Complete Summary

GUIDELINE TITLE

Evidence based clinical practice guideline for fever of uncertain source in children 2 to 36 months of age.

BIBLIOGRAPHIC SOURCE(S)

Cincinnati Children's Hospital Medical Center. Evidence based clinical practice guideline for fever of uncertain source in children in 2 to 36 months of age. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2003 Oct 27. 12 p. [53 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Cincinnati Children's Hospital Medical Center. Evidence-based clinical practice guideline of fever of uncertain source. Outpatient evaluation and management for children 2 months to 36 months of age. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2000. 10 p.

The guideline was reviewed for currency in August 2006, using updated literature searches and was determined to be current.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- September 11, 2007, Rocephin (ceftriaxone sodium): Roche informed healthcare professionals about revisions made to the prescribing information for Rocephin to clarify the potential risk associated with concomitant use of Rocephin with calcium or calcium-containing solutions or products.

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Fever of uncertain source (FUS), defined as an acute illness in which the etiology of the fever is not certain after a thorough history and physical examination. Fever is defined as a temperature of at least 38.0 degrees C (100.4 degrees F) rectally.

GUIDELINE CATEGORY

Evaluation
Management
Treatment

CLINICAL SPECIALTY

Emergency Medicine
Family Practice
Infectious Diseases
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Nurses
Patients
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To improve the use of appropriate laboratory studies, the use of appropriate antibiotic therapy, efficiency of care, parental satisfaction, and understanding of family-centered care

TARGET POPULATION

These guidelines are intended primarily for use in children aged 2 months through 36 months presenting with fever of uncertain source.

Exclusions: These guidelines are not intended to address all considerations that are needed to manage the following categories of patients:

- Child with a fever source found on history or physical exam
- Child that is clinically "toxic"
- Child with petechiae
- Child with an immunodeficiency syndrome
- Child with chronic illnesses, altering care options
- Child on antibiotics
- Child given diphtheria-pertussis-tetanus immunizations within 48 hours
- Child presenting with seizures
- Child requiring intensive care management

INTERVENTIONS AND PRACTICES CONSIDERED

Assessment/Evaluation

1. Physical examination
2. Patient history, including assessment of clinical risk factors; targeted to determination of immunization status and exposures to infectious agents and observation of behavioral changes
3. Laboratory and radiologic studies as indicated: complete blood count (CBC) with differential, and blood culture; urinalysis and urine culture; viral studies; chest x-ray; lumbar puncture; stool culture

Management/Treatment

1. Observation at home without starting antibiotic therapy
2. If focus is diagnosed, treatment appropriate to that condition.
3. Empiric antibiotic therapy: Amoxicillin or ceftriaxone and alternative antibiotics when required.
4. Assessment for clinical improvement
5. Family education

MAJOR OUTCOMES CONSIDERED

- Sensitivity and specificity of laboratory tests
- Risk and prevalence of serious bacterial infection in a febrile child
- Antibiotic use

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

To select evidence for critical appraisal by the group, the Medline, EmBase and the Cochrane databases were searched to generate an unrefined, "combined evidence" database using a search strategy focused on answering clinical questions relevant to fever of uncertain source in children 2-36 months of age and employing a combination of Boolean searching on human-indexed thesaurus terms (Medical Subject Headings [MeSH] using an OVID Medline interface) and

"natural language" searching on words in the title, abstract, and indexing terms. The citations were reduced by: eliminating duplicates, review articles, non-English articles, and adult articles. The resulting abstracts were reviewed by a methodologist to eliminate low quality and irrelevant citations. During the course of the guideline development, additional clinical questions were generated and subjected to the search process.

August 2006 Review

A search using the above criteria was conducted for dates of January 2003 through July 2006. Seventeen relevant articles were selected as potential future citations for the guideline. However, none of these references were determined to require changes to the 2003 version of the recommendations.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review
Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The recommendations contained in this document were formulated by a multidisciplinary working group which performed systematic and critical literature reviews, used an evidence based grading scale, and examined current local clinical practices.

During formulation of these guidelines, the team members have remained cognizant of controversies and disagreements over the management of these patients. They have tried to resolve controversial issues where possible and, when not possible, to offer optional approaches to care in the form of information that includes best supporting evidence of efficacy for alternative choices.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The guidelines have been reviewed and approved by clinical experts not involved in the development process, senior management, Risk Management & Corporate Compliance, the Institutional Review Board, other appropriate hospital committees, and other individuals as appropriate to their intended purposes.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Each recommendation is followed by evidence grades (A-X) identifying the type of supporting evidence. Definitions of the evidence grades are presented at the end of the "Major Recommendations" field.

Clinical Assessments

Temperature and Fever

Fever is defined as a temperature of at least 38.0 degrees C (100.4 degrees F) rectally (see Table 2 in the original guideline document). Although rectal temperatures are more accurate, it is recommended that a practitioner give credence to a parent´s verbal report of a child´s fever measured by any method, including when detected only by touch.

> **Note**: A parental report of fever detected only by touch is likely to be accurate (sensitivity 82 to 89%, specificity 76 to 86%) (Graneto & Soglin, 1996 [C]; Hooker, 1993 [C]; Singhi & Sood, 1990 [C])

History and Physical Examination

1. In the history and the physical examination it is important to recognize signs and symptoms of ill-appearance or toxicity (see Table 1 in the original guideline document).

   Note 1: The sicker a febrile child appears, the more likely the fever is associated with a serious bacterial infection (SBI) (Teach & Fleisher, 1995 [A]; McCarthy et al., 1985[C])

Well-appearing	<3% chance of SBI
Ill-appearing	26 % chance of SBI
Toxic	92% chance of SBI

   (McCarthy et al., 1982) [C]

   Note 2: Response to antipyretics is not a reliable predictor of illness severity (Kuppermann, 1999) [S, E].

2. It is recommended that history be targeted to determine the child´s immunization status and exposures to known infectious agents. Specifically, history of heptavalent conjugate pneumococcal vaccine (PCV7) significantly lowers risk for invasive pneumococcal disease (Whitney et al., 2003) [D].
3. It is recommended that history also be targeted to determine if symptoms associated with some focal infections have been observed. These include, but are not limited to, the ear pulling of otitis media, coughing of pneumonia, vomiting of gastroenteritis, or crying with voiding associated with some urinary tract infections.

   Note 1: The following are clinical signs and symptoms of urinary tract infections for this age group as adapted from the Cincinnati Children's Hospital Medical Center (CCHMC) Evidence Based Guideline for First Time Urinary Tract Infections©.

   - Diarrhea
   - Vomiting
   - Strong-smelling urine
   - Abdominal or flank pain
   - New onset urinary incontinence
   - Failure to thrive
   - Fever

   Note 2: Gastroenteritis due to any cause is rarely occult and almost always signaled by some combination of diarrhea and vomiting.

   Note 3: Rotavirus is the most common cause of acute gastroenteritis in children ("Practice parameter," 1996) [S, E]. A prevalence of only 6% was shown in fever of uncertain source (FUS) patients aged 15 days to 4 years presenting without diarrhea or vomiting, though these patients developed these symptoms soon thereafter (Staat et al., 2002) [C].

Note 4: Bacterial gastroenteritis is usually associated with bloody or mucoid stools. There is also increased likelihood if there is a history of foreign travel or occurrence during a specific pathogen community outbreak (Kuppermann, 1999 [S, E]; Limbos & Lieberman, 1995 [S]).

Synthesis after Clinical Assessment

Both subjective and objective measures are recommended to estimate the degree of illness (Bleeker et al., 2001) [D]. The classification of the child as well-appearing, ill-appearing, or toxic is extremely important in determining the course of action. Towards this classification, input from the caregiver is essential.

Because bacteremia can occur with focal infections, it is recommended that when a source of infection is identified on physical examination, further evaluations be considered whenever the practitioner judges that focal findings are insufficient to explain the degree of the child´s fever and illness (Local Expert Consensus) [E].

Laboratory and Radiologic Studies

General

Viral infections are the most common etiology for FUS in this age group. Therefore, most children with FUS do not need testing.

If elected, the options for testing include:

- Complete blood count (CBC) with differential and blood culture
- Urinalysis and urine culture
- Viral studies

When indicated, testing options may also include:

- Chest x-ray
- Lumbar puncture
- Stool culture

See algorithm in original guideline document.

Special Note about 2 to 3 Month Age Group

Many FUS studies group infants age 2 to 3 months in a 0 to 90 day study population and most other studies on FUS are conducted on a 3 to 36 month group. Therefore, there is less known about the risks for and complications of bacteremia and SBI in the infant 2 to 3 months of age.

Testing Recommendations

1. It is recommended that a well-appearing child, in the clinician´s judgment, with an unremarkable history, be considered a candidate for observation at home without initial laboratory testing. This assumes the presence of **all** of the following:

- Available reliable follow-up as needed
- Health-care provider(s) confident that caregiver will use appropriate observational and follow-up skills
- Primary care physician (PCP) and family agree with plan of care

It is recommended for select children, depending on season and clinical presentation, that the following be considered: rapid diagnostic tests and/or culture for influenza, respiratory syncytial virus (RSV), or enteroviruses. If a viral etiology is identified, SBI is unlikely, and it is recommended that management be modified accordingly.

Note 1: Pre-PCV7data showed bacteremia present in 0.2% (95% CI: 0.01, 0.8) of children age 3 to 36 months with viral infections (croup, varicella, bronchiolitis stomatitis) (Greenes & Harper, 1999) [D]. Of 156 bronchiolitis patients age 0 to 24 months, there were no bacteremia cases and urinary tract infection was diagnosed in 1.9% of the 106 patients who were cultured (Kuppermann et al., 1997) [C].

Note 2: As many as 55% of children hospitalized for an acute febrile illness in the summer and fall seasons were subsequently found, by polymerase chain reaction (PCR) testing, to have enteroviral infection. Therefore, early identification of enteroviral infection could decrease hospitalization rates during these seasons (Rotbart et al., 1999) [C].

Note 3: Rapid flu testing of young children in the Emergency Department (ED) decreases use of diagnostic tests and antibiotics and decreases time in the ED (see table in original guideline document).

2. It is recommended that a practitioner have a low threshold for obtaining both a urinalysis and a urine culture. Urinary tract infection (UTI) is the most common SBI for children age 2 to 36 months of age at the time of this guideline review. Overall prevalence of UTI in this age group is 4.2 to 5.4% (Downs, 1999) [S, E].

   Risk factors for UTI include:

   - Male
     - Uncircumcised
     - <6 months
   - Female: <2 years
   - Caucasian race
   - Fever ≥39 degrees C

   (Shaw et al., 1998 [C]; Hoberman et al., 1993 [C]; Bachur & Harper, 2001 "Reliability of the urinalysis" [D] & "Predictive model" [D])

   Absence of high fever or other specific risk factors does not preclude the presence of UTI (see Appendix 1 in the original guideline document).

It is recommended that urine samples be collected by catheter, as they are less likely to be contaminated than "clean catch" samples (Weinberg & Gan, 1991) [D].

It is recommended that any positive urinalysis result, while pending results of culture, be considered consistent with a presumptive diagnosis of UTI and an indication to initiate antibiotic therapies and other measures fully described in the Cincinnati Children's Hospital Medical Center (CCHMC) Evidence Based Clinical Practice Guideline for First Time Urinary Tract Infections©.

> **Note**: A positive culture on urine collected using sterile technique remains the only standard for diagnosing a definite UTI (Hoberman et al., 1994) [C]. Any one of the following study results defines a positive urinalysis (Gorelick & Shaw, 1999) [M]:

- Positive nitrite screen
- Positive leukocyte esterase
- Positive microscopic exam: the definition of abnormal microscopic exam is dependent on patient or provider-specific determinants (see table in the original guideline document)

If all of the above three tests are performed and any one is abnormal (using $\geq$5/high power field [hpf] as the abnormal value for white blood cells [WBC]), the aggregate sensitivity is 100% (95% CI; 96.4, 100) and aggregate specificity is 60.1% (95% CI; 56.1, 64.1) (Lohr et al., 1993) [D].

3. Routine CBC and blood culture of well-appearing children with FUS are **not** recommended (Lee, Fleisher & Harper, 2001 [Q]; Kuppermann, 2002 [X]).
4. It is recommended that a CBC with differential and a blood culture be performed on any child who is ill-appearing or if the practitioner determines the child to be at high risk for occult SBI.

Note: It is preferred that the blood culture sample be collected from a separate site from the insertion of an intravenous line, as this has been shown to lower blood culture contamination rates by 69% (Norberg et al., 2003)[C].

In the post-PCV7 era, the predictive values of individual diagnostic tests have not been studied. The factors influencing the decision to perform the tests include:

- PCV7 series incomplete for age (see Appendix 2 in original guideline document)
- Age, more likely less than 24 months
- Clinical appearance
- Lack of viral symptoms or exposure
- Duration of illness
- High fever (such as >40.0 degrees C)
- Inadequate access to follow-up care
- Family´s tolerance for risk
- Meningococcal contact

(Finkelstein, Christiansen & Platt, 2000 [D]; Kuppermann, Fleisher & Jaffe, 1998 [A])

The following notes are based on pre-PCV7 data.

Note 1: An absolute neutrophil count (ANC) is more sensitive and specific than a WBC or absolute band count (ABC) for occult pneumococcal bacteremia detection (Kuppermann, 1999 [C]; Isaacman et al., 2000 [D]; Kuppermann, Fleisher & Jaffe, 1998 [A]).

An ANC of >10,000/mm^3 increases risk, to 8 to 10% (Kuppermann, Fleisher & Jaffe, 1998) [A].

Note 2: A WBC of >15,000/mm^3 raises risk for bacteremia to 3 to 4%; if >20,000/mm^3, the risk is 8 to 10% (Bachur, Perry & Harper, 1999 [C]; Lee & Harper, 1998 [C]).

Note 3: A CBC is not routinely helpful in identifying unsuspected meningococcal bacteremia in febrile children (Kuppermann, 1999) [D].

5. There is no published evidence demonstrating that chest x-rays, stool cultures, or lumbar punctures are helpful as routine studies. No specific recommendations are made other than to consider these studies when there are specific indications that the child is likely to have occult or complicated pneumonia, gastroenteritis, or meningitis (Kuppermann, 1999) [D].

   Note 1: Pneumonia is seldom occult, but may be. Pre-PCV7 evidence suggests that a chest x-ray be considered when a fever exceeds 39 degrees C and WBC exceeds 20,000/mm^3 (Bachur, Perry & Harper, 1999) [C]. However, chest x-rays do not often help in the choice of appropriate pneumonia therapy (McCarthy et al., 1981) [C].

   Note 2: In children with lower temperatures and WBC counts, the absence of respiratory distress, tachypnea, rales (crackles), or decreased breath sounds reduces the likelihood of pneumonia (Jadavji et al., 1997) [S, E].

Medications and Management

General

Routine empiric antibiotic therapy in febrile patients results in the treatment of many children unlikely to benefit (Bulloch, Craig & Klassen, 1997 [M]; Lee, Fleisher & Harper, 2001 [Q]; Kuppermann, 2002 [X]) . Moreover, the decision to use antibiotics and the specific choice of antibiotic must be balanced against the increasing emergence of bacterial resistance.

Note: Although complications are rare, and up to 75% of occult pneumococcal bacteremia resolve spontaneously, children with occult bacteremia and treated with antibiotics clinically improve earlier and are less likely to be bacteremic at follow-up. Also, in spite of a prevalent practice of starting empiric oral or parenteral antibiotics in

febrile patients to try to prevent complications, the efficacy for this practice has never been documented in a randomized controlled fashion (Rothrock et al., 1998 [M]; Bulloch, Craig & Klassen, 1997 [M]; Harper, Bachur & Fleisher, 1995 [D]; Kuppermann, 1999 [S, E]).

Treatment Recommendations

1. It is recommended that well-appearing children with FUS who are judged to be at sufficiently low risk to preclude the need for diagnostic studies, and also have the likelihood of excellent follow-up, can be considered for outpatient observation without starting antibiotic therapy (Local Expert Consensus [E]).
2. It is recommended that well-appearing children with FUS with positive laboratory evaluation for viral illnesses, such as influenza, RSV, and enteroviruses, and who also have the likelihood of excellent follow-up, be observed as outpatients without starting antibiotic therapy. Instructions for caregivers are important regarding careful observation of clinical course and appropriate follow-up with primary care provider (PCP) (Local Expert Consensus [E]).
3. It is recommended that well-appearing children with FUS who have normal laboratory studies, and also have the likelihood of excellent follow-up, can be considered for outpatient observation without starting antibiotic therapy (Local Expert Consensus [E]).
4. It is recommended that well-appearing children with FUS who have positive diagnostic studies consistent with the diagnosis of UTI, community acquired pneumonia, or gastroenteritis are treated according to the CCHMC Evidence Based Clinical Practice Guideline specific for that condition (Local Expert Consensus [E]).
5. It is recommended that well-appearing children with FUS who have risk factors for and positive diagnostic studies consistent with bacteremia, and also have the likelihood of excellent follow-up, be considered for treatment as outpatients with antibiotics after obtaining appropriate samples for culture (Local Expert Consensus [E]).

   In the era preceding the availability of a conjugated pneumococcal vaccine, empiric antibiotic therapy was based on the observation that 83 to 85% of the episodes of occult bacteremia in this age group were due to *Streptococcus pneumoniae* (Fleisher et al., 1994 [A]; Segal & Chamberlain, 2000 [D]). Therefore, amoxicillin, ceftriaxone, or a combination of both was recommended. There was no consistent evidence of the superiority of one regimen over the others, of the optimal dose of amoxicillin, or of the alternative drug of choice for patients unable to tolerate amoxicillin or ceftriaxone (Rothrock et al., 1998 [M]; Fleisher et al., 1994 [A]). Conjugated pneumococcal vaccine has dramatically reduced the incidence of occult pneumococcal bacteremia and there are no longer clear epidemiological data upon which the recommendations for empiric therapy can be based (Whitney et al., 2003 [D]; Black et al., 2001 [O]) .

6. It is recommended that ill-appearing children with history, physical examination, and diagnostic evaluation most consistent with SBI be treated with antibiotics after obtaining appropriate samples for culture (Local Expert Consensus [E]).

The most effective dose of amoxicillin is still uncertain. There is increasing emergence of amoxicillin resistant strains of *S. pneumoniae* nationally. To address the issue of resistance, "high dose" amoxicillin, 80 to 100 mg/kg/day, divided into 2 or 3 daily doses, has been advocated for some indications. In pediatrics, the efficacy of this higher dosing has primarily been demonstrated as therapy for acute otitis media (Seikel, Shelton & McCracken, 1997 [C]; McCracken, 1998 [S]). Although there are no confirmed demonstrations of high-dose amoxicillin efficacy for *S. pneumoniae* in the bloodstream, the dose is still included here because it is locally considered a reasonable option pending the publication of contrary evidence (Local Expert Consensus [E]).

See Table 3 in the original guideline document for dosage information.

7. It is recommended that antibiotic therapy be discontinued if bacterial cultures are negative and the course of illness is consistent with a viral infection (Local Expert Consensus [E]).
8. It is recommended that, if a blood culture is positive, the patient be reexamined to assess for clinical improvement or whether bacteremia was due to a previously undetected focal infection such as meningitis, UTI, or bacteremia (Finkelstein, Christiansen & Platt, 2000 [D]; Kuppermann et al., 1999 [D]).

Education

It is recommended that the family be educated regarding careful observation of the febrile child and the importance of follow-up with the primary care provider (PCP), as unsuspected sepsis or meningitis may not be determined early in the course of a febrile illness (Kuppermann et al., 1999 [D]).

Family education and review is recommended on the following topics.

A. Fever:
    - Observing for signs, including taking an accurate temperature measurement
    - Causes
    - Comfort measures

    (O´Neill-Murphy, Liebman & Barnsteiner, 2001 [O]; Crocetti, Moghbeli & Serwint, 2001[O])

B. Indications to call their physician
C. Anticipated course of the illness

Refer to the "Patient Resources" field for on-line information on Fever.

Definitions:

Evidence Based Grading Scale:

A: Randomized controlled trial: large sample
B: Randomized controlled trial: small sample

C: Prospective trial or large case series
D: Retrospective analysis
E: Expert opinion or consensus
F: Basic laboratory research
S: Review article
M: Meta-analysis
Q: Decision analysis
L: Legal requirement
O: Other evidence
X: No evidence

CLINICAL ALGORITHM(S)

An algorithm summarizing the recommendations for the evaluation and management of fever of uncertain source in 2 to 36 month old children is provided in the original guideline document.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

See the original guideline document for identification of the type of evidence supporting the recommendations and rationale statements.

Evidence Based Grading Scale:

A: Randomized controlled trial: large sample
B: Randomized controlled trial: small sample
C: Prospective trial or large case series
D: Retrospective analysis
E: Expert opinion or consensus
F: Basic laboratory research
S: Review article
M: Meta-analysis
Q: Decision analysis
L: Legal requirement
O: Other evidence
X: No evidence

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Improved use of appropriate laboratory studies
- Improved use of appropriate antibiotic therapy
- Improved efficiency of care

- Improved parental satisfaction and understanding of family-centered care

POTENTIAL HARMS

A decision to use antibiotics and the specific choice of antibiotic must be balanced against the increasing emergence of bacterial resistance.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- These recommendations result from the review of literature and practices current at the time of their formulations. This protocol does not preclude using care modalities proven efficacious in studies published subsequent to the current revision of this document. This document is not intended to impose standards of care preventing selective variances from the guidelines to meet the specific and unique requirements of individual patients. Adherence to this pathway is voluntary. The physician, in light of the individual circumstances presented by the patient, must make the ultimate judgment regarding the priority of any specific procedure.
- Using current technology and evidence, there are no perfect methods for detecting all possible occult infections.
- Many fever of uncertain source (FUS) studies group infants age 2 to 3 months in a 0-90 day study population, and most other studies on FUS are conducted on a 3-36 month group. Therefore, there is less known about the risks for and complications of bacteremia and serious bacterial infection in the infant 2 to 3 months of age.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The implementation process for each Children´s Hospital Medical Center guideline is a phase in a larger process of Guideline Development. This process is utilized for every guideline but is not addressed in the content of every guideline.

At the start of each guideline, a projected implementation date is determined. Reservations for education are then made (Grand Rounds, Patient Services, Inservices). When the guideline is complete and enters into the Approval Process, Education planning begins. Changes created by the guideline are outlined as well as anticipated outcomes. The implementation date is confirmed, and Education is provided. The guideline is implemented and pilot information collection started. The Guideline Coordinator makes daily rounds and eligible children are followed to document the use of the guideline. The implementation phase aids in finding areas for improvement or question. When issues identified are improved, the guideline progresses to the monitoring phase.

IMPLEMENTATION TOOLS

Clinical Algorithm
Foreign Language Translations
Patient Resources
Quick Reference Guides/Physician Guides

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Cincinnati Children's Hospital Medical Center. Evidence based clinical practice guideline for fever of uncertain source in children in 2 to 36 months of age. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2003 Oct 27. 12 p. [53 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2000 Feb (revised 2003 Oct 27; reviewed 2006 Aug)

GUIDELINE DEVELOPER(S)

Cincinnati Children's Hospital Medical Center - Hospital/Medical Center

SOURCE(S) OF FUNDING

Cincinnati Children's Hospital Medical Center

GUIDELINE COMMITTEE

Fever 2 – 36 months Team Members 2003

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All Team Members and Clinical Effectiveness support staff listed above have signed a conflict of interest declaration.

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Cincinnati Children's Hospital Medical Center. Evidence-based clinical practice guideline of fever of uncertain source. Outpatient evaluation and management for children 2 months to 36 months of age. Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2000. 10 p.

The guideline was reviewed for currency in August 2006, using updated literature searches and was determined to be current.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Cincinnati Children's Hospital Medical Center.

For information regarding the full-text guideline, print copies, or evidence-based practice support services contact the Children's Hospital Medical Center Health Policy and Clinical Effectiveness Department at HPCEInfo@chmcc.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Guideline Highlights. Fever of uncertain source in children 2-36 months of age. Cincinnati (OH): Cincinnati Children´s Hospital Medical Center; 2003 Oct.

Electronic copies: Available from the Cincinnati Children´s Hospital Medical Center Web site.

PATIENT RESOURCES

The following is available:

- Fever. Cincinnati (OH): Cincinnati Children´s Hospital Medical Center; 2003 Sep.

Electronic copies: Available in English and Spanish versions from the Cincinnati Children´s Hospital Medical Center Web site.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on March 15, 2001. The information was verified by the guideline developer as of June 15, 2001. This summary was updated by ECRI on September 9, 2004. The updated information was verified by the guideline developer on October 22, 2004. This summary was updated by ECRI Institute on October 3, 2007 following the U.S. Food and Drug Administration (FDA) advisory on Rocephin (ceftriaxone sodium).

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