



The Annual Program Review of Effectiveness:

A Process Improvement Approach

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BACKGROUND AND OBJECTIVES: All residencies and fellowships are required by the Accreditation Council for Graduate Medical Education (ACGME) and local institutional policy to conduct an annual program review of educational effectiveness. However, a number of family medicine residencies were cited for having an inadequate annual review or for failing to document the review in 2008. The ACGME and university offices of graduate medical education provide program directors some guidance on conducting and documenting annual program reviews, but few articles describe a detailed process for such a review. In this article, the authors describe the systematic process their program uses to conduct and document an annual program review and argue that the annual program review is an excellent way of modeling quality improvement to residents and showing residents and faculty that their input helps improve the residency and the residents' educational experiences. The article also describes metrics included in the process and tells how resident and faculty participation is integrated in the review. Specific outcomes of the process are also described. The authors believe that other residency programs and fellowship programs can adapt this process to conduct annual reviews that improve educational and clinical outcomes.

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The Accreditation Council for Graduate Medical Education (ACGME) requires all residencies and fellowships to conduct an annual program review of educational effectiveness.¹ Although this requirement is described in ACGME documents,¹ an inadequate annual review or the failure to document such a review is a frequent citation for family medicine programs. In 2008, 27 of 127 core programs reviewed were cited for lack of an adequate review or documentation of the review (personal communication with Sara L. Thomas, May 25, 2010).

The ACGME and university offices of graduate medical education

provide some guidelines on conducting and documenting annual program reviews.² However, beyond these brief guidelines, program directors have limited structure for conducting an annual review. A literature review identified no articles addressing this process in primary care residencies, but an article by anesthesiology faculty³ suggested some metrics (eg, resident performance on annual in-training examinations) programs might use in their annual reviews.

This article addresses three issues related to annual program reviews. One, it describes the evolution of a systematic process in a

university-based family medicine residency. Two, it details the steps of our quality improvement process along with tools used to gather resident and faculty input. Three, the article details specific outcomes the process has produced.

Methods

Three major sources were reviewed to obtain guidance on conducting annual program reviews. One, we searched PubMed and OvidSP for articles on annual program reviews using the terms "residency review," "internal review," "annual review," and "performance improvement." After this search found no articles describing explicit methods for conducting an annual review of educational effectiveness, our faculty developed a list of clinical and educational data that could be practically extracted from our residency. The office staff, program director and associate program director, and several faculty obtained other data (eg, resident performance on the ABFM In-Training Examination) during the month before the review. The authors also developed separate, but similar, online surveys for residents and faculty that were distributed and completed in early May. Two, quality improvement methods from business applications were reviewed

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and considered.⁴ Three, our initial process heavily relied on university policy that recommended several items be included in the review.⁵

The program director scheduled the annual program review for a half day in late May in our residency's classroom. All residents and faculty were invited to the review, but those on ward teams were excused. Rotation schedules were adjusted to promote resident attendance. The agenda and data are included in Tables 1 and 2 and Figures 1 and 2.

Table 1: The Agenda for an Annual Review Meeting

1. Discussion of the purpose for the annual review
2. Update on changes to goals and objectives since last year's annual review.
3. Review of most recent Program Information Form (PIF)
4. Discussion of the data (see Table 2)
5. Time to review data
6. Review of last year's brainstorming
7. Strengths, weaknesses, opportunities, and threats (SWOT) analysis
8. Brainstorming session for improvements to the program

Table 2: Description of Data Sources for the Annual Program Review

Written comments from the faculty and residents	We use an online survey service (SurveyMonkey) to obtain resident and faculty input using similar, but slightly different, surveys. Surveys are distributed at least twice to each group. Encouraging e-mails from the program director have helped keep the response rates from residents and core faculty at >80%. Responses are anonymous, and one faculty member screens the comments for statements that identify specific residents or faculty and generates two reports: one labeled "Resident Ratings and Comments" and the other labeled "Faculty Ratings and Comments" that are distributed to participants at the meeting.
Volume and variety of patient data from the Family Health Center—patient volumes and demographics	We review volume of resident outpatient visits, deliveries, and procedures. The data that is used for the Program Information Form (PIF) and the data that is distributed quarterly to the residents for practice management training are used for this section.
Resident performance and outcome assessment	Results of the American Board of Family Medicine (ABFM) In-Training Examination and pass rates of recent graduates on the ABFM Certification Examination (Figures 1 and 2). Board pass rate analysis—First time board pass rate and overall board pass rate based on data from the ABFM Web site. ⁷
Action plan from previous year with follow up of items	See Results section.
Program information form update	We update the PIF on a yearly basis to ensure that we are in compliance with all audited requirements. The yearly updates are less time intensive since some of the elements (for example, faculty resumes, faculty scholarly activity) are not updated for our Annual Review process. Includes response to RRC citations.
Resident scholarly activity	At the 2007 review, we discussed the need to improve and to measure ourselves better in this area. We added a list of all resident presentations, awards, and scholarly projects to the Annual Review two cycles ago. This had been identified on the action list as an area we wanted to improve. We found that this is a nice forum to publically recognize these accomplishments. This public acknowledgement also helps set a positive tone for the session. We track the following: submitted presentations, accepted presentations, and award-winning presentations.
Duty hours data	Includes institutional duty hours report and required quarterly duty hours report.
ACGME survey	
Annual program report	This is a specific requirement of our university's Graduate Medical Education Office. It includes a few items not otherwise included in our review. It is very easy to include these data since they have been previously collected and formatted.
Documentation of interdisciplinary training	This is a new item this year. The 2010 ACGME survey (question 16) asks whether other learners compromise the ability of the resident to learn. This has helped support discussions of the realities and the importance of interdisciplinary learning.

(continued on next page)

Table 2: Continued

Inpatient service quality improvement project data	Survey and other data from a current improvement effort for one rotation were included.
Faculty development activities	Because this was a previous RRC citation, we included a cataloging of these activities in our review.
Institutional duty hours reports	Duty hours, a frequent citation for programs, deserves close attention at the review. We monitor duty hours in a variety of ways, including the ACGME survey and the data from our institutional survey.
Most recent accreditation report from ACGME	
Goals from the department strategic planning session	All training and clinical activities take place in the context of the department and the medical center. Priorities of the institution need to be reviewed to help residents and faculty see that educational priorities compete for attention and resources with other necessary activities.
Characteristics of matched applicants-NRMP report	The NRMP provides a 16-item report over the past 3 Matches. We have elected to review these data to generate discussion about possible changes. Some of the metrics presented can be addressed with recruiting processes and the methodology for generating the Match list. For example, we found that for some test years our recent mean step scores were below the mean for the nation. Everyone agreed that there is more to selection of residents than high test scores, but we had a discussion about how we might give this more emphasis in recruiting and ranking in the next cycle. Other valuable numbers for our program have been percent filled, ranks per position, and ranks to fill.

Figure 1: Performance of Recent Residency Graduates on the ABFM Certification Examination



American Board Of Family Medicine

Residency Program Certification Performance Summary

February 10, 2010
San Antonio, Texas

1204821312 - University of Texas Health Science Center at San Antonio Program

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Year	Number Total New Grads	Number Exams New Grads	Number Passed New Grads	Number Exams Prior Grads	Number Passed Prior Grads	Number Exams 1st Time Takers	Number Passed 1st Time Takers	Number Exams Retakers (Prior Fail)	Number Passed Retakers (Prior Fail)	Program Average 1st Time Takers	National Average 1st Time Takers	% Pass National 1st Time Takers	Score at 25th %tile
2009	10	10	10	7	5	12	12	5	3	474	483	90	420
2008	12	12	9	5	2	13	9	4	2	425	472	85	410
2007	11	10	6	1	0	9	4	2	2	397	461	82	400
2006	10	9	9	4	4	11	11	2	2	518	458	97	390
2005	11	9	9	2	2	10	10	1	1	483	508	96	450

Column 1 is the indexed year.
 Column 2 is total number of program graduates in the indexed year.
 Column 3 is the number of exams taken by this year's graduating class. It may be higher than Col 2 if grads take the exam more than once in their grad year.
 Column 4 is a subset of column 3, including only those who passed.
 Column 5 and 6 include only examinees who graduated in a prior year and are taking the examination in the indexed year.
 Column 6 is a subset of column 5, including only those who passed.
 Column 7 and 8 include all those taking the exam this year, who have not previously taken the certification exam. (whether prior grads or new grads)
 Column 8 is a subset of column 7, including only those prior grads taking the certification exam who passed.
 Column 9 is a count of those who took a prior exam and who are retaking the exam in the indexed year.
 Column 10 is a subset of column 9, including only retakers who passed.
 Column 11 consists of all first time examinees from your program taking the exam in the year indicated. N/A in this column indicates that an average cannot be provided.
 Column 12 is the national average of all of all first time examinees in this year.
 Column 13 is the national percent passing of all first time examinees in this year.
 Column 14 is the national score that separates the bottom 25% of this year's graduates who took the exam from the top 75% (first takers only).

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After reviewing the data in the meeting, the program director led the group in a SWOT analysis of the program. SWOT analysis is a strategic planning method used in business and academia to help organizations evaluate their Strengths, Weaknesses, Opportunities, and Threats. Most users consider Strengths and Weaknesses to be issues over which the organization has some internal control, while Opportunities and Threats are present in the external environment. This exercise broadened participants' view of the residency and gave first-year residents and new faculty a deeper insight into the residency. The SWOT analysis also created an overview of the residency, which ensured that subsequent discussions about improvements were more comprehensive. Discussion was open-ended, and the final elements of the SWOT were derived by group consensus (see Table 3).

The SWOT analysis also permitted a broad range of initiatives in the next step of the process: developing a list of issues to improve. With the SWOT analysis prominently displayed, participants could see that all strengths, weaknesses, opportunities, and threats were addressed in the completed action plan.

Results

The time and effort expended in preparing for and completing the review generated new and useful ideas for changing and improving the residency and our practice. Office staff spent about 8 hours collecting and organizing data. Three faculty members and the program director each spent 3–4 hours requesting and reviewing data. The program director and one faculty member each spent about 5 hours developing and distributing the online surveys and preparing the results for the first annual program review but less than 2 hours each for subsequent program reviews. In addition, the annual review allowed the program director and department chair to highlight the past year's successes and set

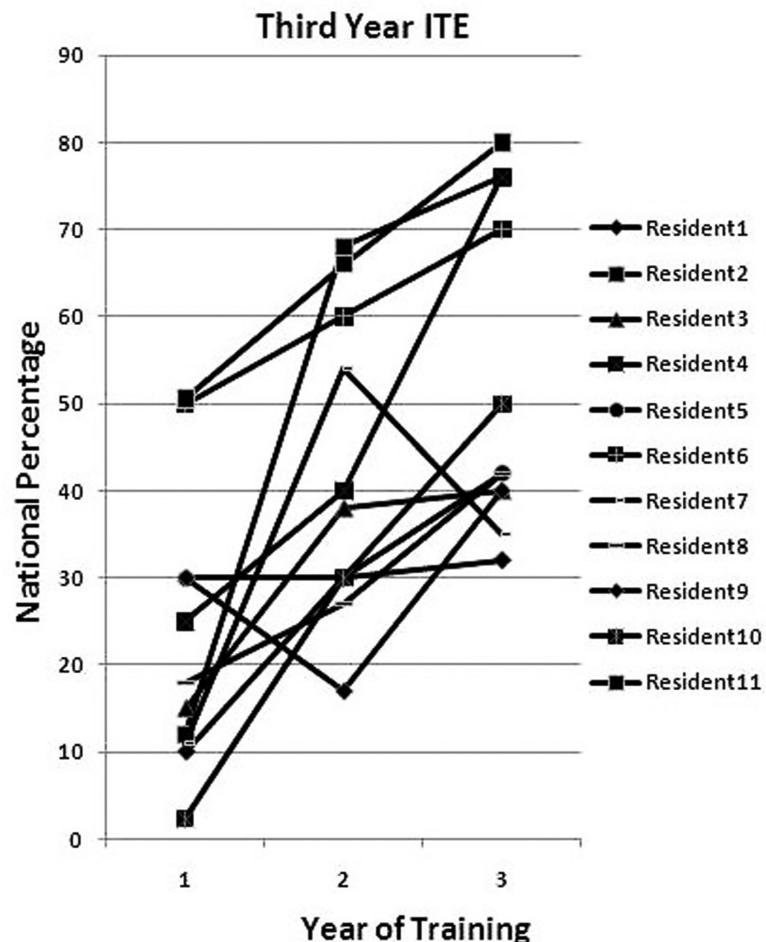
improvement goals and priorities for the coming year. The program has also reviewed its curriculum in two annual reviews since the FM Review Committee Requirement V. C. 1 mandates that programs document formal, systematic evaluation of the curriculum at least annually. In these curriculum reviews, small groups of faculty members and residents reviewed our curriculum and identified several required updates. While goals and objectives were neither written nor revised in the annual program review, participant input helped the program director and key faculty members update the curriculum after the annual review.

The ACGME mandates that residents and faculty must have the

opportunity to evaluate the program confidentially and in writing at least annually, and the program must use the results of residents' assessments of the program together with other program evaluation results to improve the program. So, as stated earlier, we developed separate surveys for residents and faculty that were distributed online via SurveyMonkey 2 weeks before the annual review. All ratings and comments remained anonymous and confidential to enhance candor and were compiled into separate reports that were given to everyone who attended the annual review.

The SWOT analysis was used as a framework to develop specific action plans. Each line of the newly created

Figure 2: Resident Performance on the ABFM In-Training Examination, De-identified by Resident and by Class



**Table 3: Selected Items From Our 2009 Annual Program Review's SWOT Analysis
(Each Section Typically Has 10–20 Items—Here Are Some Examples)**

Strengths	Weaknesses
1. Clinical experiences 2. Procedures training 3. Faculty member with C-section privileges 4. Strong orientation	1. Continuity visits 2. Sunrise electronic medical record (EMR) 3. Mediocre evaluation tools for some rotations 4. Acute care experience
Opportunities	Threats
1. Vegetarian options for department events 2. More psychotropic clinics 3. More women's health training 4. Additional elective time 5. Improved continuity-maternity patients 6. Call room next to Labor and Delivery	1. Funding for residents to present presentations at national conferences 2. Surgery 1 rotation: long grueling call 3. Inpatient acceptance guidelines

SWOT was reviewed and discussed in terms of how each area might be addressed. If consensus was reached on an item by participant voting, it was added to the action item list for tracking (see Table 4). In our case, the program director assigned a person or group to address each item. Tracking progress on an issue has been the program director's and associate program director's responsibility. Items are reviewed every 3-4 months and discussed at a meeting with the program director, the associate program director, and the chief residents. We plan to post action actions and progress reports on a whiteboard in the residency office to enhance transparency and to review the items quarterly at the residency core faculty meeting.

Discussion

The annual review allows program and department leaders to emphasize their priorities and determine if these priorities match resident and faculty expectations. Because residents and faculty quickly acclimate to positive changes, they often do not recall recently resolved problems. Openly reviewing the required changes discussed at the last review and discussing the progress made on issues has helped participants see that their input has helped the program improve and that the program is committed to change efforts. Additionally, the annual review is a great time to have a "reality check" about

change. Since many changes are outside the department's control, residents and faculty must realize that not all envisioned changes can occur over a year.

While most, but not all, residents and faculty can participate in the review meeting, everyone should have the opportunity to provide input. Gathering data from both groups via online surveys is one approach for ensuring that everyone can identify issues and suggest improvements. Sharing faculty and resident input with all attendees allows both groups to see other perspectives and gain new insights on improving the program.

Addressing a wide variety of items demonstrates the program's commitment to the improvement process. We have strived to create a positive environment to demonstrate a shared responsibility for our program's strengths and needs and for the need to work on improvements. Change management skills are an important element to any leadership curriculum. Our annual review process has given residents and faculty practical experiences in planning and creating change. We have found that teaching our residents about change is very meaningful to them since the improvements have a direct and often immediate effect on their education and their clinical practice.

Some improvements are easy, while others take more time and

effort. For example, more vegetarian options were quickly provided after residents stated that we were not consistently providing adequate options for vegetarians at department events. Conversely, adding another call room for our on-call residents took longer to resolve. The level of effort required to deal with a real estate issue in the hospital setting was several orders of magnitude higher than the effort required to ensure that the residency office provide more vegetarian meals. However, both improvements illustrate the program director's willingness to make changes.

The annual program review is not a mini-internal review. In our institution, the internal review, like the site visit, is compliance based, requires a full program information form (PIF), and is conducted by a group external to the residency. Thus, the internal review format is like the residency site visit conducted by the Family Medicine Review Committee. In contrast, the annual program review allows significant flexibility in the format, and all personnel are from our program. We also use our annual program review to emphasize performance improvement using available data and easily understood management tools.

Each year, we review our PIF and curriculum outside the annual program review process in a faculty meeting led by our program director. The minutes of this meeting

Table 4: Selected Items From Our 2009 Action Item List (Generated Based on the Complete SWOT—Complete List Typically Has 20–30 Items)

Resident and/or Faculty Recommendations	Action	Follow Up
Residents requested more travel funds so they can present scholarly projects at more national conferences.	Obtained more travel funds for residents from department chair for presenting scholarly projects at national conferences.	A great success story: residents published more articles and presented more sessions at national meetings this year. These accomplishments are presented on our “Recent Resident Scholarly Activity” Web page.
Residents suggested more training in psychotropic and acute psychiatric issues.	We will continue to consider this recommendation but are unable to expand psychotropic clinic at present.	Not feasible at this time.
Residents suggested more training in women’s health (eg, family planning, colposcopy clinics).	Family planning was added to the gynecology rotation.	Accomplished.
Faculty requested improving the quality of resident’s clinical evaluations by increasing the match between rotation objectives and evaluation items.	Ongoing project: to be completed in fall 2010.	In progress.

are added to our annual review notebook so our program can easily demonstrate our attention to process change during the internal review and site visit.

The ACGME Web site has some useful tools in the “Notable Practices” section that residency directors should find helpful in developing their annual review process. The tools include a survey that can be modified to obtain input from faculty and residents and a comprehensive checklist based on using performance improvement tools. If a program wants a more compliance-based approach for their annual review, there is a helpful tool available to reference.¹

Improving the improvement process is part of becoming a learning organization. We have streamlined the process each year to enhance the data participants have available for review and to improve our data display and distribution. One year, we distributed much of the data electronically before the meeting, but many participants said they didn’t read it. We now schedule the lunch period and the beginning part of the annual review for reading and discussing data to prepare participants

for the SWOT and the brainstorming sessions. One shortcoming of our process is that we print much of the data on paper, but we are implementing ways to make the process more digital next year.

Metrics are being increasingly used to manage graduate medical education programs.⁷ Some examples of useful metrics include numbers of publications and presentations, patient volumes, faculty academic rank, in-training exam scores, and board pass rates. We will continue to develop and refine our metrics over the next few years to make them more meaningful and useful. The one-half day session has proven to be an adequate time for the SWOT review and the generation of an action list. Our annual review process will continue to evolve as we become more facile with this improvement cycle and improve the data sources used throughout our residency and clinical practice. We have learned that faculty members and residents will invest time and energy in annual program reviews if they see that their input is valued and that there are changes as a result of the process. We have many

new opportunities for improvement that have emerged at the annual program review that were not recognized through our other management processes. Having residents and faculty focus on improving the program for one half-day each year can produce important changes and improve morale.

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References

1. ACGME program requirements for graduate medical education in family medicine. July 1, 2007 V C.1 and VC.2. Available at: www.acgme.org/acWebsite/downloads/RRC_progReq/120pr07012007.pdf. Accessed March 7, 2011.
2. Graduate Medical Education Office, Medical University of South Carolina. Annual program review timeline and worksheets. Available at <http://academicdepartments.musc.edu/gme/acgme/apr/apr.html>. Accessed March 7, 2011.

3. Rose SH, Long TR. Accreditation Council for Graduate Medical Education (ACGME) annual anesthesiology residency and fellowship program review: a "report card" model for continuous improvement. *BMC Med Educ* 2010;10:13-8. www.biomedcentral.com/1472-6920/10/13. Accessed March 7, 2011.
4. Krajewski LJ, Ritzman LP. *Operation management: strategy and analysis*, sixth edition. Upper Saddle River, NJ: Prentice Hall, 2002.
5. UTHSCSA Graduate Medical Education Policy 3.1.5. Assessment of educational effectiveness of programs, effective date July 2005. Available at www.uthscsa.edu/gme/Policies/3.1.5%20of%20educ%20effective.pdf. Accessed March 7, 2011.
6. American Board of Family Medicine. Program-specific information on Board performance of UTHSCSA family medicine residency graduates. Downloaded from the www.theabfm.org/.
7. Murray PM, Valdivia JH, Berquist MR. A metric to evaluate the comparative performance of an institution's graduate medical education program. *Acad Med* 2009;84(2):212-9.
8. ACGME. All RC notable practices. Available at: www.acgme.org/acWebsite/notablepractices/default.asp. Accessed March 71, 20110.