How much guidance is given in the operating room? Factors influencing faculty self-reports, resident perceptions, and faculty/resident agreement

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Background. *Guidance in the operating room impacts resident confidence and ability to function independently. The purpose of this study was to explore attending surgeon guidance practices in the operating room as reported by faculty members themselves and by junior and senior residents.*
Methods. *This was an exploratory, cross-sectional survey research study involving 91 categorical residents and 82 clinical faculty members at two academic general surgery training programs. A series of analyses of variance along with descriptive statistics were performed to understand the impact of resident training year, program, and surgeon characteristics (sex and type of surgery performed routinely) on guidance practices.*
Results. *Resident level (junior versus senior) significantly impacted the amount of guidance given as reported by faculty and as perceived by residents. Within each program, junior residents perceived less guidance than faculty reported giving. For senior guidance practices, however, the differences between faculty and resident practices varied by program. In terms of the effects of surgeon practice type (mostly general versus mostly complex cases), residents at both institutions felt they were more supervised closely by the faculty who perform mostly complex cases.*
Conclusion. *More autonomy is given to senior than to junior residents. Additionally, faculty report a greater amount of change in their guidance practices over the training period than residents perceive. Faculty and resident agreement about the need for guidance and for autonomy are important for achieving the goals of residency training. (Surgery 2014;156:797-805.)*

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A GOAL OF GENERAL SURGERY RESIDENCY TRAINING is to graduate surgeons who are capable of performing the "essential" operations, as identified by the Surgical Council on Resident Education,[1] and "guiding the conduct of most operations and making independent intra-operative decisions," as stated in the General Surgery Milestones Project.[2] Further, residencies should produce graduates who are confident in their ability to function independently. An increasing number of residents choose to do fellowship training after residency,[3,4] and anecdotal information suggests that many residents who complete training do not feel confident to perform independently and may be prepared inadequately.[5]

Historically, residents often performed operations without attending surgeons being present. Medicare rules and regulations and subsequently Accreditation Council for Graduate Medical Education (ACGME) residency rules now require that attending surgeons be present for all procedures, regardless of the level of training of the resident.[6] With the implementation of these requirements, resident autonomy has been undeniably affected. Further, these regulations may also have implications on the nature and amount of *guidance*, a component of autonomy, provided by attending faculty members to residents, which can also impact resident confidence and ability to function independently. Guidance can be defined as cueing the residents either by giving verbal directions, physically setting up the environment, or using facial expressions/gestures/vocal intonation.[7] An

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optimal strategy would be one where attending surgeons provide substantial guidance early in training and then diminish their role as the training and the proficiency of the resident progresses.[7]

Little is known about the nature and amount of guidance provided by attending surgeons. A limited, observational study of 5 cases found that more guidance occurred than was reported by the attending surgeon.[8] Chen and colleagues reported that individual attending surgeons varied in their self-reports of the amount of guidance provided, but the investigators did not evaluate what factors influenced the amount of guidance provided, nor did they determine whether surgeons and residents agreed on how much guidance had been provided.[7]

The purpose of this study was to explore the guidance practices of attending surgeons in the operating room (OR) as reported by faculty members themselves and by junior and senior residents. Our primary goals were to determine whether the amount of guidance decreases as residents mature, whether faculty and residents agree about the amount of guidance provided, and whether other surgeon characteristics influence faculty and resident perceptions. Our specific research questions were:

1. To what extent did the training level (postgraduate year [PGY]) of the resident determine the amount of guidance provided, as reported by faculty and as perceived by residents?
2. To what extent did residents and faculty agree about the amount of guidance given at different training levels (junior versus senior)?
3. To what extent did reported guidance practices of female and male faculty members differ?
4. To what extent did reported guidance practices differ for faculty who perform primarily routine general surgery cases and those who perform routinely the more complex specialty cases?

METHODS

This was an exploratory, cross-sectional survey research study involving categorical residents and clinical faculty members at two academic general surgery training programs, Indiana University (IU) and the University of Minnesota (UM). Approval from each Institutional Review Board was obtained before the start of this project. Two parallel survey forms were created. Both provided respondents with the same instructions and definition of "guidance" and both used a behaviorally anchored scale for rating the amount of guidance given.

Faculty members were asked to complete their survey online (Survey Monkey, Palo Alto, CA). The survey scenario read as follows: "You are in the OR performing an operation with a resident who is in good standing and with whom you have worked on 3 previous occasions for this same case. The patient is stable, the operation is one that is performed frequently, and there are no unusual time constraints placed on you. We would like for you to answer a few questions about your normal guidance practices with residents under the above circumstances." The instructions then clarified: "Guidance" can take many forms including verbal directions, physically setting up the environment (eg, managing tissue planes, managing the OR table position), and physically (eg, with the camera) or verbally pointing out structures or problems. Attending surgeons also provide guidance through facial expressions, gestures and vocal intonation".[7] Faculty were then instructed to rate the amount of guidance they gave using a 5-point scale with three anchors: (1) "I tend to manage most details of junior/senior resident OR performances"; (3) "I tend to provide strong guidance during the critical and difficult parts of the case and less guidance during the more straightforward parts"; and (5) "I tend to give junior/senior residents a great deal of independence when they are performing procedures in the OR." Faculty members were asked to rate their guidance separately for junior residents (PGY 1 and 2) and then with senior residents (PGY 4 and 5). An option, "Unable to rate," was available if faculty did not work with a resident group. Two e-mail reminders to complete the survey were sent out before the survey closed after 3 weeks.

Using the same instructions and definition of "guidance," residents were asked to complete a parallel survey reporting on their perceptions of the operating room guidance practices of faculty members with whom they had worked. Faculty names (specific to each institution) were listed individually in the survey, and a behaviorally anchored scale was used that was equivalent to the 1, 3, and 5 anchors in the faculty survey. Options for "unable to rate" were also given. Junior (PGY 1 and 2), mid-level (PGY 3), and senior (PGY 4 and 5) residents were asked to rate the amount of guidance faculty gave them when they were a junior resident. Senior residents were tasked additionally to also rate the amount of guidance faculty gave them when they were a senior resident. The resident survey was administered via paper during mandatory conferences addressing resident education core curriculum to ensure a better response rate.