

Quality Assurance for Health Supervision of the Ambulatory Child

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The Joint Committee on Quality Assurance (JCQA) was established in 1970 by the American Academy of Pediatrics and includes members from eight organizations concerned with primary care for children. The Committee developed criteria for assessing (1) health supervision of children, and (2) the management of three common diseases of children: tonsillopharyngitis, urinary tract infection, and bronchial asthma. These criteria were then validated by 452 academic and practitioner experts. A representative sample of primary care physicians further evaluated these criteria. The last phase of the study consisted of an audit of charts in the offices of pediatricians, family physicians, and general practitioners to determine the applicability of these criteria to medical records.

Good agreement on health supervision criteria was found between academic and practitioner experts. Recording practices of pediatricians and other physicians were quite similar in the representative sample, although pediatricians recorded more complete health supervision information than did family physicians and general practitioners in the office audit. Present chart systems and recording practices do not allow meaningful peer review by chart audits in most office settings.

Introduction

The Joint Committee on Quality Assurance (JCQA) was initiated in 1970 by the American Academy of Pediatrics. The Committee was composed of members representing eight organizations dealing with primary care of children, including the American Academy of Family Physicians. Criteria were developed by the Joint Committee on Quality Assurance for evaluation of ambulatory child health

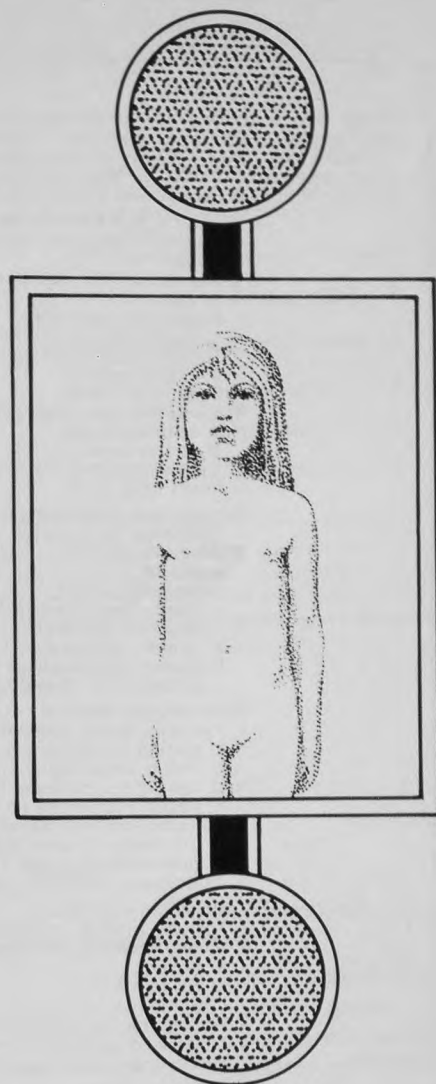
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supervision, as well as three disease states, through chart audit. Chart audit was selected because it lends itself well to quantification and may be used for peer review or self-evaluation. These criteria were evaluated for both relevance to outcome and suitability for use in self-audit or peer review by a group of "experts" equally divided between academicians and practitioners. The criteria were further evaluated by a representative sample of physicians providing primary care for children. A fourth phase demonstrated the applicability of the criteria to medical records in physicians' offices.

Methods

Phase One: Health Problem Selection and Development of Criteria^{1,2}

Two general health problem areas



were selected:

1. Health Supervision
 - a. Birth to one year
 - b. One to five years
 - c. Six to twelve years
 - d. Thirteen to eighteen years
2. Diseases of Children
 - a. Tonsillopharyngitis — a common, acute illness.
 - b. Urinary tract infection in the female — an acute illness with potential for chronicity.
 - c. Bronchial asthma — a common and disabling chronic illness of childhood.

The initial list of criteria was developed by identifying those procedures related to history-taking, physical examination, laboratory tests and treatment. The criteria were developed by committee members and then

Table 1. Final Criteria List

These criteria are not to be considered as a recommended method of treatment or an official policy statement of the American Academy of Pediatrics, American Academy of Family Physicians, or any of the other participating organizations, and do not represent the only possible criteria sets for these areas of medical care. The omission of any single criterion should not be interpreted as a breach of good medical practice and the performance of additional services not included on these lists does not indicate that such service was inappropriate or unnecessary in the care of a specific patient.

HEALTH SUPERVISION (Birth to 1 year, 1 through 5 years)

Excludes illness care, includes preschool exam

History

1. Receiving information concerning
 - a. labor
 - b. delivery methods
 - c. complications during delivery
2. Recording prenatal care and VDRL of mother
 - a. first trimester
 - b. third trimester
3. Obtaining the Apgar score
 - a. at one minute
 - b. at five minutes
4. Receiving/obtaining a photocopy or transcript of a comprehensive health appraisal of the first 24 hours after birth.

Growth and Development

1. Obtaining information concerning developmental landmarks reached since preceding visit
2. Assessing the following at health supervision examinations
 - a. height
 - b. weight
 - c. head circumference (0 - 1)
3. Appraising the child's (1 - 5)
 - a. overall readiness to begin school
 - b. speech and language development
 - c. gross motor development

Screening for Disease

1. Performing the following tests
 - a. testing for blindness (0 - 1)
 - b. vision screening (1 - 5)
 - c. testing for deafness (0 - 1)
 - d. hearing screening (1 - 5)
 - e. hemoglobin or hematocrit value
 - f. urinalysis (at least 5-test dipstick) (1 - 5)
 - g. tuberculin skin test (1 - 5)
2. Appraising the child's dental condition at least once (1 - 5)

Counseling

1. Visiting mother in the hospital for instructional purposes (0 - 1)
2. Giving parental guidance on (0 - 1)
 - a. feeding
 - b. accidents
 - c. discipline
3. Appraising the child's emotional adjustment, emphasizing behavioral and habit patterns (1 - 5)
4. Discussing accidents with the responsible party* at least once (1 - 5)
5. Discussing poisonings with the responsible party* at least once (1 - 5)

Number of Visits

1. Accomplishing at least four (0 - 1), three (1 - 5) supervision visits

HEALTH SUPERVISION (6 through 12 years, 13 through 18 years)

Excludes illness care

History

1. Obtaining significant interval history

Growth and Development

1. Assessing the following at health supervision examinations
 - a. height
 - b. weight
 - c. musculoskeletal status (9 - 18 years)
 - d. sexual development (9 - 18 years)

Screening for Disease

1. Performing the following tests
 - a. blood pressure
 - b. femoral artery pulsation (6 - 12) (unless previously recorded)
 - c. vision screening
 - d. hearing screening
 - e. urinalysis (at least 5-test dipstick)
 - f. tuberculin skin test
 - g. sickle cell test if patient is black and test not previously performed (13 - 18)
 - h. if female, rubella vaccine or hemagglutination inhibition (HI) antibody test (13-18)

Counseling

1. Discussing with the responsible party* the child's interpersonal relationship with his/her parents
2. Discussing the child's educational progress with the responsible party* (6 - 12)
3. Appraising and discussing the child's attitudes or habits concerning (13 - 18)
 - a. diet
 - b. drugs
 - c. sex
4. Discussing with the child his interpersonal relationship with (13 - 18)
 - a. parents
 - b. siblings and/or peers
5. Discussing the child's educational progress with him (13 - 18)

Number of Visits

1. Accomplishing at least two health supervision visits

*Responsible party may be parent(s), guardian(s), case worker, etc.

tested on their own and their associates' charts. The criteria were then modified and retested on the charts of 129 physicians involved in primary health care of children who were personally known to members³ of the JCQA and were believed to provide services of high quality.

Phase Two: Validation and Final Criteria^{1,2}

1. Validation

To validate the lists of criteria, a group of 452 experts were selected. This group included both academicians and practitioners. These physicians were from all regions of the United States, and included pediatricians, family physicians, general practitioners, internists, and osteopaths.

The Delphi method⁴ of validation was used. The panel was first asked to rate each item according to its relevance to outcome⁵ and to provide supporting documentation.⁶⁻⁹ They were also asked to rate each item for acceptability for assessment of quality of practice by peer review and self-assessment. In the second phase, a summary of the group response to the first questionnaire was returned to the panel of experts and they were asked to review and again rate the criteria. Eighty-eight percent of the experts responded to the second questionnaire.

2. Final Criteria (Table 1)

The final criteria were developed by the JCQA. A criterion was considered *relevant* if 85 percent of the experts rated the item relevant, and fewer than 15 percent of the experts rated it as contraindicated. For peer review, criteria were classified *recommended* if 85 percent of the experts rated an item as essential, and fewer than 15 percent considered it unacceptable. A classification of *acceptable* was assigned for criteria considered essential by fewer than 85 percent of the experts, and unacceptable by fewer than 15 percent. Several items of health supervision were reworded for clarity, eg, "testing for blindness," "testing for deafness" (birth to one

year) and "assessing sexual development" (6 to 18 years).

Phase Three: Representative Sample^{2,10}

A representative sample of 2,440 physicians was selected from the files of the American Medical Association. The sample was stratified by sex, specialty, region of the country, and urban-rural distribution. An additional sample of 125 physicians was selected from the directory of the American Osteopathic Association. These physicians were asked to rate the validated criteria for relevance and peer review, and if they performed the item, was it recorded. The initial sample was reduced and corrected to a sample base of 2,055 after analysis of the responses indicated that approximately 20 percent of the sample should not have been included. The reasons for exclusion were death, withdrawal from practice, inability to locate, or exclusion of children from their practice. The response rate from 1,049 pediatricians was 82 percent and from 85 family physicians, 72 percent. The small number of family physicians did not permit generalizations on the results of their responses. The responses from internists, osteopaths, and general practitioners were below 50 percent and also did not permit generalizations for each of these groups. The total response rate for all other physicians was 47 percent, based on a sample size of 1,006 physicians. This sample size permitted some conclusions.

Phase Four: Community Phase^{2,11}

The final phase, a direct chart audit by specially trained senior medical records administration students, was conducted in 166 family physicians', general practitioners', and pediatricians' offices throughout the United States. These physicians practiced alone or in small or large groups. Of the 166 practices reviewed, 60 percent were in pediatricians' offices and 40 percent in family physicians' or general practitioners' offices. A 96 percent or greater agreement was found between the physicians and the reviewers as to the presence or absence of recorded criteria during the audit.

Table 2. Representative Sample. Peer Review Items Considered Acceptable by 70% or More of the Other Physicians.*

1. Receiving information regarding delivery methods.
2. Receiving information concerning complications of delivery.
3. Assessing the weight between birth and one year.
- **4. Obtaining an interval history 6 to 12 years.
- **5. Obtaining an interval history 13 to 18 years.
6. Performing a hearing screening test 6 to 12 years.
7. Tuberculin skin testing 6 to 12 years.
8. Tuberculin skin testing 13 to 18 years.

*Family Physicians, General Practitioners, Internists, Osteopaths.
**Items performed by physician.

Results

Validation of Health Supervision Practices or Procedures

Citations from the literature supporting relevance of the criteria to outcome included only 29 articles and six textbooks. Only nine references related to health supervision of children between six and 18.

Concordance between the expert practitioners and academicians was very close; only one item of 95 was significantly different for relevance (R) and only four items were significantly different for peer review (PR). All items were given lower ratings by the practitioners. These items were:

1. Performing hearing screening tests (6 to 12 years) (R and PR).
2. Giving mother printed materials to be read for instructional purposes (PR).
3. Performing tuberculin skin tests (Birth to one year) (PR).
4. Assessing femoral artery pulsation (unless previously recorded) (6 to 12 years) (PR).

Representative Sample

Pediatricians and other physicians included in the representative sample agreed with the experts as to the

Table 3. Representative Sample. Classification of Criteria by Frequency of Performance and Recording by Pediatricians and Other Physicians* for Health Supervision.

	Frequency of Performance and Recording in Charts			
	76 - 100%	51 - 75%	<50%	Total Criteria
Pediatricians	27	23	19	69
Other Physicians	24	23	22	69

*Family Physicians, General Practitioners, Internists, Osteopaths.

relevance to outcome of the great majority of the criteria. Pediatricians disagreed on only three items, and in areas of greatest difference at least 70 percent of the other physicians agreed as to relevance.

The recommendations for peer review were quite different. The pediatricians of the representative sample recommended fewer than half as many items for peer review as the experts, and most of these items were performed by paramedical personnel. Other physicians rated no items as recommended, although eight were considered as acceptable by at least 70 percent (Table 2). Only two of these items, "obtaining an interval history" for ages 6 to 12 and ages 13 to 18, were actually performed by the physicians.

Recording patterns of pediatricians and other physicians were quite similar (Table 3). Two thirds of the criteria were recorded less than 70 percent of the time.

Community Phase

Pediatricians recorded information in the patient's chart more completely than the family physicians or general practitioners in the area of health supervision. In the disease categories there was little difference. The largest differences in the recording patterns concerned growth and development. Documentation was better in large group practices than in small group or solo practices.

"Perform and then record only if positive" was a common statement in the first phase, representative sample and community phase.¹² The physi-

cians of the representative sample reported this pattern more frequently than the members of the JCQA and other participants in phase one. Fewer than 50 percent of the criteria for health supervision were actually recorded. Table 4 lists the criteria recorded 50 percent or more of the time.

Counseling was believed to be important by both the members of the JCQA and the experts, while the physicians of the representative sample gave it a lower priority. In the community phase counseling was found to be recorded less than 20 percent of the time except for educational progress in the two older age groups (33 and 38 percent). When counseling was recorded, little description was provided.

Discussion

Validation of Health Supervision Practices or Procedures

References validating the relevance of criteria of well-child care were minimal. Except for newborn and preschool care, guidelines were more general and minimal. Comprehensive studies comparable to this study were not encountered. More investigation and education is needed to further develop criteria on well-child care.

The concordance of the practice and academic experts for relevance and peer review was an interesting finding. Some committee members felt there would be a moderate difference between "town and gown" because of differences in orientation and facilities. This reaffirms that quality is recognized as quality regardless of the setting, and suggests greater similarity

between the two groups than is sometimes appreciated.

Representative Sample

Two questions were considered for each criterion when evaluating the response of the representative sample. Would the physicians of the representative sample agree with the expert panel, and would the pediatricians of the representative sample agree with other physicians of the representative sample? Agreement was general for relevance of criteria between the experts and the physicians of the representative sample. However, the representative sample physicians rated peer review items much lower than the experts, though the pediatricians agreed with the recommendations of the experts about half the time. It is not certain whether the few criteria recommended for peer review reflects antagonism to the peer review process, disagreement with the criteria themselves, or whether it indicates a genuine concern over lack of medical process documentation in existing records. In this area exists the greatest difference between pediatricians and other physicians in the entire study. One could speculate that a physician might react to peer review questions somewhat in relation to the amount of data recorded in his own charts. Since recording patterns in well-child care were better in pediatricians' offices than in other physicians' offices, it is suggested that perhaps more pediatric-oriented charts accounted for this difference. Another possible reason is the fact that well-child examinations are more likely to be scheduled separately in the pediatrician's office, while in other physicians' offices, pediatrics is a smaller portion of the practice and well-child examinations may be included in a visit for some other condition. Our family practice residency programs would seem an ideal place for chart development and evaluation. Increased emphasis on preventive care should narrow the health supervision recording gap between pediatricians and other physicians in the future.

Unless a large majority of practicing physicians agree that a substantial number of relevant criteria are essential or desirable for peer review, it will be difficult to convince physicians that chart audits in office practice are

Table 4. Percent of Charts Audited in Community Phase which Recorded JCQA Criteria more than 50% of the Time

	0 - 1		1 - 5		6 - 12		13 - 18	
	Ped	OP*	Ped	OP	Ped	OP	Ped	OP
Receiving information concerning labor	60	**	-	-				
Receiving information concerning complications of labor	67	-	55	-				
Receiving information concerning developmental landmarks reached since preceding visit	91	77	82	59				
Assessing height at health supervision examinations	99	80	100	83	98	84	98	93
Assessing weight at health supervision examinations	100	97	100	96	98	84	98	93
Assessing head circumference at health supervision examination	82	54	-	-				
Performing hemoglobin or hematocrit	53	-	69	-				
Appraising the child's speech and language development	-	-	51	-				
Appraising the child's gross motor development	-	-	70	-				
Performing tuberculin skin test	-	-	87	-	83	-	80	-
Obtaining significant interval history	-	-	-	-	72	77	70	75
Assessing blood pressure at health supervision examinations					77	57	85	83
Performing vision screening test					66	-	60	-
Performing urinalysis test (at least 5-test dipstick)					85	64		
Assessing sexual developmental at health supervision examinations								
Performing sickle cell test if patient is black and test not previously performed							52	51
Performing, if patient is female, rubella vaccine or hemagglutination inhibition (HI) antibody test							68	-
Accomplish at least four health supervision visits	96	98					63	-
Accomplish at least three health supervision visits			96	98				
Accomplishing at least two health supervision visits					95	95	92	95

*other physicians (family physicians, general practitioners)

**performed but less than 50%

useful, and attempts to do so probably will be unsuccessful.

Community Phase

Physicians of the community phase indicated they used a majority of the validated criteria, but usually recorded only positive findings. Since criteria were found recorded less than 50 percent of the time by both pediatricians and other physicians, it is obvious that chart audit is unsatisfactory for quality assurance at this time. Investigation into new chart systems is necessary, as well as more education as to proper documentation.

It is assumed that improved recording in larger groups was the result of a peer effect and perhaps additional personnel, such as a typist for chart dictation.

Counseling was felt to be important by the JCQA and experts, yet recording of counseling in the community phase was minimal. This might be due to the fact that the physicians of the community phase are more representative of physicians of the representative sample, or that the

material was too sensitive or too time-consuming to record. Though counseling seems reasonable, it would be difficult to prove its value in relation to outcome. Much needs to be done to demonstrate cost effectiveness and by whom the counseling should be done.

Conclusions

1. More investigation, as well as education, is needed regarding health supervision procedures, particularly in counseling as it relates to outcome.
2. More education and/or development of structured medical records is needed to improve documentation of medical research for health supervision.
3. Established criteria for health care may be useful for self-education of physicians, and to further delineate the essential components of health supervision in the future.
4. In view of present chart systems and recording patterns, it is apparent that meaningful peer review of health supervision by chart audit is not possible at this time.

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