AN ANALYSIS of AFTER-HOURS TELEPHONE CALLS to a PEDIATRIC PRACTICE

John Rugge

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Date

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by

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INTRODUCTION

The after-hours call to the doctor might be termed as ordinary, extraordinary event. Physicians (they would have one understand) anticipate evening and night calls from their patients, organize their routine around these calls, and accept them as a responsibility. But they never get used to them; the calls remain a disturbance of privacy, an interruption of study or leisure or sleep. For the patient, too, a call to the doctor after the appointed hours requires a modicum of extra effort, presumably prompted by some kind of stress. For the physician, evening and night calls are common; for many families they are not common, but for no one are they quite placidly routine.

REVIEW OF LITERATURE

The phenomenon of the after-hours call has stimulated a small number of studies.[1-9] Most of these studies have been conducted as internal audits - that is, a physician reviewing consecutive night calls to his own practice over a period of months. In Great Britain, several papers have been published by general practitioners interested in comparing the "amount and type of night work that has occurred in our practice" with the experience of others.[1-5] An underlying assumption of this group of papers is that virtually every telephone call to the practitioner requires a home visit to examine the sick patient. Webster and his colleagues mention that just 4.5% of their calls were handled by telephone advice alone.

The common interests of these British papers are the incidence of night calls, the time distribution of these calls, a catalogue of the presenting illnesses, and an assessment of what proportion of calls are necessary. The reported incidence of night calls or, more properly, night visits varies in these reports from 10.7 to 39 per 1,000 patients per annum. While the range is interesting, these figures are difficult to compare, one to another. The practices vary from rural to urban settings, the practitioners handle different kinds of caseloads (some include minor surgery, anesthesia or obstetrics while others do not), and the authors variously define night as 11:00 P.M. to 8:00 A.M., 8:00 P.M. to 8:00 A.M., and 8:00 P.M. to 7:00 A.M.

All studies concur that the great preponderance of calls occur in the early hours of the evening. Of calls between 11:00 P.M. and 8:00 A.M., Webster *et al* report 25% are received in the first hour between 11:00 P.M. and 12:00 midnight, while Brotherston and his

group report 30%. Of calls between 8:00 P.M. and 8:00 A.M., Model finds that 82% are placed before midnight. All the British studies acknowledge that an evaluation of the necessity of a family's call requires a broad interpretation since the layman is, of course, not trained to distinguish the genuine emergency from more minor afflictions. Webster and his colleagues state, "It is difficult to be dogmatic and almost impossible to define what constitutes an unnecessary night call." With this proviso, these authors rate 7% of their 342 calls "unnecessary." Brotherston et al find 6% of their 254 calls "unnecessary." Model declares that 48% of his 94 calls were "non-emergencies" and Burrowes judges 1/3 of his calls to be "not medically justified."

Another British study represents a different kind of internal audit of night calls by general practitioners.[6] In a book-length publication M. B. Clyne reports on a seminar involving 5 physicians under the supervision of a consulting psychiatrist, Michael Balint. Over 4 months this group discussed the psychological aspects of 50 non-consecutive, non-random night calls and night visits attended by the seminar's participants. Clyne's outstanding general finding is that psychological stresses are important and often neglected determinants of both the patient's call and the doctor's response. While this finding may be challenged as indistinguishable from the group's opening and guiding presupposition, it remains a conclusion that is copiously documented by the 50 case reports.

Three other self-audits of night calls appear in the medical literature of the last 2 decades. I. R. McDonald, a solo practitioner in Australia,reports on all telephone calls he received between 7:00 P.M. and 8:00 A.M. over 151 days.[7] He notes that

about 70% of his calls were logged before midnight, and he rates 40% of his calls as "urgent", a category which he does not otherwise define. H. Stamm, a general practitioner in the West Indies, notes that 2/3 of his after-hours calls are placed before 10:00 P.M.[8] He visited and examined 91% (163 of 179) of these patients and concluded that 58% were "necessary," in terms of actual or potential danger and physical or mental distress. Both McDonald and Stamm report that a higher proportion of late night calls are necessary or urgent than is true of early evening calls.

In 1955 W. W. Forbes, a general practitioner from South Acton, Massachusetts, tabulated 200 consecutive night visits (omitting the "rare cases in which a patient was satisfied with advice over the telephone") in order to determine whether "the single factor of a call made during the night" would be a "help in diagnosis by probability."[9] He found no "very definite" pattern of night-time diagnoses. Forbes notes incidentally that, in his total sample, 11% of the calls were "clearly not necessary" and another 10.5% should have been placed at another time. Of the 16 pediatric calls, however, he judges the call was not justified or inappropriate in 12 cases.

In summary, these papers represent attempts by a physician or small group of physicians to audit their patients' night-time demands and to compare their night work with that of other practitioners. As a group, these studies document that at the largest proportion of after-hours calls are placed in the early evening, that the after-hours call is a source of stress for the doctor and an outcome of stress for the family, and that the author-physicians find it interesting to rate calls as necessary or unnecessary

although they acknowledge that precise definitions of these categories elude them. Furthermore, 2 studies suggest that the unnecessary calls tend to congregate early in the evening.

An alternative to the doctor's internal audit is the use of third-party researchers to conduct an outside, independent analysis of the night call. Of this approach there is a single representative, "A Study of Night Calls in Jerusalem" by Pridan, Navid and Epstein.[10] These authors investigated 541 calls to a social service agency to request a home visit by a physician between 8:00 P.M. and 7 A.M. Five hundred and one (501) home interviews were obtained, and the doctors' records were reviewed. Using census date, Pridan et al found an increased rate of use of this service by the pediatric age group (0 to 9 years). The most common diagnosis was upper respiratory disease, a category which accounted for 2/3 of the total among children. Over 2/3 of the calls were made before midnight, but these researchers point out that "the 'severe' conditions ... are spread fairly evenly over the total time span."

After trying to find some kind of trigger "mechanism' for the night call, the investigators report nothing to support a theory of prior events during the day influencing the later perception of an emergency. They hypothesize that, "the emergency 'signs' suggested by the respondents were in line with what the population apparently identifies with the image of a 'sick' person - interestingly enough, without apparent relationship to cultural or social background." Pridan and his coworkers also assessed the urgency of the calls and conclude that there is little abuse of this night call service in Jerusalem since 95% of the patients were still at

home and under treatment the following day. Finally, the interviewers asked the families about their satisfaction with the doctors and placed the total rate of dissatisfaction at 20%.

DEFINITION OF THE PROBLEM

In this study, the after-hours calls placed to a small pediatric group are investigated in an attempt to consider the nature of these calls in the context of the doctor-patient relationship.

Fundamental to such an attempt is an adequate description of the after-hours calls to this urban New England practice. Simple census-taking - that is, a computation of the incidence of these calls and their time distribution - will serve to establish local patterns and to provide the backdrop for further analysis. A more comprehensive description of the after-hours call as an evolving event follows on the basis of my interviews with both doctor and family. These interviews focused particularly on the development of the child's problem, the formulation of the family's decision to call the doctor, the reformulation of the problem by the doctor, the family's response to professional advice, and, finally, each party's evaluation of the other's performance. In addition, I have obtained information regarding social status, cultural identities, family structure, debtor status to the physician, and length of association with the practice both from the after-hours callers and from a random sample of daytime office visitors. Using this data in the light of a descriptive understanding of these calls, I hope to answer the following questions:

1.. Are after-hours callers distinctive as a group from office visitors? That is, do night users and day users of medical services constitute different subsets of the general population of the practice?

2.. Among after-hours callers do any cultural or social

groups show distinctive behavior patterns?

3.. Are late calls to the doctor different from early calls in ways other than simply the time of call?

4.. Aside from the actual complaint of the patient, do such factors as time of call or social and cultural identifications influence the doctor's evaluation of the call as justified or unjustified?

5.. How do the physicians and the families regard the possibility of changing the basic structure of the encounter - specifically by assigning paramedical personnel to receive after-hours calls?

METHODS

Evening and night telephone calls to one pediatric practice in one calendar month (August 1972) provided the data for this study.

The practice, which I shall call Pediatric Physicians, is organized as a four-man partnership in a city of 150,000 people. The two senior pediatricians were original members of Pediatric Physicians which was formed ten years ago as the first group practice in the state. With the retirement of other charter members, the third and fourth men joined the group five years and one year ago, respectively. In addition to their private practice, all four Pediatricians have partial responsibility in training programs and specialty clinics in the local community hospital and nearby medical center. Clearly, these Pediatricians are active professionals, and many of their colleagues regard Pediatric Physicians as an innovative model practice.

In the fall of 1971, one year before this research, Pediatric Physicians hired a nurse practitioner to assist with routine office visits, developmental testing, and daytime telephone calls. Additional full-time staff includes a registered nurse, a bookkeeper and a lab technician. Four other women, one an R. N. and three who have been office-trained, work part-time as receptionists and aides. Sunday coverage is provided by moonlighting fellows in the pediatric sub-specialties at the medical center.

The office is open for appointments and run-in visits weekdays from 9:00 A.M. to 5:00 P.M. and Saturday mornings from 9:00 A.M. to about noon. Responsibility for taking after-hours calls is rotated night by night among the member Pediatricians. Patients are

instructed that, while they are welcome to request the doctor of their choice on weekdays, all evening and weekend consultations are handled only by the physician on call. After regular office hours each incoming call is routed through an answering service that in turn contacts the physician who then returns the family's call. At no time does Pediatric Physician impose a fee for a patient's telephone inquiry.

Further advice to families about after-hours calls is contained in the "Baby's Record" booklet that is given to parents as each new baby or child enrolls in the practice. Between the section on "General Newborn Instructions" and an entry on "Office Calls as Against House Calls," Pediatric Physicians inserts a few paragraphs on "The Telephone," To wit:

> "We are ready to receive emergency calls at whatever hour. We do not, however, appreciate the "late" call, the evening and night call, on matters which have been brewing for days, or for situations which, with a little thought on your part, can wait until morning for an answer; as for example, 'constipation', 'fussiness', 'poor appetite', 'worms', 'teething', 'diaper rash', a cough which has persisted for days, or perhaps even just begun, but without any other difficulty. (A vaporizer will certainly do until morning). Cudden fever in an otherwise well infant or child is best treated with aspirin and sponging. Delay until morning often allows for clarification; that is, the development of symptoms and signs which will allow for readier diagnosis and proper treatment. The short delay in 'specific drug' therapy (should that prove necessary) also allows the patient some opportunity to develope natural immune responses.
>
> You can be certain that if 'Johnny' is ill during the day, or has a fever, that he is more than likely to seem worse to you at night. So if you are really worried, check in with us during the day.
>
> The staff and facilities for meeting your needs are obviously infinitley more limited at night than during the day. The doctor you are calling at night has already put in a 'full' day. He needs his energies to meet 'real' needs. He has to look forward to another 'full' day tomorrow. Please be thoughtful."

The doctors were themselves skeptical about the effectiveness of this statement. One of the pediatricians remarked to me, "We try to educate our patients about night calls in our book. But you know most people never read it. They just don't seem to use it at all.' Another member of the group was scarcely more sanguine. "They probably read it once and throw it away."

All four men reported extra informal efforts to instruct their patients on when to place night calls. One approach was to "tell patients on their first visit what kind of things we think are important. I tell them that that may be different from what their old doctor said." A different strategem was used by Dr. Y: "I often ask patients why they called when they did in order to educate them. I try to make them think."

This study was conducted by interviewing the physicians and families involved in all telephone calls to Pediatric Physicians between the hours of 5:00 P. M. and 9:00 A. M. during August 1972. (Calls directly from the hospitals concerning in-patients or newborns were not investigated.) The Pediatrician on call each night received a questionnaire to be filled out with each call (Appendix A). The physicians' rate of response was 100%. Informal discussions between the physician and the researcher were held most mornings concerning the previous night's calls. The length of discussion about each call ranged from 0 to 10 minutes.

The investigator attempted to contact and interview all the families who called Pediatric Physicians during the month. Ninety two percent (92%) - 172 of 186 - were interviewed by telephone while 3% (5 callers) were interviewed in person at the pediatricians' office. Five percent (5%) - 9 of 186 - were not contacted because the families could not be reached within 48 hours of the

time of their call or, in one instance, out of discretion in the case of a call regarding the murder of a family member. Of those families contacted, none declined to participate in the study, although an occasional datum was unknown to the respondent (e.g., ethnic background) or refused to the interviewer (e.g., age of mother). The patients' charts were made available to the researcher and were sometimes used to fill in such bits of information. Billing records were also consulted so that each family was identified as a good account, deliquent account, or welfare case. In every case but 5 (3%) the family interview was conducted with the person who had placed the call to the doctor; in the remaining cases the interviewer questioned the spouse of the caller on the condition that he was at home at the time of the call.

The interviewer identified himself to each family as a medical student studying the medical problems that children and their families have at night. Further and completely frank explanation of this research was offered to the respondent as seemed necessary to win her confidence and cooperation. The interviews were semi-structured and ranged from 8 to 20 minutes long. The same questions were asked of each family (Appendix B), but the phrasing and the sequence were on occasion rearranged in the interest of facilitating clear, engaging and empathetic communication. Families were encouraged to elaborate on their answers and to express their feelings about their call to the doctor. The interviewer, of course, scrupulously withheld both his and the doctor's opinions about the patient's problem and the family's call. In the course of each interview, the investigator made notes, and at its conclusion he recorded the conversation longhand.

From the data sheets, coding of 35 variables was done for cross-tabulations and analysis (Appendix C). As can be seen from Appendix B, the coding for most variables could be transcribed directly from the raw information supplied to the interviewer. Three variables - social class, medical urgency and the family's sense of urgency - required prior interpretation by the researcher. Social class was determined from the occupation and education of the head of the household according to Hollingshead's "Two Factor Index of Social Position."[11]

The degree of medical urgency of the child's problem was assessed by the researcher using criteria of E. R. Weinerman.[12] Urgent problems were defined as "conditions requiring medical attention within the period of a few hours; there is possible danger to the patient if medically unattended; disorder is acute, not necessarily severe." Non-urgent problems were considered to be "conditions not requiring the resources of an emergency service; referral for routine medical care may or may not be needed; disorder is nonacute and minor in severity."

An evaluation of the family's sense of urgency at the time of call was more problematical. It was thought that a direct question on this issue of felt urgency would not elicit a reliable response from many families. Instead, the researcher interpolated the family's sense of urgency from the total interview. If the family expressed any feelings of fear for the child or mentioned at any time the possibility of a condition or complication that would indeed be medically urgent, then that family was coded as placing its call with a sense of urgency. For example, a call by Mrs. A concerning her little boy's temperature of 102° was rated as non-urgent medically but urgent in the eyes of the family because she

told the researcher, "I got nervous because he had convulsions last year." Calls rated non-urgent from the point of view of the family, on the other hand, were characterized by a lack of any expression of anxiety or fear of complications during the interview and were often marked by a clear statement of a casual attitude by the family. For example, Mrs. B called the doctor the next evening about her son:

> We had just gotten back from the amusement park. My husband thought that Freddie looked pale, so I took his temperature and it was 102°. I really called because I didn't remember how much aspirin to give. Just remember that when you get to be a doctor.

To serve as a control group, in early September, 100 consecutive office visitors to Pediatric Physicians were given a questionnaire requesting the same social and demographic information that had been obtained from August's after-hours callers. The response rate was 91% (91 of 100). The 2 office visitors who had placed after-hours calls during August were not handed questionnaires and were thus excluded from ~~the~~ representation in both samples.

RESULTS

After-Hours Calls: A Census

In August 1972 Pediatric Physicians received 186 evening and night calls from 165 families. At that time, the practice maintained active billing accounts for approximately 4,000 families accounting for an estimated 10,000 children. The calculated incidence of evening and night calls for this practice was, therefore, on the order of 223 calls per 1,000 patients per year. Only 1 call was placed by a family not already a member of the practice. There is of course no way to determine whether or how many of the families enrolled in this practice called some other physician or health facility for night care.

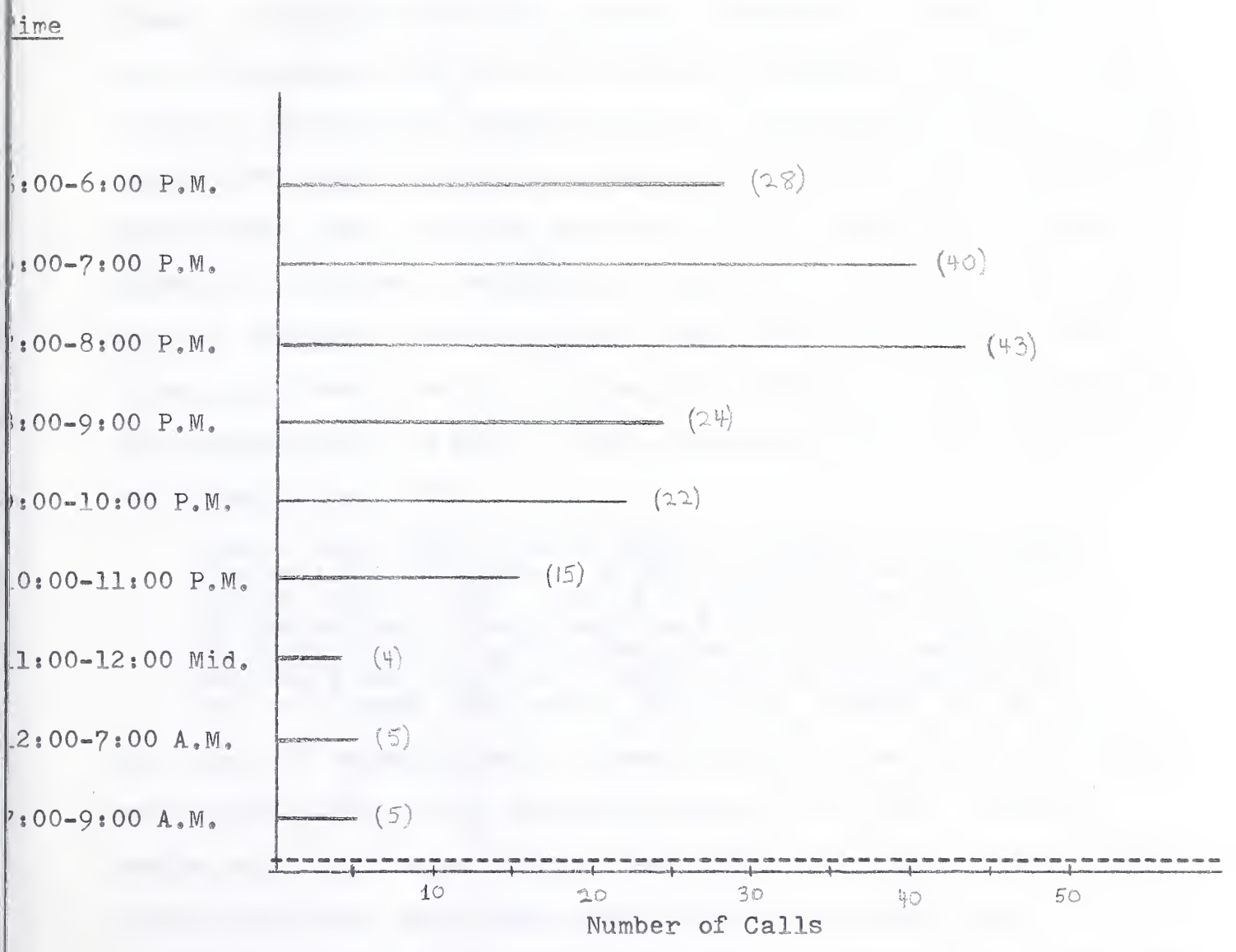
The distribution of calls by time can be seen in Figure 1. The increased frequency of calls early in the evening is very striking. Sixty per cent (60%) of Pediatric Physicians' after-hours calls were received before 8:00 P.M. Conversely, less than 3% of the calls, only 5 in 1 month, were taken between midnight and 7:00 A.M.

The Calls: The Family's Formulation

Families called Pediatric Physicians after hours with 21 varieties of chief complaints (Table I). In addition, 6 families (4%) called with no complaint but, instead, an inquiry for specific information. These requests ranged from a young mother desiring a note for her daughter's nursery school to a neuro-surgeon asking the correct pediatric dose of an ophthalomologic solution for his baby's blepharitis. Over 60% of the calls concerned 1 of only 5 complaints: fever, trauma, gastrointestinal upset, abdominal pain and earache.

FIGURE I

Time Distribution of After-Hours Calls



That fever is the front-running complaint is easy to understand. In addition to being the common physiological response to many common childhood afflictions, fever represents an objective finding of an abnormality that the parents can quantitate for the physician. Temperatures generally rise in the evening, and while most people are aware that low and medium grade fevers are in themselves quite banal, many families mentioned to me a lurid fear of that dramatic if uncommon complication, the febrile seizure. The doctors at Pediatric Physicians told their patients that the significance of a fever lies in the "company it keeps." Dr. S summarized the consensus of the group in his comments on one call concerning an uncomplicated fever of 105°.

> Fever, high fever, scares people - fever at night scares the hell out of people. Fever during the day doesn't bother them so much. Now if I had seen these people in the office, I would have told them that a temperature of 101° to 105.9° is all the same to a child and does not worry me. 106° and I would like to see the child. So, in a sense, this was a failure to educate the parents.

The range of temperatures of those children presenting after hours with fever as the chief complaint was 101° to 106°. The mean, median and most frequent figure was 103°. Like other calls, those concerning fever were placed early (64% before 8:00 P.M.).

Trauma, a category including falls, cuts, and animal bites, was the second most common complaint. The main concerns of the parents in these cases were the need for sutures, a question about tetanus boosters, the danger of rabies, and in the case of head trauma, the risk of impending coma and long term sequalae. All of these calls were placed as soon as practicable by the family, usually less than half an hour after the injury. At lease one mother was in such a rush to call the doctor that the opening conversation was breathless:

Mrs. C: "Doctor, my daughter cut her toe."

Dr. P: "What does it look like?"

Mrs. C: "I don't know. I haven't looked yet."

Virtually all the calls (30 of 31) regarding trauma and accidental ingestion were regarded by the family as urgent. The physicians, in turn, tended to agree that these calls were justified and, in fact, were significantly more likely to regard these calls as justified than calls for other complaints ($p < .05$). Occasional remarks by the doctors indicated that they feel it is a positive responsibility of the parents to contact the primary physician even if the child emerged from the accident apparently unscathed:

Dr. S: "Here's a kid who fell 15 feet off a roof into the dirt two days ago, and they didn't call. Can you imagine? Then he feels warm yesterday afternoon and they call after office hours."

Dr. C: "That just shows what's important to people. Let him fall 15 feet and no one cares or thinks twice about it. But let his temperature hit 102° and they call any time of day or night. Someone should invent a thermometer that doesn't go above 100°."

Of those calls not related to injury or ingestion, only a bare majority of families, even at the time of their call, regarded their child's problem as medically urgent. Ninety five (95) families (51%) either indicated feelings of fearfulness for the sick child or mentioned the possibility of some complication that would, indeed, be medically urgent if actually present. On the other hand, 61 families (33%) indicated that neither the child's condition nor the parent's perceptions imparted any urgency to their call to the doctor. Thirty (30) families (16%) could not be scored on this issue.

If not always out of an acute sense of urgency, how do families come to the decision to call the doctor after hours? When asked

explicitly how they had decided to call at the time they did, 55% of the families stated that their call was prompted by their observation of a change in the child's symptoms - either the sudden appearance of the problem, the development of a new symptom, or the worsening of a symptom. Conversely, 30% of the families related the timing of their call to their own changing reactions to the ill child. Their call represented a response to either the sheer duration of the illness, the parents' convenience, or the advice of someone outside the household. Of the former group, 80% regarded their call as urgent, while 47% of the latter group thought their own call as urgent.

From my interviews, however, it became apparent that such simple divisions as between urgent and non-urgent, while neat, tend to be brittle. If over-interpreted, they may actually obscure what should not be forgotten: that the evening or night call to the doctor is most often an attempt to resolve an exceedingly complex, confusing and usually difficult situation. The families themselves, hoping to simplify, frequently devise personal rules of thumb to help them through the complexities of deciding to call the doctor. One lady remarked, "We usually call the doctor as soon as the temperature hits 101°." Another parent offered a more pungent explanation for her call, "Oh, blood really gorks me out. I call the doctor for anything, anyway, but blood really does it." Still other families were able to express quite clearly how difficult it is to account for a single night call to the doctor, much less all night calls.

> I could just as well have called this morning. I rarely call in the evening. You know, you say to yourself, "I've seen a thousand fevers," but some-

times it just hits you.

Perhaps the best accounts of what goes into the decision to call the doctor were given by the families who were willing to sketch the background of their call in detail. For example:

> John [the 16 year old patient] made it quite definite that he wanted to speak to the doctor, and I was specially eager to placate him because he was irritable and was picking on his 12 year old brother who was threatening to leave home. Also, he had just been tatooed and I was worried about tetanus.

The actual decision to call the doctor was made by one parent alone in 44% of the families . A nearly equal proportion of calls (42%) were preceded by collaboration between both parents. Of this group, the mother and father agreed with one another that the doctor should be called in 69 cases, while 6 sets of parents did not agree. There was no correlation between agreement by both parents on the need to call and either the family's perception of urgency or the doctor's ranking of the call as justified.

The child's problem was first noticed by the family only during the evening of the call in 40% of the cases. Many of these calls (31 or 72), of course, were prompted by either trauma or accidental ingestion. Small numbers of calls concerned problems that began in the afternoon (8%) or the morning (9%) prior to the call. But the largest group of after-hours calls (42%) concerned problems that were more than one day old.

Many families (28%) had already consulted with the doctor about the child's problem before their after-hours call. Roughly equal numbers had contacted Pediatric Physicians by an office visit and by phone while just 2 families (1%) had consulted an

outside physician.

The Doctor Answers

Once the physician returns the family's call, the first order of business is the clear communication of the child's problem to the doctor. In many of the interviews conducted for this study, families took the time to relate the story of their child's illness in more detail than would be necessary or even appropriate in a night call to the doctor; in some of the interviews, families cast their child's difficulty in slightly different terms than they apparently had used with the doctor; but, for 98% of the calls the physician had quite clearly obtained an adequate understanding of the child's problem and the family's main concern.

In 4 cases, however, it seemed clear that the doctor, for whatever reason, had failed to grasp the primary reason for the family's call. For example, Dr. C judged one Saturday evening call to be "ridiculous" because the mother had complained of "diarrhea" in her 7 month old son when the boy had had only one bowel movement all day. In the next day's interview, it emerged that the mother had called Pediatric Physicians earlier in the week because her child was passing black stools. She was told by Dr. Y to call back if he did so again. On Saturday evening the mother found another black stool in his diaper, and on the weight of Dr. Y's advice, she called the office immediately. Apparently a loose use of the quasi-medical term diarrhea led to this misunderstanding of the complaint.

It may be worthwhile to cite one other example of faulty communication between family and doctor. Dr. S received a 7:00 P.M. call on behalf of an 11 year old girl who had a "splinter' in the

skin of the sole of her foot," and he discussed the call with me in red.

> It seems that in this day and age people should be able to handle a few simple problems. The mother's questions were things like whether to use methiolate or mecurocrome. I'm sorry, but ... (a shrug of the shoulders).

When the mother was contacted the next morning, the source of her anxiety and the true reason for her call became clear:

> Mrs. D: Linda also has tricuspid atresia, a heart problem... I was hoping the doctor would tell me some way to draw out the sliver without upsetting her... She still turns blue sometimes. Luckily there is a hole beneath the valve and that compensates so she is nearly normal.
>
> JR: Have you been warned about not getting her upset?
>
> Mrs. D: Well, everyone has hinted....

Perhaps because she felt threatened by the question, Mrs. D did not continue or directly acknowledge that this fear was her reason for calling. Similarly, she did not mention her fear to Dr. S, presumably because she was not sure whether her concern was medically justified or whether it was a foolish misunderstanding. In any case, Mrs. D obviously communicated Linda's problem and her own concern poorly to the doctor. He even thought Robert, the brother, was the one with the sliver. Fortunately, Mrs. D's immediate conundrum - what to do about a sliver in a girl who may or may not turn blue if she becomes upset - was resolved by Dr. S's advice. But the underlying uncertainty that prompted the call was not communicated and therefore not resolved.

For this study, the physicians were asked to state their diagnosis following each after-hours call. Forty one percent (41%)

of the problems prompting evening calls were designated a non-specific viral syndrome by the doctors. Twenty two percent (22%) were self-evident diagnoses of trauma, ingestion, or insect bites. Otherwise only 12% of the after-hours patients were given any kind of specific diagnosis - e.g., bullous myringitis, herpetic stomatitis, stool change due to change in formula. For 16% of the calls the physician was unable to venture a diagnosis. It is interesting that one physician (Dr. P) posted a significantly higher proportion of specific diagnoses than his colleagues ($p=<.05$), while the fellows who covered part-time were least apt to offer any diagnosis at all (Table II).

The treatment recommended to after-hours callers fell into 2 unequal groups. By far the larger group, 87% of all callers, was offered symptomatic measures (benadryl, aspirin, etc.) or simple reassurance. Just 7 families (4%) were given a specific remedy (e.g., susephrine for an asthmatic attack) while another 5 callers (3%) were referred to a hospital emergency room for specific therapy (especially sutures for lacerations). These figures certainly reflect the policy of Pediatric Physicians not to order antibiotics when the child has been neither examined nor cultured.

The doctor on call elected to see and examine just 3 patients (2%) among the after-hours callers before the office opened the next morning. Two were for acute asthmatic attacks; 1 for g.i. upset with fever and earache. Five other patients (3%) were referred to a nearby emergency room - 4 for suturing of lacerations by a surgeon and 1 for treatment of asthma by the resident house staff.

In addition to his diagnosis and disposition of each call as a professional, the physician naturally developed personal feelings

about his after-hours calls. The doctors were asked to rate each call as justified or unjustified from his point of view as primary physician. At the outset, the doctors agreed that from a strictly medical standpoint few calls would qualify as genuinely urgent. Nonetheless, they also acknowledged that some calls are necessary if only "that parents can be reassured that the kid is not going to die" (in the words of Dr. S). By the same token, none of the pediatricians was willing to accept the premise that all calls are justified. "It was justified from the mother's point of view, but not from the doctor's," Dr. Y commented about 1 call. "Of course, the mother thinks all her calls are justified." Perhaps one of the mothers best summarized the tension between the two points of view: "The doctors think everything is nothing, I guess, while the mothers think that everything is something."

On strictly medical grounds, 16 calls (9%) were in fact "urgent" by Weinerman's criteria. On the more generous basis of their own global judgement, the doctors ranked 99 calls (55%) as justified, 71 calls (34%) as not justified, and 11 calls (6%) as indeterminate or "justified but not at this time." Of the 16 medically urgent calls, all but 1 were considered justified by the doctor. The exception was the breathless call concerning the lacerated toe mentioned earlier. When the bleeding did not stop despite Dr. P's reassurance to the contrary, the parents took the girl to a local hospital where she required four stitches.

There were significant differences among the individual doctors in their willingness to regard an after-hours call as justified ($p < .01$; Table III). Dr. C, the most grudging of the group, thought that only 27% of the calls he received were justified. At the other extreme, Dr. S found fully 86% of his calls justified.

Aside from each doctor's idiosyncratic predisposition about the justifiability of night calls, an effort was made to locate some influences on the doctor-family relationship that might affect the physician's final evaluation of a call as justified or unjustified. There was, for example, a significant correlation between the doctor's rating of a call as justified and the family's own perception of their call as urgent ($p = < .01$). Possibly, the mother communicated her anxiety to the doctor which in turn influenced his own assessment of the importance of the call. Alternatively, the family may have tended to perceive as urgent the more serious medical conditions, and the doctor may have used a like scale of seriousness to assess whether a call was justified. In point of fact, all 16 cases that were actually medically urgent were indeed thought to be urgent by the family itself. When those 16 calls are deleted from the sample, there remains a tendency for the calls believed urgent by the family to be rated justified by the doctor, but the correspondence was not statistically significant.

Another factor that seemed to influence the doctors' willingness to consider a call justified was the length of the family's association with the practice (Table IV). The doctors appeared more likely to approve of after-hours calls from long term patients than from families newer to the practice. There was no such trend for chronologically older patients or older parents. Perhaps over the years the doctors ~~are~~ have been effective in educating families on when to call at night, or perhaps the doctors ~~are~~ were more tolerant of calls from families more familiar to them.

A small percentage of families enrolled in the practice (roughly 4-5%) have delinquent accounts and have received polite

dunning notices. Roughly the same proportion of after-hours callers (5%) were delinquents. Although after-hours calls in general were rated justified and unjustified in ratio of 99 to 71, among delinquent bill-payers the doctors regarded only 2 of their 9 calls as justified. This imbalance is not more than suggestive.

No correlations were found to exist between time of call and the doctors' feeling of whether it was justified.

Outcome of the Calls

Just as important as open communication between the family and the physician about the patient's problem is a clear understanding of the doctor's recommendations by the family. Ninety nine percent (99%) of the families contacted, all but 2, were able to repeat, at least in rough outline, the doctor's instructions on the day following the call. The two exceptions included 1 Sunday call taken by Dr. J, a fellow. The mother told him that her two year old had a high fever and was "acting strange." Dr. J reassured her that the illness was viral and that she should give her child aspirin and plenty of fluids. The next morning, the mother reported quite a different version:

> He said it was a viral infection and that it should be seen by a doctor. He said he wasn't in the hospital and that he couldn't get there before about two hours - until 10:00 P.M. But that if I was really concerned, I could take her there myself. There in the emergency room they also said it was viral. Would you tell me? What is that?

The second case of a garbled interpretation of the doctor's advice, interestingly enough, involved Mrs. D and her daughter with a tricuspid atresia. Dr. S in his own notes stated that he advised "soap and water, remove with needle, methiolate." Mrs. D interpreted their conversation to her own purpose.

He told me the sliver would work itself out if I left

> it alone. And that's what I needed to know, because when I left her alone, Linda was quiet and all right.

We have already reviewed the finding that 3 children were seen after hours by the doctor on call and 5 others were referred to the hospital emergency room for treatment. Of the remaining callers, 11 (6%) contacted another doctor during the evening. Nine of these families went to an Emergency Room to seek a physical examination for their child - 5 for lacerations or a fall, 1 for earache, 1 for abdominal pain, and 1 (an infant) for a cyanotic attack. Two families contacted another physician by phone - one for gagging and the other for ingestion. In 1 case of laceration and in the case of cyanosis, the effort to reach outside medical help was initiated before the doctor at Pediatric Physicians was able to return the family's call to the answering service. The other families all sought outside advice during the evening sometime after their call to Pediatric Physicians had been completed.

Of this latter group of 9, 3 families indicated that their call to Pediatric Physicians had not been helpful to them or their child. Two (2) of these families were determined to have their child seen by a doctor; and, when not accomodated by Pediatric Physicians, they went to the Emergency Room for satisfaction. The third case involved an unfortunate mother with more complex needs. Mrs. F called Pediatric Physicians at 7:30 P.M. about her two weeks old boy. She had joined the practice only at the time of the baby's birth, and this after-hours call was already her second:

> I looked in on the baby and he had vomited up his feeding. It was all over his face and in his ears

> and everywhere. We got him up, and he started gagging and I was scared out of my tree. He was trying to cough up the mucus, but he couldn't, and he couldn't breath...
>
> The doctor told me just to use a syringe, but I'm too scared to do that, to put anything in the back of his throat. I think they should take into consideration how petrified I am...
>
> With this group I get a different doctor every time, and they don't have the records yet. I have to go through the whole story again, and something must get lost.

What was lost to the doctor was the fact that Mrs. F had suffered five miscarriages and a crib death. Her anxiety about her newborn may have been all out of proportion to the baby's current medical problem as even Mrs. F was willing to admit, but it was not out of proportion to her total experience. Mrs. F was in desperate need of counseling, but a night call to a still unfamiliar doctor had twice proved an ineffective way of asking for it.

Overall, for all after-hours, 88% of the families regarded their call to the doctor as helpful. When asked how the call had been of benefit, less than 1 family in 6 (16%) referred only to the treatment suggested by the doctor. An additional 15 families (10%) commented on both the effectiveness of the treatment and the quality of reassurance from the doctor. The largest group by far, 74% of the families who had found the call helpful, mentioned only their reassurance by the doctor. The most frequent response was direct and enthusiastic: "Oh, it relieved my mind." Families whose calls were disapproved by the physician as unjustified found their calls as helpful and reassuring as other callers.

Twenty (20) families (11%) indicated that their call had not been helpful. (Table V). Although there was no single overriding

source of dissatisfaction, the most common explanation (7 families) was that the doctor had not been able to effect a cure or offer adequate relief. Three other families said that they had come to realize that their call was "silly" and that they should not have disturbed the doctor in the first place. The other 10 families (6%) found the calls not helpful for some reason that might have been avoided by the physician.

Social and Cultural Investigation

Tables VI - VIII compare after-hours callers and daytime office visitors with regard to parameters of family structure, relationship to the practice and larger social identities. Together, these tables point to a single theme. By none of the social, cultural or demographic categories investigated did after-hours callers differ significantly from office visitors. No group tended to rely more than others on the after-hours call as a means of contacting the doctor to help the family manage their sick or difficult child.

An effort was also made to determine whether certain social or cultural groups among the after-hours callers showed distinctive attitudes or behavior regarding their calls. The single statistically significant finding was that Jewish families called the doctor after hours more frequently for problems of long duration (i.e., more than 2 days), ($p < .05$; Table IXa). Conversely, non-Jews called more frequently for problems of acute onset, beginning some time during the evening of the call.

In certain other ways, Jewish families were distinctive. There was a tendency for the physicians to view their calls (30 in all) as less justified than those from non-Jews (Table IXb). The families, themselves, tended to agree (Table IXc). In addition,

Jewish families were more likely to report that their calls had not been helpful (Table IXd).

Analysis of the justifiability, urgency and helpfulness of these calls by ethnic background and social class showed apparently related trends. Eastern Europeans showed a tendency, like the Jews, to have their calls rated less justified by the doctor and to regard their own calls as less helpful (Table X). When Jewish families are deleted from the sample, however, these tendencies disappear. Analysis by social class revealed a slight tendency for the calls of the upper classes (i.e., I and II) and the bottom class (V) to be thought less justified by the doctor and to be regarded as less urgent in the family's own eyes (Table XI). These tendencies do not fade when the calls by Jews are omitted from the analysis.

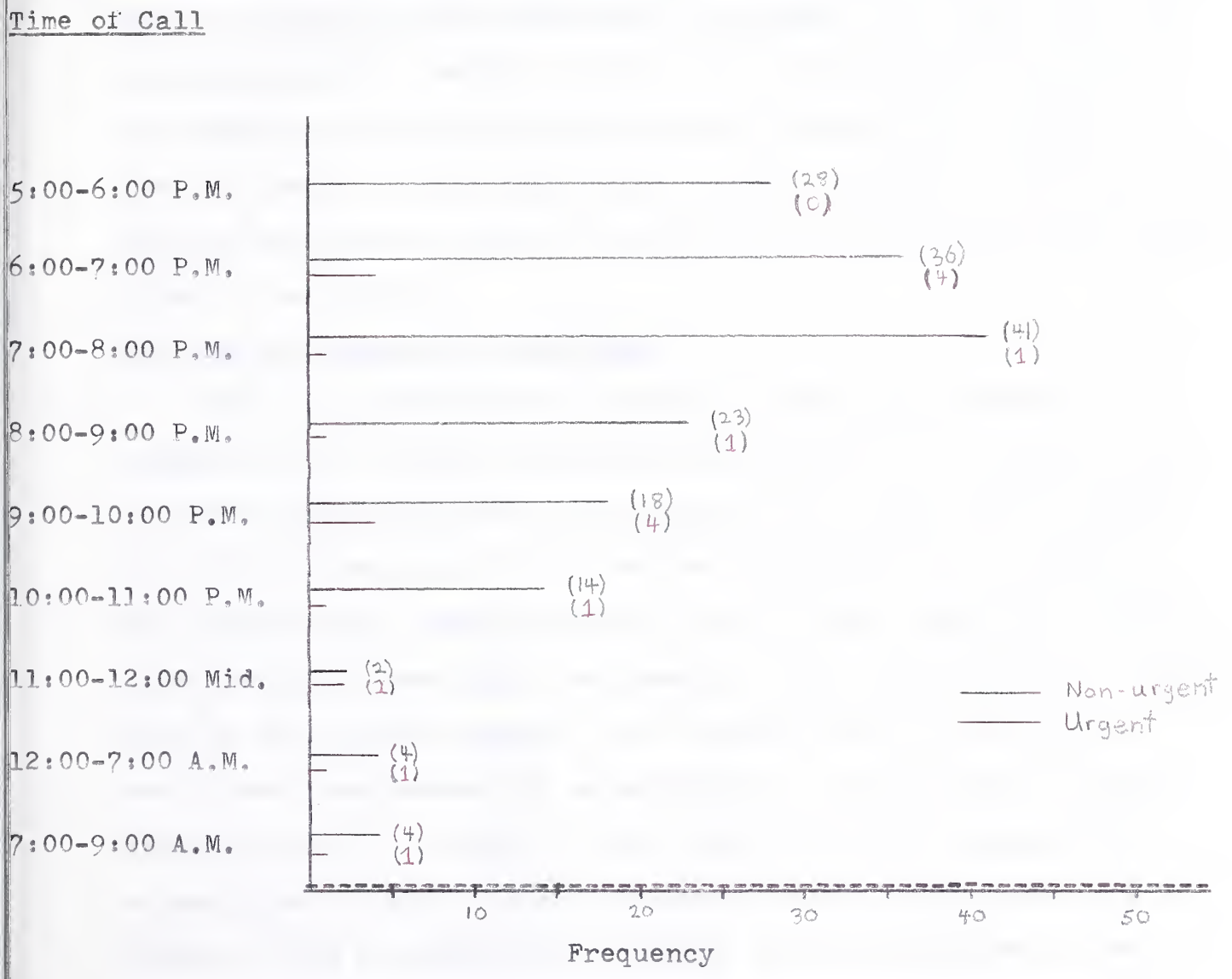
In summary, there appears to be a number of ways in which Jews tended to think and act distinctively in their after-hours call to the doctor. Compared to non-Jews, they tended to call the doctor for longer standing problems, and they showed tendencies to make less urgent calls which the doctors thought were less justified and which they, themselves, felt were less helpful. A definite determination of the possible significance of these relationships and clarification of how these tendencies interact with a family's total social identity would have to await a larger study.

Early Callers vs. Late Callers

Figure I showed that most of the after-hours calls to Pediatric Physicians were placed in the early evening, 73% before 9:00 P.M. An effort was made to determine whether late calls were different from early calls in ways other than simply the time of call. Figure II shows that only 5% of the early calls (i.e., between 5:00

FIGURE II

Time Distribution of Urgent vs. Non-Urgent Calls



and 9:00 P.M.) were medically urgent, while 22% of the late calls (between 9:00 P.M. and 7:00 A.M.) were urgent. That is, the urgent calls were more evenly distributed throughout the night than the non-urgent calls ($p < .02$). There was no corresponding tendency for families to think of their own late calls as more urgent or for the doctor to rate late calls as more (or less) justified. Nor did any particular social or cultural group tend to call the doctor later in the evening.

The Use of Paramedical Assistants

Both the physician and the caller were asked whether he thought that a trained paramedical assistant or nurse practitioner could have handled each particular call. The doctors opined that 89% of the calls could have been managed by an assistant. The doctors were undecided about 3 calls (2%). Among the individual physicians who staff the practice there was substantial agreement on this issue; however, Dr. P thought that all his calls could have been managed by an assistant. The part-time fellows thought 4 out of 10 (40%) of their calls required a response by a physician. Eight (8) calls received by the fellows were not rated on this question partly because of the conviction of one fellow that "if a call is not justified, no one should have to take it."

One hundred and two (102) families, 58%, thought that a paramedical assistant could have handled their particular call. On the other hand, 44 families (25%) believed that their call required a doctor, while 30 callers (17%) were uncertain.

In Table XII the attitudes of the doctors and families are cross-tabulated. It contains the findings already mentioned: the doctors favor coverage of after-hours calls more than the families,

and the doctors are more decisive in their judgment. In addition, this Table shows that the doctors and the families very often do not agree on which calls can be safely handled by an assistant.

DISCUSSION

As in all the scattered reports on night calls over the past two decades, after-hours calls to Pediatric Physicians were concentrated heavily in the early evening. Three quarters (3/4) of the calls were placed between 5:00 and 9:00 P.M., that is, in just one quarter of the time that the office is closed for the night. The medically urgent calls, however, were scattered more evenly, one half ($\frac{1}{2}$) of these calls falling between 5:00 and 9:00 P.M. It seems clear that the social patterns of family life were important determinants of the timing of the call to the doctor, if not of the decision to call itself. That even the urgent calls were skewed toward the early hours is understandable, since trauma — falls, lacerations and bites — ranks as the second most common complaint by the family. The extra increment by which non-urgent calls clustered around the hour of 7:00 P.M. can, it seems, be laid to the flow and ebb of anxious anticipation by the family facing the night with an ill child.

The absolute incidence of after-hours calls to this pediatric group is difficult to relate to the published experience of others. The most frequent and the mean figure cited by general practitioners for night calls between 11:00 P.M. and 8:00 A.M. was about 17 or 18 calls per 1,000 patients per year. For the same late night period, by extrapolation from one month's experience, Pediatric Physicians received about 31 calls per 1,000 per year, but these pediatricians insist that August is the kindest month with many fewer calls than is typical of the school season.

Pridan and his colleagues, the researchers from Jerusalem, hypothesized that night calls to the doctor are prompted by certain

undefined "signs" which "the population apparently identified with the image of the sick person - without apparent relationship to cultural and social background." This study provides data to support this contention. No particular group or groups as defined by family structure, social class, ethnic background, race, debtor status or length of association with the practice placed disproportionate numbers of after-hours calls. Among after-hours callers, no social group tended to call late instead of early. The one cultural group which tended to think and act distinctively about the indications and outcome of its after-hours calls seemed to be the Jews. Jewish families called the doctor for longer term problems and seemed to regard their own calls as less urgent and as less helpful to them. These latter tendencies were, however, not statistically significant, and clarification of how this religious identity interacts with the influence of social class must await further study. (How these tendencies by Jewish families relate to special patterns of childrearing or to a unique understanding of the doctor's role also remains unresolved by this study). Likewise, the doctors' judgment of what is a justified call was not influenced by social affiliations except for a corresponding tendency to regard calls by Jewish families as less justified. Thus, it seems that there was no identifiable group or class of abusers of the night service provided by Pediatric Physicians. Yet, the doctors felt that 39% of the calls were not justified, and 34% of the families did not feel that their own call was urgent.

Before jumping to the conclusion that there was widespread overuse of the after-hours calls, we need to consider the findings of this study closely. Just 9% of all after-hours calls were urgent

by strictly medical criteria. The doctors clearly acknowledged that many calls were justified even if not medically urgent. The doctors also thought that calls which were urgent in the family's eyes were more frequently justified than the calls not considered urgent by the family, but this relationship was no longer significant when the truly medically urgent calls were deleted from the sample. The prototypical justified night call as far as the doctor was concerned seems to have been the one prompted by traumatic injury or accidental ingestion. In such cases, the problem was acute, was well circumscribed, and clearly required professional judgment.

For the families, however, their child's problem was often not so neat. A third of the families called for problems that had been dragging on for more than two days; another large group of families first began to notice mild symptoms early in the evening and puzzled over whether to call early or take the chance of the child worsening and having to disturb the doctor late at night. The parents based their decisions on their knowledge and on their experience (just as doctors do), but also on sharp feelings that their own knowledge is incomplete, that their experience is limited, and that a better judgment is available, be it for symptomatic relief to the child, prevention of dire complications, or simple peace and quiet.

These considerations point us back to the obvious: Even though the family may not have felt their child's problem was actually or potentially dangerous, they did feel the need to call the doctor — that he may reformulate their problem and make the total situation more manageable. Whether the call was urgent or not, justified or not, the families found that the doctor was indeed helpful

in 89% of the cases.

Between the previous reports of night calls and the experience of Pediatric Physicians there was one radical difference. The practitioners of the earlier studies as a matter of course personally attended nearly all the patients who contacted them during the night. Quite the opposite, the doctors at Pediatric Physicians elected to see only 3 children of the families who called after-hours in 1 month, while referring another 5 to a hospital emergency room for treatment. Nine (9) other families reported contacting some other doctor after their call to Pediatric Physicians, but 90% of the families consulted the doctor only by telephone.

The fact that night calls to the doctor have in recent years been restructured in such a fundamental way and the fact that many people called the pediatrician after-hours for problems that were not by anyone's estimate medically necessary raise an important question. Is it feasible to change the structure of the after-hours call even more radically - namely, by having a paramedical assistant accept these calls?

The 4 pediatricians at Pediatric Physicians thought that 93% of their after-hours calls could have been handled by such an assistant. The families were more skeptical. Fifty eight percent (58%) of the callers who were interviewed agreed that a paramedical assistant could have dependably advised them about their child's problem. Their response, it should be remembered, followed by half a day the actual prospect of nursing their child through the night, but it also followed the actual experience of already having consulted the doctor, not his substitute.

On the other hand, while the doctors thought that only 7% of

the after-hours problems were beyond the competence of an assistant, 25% of the families disapproved of such a stand-in. A few callers were discriminating in their reactions. One lady, for example, said that "for most things it would be all right, but not for the eyes -- they're too important." But most of this group of nay-sayers expressed blanket disapproval of night coverage by paramedical assistants. Some were almost prudish: "I don't approve of that kind of thing." Others were inconsistent. One mother who replied, "Oh, no, there's no comparison between a nurse and a doctor," also remarked that she had previously tried to call the pharmacist so as not to bother the doctor. Perhaps one lady articulated the opposition most intelligently: "I suppose they could handle routine problems, but you try not to call at night for just routine problems."

In general, families expressed two lines of concern about the use of assistants after-hours. First of all, they stressed the importance of confidence in the professional authority of the doctor. In part, this confidence rested on the technical competence of the physician. In the words of one parent, "...his education runs a little deeper." Some families, though, were quite certain that even more fundamental issues are at stake. For example,

> It's a feeling of security. If I'm calling the doctor, I want to talk to the doctor.

> I guess a nurse would have the technical information, but I would have preferred to have talked to the doctor.

> When I call the doctor, I know I'm getting the last word.

And most to the point:

> In our case it was judgment that we needed and the doctor is the one who has judgment.

The second concern of families regarding the substitution was the importance of the familiarity and personal interest of a doctor

in their child. "He knows my baby medically better than I do," said one mother. "If he's not worried, then I'm not worried." The cultivation of a personal doctor reached its outer, rather bizarre limits in the case of Mrs. E who called Dr. O, not realizing that he had retired from practice the previous year.

> Dr. O suggested that I call Pediatric Physicians. But I know that doctors at night just say to take aspirin and orange juice, and so I thought I would just bypass that and not bother. I'm the kind of person who puts complete trust in a doctor once I get to know him.

Thus, it is not surprising that many of the families who would welcome the advice of a paramedical assistant at night based their approval on personal experience with the nurse practitioner employed by Pediatric Physicians for daytime work.

It should be emphasized that the interviews revealed that many people's opinions on this issue were very fluid. Seventeen percent (17%) of the families said they just did not know how to answer this question, and many others seemed to be fumbling for a considered reply. In the individual instance, the author thinks of how easily one woman's opinions shifted:

> In this particular case I guess a nurse could have done it. My husband just shook his head no. In general, I have more confidence in the doctor's knowledge. I really don't like talking to the nurse.

On the basis of all the evidence, this investigator would estimate that a nurse practitioner would in the trial be accepted by most, perhaps 8 or 9 tenths, of the after-hours callers to Pediatric Physicians. His level of acceptance would be increased by emphasis on the qualifications to which the families attach great importance - professional experience and personal acquaintance with the children. He should be prepared to find some families who refuse to accept his advice and some who will be quite blunt in their refusal. Those

families will not necessarily be those whose calls are urgent even in the family's own eyes, nor will they characteristically correspond to those calls that the doctor will want referred to him. If all after-hours callers are not offered free and prompt access to the back-up pediatrician, there is likely to be considerable misunderstanding and strong resentment among many families of the practice. (One or two families, even after hearing a detailed description of this project, inquired whether the interviewer was planning to take night calls for Pediatric Physicians - a prospect that enthralled neither party.) It might be pointed out that a paramedical assistant assigned to accept calls from 5:00 to 9:00 P.M. would in 4 hours handle 3/4 of the night's work.

Any assignment of paramedical personnel to handle after-hours calls should only be undertaken with a clear understanding of the function of these calls for the medical care of the community and for the life of the family. Very rarely do night calls present as genuine life-or-death emergencies. Only 1 call (the cyanotic infant) fell into such a category in the month of this study, and that baby had already been taken to the hospital before the physician on call was able to contact the family. In about 10% of the cases, the problem is serious enough to warrant prompt medical attention. For the remaining 90% of calls, no definitive treatment could be offered; for 2/3 of the calls, not even a specific diagnosis could be made over the telephone. What's more, the families seem to understand and (generally) accept this tentativeness. What the families receive and appreciate in large measure (86.5%) is reassurance from the doctor. To borrow a concept from Michael Balint, after-hours callers presently telephone Pediatric Physicians in

full confidence that they will receive a dose of the drug, 'doctor.'[13] To delegate the role of receiver of night calls to an assistant will necessarily entail a transfer of some measure of the authority and the magic that has been until now the prerogative of the physician.

CONCLUSION

One hundred eighty six (186) after-hours telephone calls to a small pediatric practice were studied through interviews with both the families and physicians. It was found that:

1. Most after-hours calls to the pediatrician were placed in the early evening. Medically urgent calls were scattered more evenly throughout the night.

2. Social and cultural groupings did not distinguish after-hours callers from office visitors, or early callers from late callers.

3. Among the families, Jews called more often for longer term problems and tended to regard their calls as less urgent and less helpful. The doctors correspondingly tended to feel that the calls from Jewish families were less justified.

4. The physicians thought that 93% of the calls could have been handled by a paramedical assistant. The families were less approving and less decisive about the desirability of such an arrangement. Any such restructuring of the practice's night service would have to be undertaken very cautiously in light of these suspicions and in light of the success of the service as it is now organized.

TABLE I

Chief Complaint Among After-Hours Callers

Fever	47	Fussiness	5
Trauma	24	Wheezing	4
G.I. Upset Nausea, Vomiting, Diarrhea	21	Sore Mouth	3
Abdominal Pain	12	Emotional Upset	2
Earache	11	Stuffy Nose	2
Rash	7	Lump Under Arm	2
Sore Throat	7	Turned Blue	1
Ingestion	7	Big Tonsils	1
Red Eyes	6	Headache	1
Information Request	6	Hoarseness	1
Cough	5	Return Calls As Dr. Advised	1

TABLE II

Diagnoses by Physicians
(by percent)

	Viral	Trauma or Ingestion	Specific	Unknown	None Appropriate	n
Dr. P	35%	27%	24%	6%	8%	66
Dr. Y	44%	16%	4%	32%	4%	25
Dr. C	56%	12%	5%	12%	15%	41
Dr. S	43%	37%	3%	7%	10%	30
Fellows	27%	14%	14%	45%	0%	22
n	76	41	23	29	15	184

Comparing specific vs all other diagnoses by physician:

$X^2 = 22.569$ with Yates correction

$P = < .05$

TABLE III

Physicians' Rating of Calls as Justified
(by percent)

	Justified	Not Justified	Undecided	n
Dr. P	46%	49%	5%	67
Dr. Y	60%	36%	4%	25
Dr. C	27%	61%	12%	41
Dr. S	86%	10%	4%	30
Fellows	89%	6%	6%	18
n	99	71	11	181

Comparing justified vs not justified calls by physician:

$X^2 = 34.725$ with Yates correction

$P = <.01$

TABLE IV

Physicians' Rating of Calls
(by percent)

Family's Association With Practice	Justified Call	Not Justified	Undecided	n
<1 year	46%	46%	8%	35
1-5 years	52%	42%	6%	67
>5 years	65%	30%	5%	69
n	96	65	10	171

TABLE V

Why Families Found Their Call Not Helpful

Reason	Number
No Effective Treatment	7
"Silly" to Call	3
Still Felt Anxious After Call	3
Dr. Refused to See Child	3
Dr. Did Not Take Problem Seriously	1
Inappropriate Referral to Emergency Room	1
Dr. Did Not Return Call Soon Enough	1
Dr. Did Not Know The Requested Information	1

TABLE VI

Comparison of After-Hours Callers and Office Visitors: Family Structure

a. Age of Patient

	<1 year	1-4 years	5-10 years	>10 years	
After-Hours Callers	25	83	41	30	n = 179
Office Visitors	23	30	19	22	n = 94

b. Sex of Patient

	Male	Female	
After-Hours Callers	97	82	n = 179
Office Visitors	43	54	n = 97

c. Birth Order of Patient

	1	2	3	4 or More	
After-Hours Callers	86	51	26	11	n = 174
Office Visitors	39	34	13	5	n = 91

d. Household

	Two Parents at Home	One Parent at Home	Institution	
After-Hours Callers	167	20	2	n = 189
Office Visitors	86	4	0	n = 90

e. Number of Children

	1	2	3	4 or More	
After-Hours Callers	50	65	40	22	n = 177
Office Visitors	19	38	25	9	n = 91

TABLE VII

Comparison of After-Hours Callers and Office Visitors: Ralationship to Practice

a. Length of Association

	<1 year	1-5 years	>5 years	
After-Hours Callers	36	68	72	n = 176
Office Visitors	18	29	46	n = 93

b. Financial Status

	Good Account	Delinquent	Welfare	
After-Hours Callers	166	9	2	n = 177
Office Visitors	93	3	2	n = 98

TABLE VIII

Comparison of After-Hours Callers and Office Visitors: Social Identities

a. Social Class

	(Highest) I	II	III	IV	(Lowest) V	
After-Hours Callers	23	25	38	63	25	n = 174
Office Visitors	13	13	20	35	8	n = 89

b. Religion

	Roman Catholic	Protestant	Jewish	Other	
After-Hours Callers	105	32	30	7	n = 174
Office Visitors	57	11	17	4	n = 89

c. Ethnic Background

	Italian	Eastern Europe	English	Negro	Mixed or Other	
After-Hours Callers	63	44	11	12	39	n=169
Office Visitors	29	19	12	8	8	n =76

TABLE IX

Patterns of After-Hours Calls
Among Jewish Families

a. Onset of Child's Illness

	Evening	Daytime	Previous Day	2 Days	
Jews	6	5	3	16	n = 30
Non Jews	66	24	10	43	n = 143

b. Doctor's Ratings of Calls as Justified

	Justified Calls	Unjustified Calls	
Jews	13	13	n = 26
Non Jews	86	47	n = 133

c. Urgency of Calls in View of Family

	Urgent	Non-Urgent	
Jews	14	13	n = 27
Non Jews	79	46	n = 125

d. Helpfulness of Calls

	Helpful	Not Helpful	
Jews	23	7	n = 30
Non Jews	124	12	n = 136

TABLE X

Patterns of After-Hours Calls
Among Ethnic Groups

a. Doctors' Rating of Calls as Justified

	Justified Calls	Not Justified	
Italian	34	22	
Eastern European	20	20	
English	5	6	
Negro	8	3	
Other and Mixed	29	7	n = 154

b. Helpfulness of Calls

	Helpful	Not Helpful	
Italian	51	6	
Eastern European	33	9	
English	11	0	
Negro	10	1	
Other and Mixed	34	3	n = 158

TABLE XI

Patterns of After-Hours Calls
Among Social Classes

a. Doctors' Rating of Calls as Justified

	Justified Calls	Not Justified	
I	11	11	
II	14	10	
III	23	13	
IV	39	17	n = 159
V	10	11	

b. Urgency of Calls in View of Family

	Urgent	Non-Urgent	
I	13	10	
II	12	10	
III	21	9	
IV	39	18	n = 153
V	9	12	

TABLE XII

Comparison of Attitudes of Physicians and Families on Night Coverage by Paramedical Assistant

(by percent)

Attitudes of Family	Attitudes of Physician			
	Approve	Disapprove	Uncertain	n
Approve	90%	8%	2%	100
Dis-approve	87%	13%	0%	38
Uncertain	90%	7%	3%	29
n	149	15	3	167

APPENDIX A

NIGHT CALL SURVEY

Child's Name_____ M. D._____

Caller's Name_____ Date of Call_____

Relation to Child_____ Date of Interview_____

Phone_____ Length of Interview

M. D. _____

Time of Call_____ Family_____

PHYSICIAN SCHEDULE

Complaint

Diagnosis

Treatment

Do you think this call was justified?

Do you think this call could have been handled by a paramedical person?

Family's Schedule

What was the Problem?

Type

Duration
New_____
Recurrent_____

Any Previous Medical Consult?
New_____
Recurrent_____

Who Decided to Call the Doctor?_____

Relation to Child_____ Relation to Caller_____

Who Else Was Included in the Decision?_____

_____

Did Everyone at Home Agree that the Doctor Should be Called?

How Did You Decide to Call When You Did?

Did You Call Any Other Doctor During the Night?

What Was The Outcome of Your Call?

Did Calling The Doctor Help? How?

Would a Paramedical Person Have Been Able to Handle Your Call?

Child's Age__________ Sex__________ Birth Order____________

Length of Family's Association With Practice________________________

Household: Number of People Living at Home__________________________
Relation to Patient?
Age__________________________

Sex__________________________

Head of Household________________________

Occupation__________________________ Education

Caller__________________________________

Religion______________ Ethnic Origin_____________ Race________

* *

APPENDIX C

List of Variables

1. Prior August call
   1. Yes
   2. No

2. M. D. Taking the Call
   1. Dr. P
   2. Dr. Y
   3. Dr. C
   4. Dr. S
   5. Fellows

3. Time of Call
   1. 5-6
   2. 6-7
   3. 7-8
   4. 8-9
   5. 9-10
   6. 10-11
   7. 11-12
   8. 12-7 A. M.
   9. 7-9 A. M.

4. Complaint
   1. Fever
   2. Trauma
   3. Ingestion
   4. G.I. Upset
   5. Abd pain
   6. Bites
   7. Fussy
   8. Info request
   9. Other

5. Diagnosis
   1. Viral
   2. Trauma/Ingestion/Bites
   3. Alergic rxn
   4. Specific dx
   5. Unknown
   6. None appropriate

6. Rx
   1. Symptomatic
   2. Specific
   3. Referral
   4. Reassurance only
   5. None

7. Justified call in view of doctor
   1. Yes
   2. No
   3. $\pm$

8. Does This Doctor Think A Paramedical Assistant Could have Handled This Call?
   1. Yes
   2. No
   3. $\pm$

9. Degree of Urgency by Weinerman's Criteria
   1. Urgent
   2. Non-Urgent

10. Degree of Urgency in View of the Family
    1. Urgent
    2. Non-Urgent

11. Definition of Complaint by Family
    1. Concordant with Physician
    2. Discordant

12. Duration of Problem
    1. $<\frac{1}{2}$ Hour
    2. $\frac{1}{2}$-6 Hours
    3. 6-24 Hours
    4. 24-48 Hours
    5. $>$48 Hours

13. Onset of Problem
    1. Evening
    2. P. M.
    3. A. M.
    4. Previous Day
    5. $>$48 Hours

14. Prior Med Consult
    1. Yes - Phone Only
    2. Yes - Visit
    3. No
    4. Outside Consult

15. Decision to Call
    1. One Parent Alone
    2. Collaborative by Parents
    3. Disagreement by Parents
    4. Other

16. Timing of Call Prompted by:
    1. Sudden Onset
    2. New sx
    3. Worsening sx
    4. Duration of sx
    5. Convenience
    6. Advice of Another
    7. Other

17. Did Family Call Another Doctor During Night?
    1. Yes
    2. No

18. Did Family See a Doctor During Night?
    1. Dr. on Call
    2. ER on Advice
    3. ER on Own
    4. Other
    5. None

19. Outcome of Call as Reported by Family & Physician
    1. Concordant
    2. Discordant

20. Helpful Call
    1. Yes - Reassurance Only
    2. Yes - Rx Only
    3. Yes - Reassur & Rx
    4. +
    5. No

21. Does This Family Think a Paramedical Assistant Could Have Handled This Call?
    1. Yes
    2. No
    3. Don't Know

22. Child's Age
    1. <1 year
    2. 1-4 years
    3. 5-10 years
    4. >10 years

23. Child's Sex
    1. Male
    2. Female

24. Birth Order of Child
    1. 1
    2. 2
    3. 3
    4. 4 or more

25. Family's Assoc with Practice
    1. <3 mos
    2. 3-12 mos
    3. 1-5 years
    4. >5 years

26. Financial Status
    1. Good Account
    2. Delinquent Account
    3. Welfare Case

27. Household
    1. Both Parents Live at Home
    2. Both Parents Do Not Live at Hm
    3. Institution

28. Number of Children
    1. 1
    2. 2
    3. 3
    4. 4 or more

29. Social Class
    1. I
    2. II
    3. III
    4. IV
    5. V

30. Education of Caller
    1. H. S. Dropout
    2. H. S. Graduate
    3. Some College
    4. B. A.
    5. Some Graduate Work
    6. Doctorate or Professional Deg.

31. Religion
    1. Roman Catholic
    2. Protestant
    3. Jewish
    4. Other

32. Ethnic Background
    1. Italian
    2. Eastern European
    3. English
    4. Other or Mixed

33. Race
    1. Caucasion
    2. Negro
    3. Other

34. Identity of Caller
    1. Mother
    2. Father
    3. Other

35. Age of Caller
    1. <20
    2. 20-25
    3. 26-30
    4. 31-35
    5. 36-40
    6. >40

FOOTNOTES

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