

## **Pediatric Call Centers: Future Trends**

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Presented: October 2001 in Phoenix, Arizona

Telephone triage and advice is a type of medical service. Telephone visits fit into the spectrum of acute illness visits, health supervision visits, chronic illness visits and follow-up visits. They provide a medical service by telephone, using diagnostic and therapeutic skills. The physician or nurse who manages the calls arrives at a provisional diagnosis and provides a treatment plan comparable to what is provided in the office setting. The liability of telephone decisions is comparable to that established during any other patient-physician interaction.

In 1988, we started an after-hours call center at The Children's Hospital of Denver to cover for some pediatricians who were sleep-deprived or in need of medical leave. We started with 10 physicians. By 1993, we had become a metro-wide system, covering for 92 pediatricians (Poole 1993). In 1994, we became computerized. At the present time we are a state-wide system covering for 430 pediatricians. During this time, we have taken over 1.7 million calls without adverse outcome. We currently cover for 700,000 children. In the last 5 years, similar computerized pediatric call centers have been developed at over 40 other children's hospitals.

Pediatric call centers meet a parent desire for immediate medical information, especially when their child is sick. . Presently, about 70% of after-hours calls in this country are

about children, 30% about adults. When children are ill, parents don't want to wait until morning to determine what to do. The normal parental "protective instinct" goes against postponing calls until office hours. This demand will not change. Our only choice is to accept increased calls or increased after-hours visits. The following are my predictions for what will happen to pediatric call centers in the next decade:

**Parents will have 24x7 access to telephone care.** Help is truly just a phone call away. Parents are very satisfied receiving triage and advice from nurses (Kempe 2001). In one survey, many of them preferred to speak to a nurse rather than their personal physician. Phone care saves the parents time, money and convenience. Health plans are also satisfied with this type of service. In contrast to having all sick children brought into an urgent care center or ED, after-hours triage only refers 20% to the ED and 30% to the office on the next day. The cost savings is significant.

**All routine calls will be managed by triage nurses.** Using standardized decision support guidelines, nurse performance has been documented to be safe and accurate. During after hours, physicians will only take calls regarding chronic disease and hospitalized patients. Some offices will even sign out office hours calls to the call center. Most will prefer to maintain continuity of care, but they will delegate this task to an office RN or LPN. The current status of delegating telephone triage is 75% for office hours, and 20% for after-hours (Hertz 1999).

**Pediatric call centers will become available in every state.** Centralization is cost effective for after-hours calls. The average triage nurse can handle all of the after-hours calls for 15-20 pediatricians. Pediatric call centers may link together so that the entire country is covered by them as a group. This will put them in a better position to negotiate fees with health plans. Research has proven call centers to be a safe adjunct to the practice of medicine. Caller satisfaction is higher than any other service within health care today. Not only is PCP satisfaction high, but it also increases the practice life span of the practicing physician.

**Pediatric call centers will comply with standards of care.** Preliminary standards of performance have been published by the American Academy of Pediatrics (Hertz 1998). These include ED referral rates < 20%, home care rates > 50%, nurse and caller override < 7%, call time < 10 minutes and response time (wait time) < 15 minutes. Performance measures will permit comparison of call centers. Quality of care and patient safety will remain the top priority.

**Pediatric call centers will be computerized.** Once 2 or 3 nurses are required to provide telephone coverage (40 to 50 pediatricians), computerization is cost-effective. The advantages of computerization are many, including pre-registered patients, standardized triage, and standardized advice. Storage and faxing of documentation is also automated. Performance measure and quality improvement programs are easier to complete. Medical liability is reduced by standardization and documentation. Within

Colorado, COPIC reports 4 years without any lawsuits against physicians about pediatric after-hours telephone care.

**Triage nurse training will be standardized.** Telephone triage will become a nurse specialty. Nurses will eventually subspecialize in pediatric, women's, or senior triage and all nurses will be cross-trained for healthy adult calls. Standardized computer-based training using simulators will be available. Eventually nurses will undergo a certification process.

**Continuing education for triage nurses will be improved.** Outcome data (especially final diagnoses) from referrals to urgent care centers and EDs will be provided automatically to the nurse for self improvement. QA and QI projects will drive targeted nurse education. More triage nurses will attain academic positions and a new journal of telephone triage nursing will appear. Conferences directed specifically to triage nurses will proliferate. Standardized pre-tests to assess critical thinking, decisiveness, clinical judgment and organization skills will be developed for hiring appropriate nurses.

**Pediatric call centers will interface with other services.** Answering services will be absorbed by pediatric call centers to provide more streamlined pre-registration.

Emergency medical services will interface with call centers and calls will be automatically transferred from EMS to call centers when the call is not an emergency and from call centers to EMS services when the call is a life-threatening emergency.

Interfaces with office practices will allow the after-hours call center nurse to make

appointments for the following day. Having an appointment increases parent compliance with waiting until the following day to be seen rather than walking into an urgent care center at night. The interface with offices will also give the call center helpful information about patients who have chronic diseases. Interfaces with urgent care centers will allow nurses to give callers after-hours appointment times to cut down on wait time in UCCs. Interfaces with on-call PCPs will allow the nurse to transfer the database she has collected and reason for being referred, which in turn created the need for physician involvement.

**All triaged calls will be automatically recorded.** Audio recordings of all calls will be archived. Call recordings are an ideal risk-management strategy. They prevent false accusation lawsuits. They also permit efficient resolution of any caller complaint. Rather than having a neutral party discuss the complaint with the caller and then the nurse, all parties can listen to the call recording. Nurse practice acts and laws will be modified. Providing telephone triage across state lines will become accepted without duplicate licensing. The nurse will be expected to comply with nurse practice acts in both states, but will just need to be licensed in the home state. The precedent for this is already present; some call centers border on several states (eg Cincinnati) and most physicians already provide telephone care to their patients while vacationing in other states or countries.

**Self-care alternatives to telephone visits will be optimized.** Providing booklets about parent-triage and parent-care for sick children will be expanded. A recent study looking

at 500 parents of newborns who received a child care book versus 500 who did not, found 24% less phone calls, 23% less sick visits, and 26% less prescriptions (France 1999). Automated phone advice messages will become more available. A recent study found that when parents used a Parent Advice Line, 60-70% of the time the message made a visit to the office unnecessary (Kempe, 1999). Internet-based parent triage and advice for parents who are comfortable using the Internet reduces office phone calls (Pediatric Web, 2001). Automated test result lines will reduce unnecessary phone calls and telephone tag regarding the results of lab tests such as throat cultures and urine cultures. Parent education in the office will become more pro-active (Schmitt 1997). Pro-active outbound calls to high users of health services (disease management programs) will become more common. Nurse clinicians will specialize in conditions such as asthma, diabetes mellitus or newborn care.

**All telephone visits will be funded.** Telephone visits are a medical service that should be funded by the health insurance industry. Telephone triage gives a 20% ED referral rate in pediatrics. It prevents unnecessary and expensive ED visits. One recent study found a 90% appropriateness rate according to the ED physicians who evaluated the patients referred by triage nurses (Kempe 2000). Another study showed an 80% appropriateness rate of nurse-triage-referred patients versus a 60% appropriateness rate for patients referred by physicians or self-referred (Barber 2000). They also provide cost-effective care. At most call centers, the cost is approximately \$1.00 per minute, which is a bargain. The telephone care subcommittee of the American Academy of Pediatrics is studying this problem, and will eventually recommend appropriate

reimbursement. It's obvious that the source of funding should be the health plans who benefit immensely from pediatric call centers.

**More EDs will have pediatric staffing.** Pediatricians are reluctant to send young children to emergency departments with adult-oriented staff. They're concerned about overinvestigation, overtreatment, and overhospitalization. One answer is developing a community-wide program linking the EDs of several hospitals and staffing them with specially trained pediatricians. Dr Steven Poole has successfully done that at The Children's Hospital of Denver and 4 affiliated hospitals. In other smaller communities, pediatricians have banded together and share coverage at an after-hours pediatric urgent care center. Measures that every practice can take to reduce ED utilization are early morning office hours, extended evening office hours for sick children, and Sunday or holiday office hours for 2 hours each day.

**Advances in technology will be never-ending.** Stand-alone call centers will continue. But virtual call centers via the Internet or satellite will begin to appear. Advances in software programs and telephone systems will permit triage nurses to work at home. This will improve recruitment and the nursing pool will be drawn from a combination of cities. Software will become available for automatically calculating OTC brand name drug dosages, and eliminate the crazy quilt tables that all of us have to collect to meet this need. Skill-based routing by an automated attendant will direct calls to appropriate specialty nurses, disease management nurses, and language-fluent nurses. A national tracking system will be developed to learn from adverse outcomes.

**Summary.** Telephone volume will continue to grow. Parents will learn to prefer telephone care over going to an ED or UCC. Nurses will replace physicians in providing most of this service. Decision support guidelines will become the standard of care for nurse triage. . Software programs will replace paper and pen documentation. Pediatric call centers will replace after-hours coverage by individual pediatricians. And hopefully, this donated service will finally become reimbursed by the insurers who most benefit from it.