The After-Hours Call: A Survey of United States Family Practice Residency Programs

Peter Curtis, MD, Addison Talbot, and Volker Liebeseller, MPH
Chapel Hill, North Carolina

This article reports the results of a 1977 survey of 245 family practice residency programs providing after-hours care. The objectives of the study were: (1) to clarify the involvement of family practice residents in this aspect of medical care; (2) to investigate the organization of after-hours care in the family practice centers as a possible training model for future family physicians; and (3) to establish whether or not specific educational activity was based on after-hours calls.

All the responding operational programs provided after-hours care to patients, using all levels of residents as providers. Most of the programs used an answering service. Only 67 percent documented all patient encounters in writing. Regular educational feedback to residents was undertaken by 71 percent of the residency programs.

In the early part of this century primary care was relatively unsophisticated as compared to what it is at present. Not only was the physician bereft of a vast array of powerful and effective drugs, but he also practiced medicine in a relatively disorganized way. Appointment systems hardly existed and "office" hours often ran as a continuum from weekday through the weekend and often into the early hours of the morning. The physician's leisure and family activities were interspersed with or interrupted by the demands of the community on his time and energy.

The situation is now quite different. Family physicians and other physicians in primary care have developed carefully-structured services to their clients and patients in the area of office hours, special clinics, call-in hours, and well-organized appointment systems. There is a growing awareness of the value of teaching the effective use of time and facilities in the early training years of family physicians. The effective and efficient physician's office can create more available time for leisure, postgraduate training, continuing education, and the further development of good medical practice.

After-hours care, occurring usually at nighttime or during weekends, is one area of medicine that remains nebulous and difficult to manage. Family physicians vary tremendously in their commitment to provide this care, and consequently it may be hard to expect family practice residency programs to develop a suitable training model for after-hours calls that will prepare the residents for subsequent practice.

After-hours care is still regarded as a part of the continuing and personal care a family physician or a primary care physician should give to patients.[1,2] There is, however, much evidence that hospital Emergency Rooms are taking over the role of "family physician" after hours.[3,4] Similar findings

From the Department of Family Medicine, University of North Carolina, Chapel Hill, North Carolina. Requests for reprints should be addressed to Dr. Peter Curtis, Department of Family Medicine, Room 711 Clinical Sciences Building 220 H, University of North Carolina-CH, Chapel Hill, NC 27514.

0094-3509/79/010117-06$01.50

Table 1. Sites of After-Hours Patient Encounters

Site	Program No.*	%
Emergency room	237	96
Family practice center	122	49
Home	112	45
Nursing home	27	11
Ambulatory care clinics	9	3
Other	5	2

*164 residencies reported more than one site

have been noted by T. T. Nobel, MD, of the Emergency Care Institute (written communication, October 1977). Over the past 20 years, the public demand and use of emergency services has increased enormously, in some areas by 500 percent.[5,6] The needs of ambulant patients are now being met by the construction of special "non-emergency" areas in hospitals, adjacent to the Emergency Room. This trend is not localized only to the North American continent, but has also been documented in Europe where alternative after-hours services have been set up, ranging from commercial deputizing organizations (who offer home visits) to citywide medical care systems.[7-9] The willingness and extent to which a physician can provide on-call services is very much dependent on the local practice setting, the availability of local medical services, the socio-economic status of the patient population and, not least, the physician's own attitudes and education. There is no doubt that the leaders of the discipline of family medicine in the United States, as well as those in other countries, endorse the need for the family physician to provide after-hours care.[10]

In order to ascertain how this aspect of medical care was being provided and used for educational purposes in the training of family physicians, a survey of all family practice residency programs in the United States was undertaken in March 1977. The survey was intended to establish the kinds of arrangements that were made for after-hours coverage and to discover whether any educational activity was built around this service to patients. No judgments as to the value and quality of the teaching on this subject were asked in the survey.

Methods

A questionnaire was sent to the Directors of 304 family practice residency programs over a period of four months beginning in March 1977. That was the total number of active programs in the nation at that time according to the American Academy of Family Physicians. A follow-up posting to 70 nonresponding programs was undertaken one month later. Over 88 percent (268) of the residencies surveyed responded to the questionnaire, including 23 programs that were not ready to provide patient care until July 1977. The latter were excluded from any analysis, leaving 81 percent (245) of the sample for further study. The responses were coded, key punched, and tabulated by computer. The questionnaire was purposely kept short and the questions limited in order to motivate the respondents to provide a good return rate.

Results

After-Hours Coverage in the Family Practice Centers

The data obtained tend to confirm that, in relation to office hours, most of the residencies were based on an active medical practice which appeared to reproduce the private office setting. The majority of family practice centers opened at 8 or 9 AM and closed at 5 PM, while a minority offered patient services at more unusual times. The majority (87 percent) of family practice centers provided emergency on-call care for a 12 to 16-hour period on weekdays. During the weekend the length of coverage was greater. On Saturdays 90 percent of the programs were on call for at least 20 hours and on Sunday all but two (99 percent) offered round-the-clock coverage.

Medical Staff Providing Coverage

In 69 percent of the residencies, the providers of after-hours call for family practice patients were either residents and/or faculty. In 24 percent of the programs only residents were on call, while 6 percent of the programs used other personnel, such as family nurse practitioners or registered nurses. The data do not show how often these different groups of individuals were on call. Some 41.6 percent of the programs involved first, second, and third year residents in the coverage systems, and 33 percent used only second and third year resi-

Table 2. Types of After-Hours Encounters Recorded in Writing

Type of Encounter	Program No.	%
All consultations	150	61
Face-to-face encounters only	75	30
Telephone and face-to-face encounters	6	2
Telephone only	4	1
Others	4	1
Not reported	4	1
No records kept	2	1
Totals	245	97*

*Falsely low due to rounding error; actual total 100 percent

dents. Those using only first or second year residents were usually in the formative phase of the residency with no third year residents available to provide medical coverage. First year residents took call least (55 percent), probably because of their intensive commitments to hospital inpatient services, and it is interesting to note that second year residents (87 percent) were more involved in after-hours calls than those in the third year (81 percent). As reported in additional comments in the returned questionnaires, there was almost always direct faculty backup for the on-call physicians. Additionally, in three programs, junior residents were on duty, backed up by third year residents and then faculty physicians. Five residencies responded further that each resident was required to be on call 24 hours a day for his or her own particular patients, who were aware of the physician's home telephone and paging number.

The Methods of Contacting the Physicians On Call

The majority (62 percent) of the residency programs used an answering service, thus enabling the physician to call back later, but several program directors stated that this inevitably produced a delay in responding to the patient relative to a direct contact method. In 24 percent of the programs there was no intervening link in the physician-patient communication; residents responded directly to the telephone call. The local hospital switchboard operator functioned as an answering service for 11 percent of the residency programs, and in some other programs Emergency Room staff, residency faculty, nurses, or secretaries took messages from patients prior to calling the physician. The taped message telling the patient how to contact the physician on call was a less commonly used system. The residency directors were consistent in their comments that where the on-call family practice physician was contacted by Emergency Room personnel when the patient arrived without prior warning, the arrangement worked imperfectly in that the family physician was not consistently contacted. The major dissatisfaction seemed to be that patients were being treated without the knowledge of their family physician, and this was regarded as detrimental to continuity of care.

As shown in Table 1, family practice patients were seen in a variety of settings, but the most mentioned site of contact was in the hospital Emergency Room (96 percent). Many programs would see patients in various sites depending on the nature of the presenting problem. The family practice center was frequently used to see patients (49 percent) and almost one half of the programs (45 percent) undertook house visits after hours. Patients were also seen in nursing homes (11 percent) and in special ambulatory centers (3 percent) which, according to explanatory comments in the questionnaire, were set up close to Emergency Rooms to provide care for non-urgent problems.

Table 3. Methods Used to Record After-Hours Encounters

Method	Program No.*	%
Patient chart	106	43
Message pad/sticker	95	38
Emergency room records	27	11
Dictated notes	14	5
Chart and pad	13	5
Notebook log	10	4
No records kept	4	1
MD-to-MD contact	2	1

*27 residencies reported more than one method

The Methods Used to Record After-Hours Calls

In view of the legal and medical value of keeping good records of patient contacts, Table 2 reports the somewhat surprising finding that only 150 programs out of 245 (61 percent) documented, in writing, all types of encounters that took place; and just 33 percent made systematic notes on face-to-face and telephone encounters. Among those residencies recording either but not both forms of contact, face-to-face contacts were recorded much more often (30 percent) than just telephone call consultations (1 percent). Comments from the questionnaire revealed that 20 residencies recorded telephone calls or direct clinical encounters only if medication was involved. Furthermore, about a dozen program directors noted some difficulty in getting residents to record details of the after-hours calls.

Table 3 shows that a variety of methods were used to record information about the after-hours call. In only 60 percent of the programs was a permanent detailed note made in the medical record. Most frequently the contact note was written directly into the medical record (43 percent of programs). Over one third (38 percent) of the residency programs used some form of message pad or sticker, but comments from the questionnaire showed that this information frequently did not find its way into the permanent medical record, since it was discarded once the patient's physician had received the message. In 27 programs (11 percent), Emergency Room records were photocopied and sent to the family practice center. In ten programs (4 percent) an after-hours log book was maintained as the permanent record and used in patient follow-up. In 14 residencies (5 percent), the on-call physician dictated notes into a small tape recorder or into a hospital telephone dictating system.

The Use of After-Hours Calls in Resident Education

Table 4 shows that 69 of the programs (28 percent) provided no setting for regular discussion between the on-call resident and family practice faculty about problems encountered. Among the 71 percent of the residencies which did provide regular educational feedback, this usually took the form of either one-to-one teaching (ie, telephone consultation during the on-call period) or group discussion during the day. In eight instances the family practice director or chief resident would audit the on-call resident's care for all hospital admissions, obstetric cases, and serious ambulatory problems. The data show that the educational conferences took place in a variety of contexts. Morning report (30 percent) and chart reviews (15 percent) were the most common settings, but teaching also occurred in weekly and noon conferences. Educational formats included inpatient morning rounds, weekend rounds, and breakfast meetings.

Table 4. Contexts Used to Review After-Hours Patient Encounters

Educational Method	Program No.	%
No method used	69	28
Group discussion and 1:1 teaching	61	24
Group discussion only	56	22
1:1 teaching only	51	20
Chart audit	8	3
Total	245	97*
Educational Setting	**No.**	**%**
No setting reported	128	52
Morning report	74	30
Chart review	37	15
Other	6	2
Total	245	99*

*Rounding error; actually 100 percent

Discussion

The data from this national survey of 245 operational family practice residency programs (as of June 9, 1977) show certain trends and similarities. Most of the programs tended to maintain clinic hours which approximated closely those of the physician's office in private practice; a minority also offered access to patients through evening and/or weekend clinics. Some form of after-hours coverage was provided by all the residency programs; the variability of coverage depended on the practice model selected by each particular training program. The longest period of after-hours coverage occurred on Sundays.

The manpower used for providing care after hours was primarily family practice residents with backup from faculty physicians. The involvement of first year residents in this activity in over half the programs surveyed may reflect the differing "ages" of the residencies or, alternatively, may be a result of program structure and educational philosophy on the part of program directors.

The data show that the mechanisms used by patients to contact physicians as well as the settings in which they were seen varied significantly across the residency programs. It is interesting that most of the patient contact systems involved an intermediary between the physician and the patient, so that access to the health care system was made complex; this then appears to be the method selected or used by most residency programs as a model for future family physicians. Although the residency programs used Emergency Rooms extensively after hours, thus conforming to the national trend in increasing use of these facilities, on-call physicians saw patients in a number of other sites. It is interesting to note that over half the residency programs allowed or endorsed visits to patient's homes after hours as well as to other health care institutions outside the hospital. Notwithstanding the complexity of on-call systems, the variety of health care personnel involved, and the multiplicity of sites of encounter, methods of recording medical care after hours were considerably less effective and systematized

than those provided during office hours, according to the survey. Program directors commented, in their responses, on the need for improved medical records, communication, and teaching of this part of medical care in the residencies.

The data also suggest that the educational commitment of residency programs to the teaching of after-hours medical care was only moderate. Over a quarter of the programs provided no review of cases and another 25 to 50 percent dealt with cases only on an immediate and consultative basis with little evidence of systematized review. Considerable personal interest in the study was expressed in the questionnaire responses and many additional comments were made, some of which had to do with the philosophy of providing medical care "after hours." One theme that emerged is illustrated by the following quotation from a questionnaire response:

> I cannot imagine modeling family practice without providing continuity of care 24 hours a day. If residents don't take night and weekend calls, they aren't learning how to be family physicians!

It is therefore apparent that the family practice movement, as exemplified by the residency programs that are training family physicians of the future in the United States, endorses the need for after-hours care. After-hours care often does not parallel that provided to patients during daytime office hours in terms of morbidity or frequency of disease. Medical and social problems are overrepresented in the form of pediatric and geriatric patients with respiratory tract infections, trauma, and many problems of living (ie, depression, anxiety, alcohol and drug abuse, family problems, etc).[11-13] Stress and hostility between patient and physician seem to be more evident outside of regularly scheduled office hours, and residents in training often have difficulties in handling these encounters. Skillful communication and care over the telephone (including diagnosis, therapy, and reassurance) does not come automatically to the physician, and there is considerable opportunity for assimilating these techniques from experienced professionals in the teaching environment. Approximately 15 percent of all medical contacts in family practice programs occur "out of hours," so it is important that this aspect of medical care be included in the educational curriculum.[14] Similar findings have been noted by W. Hogg, MD, in an unpublished report entitled "The Doctor After Hours." (Gatineau Memorial Hospital, Wakefield, Quebec, 1976.) It seems that most of the family practice residency programs in the survey, used after-hours coverage primarily as an attractive service to patients, rather than as a model (and not necessarily a realisitic one) for physicians in training to emulate in practice.

If the various methods of education and service involved in the after-hours call are to be used effectively, it is evident that recording methods and information exchange between the medical providers need to be improved. The skills and knowledge that must be learned have not yet been adequately defined or described in the curriculum of graduate medical education for primary care.

Acknowledgement

Funding for this study was provided by the Health Sciences Research Center, University of North Carolina—Grant Number 1-0-110-4950-BF024.

References

1. McWhinney IR: Continuity of care in family practice. J Fam Pract 2:373, 1975
2. Royal College of General Practitioners: The Future General Practitioner: Learning and Teaching. London, British Medical Association, 1972
3. Satin DG, Duhl FJ: Help! The hospital emergency unit as community physician. Med Care 10:248, 1972
4. NEWSLINE, editorial. New Physician 26(12):11, 1977
5. Shortliffe C, Hamilton JS, Novoian EH: The emergency room and the changing pattern of medical care. N Engl J Med 250:20, 1958
6. Huntley TC: Emergency department visits: A statewide survey. J Am Coll Emergency Physicians 6:296, 1977
7. Bentzen W, Russell I, Spark MG: Deputizing services in Denmark: Some implications for Great Britain. J R Coll Gen Pract 26:37, 1976
8. Out of hours work, editorial. J R Coll Gen Pract 26:3, 1976
9. Cover out-of-hours, editorial. Br Med J 1:732, 1976
10. Standing Committee on Emergency Calls of the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/ Family Physicians: Editorial. WONCA News 4:3, 1977
11. Clyne MB: Night call: A study of general practice. London, Tavistock, 1961
12. Priden D, Navid H, Epstein L: A study of night calls in Jerusalem. J R Coll Gen Pract 18:272, 1969
13. Lockstone DR: Night call as a group practice. J R Coll Gen Pract 26:68, 1976
14. Maisel R, Brown DG, Hodges M: After hours care: 2,000 examples. Presented at the Annual Meeting of the North American Primary Care Research Group, San Francisco, April 22-24, 1976