Communications

The Use of Problem Profiles in Planning Programs of Medical Education and Specialty Consultation

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Medical education in this country is based primarily on problems encountered in hospitalized patients. In addition, rare and unusual diseases are commonly stressed. This emphasis has often been at the expense of those problems frequently encountered in the ambulatory care setting, many of which are serious and/or potentially modifiable by physician intervention. Due to the discrepancy between the content of education for physicians-in-training and the actual problems they face in their particular clinical disciplines, graduates are often inadequately prepared for the challenges of everyday medical practice.[1] In an attempt to overcome this discrepancy, profiles of problems encountered by family practice residents in an ambulatory health-care setting were used as the basis for subsequent educational activities.

Method

Problems designated as having been identified or dealt with on each patient visit were recorded on progress note forms. These designations included specific diagnoses, undefined problems, and various types of psychosocial dysfunction. Periodic rank order profiles of these problems were then generated for the clinic (Table 1) as well as for individual physicians. In order to avoid undue emphasis on minor medical events, problems were assigned an Emphasis Index score when possible.[2] A high score usually indicates that the problem is serious and commonly seen, and that diagnostic or therapeutic intervention is potentially capable of favorably affecting its outcome.

These problem profiles and Emphasis Index scores were used in planning and implementing the following educational activities in the period from July, 1974 to June, 1976.

Twice-Weekly Didactic Conferences

Topics were chosen from these problem profiles for twice-weekly conferences dealing with commonly encountered clinical problems. Also, problem profiles within more specific clinical areas were compiled. These were used to direct the discussion by the scheduled speaker when applicable. In this manner, for example, a specialist in infectious diseases was encouraged to focus on appropriate antibiotic management of infections commonly seen at the clinic.

Longitudinal Record Audit

Profiles were compiled of the 23 most commonly encountered problems over a four-month period. These 23 problems represented 50 percent of all problem encounters during this time. In addition, the highest scoring problems from the Canadian Emphasis Index were tabulated. Both listings were then used to select those problems considered most appropriate for audit. Criteria for completeness and appropriateness of the data base and problem management were developed by teams of three resident physicians. Representative charts were audited on the basis of these criteria and the results reviewed with a staff physician.

On-Site Specialty Consultation

Rank order frequency profiles were also used in the selection of on-site specialty and subspecialty consultants. Analysis of profiles compiled from nine months' experience revealed disease-category encounter frequencies to be highest within the specialty areas of otolaryngology, dermatology, psychiatry, and orthopedics. Arrangements were then made with the appropriate specialists to provide consultation services at the clinic for a two-hour period once a month. Problem frequency profiles were compiled for each specialty area and served as the basis for a systematic review of medical records and didactic but informal discussions of relevant topics. In addition, consultation was provided for problem patients. The content of each two-hour session was summarized by a resident physician and the summary distributed to all other residents and staff physicians.

Results

In this study, the day-to-day care of patients and data derived therefrom served as the basis for planning and implementing three educational activities. A sense of practicality and relevancy was achieved by emphasizing the management of problems frequently encountered and those modifiable by physician intervention. Thus, in the twice-weekly conferences, a direct relationship between the educational effort and patient care was demonstrated. Similarly, relevancy in the audit procedure was achieved by selecting problems for review which were commonly encountered and/or therapeutically modifiable. Resident physicians not only performed the audits but developed their own audit

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Table 1. Twenty-Five Most Commonly Encountered Problems in Rank Order Frequency Period from July 1, 1975 to September 30, 1975

ROF	Problem Description	Frequency of Encounter	% of Total	Emphasis Index Score
1.	Physical examination	291	7.1	
2.	Immunizations	219	5.3	
3.	Hypertension	164	4.0	64
4.	Upper respiratory infection	159	3.9	30
5.	Lacerations, abrasions, and contusions	145	3.5	
6.	Pelvic examination	122	3.0	
7.	Obesity	117	2.8	80
8.	Warts	114	2.8	
9.	Pregnancy and prenatal care	114	2.8	
10.	Well-child examination	105	2.6	
11.	Acute pharyngitis, non-streptococcal	95	2.3	30
12.	Pap smear	93	2.3	
13.	Otitis media, acute	72	1.8	75
14.	Diabetes mellitus	68	1.7	80
15.	Sprains and strains	68	1.7	
16.	Vulvitis/vaginitis	68	1.7	40
17.	Contraceptive, oral	67	1.6	
18.	Abdominal pain	67	1.6	
19.	Family relations problems	62	1.5	18
20.	Depression, non-psychotic	55	1.3	80
21.	Otitis externa	53	1.3	20
22.	Urinary tract infection	44	1.1	60
23.	Low back pain	40	1.0	27
24.	Other circulatory system	37	0.9	
25.	Diarrhea and/or vomiting	36	0.9	
	Other	1,632	39.7	
	Total	4,107	100	

Problems are listed in order of decreasing frequency. An Emphasis Index score is the product of 5 points or less accorded the frequency, seriousness, and modifiability by physician intervention of a specific problem.

criteria. This high level of participation was further enhanced by a nonthreatening approach and the opportunity for bidirectional feedback between resident and staff physicians.

The on-site specialty consultant services were very popular. This was attributed to the structuring of consultations around problems commonly encountered, the direct participation of residents in the health-care activities, and the opportunity for professional interchange on a close personal basis. In addition, the consultants often dealt with ambulatory care problems which were infrequent in their selective hospital-based practices. In so doing, they gained an appreciation of the problems encountered in family practice and were able to direct their educational efforts more effectively.

Comment

Data derived from a clinical practice setting can be used effectively to identify educational needs and to assist in the selection of educational modalities to fulfill those needs. These educational principles were eloquently discussed by Groen[3] 20 years ago. More recently they have been amplified and updated by Brown and Uhl.[4] The combination of service and education in the program of on-site consultation is consistent with these principles. The overall approach described in this study, with its attendant relevance, convenience, and efficiency, has application to medical education at the student, resident-physician, and postgraduate levels.

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References

1. Hodgkin K: Towards Earlier Diagnosis, ed 2. Edinburgh and London, E & S Livingston, 1966

2. College of Family Physicians of Canada: Canadian Family Medicine: Educational Objectives for Certification in Family Medicine. Willowdale, Ontario, College of Family Physicians of Canada, 1974

3. Groen J: Postgraduate teaching and its integration in medical practice. J Med Educ 31:181-186, 1956

4. Brown CR Jr, Uhl HSM: Mandatory continuing education — sense or nonsense? JAMA 213:1660-1668, 1970