Impact Of A Simple Reminder On Documentation Of Pediatric Health Screening Procedures

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Improvement in health screening and health maintenance has become a major issue in the assessment of high-quality medical care in recent years. A number of studies have delineated the standards of quality for documenting health maintenance, such as mammography screening and care of the hypertensive patient.[1-10] Trends toward improvement in quality in ambulatory care are evident nationally and locally. The Joint Commission on Accreditation of Hospitals publishes a manual on the standards for ambulatory health care and is applying these standards to outpatient office practices.[11] Institutions, such as the University of Chicago Hospitals, have developed quality assurance systems designed to be used in their ambulatory care clinics.[12]

One area of emphasis in ambulatory family medicine training is well-child care. To this end, the American Board of Family Practice publishes a reference guide that serves as the standard of care for early disease detection during the well-child visit.[13] Adherence to published standards of the well-child examination in a family practice residency program has not been reported in the current literature.

This study was designed to improve physician compliance with routine well-child care by implementing a simple physician reminder system. A record review before and after implementation of the reminder was used to measure the impact of the intervention. The site selected for this project was the model Family Practice Center at Akron City Hospital, Akron, OH. A resident chart audit undertaken 1 year before this study indicated that although residents had almost always documented a cornea eye and tympanic membrane ear examination, there were other documentation deficiencies by residents, including children's response to sound cues and the strabismus examination.

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Methods

A simple reminder was developed to improve physician compliance with documentation of well-child examinations. The reminder included recommendations concerning the special senses, social history, birth and developmental history, and cardiopulmonary examination. The Family Practice Center at Akron City Hospital was the site used in this study. This one-page physician reminder was based on the recommendations of the American Board of Family Practice.[13]

Several criteria were used to develop the reminder. The sheet had to be brief, legible, and easily included in the current charting system. Instructions to providers also had to be detailed and easily understood, enabling completion of tasks in a time-efficient manner. The final version was chosen because it met these criteria (Figure 1).

Before the study, 16 residents and 5 faculty were informed through a memorandum that a reminder was going to appear in the pediatric charts to assist with improving health maintenance in the pediatric patient population. These faculty and residents were not included in the development of the reminder.

For a 3-month period, every morning before the beginning of office hours, a reminder was placed in the chart of every child who had an appointment that day. The reminder, an 8½ × 11-inch sheet of paper, was not attached to the chart but was clearly visible to the physician upon opening the chart. The physician could either save or discard the reminder.

After the 3 months, the entire record for every pediatric patient younger than 4 years who was seen during the study period was reviewed by the investigator. Documentation of adequate eye and hearing examinations before and after the study were recorded for comparison. Charts

Physician: This is a reminder to document necessary information in your pediatric chart. It is not part of the permanent record.

Special Senses	
Hearing	Responds to sound cues
	Follows sounds
	Response to loud noise
Vision	Follows doctor
	Strabismus — Flashlight test,
	Cover test
	Red reflex bilaterally
Social, e.g.	Who lives at home?
	What is the family situation?
Birth History	(Once between 1–24 months)
	Complications during delivery
	Apgars
	Birth weight, length, head circumference
Developmental	Milestones
	Feeding, sleeping, bowel habits
	Motor and language
	Child's social development
Physical Examination	Auscultation and percussion of heart and lungs
	Palpation of femoral and pedal pulses
	Orthopedic

(Height, weight, head circumference, and immunizations are already documented by the nurse but are also necessary for the chart.)

Figure 1. A replica of the 8½ × 11-inch paper reminder used in the study. It was placed loose in the chart every morning before office hours.

were examined only for documentation of eye and hearing examinations. An eye examination was graded as adequate if documentation included notation of a cornea examination, observation of a bilateral red reflex, and a check for strabismus. Notation of a flashlight test was considered minimal documentation of a strabismus check for children aged 1 to 12 months, and a cover test was required for children aged 13 to 48 months. The hearing examination was graded adequate if the physician indicated an examination of the external canal, tympanic membrane, and patient response to sound or loud noise. Using a chart review form, the following were recorded: the age of the patient, the type of visit (well-child or acute), and the dates, if recorded, of the first adequate eye and hearing examinations.

To determine the significance of age, type of visit (well-child or acute), and the reminder, an ordinary least-squares linear regression analysis was applied to the results of both the eye and hearing examinations.

Results

Charts for 104 patients were reviewed for performance of the eye and hearing examinations. The mean age of the patients reviewed was 16 months. Eighty-two of the patients were seen for a well-child visit during the 3-month study. The remaining 22 patients were seen on an emergency basis for an acute illness.

Eye Examination

Before the study, only 44 of the 104 charts had documentation of an adequate eye examination. After completion of the study, 78 of the 104 charts contained documentation of an adequate eye examination for an improvement of 77 percent. The coefficients of linear regression were 0.4 for the prompt, −0.016 for age, and −0.097 for the type of visit. The standard error for each was 0.07, 0.03, and 0.09, respectively. These results indicate that age and type of visit were not significant modifiers of documentation of the eye examination, whereas the prompt did significantly improve documentation of the eye examination.

Hearing Examination

Before the study, only 15 of the 104 charts had documentation of an adequate hearing examination. After completion of the study, 45 of the 104 charts contained documentation of an adequate hearing examination for an improvement of 200 percent. The coefficients of linear regression were 0.74 for the prompt, 0.002 for age, and −0.33 for the type of visit. The standard error for each was 0.01, 0.004, and 0.113, respectively. These results indicate that only the prompt was related to significant improvement in documentation of the hearing examination.

Discussion

The need to improve documentation of health screening procedures in a family practice residency program was recently reported by Morris, et al.[14] Their study indicated performance of well-established preventive medicine interventions, and their results showed very poor compliance by residents. For instance, breast examinations were performed on only 2.2 percent of women patients and mammography on only 4 percent of women aged 50 to 59 years. In another study, medical and pediatric physicians actually participated in the development and assessment of their own quality

of health care.[9] The results of that study were mixed, showing increased improvement with some tasks and decreased improvement with others. In only 3 of 8 tasks studied was the improvement considered significant. In another recent study, the use of a screening flow chart for improving physician compliance with ordering or performing health maintenance procedures had mixed but generally poor results.[6] The investigators reported a 14 percent rate of use of the flow chart even after instructing the physicians on the minimum recommendations of their own clinic. Yet another study showed only a small improvement using computer-generated reminders.[7] Of women due for a screening mammogram, 21 percent of a control group were up to date at the end of the study compared with 27 percent of the experimental group.

The results of this study show that a simple physician reminder that is short, easy to read, and disposable has a high probability of improving physician documentation for two aspects of the well-child examination: the eye examination and the hearing examination. These data have also supported previous studies that have established the need for improved documentation of health screening procedures in residency training programs.

The study results may have been influenced by a number of factors. Because the patients were seen before the study and then again during the study, the opportunity to meet the criteria for performance of adequate eye and hearing examinations could only improve. This study was performed about 1 year after a chart audit that indicated poor performance with documentation of a strabismus examination and response to sound cues. Those faculty who were aware of the results of that chart audit may have been more likely to improve their own documentation, as well as to encourage the residents to do the same, resulting in an improvement independent of the physician reminder. The residents involved in this study were halfway through their training year; therefore, documentation could have improved as a result of their continuing medical education. Because this study was new and lasted only 3 months, its effectiveness could have diminished with time.

Conclusion

Health screening and preventive maintenance are important aspects of primary care but are frequently not emphasized by physicians.[1] Several studies have attempted to improve health screening by using a variety of methods. The study reported here has shown that a simple, visible reminder can have a dramatic impact upon documentation of routine pediatric screening procedures. The low cost and ease of administration allow clinicians to utilize this prompt continuously or intermittently to improve documentation of their health screening practices. Further studies regarding the need for constant visible reminders may aid physicians and patients with health maintenance and preventive medicine.

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