

Team Learning in Community Medicine for Medical and Paramedical Students

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MUCH emphasis has been given to the team approach in providing health services, and to the need for students of the health sciences to receive part of their educational experience outside the professional school or medical center (1-3). These concepts are being tested at the University of Kentucky.

The University of Kentucky College of Medicine has always considered the community as a laboratory. Its philosophy embraces the idea that the student must learn to look at the health of a community and make appropriate diagnoses—just as he must learn to look at the health problems of one patient and make a diagnosis. The college's department of community medicine sends students into a community to live and to study its health status during a required 6-week senior clerkship. The experiences of these students have been described elsewhere (4-6), and the pertinent aspects of the clerkship are discussed later in this report.

The faculty of the new department of community health in the university's School of

Allied Health Professions has more recently developed a course that is designed to focus the students' attention beyond the individual patient to his family and the community. At the culmination of the course, the allied health students team with medical students in fieldwork in communities. Thus all the students receive a much broader experience than they can possibly receive at the medical center alone.

The Teams

The first joint experiment of the two departments was the assignment of physical therapy students to communities where medical students were engaged in senior clerkships. One physical therapy student teamed with one medical student, and together they studied the community. The expertise of the physical therapist to this point had been developed through classroom lectures. The experiences of both the medical student and the physical therapist became more meaningful as they worked together since each could now discuss his findings with an "outsider"—a person to whom he could relate objectively in his analysis of the community's health problems. The different educational backgrounds of the two students permitted a broader investigation of the health status and health resources of the community.

Teams, even if consisting of only two members, function best if one member acts as a leader. Occasionally, the medical student, who was expected to act as team leader, failed to assume this obligation when only one student was assigned to him. Despite this failure, the

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experience still gave practical application to the materials that had been presented in lectures to the physical therapy students.

During the following academic year, students from other disciplines were available for community assignments. A multidisciplinary team composed of students of medicine, physical therapy, social work, dental hygiene, and clinical nutrition was assigned to one community. This group effectively demonstrated the depth of study possible through a team approach. The experience of the large team and the reactions of several two-man teams have been described (7).

When student enrollments increased, four multidisciplinary teams were assigned to four communities. The disciplines represented were medicine, physical therapy, clinical nutrition, pharmacy, nursing, social work, and behavioral science. A trainee in clinical pastoral counseling also served on one team.

Orientation

All the team members attended the orientation given to the medical students at the beginning of their clerkships. The four main points of focus were:

The community. The students were to ascertain its health problems and the factors contributing to them. The medical student, assisted by the team, was expected to recommend solutions to the community's health problems.

The family. The students were to study the interrelationships between health status, family circumstances, and environment.

The individual practitioner. The medical student was to analyze the practice of his sponsor (a practicing physician) and learn the art, science, and business of medicine away from the medical center. The other members of the team were similarly to learn the activities of the practitioners of their professions, if any were available in the community.

Research techniques. The students were each to conduct small research projects by using the scientific method applied in an area of interest to the student.

Fieldwork

All the team members except the medical students lived in the communities for 3 weeks.

The medical students, in addition, had spent the preceding 3 weeks in the communities as part of their clerkships.

At the beginning of their community experience, the team members met again with the medical student, who presented to them his initial findings and planned with them their community study. Since the allied health students also were expected to visit families, carry out small research projects, and observe practitioners of their disciplines, the preliminary experience of the medical student was helpful.

Whenever possible, the medical student investigated the feasibility of each student's research project and made some necessary arrangements for it before the student arrived in the community. These individual projects were chosen to be consistent with the interest of the student and the needs of the community. Information gained while conducting these studies added further depth to the community study. In one county, team members chose the following topics for descriptive study:

1. The status of and need for physical therapy services as seen by health personnel (physical therapy students).
2. High school seniors' knowledge concerning mental illness (nursing student).
3. Services for the mentally retarded (medical student).
4. School lunch programs (clinical nutrition student).
5. Pharmacy services including attitudes of pharmacists (pharmacy student).

The team members gathered other information necessary for the community study following guidelines provided for them by the departments of community health and community medicine.

One profitable feature of team learning was the daily conference, usually held in the evening. Information gathered in the daytime was discussed, and impressions developed during contacts with various residents of the community were compared.

Faculty members from the medical center and field offices of the department of community medicine (8) met in the communities with the teams to discuss their progress. The faculty dis-

ciplines represented were medicine, physical therapy, nursing, and social work.

During the last week of the clerkship, each team presented a final oral report diagnosing the health problems of the community (9) and recommending solutions. Individual team members introduced their research projects as supportive material. During the presentations, the medical students served as moderators. The presentations varied among the teams but because all the members had participated in collecting data and in formulating diagnoses and recommendations, they all helped in presenting the report.

The final reports initially had been given at the medical center concurrently with the presentations of other senior medical students. Now the teams gathered, two each, in or near the communities where they studied. Because of the large number of students participating, this approach was most advantageous. Written reports were also prepared by the team members.

Evaluation of Approach

To better understand the team approach to learning and the interrelationships of its various members, a participant observer, a doctoral student of behavioral science, accompanied one team during its field experience. A questionnaire that he prepared was completed by all members of the four multidisciplinary teams.

In response to a question concerning the need for a team leader, the answer was almost unanimously "yes" from two teams, and when asked to designate which team member should serve as leader these teams unanimously specified the medical student. The two teams where the medical student did not assume the leadership role had a mixed response about the need for a leader and were nearly unanimous in not designating the medical student as the suggested leader.

In response to the question "Do you think you gained a greater understanding of your discipline and its relation to the community during this team study?" the two teams with definite leadership from the medical student answered "Much greater," whereas the other teams answered only "Somewhat greater." When a similar question about understanding the work of other professionals was asked, the responses were again divided. Those members of teams

that functioned with the medical student as a leader were nearly unanimous in choosing the maximum response "To a great extent," while the members of the other teams were much less positive in their response.

When asked "What particular aspects of this experience did you dislike?" the members from the teams with active medical student leadership asked for more information about housing and travel arrangements beforehand, and one respondent even suggested an extended field experience. Those from the other two teams mentioned the lack of organization and complained about the amount of time required to perform their studies. All team members felt that each team should meet as a unit for planning before leaving the medical center. The orientation apparently did not fulfill this need.

The final question was, "Would you recommend this experience to your classmates or to future classes?" The members of the teams with active medical student leadership were quite willing to recommend the experience without reservation, whereas only one of the 12 members of the other two teams would do so.

In addition to the questionnaire responses, the behavioral scientist made observations concerning his team—one of the two teams in which the medical student failed to accept his assigned role as leader. He observed that all students except the medical student were disturbed by the unstructured approach. Since all were provided with study guides before leaving for the community, the observer felt that this sense of lack of structure and clear-cut understanding of just what was expected of the team resulted from the lack of effective leadership. Only when three students of physical therapy assumed the leadership role, as a troika, did the team begin to function effectively. In addition, the behavioral scientist observed that the team's evening sessions were more social than educational and that it did not benefit adequately from a sharing of ideas.

Informal evaluation by the faculty before the results of the questionnaire and observations were known, rated the performance of the teams in which the medical student assumed active leadership as good and truly representative of team efforts. The other two teams were considered to have performed barely adequately.

These observations support the statement from the Coggeshall report that "The team approach to health care cannot be perfected unless there is a balanced team available to the physician and until he clearly takes responsibility for its leadership" (10).

Discussion

Questions were raised by some people with whom the program had been discussed about the team approach to the teaching of community medicine and community health. First, how realistic are the diagnoses and recommendations of the students?

Because of their brief exposure to the community, the students, whether in medical or allied health studies, cannot be expected to come up with expert diagnoses of community health problems or give expert recommendations concerning them. They are in the community to learn, but their backgrounds encourage them to look at community health with a much broader perspective than that of the community's busy practicing professionals. The students often spot unrecognized problems—problems that sometimes can be resolved with available community resources. Through this intensive look by outsiders, local persons, lay as well as professional, have been stimulated to act in situations that previously were overlooked.

Second, what benefits accrue to the team? Members of the various health disciplines are expected to work together after they have completed their educational experiences. In team learning they gain a greater understanding of the potential of each discipline. For example, the presence of a student of social work helps students of other disciplines to be more conscious of the importance of social workers in the community.

For students of the allied health sciences, a community experience is a chance for concrete application of theoretical ideas about teamwork and community problems. Each student feels a sense of importance as part of a team. For the medical student, the community experience adds another dimension to the senior clerkship. All team members gain a greater understanding of responsibility to a community—extending beyond a professional interest.

Team learning opportunities should be increased so that a greater number of students and disciplines may share in this experience. In addition, even though the peer-group learning experience is most important, team teaching and supervision by faculty from a greater variety of disciplines should also augment the benefits from such experiences.

Summary

Using the community as a laboratory, four multidisciplinary teams of students of allied health sciences at the University of Kentucky's medical center each joined a medical student of the university engaged in a senior clerkship in community medicine and helped analyze the health status of the community in which he was living and studying. Each medical student stayed 3 weeks in the community before a team arrived and an additional 3 weeks working with the team. Each team member visited families in the community, talked with practitioners of his particular discipline, and conducted a community research project that had previously been discussed with the medical student leader.

Frequent meetings of the teams allowed discussions of impressions gained by each member. Final team reports covering diagnoses of community ills and recommendations for solving its health problems were presented orally within the community as well as in written form.

Evaluations of the team approach—questionnaires were completed by all members of the teams, and observations were made by a participant observer of one team—showed the importance of a team leader. The two teams in which the medical students actively assumed leadership functioned well. Their efforts were judged to be truly representative of team activity, and the team members commended their experience to future classes of medical and paramedical students at the university. In the teams where the medical students failed to assume leadership, the quality of the teamwork was barely adequate, and the attitudes of the team members toward their experience were less positive.

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Tearsheet Requests

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ph synopses

PARISER, DAVID M. (Virginia Commonwealth University), and **PIT-TARD, WILLIAM B., III:** *Primary isolation of Neisseria gonorrhoeae on hemoglobin-free Thayer-Martin medium. Public Health Reports, Vol. 85, June 1970, pp. 532-534.*

This study was designed as a preliminary attempt to determine if the omission of hemoglobin from standard Thayer-Martin medium would affect the number of isolates of *Neisseria gonorrhoeae* observed in primary cultures from patients. Patients for the study included men and women seen in the Norfolk, Va., venereal disease and family plan-

ning clinics. The number of isolations of *N. gonorrhoeae* on standard Thayer-Martin medium containing gonococcal (GC) medium base, Iso-VitaleX enrichment, VCN inhibitor, and hemoglobin was compared with the number of isolations of *N. gonorrhoeae* on the same medium without hemoglobin.

Of 724 specimens cultured, 124 confirmed cultures of *N. gonorrhoeae* were isolated on hemoglobin-free medium, while only 112 were isolated on standard Thayer-Martin medium containing hemoglobin. Hemoglobin does not seem to be a necessary ingredient in a routine culture medium for isolation of gonococci when IsoVitaleX is used as an enrichment. Further evaluation of the elimination of hemoglobin from routine GC culture mediums should be undertaken.

GLOOR, ROBERT F. (University of Kentucky College of Medicine), and **EICHENBERGER, RALPH W.:** *Team learning in community medicine for medical and paramedical students. Public Health Reports, Vol. 85, June 1970, pp. 558-562.*

Using the community as a laboratory, four multidisciplinary teams of students of allied health sciences at the University of Kentucky's medical center each joined a medical student of the university engaged in a senior clerkship in community medicine and helped analyze the health status of the community in which he was living and studying. Each medical student stayed 3 weeks in the community before a team arrived and an additional 3 weeks working with the team. Each team member visited families in the community, talked

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SOHLER, K. BERRIDGE (University of Oklahoma School of Health, Oklahoma City) and **THOMPSON, J. D.:** *Jarvis' law and the planning of mental health services: Influence of accessibility, poverty, and urbanization on first admissions to Connecticut State hospitals—Role of alternative service in Connecticut. Public Health Reports, Vol. 85, June 1970, pp. 503-515.*

Jarvis' law—that accessibility has a strong bearing on the use of public mental hospitals and that admission rates tend to vary inversely with distance from the patient's residence to the institution—had a marked effect on first admissions to Connecticut State hospitals from July 1, 1959 through June 30, 1963. It applied to all age groups, to non-whites (in lesser degree) as well as to whites, and to the functional psychoses as well as to the less-severe disorders. It was not an artifact due to the confounding effect of poverty or urbanization. It tended to be more pronounced among large towns than among small ones; in particular, the proximal rates tended to be much higher for towns of 10,000 or more people. Thus, Jarvis'

law has a vital bearing on the planning of service in smaller, more numerous facilities in large population centers.

When towns were classified by type of service available, the negative correlation of first admission rates with distance remained apparent in all service groups which were represented in more than two State hospital zones. In one group only, the no-service group, it may have been reinforced by a demographic variable.

In the planning regions a marked negative correlation was seen between average distance from the State hospital and first admission rate. This trend was independent of psychiatric manpower and outpatient service. Hartford's compre-

hensive service, with its relative abundance of general hospitals, probably contributed to low admission rates in areas remote from a State hospital. However, the effect of Hartford service proved to be stronger in zones near a State hospital than in the more distant zones. Far from explaining Jarvis' law, or reinforcing it, Hartford service to some extent counteracted it.

When mental health centers are the chief sources of psychiatric care, Jarvis' law may be expected to exert a potent influence on the demand for first admissions. Its effect will be substantial when facilities are more numerous, less widely spaced, and located in large population centers; it should be considered in estimating needed capacity, if planning is to be realistic.

If Jarvis' law is as pronounced in total utilization rates as in admission rates, the need for service in mental health centers will greatly exceed estimates based on present-day average utilization.

CHAMBERS, CARL D. (New York State Narcotic Addiction Control Commission), **CUSKEY, WALTER R.**, and **MOFFETT, ARTHUR D.:** *Demographic factors in opiate addiction among Mexican-Americans. Public Health Reports, Vol. 85, June 1970, pp. 523-531.*

To isolate any changes which may have occurred in Mexican-American drug addicts in recent years, the histories of the 106 Mexican-American addicts admitted to the Federal hospitals at Lexington, Ky., and Fort Worth, Tex., during the first 6 months of 1961 were compared statistically, by sex, with the histories of the 169 Mexican-Americans admitted during the same period of 1967.

The study showed that the incidence of Mexican-American addicts among the total addicts admitted to the two hospitals doubled between 1961 and 1967 even though the total number of hospital admissions decreased by almost 20 percent. The

increase, however, was only among the male addicts. Female representation in 1967 was less than half that of 1961. The majority of Mexican-American addicts in 1967 resided in Texas; in 1961, California had been the largest contributor of Mexican-American addicts.

An overwhelming majority of the Mexican-American addicts, regardless of sex, were school dropouts. Although the addicts averaged 28.1 years of age in 1967, almost one-third had never been married. Moreover, more than 40 percent of those who had attempted a marriage had been unable to sustain the relationship.

A large majority of the Mexican-American opiate addicts in 1967 had

histories of smoking marihuana, histories which usually had preceded their use of opiates. Opiate use most often began during the adolescent years. The Mexican-American addicts were most frequently found to be young adults; their mean age decreased between 1961 and 1967. Almost all were addicted to heroin, which, of course, they purchased from illegal sources; almost all used it intravenously.

Even though the Mexican-American addicts supplemented their incomes from illegal sources, a majority maintained some legal occupational role while addicted. All had been arrested; the first arrest most frequently had preceded the use of opiates. While, by 1967, recidivism was increasing, readmissions were more likely to be voluntary than enforced.

OVERPECK, MARY D. (Public Health Service): *Physicians in family practice 1931-67. Public Health Reports, Vol. 85, June 1970, pp. 485-494.*

Numerical trends in family practitioners from 1931 to 1967 have not followed the continuing increase in the total number of physicians in the United States that has resulted in a rising physician-population ratio in the last few decades. The number

and proportion of physicians available to the population for family practice has consistently decreased. Defined as general practitioners, internists, and pediatricians, this pool of potential family physicians in solo, partnership, group, or other practice

dropped from 56.8 in 1963 to 53.2 in 1967 per 100,000 civilian resident population. The number of physicians in internal medicine and pediatrics increased, but the increase was not enough to offset the loss of those in general practice. Slight increases in the obstetrics-gynecology category did not have much impact on the decreasing trend in family practice.

HABERMAN, PAUL W. (Columbia University School of Public Health and Administrative Medicine): *Ethnic differences in psychiatric symptoms reported in community surveys. Public Health Reports, Vol. 85, June 1970, pp. 495-502.*

In community surveys representative samples of 1,883 adult residents of the Washington Heights Health District of New York City and 706 adults living in the five boroughs of the city were asked questions about psychiatric symptoms, including 22 items from the Midtown Manhattan Study. The absolute and relative proportions giving symptomatic responses to the 22

midtown items in the two surveys—both overall and by demographic subgroups—were similar. The proportions giving symptomatic responses varied inversely with social class, as indicated by educational level and family income. Women, previously married persons and, among ethnic groups, Puerto Ricans reported the most psychiatric symptoms. Differences between the two surveys, for

the most part, were attributable to the differences in the wording of four questions and in ethnic composition—disproportionately more Irish in Washington Heights reported the least symptoms and disproportionately more Italians in New York City reported a moderately high number of symptoms. The use of a single cutting point to indicate impairment in surveys of heterogeneous communities is questioned. Using different cutting points for various ethnic groups is suggested as a possible means of compensating for their variation in response.

LAESSIG, RONALD H. (University of Wisconsin Medical Center), and WATERWORTH, KATHY J.: *Involvement of alcohol in fatalities of Wisconsin drivers. Public Health Reports, Vol. 85, June 1970, pp. 535-549.*

A Wisconsin study of 507 drivers killed in motor vehicle accidents in the State during the period February 1, 1968, through May 30, 1969, disclosed that more than half of the drivers were either drunk or significantly under the influence of alcohol at the time of the accident. Young people, 16 to 20 years old, had a fatality rate of 0.50 per 1,000 population compared with 0.22 for the entire United States. Women had a much lower fatality rate than men; that for men classified as "drunk" was 0.1810 and that for women in the same category was 0.0097.

The highest percentage of drinking driver fatalities occurred from 12 midnight to 3 a.m. Nondrinking driver fatalities were almost evenly distributed throughout the day. Most fatalities of sober drivers were the result of two-car accidents;

the drinking driver usually was killed in a single-car crash.

At all blood alcohol levels, the weekend day rate was approximately twice the weekday rate. Weekend traffic volumes per day, however, were not twice the weekday volumes, which indicates that factors other than drinking, such as fatigue and speed, were causative. Saturday was the day most frequently named for alcohol-involved fatalities; most nonalcohol-involved fatalities occurred almost evenly during the week. Holiday rates on all types of roads were at least double the non-holiday rates. Fatality rates on county roads, which held the greatest danger for drinking drivers, were 0.71 for holidays and 0.24 for non-holidays. Interstate highways were the least hazardous, based on actual traffic volumes. Comparative fatality attack rates for drunk drivers over

holidays was 0.005 and over nonholidays, 0.0007.

Data corrected for traffic volumes also showed the same trends. At low levels of traffic (one to 25 cars per hour) the fatality rate increased with increased blood alcohol levels.

Milwaukee County, which was excluded from this study, has a uniform "no teen bar" ordinance, and large numbers of 18 to 20 year olds drive from that county to "beer islands" in adjoining counties included in the study. These trips presumably would lead to a higher incidence of accidents among this age group, but the study data show that this presumption may not be true. Of 26 driver fatalities, only two were under the age of 21, and only one had been drinking. Two explanations are possible: Either the drivers under 21 were not killed until they reentered Milwaukee County and the study did not record their deaths or the popular idea concerning "beer island" traffic accidents is not valid.