Pediatric Residents’ Telephone Triage Experience

Do Parents Really Follow Telephone Advice?

Jennifer D. Crane, MD; John T. Benjamin, MD

Background: A previous study showed that calls received by our continuity clinic residents were similar to those in private practice. However, that study did not address the compliance of the parents to the advice given.

Objective: To determine parents’ compliance to after-hours telephone advice given by pediatric residents in a continuity clinic.

Design: Advice given during initial telephone contact of 493 after-hours telephone calls was categorized into 3 groups: only telephone advice, appointment the next day, or immediate visit to the emergency department (ED). Follow-up telephone calls were made to all families 3 to 7 days after initial contact to determine compliance with the advice given.

Setting: Pediatric resident continuity clinic of a tertiary hospital in Augusta, Georgia.

Patients: Children registered in the pediatric resident continuity clinic.

Results: Overall, 412 (83.6%) of 493 caregivers followed the telephone advice that residents gave them. Of the 270 callers only given telephone advice, 244 (90.4%) followed the advice, 15 (5.6%) went to the ED, and 11 (4.1%) made an appointment for the next day. Of the 112 patients instructed to make an appointment, 82 (73.2%) reported at the scheduled time, 18 (16.1%) improved and did not come to the appointment, and 1 (.9%) reported worsened symptoms and went to the ED. When a visit to the ED was recommended, 86 (93.5%) of 92 complied, 2 (2.2%) improved and did not come, 1 (1.1%) had transportation problems, and 3 (3.3%) did not think an ED visit was warranted.

Conclusion: If an after-hours line is used by caregivers, they are more likely to follow the recommendations given by pediatric residents in a tertiary center.

During the past decade, after-hours telephone protocol systems have become widely used in pediatric offices. Comparison of telephone calls answered by faculty physicians, pediatric residents, and private physicians suggests that formal training in telephone management, not clinical experience, makes a physician more capable of making correct clinical decisions over the telephone. In an effort to train pediatric residents in the proper management of telephone calls, some residency programs place resident physicians as the primary contact person for parents after clinic hours. Standardized telephone protocols can be followed to ensure that appropriate treatment guidelines are followed. A previous study determined that calls received after hours in the continuity clinic practice of a tertiary hospital were similar in both chief complaint and disposition to those calls received in a private pediatric practice. This study concluded that the experiences residents got in giving telephone advice were similar to what they could expect in private practice.

However, that study did not address the actual compliance of parents to the advice given. The purpose of this report was to determine if parents actually followed the telephone advice given to them by continuity clinical residents.

The most common calls concerned fever, cough, and vomiting. The chief complaints for this study were remarkably simi-
MATERIALS AND METHODS

All patients enrolled in the resident-staffed pediatric continuity clinic were given access to an after-hours telephone triage system. There are approximately 2200 patients enrolled in the continuity clinic, and almost all of them are supported by the state's Medicaid program. Pediatric residents recorded calls on telephone triage cards that were created to include pertinent patient information obtained during the call. Data collected included the age of the patient, time of the call, chief complaint, and disposition given. The next morning, each card was reviewed by a faculty preceptor, who, in turn, gave any necessary feedback to the resident. The cards were then analyzed for compliance.

In a 3-month period, 493 calls were taken by residents after-hours and on weekends. The after-hours system was used from 4:30 PM to 7:30 AM on weekdays, and 24 hours on Saturday and Sunday. The type of advice given during the initial telephone contact was categorized as follows: only telephone advice, appointment in the continuity clinic the next day, or immediate visit to the emergency department (ED). To determine the degree of compliance, follow-up telephone calls were made to all families 3 to 7 days after the initial contact. Of the initial 493 made, 474 caregivers were contacted for follow-up.

On reaching the parent or caregiver by telephone, a physician (J.D.C.) identified herself as being from the pediatric continuity clinic and inquired about the child involved. Information obtained on the telephone was then compared with that recorded on the original triage card. Caregivers were asked about the actual disposition of the child—home therapy, clinic appointment, or ED. If the advice given by the resident was not followed, the caregiver was asked the reasons for noncompliance. Compliance was defined as having followed the intended disposition that the resident had recommended: only telephone advice, office visit the next day, or immediate visit to the ED. No attempt was made to determine whether parents actually followed specific telephone instructions such as giving over-the-counter medications, taking the temperature, etc. Parents were considered noncompliant if they did not adhere to the recommended disposition. An analysis of compliance, based on the age of the patient, was then performed.

A random review of 52 medical records of patients instructed to report to the pediatric continuity clinic the next day for an appointment, and 92 (19.4%) were advised to come to the ED for prompt evaluation.

Overall, 412 (86.9%) of the 474 caregivers in this study followed the telephone instructions given to them by the resident (Table 3), whereas 244 (90.4%) of the 270 caregivers given telephone advice complied with the advice as it was given: 15 (5.6%) went to the ED for immediate treatment instead, and 11 (4.1%) chose to make an appointment for the next day.

An appointment for the next day was advised for 112 (23.6%) of the 474 callers, 82 (73.2%) of whom reported to the clinic at the scheduled time, whereas 18 (16.1%) did not, citing clinical improvement. Only 1 patient (.9%) with a chief complaint of cough was taken to the ED before the scheduled appointment time the next day, citing a worsening of symptoms.

Emergency department visits were advised for 92 (19.4%) of the 474 children. As anticipated, parents com-

<table>
<thead>
<tr>
<th>Chief Complaint</th>
<th>Present Study</th>
<th>MCG Previous Study*</th>
<th>Private Practice Study by Poole*</th>
<th>Study by Baker*</th>
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</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>30</td>
<td>26</td>
<td>20</td>
<td>21</td>
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<tr>
<td>Trauma</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>14</td>
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<tr>
<td>Gastrointestinal</td>
<td>16</td>
<td>20</td>
<td>12</td>
<td>13</td>
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<tr>
<td>Rash</td>
<td>9</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Fever</td>
<td>21</td>
<td>23</td>
<td>19</td>
<td>6</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>20</td>
<td>19</td>
<td>34</td>
<td>36</td>
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</tbody>
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*MCG indicates Medical College of Georgia, Augusta. Data are given as percentages.

<table>
<thead>
<tr>
<th>Disposition of Calls</th>
<th>Total Calls</th>
<th>Compliance</th>
<th>Noncompliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone advice only</td>
<td>270 (57)</td>
<td>244 (90.4)</td>
<td>26 (9.6)</td>
</tr>
<tr>
<td>Appointment next day</td>
<td>112 (24)</td>
<td>82 (73.2)</td>
<td>30 (26.8)</td>
</tr>
<tr>
<td>Emergency department now</td>
<td>92 (19)</td>
<td>86 (93.5)</td>
<td>6 (6.6)</td>
</tr>
<tr>
<td>Total</td>
<td>474 (100)</td>
<td>412 (87)</td>
<td>62 (13)</td>
</tr>
</tbody>
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*Data are given as number (percentage).

The disposition of calls for each chief complaint was also similar to that found in a previous study and private practice study by Poole and colleagues, and only slightly different from the study by Baker et al. Of our telephone advice, 270 calls (57.0%) were handled with only telephone advice, 112 parents (23.6%) were instructed to report to the pediatric continuity clinic the next day for an appointment, and 92 (19.4%) were advised to come to the ED for prompt evaluation.
plied with this advice more readily than with the other 2 forms of advice. When a visit to the ED was recommended, 86 (93.5%) of 92 patients did as they were instructed, whereas 2 (2.2%) reportedly improved and did not come. One parent (1.1%) had transportation problems, and 3 (3.3%) disagreed with the need for an ED visit.

There was no discrepancy in caregiver compliance based on the child's age. Most of our 474 calls (197 [41.6%]) were about children younger than 1 year. Fewer calls were for children aged 1 to 3 years (166 [35.0%]), 3 to 5 years (45 [9.5%]), and 6 or more years (66 [13.9%]). Only slightly higher levels of compliance were noted among parents of children younger than 3 months, whereas lower levels of compliance were found in parents of children aged 1 to 3 years.

A random review of 52 medical records of children advised to come to the ED showed that 51 came to the ED as instructed. The 52nd patient may have been one who did not agree with the recommended disposition.

Previous studies showed that the content and disposition of calls from a resident continuity clinic are similar to those received in a pediatric practice setting. The degree to which parents followed the telephone advice that they received was not addressed in those studies. Compliance to the advice given is an important gauge of the effectiveness of our continuity telephone triage system, and it is reassuring that such high levels of compliance were found. Of parents who were advised to report to the ED, 86 of 92 (93.5%) followed through and were seen urgently. Two hundred forty-four (90.4%) of 270 parents who were given specific instructions on caring for the patient at home did so with satisfactory results, and they had no unnecessary ED visits. For the 112 parents advised to make a clinic appointment to be seen, 82 (73.2%) made the appointment and were seen in clinic the next day.

All parents and caregivers involved in the study were reached 3 to 7 days after initial telephone contact to ensure their most accurate recall of events and advice given. There was a complete concordance between the parents' recollection of the advice given and what the resident had recorded on the triage card. Follow-up calls were well received; parents welcomed the opportunity to discuss their child's problem and its progression and outcome.

The first organized after-hours telephone triage program was established at the request of private physicians in Denver, Colo, in 1988. Subscribing physicians reported overwhelming satisfaction with the service, and the vast majority of parents were content with the new system. Although the specific details were not published, these authors reported a high level of parent satisfaction with all aspects of the program, including compliance with the advice given and the final disposition.

Although most metropolitan areas are now equipped with nurse-trained triage systems, more than 25% of practice time is still spent answering clinical questions over the telephone. Particularly important is the identification of dissatisfied parents on the telephone—a common problem in private practice. For these reasons, it is necessary and vital that residents receive proper training in the arts of telephone triage and give advice to parents over the telephone prior to entering private practice.

With the increasing demands on attending physicians in tertiary care to see patients and to precept residents and students in clinical settings, their time for direct observation of residents giving telephone advice and for evaluation of individual performance is limited. Physicians in one pediatric residency program have taken steps to better instruct residents by using an interactive CD-ROM program for telephone advice training in the outpatient clinic rotation. By offering simulated telephone scenarios and direct evaluation on resident performance in history taking, assessment, triage, and home management, residents learn a consistent and organized approach. This method of instruction is significantly more effective than having residents review identical scenarios provided only in a written format. In our institution, the use of triage protocols and routine feedback from a physician preceptor has been shown to ensure quality and safety in telephone advice provided by resident physicians.

A recent study reported by Baker et al studied parental compliance to nurses' telephone triage advice. These authors found that parents had a low compliance when advised to bring their children to the ED—only 42% of nonprivate patients and 46% of private patients complied with the advice. Their results are quite different from that found in our study—93.5% of our patients actually came to the ED when so instructed. Compliance to the advice of coming for a next-day appointment was similar in the 2 studies: Baker et al found that 64% of nonprivate and 69% of private patients complied with advice to go to the office the next day, whereas 73.2% of our patients followed the same advice.

The chief complaints between studies differed slightly: Baker's study had more trauma cases (14%) than we did (4%), and we had more cases of fever (21%) than they did (6%) (Table 1). Compared with the patients described by Baker et al, our patients tended to be younger—this could be due to increased recruitment of newborns as we developed our continuity clinic. It is unclear in these 2 studies why compliance with advice to take the child to the ED was so different. The "emergency room now" advice was given to similar percentages of caregivers: 20% of their patients and 19.4% of our parents were given this recommendation (Table 2). Our emergency services were possibly easier for patients to access, or our caregivers may have been more compliant because they talked with a resident physician rather than with a nurse. Clearly, reasons for compliance and noncompliance to telephone triage advice need to be studied further. It would be interesting to compare our telephone compliance results with those of health maintenance organizations or private practices.

Potential bias for our study may have been created when the author identified herself as a physician from
the pediatric continuity clinic as she contacted the parent. Also, parents may have been more likely to cite improved clinical status rather than disagreement with advice given as a reason for a missed clinic appointment. In addition, we did not assess the behavior of patients enrolled in our continuity clinic who did not use the telephone advice line.

In conclusion, 86.9% of parents who made telephone calls to pediatric continuity residents in our institution followed the advice given 87% of the time. The highest rates of compliance were for caregivers instructed to report to the ED immediately (93.5%). Compliance was also extremely high for caregivers given telephone advice (90.4%) and for those advised to make an appointment for the next day (73.2%). Pediatric residents can be confident that the overwhelming majority of parents given advice in an after-hours telephone triage system comply with that advice.

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REFERENCES