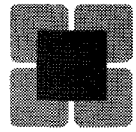

A survey of Cleveland Clinic training-program alumni

Implications for evaluation of graduate medical education

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■ The graduate of a medical training program is in a unique position to evaluate that program in comparison with the realities of medical practice. A survey of alumni of the Cleveland Clinic's graduate training programs was conducted in September 1986. The alumni's perceptions of the quality of their programs and the educational services provided by the Division of Education are discussed in relation to the educational administrative structure and evaluation process at The Cleveland Clinic Foundation. The need for such evaluation methods, as well as additional techniques to provide a comprehensive evaluation system in graduate medical education, is emphasized.

□ INDEX TERM: EDUCATION, MEDICAL, GRADUATE □ CLEVE CLIN J MED 1989; 56:167–173

EVALUATION by students is useful in assessing the quality of educational programs. However, the data are often criticized because of students' limited experience and lack of professional insight. Program evaluations by faculty through self-study or peer review provide another perspective, but they are time consuming and are infrequently attempted. The graduate of a medical training program is in a unique position to evaluate the educational experience and assess how well it prepared him or her for the realities of medical practice.[1]

■ *See also the editorial by Michener (pp 124–125)*

The variables of medical program evaluation studies by alumni have included quality of teaching, appropriateness of emphasis in certain content areas (i.e., basic sciences, psychosocial issues, problem solving, interpersonal skills, library, and information management skills), amount and appropriateness of teaching in various specialties and subspecialties, relevance of programs to medical practice, and effectiveness of administrative areas (i.e., admissions, facilities and equipment, student services).[1-3]

The amount of time between training and practice may influence alumni's perceptions of their training, and evaluators must identify these variables and take into account changes in program content. O'Reilly et al[1] found that more recent graduates rated the quality, appropriateness, and relevance of their undergraduate program higher than those who had been in practice longer. Those in general practice rated their programs higher than those in specialty practices.

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PART II. EDUCATION

n = 990
N = 3278

1. Please rate the following educational services provided by the Division of Education according to 1) amount of use during your training and 2) adequacy.

	I utilized the following: Never/ Seldom	Sometimes	Frequently	n	I found the following: Inadequate	Average	Excellent	n
Audiovisual								
% a. Equipment loan	66.5	26.7	6.8	716	4.6	44.5	50.9	328
b. Projection services	47.3	36.0	16.6	733	2.4	35.2	62.4	420
c. Production services	65.4	24.4	10.2	696	3.5	31.6	64.8	310
d. Art/Illustration	49.7	33.7	16.5	732	2.6	18.9	78.5	423
e. Photography	37.1	37.8	25.1	752	1.8	17.7	80.5	497
Conferences								
f. Facilities	9.3	28.9	61.8	720	0.8	23.8	75.3	608
Medical Library								
g. Journals and books	4.9	20.0	75.1	800	2.0	30.0	68.0	697
h. Literature searches	20.5	41.4	38.1	746	2.6	26.0	71.4	569
i. Interlibrary loan	44.5	35.9	19.6	708	2.4	34.2	63.3	450
j. Photocopying	21.6	26.4	52.0	727	3.7	30.4	65.9	572
k. Study area	20.1	34.5	45.4	733	12.4	43.6	44.0	582
Patient Education Center								
l. Consultation	68.7	18.3	13.0	654	5.7	39.7	54.7	247
m. Patient referral	69.5	17.4	13.1	639	6.4	39.3	54.3	234
Registrar								
n. Application processing	64.4	27.9	7.7	621	3.2	47.0	49.8	285
o. Benefits	64.1	27.0	8.9	644	5.2	51.6	43.2	308
p. Counseling	84.9	11.8	3.3	637	10.8	53.4	35.8	204
q. Housing	78.3	16.9	4.8	644	12.8	59.5	27.7	242
r. License assistance	78.3	17.7	4.0	631	6.9	53.2	39.8	231
s Scheduling	75.3	17.5	7.2	627	4.8	61.1	34.1	229
t. Social events	59.9	30.3	9.8	643	6.0	52.4	41.6	315
Scientific Publications								
u. Editorial assistance	66.8	25.3	8.0	665	5.2	34.3	60.5	271

2. Please rate the following CCF Publications according to 1) use and 2) adequacy.

	I read the following: Not Received	Never/ Seldom	Sometimes	Frequently	n	I found the following: Inadequate	Average	Excellent	n
% Cleveland Clinic Quarterly	2.7	5.7	35.3	56.3	934	2.3	44.1	53.6	839
Consult Magazine	12.1	7.5	31.5	48.9	876	1.6	47.2	51.2	701
Fellow	56.8	8.9	14.0	20.4	731	2.7	56.2	41.2	260

3. Have you attended CME courses sponsored by CCF?
% a. Yes 47.0 No 53.0 *(Skip to c)* n = 948
b. Approximate number in the past three years: * *(Skip to question 4)*
c. Why not? 8.1 Not on mailing list 60.3 Inconvenient location
n = 506 16.0 Topics not relevant to my practice
15.6 Other*(Specify)*: Time/scheduling conflicts = 9.5

4. Would you be more inclined to attend courses held away from CCF in a resort setting?
% a. Yes 53.9 No 46.1 *(Skip to question 5)*
b. Where? _____

5. Graduate (Residency and Fellowship) training programs at CCF: n = 905
% benefit 94.4 hinder 0.4 have no effect on 5.2 the reputation of CCF.

6. Graduate training programs at CCF: n = 887
% benefit 95.6 hinder 0.7 have no effect on 3.7 the delivery of health care at CCF.

% 7. There should be: more 30.6 fewer 6.6 the same number of 62.8 graduate education n = 759 programs offered at CCF.

8. Who would you consider outstanding teachers during your training at CCF? Why?

_____

_____

(Complete reverse side)

9. Please rate the overall quality of the following aspects of your CCF training program:

	Poor	Fair	Average	Good	Excellent	n
% a. The overall quality of my training program at CCF was:	0.4	2.7	5.0	39.3	52.6	947
b. The clinical skills of the professional staff at CCF were:	0.1	0.6	3.3	29.0	66.9	933
c. The teaching skills of the professional staff at CCF were:	1.0	4.5	16.6	42.5	35.4	934
d. The case load that I carried during training was:	1.1	2.9	16.1	42.0	37.9	911
e. The level of supervision during training was:	1.3	3.6	14.1	41.9	39.1	926
f. The relevance of my training program to current practice was:	0.5	3.1	8.8	31.6	56.0	925

10. Have you referred patients to CCF? n = 926
% a. Yes 60.3 No 39.7 *(Skip to question 11)* b. Number in 1985: *
c. Area(s) in which you have referred *(Check all that apply)*:
n 146 Internal Medicine 228 Medical specialties 42 Radiology
67 General Surgery 299 Surgical Specialties 81 Other *(Specify)*:
% d. Were you satisfied with the referral experience? 5.5 No 94.5 Yes *(Skip to question 11)* n = 510
e. Why were you dissatisfied? _____
(Please specify)

11. Have you recruited physicians trained at CCF for your practice?
% a. Yes 16.6 No 83.4 *(Skip to question 12)* n = 906
b. How many? * c. Last year of recruitment: 50% since 1983

% 12. Do you expect to recruit physicians trained at CCF for your practice? Yes 36.7 No 63.3 n = 773

13. Have you recruited any allied health professionals or nurses from CCF training programs?
% a. Yes 4.0 No 96.0 *(Skip to question 14)* n = 890
b. Type: _____ How many? $\bar{x}$ = 1
Type: _____ How many? _____

14. Specialty in which you trained at CCF *(Check all that apply)*: n = 986
270 Internal Medicine 163 Medical Specialties 26 Pediatrics 52 Pathology
n 78 General Surgery 186 Surgical Specialties 57 Anesthesiology
57 Radiology 254 Other *(Specify)*: _____

15. Specialty in which you currently practice: n = 950
% 18.1 Internal Medicine 20.7 Medical Specialties 2.3 Pediatrics 4.8 Pathology
4.8 General Surgery 21.1 Surgical Specialties 6.8 Anesthesiology 6.0 Radiology
6.5 Retired 8.7 Other *(Specify)*: _____

% 16. Are you Board Certified? Yes 79.2 No 20.8

% 17. Geographic area in which you practice: n = 890
4.5 At CCF 25.6 In Ohio 10.6 In a contiguous state (i.e., PA, WV)
18.1 Northeastern USA 14.9 Southeastern USA
7.9 Northwestern USA 18.4 Southwestern USA

18. I completed my training at CCF:
% 17.4 Since 1984 12.1 1981-1983 15.8 1976-1980 13.2 1971-1975 10.8 1966-1970
6.8 1961-1965 12.8 1951-1960 8.5 1941-1950 2.5 Prior to 1940

19. What additional services should be offered in the Division of Education?
_____
_____

20. What suggestions for improvement or changes should be made in the training programs at CCF? _____
_____
_____

Attach additional comments if more space is needed. Thank you for completing this questionnaire.

FIGURE 1. Results of survey of alumni of residency training program.

This paper describes a survey of alumni of graduate training programs at The Cleveland Clinic Foundation (CCF) and discusses the survey's usefulness in overall program evaluation.

METHODS

The survey instrument, which was designed by the Division of Education and the Office of Alumni Affairs within the Division of Public Affairs and Corporate Development, aimed to gather opinions from training-program alumni concerning the educational programs and services offered at the CCF. The 20-item anonymous questionnaire was mailed to 3,278 alumni living in the United States and its territories in September 1986.

Data analysis included calculation of frequencies and percentages. Kappa was calculated to determine the level of agreement between training and practice specialties. When appropriate, the chi-square test with Yate's correction was used to ascertain significant differences in perceptions over time (training completed prior to 1976 *v* training completed after 1976).

RESULTS

A total of 990 (30%) surveys were returned and analyzed (*Tables 1* and *2*, and *Figure 1*). Responses from specialists in practice were similar to responses from specialists in training (K=0.76), except for responses from general surgeons, which showed less agreement (K=0.57). Forty-five percent of the respondents completed their training within the previous 10 years.

Seventy-nine percent of the respondents stated they were board certified. The percentage of individuals who stated they were board certified dropped from 83.7% before 1976 to 74.3% after 1976 (P=0.001). This may reflect the delay between a resident's completing training and passing the various sections of specialty board examinations. Overall, the pass rate of the CCF graduates appears to compare favorably with pass rates nationwide.[4]

Quality of training programs

Ninety-two percent rated the overall quality of their training program as good to excellent, and 88% indicated the program was relevant to current practice. Most respondents rated the clinical skills (96%) and the teaching skills (78%) of the professional staff as good to excellent. Approximately 80% of the respondents rated the case load carried and the level of supervision during training as good to excellent. One open-ended question led respondents to cite 347 individuals as outstanding teachers, including some staff physicians who, due to retirement or attrition, were no longer at the CCF.

Perception of teaching and clinical skills were the only variables significantly different (P< 0.001) for residents who completed training prior to 1976 and those who completed training after 1976. Post-1976 alumni rated these skills lower.

The most frequently listed suggestions for change included: improve and increase the amount of teaching and/or decrease the amount of emphasis on service, increase the number of outpatient (primary care/general practice) experiences, increase the amount of hands-on experience in performance skills (e.g., surgery), improve the attitude and communication between learners and teachers, and increase the emphasis on or exposure to research.

Approximately 95% of the respondents indicated that graduate training programs benefit the reputation of the CCF and the delivery of health care at the institution. Sixty-three percent indicated the number of graduate education programs should not be changed, and 30% indicated the number should be greater.

Educational services

Respondents indicated the most frequently used services in the Division of Education were conference facili-

TABLE 1
SPECIALTY AREAS OF RESPONDENTS

Specialty	n	%
Internal medicine	172	18.1
Medical specialties	197	20.7
General surgery	46	4.8
Surgical specialties	201	21.1
Pediatrics	22	2.3
Anesthesiology	65	6.8
Pathology	46	4.8
Radiology	57	6.0
Other	83	8.7
Retired	62	6.5

TABLE 2
GEOGRAPHIC PRACTICE AREA OF RESPONDENTS

Area	n	%
Cleveland Clinic	40	4.5
Ohio	228	25.6
Contiguous states	94	10.6
Northeastern U.S.	161	18.1
Southeastern U.S.	133	14.9
Northwestern U.S.	70	7.9
Southwestern U.S.	164	18.4

ties and the medical library's journal and book collection and photocopying services. Although use of services increased after 1976, many were not as readily available prior to that time. Most of these respondents rated audiovisual services, photography, the medical library, the patient education center, and publications services as excellent.

The need for job placement advice and assistance, courses in practice and financial management for both residents and alumni, and better library facilities were the most frequently listed suggestions for improvement in the services provided by the Division of Education.

Educational outreach

Continuing Medical Education (CME) courses and the CCF publications, such as the *Cleveland Clinic Quarterly* (now the *Cleveland Clinic Journal of Medicine*), *Consult*, and *Fellow*, provide an opportunity for the Clinic to continue its communication with graduates.

Forty-seven percent of the respondents indicated they have attended CME courses sponsored by the Division. Sixty-four percent of those attended one to three courses over the past three years. The most frequently listed reasons for not attending CME courses were inconvenient location (60.3%), topics not relevant (16.0%), and no time or scheduling conflicts (9.5%). Fifty-four percent indicated they would be more inclined to attend the courses if they were held at a resort. A number of individuals suggested that alumni be made eligible to attend mini-residencies or fellowships of one week to three months to update their skills and knowledge.

Most respondents indicated that they read the *Cleveland Clinic Quarterly* frequently. Fewer indicated they read *Consult* magazine (49%) or *Fellow* (20%) frequently. Of those who stated that they read these publications frequently, 70% rated the *Cleveland Clinic Quarterly*, 69% rated *Consult*, and 63% rated *Fellow* as excellent.

DISCUSSION

The perceptions of alumni provide useful data to augment the process of overall evaluation of the Division's training programs. The results obtained from this study reinforce the importance and value of the teaching efforts and offer suggestions for improving both the training program and educational services.

However, evaluation by multiple sources is necessary to draw a comprehensive picture. An internal residency program review system is conducted by the Division Education Councils. For each program, reviewers (program directors from other departments or divisions) not only examine data provided by alumni surveys but also interview teaching staff, residents, and fellows; observe conferences; inspect educational records; analyze data provided anonymously by residents on faculty teaching skills; and evaluate in-training examination scores.[5]

Because data have been collected from many sources over time, such as an alumni survey conducted by the Division of Education in 1980, it is possible to make some generalizations about the residency training programs at the CCF. As in other institutions, some strengths and weaknesses in the training programs may be a reflection of the nature of the institution. The CCF is a highly specialized national and international referral center with a large variety and volume of patients. This patient population forms the basis for teaching, with residents assuming progressive responsibility for patients' care, under staff supervision. The patient population is skewed to the interests and expertise of specialists; consequently, residents sometimes complain of lack of experience in handling commonplace illnesses, providing longitudinal care, having graded responsibility for care, and participating in hands-on or operative procedures. In response to this problem, rotations in the Primary Care Department (which provides health care to approximately 25,000 employees and their families) and in general medicine (at St. Vincent Charity Medical Center in Cleveland) have been established.

Exposure to the seriously ill patient with complicated disease is viewed positively by resident physicians. However, the large volume of patients presents problems as well as opportunities for the teaching program. The resident can be forced into a service role that can impede advancement toward his or her educational goals. In addition, residents desire exposure to more research opportunities, which requires even more time away from patient care.

Many of the program changes recommended in the program evaluation process reflect changes in practice. Ambulatory care experience is increasingly emphasized, as is cost-effective medical care and the use of nurse clinicians and clinical associates to meet service and educational needs.

Residents appear satisfied, for the most part, with the teaching quality and perceive the faculty as clinically competent and good role models. However, some faculty are criticized as being unavailable or having poor interpersonal relationships with residents. Perceptions of a decrease in the quality of teaching and clinical skills of staff after 1976 may reflect the growth of the institution,

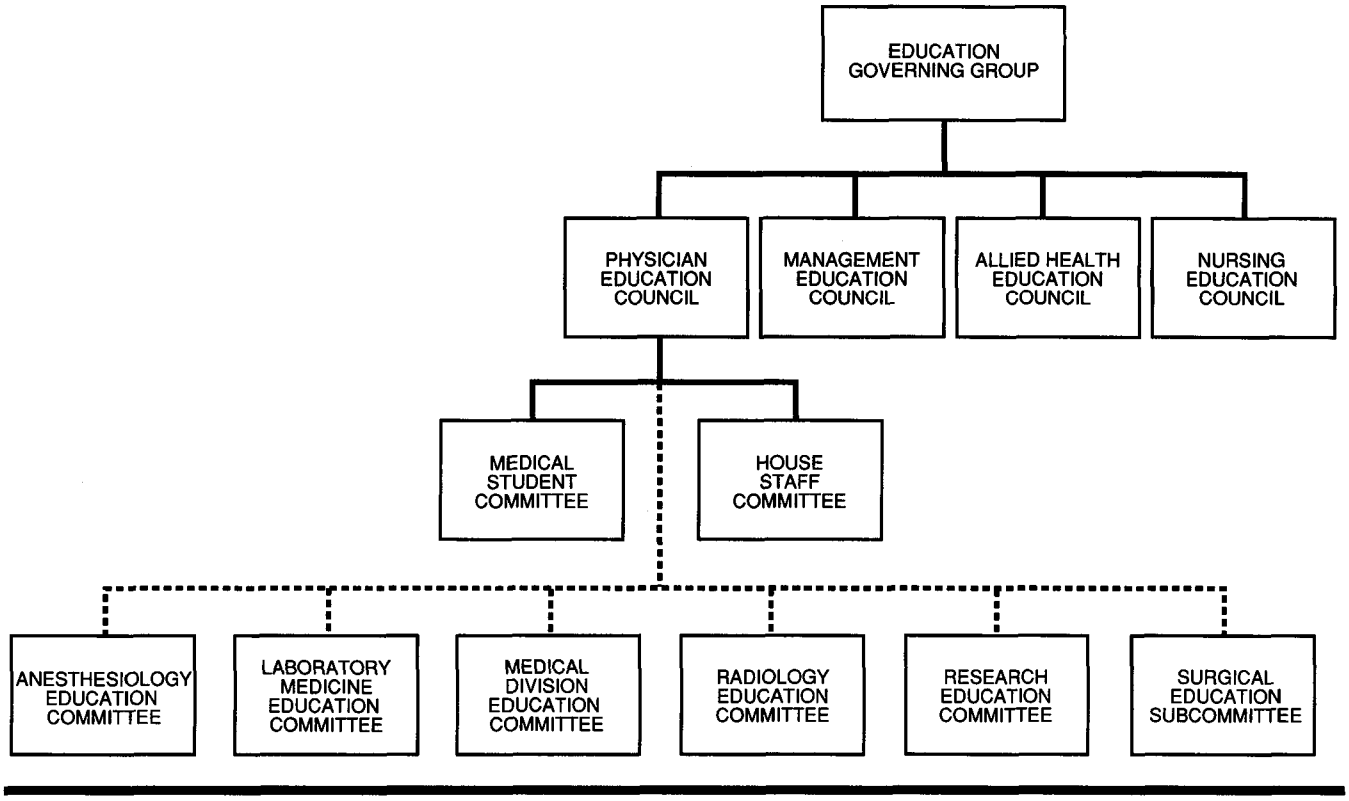

FIGURE 2. Education Governing Group and councils.

with staff under increased pressure due to expanded responsibilities in patient care, research, and teaching.

Supporting teaching efforts and encouraging improvements are functions of the various Division of Education councils, the Physician Education Council, and the Division of Education interacting within a unique administrative structure (*Figure 2*). The Education Governing Group (EGG), chaired by the chairman of the Division of Education, establishes educational policies that affect all training programs. The Physician Education Council (PEC), chaired by the vice-chairman of the Division of Education and represented by program directors and residents, implements these policies and is responsible for overall evaluation of physician education programs. Although the PEC has delegated internal program reviews to Division of Education committees, it discusses and seeks solutions to problems affecting all programs. Such issues as the development of teaching and nonteaching services and computer-assisted instruction are being explored. The PEC is also developing mechanisms to recognize outstanding teaching efforts and to assist others in becoming better teachers. The PEC and EGG sponsor conferences on teaching skills for program directors and residents. Assistance in program improvement and performance evaluation is also available to staff through the Division of Education.

Alumni survey data are also being used to improve the Division's services and facilities. For example, the data were used to support recommendations in the Division's long-range plan, which includes plans for a new library. A job-placement service and seminars in financial management for graduating residents have been implemented, partly in response to alumni surveillance.

Graduate medical education is under attack on many fronts. The federal government is threatening to withdraw financial support in order to decrease health care costs. Some programs are being forced to close and many others are being asked to limit size. The implications of an oversupply of physicians, especially in certain fields, is a concern among educators involved in residency training at the CCF. Yet most respondents to this survey—physicians in practice throughout the United States—believe the number of residency programs at the CCF should not be decreased. Most indicated they view

such programs as beneficial to the institution's reputation and its ability to deliver quality health care. An earlier study by Allen et al[6] found that the CCF's professional staff concurred with this sentiment; they believed that medical education programs at the CCF improve patient care, force the staff to keep up to date, and maintain or enhance the CCF's reputation. Eighty-two percent stated that medical education programs were necessary to keep the Cleveland Clinic at the forefront of technique and technology. These observations point to the conclusion that a committment to high-quality health care implies committment to high-quality training and to ongoing evaluation of graduate medical education programs.

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