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|  <p style="text-align: center;"><b>CREDIT VALLEY</b><br/>THE CREDIT VALLEY HOSPITAL</p> | <b>CLINICAL PRACTICE<br/>GUIDELINE</b>                          | <b>PROFESSIONAL<br/>PRACTICE</b> |
| <b>TITLE: Management of Febrile Infants 3 to 90 Days of Age</b>  |   |                                  |
| <b>DATE OF ISSUE:</b> 2001, 06   | <b>PAGE</b> 1 <b>OF</b> 7 (Appendix)                            | <b>NUMBER:</b> CPG 6-3           |
| <b>SUPERCEDES:</b>   | <b>ISSUED BY:</b> _____<br><b>TITLE:</b> Chief of Medical Staff |                                  |
|  | <b>ISSUED BY:</b> _____<br><b>TITLE:</b> President              |                                  |

**Purpose:**

To provide a guideline for the management of febrile infants 3 to 90 days of age in the Emergency Department.

**Inclusion Criteria:**

Infants 3 to 90 days of age presenting to the Emergency Department with a fever of  $\geq 38^{\circ}\text{C}$  taken rectally.

**Algorithm: Management of the Febrile Infant 3-90 Days of Age**

See Appendix 1

**Assessment and Management**

A. Infant  $\leq 30$  days of age or toxic looking

1. Triage as L1
2. Mandatory Paediatrician consult.
3. Full septic workup including: CBC, Blood Culture, Urine R&M, Catheter Urine for C&S and Lumbar Puncture for CSF culture.
4. Chest Xray if respiratory symptoms present
5. Initiate treatment with IV antibiotics within 2 hours from triage.
6. Admit
7. Continue IV antibiotics until culture results known.
8. At 48 hours post culture if the culture results remain negative and the infant looks well the infant may be discharged home.
9. If cultures positive or infant does not look well continue and/or change therapy. Consider further investigations.

**B. Infant 31-90 days of age and non-toxic looking**

1. Triage as L2
2. Partial septic workup including: CBC, Blood Culture, Urine R&M, and Catheter urine for C&S.
3. Apply Rochester Criteria for risk assessment and complete clinical data checklist for Febrile Infants 31-90 Days of Age.
4. Assess hydration, perfusion and activity using The Yale Observation Scale (YOS)
5. Chest Xray if respiratory symptoms present.
6. Consider Lumbar puncture for CSF culture.
7. High risk requires Paediatric consult, admission and treatment with IV antibiotics. Reassess culture results in 48 hours to decide treatment.
8. Low risk infants can be:
  - admitted and observed with or without antibiotics ordered
  - may be given an antibiotic IM in the Emergency Department and discharged home with follow-up in 24 hours
  - discharged home with no treatment and followed-up in 24 hours
9. If there is a concern about parental follow-up, observation should be done in hospital.

**Patient Education**

Upon discharge from the Emergency Department, the caregiver will be given the discharge instruction sheet entitled Fever in Children.

**Evaluation:**

An audit will be done to determine compliance and outcomes of the CPG after it has been in place for 1 year.

**References:**

1. Baker MD, Bell LM. Unpredictability of Serious Bacterial Illness in Febrile Infants From Birth to 1 Month of Age. Archives of Pediatrics & Adolescent Medicine. 1999;153(5):508-11
2. Baraff LJ, Bass JW, Fleisher GR, Klein JO, McCracken GH, Powell KR, Schriger DL. Practice Guidelines for the Management of Infants and Children 0 to 36 Months of Age with Fever Without Source. Pediatrics. 1993;92:1-12
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5. Ferrera PC, Bartfield JM, Snyder HS. Neonatal Fever: Utility of the Rochester Criteria in Determining Low Risk for Serious Bacterial Infections. American Journal of Emergency Medicine. 1997;15:299-02.

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7. Kramer MS. Management of the Young Febrile Child: A Commentary on Recent Practice Guidelines. *Pediatrics*. 1997;100:128-135.
8. Lopez JA, McMillin KJ, Tobias-Merrill EA, Chop WC. Managing Fever In Infants and Toddlers. *Postgraduate Medicine*. 1997;101:241-52.

**Approval:**

Paediatric Department: November 2000

Emergency Department: November 2000

Emergency Steering Committee: February 2001

Paediatric Steering Committee: April 2001

Professional Practice Committee: May 2001

Clinical Quality Care Committee: May 2001

Medical Advisory Committee: June 2001

**Figure 1. Clinical Data Checklist for Febrile Infants 31-90 Days of Age\***

| History                                | High Risk | Low Risk |
|--|-----------|----------|
| Prematurity < 37 weeks Gestation       | Y _____   | N _____  |
| Previous or Current Antibiotic Therapy | Y _____   | N _____  |
| Chronic Illness                        | Y _____   | N _____  |
| Prior Hospitalization                  | Y _____   | N _____  |
| <b>Physical Examination</b>            |           |          |
| Vital Signs                            |           |          |
| Temperature _____                      |           |          |
| Pulse _____                            |           |          |
| Respirations _____                     |           |          |
| Blood Pressure _____                   |           |          |
| Hydration Abnormal                     | Y _____   | N _____  |
| Perfusion Abnormal                     | Y _____   | N _____  |
| Activity Abnormal                      | Y _____   | N _____  |
| Otitis Media                           | Y _____   | N _____  |
| Skin Infection                         | Y _____   | N _____  |
| Bone/Joint Infection                   | Y _____   | N _____  |
| <b>Laboratory Evaluation</b>           |           |          |
| WBC: <5000 or >15000 mm <sup>3</sup>   | Y _____   | N _____  |
| Bands: >1000/mm <sup>3</sup>           | Y _____   | N _____  |
| Urinalysis ≥ 5 WBCs/hpf                | Y _____   | N _____  |
| If Rales, Tachypnea – Chest Xray       | Y _____   | N _____  |
| If Diarrhea, ≥ 5 WBCs/hpf              | Y _____   | N _____  |

**Circle Risk Assessment**

**HIGH RISK**

**LOW RISK**

**Septic Workup** (check if done)

- Blood Culture
- Urine Culture
- CSF Culture

**Social Situation Considerations**

|                        |         |         |
|------------------------|---------|---------|
| No Home Telephone      | Y _____ | N _____ |
| No Car Available       | Y _____ | N _____ |
| Parental Immaturity    | Y _____ | N _____ |
| No Thermometer         | Y _____ | N _____ |
| ED Travel > 30 min.    | Y _____ | N _____ |
| Follow-up Not Arranged | Y _____ | N _____ |

**\* Patients must meet all criteria to be considered at low risk**

**Adapted From:** Baraff LJ, Bass JW, Fleisher GR, Klein JO, McCracken GH, Powell KR, Schriger DL. Practice Guidelines for the Management of Infants and Children 0 to 36 Months of Age with Fever Without Source. Pediatrics. 1993;92:1-12

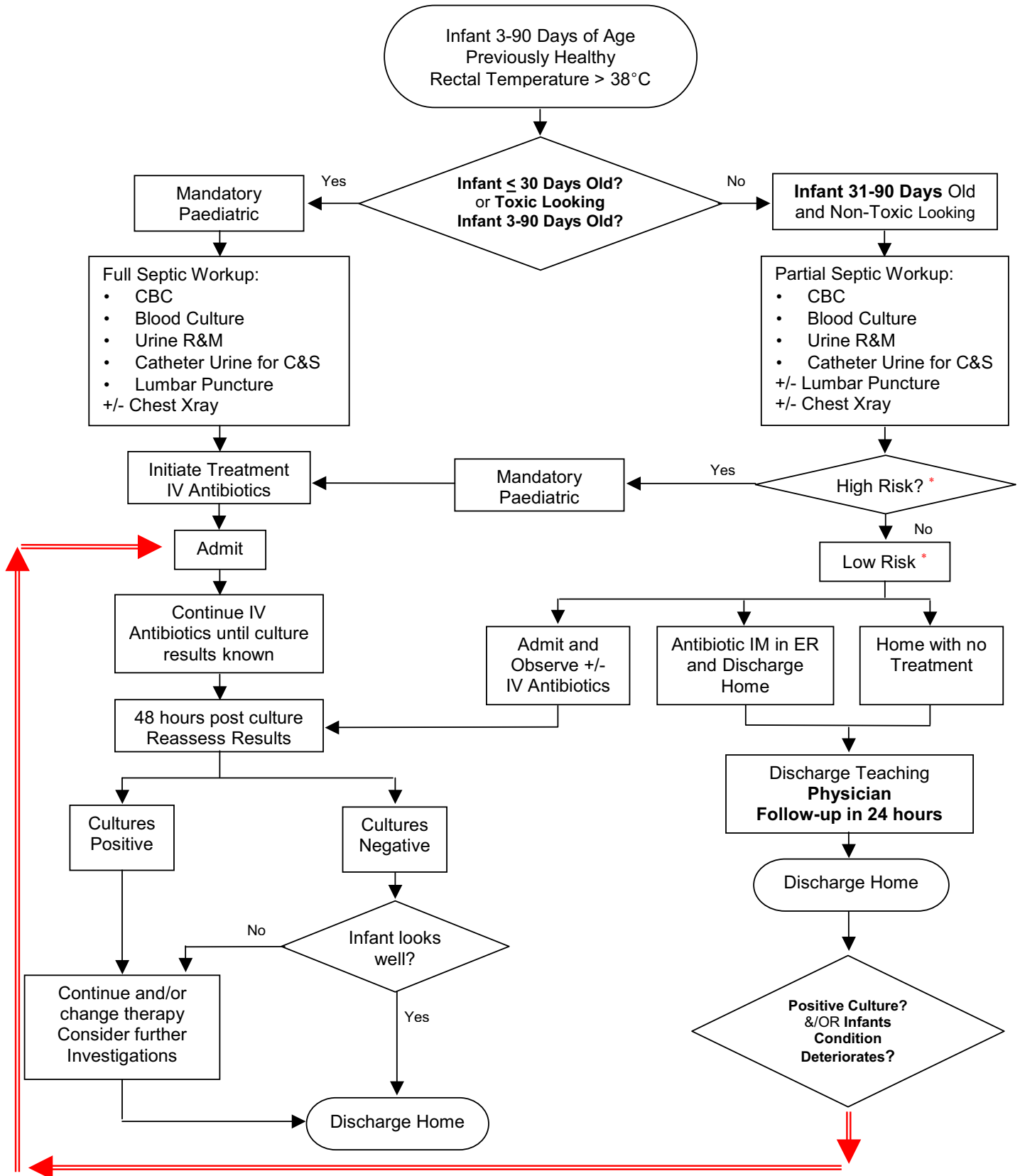
**Table I. The Yale Observation Scale (YOS)**

| Observation Variable                       | Normal (1)   | Moderate Impairment (3)  | Severe Impairment ( 5)                                       |
|--|--|--|--|
| Quality of cry                             | Strong with normal tone or content & not crying                  | Whimpering or sobbing  | Weak or moaning or high-pitched                              |
| Reaction to parent stimulation             | Cries briefly then stops or content & not crying                 | Cries off & on   | Continual cry or hardly responds                             |
| State variation                            | If awake, stays awake or if asleep & stimulated wakes up quickly | Eyes close briefly when awake or awakes with prolonged stimulation | Falls to sleep or cannot be aroused                          |
| Color                                      | Pink   | Pale extremities or acrocyanosis                                   | Pale or cyanotic or mottled or ashen                         |
| Hydration                                  | Skin normal, eyes normal & mucous membranes moist                | Skin, eyes normal & mouth slightly dry                             | Skin doughy or tented & dry mucous membranes or sunken eyes  |
| Response (talk, smile) to social overtures | Smiles or becomes alert  | Brief smile or becomes alert briefly                               | No smile, anxious, dull, expressionless or cannot be alerted |

\*Total score ranges from 6 to 30

The six variables of YOS were graded with either 1,3, or 5, with a higher score indicative of a greater degree of compromise. When patients appeared to be well (total YOS score less than or equal to 10) the rate of serious bacterial illness was only 2.7%, whereas when patients appeared to be ill (total YOS score equal to or more than 16) the rate of serious bacterial illness was 92.3%. No child who exhibited a normal social smile had a serious bacterial illness.

Appendix 1  
**Management of the Febrile Infant 3-90 Days of Age**



\* Criteria on back

Appendix 2

**The Rochester-Criteria for Identifying Febrile Infants at Low Risk for Serious Bacterial Infection\***

| <b>Low Risk*</b>  | <b>High Risk</b>  |
|---|---|
| Appears well, no signs of toxicity  | Appears ill, signs of toxicity (see below)  |
| Previously healthy  | Previously unwell   |
| Term Birth  | Preterm Birth   |
| No perinatal antibiotic therapy   | History of perinatal antibiotic therapy   |
| No history of unexplained <b>Hyperbilirubinemia</b>   | <b>History of unexplained Hyperbilirubinemia</b>  |
| No previous or current antibiotic tx.   | Previous or current antibiotic therapy  |
| Not previously hospitalized except for Birth and then not longer than the Mother                            | Previously hospitalized after birth and/or hospitalized longer than Mother at birth                         |
| No chronic or underlying illness  | <b>History of chronic or underlying illness</b>   |
| No skin, soft-tissue, bone, joint, or ear infection   | Skin, soft tissue, bone, joint, or ear infection  |
|   |   |
| <b>Laboratory Values</b>  | <b>Laboratory Values</b>  |
| Peripheral blood WBC count of 5,000-15,000/mm <sup>3</sup>  | Peripheral blood WBC count <5,000 or >15,000/mm <sup>3</sup>  |
| Total band count of <1,500/mm <sup>3</sup>  | Total band count of >1,500/mm <sup>3</sup>  |
| ≤10 WBCs per high-power field (x40) on microscopic examination of spun urine sediment                       | >10 WBCs per high-power field (x40) on microscopic examination of spun urine sediment                       |
| ≤5 WBCs per high-power field (x40) on microscopic examination of a stool smear (only infants with diarrhea) | >5 WBCs per high-power field (x40) on microscopic examination of a stool smear (only infants with diarrhea) |

\* Patients must meet **all criteria** to be considered at low risk

Infants in a **toxic condition** exhibit a clinical picture suggesting sepsis, which may include:

- Increased irritability, weak, moaning or high-pitched cry
- Poor feeding
- Lack of eye contact
- Reluctance to socialize, no smile, anxious, dull and expressionless
- Poor perfusion (capillary filling delayed more than 3 seconds after blanching)
- Cyanosis, pale or mottled skin, or petechiae
- Lethargy, falls asleep or cannot be aroused
- Decreased activity