

Teaching Information Mastery: Evaluating Information Provided by Pharmaceutical Representatives

Allen F. Shaughnessy, PharmD; David C. Slawson, MD; Joshua H. Bennett, MD

Background: *The pharmaceutical industry plays a large role in the lifelong learning of family physicians. Controversy exists over how to integrate this potential information source into residency curricula. **Methods:** Based on a faculty and resident needs assessment, a curriculum was designed to teach the evaluation of pharmaceutical representatives' (PRs) presentations. The Pharmaceutical Representative Evaluation Form is the keystone of the curriculum. This evaluation form guides discussion of pharmaceutical presentation to facilitate understanding of the sales process and help residents confirm or dispute the presentation's content, based on the sales methods used. A second goal of the evaluation program is to improve the content of the PRs' presentations. **Results:** Residents rapidly acquire the ability to identify potential fallacies of logic and other misleading sales techniques in representatives' presentations. Compared with pretest results, residents' posttest scores demonstrate an understanding that PRs and the acceptance of promotional items can affect their prescribing behavior. Most PRs are pleased that their role is seen as educational. **Conclusions:** Physicians must function more as information managers than as information repositories, and it is important that residents be able to obtain useful information from PRs. Our curriculum has been effective in increasing residents' abilities to evaluate the pharmaceutical sales process and allowing them to separate the "wheat from the chaff" contained in this ubiquitous source of information.*

(Fam Med 1995;27:581-5.)

The process of teaching family practice residents to be effective lifelong learners is one of the most important, yet challenging, aspects of the educational process. Along with teaching clinical skills, residency programs must provide training for critical evaluation and management of new medical information which is available from a myriad of sources, each with its own advantages and disadvantages.

One source of new information, the pharmaceutical industry, plays a large role in resident education and the formal and informal continuing medical education of practicing physicians.^{1,2} Residents have frequent contact with pharmaceutical representatives (PRs), starting early in medical school. Research evaluating the prescribing habits of residents³ and practicing physicians^{4,5} has documented the effect of PRs on drug prescribing. In the Lurie et al study, 32% of 131 house officers reported changing their prescribing practices at least once based on contact with a PR.³ Avorn and Soumerai found PRs so effective that

they successfully used pharmaceutical sales techniques to "counter-detail" physicians and thus change their prescribing habits.⁶

Residency programs have taken two approaches to PRs and residency education. Some residency programs bar PRs from contact with residents during working hours. By instituting a "no PR policy," the residency program thus does not appear to endorse PRs as a credible source of information.

However, this policy of benign neglect may not be best. Recent guidelines from the Society of Teachers of Family Medicine state that:

Residency programs are encouraged to develop educational programs that assist residents in learning about promotional techniques used by industry representatives and that assist them in developing appropriate responses.⁷

Residents with minimal or unsupervised contact with PRs do not have the opportunity to learn how to evaluate the information presented or the techniques of drug promotion. Most residents do choose to interact with PRs after graduation,⁸ but many are unable to effectively evaluate this source of information.⁴

From the Harrisburg Hospital Family Practice Residency Program, Harrisburg, Pa (Drs Shaughnessy and Bennett) and the Department of Family Medicine, University of Virginia, Charlottesville, (Dr Slawson).

Table 1

Outline of Introductory Lecture on the Pharmaceutical Sales Process

1. Introduction
 - Goals of advertising: inform, remind, persuade
 - Evidence that PRs affect prescribing habits
2. Uniqueness of drug promotion
 - Decision maker does not equal purchaser
 - 225,000 MDs control 250 million persons' drug consumption
3. Personal selling
 - The approach (breaking the ice)
 - The pitch (the sales presentation)
 - The close (obtaining a commitment)
4. The pitch: logic and logical fallacies
 - Components of an argument (appeal)
 - Rational appeals (reasons) to use a drug
 - Nonrational appeals
5. Other techniques of drug promotion
 - Food • Gifts
 - Sexual appeals • Relationship building
6. Separating the "wheat from the chaff"
 - Remember goal of drug promotion
 - Recognize susceptibility
 - Active approach
 - Critical evaluation of information
 - Confirmation by other sources

PRs—pharmaceutical representatives

The alternative policy of allowing resident contact with PRs ranges from unrestricted access to tightly controlled and monitored detailing sessions.⁹ With few exceptions,¹⁰ residents are not formally taught how to evaluate the pharmaceutical sales process or judge the usefulness of the presented information.

To successfully use PRs as a source of useful patient-oriented information, residents must be taught the sales process so they can separate useful information from other information that could mislead them. This paper outlines the rationale and design of a curriculum that has three goals: 1) to prepare residents to critically evaluate information from PRs, 2) to allow the residency program to monitor PRs' teaching activities, and 3) to give the PRs feedback on their presentations, since active "cultivation" of PRs by the clinician can result in a useful source of patient-oriented evidence.¹¹ In addition, preliminary evaluation will be provided on the effect of the curriculum on residents' attitudes toward PRs. We currently are collecting more detailed data on this intervention's effect on resident and PR behavior.

Methods

Needs Assessment

After informal discussions with faculty and residents of the Harrisburg Hospital Family Practice Residency Program, the idea of a structured curriculum involving PRs was generated. Stated reasons why such

Table 2

Pharmaceutical Curriculum's Goal and Objectives

Goal

This curriculum's goal is to prepare the resident to understand the sales process of pharmaceuticals so they will be able to evaluate the information presented by pharmaceutical representatives.

Objectives

1. Given an opportunity to discuss a medication with a pharmaceutical representative, the resident will be able to:
 - Recognize the marketing techniques used by the representative
 - Obtain the following information about each drug discussed: generic name, comparative information with other drugs, adverse effects, contraindications, and patient cost
 - Identify the information that is of little relevance to clinical decision making
 - Differentiate between rational and nonrational appeals used in the marketing presentation
 - Specify what types of questions are appropriate for the representative, what types of questions are appropriate for the manufacturer's drug information department, and what questions are inappropriate for the representative or the manufacturer
 - Assess the validity of the presented information
 - Identify and list necessary information omitted from the presentation
2. The resident will be able to describe the role of a pharmaceutical representative in the resident's lifelong learning process.
3. The resident will be able to explain the ethical issues that arise from the medical industry/pharmaceutical industry interaction.
4. The resident will be able to describe the ethical guidelines advocated by various medical societies.

a curriculum was needed included: 1) residents were thought to be unprepared to evaluate information presented by PRs and were often unduly influenced by the PRs' sales efforts; and 2) faculty members felt a conflict in their attempts to clarify or rebut claims made during a sales presentation. If faculty members confronted the PR about a claim in the presence of the residents, the ensuing argument was uncomfortable and might actually increase the presentation's effectiveness. If faculty did not dispute a claim, the residents might leave the presentation with incorrect or harmful information.

The majority of residents also felt uncomfortable with their current knowledge of the sales process. Many stated they "didn't know what to believe" when talking to PRs. Most of the residents were unfamiliar with the ethical issues related to their interactions with PRs such as the spending of "patients' money" without patients' knowledge or consent and the establishment of indebtedness when accepting a gift.¹²

To formally explore residents' attitudes toward PRs as part of our needs assessment, an anonymous survey was conducted using a questionnaire developed by McKinney et al.¹³ The questionnaire consists of 10 attitude statements about PRs and drug detailing. Residents were asked to report their degree of agreement with the statements using a 5-point Likert scale,

ranging from strongly agree to strongly disagree.

The analyzed responses revealed that residents had a generally favorable attitude toward PRs' education and information services and did not feel overly influenced by PRs. However, they did not feel adequately trained to interact with PRs.

From this assessment we concluded that although pharmaceutical representatives were seen as a valued and frequently used source of information, residents were uncomfortable with their ability to evaluate this information effectively. Based on this needs assessment, the curriculum described below was developed.

Description of the Curriculum

The curriculum begins with a lecture/discussion format that presents the general goals and techniques of pharmaceutical advertising (Table 1). This presentation is given at the beginning of each residency year. The remaining curriculum evaluates PR sales presentations. The curriculum's goal and objectives are shown in Table 2.

In our program, PRs provide lunch 3 days each week, scheduled in advance by appointment. On 2 days every month, the PRs are given half of the lunch hour for a formal presentation to the residents and faculty. One of these formal monthly presentations is evaluated as part of this curriculum. Unless requested by the PR, the presentations are not screened or approved beforehand. PRs are notified by letter about the goals and methods of the evaluation program.

At the end of the presentation, the PR is asked to leave the room so an open discussion can be conducted without confrontation. At this time, a Pharmaceutical Representative Evaluation Form (available from authors by request) is completed by every resident. Completion of the form takes 5–7 minutes.

When the form is completed, discussion is focused on identifying aspects of the sales process, attempting to confirm or dispute the content of the presentation based on the sales methods used. Sales techniques, appeals, and omissions are identified, and their effect on the overall message of the PR ("prescribe my drug") is deliberated. Care is taken not to let the discussion turn into an attack on the PR or the pharmaceutical industry.

The results of the residents' evaluations are tallied, and the summary is provided to the PR. The cover letter stresses that the results are from the residents (not necessarily the moderator) and informs the PR of "what was heard," so they can compare it with "what was said." This feedback is designed to improve the PR's presentation content and educational performance.

Depending on the quality of the presentation, this evaluation program will either reinforce or invalidate the message of the PR. Incorrect or invalid informa-

tion and inappropriate appeals are recognized as such, and the discussion may have a "counter-detailing" effect. On the other hand, factual and clinically relevant information, presented in a candid and straightforward manner, is further reinforced and validated. As a result, PRs have an incentive to provide useful information.

The Evaluation Form

The Pharmaceutical Representative Evaluation Form is designed to evaluate three significant areas of the sales process between PRs and residents: the completeness of the presented information, the general techniques of persuasion used, and the use of rational and nonrational appeals.¹⁴⁻¹⁶

The first section of the form addresses whether the following information was presented: 1) generic name of the drug, 2) comparative information with other drugs, 3) adverse effects, 4) contraindications, and 5) drug cost. The next four questions deal with clinical relevancy and the information's accuracy. The residents are asked to determine whether the information was factually correct and if any new information was supported by well-designed studies. Studies of this type are evaluated using the criteria of evidence-based medicine.^{17,18}

The next section of the form asks the resident to identify which techniques of promotion were used by the PR. The final section considers appeals or arguments that were presented by the PR. Appeals are divided into rational and nonrational categories (Table 3). Rational appeals provide information about the product or its clinical use, which logically lead to the conclusion that one drug should be used over another (or vs no drug at all). Nonrational appeals, on

Table 3

Reasons to Choose One Therapy Over Another

Rational Appeals (Reasons) to Use a Drug

- Greater effectiveness
- Greater safety
- Greater patient convenience (taste, frequency of dosing, etc)
- Lower cost

Nonrational Appeals

- Testimonial (case report)
 - Appeal to authority ("Dr ___ uses this drug.")
 - Bandwagon appeal ("Everyone's using this drug.")
 - Red herring appeal (factual but irrelevant data)
 - Appeal to ignorance ("The claim hasn't been shown to be false, so it must be true.")
 - False cause (effect inappropriately linked to drug)
 - Ad hominem attack (attacking other company, other PRs, etc)
 - Appeal to fear (fear of litigation, patient dissatisfaction, etc)
 - Ego gratification ("You'll feel better if you prescribe this drug.")
 - The challenge ("Prove me wrong by trying my drug.")
 - Appeal to pity ("Help me out by giving it a try.")
-
-

Table 4
Changes in Residents' Attitudes Toward Interaction
With Pharmaceutical Representatives (PRs)

Survey Item	Pretest	Posttest
1. PRs perform an important teaching function at this institution.	2.5	2.3
2. PRs provide useful and accurate information about newly introduced drugs.	2.4	2.4
3. PRs provide useful and accurate information about already established drugs.	2.6	2.3
4. PRs should be banned from presentations at this institution.	4.2	4.3
5. I was given sufficient training during medical school about interacting with PRs.	3.9	3.7
6. I am being given sufficient training during my residency.	2.3	1.7
7. I would have the same degree of contact with PRs whether or not promotional gifts were distributed.	3.5	3.3
8. Discussion with PRs has no impact on my prescribing behavior.	3.1	3.3*
9. Acceptance of promotional items from PRs has no impact on my prescribing behavior.	1.8	2.3*
10. PRs help to support important conferences and speakers at this institution.	1.7	2.2*

Values are mean of responses on 5-point Likert scale (1=strongly agree; 2=agree; 3=neutral; 4=disagree; and 5=strongly disagree).

* Paired *t* test, *P*<.05

the other hand, have no part in the critical thinking process. Claims made by PRs usually contain true facts, but these facts may not be complete or may not be related to the conclusion. This section includes 12 common nonrational appeals. These appeals are briefly explained in Table 3; a full discussion can be found in a previous paper.¹⁹

Evaluation of the Curriculum's Effect on Resident Attitudes

This curriculum has been used for 2 years at Harrisburg Hospital. In our experience, residents rapidly acquire the ability to identify potential fallacies of logic in representatives' presentations. As their confidence increases, the residents become increasingly assertive in questioning the representative about these claims. Once residents gain confidence, the focus of the evaluation process changes from identifying fallacies to identifying useful information that can be obtained from the encounter.

To more precisely evaluate the effect of the curriculum, we administered a 10-item attitude survey modified from that used by McKinney et al to evaluate internal medicine faculty and residents.¹³ Two residency classes were evaluated before and after 1 year of exposure to the curriculum. The results were analyzed using StatView™ SE+Graphics (Abacus Concepts) to perform the paired *t* test statistic.

Results

Compared with their responses to the questionnaire before the intervention began, the same group of residents (*n*=12) did not change their belief that PRs play an important teaching function and can provide use-

ful and accurate information (Table 4). They also felt that PRs should continue to make presentations. When asked their degree of agreement with the posttest statement, "PRs should be banned from presentations in this residency," the options "disagree" or "strongly disagree" were chosen by 95% of the residents. Residents recognized the influence of PRs on their prescribing habits, more strongly disagreeing with statements such as "Discussion with PRs has no impact on my prescribing behavior" (paired *t* test = -2.309, *P*=.0395) and "Acceptance of promotional items has no impact on my prescribing behavior" (paired *t* test = -2.309, *P*=.0395).

While we have not systematically queried or collected data from the PRs, we have received a variety of responses to the program from them. Most PRs seem to be pleased that we see their role as educational, while others have expressed to us that they feel burdened by this responsibility. ("My job is to sell drugs, not teach doctors.") Like most educators, they have mixed feelings toward the evaluation process. The opinions of PRs who present useful information are generally positive.

Discussion

We are entering an era of medicine in which information about the care of patients is changing so quickly that physicians must function more as information managers and not just as information repositories. As a result, training programs will need to focus more on teaching information management skills.

The pharmaceutical representative serves and will continue to serve as a valuable source of new information. Good PRs are truly experts on the drugs they sell. Their inherent limitation is their inability to provide credible recommendations with regard to when to use their drugs. This curriculum's purpose is to enhance residents' ability to obtain useful information from this source. Though this evaluation program focuses on uncovering flaws in the sales process, residents still value the presentations made by PRs.

The method used in this curriculum varies from the traditional approach, which is either to ignore or

debate PRs or to painstakingly verify every claim. The practice of ignoring PRs is not continued by most residents once training is completed. The debate method can quickly degenerate into the sport of PR bashing, which may reinforce the message being debated, ultimately benefiting the PR. Verifying the information requires too much time and decreases the information's usefulness.

Teaching residents to evaluate the pharmaceutical sales process enables them to identify logical loopholes, meaningless testimonials, unneeded improvements in drugs, and unlikely claims.²⁰ Directing the PR to provide new, patient-oriented information greatly improves his/her use as an information source.

One limitation to our approach is that it is somewhat artificial. Whereas the majority of the residents' interactions occur in a group setting, when residents enter practice they will be much more likely to interact one on one with PRs. However, the knowledge and techniques learned by the resident should be transferable to and useful in one-on-one encounters.

Another limitation is that we have had only 2 years of experience with this curriculum and have been limited in our ability to evaluate its effectiveness in teaching residents to judge the information obtained from PRs. The small number of residents who have evaluated the curriculum limits the statistical power of the study to identify changes in attitude as a result of the curriculum. Also, we have not evaluated whether the curriculum has had an objective effect on the knowledge or behavior of either the residents or the PRs.

This curriculum is one part of our larger goal of creating information masters, "informed consumers" of information, who are able to provide better care to patients as a result. Ideally we would like to determine whether this curriculum meets this goal. An intermediate outcome would be to determine whether residents are able to distinguish rational from nonrational appeals. Further research into these areas will tell us whether this curriculum is successful.

Our plans for the future call for greater involvement by the upper-level residents in conducting the evaluation process. We will continue to demonstrate, via role modeling, the art of redirecting pharmaceutical representatives to provide useful information during the encounter. We are continuing to refine the residents' ability to judge valid and fallacious appeals.

Teaching residents to evaluate pharmaceutical representatives is one part of our larger curriculum of becoming a medical information master. Other sources of information—the research literature, experts, continuing medical education programs, practice guidelines, and others—can be evaluated using distinct criteria developed for each.²¹ It is our goal that this evidence-based approach to medicine will

equip residents to be competent family physicians throughout their careers.

Corresponding Author: Address correspondence to Dr Shaughnessy, Harrisburg Hospital Family Practice Residency Program, 205 South Front Street, PO Box 8700, Harrisburg, PA 17105-8700.

REFERENCES

1. American College of Physicians. Physicians and the pharmaceutical industry. *Ann Intern Med* 1990;112:624-6.
2. American Academy of Family Physicians. White paper on proprietary practices. Kansas City, Mo: American Academy of Family Physicians, 1991: 3.
3. Lurie N, Rich EC, Simpson DE, et al. Pharmaceutical representatives in academic medical centers: interaction with faculty and housestaff. *J Gen Intern Med* 1990;5:240-3.
4. Avorn J, Chen M, Hartley R. Scientific versus commercial sources of influence on the prescribing behavior of physicians. *Am J Med* 1982;73:4-8.
5. Chren MM, Landefeld CS. Physicians' behavior and their interactions with drug companies. A controlled study of physicians who requested additions to a hospital drug formulary. *JAMA* 1994;271:684-9.
6. Avorn J, Soumerai SB. Improving drug therapy decisions through educational outreach. A randomized controlled trial of academically based "detailing." *N Engl J Med* 1983;308:1457-63.
7. STFM Group on the Pharmaceutical Industry in Family Medicine. Guidelines for residency program relationships with pharmaceutical and other proprietary companies. Kansas City, Mo: Society of Teachers of Family Medicine, 1994.
8. Eaton G, Parish P. Sources of drug information used by general practitioners. *J R Coll Gen Pract* 1976;26(suppl):58-64.
9. Bucci KK, Frey KA. Involvement of pharmacy faculty in the development of policies for pharmaceutical sales representatives. *J Fam Pract* 1992;34:49-52.
10. Anastasio GD, Little JM. Interaction with pharmaceutical representatives: a residency training curriculum. Presented at the Society of Teachers of Family Medicine 24th Annual Spring Conference; May 1991; Philadelphia. Program abstract.
11. Slawson DC, Shaughnessy AF, Bennett JH. Becoming a medical information master: feeling good about not knowing everything. *J Fam Pract* 1994;38:505-13.
12. Chren MM, Landefeld CS, Murray TH. Doctors, drug companies, and gifts. *JAMA* 1989;262:3448-51.
13. McKinney WP, Schiedermayer DL, Lurie N, Simpson DE, Goodman JL, Rich EC. Attitudes of internal medicine faculty and residents toward professional interaction with pharmaceutical sales representatives. *JAMA* 1990;264:1693-7.
14. Smith MC. Pharmaceutical marketing. Strategy and cases. New York: Pharmaceutical Products Press, 1991.
15. Hemminki E. Content analysis of drug detailing by pharmaceutical representatives. *Med Educ* 1977;11:210-5.
16. Johnson RH, Blair JA. Logical self defense, 2nd ed. Toronto: McGraw-Hill Ryerson Limited, 1983:246.
17. Guyatt GH, Sackett DL, Cook DJ. Users' guides to the medical literature. II. How to use an article about therapy or prevention. A. Are the results of the study valid? *JAMA* 1993;270:2598-601.
18. Guyatt GH, Sackett DL, Cook DJ. Users' guides to the medical literature. II. How to use an article about therapy or prevention. B. What were the results and will they help me in caring for my patients? *JAMA* 1994;271:59-63.
19. Shaughnessy AF, Slawson DC, Bennett JH. Separating the wheat from the chaff: identifying fallacies in pharmaceutical promotion. *J Gen Intern Med* 1994;9:563-8.
20. Garai PR. Advertising and promotion of drugs. In: Talalay P, ed. *Drugs in our society*. Baltimore: Johns Hopkins Press, 1964:189-202.
21. Shaughnessy AF, Slawson DC, Bennett JH. Becoming an information master II: a guidebook to the medical information jungle. *J Fam Pract* 1994;39:489-99.