**Intern Evaluation Strategies in Family Medicine Residency Education:**

**What Is—and Is Not—Being Done**

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**BACKGROUND AND OBJECTIVES:** Family medicine interns often have deficiencies that are not initially appreciated. By recognizing those growth opportunities early, programs may be able to better meet their interns’ training needs. This study provides a needs assessment to ascertain what evaluation tools are being utilized by residency programs to assess their incoming interns.

**METHODS:** A questionnaire was sent to all US family medicine residency program coordinators (439 programs) via Survey Monkey©, inquiring about whether intern evaluation is performed and, if so, what strategies are used. A mixed mode methodology was used: mailing with incentive, email prompts, and telephone calls.

**RESULTS:** Of 439 programs, 220 (50%) responded to the survey. Most respondents (145, 66%) think intern evaluation is needed. However, only 79 (36%) programs are actually doing intern evaluations—only 14 (6.4%) extensively. Most programs are performing simulations (81, 45%) and assessing knowledge/comfort levels (79, 36%); less than one third are considering personality/learning styles, and almost no programs are evaluating skills such as typing (three, 1.4%) and math (one, 0.5%). Many programs use evaluations to guide future planning, help with early identification of challenging learners, and to match training to the residents’ needs. Several programs expressed concern about how they would use the information once obtained.

**CONCLUSIONS:** The majority of respondents agreed that a baseline intern evaluation is useful; few are actually doing it. This area is not well-described in the literature; residency programs could benefit from information sharing. The next step is to encourage interest in and implementation of such strategies.

(Fam Med 2013;45(6):387-91.)

The specialty of family medicine had a fill rate of 76.2% according to the 2003 National Residency Match Program (NRMP) match. Since the nadir in 2003, the fill rate has improved and was 94.4% in 2011. However, positions filled with US medical school graduates have declined from 57.2% in 2000 to 48.2% in 2011. Additionally, many new medical and osteopathic schools have been established during the last decade, and students from these schools may have been trained with a less structured curriculum and/or less formalized rotations. As such, the experiences and backgrounds of current family medicine interns are different from those in the past and may lead to significant differences in knowledge, skills, and expectations. Wendling and Baty suggest that it may be beneficial to assess the baseline competency of interns at the onset of their training in an effort to more quickly recognize those who may require more guidance or supervision. The goals of such an assessment would be “to optimize the capability of all learners and practitioners by providing motivation and direction for future learning” and “to protect the public by identifying incompetent physicians.”

An intern assessment was performed in 2009 at a family medicine residency program of four interns and in 2010 at a different family medicine residency program of eight interns. These assessments consisted of a self-reported learning history, including present concerns, past learning experiences including undergraduate and medical school grades, Medical College Admission Test (MCAT), and United States Medical Licensing Examination (USMLE) Steps 1 and 2 scores, prior learning disability evaluations, social history, medical history and current and past medications, and review of psychiatric and sleep symptoms as well as current medical concerns. This self-reported learning history was based...
on an approach presented by Gus-
sak and Kedian.4 Interns were then
asked to complete a learning style
questionnaire (the VARK guide to
learning styles, which includes Vi-
sual, Aural, Kinesthetic, and Read/
Write; www.vark-learn.com), an on-
line cultural competency evaluation
(the Provider’s Guide to Quality &
Culture, http://erc.msh.org/quiz.cfm),
a typing test (www.typingtest.com), a
medical math test (adapted from the
test provided to new nurses at New
Hanover Regional Medical Center),
and a mock in-training service ex-
amination (ITSE—the first half of the
prior year’s American Board of Fami-
ly Medicine in-training examination).
The goal of this assessment was to
create a comprehensive picture of
the learner, to include “habits of
mind and behavior; acquisition and
application of knowledge and skills;
communication; professionalism;
clinical reasoning and judgement
in uncertain situations; teamwork;
practice-based learning and improve-
ment; and systems-based practice.”
Based on the results of this evalua-
tion, an assessment and plan was
made regarding projected difficulties
in the areas of cognitive, structural,
affective, and interpersonal.

A number of potential challenges
were recognized based on these as-
sessments: typing speeds varied from
22–72 words per minute, which can
have significant electronic health re-
cord (EHR) implications; few interns
correctly answered all seven med-
cal math test questions; mock in-
training service examination scores
ranged from 36%–67% correct; sev-
eral interns had a history of test-
taking difficulty; and at least one
resident had extreme test-taking
avoidance due to anxiety. Most
interns had limited experience in
writing orders and discharge sum-
maries; one intern had no experience
taking hospital call and no hands-on
obstetrical experience. Many interns
had issues that often contribute to
residency stress, including reloca-
tion challenges, separation from
family, and the need to establish re-
lationships with their own personal
physicians due to chronic medical
problems. Some residents, particu-
larly military residents, had ambigu-
ity about their specialty choice.

For the last few years, few of our
residents’ challenges were a sur-
prise. An intern who failed his first
pediatrics rotation had also failed as
a third-year medical student. Resi-
dents who performed poorly on their
in-training service examinations
were students who had performed
poorly on their MCATs and USMLE
boards, and interns with professional-
ism issues had faced professional-
ism criticism throughout medical
school.

Using the information obtained
through intern evaluation, we were
better able to recognize and antici-
pate educational and personal chal-
 lenges for the interns and could
adapt their training schedules ac-
cordingly to meet their training
needs. For example, residents who
failed rotations as a medical student
were given early rotations in those
specialties in their intern year. Oth-
er residents who had had limited in-
tensive care unit (ICU) experience as
a medical student were scheduled
to rotate through the ICU earlier in
their intern year. Some interns were
more closely tutored with use of the
EHR system. Many interns were en-
couraged or required to attend board
review classes from the very start of
the intern year.

Having obtained and implemented
use of this information at two sep-
 arate programs, the question was
raised whether other residency pro-
grams evaluated their interns at the
start of family medicine residency. A
literature search indicated a dearth
of information about this topic. As
such, a needs assessment was de-
veloped to ascertain what evaluation
tools, if any, are being utilized by res-
didency programs to assess their in-
coming interns.

Methods
Between January and March 2009,
a survey of the 439 US family medi-
cine residency programs was under-
taken. This study was reviewed by
and received approval through the
Institutional Research Board (IRB)
at New Hanover Regional Medi-
cal Center. This was a mixed mode
study and involved a web-based sur-
vey of residency coordinators. The
decision to query residency coordi-
nators rather than residency direc-
tors was made based on access to the
coordinators and perceived increased
response rate with this group. Pro-
grams were accessed through the
American Academy of Family Physi-
cians (AAFP) web site.3 The residen-
cy coordinator for each of the family
medicine residency programs (not
taking into account duplicate pro-
grams) was mailed a letter with the
survey link in January; the mailing
included a tea bag as an incentive.
All residency program coordinators
were sent two email reminders in
February; the emails included a hy-
perlink to the survey. Personal re-
quests were then made to selected
programs with physician faculty con-
tacts. The remaining residency co-
dinators from programs that had
not completed the survey were in-
dividually called in March; message-
es were left when direct contact was
not made.

The survey consisted of three mul-
tiple-choice/response questions and
two open-ended questions about if
and how intern evaluation was per-
formed. A pilot survey instrument
was given to selected University of
North Carolina Faculty Development
fellows and the survey was adapted
based on this input. The survey was
directed via SurveyMonkey.com.
The survey took less than 5 minutes
to complete. All responses were com-
pletely anonymous.

Results
The program coordinators were en-
couraged to complete the survey
through a mixed mode approach
(see Figure 1). Of the 439 programs
that were surveyed, 220 programs
participated (50%). Most responses
(101 of 220, 45.9%) resulted from the
mailing. The initial email prompt led
to more responses (56 of 67, 83.5%)
than the follow-up email (11 of 67,
16.4%). The most effective way of getting the survey completed was through personal contact with 14 physician faculty members in individual programs where the coordinator had not completed the survey. As a result of this contact, 12 of the residency coordinators from those programs subsequently completed the survey, an 85.7% response rate. The residency coordinators for 231 of the remaining 257 programs that had not completed the survey were then contacted; correct telephone numbers were not available for 26 programs. Of these 231 programs called, direct telephone contact was more effective (27 of 83, 32.5%) than when messages were left (39 of 148, 26.4%).

At the time of the survey, 355 programs had reported their program sizes on the AAFP website. Thirty-five (9.9%) had four or less residents per class, 242 (68.2%) had five to eight residents per class, and 78 (22%) had more than eight residents per class. On the survey, 19 of the programs (8.6%) reported having four or less residents per class, 137 (62.3%) had five to eight residents per class, and 63 (28.6%) reported having more than eight residents per class.

Approximately 30% of programs surveyed interns about their medical school experiences, as shown in Figure 2. Table 1 reflects the types of evaluations conducted for incoming interns in various programs.

Most (145, 66%) residency coordinators agreed that evaluation of incoming interns for a baseline assessment is needed, 21 (9.5%) stated that it is not needed, and 51 (23.2%) were unsure. Comments included, “Medical schools are not consistent in how they teach or what experiences the intern will have, so knowing some baseline data for the individual is very important;” “This information allows you some sense of each interns’ level of clinical skills and their own self-confidence. Due to the increasing number of IMGs [international medical school graduates] in FM [family medicine] and the variance in familiarity with US clinical medicine and the clinical skills they bring; this can be helpful information and allows us to be proactive rather than reactive;” and “The idea of a pre-instruction knowledge assessment is so important and yet never done for interns—great idea!”

The respondents were asked the question “How would your program change if you had this information?” The answers were then reviewed by two independent reviewers for common themes and grouped based on those themes. A quantitative analysis of the 100 responses revealed the following themes: early identification (24, 24%), matching training to needs (24, 24%), future plans (15, 15%), increasing awareness (14, 14%), uncertain if/how it would help (11, 11%), it wouldn’t help! (10, 10%), change in orientation (10, 10%), helping interns/improving their comfort (5, 5%), and thanks for the suggestions (3, 3%).

Discussion/Conclusions
There are a number of ongoing efforts to try to allow earlier identification of residents who might need more guidance or supervision, including the Intern Clinical Judgment Evaluation tool at Michigan State University. However, there is a scarcity of information about this issue in the educational literature. A study published in JAMA in 2009 showed that there is limited validity evidence and description of educational outcomes regarding the various tools available for direct observation of clinical skills. By working toward a more intensive effort at evaluating interns across family
In medicine residency programs, we may be more successful across the specialty of family medicine at recognizing our interns’ needs, targeting them, and creating more successful doctors. If we are able to establish a comprehensive assessment tool, we hope to “improve the clinical skills of trainees and produce competent physicians who can provide high-quality care.”

Despite the majority of residency coordinators agreeing that baseline intern evaluations are needed, 138 (63.3%) stated that they are not doing it, 65 (29.8%) are doing only some intern evaluation, and only 14 programs (6.4%) are doing extensive intern evaluations. Some of the comments indicated barriers to intern evaluation. One program noted it is “hard to have time to do much to make a difference.” Another noted, “With all that we have to teach/train and evaluate, I am not sure we really have the resources to change much, except to be more aware of the special needs some new interns might have.” Others stated, “If we had a good tool, we would use it,” and “The difficulty arises with finding the time during orientation to complete the assessments.” Finally, some programs indicated that they thought this information is or should be obtained through the residency application and interview process.

Table 1: Type of Evaluations and Number/Percentage Out of 180 Respondents

<table>
<thead>
<tr>
<th>Knowledge/comfort</th>
<th>Number/Percentage</th>
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<tbody>
<tr>
<td>Clinical reasoning exercises</td>
<td>79 (78%)</td>
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<tr>
<td>Mock history/physical/order writing</td>
<td>65 (57%)</td>
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<tr>
<td>Mock In-Training Exam</td>
<td>51 (40%)</td>
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<tr>
<td>On-call scenarios</td>
<td>46 (34%)</td>
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<td>Cultural competency</td>
<td>33 (22%)</td>
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<table>
<thead>
<tr>
<th>Simulations</th>
<th>Number/Percentage</th>
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<tr>
<td>Simulated patients</td>
<td>81 (82%)</td>
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<tr>
<td>Structured clinical examination (OSCE)</td>
<td>62 (53%)</td>
</tr>
<tr>
<td>Simulator Center (NOELLE or other)</td>
<td>34 (23%)</td>
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<tr>
<th>Personality testing</th>
<th>Number/Percentage</th>
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<tr>
<td>Myers-Briggs Test®</td>
<td>48 (36%)</td>
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<tr>
<td>VARK</td>
<td>16 (10%)</td>
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<tr>
<th>Skills</th>
<th>Number/Percentage</th>
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<tr>
<td>Typing</td>
<td>3 (2%)</td>
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<tr>
<td>Medical math</td>
<td>1 (0.6%)</td>
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VARK—guide to learning styles, which includes Visual, Aural, Kinesthetic, and Read/Write

Figure 3: Logic Model
There were a number of ideas that were suggested in response to the survey questions. These included shadowing in the clinic and hospital with varied faculty observers; encouraging the faculty to develop comprehensive teaching modalities; an extended orientation block with a more intense pre-orientation for international medical school graduates; involving chief residents; conducting a pre-orientation survey of incoming interns; requiring medicine, pediatrics, and obstetrics calls within the first 2 months of internship, shadowed by a senior resident; end of the day summary daily for interns—to review challenges and pitfalls regularly; videotaping encounters; procedures workshops for the interns as a group; having interns see faculty patients while faculty members observe; and assigning advisors based on areas of projected weakness. One response was, “At the end of [orientation], we discuss each intern at the weekly faculty meeting and identify each intern’s MBTI [Myers-Briggs Type Indicator] profile, learning style, strengths, and potential areas of weakness.”

**Limitations**

This study had several limitations. First, the response rate appears adequate at 50%, yet it is difficult to ascertain if this is an accurate representation of all family medicine residency programs. While the response rate based on the size of the programs was similar to the self-reported data on the AAFP web site, small and mid-sized residency programs were less likely to respond. There may also have been a selection bias in that programs already doing intern evaluation may have been more or less likely to answer. There also appeared to be some confusion regarding what constitutes assessment—and this varies between programs.

**Conclusions**

Many programs indicated an interest in intern evaluation. Two thirds of the residency coordinators thought that intern evaluations are needed, yet only one third actually conduct them. While the programs suggested many innovative ideas about how to effectively implement this concept into their residency programs, part of the challenge will be encouraging implementation in residency programs. There are several ways to accomplish this: increasing exposure to the ideas, implementing the ideas on a small scale and seeing results, and better involvement of leadership and gaining their support. A proposed logic model for developing an effective implementation plan is included (Figure 3).

Ultimately, we may be able to impact these residents by providing early identification and helping to lead them in the right directions by offering extra assistance in such areas as board preparation, mentoring, social support, and encouraging doctors to find their own doctors. Intern assessment strategies may be increasingly important for the future of family medicine. Several programs are implementing ideas based on this survey. Further discussion and ideas may lead to greater implementation.

**ACKNOWLEDGMENTS:** This project was performed through the University of North Carolina Faculty Development Fellowship under the guidance of Kathryn Kramer, PhD. Partial content of this manuscript was presented at the 2010 Society of Teachers of Family Medicine Annual Spring Conference in New Orleans.

The views expressed in this article are those of the author and do not reflect the official views of the US Army, Department of Defense, or the Federal Government.

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**References**