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### Title

Reach out and teach someone: generalist residents' needs for teaching skills development.

### Permalink

<https://escholarship.org/uc/item/33v0m3ff>

### Journal

Family medicine, 34(6)

### ISSN

0742-3225

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### Publication Date

2002-06-01

Peer reviewed

## Reach Out and Teach Someone: Generalist Residents' Needs for Teaching Skills Development

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**Background and Objectives:** *Family practice residents and students receive substantial teaching from senior residents. Yet, we lack data about residents' needs for teaching skills development, particularly in generalist training. This multicenter, interdisciplinary study describes the learning needs of generalist residents for becoming more effective teachers. Methods:* One hundred medical students, residents, and faculty in family medicine, internal medicine, and pediatrics participated in 11 focus groups and 4 semi-structured key informant interviews at the University of California, Irvine and the University of California, Los Angeles in 2000–2001. **Results:** *Participants agreed that resident teachers fulfill critical roles in medical education, providing powerful, skills-based teaching that can tangibly benefit both residents themselves and their junior learners. House staff often facilitate students' best learning experiences despite inherent risks in serving as teachers and professional role models. Residents need teaching skills training that prepares them to lead clinical teams and teach students essential skills that include history taking and physical examination, critical reasoning, charting, and procedures. Conclusions:* *Generalist residents fulfill important roles as practical clinical teachers and role models for junior learners. Future research should address how resident teachers affect learners' clinical skills, academic performance, and professionalism.*

(Fam Med 2002;34(6):445-50.)

Residents and medical students in family medicine receive a large proportion of their teaching from senior residents.<sup>1</sup> These resident teachers, many of whom are generalist physicians in training themselves, communicate important professional values to learners when attending physicians are absent.<sup>2</sup> Yet, we know little about resident physicians' needs for teaching skills development. One recent study found that a group of second-year internal medicine residents often experienced intense distress on becoming teachers and team leaders.<sup>3</sup>

This multicenter, interdisciplinary study describes the learning needs of generalist residents for becoming better teachers through a series of key informant interviews and focus group discussions.<sup>4</sup> We were interested in identifying residents' needs by qualitatively explor-

ing the opinions of the residents themselves, their faculty, and their medical students. A review of the published literature on residents as teachers revealed few previous studies using focus groups in any specialty<sup>5</sup> and none following the interdisciplinary generalist approach used in the present study.

### Methods Study Sites

The University of California, Irvine (UCI) College of Medicine and the University of California, Los Angeles (UCLA) School of Medicine are publicly supported institutions serving socioeconomically diverse urban communities. UCI and UCLA are collaborative partners in Bringing Education and Service Together (BEST), a federally funded study of generalist residents' teaching and cross-cultural communication skills. BEST includes an ongoing randomized, multicenter trial of a longitudinal residents-as-teachers curriculum informed by the present study's qualitative data. Both medical schools include residency programs in family practice, internal medicine, and pediatrics, which have a long

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tradition of teaching by residents. We invited university-based generalist residencies from UCI and nearby Harbor-UCLA Medical Center to participate in our study. During the study, none of the participating residencies provided extensive teacher training for its residents. We wanted our sample to represent the many generalist residency programs nationwide in which residents typically teach but receive limited teaching skills training, if any.<sup>6,7</sup> The Human Subjects Review committees at both medical schools approved the research protocol.

### Participants and Sampling Methods

From a total pool of roughly 1,000 senior medical students, generalist residents, and generalist residency faculty in the participating training programs, we purposely selected 100 participants to reflect the cultural and gender diversity of our institutions (Table 1). For our key informant interviews, we selected four deans whose key decision-making roles in their medical schools made their opinions about teaching especially important to understand.

### Instruments and Data Collection

One investigator drafted separate, structured question sets for the key informant interviews and focus groups (Table 2), which were edited by each of the other investigators. Two investigators used the question sets to jointly conduct semi-structured, open-ended 30-minute interviews with the four key informant deans, making field notes and audiotaping the sessions. The same investigators also jointly conducted the 11 1-hour focus groups using the same question sets. We made field notes during and after each focus group and audiotaped all sessions (which were transcribed afterward).

### Qualitative Analysis and Validity

Two of the authors independently reviewed the written transcripts, audiotapes, and field notes from each session. Using structured summary forms tailored to each session type, we conducted detailed qualitative content analyses of each record. During multiple readings, we culled key themes from the participants' speech and examined their interconnections and relationships to larger categories. Each set of summaries underwent two independent reviews for similarities and differences. Next, we accomplished subject review by giving all study participants the final results to critique. Three participants chose to offer their comments, and none differed with our findings.

### Results

Several recurrent themes emerged from the content analysis of the key informant interviews and focus groups. Our review of two of the authors' independent summaries revealed marked thematic agreement. By

Table 1

### Participants and Sites for Focus Groups and Key Informant Interviews\*

<i>Participants</i>	<i>Sites</i>	<i>Number</i>
Key informant interviews		
Medical school dean	UCI	1
Dean of educational affairs	UCI	1
Dean of educational affairs	UCLA	1
Dean of graduate medical education	UCI	1
		n=4
Focus groups		
Three groups of medical students	UCI, UCLA	22**
Four groups of generalist residents	UCI, Harbor-UCLA	41
Four groups of generalist faculty	UCI, Harbor-UCLA	33
		n=96***

UCI—University of California, Irvine

UCLA—University of California, Los Angeles

\* n=100

\*\* All participating medical students were in their third and fourth years of training and had completed some or all of their clinical clerkships. Students and residents were purposely selected to ensure diversity of gender and culture.

\*\*\* All participating faculty were closely involved in the education of generalist residents and included generalist physicians, subspecialty physicians, and nonphysician educators. The authors purposely selected each participant in the family medicine and internal medicine faculty focus groups to include those most involved in teaching residents. Following the wishes of the UCI pediatrics residency faculty, their focus group included a convenience sample of any departmental faculty who elected to participate.

the time we conducted the final focus groups, participants had reached saturation for major themes. Many themes crossed training levels, and we found that the results were most clearly described by collapsing all three training levels: deans and faculty, residents, and students (Table 3).

### Resident Teachers Fulfill a Critical Role

Participating faculty and residents, as well as each of the four key informants interviewed separately, repeatedly emphasized resident teachers' "critical" role in medical education, often using that specific word. Each key informant dean agreed that undergraduate and graduate training programs at both UCI and UCLA would suffer without resident teachers. Both faculty and residents believed that residents' teaching is the most consistent educational influence in students' training. Many residents recounted memories of good learning experiences with their own senior residents.

In contrast, all three medical student focus groups expressed ambivalence about resident teaching, which

Table 2

## Example of a Structured Question Set Used for Focus Groups and Key Informant Interviews

<i>Generalist Resident Focus Group Questions</i>	
Introductory question	1. Tell us your name, your residency program and year, and what you liked the most about your favorite resident teacher when you were a student or a junior resident.
Transition questions	2. How do you feel about teaching students and junior residents and why? 3. How much value do you feel your department places on residents' teaching activities?
Key questions	4. Here's a list of various teaching skills for residents. Which are most important to your role as a resident teacher? Least important? a. Teaching history taking b. Teaching physical examination c. Teaching diagnostic reasoning d. Teaching use of laboratory tests and imaging studies e. Teaching management of clinical problems f. Teaching procedures g. Teaching medical informatics h. Teaching evidence-based medicine i. Teaching health promotion and disease prevention j. Teaching patient communication skills k. One-to-one teaching l. Small-group teaching m. Teaching with time constraints n. Giving talks or other presentations o. Evaluating learners and giving feedback p. Motivating learners q. Working with learners in difficulty r. Other  5. Here's a list of some of the techniques we plan to use to help residents develop their teaching skills. Please rank these in order of how much they appeal to you (from most to least). Which of these techniques should we change or eliminate? <ul style="list-style-type: none"> <li>• With a preceptor, reviewing videotapes of yourself in actual teaching encounters</li> <li>• Teaching "standardized students" and getting feedback afterward</li> <li>• Practicing techniques for giving feedback to students and interns</li> <li>• Viewing and discussing videos of various clinical teaching styles</li> <li>• Participating in a Web-based discussion group for resident teachers</li> <li>• Using other Web-based materials about clinical teaching (videos, interactive text sections that ask you questions)</li> <li>• Reading selections from a book for resident teachers</li> </ul> 6. Your jobs as residents are very busy. How could we create a longitudinal curriculum in teaching skills that comfortably fits into residents' lives so that they would be able to enjoy participating? 7. What would it take to get primary care residents to enroll in a study of a longitudinal curriculum for teaching skills?
Ending questions	8. Of everything we talked about, what one piece of advice would you give to us as we develop a teaching skills curriculum for residents? 9. Are there any important topics we missed that you would like to comment on now?

was widely believed to be resident dependent. Many students cited examples of excellent resident teachers.

Even though [one resident] was doing sort of a delicate procedure, she would just start talking through it, explaining exactly what she was doing, how she was doing it, how to look for landmarks. And she actually continued to do that every time I was in the emergency room. I just felt that was really incredible.

Other students complained about residents who taught poorly or not at all. Some mentioned examples of residents' unprofessional role modeling.

I asked [a resident] a question about a patient, and I used the patient's name, and he said . . . to . . . call the patient by the patient's disease, not by the patient's name. He actually said that.

Throughout the first 3 weeks of my surgery rotation, you know, we didn't have anybody who wanted to teach. So we were . . . thrown in on a new rotation. No one even introduced us to the team or anything.

The "informal curriculum" emerged as a powerful theme in every focus group. Many resident participants

recognized its power to affect students and residents alike:

I believe there's actually a lot of teaching that goes on that we don't realize that we're teaching. You know, . . . even the student following you around . . . and you're saying you've got to go see a patient . . . student comes with you. You're talking out loud . . . That's what's kind of fun, is that things actually are more interesting if you're . . . trying to teach somebody, trying to learn, rather than just going and taking care of this hectic crisis on rounds.

Most faculty agreed that residents play a profound role in professional role modeling. As a behavioral scientist stated:

There is a kind of unstated or informal curriculum that residents teach, and they don't even know that they're teaching it . . . Residents don't even think too much about how they are role models . . . They . . . need to be at least aware of some of the "meta messages" they're giving these learners about . . . how a doctor really behaves with patients . . . All of that is very unconscious but has a powerful impact . . . on medical students.

A dean of educational affairs added that:

You cannot not teach. Residents are always the role models that students are observing.

#### House Staff May Facilitate Students' Best Learning

Despite their concerns, students generally agreed that able and willing resident teachers facilitated some of their best learning. Both students and residents emphasized repeatedly that residents are closest to students' training level and therefore understand best how students should be taught. Motivated resident teachers conveyed an infectious enthusiasm for learning that overcame gaps in their knowledge. Gifted residents could merge "text knowledge" with actual patient situations, distilling complex concepts into vivid summaries that students could readily recall and apply. They also set expectations for independent thinking.

They wouldn't tell you the answer right away but they'd make you think about it . . . Maybe if you needed a little leading, then they would, but you'd really feel good when you'd figure it out (pediatrics resident).

The best teachers that I had were the ones that expected a lot from me (pediatrics resident).

Some students would accept somewhat rough handling if the resident truly cared about teaching something. One fourth-year student described a senior resi-

Table 3

### Summary of Results\*

1. Resident teachers fulfill a critical role.
  - Resident teachers fulfill a critical educational role.
    - \* Training programs at UCI and UCLA would suffer without resident teachers.
    - \* Residents' teaching is the most consistent educational influence in students' training.
    - \* Today's primary care residents will teach patients and peers for the rest of their lives.
  - Some students expressed ambivalence about resident-dependent teaching.
    - \* Many students cited examples of excellent resident teachers.
    - \* Other students complained about residents who taught poorly or not at all.
  - Residents are key professional role models for junior learners.
2. House staff may facilitate students' best learning.
  - Able and willing resident teachers facilitate some of students' best learning.
  - Residents understand better than other teachers what students need to learn.
  - Motivated resident teachers overcome gaps in their knowledge.
    - \* As they teach, they merge text knowledge with actual patient situations.
    - \* They also set high expectations for learners to think independently.
  - For residents' teaching, quantity does not necessarily equal quality.
    - \* Students favor brief bedside teaching and well-timed "5-minute lectures."
  - The residents generally enjoyed teaching, provided they had the time and knowledge.
    - \* Teaching helps residents cement their own medical knowledge.
    - \* Teaching isn't always a pleasure and can cause residents guilt or anxiety.
3. Residents need teaching skills training.
  - Programs designed to improve residents' teaching skills are much needed.
  - Residents can and should learn a variety of teaching skills.
    - \* Exceptions may include teaching medical informatics, guiding learners in difficulty.
    - \* Residents most need to teach students basic clinical skills: history taking and physical examination, diagnostic reasoning, charting, and procedures.
    - \* Many residents also wanted skills in lecturing, evaluation, and giving feedback.
  - Essentially all residents preferred small-group interactive teaching to lectures.
  - Many participants wanted a stronger teaching culture at all medical schools.

\* Includes all major themes that the focus groups identified

UCI—University of California, Irvine

UCLA—University of California, Los Angeles

dent who tore her history and physical write-up into pieces and then helped her completely rewrite it. Although the student was initially tearful, she later recalled the episode as one of the best learning experiences in her training. Other students advocated a gentler style:

. . . teaching without intimidation, where someone encourages you to really shine in your best light.

Neither students, residents, or faculty necessarily equated quantity of residents' teaching with quality. Brief bedside teaching and well-timed "5-minute lectures" ranked among students' favorite teaching experiences with residents. Many students appeared eager to learn from their residents at all hours.

One intern, every time he was on call . . . had a topic he wanted to teach us about, very goal directed. He loved to teach, and he was fun at the same time even though it was three in the morning, and we were exhausted.

The generalist residents we interviewed generally found teaching enjoyable and self-rewarding, provided they had the time and knowledge:

If you feel comfortable with the subject, you're much more apt to be able to teach it. And it's not easy, especially considering the fact that you are only 1, maybe 2 years ahead of these people that look up to you as being the source of all knowledge and wisdom (medicine resident).

Numerous residents stated that they like the way that teaching helps them cement their own medical knowledge.

[Teaching is] important. It's critical. It's part of our own education. You have to know your stuff that much more to teach (family practice resident).

I think by the end of teaching, you know more about the subject than you would if you were being lectured about it (family practice resident).

A dean added that:

Learning and teaching go hand in hand. Those people who like to teach generally like to learn.

Several faculty noted that today's primary care residents will be teachers for the rest of their lives. As a dean expressed it:

Regardless of whether they're going to be academicians or whatever, physicians . . . are constantly teaching. You're teaching patients, you're teaching nurses, you're teaching families.

Most participants agreed, however, that teaching isn't always a pleasure. Residents may feel guilty when they lack time to teach. Teaching can also create significant anxiety.

If it's . . . not one of your stronger areas, and you don't have all the knowledge on the tip of your tongue, it can be frustrating and embarrassing (family practice resident).

Residents tended to associate these infrequent negative teaching experiences with medical students who appeared uninterested in learning or intolerant of residents' busy schedules.

I thought I'd really like teaching the med students, but I really wasn't prepared for how annoying they can actually be. . . They don't understand the importance of some of the work that needs to be done.

#### Residents Need Teaching Skills Training

Most residents, faculty, and students voiced strong enthusiasm for programs designed to improve the teaching skills of generalist residents. Most residents believed their academic departments value residents' teaching roles, although many wanted more direct support.

I think [the faculty] place a lot of emphasis on it [residents' teaching]. However, I'd like to say that we're not taught how to teach, and I think that's really a key element (internal medicine resident).

Every focus group wanted to see residents learn most or all of the 16 teaching skills we asked about (Table 2) except for medical informatics and evidence-based medicine (which some students felt they had mastered already) and dealing with learners in difficulty (which some residents believed should be a faculty responsibility). As one family practice resident said:

Anything that we as residents need to know and need to do, we should also be able to teach.

Among the 16 needed teaching skills, participants particularly emphasized evaluation and feedback, teaching with time constraints, and teaching basic clinical skills to students: history taking and physical examination skills, diagnostic reasoning, charting, and procedures. Residents also felt they needed to learn to lecture more effectively. Students agreed they wanted to get more and better feedback from residents. Feedback may present special challenges for resident teachers.

It's . . . interesting with interns, especially because you're friends, so sitting down with them and taking yourself out of the friend role and being in the mentor role is somewhat awkward (pediatrics resident).

Students also believed residents should learn how to integrate each medical student as "part of the team, not somebody that was just in the way."

For residents-as-teachers curricula, residents preferred small-group "interactive teaching" to lectures. More controversy surrounded reviewing videotapes of oneself in actual teaching encounters and online exercises, which some found unappealing. All residents would prefer to attend teacher training during noon

conferences rather than during evenings or weekends. Most believed a teaching skills program would best be placed during the second year of primary care residency, when residents have more free time and are teaching the most. Of note, faculty members from various disciplines requested separate faculty development in clinical teaching. Every focus group agreed with the need to strengthen the "teaching culture" at all medical schools.

### Discussion

The generalist residents, medical students, and faculty who participated in our study expressed remarkable agreement about a number of important concepts. Residents provide substantial teaching, which can tangibly benefit both them<sup>8</sup> and their learners. Residents also serve as important role models who help shape medical students' professionalism. Participants noted that residents need training to help them teach students basic clinical skills such as history taking and physical examination, critical reasoning, charting, and procedures. Curricula to teach these skills should help medical schools promote a stronger teaching culture that may ultimately raise educational standards for all medical disciplines.

While our observational data cannot prove that our key informant deans and focus group participants were correct in their assertions, studies adhering to standards of reliability and validity for qualitative research<sup>9</sup> can deepen our understanding of important concepts in clinical teaching. Our 100 study participants spoke to the importance of generalist residents as teachers. Their observations offer broader implications for graduate and undergraduate medical education. First, our participants illuminated the unique role of the generalist resident as a practical teacher of clinical and procedural skills, also noted in previous research.<sup>10,11</sup> Medical educators can prepare primary care residents to identify teachable moments for giving students brief but powerful case-based instruction. Our data also highlight a second vital role of the generalist resident, that of consistent companion and role model for medical students. Residents-as-teachers curricula must recognize this role and prepare residents to fulfill it. Their teaching skills training should include at least some education about serving as mentors and team leaders.

The limitations in our study deserve mention. Our participating residencies were university based and may not fully represent the perspectives of community-based

residencies. We confined our sample to two medical schools in one geographic region, and they may differ somewhat from medical schools in other locales. Finally, while focus groups promote group discussions that may spark new ideas, they can limit the in-depth exploration of individual participants' perspectives.

We believe nonetheless that our findings are robust, founded on a substantial sample of learners and faculty selected to represent their counterparts at many institutions. Our results suggest questions for future research, including how resident teachers affect learners' academic performance, clinical skills, and professionalism. Given our participants' belief that residents mold their learners' professional attributes as they impart basic clinical skills, the answers to such questions should make an important contribution to the education of family physicians and other medical generalists.

*Acknowledgments:* This research was supported by grants from the Robert Wood Johnson Foundation Generalist Physician Faculty Scholars Program, the Health Resources and Services Administration, and the Tamkin Foundation.

We thank Johanna Shapiro, PhD, and LuAnn Wilkerson, EdD, for their academic contributions and Kim Hewston for clerical assistance.

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