The Yale Affiliated Hospital
Program in Internal Medicine

I. Organization, Goals and Plans

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In July, 1975, the Departments of Internal Medicine at the Yale University School of Medicine and eight community hospitals in southern and western Connecticut formed the Yale Affiliated Hospital Program (YAHP) in Internal Medicine. The YAHP provides a planned and focused program of continuing education for medical staff and housestaff at the affiliated hospitals. Six formats for the over 1,000 rounds, lectures, and conferences given annually are used. The members of the YAHP also cooperate in housestaff and faculty recruiting, evaluation of quality of care and evaluation of the process of continuing medical education itself. This report summarizes the organization, goals and future plans of the YAHP.

The pressure on American physicians to re-educate themselves annually is undeniable. The options are multiple. One can take any of several hundred organized courses [1], subscribe to a self-assessment examination, such as the ABIM MKSAP [2], or attend a regularly scheduled series of rounds or conferences at one’s own hospital. In spite of this effort, many problems still exist. At this time, there is no reliable way to evaluate the success of any of these methods of continuing medical education (CME) in either transferring information or improving the level of medical care. Furthermore, there is no generally accepted mechanism both to direct and

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supply the physician with the type and scope of education he or she needs. Also, there are few guidelines available for planning the most effective CME programs and evaluating their success.

LOGISTICAL AND HISTORICAL PERSPECTIVE

There are 35 community based, acute care, general hospitals in the state of Connecticut. Because of the relatively central location of New Haven, a good road system and the small size of the state, virtually all of these hospitals are within a one-hour drive from the Yale University School of Medicine. Beginning in the late 1960s, under the impetus of the Regional Medical Program, a system of affiliation agreements was developed between Yale and approximately 14 community based hospitals, particularly in the south central area of the state. While these affiliation agreements had as their purpose an upgrading of patient care in the region, specific programmatic aspects of continuing postgraduate education were not incorporated into these agreements, although such needs were met in some cases.

Simultaneous with, but independent of these formal affiliations, Yale faculty participated in varying degrees in continuing education programs at these hospitals. For the most part, these conferences or lectures were arranged between the Chief of Medicine at the community hospital and the individual faculty member, but in the case of gastroenterology a more formal program, the Yale Affiliated Gastroenterology Program [3], was developed which involved community based training of postdoctoral clinical fellows at most of the institutions. Until inception of the current program, however, no formal effort had been made to provide a program of community based teaching by Yale faculty which coordinated all the personnel resources within the Department of Internal Medicine and systematically addressed the needs of the affiliates.

In July, 1975, the Department of Internal Medicine at the Yale University School of Medicine and eight community hospitals (Bridgeport Hospital, Danbury Hospital, Greenwich Hospital, Griffin Hospital, Norwalk Hospital, St. Mary's Hospital, St. Vincent's Hospital and Waterbury Hospital) formed the Yale Affiliated Hospital Program in Internal Medicine (YAHP), a consortium designed to provide continuing education and to study and, perhaps, solve some of the problems mentioned earlier. This communication represents a preliminary report of our goals, organization, plans and progress to date, and deals with the approach taken by the Departments of Medicine at Yale School of Medicine and its affiliated hospitals toward providing effective medical education to community physicians and community hospital training programs.

GOALS AND PHILOSOPHY

The goal of the YAHP has been to devise an ongoing program of continuing education for medical staff and housestaff that focuses the best efforts of the university faculty. It has been a program jointly directed by the Housestaff Program Directors and the Chiefs of Medicine at the community hospital and the university. The program has been tailored to the individual needs of each hospital and is flexible and responsive to new needs as perceived by the community hospital and/or the Yale faculty. Teaching takes place at the local hospital, thus adding no additional expense or travel time for the staff of the affiliated hospital. The program is funded by contracts between the university and each individual affiliate.

The program is evaluated regularly by the various program directors and the Program Coordinator (HRB), a full-time Yale faculty member. The latter is responsi-
ble for the assignment of speakers felt to be most qualified to meet the needs of each hospital, while the program directors select the subject of lectures and conferences and the percentage of time devoted to each medical subspecialty. Thus, the university and the community hospital cooperate in planning and implementing the program so that the faculty supplies expertise in areas locally under-represented or enriches those areas that are well covered.

Ongoing evaluation of the program occurs each month during meetings between the Chairman and Vice-Chairman of the Yale Department of Internal Medicine, the Program Coordinator, and the program directors of each of the affiliates. At these meetings, common problems have been discussed and solutions shared. Lines of communication have been opened and solidified. Near the end of Year I of the YAHP, the Program Coordinator polled each member of the faculty concerning housestaff and attending performances and suggestions on future programs. These suggestions were passed on to each affiliate. Similarly, faculty performance was rated by each affiliate, and those faculty members who were not well rated as lecturers or consultants were not assigned in Year II.

Our ultimate goal is to improve the quality of care practiced at the affiliated hospitals and to study how this may be accomplished. There is no consensus as to the best way to evaluate the quality of care or the impact of an educational program on quality. Initially we plan to use retrospective audit techniques and chart review of selected tracer conditions to evaluate physician performance and to determine the success of the program in improving performance. In time, we hope to use formal examinations before and after particular subjects are emphasized. Finally, we plan to measure outcome criteria such as mortality, control of blood pressure and proper use of antibiotics.

ORGANIZATION

The entire program is organized before each academic year and planned to encompass the scope of topics selected by the affiliated hospitals. In our first two years, results of audit were not used to select areas for concentration, but this is planned for the future. Care was taken to alternate speakers so that subspecialty subjects were spread throughout the year rather than grouped chronologically, unless this is specifically requested. In some of the institutions, subspecialty conferences had existed in the past. These had been arranged by the Yale section chiefs and their counterparts at the affiliated hospitals. Since these joint efforts were generally quite successful, they were incorporated into the program virtually unchanged. AMA Category I credit toward the Physician's Recognition Award was offered for the appropriate conferences, thus providing documentation of continuing education.

Since each hospital had different needs and program objectives, six formats were devised (refer to Table 1):

1) **Grand Rounds.** Traditional grand rounds were given at six hospitals. The subject for discussion is chosen by the housestaff or Chief of Medicine at the affiliated hospital and the speaker given notice so as to prepare a formal lecture. One institution chose to use grand rounds as a method for giving a series of coordinated lectures in one medical subspecialty, thereby bringing the attending physicians and housestaff up-to-date in that area. In Year II of the program, the subspecialty under discussion was changed.

2) **Subspecialty Rounds.** These rounds are generally for the housestaff and attending physicians with an interest in the subspecialty. Approximately 15 to 25 people attend and cases are presented for active discussion. A subspecialty represen-
| Hospital          | A  | B  | C  | D  | E  | F  | G  | H  | TOTALS: |
|------------------|----|----|----|----|----|----|----|----|---------|
| Cardiology       | 19 | 9  | 9  | 9  | 33 |    |    |    | 79      |
| Endocrinology    | 12 | 1  | 9  | 11 |    |    |    |    | 33      |
| Gastroenterology | 36 | 6  | 60 | 27 | 34 |    |    |    | 163     |
| Hematology       | 12 |    | 2  | 29 |    |    |    |    | 43      |
| Immunology       |    | 3  |    | 1  |    |    |    |    | 4       |
| Infectious disease | 7  | 3  |    |    |    |    |    |    | 10      |
| Nephrology       | 24 | 2  | 4  | 1  | 24 |    |    |    | 55      |
| Oncology         |    |    |    |    |    |    |    | 4  | 4       |
| Pulmonary        | 5  | 2  | 3  | 12 |    |    |    |    | 22      |
| Rheumatology     |    | 3  | 3  |    |    |    |    |    | 6       |
| Sub-specialty rounds |    |    |    |    |    |    |    |    | 9       |
| Basic science lectures |    |    |    |    |    |    |    | 9  | 9       |
| General medical rounds |    |    |    |    |    |    |    | 91| 18      |
| Grand rounds     | 30 | 11 | 38 | 22 |    |    |    |    | 101     |
| Ward teaching rounds | 1  | 99 |    |    |    |    |    |    | 188     |
| Yale medical rounds | 35 |    |    |    |    |    |    |    | 35      |
| **TOTALS:**      | 143| 39 | 99 | 89 | 158| 147| 155| 41 | 871     |

| Conferences Year II | A  | B  | C  | D  | E  | F  | G  | H  | TOTALS: |
|---------------------|----|----|----|----|----|----|----|----|---------|
| Cardiology          | 20 | 8  | 11 | 12 | 35 | 1  |    |    | 87      |
| Endocrinology       | 12 |    | 16 | 12 |    |    |    |    | 40      |
| Genetics            | 9  |    |    |    |    |    |    |    | 9       |
| Gastroenterology    | 36 | 8  | 60 | 27 | 36 |    |    |    | 167     |
| Hematology          | 12 |    | 5  | 24 |    |    |    |    | 41      |
| Infectious disease  |    |    | 6  | 15 |    |    |    |    | 21      |
| Nephrology          | 24 |    | 12 | 16 | 24 |    |    |    | 76      |
| Nuclear cardiology  |    |    |    |    | 11 |    |    |    | 11      |
| Oncology            | 24 | 5  |    |    |    | 10 |    |    | 39      |
| Pulmonary           | 12 | 10 | 6  | 12 |    |    |    |    | 40      |
| Rheumatology        |    | 6  | 6  |    |    |    |    |    | 12      |
| Basic science lectures |    |    |    |    |    |    |    | 10 | 10      |
| General medical rounds |    |    |    | 24 | 24 |    |    |    | 48      |
| Grand rounds        | 35 | 12 | 11 | 45 | 20 |    |    |    | 123     |
| Model practice unit | 93 |    |    |    |    |    |    | 93 |        |
| Ward teaching rounds|    |    |    | 126|    |    |    |    | 126     |
| Yale floor rounds   | 103|    |    |    |    |    |    |    | 103     |
| Yale medical rounds | 36 |    |    |    |    |    |    |    | 36      |
| **TOTALS:**         | 152| 63 | 232| 102| 142| 195| 155| 41 | 1,082   |

The affiliated hospital chooses speakers from the subspecialty sections at Yale. These conferences also permit direct on-site consultation for difficult cases.

3) Basic Science Lectures. One hospital chose a series of lectures in basic science during an evening hour. Areas such as cardiac electrophysiology, salt and water metabolism, acid-base balance, and others were covered.

4) General Medical Rounds. These were problem case discussions with the housestaff and attendings concerning patients presently in the hospital. For the most part, orientation was toward patient management with attention to pathophysiology.

5) Ward Rounds. Two hospitals chose to have members of the Yale faculty come on a regular basis several times a week and serve as the ward attending for a housestaff team. The faculty member would review and discuss difficult cases selected...
by the housestaff and assist in management and approach. While the Yale faculty member would not be the responsible physician, he or she would provide thrice weekly rounds for a month and be available for followup and phone consultation if necessary. Thus, direct on-site consultation and, presumably, improved training and patient care were provided.

(6) Model Practice Unit. At one of the hospitals, Yale faculty participate in the ambulatory care program. The faculty member comes to the afternoon housestaff clinic and is available for discussion of ambulatory problems. A brief conference is held either before or after the clinic session.

Overall these conferences have represented 1,045 faculty hours in 1975–76 and 1,428 in 1976–77. In addition, 990 hours were consumed traveling to and from the hospitals in 1975–76 and 1,522 in 1976–77 (refer to Table 1). Assuming a department of 70 members and a 50 hour work week, the commitment represents 1.6% of the time of the Yale faculty.

OTHER ACTIVITIES

In addition to the obvious advantages of a direct education program to the affiliated hospitals of the presence of the Yale faculty and the benefits to the faculty of an increased referral network and salary supplements, the YAHP offers other advantages to the participants.

(1) Housestaff Recruitment. As the YAHP consortium developed, it became clear that housestaff recruitment could become a cooperative effort. Each applicant for a medical housestaff position at Yale was sent information about each affiliate. In this way, medical students interested in the Southern Connecticut region were directed to the Yale Affiliated Hospitals. It is still too early to know whether or not there will be an increase in applications, but data will be available soon. The group also actively cooperated in placing unmatched students in the few places open within the consortium.

(2) Faculty Recruitment. Many physicians trained at Yale wish to remain in Connecticut and several have now been placed in full- or part-time positions in the affiliated hospitals.

(3) Housestaff Training. The development of the YAHP has significantly benefited housestaff training at the affiliated hospitals. Besides the upgrading of the teaching program locally, elective subspecialty rotations at the Yale-New Haven Hospital and the West Haven V.A. Hospital have been greatly expanded. Residents from the member hospitals take electives on Yale subspecialty services and several have since been accepted into various fellowship programs at Yale. While Yale residents have not, as yet, elected rotations through affiliated hospitals, with one exception, it is our hope that they will use the opportunity to work with some of the excellent practicing physicians on the member hospital staffs.

(4) Medical Student Electives. As a matter of policy, Yale medical students are not assigned to clerkships at hospitals outside the greater New Haven area. Students are, however, encouraged to elect to take their second (of two) medical clerkships or a subinternship at the affiliated hospitals. The affiliated hospitals in turn are encouraged to so design such rotations as to make them attractive to the Yale students on an elective basis.

(5) Financial Support. Another advantage of the program has been the income generated for the Medical School and Department of Internal Medicine. This has provided for salary supplementation and funds for development of new projects.
(6) Research Potential. The YAHP is a unique laboratory for the study of medical education and the effect of continuing education on medical practice. Several important issues can be investigated using the present organization.

All eight hospitals have housestaff training programs and some beds are staffed by house officers and some by private physicians without housestaff. One hundred sixty-five residents and interns are trained annually in these institutions at a cost of approximately $2,500,000. Since it is still not clear that this extensive effort results in better patient care, we have begun a retrospective study at one of the hospitals to evaluate the impact of house officers on patient care.

All of our institutions subscribe to the Professional Activity Study (PAS) [4] system and have been storing demographic data and clinical information for a number of years. These data enable us to study physician performance with respect to specific quantifiable aspects of practice. For example, at one institution patient bed assignments have been randomized between housestaff and non-housestaff units. We hope to demonstrate the effect of housestaff on the quality of practice as judged by tracers like the depth of clinical data gathered, completeness of physical examination, choice of antibiotics, and completeness of work-up of specific problems (proteinuria, hypertension) in this institution. We also hope to expand this study soon and prospectively randomize patients between housestaff and non-housestaff services to evaluate such benchmarks of care.

The YAHP also offers the opportunity to study continuing education itself. Since we use several formats and can prearrange the content and scope of the year’s effort, we can evaluate the success of each format on physician knowledge and performance and test the medical staff’s knowledge before and after concentration on a particular subject. We can then determine whether lecture formats or small group tutorials [5] are more successful in transferring information, or whether either approach improves patient care or the outcome of therapy. We hope to demonstrate whether or not the immense proliferation of postgraduate continuing education done by short planned courses is worthwhile, or whether ongoing tailored programs such as the YAHP are more successful.

COMMENT

Continuing education is a major responsibility of the modern physician and providing adequate programs of CME is an important goal of universities and hospitals. Several alternative methods have been used and approaches vary depending on the availability of medical care and medical schools. Many universities have developed large departments and divisions of continuing education which offer concentrated courses—some in very specific areas and others covering broad topics. In fact, a recent issue of the Journal of the American Medical Association was devoted simply to listing upcoming courses [1]. In order to take these courses, the physician must leave his or her office for several days and often travel long distances. Other institutions have chosen, as we have, to provide faculty at affiliated hospitals. The organization of these programs greatly depends on the needs of the areas served and different types of programs must be planned by universities located in areas where access to the university is difficult. In most instances, these programs are also jointly planned by university and hospital, and are generally geared as postgraduate education for practicing physicians, although some are for nurses or allied health workers [6]. The University of Louisville has developed a consortium incorporated under the laws of the state of Kentucky which arranges meetings jointly chaired by the faculty and local private practitioners. “Season tickets” are sold enabling physi-
cians to attend all of the consortium’s programs. The content of the program is decided, in part, by response to a questionnaire sent to subscribers. Stanford University, in addition to providing locally run courses on topics like intensive care and primary care medicine, gives fellowships to selected members of affiliated hospitals who return to the university to learn skills and techniques first-hand. Bowman-Gray has a similar program for family practitioners, the Mini-Residency Program. Here, physicians return to the university hospital and act as residents for brief periods. The University of Southern California has organized a team to visit community hospitals, assess needs, and help them to plan and run their own programs. Other universities which serve rural areas where specialty expertise is not readily available have tailored their own programs. The University of Kansas and the University of Michigan send faculty members to provide on-site consultation and teaching at distant locations. The University of Dalhousie serves an area of 1,200 square miles encompassing 40 hospitals and providing approximately 600 conferences at locations often as much as a three-day drive for the faculty member.

Other groups, such as the Albany Medical College, under the direction of Dr. Frank Woolsey, have used modern technology. They have set up a network of two-way radio conferences which transmit to 57 community hospitals within 100 miles of the institution. Thirty-minute programs, the content of which is selected by the university, are presented and a member of the Department of Postgraduate Education remains in the studio after the broadcast to answer questions from the participating hospitals. The system is designed so that both questions and answers can be heard in all the institutions tuned in.

Neu and Howrey [7] recently reported the results of the National Antibiotic Therapy Test. This was a videotape presentation of questions and discussion of patient problems related to antibiotic usage. While designed primarily as a self-assessment test, it is a promising model for CME since it evidently holds viewer interest and can be designed to pre-test, test, and post-test individual performance. A similar videotape and workbook self-assessment program has been developed by Felig et al. [8] on the chronic complications of diabetes. While both of these devices are useful and innovative, the consumer has limited input in subject matter.

The YAHP in Internal Medicine has as its premise that in a community like ours, where medical care is plentiful and access to universities relatively easy, comprehensively planned and locally presented programs are the best way to provide continuing education. The additional benefits of housestaff training and recruitment significantly help strengthen the affiliation. Although many universities participate in continuing education in community hospitals, to our knowledge, none has organized a similar program on a departmental level with as wide a scope. Careful evaluation of the success of our program in influencing physician performance and outcome has been built into the program. We hope to show whether or not our efforts have been worthwhile and whether the YAHP should serve as a model for CME and for university-community cooperation in a region where medical care is plentiful.

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