

Children and Infants - Recognition of a Sick Baby or Child in the Emergency Department

Summary This guide for Recognition of a Sick Baby or Child in the Emergency Departments has been developed under the auspices of the Statewide Paediatric Networking Steering Group of the NSW Health Department. The aim of this guide is to provide assistance in the triage process involving children, and provide cues for triaging staff to assist in the allocation of appropriate triage level according to the Australian Triage Scale

NOTE: This Policy also applies to Local Health Networks until Local Health Districts commence on 1 July 2011.

On 8/7/2011 the Clinical Practice Guideline attachment was updated to amend the address and contact details for the Better Health Centre (inside front cover). The policy content has not changed.

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Distributed to Public Health System, Divisions of General Practice, NSW Ambulance Service, Ministry of Health

Audience Clinical;Emergency Departments

Secretary, NSW Health

This Policy Directive may be varied, withdrawn or replaced at any time. Compliance with this directive is mandatory for NSW Health and is a condition of subsidy for public health organisations.

RECOGNITION OF A SICK BABY OR CHILD IN THE EMERGENCY DEPARTMENT

PURPOSE

The *Recognition of a Sick Baby or Child in the Emergency Department* clinical practice guideline (attached) has been developed to provide direction to clinicians and is aimed at achieving the best possible paediatric care in all parts of the state.

The clinical practice guideline was prepared for the NSW Department of Health by an expert clinical reference group under the auspice of the state wide Paediatric Clinical Practice Guideline Steering Group.

MANDATORY REQUIREMENTS

This policy applies to all facilities where paediatric patients are managed. It requires all Health Services to have local guidelines/protocols based on the attached clinical practice guideline in place in all hospitals and facilities likely to be required to assess children.

The clinical practice guideline reflects what is currently regarded as a safe and appropriate approach to the recognition of the sick baby or child. However, as in any clinical situation there may be factors which cannot be covered by a single set of guidelines. This document should be used as a guide, rather than as a complete authoritative statement of procedures to be followed in respect of each individual presentation. **It does not replace the need for the application of clinical judgement to each individual presentation.**

IMPLEMENTATION

Chief Executives must ensure:

- Local protocols are developed based on the *Recognition of a Sick Baby or Child in the Emergency Department* clinical practice guideline.
- Local protocols are in place in all hospitals and facilities likely to be required to assess or manage sick babies or children.
- Ensure that all staff treating paediatric patients are educated in the use of the locally developed paediatric protocols.

Directors of Clinical Governance are required to inform relevant clinical staff treating paediatric patients of the revised protocols.

REVISION HISTORY

Version	Approved by	Amendment notes
June 2011 (PD2011_038)	Deputy Director-General Strategic Development	Second edition. Replaces PD2005_382
December 2005 (PD2005_382)	Director-General	New policy - Recognition of a Sick Baby or Child in the Emergency Department

ATTACHMENT

1. Recognition of a Sick Baby or Child in the Emergency Department – Clinical Practice Guideline.

Recognition of a Sick Baby or Child in the Emergency Department

second edition

CLINICAL PRACTICE GUIDELINES



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This Clinical Practice Guideline booklet is extracted from the PD2011_038 and as a result, this booklet may be varied, withdrawn or replaced at any time. Compliance with the information in this booklet is mandatory for NSW Health and is a condition of subsidy for public health organisations.

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Further copies of this document can be downloaded
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June 2011 - second edition
A revision of this document is due in 2014.

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Introduction

These Guidelines are aimed at achieving the best possible paediatric care in all parts of the State. The document should not be seen as a stringent set of rules to be applied without the clinical input and discretion of the managing professionals. Each patient should be individually evaluated and a decision made as to appropriate management in order to achieve the best clinical outcome.

The formal definition of clinical practice guidelines comes from the National Health and Medical Research Council:

‘systematically developed statements to **assist** practitioner and patient decisions about appropriate health care for specific clinical circumstances.’ (National Health and Medical Research Council *“A Guide to the Development, implementation and evaluation of Clinical Practice Guidelines”*, Endorsed 16 November 1998, available from www.nhmrc.gov.au/publications/synopses/cp30syn.htm)

It should be noted that this document reflects what is currently regarded as a safe and appropriate approach to care. However, as in any clinical situation there may be factors which cannot be covered by a single set of guidelines. This document should be used as a guide, rather than as a complete authoritative

statement to be followed in respect of each individual presentation. It does not replace the need for the application of clinical judgment to each individual presentation.

All babies and children should be **triaged** according to the Australasian Triage Scale and placed in an appropriate area for assessment and resuscitation. Further guidance regarding triage can be found in Appendix 3.

This document represents the clinical practice guidelines for the **recognition** of a sick baby or child. They are **NOT meant to replace facility triaging tools**, but may assist clinicians to appropriately recognise the acuity of a baby or child presenting, and subsequently inform the triage process (Appendix 3). Whilst principally focussed on the Emergency Department, these guidelines may also be applicable in the General Practice setting and the inpatient setting, with respect to recognising a sick baby or child.

This guideline has been developed as the umbrella guideline for the suite of 11 paediatric clinical practice guidelines that have been developed by expert reference groups convened by NSW Health. Unlike

the remaining clinical practice guidelines which focus on management of the named condition, the recognition of a sick baby or child clinical practice guideline is about assessment. **It is not meant to describe differential diagnoses or intervention.** Once a sick baby or child is recognised, the goal is timely and appropriate supportive care and treatment.

The needs of babies aged less than 3 months and the threshold for intervention are generally quite different to those of the older infant. For the purposes of this Guideline, the word baby refers to infants aged less than 3 months. In specific circumstances, the neonate (ie the baby aged less than 1 month) is referred to because of the significant risk posed by illness, and recognition of the sick neonate is presented separately in this guideline. Also, for the purpose of this document, the word child is used to refer to patients aged from 3 months to 16 years of age.

As a rule of thumb, a neonate presenting to the Emergency Department should be considered sick, until proven otherwise.

For all infants aged less than 3 months presenting to the Emergency Department, consultation with a paediatric clinician is strongly recommended. This will vary according to the location and may include a general or specialist paediatrician, or a clinician experienced at least at the level of a paediatric registrar.

Each Local Health Network (LHN) is responsible for ensuring that local protocols based on these guidelines are developed. Local Health Networks are also responsible for ensuring that all staff treating paediatric patients are educated in the use of the locally developed paediatric guidelines and protocols.

In the interests of patient care it is critical that contemporaneous, accurate and complete documentation is maintained during the course of patient management from arrival to discharge.

Parental anxiety should not be discounted: it is often of significance even if the baby or child does not appear especially unwell.

Changes to previous clinical practice guideline

This edition of the Recognition of the Sick Baby and Child Guideline has the following changes from the 2005 publication:

The name of the guideline has been changed to incorporate recognition of the sick infant and neonate, generally defined as a baby in this document. Specific reference is made to the neonate (ie babies aged less than 1 month) on occasion.

A new table has been developed to assist clinicians to determine the severity of presenting symptoms in order to determine the level of observation. The table provides advice about consultation requirements and escalation in the event that retrieval is required. See the summary table for the recognition of a sick infant or child on pages 14-15 and recognition of the sick neonate on pages 16-17.

Mental health considerations have been included, recognising that children and young people may have a significant deterioration in their mental health status requiring early recognition and consultation.

The parameters that are provided for age specific heart rates, respiratory rates and systolic blood pressures are the same as

those used by “Between the Flags”. NSW Health has implemented a program called Between the Flags to improve the way staff recognise and respond to patients when their clinical condition starts to deteriorate.

The Between the Flags program has led to the development of standardised observation charts for use in all NSW Public Health Facilities. Research into health systems around the world has demonstrated that some warning signs of deterioration can be recognised earlier, thus enabling earlier intervention. The Standard Observation Chart supports doctors and nurses in recognising these signs, making clinical decisions on when to seek help and what sort of help is required.

The Standard Paediatric Observation Charts (SPOC) are colour-coded and have been developed by expert clinicians. They include observations of the most sensitive indicators that identify when a patient is clinically deteriorating including breathing rate, blood pressure, heart rate, temperature and drowsiness.

The charts act as a track and trigger system to support the early identification of babies and children who are clinically

deteriorating. Observations are graphed to track trends in the patient's condition and an immediate response is triggered if observations move into the blue, yellow or red colour-coded zones.

■ **Blue Zone:** If the patients observations enter the blue zone on the SPOC, nursing or midwifery staff are expected to increase the frequency of clinical observation as appropriate. They should also manage anxiety, pain and review oxygenation to determine whether those aspects are impacting the observations. The senior nurse or midwife on the ward should also be alerted to the change in the patient's condition.

■ **Yellow zone:** If a patient's observations enter the Yellow Zone on the SPOC, clinical staff will initiate treatment, consult with the Nurse or Midwife in Charge and decide if a Clinical Review is required. Clinical Reviews are conducted by appropriately skilled nurses and doctors and will include an assessment of the patient's care plan. Appropriate treatment will then be started to prevent any further clinical deterioration.

■ **Red zone:** If a patient's observations fall within the Red Zone, a Rapid Response is immediately initiated. Clinical staff with advanced life support skills will be called to resuscitate the patient and treat whatever may have caused the deterioration in condition. Babies (aged less than one month) will often require a different response to that of the older infant or child.

The Recognition of the Sick Baby & Child has been developed, based on the parameters identified by the Between the Flags program. The tables on pages 14-17 are colour-coded and are consistent with the age-specific SPOC.

Key points in the recognition of a sick baby or child

In order to recognise the sick baby or child a **structured assessment** is required. The structured approach that best enables timely intervention for the sickest babies and children is described in the tables on pages 14-17.

Assessment of babies and children in particular is sometimes difficult as the signs and symptoms of illness may not be as marked or as readily expressed as those of the adult patient.

Assessment is not a singular event, but a continuous and dynamic process.

Obtaining a good history of the illness and precipitating factors to the infant, child or adolescent's presentation is fundamental to assessment. It may help to differentiate:

- the child who was perfectly well immediately prior to the acute onset of vomiting from the child who has been unwell for days or weeks prior to acute vomiting; suggesting perhaps a diabetic ketoacidosis;
- the baby who now appears perfectly well but the parents report a history of acute pallor which may be suggestive of conditions such as an intussusception, seizure, sepsis, or a metabolic/ endocrine condition;
- the child on medication that may alter assessment such as antibiotics or medications that cause drowsiness (such as antihistamines).

Repeated observations over time are required to ensure subtle signs or cues of illness are detected. Due to compensatory measures, the clinical severity may be greater than it first appears.

For those babies and children who are able to be discharged, the parents should be advised to remain vigilant to the possible emergence of new or worsening signs and symptoms and provided with clear advice regarding re-presentation.

The threshold to admit babies aged less than 3 months for a period of observation should be lower.

See page 33 for information about the relevant parent fact sheet regarding recognition of the sick baby and child, that should be provided to parents at the time of discharge.

Range for age values

Observations that are considered to be normal for heart rate, blood pressure, and respiratory rate vary widely with a child's age and weight. Heart rate and respiratory rate typically decline with age, while systolic BP increases.

There is little published evidence for normal range for age values. This guideline should be read in conjunction with the age-specific SPOC which provide details regarding the range of vital signs for babies and children. The observation charts show "normal values in white; with blue, yellow and red zones representing increasingly abnormal ranges and need for escalation of care (as described on page 6). ROSC escalation zones correspond to those seen in the SPOC developed for the Between the Flags project <http://www.health.nsw.gov.au/initiatives/btf/index.asp>.

Explanatory Notes

Airway

The airway of babies and children is at higher risk of obstruction than an adult due to the relatively small diameter and anatomical differences in the size and shape of the soft tissues.

Assessment of airway

Obstructed – complete or partial

- Inspiratory noises are the feature of a partially obstructed airway.
 - **Bubbly** noises are heard when the airway is partially obstructed with fluid.
 - **Snoring sounds** are heard in children with decreased level of consciousness, (for example, when a child lies supine, their large occiput tends to flex the neck and partially obstruct the airway).
 - **Stridor** is caused by partial obstruction to the larynx or trachea. The **loudness** of the stridor does not reliably indicate severity.

- Partial airway obstruction can rapidly progress to complete obstruction.
- The severity of airway obstruction is assessed by the respiratory rate, amount of respiratory effort, heart rate and alertness.
- Babies and children with severe airway obstruction may be agitated or drowsy.
- **Secondary** signs of worsening obstruction are:
 - increasing respiratory rate or effort,
 - decreasing oxygen saturation,
 - increasing heart rate,
 - worsening colour,
 - development of agitation or decreased level of consciousness.

In extreme obstruction requiring immediate intervention there may be a decrease in airway noise such as stridor, secondary to decreased respiratory effort and level of consciousness.

- **Wheeze** - a form of rhonchus, characterized by a high-pitched or low-pitched musical quality. It is caused by a high-velocity flow of air through a narrowed airway and is heard during both inspiration and expiration.

Breathing

Respiratory illnesses in babies and children are common and may be life-threatening. Cardiac arrest in babies and children is most frequently caused by hypoxia.

In assessing breathing, it is both the **effort** (ie how hard is the baby/child working) and the **efficacy** (ie how effective they are in gas exchange) that must be assessed.

Ineffective breathing leading to hypoxia or hypercapnoea may cause agitation and decreased levels of consciousness.

Apnoea

- No respiratory efforts for a period of more than 20 seconds.
- Infections may present with apnoea in infants less than 3 months of age.

Bradypnoea

- Respiratory rate below normal range for age.
- Respiratory arrest may occur soon after if not corrected.

Tachypnoea

- Respiratory rate above normal range for age.
- Usually indicates need to increase oxygen or to decrease carbon dioxide levels.

Chest recession

- Inward movement of intercostal and/or subcostal spaces and/or the sternum in inspiration.

Tracheal Tug

- Downward pull of the trachea during inspiration.

Accessory muscle use

- Visible muscle contraction of the sternomastoid muscle reflecting increased effort of breathing.
- May be expressed as head bobbing in babies.

Nasal flaring

- Subtle sign of respiratory distress.

Gasping

- Sign of severe hypoxia.
- Indicates impending respiratory arrest.

Grunting

- Caused by expiration against partially closed glottis.

Oxygen Saturation (SpO₂)

- When measured in room air, it is a good indication of the efficacy of breathing.
- Oximetry should only be used as an adjunct to clinical assessment.

Cyanosis

- When the haemoglobin is not adequately saturated with oxygen. This is often noticeable at birth but if it persists recognition and investigation of respiratory and cardiac conditions should occur.

Consider the following NSW Health Clinical Practice Guideline for acute management:

Children and Infants with Asthma
– Acute Management

Children and Infants with Croup
– Acute Management

Children and Infants with Bronchiolitis
– Acute Management

Circulation

Assessment of circulation requires the measurement of heart rate and blood pressure and limb perfusion, as well as identifying the adequacy of circulation with regards to perfusion of the brain and vital organs.

No one single sign alone should be used to determine circulation.

The circulating blood volume of a baby and child is less than that of an adult. A small fluid loss in a baby or child can represent a large percentage of the total circulating volume, and therefore have significant effect on circulatory volume.

Abnormal signs of circulation may be secondary to problems in other systems. For example, a slow heart rate in the context of a raised blood pressure implies raised intracranial pressure.

Circulation may be inadequate despite hearing a heart beat or seeing QRS complexes on a cardiac monitor.

Heart rate and blood pressure

The normal age related values for heart rate and blood pressure are given in the SPOC.

Secondary signs of circulatory compromise

- A decreased **level of consciousness, confusion, agitation** may each be an indication of inadequate circulation to the brain.
- Reduced urine output indicates inadequate circulation to the kidneys.
- Prolonged capillary refill time, pallor, mottled skin or cold extremities are signs of inadequate peripheral circulation and can be due to hypovolemia.

Capillary Refill Time

- This is measured by pressing for 5 seconds on the skin, releasing and counting how many seconds it takes for the colour to return. It should be measured centrally (over the sternum).

Pulses

- Pulses should be felt in the brachial, femoral (less than 1 year) or carotid (greater than 1 year) regions.
- Femoral pulses should always be assessed in addition to the brachial pulse especially in babies, to determine presence of inguinal pulses.
- A **weak pulse** implies inadequate blood pressure, is an emergency and may imply impending cardiac arrest.
- Where a **weak pulse** is isolated to one limb and associated with a proximal injury, urgent attention is required and neurovascular observations need to be commenced.

Cardiac Arrest

- Absence of pulse or inadequate cardiac output requires the commencement of cardio pulmonary resuscitation (CPR).
- The Australian Resuscitation Council recommends the commencement of CPR when the infant or child is unresponsive, and not breathing normally (Guideline 6 <http://www.resus.org.au/>).

- A check for a central pulse (brachial, femoral [less than 1 year] or carotid [greater than 1 year]) for up to 10 seconds during the period of assessment for signs of life may be performed.

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Recognition of the Sick Child

AIRWAY Page 9	BREATHING Page 10	CIRCULATION Page 11
Obstructed Partially obstructed with increased effort of breathing	<ul style="list-style-type: none"> Recent or current apnoea or abnormally slow breathing Severely increased effort of breathing <ul style="list-style-type: none"> With severe tachypnoea,* accessory muscle use, recessions, nasal flaring, grunting and/or gasping NOTE: above signs can be absent in: <ul style="list-style-type: none"> Exhaustion Central respiratory depression Neuromuscular problems Reduced or asymmetric chest expansion Absent breath sounds SpO₂ less than 90% in any amount of oxygen Cyanotic 	<ul style="list-style-type: none"> Cardiac arrest Severe tachycardia* Peripheral pulse absent or weak Bradycardia less than 60* Uncontrolled bleeding Central capillary refill over 4 seconds Hypotension*
Partially obstructed + normal effort of breathing	<ul style="list-style-type: none"> Moderately increased effort of breathing <ul style="list-style-type: none"> With moderate tachypnoea*, moderate accessory muscle use, recession, nasal flaring SpO₂ 90% - 94% in room air 	<ul style="list-style-type: none"> Moderate tachycardia* Pallor Central Capillary refill 3-4 seconds Skin mottled, cold Hypotension*
Patent	<ul style="list-style-type: none"> Mildly increased effort of breathing with mild tachypnoea* SpO₂ over 94% in room air Pink 	<ul style="list-style-type: none"> Mild tachycardia* Normotensive Capillary Refill (less than 3 seconds)
RISK FACTORS:		
SPECIFIC PROBLEMS <ul style="list-style-type: none"> High Risk Mechanism of Injury – page 24 Rash: Petechial, non-blanching, allergic – page 24 Testicular pain (surgical review) – page 24 Chemical exposure / envenomation / ingestion (contact the NSW Poison Information Centre: 131126) – page 24 Severe Burns – page 24 Mental health presentation – page 21 	AGE <ul style="list-style-type: none"> less than 3 months of age 	
IF DISCHARGING. PROVIDE PARENTS WITH FACT SHEET AND		

*Colour coding on this Table corresponds with colour coding on the standard Paediatric Observation Chart.

^Paediatric Clinician will vary according to the location – may include general or specialist paediatrician. Should at least be at the level of a Paediatric Registrar.

A heightened level of concern should be applied to ALL infants less than 3 months and advice from a Paediatric Clinician^ should be sought

DISABILITY/ LOC/ PAIN Page 18 & 25	FLUIDS IN/ FLUIDS OUT Page 19	ACTION
<ul style="list-style-type: none"> • Unresponsive • Responds only to pain • Severe pain: Pain score 7-10 • Seizure • Paralysis 	<ul style="list-style-type: none"> • No urine output 24 hours • Hyperglycemia (BGL greater than 12mmol/L) or Hypoglycemia (BGL < 2mmol/L or symptomatic) • Severe dehydration 	<ul style="list-style-type: none"> • Requires immediate response (refer to local escalation protocol) • <u>Continuous</u> monitoring (HR, ECG, SpO₂ + frq BP + RR) • <u>Continuous</u> clinical observation • Discuss with Paediatrician or NETS (Tel: 1300 36 2500) regarding management and need for transfer
<ul style="list-style-type: none"> • Responds only to voice • Poor response to environment • Moderate Pain: Pain score 4 - 6 • Recent seizures • Parasthesia • Weak cry • Irritability • Agitation 	<ul style="list-style-type: none"> • Moderate dehydration • Vomiting <ul style="list-style-type: none"> - Bile - Coffee-ground - Blood - greater than 6 in 12 hours • Melaena or red currant jelly stool • Hyperglycemia (BGL 9 - 12mmol/L) • Hypoglycemia (BGL 2-3mmol/L) 	<ul style="list-style-type: none"> • A clinical review by experienced clinician is required within 30 minutes (refer to local protocol) • <u>Continuous</u> monitoring • Consider need for transfer and discuss with senior clinician or NETS • If clinical review is not undertaken within 30 minutes and the condition is not resolved, escalate call to a rapid response (refer to local protocol)
<ul style="list-style-type: none"> • Alert but with decreased activity • Mild Pain: Pain score 1-3 • Prolonged sleeping 	<ul style="list-style-type: none"> • Mild dehydration • Less than 50% of normal fluid intake • Urine volume reduced • Vomiting <ul style="list-style-type: none"> - non-bilious - <u>less than 6</u> in 12 hours 	<ul style="list-style-type: none"> • Increase frequency of observations (refer to the SPOC) • Initiate appropriate clinical care

CONSIDER AS MORE URGENT

ALSO CONSIDER:

- Disease dynamic – how long has the child been unwell; what has occurred prior to presentation (symptoms and pre-hospital treatment eg antipyretics and sedating agents) – page 25
- Parental concern – what are the parents saying? Does their response seem appropriate to the child’s condition? – page 25
- Co-morbidity - prematurity or chronic illness – page 25
- Immuno-compromised – page 25
- Recent admission to hospital – page 26
- Multiple presentations with same illness – page 26

PROVIDE LETTER TO GENERAL PRACTITIONER &/OR PAEDIATRICIAN

NB – Only one symptom is required for a higher urgency category to be allocated.

Recognition of the Sick Neonate

AIRWAY Page 9	BREATHING Page 10	CIRCULATION Page 11
<p>Obstructed</p> <p>Partially obstructed with increased effort of breathing</p>	<ul style="list-style-type: none"> Recent or current apnoea or abnormally slow breathing Severely increased effort of breathing <ul style="list-style-type: none"> With severe tachypnoea,* accessory muscle use, recessions, nasal flaring, grunting and/or gasping NOTE: above signs can be absent in: <ul style="list-style-type: none"> Exhaustion Central respiratory depression Neuromuscular problems Reduced or asymmetric chest expansion Absent breath sounds SpO₂ less than 90% in any amount of oxygen or requirement for more than 60% oxygen Cyanotic or extreme pallor Need for CPAP or IPPV 	<ul style="list-style-type: none"> Cardiac arrest Severe tachycardia* Peripheral pulse absent or weak Bradycardia* Uncontrolled bleeding Central capillary refill over 4 seconds Hypotension*
<p>Partially obstructed + normal effort of breathing</p> <p>Secretions needing suction</p>	<ul style="list-style-type: none"> Moderately increased effort of breathing <ul style="list-style-type: none"> With moderate tachypnoea*, moderate accessory muscle use, recession, nasal flaring, intermittent grunting in a newborn SpO₂ 90% - 94% in room air or requirement for more than 40-60% oxygen Abnormal pattern of breathing 	<ul style="list-style-type: none"> Moderate tachycardia* Pallor Central Capillary refill 3-4 seconds Skin mottled, cold Hypotension*
<p>Patent</p>	<ul style="list-style-type: none"> Mildly increased effort of breathing with mild tachypnoea* SpO₂ over 94% in room air Pink 	<ul style="list-style-type: none"> Mild tachycardia* Normotensive* Normal CRT less than 3 seconds
RISK FACTORS: CONSIDER		
<p>SPECIFIC PROBLEMS</p> <ul style="list-style-type: none"> Maternal History of peripartum herpes, chorioamnionitis, fever, prolonged rupture of membranes (greater than 18 hours), group B strep colonisation Perinatal and post-natal complications Heart murmur/non palpable femoral pulses Dysmorphic features Bloated abdomen Umbilical discharge, redness or infection Skin infections Family history of childhood disease or consanguinity 		<p>TEMPERATURE</p> <ul style="list-style-type: none"> Hypothermia* – page 25 <p>AGE</p> <ul style="list-style-type: none"> All patients less than 1 month
IF DISCHARGING. PROVIDE PARENTS WITH FACT SHEET(S) AND		

* Colour coding on this Table corresponds with colour coding on the Standard Paediatric Observation Chart.

^ Paediatric Clinician will vary according to the location – may include general or specialist paediatrician. Should at least be at the level of a Paediatric Registrar.

A heightened level of concern should be applied to ALL infants less than 1 month and advice from a Paediatric Clinician should be sought

DISABILITY/ LOC/ PAIN Page 18	FLUIDS IN/ FLUIDS OUT Page 19	ACTION
<ul style="list-style-type: none"> • Unresponsive • Unconscious • Seizure 	<ul style="list-style-type: none"> • No urine output for 24 hours • Hyperglycemia - (BGL greater than 12mmol/L) or Hypoglycemia - BGL less than 1.7mmol/L • Severe Dehydration • Weight loss greater than 15% birth weight 	<p>Only one symptom is required for a higher urgency category to be allocated</p> <ul style="list-style-type: none"> • Requires immediate response (refer to local escalation protocol) • <u>Continuous</u> monitoring (HR, ECG, SpO₂ + frq BP + RR) • <u>Continuous</u> clinical observation • Discuss with Paediatrician or NETS (Tel: 1300 36 2500) regarding management and need for transfer
<ul style="list-style-type: none"> • Hypotonic/hypertonic • Poor feeding/suck • Excessive crying • Poor response to environment • Recent seizures • Weak cry or irritable high pitched cry • Irritability 	<ul style="list-style-type: none"> • Moderate dehydration • Weight loss of 10-14% birth weight • Reduced number of wet nappies • Markedly reduced volume and timing of feeds • Vomiting - Bile - Coffee-ground - Blood • Melaena or red currant jelly stool • Hypoglycemia - BGL 1.7 - 2.5mmol/L 	<ul style="list-style-type: none"> • A clinical review by experienced clinician is required within 30 minutes (refer to local protocol) • <u>Continuous</u> monitoring • Consider need for transfer and discuss with senior clinician or NETS • If clinical review is not undertaken within 30 minutes and the condition is not resolved, escalate call to a rapid response (refer to local protocol)
<ul style="list-style-type: none"> • Alert but quiet • Prolonged sleeping 	<ul style="list-style-type: none"> • Mild dehydration • Weight loss up to 9% of birth weight • Mild reduction in volume and time of feeds • Increased milk vomits 	<ul style="list-style-type: none"> • Increase frequency of observations (refer to the SPOC) • Initiate appropriate clinical care

AS MORE URGENT

ALSO CONSIDER:

- Disease dynamic – ante-natal and family history; how long has the baby been unwell; what has occurred prior to presentation (symptoms and pre-hospital treatment eg antipyretics and sedating agents) – page 25
- Parental concern – what are the parents saying? Does their response seem appropriate to the child’s condition – page 25
- Co-morbidity - prematurity or congenital conditions (such as congenital heart disease or inborn error of metabolism) – page 25
- Immuno-compromised – prematurity – page 25
- Recent admission to hospital or multiple presentations with same illness – page 26
- Maternal health – consider post natal depression & other mental health and drug and alcohol problems
- Neonates presenting with jaundice should get their bilirubin levels checked and plotted on an age appropriate chart – page 22

LETTER TO GENERAL PRACTITIONER AND/OR PAEDIATRICIAN

NB – Only one symptom is required for a higher urgency category to be allocated.

Disability and level of consciousness

Disability in ABCD refers to a brief neurological assessment. It should only be performed after Airway, Breathing & Circulation have been assessed and treated. There are no neurological problems that take priority over airway, breathing and circulation.

Assessment of pupils to light is essential in determining neurological function. Both left and right pupils should be assessed for symmetry size and reaction to a bright light source.

AVPU Scores

The mnemonic AVPU is used to determine a patient's level of arousal or alertness. Historically, AVPU was used only to assess eye-opening to various stimuli; however, it has evolved to a more general interpretation of patient responses. GCS values that approximate AVPU levels are given.

The utilisation of an AVPU score is a rapid method of carrying out a neurological assessment to assess alertness. The AVPU score is a simple assessment tool but may be less sensitive, especially in the baby aged less than 1 month, than the Glasgow Coma Score (GCS) in identifying subtle changes sometimes seen in patients where consciousness may be altered by metabolic derangements, hypoxia or hypotension rather than by a direct traumatic insult.

AVPU does not replace the need for a GCS where a more detailed assessment is required. For children aged less than five years a modified Glasgow Coma Scale should be used. Generally, a GCS should be used to assess the neurological status of children with a head injury.

AVPU stands for:

A refers to **A**lert (GCS≈ 15)

- An alert patient opens his eyes spontaneously upon your arrival at his side. If the patient is alert, there is no reason to continue with the AVPU assessment. If age-appropriate, it would be prudent to determine orientation to person, place and time.

Responds to **V**oice (GCS≈ 13)

- If the patient does not have spontaneous eye-opening, **V** is the next step in the AVPU process, which is achieved by using a verbal stimulus in an attempt to get the patient to respond. Again, if the patient responds to a verbal stimulus, there is no need to continue.

Responds to **P**ain only (GCS≈ 8)

- **P** refers to painful stimulus applied if the patient did not respond to a verbal stimulus. Originally, this test was used to determine if the patient opened his eyes when a painful stimulus was applied. When applying a painful stimulus, clinicians are looking for any indication of a response, whether it is flexion, extension, withdrawal of an extremity or localization of the pain by attempting to remove it.

Unresponsive (GCS≈ 3)

- If there is no response to a painful stimulus, the patient is said to be unresponsive, which represents the **U** in AVPU. A patient who does not respond to noxious stimuli is considered comatosed.

It is important when assessing babies and children that the clinician engages the caregiver as this might alter the patient's score.

For example, a toddler may not respond to the clinician but would to the mother.

Fluids in / fluids out

■ Assessment of fluid in

- A fluid intake of less than half normal is a feature of concern.

■ Approximate normal fluid intake

Age	mL/kg/day
0 to 9 months	120 - 140
9 - 12 months	100 - 120
1 year	90 - 100
2 years	80 - 90
4 years	70 - 80
8 years	60 - 70
12 years	50 - 60

■ Assessment of fluid out

- This includes urine, stool, blood loss and vomit.
- A urine output of fewer than 4 wet nappies in 24 hours is a feature of concern.

■ Minimum urine output

- Babies and children weighing less than 30 kg: = 1 mL/Kg/hour.
- Older children and adolescents 30-60 kg = 0.5 mL/Kg/hour.
- Children weighing greater than 60 kg. = 30 mL per hour.

Children presenting with abnormally high urine output or excessive fluid intake should involve consultation with a paediatric clinician.

Signs and Symptoms of Dehydration

Description of Dehydration	Dehydration (% of body weight)	Signs and Symptoms
Mild	3%	Reduced urine output Thirst Dry mucous membranes Mild tachycardia
Moderate	5%	Dry mucous membranes Tachycardia Abnormal respiratory pattern Lethargy Reduced skin turgor Sunken eyes, Sunken fontanelle
Severe	10%	Above signs Poor perfusion: mottled, cool limbs/slow capillary refill/ altered consciousness Shock: thready peripheral pulses with marked tachycardia and other signs of poor perfusion stated above

Adapted from the description of dehydration found in the Acute Management of Gastroenteritis in Infants and Children (3rd Edition), NSW Health, 2009.

Newborns commonly lose 10% of their birth weight and this should be regained by 2-3 weeks of age. More than 10% weight loss should warrant review by an experienced clinician.

For children with gastroenteritis, refer to the NSW Health Clinical Practice Guideline

Children and Infants with Gastroenteritis – Acute Management

Blood glucose level

- The normal random blood glucose range for children is 3.5–5.5 mmol/L.
- The normal random blood glucose range in neonates is 2.9 – 7 mmol/L.

Mental health of children and adolescents

Mental health patients are at risk of physical disorders. Delirium is a common cause of altered behaviour and perception in children. A brief mental health assessment includes evaluating the patient's risk of danger to self, the risk of the danger to others and the degree of behaviour disturbance.

If any of these features are present consultation with a paediatric or mental health clinician is recommended.

Examples where the risk of *danger to self* is increased include:

- overt suicidal ideation
- previous suicide attempt
- severe depression
- quiet and withdrawn
- Body Mass Index below recommended for age
- hopelessness
- unaccompanied by family member
- recent discharge from a psychiatric unit
- presence or recent history of self harm
- agitation
- influence of alcohol or other drugs
- relationship issues.

Examples where the risk of *danger to others* is increased include:

- threats of aggression
- history of violence
- agitation
- anger
- persecutory ideation

- delusions or hallucinations with violent content
- presence of a weapon
- influence of alcohol or other drugs.

Psychotic symptoms include:

- hallucinations
- delusions
- paranoid ideas
- thought disorder
- bizarre/agitated behaviour.

A child or adolescent with acutely disturbed behaviour may be responding to fear, pain or anger. Severe disturbances may involve high levels of arousal with extreme alertness, agitation and anxiety, high levels of response to stimuli or pacing, dis-inhibition with loud or offensive swearing, disruption with threats, menacing or damaging property.

Issues around parental mental health, particularly maternal mental health in the postnatal period, should always be considered, especially if there is discord between the presentation of illness and parental affect or response.

For more detailed information about responding to the needs of a mental health patient in the Emergency Department, refer to the Mental Health for Emergency Departments - A Reference Guide (2009), published by NSW Health. <http://www.health.nsw.gov.au/resources/mhdao/pdf/mhemergency.pdf>

The Neonate

Neonates can present with either congenital or acquired conditions. If a sick newborn presents in the first month of life they should be discussed with a senior clinician (as defined in the table on pages 16 and 17). There should be a low threshold for the admission, further observation, and treatment of babies aged less than one month.

Babies born prematurely are a specifically high risk group, as are those with congenital disorders such as cardiac disease and metabolic disease. Any neonate with cardiac, respiratory, neurological or gastroenterological symptoms or signs should be discussed with a senior clinician to consider sepsis, cardiac, metabolic or surgical causes.

Refer to individual guidelines regarding management

- **Apnoea** - Apnoea is frequently followed by bradycardia and may be an early sign of infection or other serious illness.
- **Sepsis** - This should always be considered in any sick neonate. Presenting features are generally non-specific, for example the neonate may present with a low or unstable temperature.

Consider the NSW

Health Clinical Practice Guideline:

Children and Infants with Fever
– Acute Management

- **Congenital heart disease** - This should always be considered in any collapsed neonate with respiratory or cardiac signs or symptoms. Infants can present with cyanosis or evidence of congestive cardiac failure and poor perfusion. Lesions with ductal dependent systemic circulations (eg critical coarctation) are often mistakenly diagnosed as being septic.
- **Respiratory disease** - Viral and bacterial illnesses are common. They may present with signs of respiratory distress or may present with apnoeic episodes.
- **Gastrointestinal obstruction** - Bile stained vomiting is always to be discussed with a senior clinician if presenting in the neonatal period.
- **Jaundice** - This should be noted carefully by duration, colour, progression down the body, and risk factors. If in doubt, check blood for conjugated and unconjugated bilirubin levels. Plot serum bilirubin levels on age appropriate chart (available at <http://www.sswahs.nsw.gov.au/rpa/neonatal/> Go to *guidelines* tab, then go to *jaundice*)

- **Metabolic conditions** - If metabolic causes are considered based on poor feeding, hypotonia, acidosis, hypoglycaemia, raised ammonia or enlarged liver, consult with a paediatrician and consider consultation with a paediatric metabolic specialist (via a children's hospital). Also consider discussion with the Newborn and paediatric Emergency Transport Service (NETS) as urgent retrieval may be required (1300 25 3600).
- **Excessive crying or unusual quietness** - These may be presenting signs of severe illness. Parental observations should be considered. If concerned, discuss with a senior clinician.
- **Seizures** - Seizures can present in the neonatal period and should be discussed with a senior clinician as a matter of urgency. Seizures may be subtle and therefore need careful observation in order to be detected.

General considerations

The following specific injuries are recognised as the role of various mechanisms of injury in assessing the patient.

- **Trauma** – Refer to local Trauma Guidelines re high risk mechanism of injury.
 - **Head injury** - For children with a suspected head injury, refer to the NSW Health Clinical Practice Guideline on Children and Infants with Head Injury - Acute Management http://www.health.nsw.gov.au/policies/PD/2005/PD2005_391.html
 - **Eye injury** - Refer to the NSW Health Consensus Clinical Guidelines in the Eye Emergency Manual http://www.health.nsw.gov.au/resources/gmct/ophthalmology/eye_manual_pdf.asp
 - **Burns** - Refer to the NSW Health Severe Burn Injury Guideline [2nd edn] (GL2008_012) http://www.health.nsw.gov.au/policies/gl/2008/pdf/GL2008_012.pdf

Although not all patients with burns will require transfer to a specialised burn unit, advice must be sought early in their management.

- **Chemical exposure/envenomation /ingestion**

- Contact the NSW Poison Information Centre: ph: 131 126
- For additional information regarding envenomation, refer to: NSW Health Snake and Spider Bite Clinical Practice Guideline (GL2007_006) http://www.health.nsw.gov.au/policies/gl/2007/pdf/GL2007_006.pdf

- **Testicular pain**

This should be considered a surgical emergency and an urgent surgical review should be sought.

- **Rashes**

- Non-blanching and petechial rashes generally require consultation with a paediatric clinician.
- Neonates with meningitis often have no rash.
- Allergic - Refer to the Australasian Society of Clinical Immunology & Allergy website for anaphylaxis resources <http://www.allergy.org.au/content/view/10/3/> or local anaphylaxis protocols.

■ Child at risk considerations

Where there are concerns (actual or suspected) regarding a child being:

- a victim of violence
- sexually assaulted
- neglected
- non-accidentally injured
- exposed to domestic violence
- cared for by a parent with known mental health disorder
- at risk of harm (however defined).

Practitioners are advised to use the NSW Mandatory Reporter Guide in all cases where there is a reasonable suspicion of inflicted injury. The guide is available at: www.sdm.community.nsw.gov.au/mrg

TEMPERATURE

A normal temperature is generally defined as 36.5° – 37.5°C by axillary measurement.

- Axillary temperature measurement is generally recommended.
- Tympanic measurements may be unreliable.
- Routine measurement of rectal temperature is not recommended.

Hyperthermia

- The higher the temperature the greater the risk of bacteremia particularly in young children.

Hypothermia

This is a typical feature of a sick neonate.

Consider the following NSW Health Clinical Practice Guideline for acute management:

Children and Infants with Fever – Acute Management

DISEASE DYNAMIC

This should include consideration of how long the child has been unwell; what has occurred prior to presentation – the symptoms and pre-hospital treatment eg antipyretics or sedating agents; and the overall impression of the child (based on their alertness, arousability, playfulness and interest in surroundings).

Consideration of other recent illness in family members may also be important.

Always give consideration to children with underlying chronic medical or surgical conditions.

PARENTAL CONCERN

Consider what the parents are saying about their child. How does the child's presenting condition differ from "normal" for their child? Also consider whether their response seems appropriate to the child's condition.

CO-MORBIDITY

Symptoms should be interpreted within the context of underlying conditions, for example, prematurity or chronic illness.

IMMUNOCOMPROMISED

Immunocompromised individuals (includes infants and children on long-term or repeated courses of oral steroids or chemotherapy) are susceptible to sepsis and may deteriorate rapidly. Involvement of senior clinician is required.

RECENT ADMISSION TO HOSPITAL

A recent hospital presentation or admission, particularly for the same presenting symptoms, may suggest a deteriorating condition.

Consider whether:

- this is a re-presentation for the same condition?
- this is a re-presentation within 24 hours of previous health assessment (GP or ED or inpatient setting)?
- there has been an admission to ICU for a similar complaint.

PAIN

Assessment of Pain

- Pain scores in infants and children (excluding neonates):
 - Pain score 1-3 Mild pain
 - Pain score 4-6 Moderate pain
 - Pain score 7-10 Severe pain

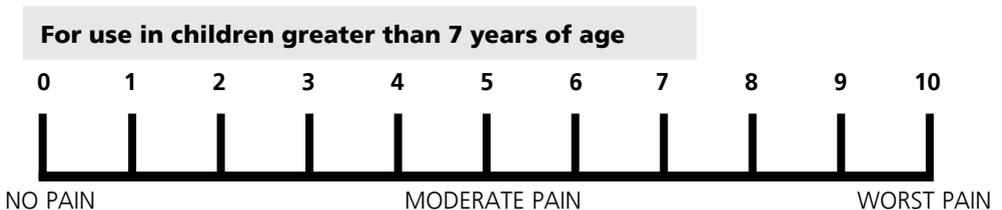
A pain score for neonates has not been included in this guide as expert advice has indicated that it is infrequently used in the Emergency Department setting when assessing the presenting neonate.

PAIN TOOLS

Linear scale

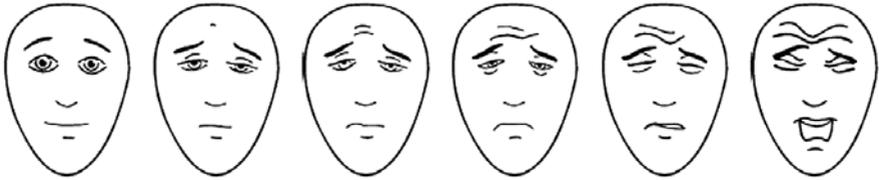
The following are a range of pain assessment tools, specific to age.

Methods of assessment: When asking the child older than 7 years of age about their pain, using a numerical pain scale as shown below, do not ask them what their pain is out of 10. Get them to point or draw on the linear scale. In some instances it is more appropriate to use a linear scale without the numbers attached.



Faces pain scale – revised

Suggested age group is greater than 4 years of age



In the following instructions say “hurt” or “pain” whichever seems right for a particular child

“This shows how much something can hurt. This face [point to the left-most face] shows **no pain**. The faces show more and more pain [point to each from left to right] up to this one [point to right-most face] - it shows **lots of pain**. Point to the face that shows how much you hurt [right now].”

This scale is intended to measure how children feel inside, not how their face looks.

Score the chosen face 0, 2, 4, 6, 8, 10, counting left to right, so ‘0’ = “no pain” and ‘10’ = “very much pain”. Do not use words like “happy” and “sad”.

FLACC behavioural assessment tool

Suggested age is from 2 months to 7 years of age

Categories	Scoring		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
Cry	No cry (asleep or awake)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distractible	Difficult to console or comfort

Each of the above five categories: (F) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability; is scored from 0-2 which results in a total score between 0 and 10.

Instructions for FLACC use	
Patients who are awake	<ul style="list-style-type: none"> • Observe for at least 2-5 minutes • Observe legs and body uncovered • Reposition patient or observe activity, assess body for tenseness and tone • Initiate consoling interventions if needed
Patients who are asleep	Patients who are asleep: <ul style="list-style-type: none"> • Observe for at least 5 minutes or longer • Observe body and legs uncovered • If possible reposition the patient • Touch the body and assess for tenseness and tone
Assessment of Behavioral Score	0 = Relaxed and comfortable 1-3 = Mild discomfort 4-6 = Moderate pain 7-10 = Severe discomfort/pain

Appendix One – References

NSW Health (2010) PD 2010_026
Recognition and Management of a Patient who is Clinically Deteriorating
http://www.health.nsw.gov.au/policies/pd/2010/pdf/PD2010_026.pdf

Protocol, Questionnaire and Public Information Sheet
<http://www.apsu.org.au/index.cfm?objectid=B4CB2370-C972-D22E-41FEAD831FEE22B8>

NSW Health Neonatal Exchange Transfusions in NSW. GL2007_001.
http://www.health.nsw.gov.au/policies/gl/2007/pdf/GL2007_001.pdf

Airway

Mackway-Jones, K., et al., (Eds.) (2005) *Advanced Paediatric Life Support. Advanced paediatric life support: the practical approach* 4th Ed. Blackwell Publishing: Malden, Massachusetts.

Rzucidlo, S.E., et al., (2004) *Trauma Nursing: Pediatric Patients. RN Magazine*. Jun. 1, 67:36.

Breathing

Mackway-Jones, K., et al., (Eds.) (2005) *Advanced Paediatric Life Support. Advanced paediatric life support: the practical approach* 4th Ed. Blackwell Publishing: Malden, Massachusetts.

Circulation

Australian Resuscitation Council - Guidelines 2010 Guideline 8 (Cardiopulmonary Resuscitation) and Guideline 12.1 (Introduction to Paediatric Advanced Life Support) www.resus.org.au

Disability and pain

Mackway-Jones, K., et al., (Eds.) (2005) *Advanced Paediatric Life Support. Advanced paediatric life support: the practical approach* 4th Ed. Blackwell Publishing: Malden, Massachusetts.

Dieckmann, R., (2010). *Pediatric Emergencies* – <http://sfgghed.ucsf.edu/Education/Lectures/Syllabus/PedEmergencies.pdf>

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Jevon, P., (2008) Neurological Assessment - Part 1 – Assessing Level of Consciousness *Nursing Times*. 104(27).

Kelly, C.A., et al., (2004). Comparison of consciousness level assessment in the poisoned patient using the alert/verbal/painful/unresponsive scale and the Glasgow coma score. *Annals of Emergency Medicine*, 44(2), 108-113.

Numerical pain scale diagram.
<http://riskcomm.com/visualaids/painscales/othermethods.php>

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Sudbury, (2006) American Academy of Paediatrics, *Textbook of Paediatric Education for Pre-hospital Professionals* 2nd Ed, Jones & Bartlett Publishing.

Mental health

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Cameron, et al., (Eds.) *Textbook of Paediatric Emergency Medicine*. (2006). Churchill Livingstone.

Fluids in/ fluids out

Browne, G.J., et al., (1997) *Principles and Practice of Children's Emergency Care*. Maclellan and Petty.

Hewson, P.H., et al., (1995) A simple hospital triaging system for infants with acute illness. *Journal of Paediatrics and Child Health*. Feb; 31(1): 29-32.

NSW Health (2009) PD2010_009 Gastroenteritis in Infants and Children - Acute Management (3rd Edition). http://www.health.nsw.gov.au/policies/pd/2010/pdf/PD2010_009.pdf

The Children's Hospital at Westmead Handbook (2009) <http://proxy58.use.hcn.com.au/index.php/chapter-7/section-3>

The Children's Hospital at Westmead Handbook (2009) <http://proxy58.use.hcn.com.au/index.php/chapter-2/section-2>

General considerations

NSW Health (2008) Burn Transfer Guidelines – Severe Burn Injury Service - 2nd Edition GL2008_012 (2008) http://www.health.nsw.gov.au/policies/gl/2008/GL2008_012.html

NSW Health (2011) Clinical Practice Guideline, Children and Infants – Acute Management of Head Injury http://www.health.nsw.gov.au/policies/PD/2011/pdf/PD2011_024.pdf

NSW Health (2009) Consensus Clinical Guidelines in the Eye Emergency Manual http://www.health.nsw.gov.au/resources/gmct/ophthalmology/eye_manual_pdf.asp

Child Protection (2010) NSW Keep Them Safe Online Mandatory Reporter Guide <http://www.sdm.community.nsw.gov.au/mrg/app/summary.page>

Anaphylaxis Guidelines (2009) - Australasian Society of Clinical Immunology & Allergy (ASCI) Anaphylaxis resources <http://www.allergy.org.au/content/view/10/3/>

Appendix Two – Parent information

A fact-sheet has been developed jointly by the three NSW Children’s Hospitals to assist parents with the Recognition of Serious Illness in Children. Access to the fact sheet can be found on each of the Children’s Hospital websites:

John Hunter Children’s Hospital –
www.kaleidoscope.org.au

Sydney Children’s Hospital –
www.sch.edu.au

Children’s hospital at Westmead –
www.chw.edu.au

Other useful resources include:

Australian Paediatric Surveillance Unit (APSU) Public Information Sheet. Severe Neonatal Hyperbilirubinaemia OR Exchange Transfusion (Severe Jaundice)

Disclaimer: The fact sheet is for educational purposes only. Please consult with your doctor or other health professional to ensure the information is right for your child.

Appendix Three – Recommended triage method

Australian Government, Department of Health and Ageing. *Emergency Triage Education Kit, Triage Quick Reference Guide*.

An Education Kit has been developed by the Department of Health and Ageing. Access to the Education Kit can be found at the following web link:

[http://www.health.gov.au/internet/main/publishing.nsf/Content/5E3156CFFF0A34B1CA2573D0007BB905/\\$File/Triage%20Quick%20Reference%20Guide.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/5E3156CFFF0A34B1CA2573D0007BB905/$File/Triage%20Quick%20Reference%20Guide.pdf)

Appendix Four – Working party members

Professor Ralph Nanan	(Committee Chair) Professor of Paediatrics, and Sub-Dean of Research Sydney Medical School – Nepean, University of Sydney
A/Prof Adam Buckmaster	Senior Staff Specialist Gosford Hospital, Conjoint Associate Professor University of Newcastle
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A/Prof Michael Fasher	Adjunct Associate Professor, Sydney Medical School – Blacktown, University of Sydney and General Practice Representative
Dr Jonathon Egan	Paediatric Intensivist, The Children’s Hospital at Westmead
Mr Darren Roberts	Paediatric Clinical Nurse Consultant, GWAHS
Ms Karyn Fahy	Western Child Health Network Coordinator – from July 2008
Ms Robyn Richards	Neonatal Clinical Nurse Consultant, Liverpool Hospital
Dr Linda Dann	Director, Emergency Department, Bankstown Hospital
Ms Helen Gosby	Nurse Practitioner, Children’s Hospital at Westmead Emergency Dept
Mr Paul Hunstead	Clinical Coordinator Sydney Children’s Hospital Emergency Dept
Dr Andrew Berry	Director, Neonatal and paediatric Emergency Transport Service NSW
Ms Lesley Jeffries	Paediatric Clinical Nurse Consultant, GSAHS
Ms Trish Boss	A/Manager Paediatrics Statewide Services Development Branch, NSW Health
Ms Halina Nagiello	Western Child Health Network Coordinator – resigned June 2008
Dr Stephen Jacobe	Paediatric Intensivist, Children’s Hospital at Westmead – resigned September 2008
Ms Alisha Baker	Paediatric Clinical Nurse Consultant, SSWAHS – until October 2008

Abbreviations: **GSAHS** – Greater Southern Area Health Service **GWAHS** – Greater Western Area Health Service
SSWAHS – Sydney South West Area Health Service

