patient rounds if particular clinical situations arose. The clinical situations surveyed are typical of those encountered

by on-call general medicine residents and are divided into the following categories: communication, transfer of care, diagnostics, therapeutics, and adverse events. Likelihood responses were given using a 5-point Likert-type scale (always, very often, sometimes, rarely, never). All items were informed by discussion and pre-testing with recent residency graduates and general medicine attending physicians, and items were then revised on the basis of the input of these discussions.

### Data Analysis

All de-identified interview transcripts were reviewed by 3 investigators and analyzed with no a priori hypotheses.<sup>9</sup> The design of the qualitative analysis was based in a grounded theory approach. Atlas TI (Scientific Software Development Company, GmbH, Berlin, Germany), qualitative analysis software, was used to facilitate retrieving, coding, and sorting the data. An inductive approach was used to develop a coding scheme after review of an initial small transcript sample. This coding scheme was then applied to the entire set of transcripts; new codes that emerged were discussed and, if agreed on, were included in the coding scheme. All discrepancies between reviewers were resolved via discussion until consensus was achieved.

Quantitative survey data were analyzed using descriptive statistics, and, where appropriate, chi-square analysis was used to compare resident and attending physician-constructed responses. In addition, a Wilcoxon rank-sum test was used to analyze the Likert-type data.

## RESULTS

### General and Specific Supervision Preferences

Forty-four of 50 eligible attending physicians (88%) completed a survey instrument; 55% were male, 45% were female, and 38% were academic faculty hospitalists. Forty-six of 50 eligible residents (92%) completed a survey instrument; 47% were male, 53% were female, 52% were in their postgraduate year 2, and 45% were in their postgraduate year 3.

Eighty-one percent of attending physicians and 77% of residents reported personal or telephone contact with

### APM PERSPECTIVES

- Providing adequate supervision is a fundamental aspect of ensuring safe patient care in teaching hospitals.
- In general, residents desire less supervision than attending physicians want to provide, despite agreement on which clinical scenarios require direct supervision.
- Future research should focus on establishing the relationship between clinical supervision and patient care outcomes and the potential impact of 24-hour hospitalist presence on these issues.

one another at least once per call night despite existing institutional mandate for attending-resident contact at a minimum of once per call night. When asked to quantify their perceived impact on a patients' plan of care overnight after they had discussed the case with the resident, attending physicians thought that they changed the residents' plan of care 21% of the time, whereas residents perceived the attending physician's contribution significantly changed the patients' plan of care 10% of the time ( $P < .0001$ ; 95% confidence interval, 0.13-0.18). Finally, attending physicians stated there were instances when they wished residents had contacted them earlier for patient care issues, whereas residents did not indicate any such instances (34% attending physicians, 4% residents,  $P < .004$ ).

Residents and attending physicians agreed that immediate notification was warranted for transfer of an existing patient to the intensive care unit, a patient experiencing cardiac or respiratory arrest or death, and housestaff personally performing an invasive diagnostic procedure. In addition, attending physicians expressed a greater desire for immediate notification for the following scenarios (Table 1): receiving a transfer patient from the intensive care unit or an outside facility; the initiation of vasoactive medications, antibiotics, or anticoagulation; housestaff ordering a noninvasive diagnostic procedure; change in the patient's code status; and patients leaving against medical advice.

### Current Status of Supervision/Effective Practices

Qualitative analysis of the resident interview transcripts revealed 2 extreme models of current supervisory practices. In one model, residents describe the attending physician as "micro-manager," dictating the plan of care for patients to the housestaff and allowing few autonomous decisions: "We didn't have a lot of autonomy with our attending, it kind of got dull and a lot of the housestaff withdrew from aspects of care because we just knew that we weren't going to make decisions anymore." In the opposite model, residents describe the "absentee" attending physician who is distanced from patient care and allows the residents almost exclusive decision-making power. One resident describes "Sometimes I just felt like [the attending] gave a rubber stamp of approval, that whatever the resident said . . . nine times out of 10, they were comfortable with that which is hopefully a sign that our team is doing the right thing but it makes you wonder how much the attending is weighing in."

When asked to describe the attributes of an effective supervisor, residents noted these characteristics most commonly: acts as a safety net ("It was nice there was this final safety net . . . if a patient were sick and I really was missing something, like some gap in my knowledge, or some error of attention, that it would get

caught"); promotes higher-ordered thinking ("I like when people challenge me like 'What was your decision-making process on this?' then when I give my reasoning, they follow up with 'Did you know this?' or the latest evidence"); and respects residents' time and competing educational pressures (" . . . provide the necessary oversight . . . but not take our time away from patient care or conferences or their own teaching.").

### CONCLUSIONS

Our findings suggest that the clinical supervision currently provided to on-call internal medicine residents is variable and highlight some strategies for improving clinical supervision during this period. Despite agreement on which clinical scenarios require direct supervision, residents desire less supervision than attending physicians want to provide. In our experience, residents often reserved attending physician-level notification for clinically unstable patients, whereas attending physicians expressed interest in earlier involvement in clinical decision-making. Ultimately, the dependence on on-call residents to initiate attending physician involvement dictates the actual supervision received.

Our data also suggest that attending physicians may use ineffective and extreme strategies to supervise. For example, micromanaging attending physicians might prevent residents from fully developing their own clinical skills. Furthermore, this strategy may generate a sense of resident apathy and a lack of faith in clinical competence. The need to preserve resident autonomy is especially evident in the language of the Residency Review Committee Internal Medicine Program Requirements.<sup>10</sup> Together, these findings highlight the difficulty in ensuring the right balance between clinical supervision and adequate resident autonomy. At the other extreme, absentee attending physicians provide little input to physicians-in-training, which can generate a sense of abandonment and exacerbates decision-making uncertainty and in turn may have detrimental effects on patient care.<sup>11</sup>

A struggle also exists between balancing decision-making autonomy and the need to report to a supervising attending physician. The hidden curriculum may play an important role in the residents' perception of supervision.<sup>12,13</sup> This informal curriculum has been defined as the set of influences that function at the institutional level of organizational structure and culture, including implicit rules to survive, customs, and rituals.<sup>12</sup> For example, those in postgraduate year 3 might be perceived as weak by peers if there is a recurrent need to communicate with an attending physician regarding patient management. Given that on-call supervision is often resident initiated, especially during times of uncertainty, peer perceptions of weakness and strength might influence an individual's decision to involve an attending physician.

**Table 1** Resident/Attending Specific Supervision Preferences

Scenario <sup>c</sup>	Level of Training	Likert-type Responses (%)					Median	P Value <sup>a</sup>
		Always	Very Often	Sometimes	Rarely	Never		
Transfer of care:								
Of patient between services	Resident	13	7	14	8	3	3.42	.025 <sup>b</sup>
	Attending	19	10	10	4	0	4.02	
Of patient from one medicine service to non-medicine service	Resident	15	8	11	8	3	3.53	.079
	Attending	24	9	9	2	0	4.25	
Of existing patient into ICU	Resident	36	9	0	0	0	4.80	.751
	Attending	35	4	4	1	0	4.40	
Receiving transfer patient from ICU	Resident	5	1	9	18	12	2.31	<.001 <sup>b</sup>
	Attending	10	6	12	14	2	3.18	
Receiving transfer patient from outside facility	Resident	6	1	8	13	16	2.27	<.001 <sup>b</sup>
	Attending	9	6	15	10	2	3.23	
Diagnostics:								
Ordering noninvasive diagnostic procedure	Resident	0	1	9	25	11	2.00	.0298 <sup>b</sup>
	Attending	0	1	17	20	5	2.32	
Ordering invasive diagnostic procedure	Resident	10	16	13	6	0	3.66	.617
	Attending	10	18	12	4	0	3.77	
Housestaff personally performing invasive procedure	Resident	7	13	16	4	5	3.28	.104
	Attending	11	15	13	4	1	3.70	
Before obtaining consultation from a medicine subspecialty	Resident	2	7	14	16	7	2.58	.254
	Attending	1	10	15	16	2	2.81	
Before obtaining consultation from a non-medicine service	Resident	2	10	14	14	6	2.73	.224
	Attending	2	10	20	10	2	3.00	
Therapeutics:								
Initiation of IV antibiotics	Resident	0	0	9	25	12	1.93	.002 <sup>b</sup>
	Attending	1	1	18	20	4	2.43	
Before initiation of IV inotropic medication	Resident	9	16	11	4	3	3.55	.023 <sup>b</sup>
	Attending	17	15	10	1	0	4.11	
Initiation of IV anticoagulation	Resident	2	6	13	19	6	2.54	.049 <sup>b</sup>
	Attending	3	7	20	7	3	2.93	
Adverse events:								
Death of patient	Resident	39	6	0	0	1	4.78	.598
	Attending	39	4	1	0	0	4.86	
Cardiac/respiratory arrest	Resident	36	8	0	0	1	4.73	.067
	Attending	41	3	0	0	0	4.93	
Change in patient's code status or goals of care	Resident	16	13	9	6	2	3.76	.042 <sup>b</sup>
	Attending	21	15	5	2	0	4.27	
Patient left AMA (against medical advice)	Resident	20	13	7	4	1	4.04	.028 <sup>b</sup>
	Attending	29	10	3	2	0	4.50	
Patient experiencing an adverse event, regardless of cause	Resident	24	13	7	2	0	4.28	.484
	Attending	25	14	4	1	0	4.43	

ICU = intensive care unit; IV = intravenous; AMA = American Medical Association.

<sup>a</sup>Wilcoxon test compares the sum of the respondents Likert-type responses, with the expected sum of the Likert-type responses were there no difference in the 2 populations: attendings and residents.

<sup>b</sup>Statistically significant  $P < .05$ .

<sup>c</sup>Question for residents: "For a standard General Medicine month, how often would you contact your attending (outside of rounds) for the following clinical situations?" Question for attending physicians: "For a standard General Medicine month, how often would expect to be contacted by your resident (outside of rounds) for the following clinical situations?"

Our findings have several implications for medical education, as well as for the quality and safety of patient care. First, it is important to establish faculty

development programs in effective on-call supervision. Academic faculty face many new challenges as they assume new roles for which they receive little formal

training—one cannot be presumed to be an effective supervisor by simply completing a residency program.<sup>14</sup> Comprehensive faculty development should focus on providing a theoretic framework for supervision strategies and a method for assessing and improving the strategies that are in use.<sup>14,15</sup> One must not lose focus of the fact that the care of the patient remains the priority; irrespective of the educational or supervisory approach, assurance of safe, high-quality care delivery is the attending physician's paramount responsibility. Previous literature has described the success of a "backstage" approach to clinical oversight, a system in which the attending is aware of decisions and allows the resident the liberty to make these decisions in accordance with clinical comfort.<sup>6</sup> Second, resident education should focus on the importance of seeking supervision in clinical care and recognizing the liability inherent in the clinical decision-making process.<sup>16</sup> Future research should focus on establishing the relationship between clinical supervision and patient care outcomes and the potential impact of 24-hour hospitalist presence on these issues.

There are several limitations to this study. It was conducted at one academic institution, raising issues of generalizability. However, given the lack of previous work done in this field, our findings may serve as a stimulus for future work at other institutions. Given our sample size, we were unable to make comparisons between supervision preferences of hospitalist versus non-hospitalist physicians. As a result, our findings cannot be considered to be definitive but provide a preliminary view of the current status of clinical supervision in residency training.

Despite these limitations, this study suggests that many factors affect attending physicians' and residents' perceptions of on-call clinical supervision, including the attending physician's supervisory style and degree of clinical uncertainty. Formal faculty and resident education on the importance of supervision and effective supervisory strategies may aid in alleviating the current

tensions that exist between clinical supervision and resident autonomy.

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