EXPLANATORY NOTES

Paediatric PCA/ NCA (patient/ nurse controlled analgesia) chart

LOCAL GOVERNANCE

Paediatric PCA/NCA is ONLY to be used in facilities with local governance structures in place to ensure its safe and effective use in children. These must include a PCA/NCA guideline (including specific paediatric information), appropriate environment, staff training, supervision and support.

Local Health District governance for Paediatric Patient Controlled Analgesia ***must*** include the following:

- An endorsed policy/guideline for Patient Controlled Analgesia (including specific paediatric information)
- A dedicated paediatric in-patient area (e.g. level 4 paediatric facilities)
- Adequate provision of onsite 24/7 medical cover
- Escalation of Care procedures
- Adequate provision of nursing staff to provide paediatric high/ close observation care
- Appropriately trained staff in care of paediatric patients and PCA/NCA
- Specification of the range of procedures and criteria to be supported through PCA/NCA
- Selection criteria of patient suitable/ unsuitable for paediatric PCA/NCA e.g. cognitive ability of the child
- Appropriate paediatric oxygen therapy
- Provide continuous oxygen saturation monitoring
- Accurate monitoring of fluid infusion rate/balance
- Accurate monitoring of IV lines for occlusion
- Must have background IV fluids (TKVO) running with paediatric PCA/NCA
- Administration of Paediatric PCA using syringes and/or bags
- Ensure that no other opioids or sedatives to be administered unless ordered by the Acute Pain Service or equivalent medical officer
- Provision of naloxone
- Regular auditing of Paediatric PCA/NCA charts
- Clinical incidence reviews
- Minimum of daily review of patients by the Acute Pain Service or equivalent medical officer.

Target Patient Group

- This is a mandated NSW chart *primarily* for use in non-tertiary paediatric facilities
- The chart is intended for use in PAEDIATRIC patients receiving PCA/ NCA for pain management
- The chart is NOT to be used for adult patients.

Target Education Group

- Medical officers who prescribe PCA/NCA for paediatric patients
- Nursing staff and management on paediatric wards and other paediatric inpatient areas with appropriately trained staff where paediatric patients use PCA/NCA
- Clinical pharmacists who review paediatric patient medications and medication charts.

Paediatric PCA or NCA Management Guide (page 1)

The management guide is on the front page of the chart. For detailed information regarding Paediatric PCA/ NCA prescribing, administering and management refer to local hospital procedures. The safety of paediatric patients using PCA or NCA for pain management is paramount.

Paediatric PCA/NCA is ***ONLY*** to be used in facilities with local governance structures in place to ensure its safe and effective use in children. These must include a PCA/NCA guideline (including specific paediatric information), appropriate environment, staff training, supervision and

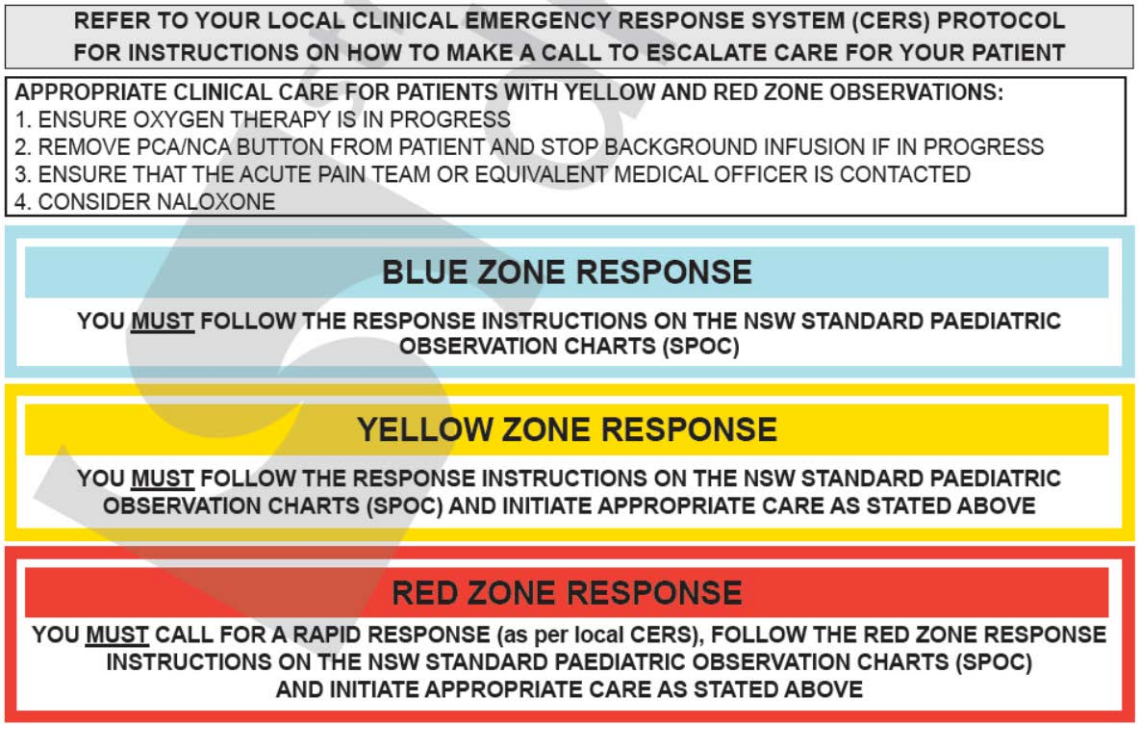
The management guide is summarised in point form:

- Environment – children *MUST* be cared for in paediatric ward or paediatric in-patient area
- All observations recorded HOURLY (pain & sedation on PCA chart; all other observations on SPOC)
- Continuous pulse oximetry MUST be used in paediatrics
- Oxygen therapy as required to maintain oxygen saturations above 95%.
- No other opioids or sedatives unless ordered by the Acute Pain Service or equivalent medical officer
- Checking of PCA pump settings by 2 nurses
- Managing adverse effects including pruritus, nausea and vomiting
- Only the patient (not the parent/carer/ nurse) may use the button on a PCA
- Only the allocated registered nurse may use the button on an NCA
- Use of dedicated PCA giving set with anti-syphon and anti-reflux capabilities

Escalation of Care (page 1)

Instructions on how to respond to paediatric patient clinical observations assessed in the Blue, Yellow or Red Zone are consistent with the 'track and trigger' principles of the Between the Flags Program [1] which has been established as a 'safety net' in NSW Public Hospitals to reduce the risk of undetected clinical deterioration of patients and ensuring appropriate responses when needed.

The observations for sedation and pain are *in addition to those which are on the SPOC chart*. Although the PCA observation chart incorporates a decision support tool it should not replace clinical judgement. Clinicians ***must*** assess a patient's condition and escalate to the appropriate level, using the chart as a guide. For example, if a clinician considers that a patient requires urgent medical attention, based on their clinical judgement, even though the patient's observations remain in the Yellow Zone, then he or she should initiate a Rapid Response call.



Blue Zone highlights the following criteria that require increased frequency of observations by nursing staff responsible for the care of patients using PCA:

- **Sedation score 1** (may appear tired/ sleepy, responds to verbal conversation and/or sound)
- **Vital Signs in Blue Zone on SPOC**

Yellow Zone highlights the following criteria that require Clinical Review by the Acute Pain Service or the equivalent medical officer responsible for the care of patients using PCA:

- **Sedation score 2** (somnolent/sleeping, easily roused with light tactile stimulation or simple verbal command)
- **A pain score** between 7 and 10 out of 10
- **Vitals signs in Yellow Zone on SPOC**

Red Zone highlights the following criteria that require an immediate Rapid Response following the local Clinical Emergency Response System (CERS) protocol. The Acute Pain Service or the equivalent medical officer responsible for the care of patients using PCA must also be contacted.

- **Sedation score 3 or 4** (unrousable, deep sleep or rousable only with deep or significant physical stimuli)
- **Vital signs in Red Zone on SPOC**

Contact details to be completed with relevant contact details for personnel responsible for the management of the patient receiving PCA during business hours *AND* after hours.

Paediatric PCA/NCA Prescription (page 2)

The prescription section of the Paediatric PCA/ NCA chart is to be completed by a prescriber in accordance with the NSW Health Policy Directive Medication Handling in NSW Public Health Facilities PD2013_043. [1]

- The PCA prescription is **valid for a maximum of 48 hours** unless ceased earlier.
- Prescriber is to complete the patient allergy and adverse drug reaction (ADR) section in full.
- Patient identification details to be either handwritten or a patient label affixed (first prescriber to check patient label is correct).

The PCA prescription:

- Route, primary drug, amount (in mg or microgram)
- Total volume
- Primary drug concentration (mg or microgram per mL)
- Space for an additional drug and dose if required
- Date
- Prescriber's signature, printed name and contact
- Space for pharmacy annotation

NOTE: *If changing from one opioid to another, a new PCA chart must be commenced.*

The PCA program: Parameters for programming the PCA pump

- Date, time
- PCA bolus dose (mg or microgram) documented in unit of drug and volume e.g. 1mg = 1mL
- Lockout interval (minutes)
- Background infusion (mg or microgram per hour) e.g. 1mg = 1mL per hour
- Prescriber's signature, printed name and contact

Two further rows are provided for subsequent changes to the PCA program.

Naloxone:

- The prescription incorporates a recommendation of dose and frequency for administration of naloxone where sedation score 3 or 4 OR respiratory rate in the Red Zone on SPOC.
- This section is not considered a 'Standing Order' for naloxone and completion of the prescription is required prior to administration. *(See Frequently Asked Questions p.7)*

Oxygen therapy:

- Provide oxygen therapy as required to maintain oxygen saturations above 95%

PCA to be ceased:

- Refers users of the chart to the medical record for guidance on how and when the PCA is to be ceased. Completion of this section may be optional in your facility.

Record of opioid syringes or bags administered and remaining drug discarded (page 3)

Opioid solutions for PCA are supplied in a syringe or a bag depending on the type of PCA pump used.

In the space required, date, time and 2 signatures are legally required for the administration of PCA opioid and the total amount discarded (in mg).

Record of naloxone administered

Four rows are provided for the administration of naloxone according to the prescription or standing order sticker on the front prescription page of the chart.

PCA observations (pages 4 – 8)

The observations component of the Paediatric PCA/NCA chart has been developed in consultation with the Clinical Excellence Commission (CEC) to incorporate the 'track and trigger' principles of the Between the Flags Program[2] to promote the early recognition of the deteriorating patient associated with opioid administration. The Paediatric PCA/NCA chart is intended for concurrent use with the Standard Paediatric Observation Chart (SPOC). The frequency of observations for paediatric patients receiving a PCA/ NCA is a minimum of hourly for both the PCA/NCA chart and SPOC observations.

The observations included in the PCA/NCA chart are those that are relevant to the needs of patients receiving PCA/NCA. Observations are presented in the same order in which an assessment of the patient with a PCA/NCA should occur.

A PAIN SCORE which is to be determined with the patient at rest and with relevant movement (such as deep breathing and coughing for a patient post laparotomy) utilising the most appropriate paediatric pain assessment tool either the:

- FLACC or FLACC-R
- Face Pain Scale
- Visual Analogue Scale.

The pain scale used needs to be identified with the first set of observations, and all subsequent pain assessments ***must use*** the same pain scale for this patient.

- Pain score at rest to be recorded with the letter 'R'
- Pain score with movement to be recorded with the letter 'M'

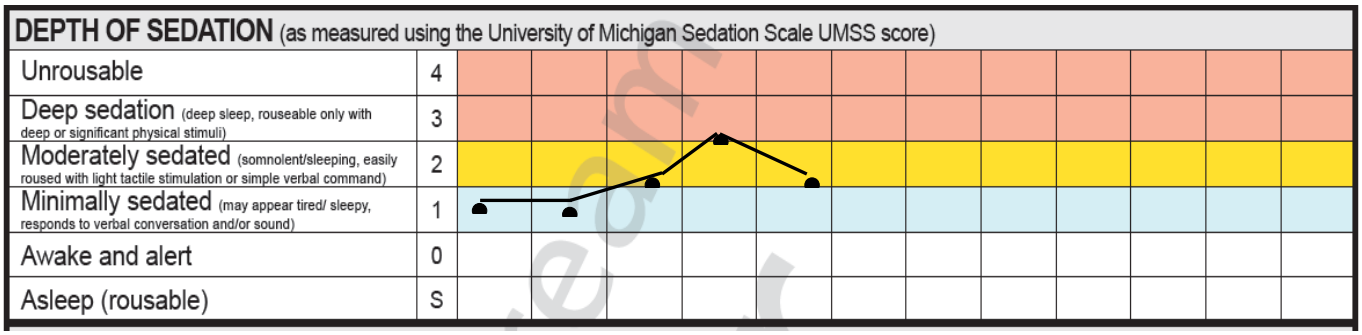
DATE			*05/10/14*										
TIME			1100	1200	**1500**	1400	1500						
PAIN SCORE Assess pain both at rest and with relevant movement (e.g. deep breathing, coughing). **Document "R" for rest and "M" for movement**													
Pain Scale used: ☐ FLACC ☐ Pain Faces ☐ Visual Analogue ☐ FLACC-R	Severe pain	10					M						
		9											
		8				M							
		7					R						
	Moderate pain	6			M								
		5				R							
		4	M										
	Mild pain	3			R								
		2	R										
		1											
	No pain or asleep	0		R									

A SEDATION SCORE which is the most sensitive indicator for clinical deterioration associated with the administration of opioids. Respiratory depression is almost always preceded by increasing sedation.[3] 'track

and trigger' colour codes have been incorporated to assist staff in recognising increasing sedation and to prompt appropriate clinical management of the patient. The Paediatric PCA/NCA chart incorporates the validated paediatric tool, the University of Michigan Sedation Score (UMSS):

- **4 - Unrousable**
- **3 - Deep sedation** (deep sleep, rousable only with deep or significant physical stimuli)
- **2 - Moderately sedated** (somnolent/sleeping, easily roused with light tactile stimulation or simple verbal command)
- **1 - Minimally sedated** (may appear tired/ sleepy, responds to verbal conversation and/or sound)
- **0 - Awake and alert**
- **S - Asleep (rousable)**

Observations for sedation scores are to be recorded graphically so that trends can be monitored (tracked). If a patient's observations enter the Blue, Yellow or Red Zones, the instructions on the front page explain the required appropriate response from clinicians.



PCA/NCA DELIVERY OBSERVATIONS are to be recorded hourly with values recorded for the following:

- The PCA DELIVERY section of the form relates to the total primary PCA dose, background infusion rate per hour, total demands, successful demands
- ADVERSE REACTIONS - pruritus, nausea or vomiting that require a YES or NO response.
- Comments/ Actions
- Assessor's Initial

TWO initials for change of PCA/NCA program, clinical handover, transfer of care or syringe/bag change

Frequently Asked Questions

1. Is this chart mandatory for all paediatric patients receiving a PCA/NCA?

The Paediatric PCA/NCA chart is a statewide chart endorsed by the NSW State Forms Management Committee and as such is mandatory use in NSW. Currently the only exceptions are for Specialist Children's Hospitals in NSW for whom the chart is not mandatory.

2. Why is there no space to prescribe an 'hourly or 4 hourly limit'?

Available evidence states that no benefit can be attributed to dose limits for PCA. The setting of a limit can give staff a false sense of security where they may believe that the patient cannot receive an excessive dose of a drug. The setting of a dose limit cannot compensate for any shortcomings in monitoring. Hourly or four hourly limits are also not present on all machines. [3, 4]

3. Why can't naloxone be a 'standing order'?

A naloxone standing order would require each hospital using PCA to write a protocol covering all issues surrounding the medication order and administration, implementation and accreditation. A standing order also requires annual review by the appropriate network/area drug and therapeutics committee. This process was considered labour intensive in contrast to a prescription that can be completed for individual patients.

Facilities may have a 'Naloxone standing order' – see your local PCA policy or procedure to confirm.

4. Why is there no space to record respiratory rate or oxygen saturations on the Paediatric PCA chart?

All observations including respiratory rate and oxygen saturations are to be recorded on the appropriate SPOC (which is mandated) to prevent duplication and to ensure signs of deterioration are alerted for children of different ages.

Relevant Policy Directives and References

1. NSW Health. Recognition and Management of the Patient who is Clinically Deteriorating PD 2013_049.

2. NSW Health. Medication Handling in NSW Public Health Facilities PD2013_043.

3. Macintyre PE & Schug SA. (2015) *Acute Pain Management a Practical Guide*. 4th ed. Saunders Elsevier: Edinburgh.

4. Macintyre PE, Schug SA, Scott DA, Visser EJ, Walker SM; APM: SE Working Group of the Australian and New Zealand College of Anaesthetists and faculty of Pain Medicine (2010), *Acute Pain Management: Scientific Evidence* (3rd edition), ANZCA & FPM, Melbourne

5. Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine (ANZCA) Bulletin December 2009.

6. Clinical Excellence Commission. CLINICAL FOCUS REPORT: Patient Controlled Analgesia, 2013 http://www.cec.health.nsw.gov.au/__data/assets/pdf_file/0009/259209/patient-safety-report-pca-web.pdf

FACTSHEET

A factsheet for children/ parents/ carers on PCA and NCA is available from SCHN at:
http://www.schn.health.nsw.gov.au/files/factsheets/analgesia_-_patient_or_nurse_controlled_-en.pdf

For further information regarding implementation of the PCA chart you can contact:

- The clinical nurse consultant /specialist/registered nurse from your Paediatrics or Acute Pain Service or education department
- The consultant anaesthetist from your Acute Pain Service or equivalent team who manage patients with PCA
- Jenni Johnson, Pain Management Network Manager, Agency for Clinical Innovation
  jenni.johnson@health.nsw.gov.au Ph: 8644 2186 Mob: 0467 772 406
- Catherine Jones, Paediatric Healthcare Team, Office of Kids and Families cjone@doh.health.nsw.gov.au
  Ph: 9424 5978

Comments and suggestions for chart design modifications can be made using the **Feedback Register Form** and sent to Jenni Johnson (ACI) jenni.johnson@health.nsw.gov.au