A Comparison of After-Hours Telephone Calls Concerning Ambulatory and Nursing Home Patients

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Background. This study documents the frequency and nature of after-hours telephone calls to a university-based family practice, with special attention to those calls from or about nursing home patients.

Methods. All after-hours telephone calls to a free-standing family practice training program that were made during the 6 months between July 1991 and January 1992 were recorded and classified.

Results. Of the 821 calls recorded, 81 included telephone calls from nursing home patients. Nursing home patients, who constitute about 1% of the practice, were responsible for 10% of the calls ($P < .001$). Nursing home patient calls were more likely to occur on weekends ($P = .013$) and were more likely to be for physician notification purposes ($P < .001$).

Conclusions. Nursing home patients generate a disproportionately large number of after-hours calls. These calls are more likely to occur on weekends and less likely to require physician action. This is a considerable hidden practice burden that needs to be taken into account when planning practice coverage.

Key words. Telephone; nursing homes; night care; physician practice patterns; patients. (*J Fam Pract 1993; 37:247-250*)

The telephone has always been associated with the practice of medicine; in fact, one of the first telephone exchanges connected a physician with a local pharmacy.[1] Today, the telephone is an important if sometimes intrusive tool for physicians, enabling them to greatly augment their availability to patients. In some practices, telephone calls account for up to 16% of all patient contacts.[2] The telephone also extends physicians' capacities by allowing them to treat patients without performing a physical examination.[2–4] Studies have shown that most after-hours calls from ambulatory patients are made for acute problems,[3–6] with physicians rating most calls as necessary.[4,5] When physicians and patients deal with one another over the telephone, patients are usually satisfied with their experience. They have reported reassurance as the most valued management strategy provided by the physician, with only 7% desiring immediate personal consultation.[4,6] Moreover, consultation by telephone obviates the need for many patient visits: two thirds of a group of patients who were interviewed after telephone consultation with a physician reported that they would have visited an emergency department if they had not been able to call.[6]

Even though telephone medicine is an integral part of modern medical practice and is included as part of the curriculum in many family practice training programs,[2,5,7] the most detailed descriptive literature on the subject is over 10 years old and may not be applicable to the contemporary family practice setting. Moreover, there is very little literature detailing the use of the telephone in caring for nursing home patients.

Patients in nursing homes are not considered inpatients; they are seen only monthly, tend not to have acute problems, and are often able to contribute to their own care. They are not considered ambulatory because they are institutionalized for chronic illnesses, yet they are observed by medical personnel more closely than would occur at home.[8] Many family practice training programs emphasize the importance of caring for patients living in

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nursing homes, particularly patients who are transferred to nursing homes while under the physician's care, and may emphasize the importance of this continuity by assigning nursing home patients to family practice residents to be followed longitudinally.[9] However, only 14% of practicing physicians make nursing home visits.[10] This is a perplexing finding; in an effort to understand this lack of enthusiasm for providing nursing home care, we turned our attention to one possible reason—that a nursing home practice makes a high demand on the physician's time in the form of after-hours telephone calls.

Therefore, we documented all telephone calls received in a practice after regular office hours and compared the calls from or about nursing home patients with those from other ambulatory patients in the practice.

Methods

The survey of all after-hours telephone calls made to a free-standing university-based family practice training program was conducted in the 6-month period between July 1991 and January 1992. Telephone calls were handled by 7 faculty family physicians and 10 family practice residents. The practice has 7000 active patients (those who have made visits to the practice within the last 3 years) with about 1000 patient visits per month; thus, about 6000 office visits occurred during the study period. These patients are covered by various types of insurance. This practice also has 85 active nursing home patients, each of whom is visited at the nursing home at least once a month by his or her physician. Everyone enrolled in the practice is given a pamphlet of practice policies, which includes the regular office hours and instructions on how to contact the physician on call after hours. After-hours calls are routed through an answering service. Calls about nursing home patients are almost always initiated by the nursing staff at these facilities, based on the urgency of the situation as well as on established protocols and legal requirements. For all after-hours calls, patients deemed to need further evaluation are asked to come to the hospital emergency department, where they are examined by the family practice resident on call and, if necessary, the faculty physician on call.

For every call received during the study period, the patient's name, time of call, primary complaint or reason for call, diagnosis, and management were recorded on a standardized form by the physician taking the call. Although the on-call physician dealt with all the problems the caller offered, only the principal reason for calling was recorded for the purposes of this study. In almost all cases, the call was for one reason only. These calls were reviewed and critiqued at a daily morning report attended by residents and faculty. The authors collected the forms and clarified questions about the recorded information at that time. Data were collapsed into management categories; simple summary statistics were then generated and chi-square analyses done. Yates' Correction Factor was used when cell frequencies fell below five.

Table 1. Time of After-Hours Calls Made to Family Physicians Concerning Ambulatory and Nursing Home Patients

Time of Calls	80* Calls for Nursing Home Patients, %	718† Calls from Ambulatory Patients, %
Weekdays		
5:00 PM–11:30 PM	23	37
11:30 PM–6:30 AM	10	9
Weekends and holidays		
5:00 PM–11:30 PM‡	63	48
11:30 PM–6:30 AM	5	6

**The time was not recorded for 1 call for a nursing home patient.*
†The time was not recorded for 22 calls from ambulatory patients.
‡The proportions of calls received on weekends and holidays were significantly higher from nursing homes than from ambulatory patients (P = .013).

Results

A total of 821 phone calls were recorded during the 6-month study period. Of these, 740 were about ambulatory patients (18 per 1000 active patients per month) and 81 were about nursing home patients (159 per 1000 active patients per month). Thus, the nursing home patients generated a significantly higher proportion of calls than the other patients ($P < .001$).

The days and times that calls were made are listed in Table 1. A majority of the calls from both patient groups occurred on weekends and holidays, but the proportion of calls was higher for the nursing home patients (54% vs 68%, $P = .013$). The times that the calls were received were similar in both populations, with 15% of the calls occurring between 11:30 PM and 6:30 AM, when the physician might be sleeping.

The distribution of calls by diagnostic or reason-for-call categories is shown in Table 2. Note that the most common category for calls about ambulatory patients was respiratory infections, followed by trauma and questions about medication (including refills). The most frequent reasons for calls about nursing home patients were trauma, complications of diabetes mellitus, and respiratory infections. The frequency of calls was significantly different between the two sites for two diagnostic categories: trauma and diabetes mellitus. Of the 22 calls from the nursing homes for trauma, 19 were for falls and 3

Table 2. Differences in Diagnoses Between Nursing Home and Ambulatory Patients for Whom Calls Were Made to a Family Physician

Reasons for Call or Diagnosis*	81 Nursing Home Patients, %	740 Ambulatory Patients, %
Trauma†	27	7
Diabetes mellitus†	17	1
Respiratory infection	10	18
Medication question	7	6
Skin rash	5	3
Neurological problem	4	3
Cardiovascular	4	3
Agitation	4	0
Urinary tract infection	4	3
Gastroenteritis	4	6
Laceration	2	2
Deceased	2	0

**Only the top 12 diagnoses are included in the Table; therefore, the percentages do not total 100%.*
†P < .001.

were for fights. Only one of these patients required treatment; the purpose of the remaining calls was physician notification as required by nursing home policy. Of the 14 calls for diabetes mellitus, 8 concerned only one patient. None of the calls for diabetes mellitus required that the patient be seen in the emergency department.

How the calls were managed is shown in Table 3. Note that there was no difference in the proportion of calls that resulted in hospitalization, although there was a strong trend toward admitting ambulatory patients; there was also no significant difference in the proportion of calls managed by calling in a prescription, which was 20% of the ambulatory calls and 17% of the nursing home calls. Of the prescriptions called in for ambulatory patients, antibiotics were the most frequently prescribed (26%), followed by narcotics (12%), anxiolytics (7%), cold remedies (antitussives, expectorants, antihistamine/decongestants, etc) (7%), and antiemetics (6%). Of the medications prescribed over the phone to nursing home patients, 25% were cold remedies, 18% were benzodiazepines, and 18% antibiotics. Significantly more ambulatory patients were deemed in need of being seen by a physician, either immediately or the next day. Calls for nursing home patients were more often managed with acknowledgement, reassurance, and advice, whereas ambulatory patients more often required a visit, suggesting that the level of illness was greater for the ambulatory patients. Said another way, the threshold of illness that prompted a call was lower for the nursing home patients.

Discussion

The purpose of this study was twofold. Our initial objective was to study the nature of after-hours calls made to an academic family practice program, looking for changes that may have occurred as our society and the role of the physician in our society has changed. Despite the media's recent preoccupation with health and health care issues, and the recent changes in the structure of the health care provision system, the rate of calls in this study was actually lower than in studies done 10 years earlier,[4,5,11] and similar to the rates found by studies reported in the British literature.[12] The percentages of calls result-

Table 3. Differences in Management of Patients Making After-Hours Calls

Patient Management	81 Nursing Home Patients, %	740 Ambulatory Patients, %	Patient Calls *P* Value
Admitted to hospital	2	6	NS
Seen by physician for acute care	6	22	.001
Seen the next working day	0	7	.011
Prescription called in	17	20	NS
Given management recommendations	41	26	.006
Given reassurance or acknowledgment	33	16	<.001
Other or unknown	0	1	NS

NS denotes not significant.

ing in prescriptions ordered and patients seen were also similar to previous studies.[4,5,11] The use of the telephone in providing patient care appears not to have changed, even though many other aspects of medicine have changed.

Our second, and more central, objective was to characterize the use of the telephone by and for our nursing home patients. The after-hours care required by nursing home residents is not well described in the literature; previous studies have focused on total calls made for this group, most of which occured during normal working hours.[13,14]

To our knowledge, this is the only study that has documented the extent to which a family practice program receives after-hours calls from nursing homes. Patients who frequently use the telephone to receive care from a family practice have been characterized in a study by Daugird and Spencer,[15] but in that study, calls from nursing homes were excluded. Even though nursing home patients comprised only 1% of the active patient population, they accounted for 10% of all after-hours calls. Thus, the "increased needs" of nursing home patients for health care[16] can be said to include an increased need for after-hours care by telephone. In most cases the physician was called in observance of nursing home policy: all falls and all blood glucose values outside the normal range must be reported immediately to the patient's physician. Although this type of care is certainly less demanding of a physician's time than an emergency department visit or a hospitalization, it is not compensable. This inevitably high call rate for which there is no compensation may partly explain why many physicians decline to follow nursing home patients.[10,17]

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