Local Guideline

Brain Injury Management (Severe)

Sites where Local Guideline applies	JHCH
This Local Guideline applies to:	
1. Adults	No
2. Children up to 16 years	Yes
3. Neonates – less than 29 days	No
Target audience	All clinical staff who care for paediatric patients within JHCH
Description	This document provides a guide to the management a paediatric patient with a severe level of brain injury during the acute phase of treatment

Hyperlink to Guideline

National Standards	NS 1, 2, 3,
Keywords	Brain injury, head injury, special, specialling,
Document registration number	JHCH 9.1
Replaces existing document?	No

Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:

- NSW Health Policy Directive 2017_032 Clinical Procedure Safety
- NSW Health Policy Directive PD 2017_013 Infection Prevention and Control Policy
- NSW Health Policy IB2020_010 Consent to Medical and Health Care Treatment Manual .pdf
- HNELHD PD2019_020_PCP_1_Clinical_Handover_-_ISBAR.pdf
- NSW Health Policy Directive PD2011_024 Child and Infant Acute Management of Head Injury
- HNELHD_CG_20_26_Enhanced_Supervision_1-1_Special_Cohort_Special.pdf

Local Guideline note	This document reflects what is currently regarded as safe and appropriate practice. The guideline section does not replace the need for the application of clinical judgment in respect to each individual patient but the procedure/s **require mandatory compliance**. If staff believe that the procedure/s should not apply in a particular clinical situation they must seek advice from their unit manager/delegate and document the variance in the patient's health record.
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Note: Over time links in this document may cease working. Where this occurs please source the document in the PPG Directory at: http://ppg.hne.health.nsw.gov.au/

Risk statement

Agitation, confusion, disorientation, incompleteness of thought and action, reduced inhibition and judgement are all characteristics of patients with a traumatic brain injury. As a result the risks to these patients, family and staff include unsafe ambulation, agitation and aggression. To manage this risk controlling the environment and interventions described in this guideline are aimed at making the environment safe and quiet and minimising sources of stimulation.
Risk Category*:* *Clinical Care & Patient Safety*

Glossary

Acronym or Term	Definition
PTA	Post-Traumatic Amnesia
TBI	Traumatic Brain Injury
ADL	Activities of Daily Living
PBIRT	Paediatric Brain Injury
CNC	Clinical Nurse Consultant

Guideline

This Guideline does not replace the need for the application of clinical judgment in respect to each individual patient.

Target Group

This guideline is to be applied to all patients with a severe brain injury according to the Severity of Injury scale below:

Severity of injury	Lowest Glasgow Coma Scale	Length of LOC	Duration of PTA
Mild	13-15	0-30mins	1hr
Moderate	9-12	30mins - 24 hrs	24hrs
Severe	3-8	More than 24hrs.	7 days or more

Source: Adapted from Sydney Cognitive Development Centre 2020

Patient Assessment

The length of time it takes to recover after a brain injury is different for each person. It is difficult for the rehabilitation team to know exactly how long recovery will take, especially at the beginning. Recovery is usually fastest in the early weeks and months.

The Ranchos Los Amigos Scale is used to describe the cognitive functioning of the patient during recovery after a brain injury. When a patient is recovering from a brain injury, they may go through some or all of the stages. It is important to remember that the child may show signs from more than one level at a time and in this case the care plan should be based on the lowest level. Patients can also regress especially if there are changes in status such as the following:

- General anaesthetic/sedation
- Changes in medication
- Receiving treatments requiring <30 minutely interventions

Clinical assessment of patients with a severe brain injury should occur with every contact with all health care professionals and the scale applied at any point of care. If there are any indications that the patient has entered a different level the treating team should be notified as soon as possible (or medical team out-of-hours). Patients care plans should be updates according. A regression for the patient in the Ranchos Los Amigos Scale can indicate a complication, such as hydrocephalus, infection or other medical issues and this needs to be assessed immediately. At a minimum a patient with a severe brain injury should be assessed using this scale at the beginning of every shift by the nursing staff and documented in the patient's medical record.

Rancho Los Amigos Scale

Stage 1 (No response)

- The child or young person appears to be in a deep sleep and doesn't respond to sounds or stimulation. This is referred to as ‘coma’.
- While in coma, the brain is not functioning at the normal level. There is a limited ability to take in information or respond to light, sound or touch.

Stage 2 (Generalised response)

- The child or young person begins to react to loud noises or painful sensations by making noise or moving their arms or legs. This response may not happen often and they may still appear to be asleep most of the time.

Stage 3 (Localised response)

- The child or young person may respond by moving away from uncomfortable procedures such as injections.
- They may turn towards sounds or try to watch people around them.
- The person may respond to simple instructions such as 'close your eyes'.

Stage 4 (Confused - agitated)

- Behaviour is variable during this stage. The child or young person may be inactive or restless, loud or agitated. Though this can be distressing, it is important to remember that they cannot control this behaviour.
- The child or young person may be confused and try to wander. They may need to be watched closely during this time as they may not know where they are going.
- Their attention span is short and they may forget things that have happened to them.
- Although they are more aware of what is going on, they can't make sense of it all.

Stage 5 (Confused - inappropriate)

- Children and young people are usually calmer at this stage and can do simple things for themselves.
- They may become agitated if they are overstimulated or asked to do something they can't do.
- They will start to talk more clearly, but what they say might seem inappropriate.

Stage 6 (Confused - appropriate)

- The child or young person may still be confused but will be starting to behave more appropriately.
- They will start to have memories of simple day-to-day things such as the names of staff.
- They may be able to work at tasks in therapy sessions for longer periods.

Stage 7 (Automatic - appropriate)

- The child or young person is able to do normal activities with only a little help.
- They may be able to learn things but may find it slower and harder than before.
- The child or young person gets tired easily.

Stage 8 (Purposeful - appropriate)

- The child or young person is able to recall past information and recent events.
- They may better understand what has happened to them and may get upset.
- They may still have changes in their thinking, concentration, memory and social skills compared to before the accident.

Nursing Management

Stages (AA)	**Nursing Management**
Stage 1-3	•Consider the need for nursing special based upon the patient's needs and acuity of the ward (decision should be made in consultation with treating team and ward NUM or After Hours Bed Manager outside of working hours). •Consider the need for patient restraint to ensure safety of patient as well as staff (The use of restraint requires medical sign off, should be reviewed every 24 hours and documented in the patient's medical record). •Provide a single room if possible •Quiet, low stimulus environment •Give frequent rest periods •Limit to 1-2 visitors •Remove excess furniture from the patient's room •Keep the room dark •Speak to the patient in a low quiet voice that is non-threatening one person at a time •Speak in simple short sentences to minimise confusion •Patient should be placed in a bed in close proximity to the nurses' station with clear site to patient. •Bedside curtains are to remain open to provide a clear view of the patient at all times (Bedside curtains are closed if patient is undergoing an ADL, examination or clinical intervention where modesty is required. The staff member/s must remain with the patient during this time while the bedside curtains are closed and restore a clear view of the patient upon completion of the intervention.
Stage 4-5	•Consider the need for nursing special based upon the patient's needs and acuity of the ward (decision should be made in consultation with treating team and ward NUM or After Hours Bed Manager outside of working hours). •Consider the need for patient restraint to ensure safety of patient as well as staff (The use of restraint requires medical sign off, should be reviewed every 24 hours and documented in the patient's medical record). •Nurse patient in bed in lowest possible position to floor •Provide a single room if possible •Quiet, low stimulus environment •Give frequent rest periods •Limit to 2-3 visitors •Remove excess furniture from the patient's room •Keep the room dark •Speak to the patient in a low quiet voice that is non-threatening one person at a time •Speak in simple short sentences to minimise confusion •Patient should be placed in a bed in close proximity to the nurses' station with clear site to patient. •Bedside curtains are to remain open to provide a clear view of the patient at all times (Bedside curtains are closed if patient is undergoing an ADL, examination or clinical intervention where modesty is required. The staff member/s must remain with the patient during this time while the bedside curtains are closed and restore a clear view of the patient upon completion of the intervention

Stage 6-8	•Encourage socialisation •Consider patient attending hospital school •Consider 4 bedded room •Rehab to be scheduled with focus on reintegration to routine

Specialling:

Agitation, confusion, disorientation, incompleteness of thought and action, reduced inhibition and judgement are all characteristics of patients with a traumatic brain injury. As a result the risks to these patients, family and staff include unsafe ambulation, agitation and aggression which can lead to harm to self and others and increase risk of falls. For these reasons patients who are clinically assessed to fall within stages 1 to 5 of the Rancho Los Amigos Scale require 1:1 nurse specialling.

Implementation and monitoring compliance

1. The guideline will be available through the HNELHD PPG Directory.
2. Education regarding the importance of using the IIMs system to record any unsatisfactory outcomes and documentation requirements for recoding the screening process will also be attended as part of the Brain injury management guideline education program.
3. Compliance will be reviewed through CYPF Falls auditing tool and IIMS tracking and reporting.

Appendices

Appendix 1: Strategies for Nursing Staff Intervention for Ranchos Level I, II or III

Appendix 2: Clinical Audit Tool

References

Brain injury clinic at the Sydney Cognitive Development Centre,

http://scdcentre.com/traumatic-brain-injury/

NSW Health Policy Directive PD2011_024 Child and Infant Acute Management of Head Injury

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Feedback

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Appendix1: Strategies for Nursing Staff Intervention for Ranchos Level I, II or III

When relating to a person at Rancho Levels I, II, or III, therapists, nursing staff, family and friends should:

- Use calm, reassuring tones, and in a normal tone of voice
- Tell the person what you are going to do before you do it. For example, "I'm going to move your leg."
- Speak in short phrases, keeping comments and questions short and simple. For example, instead of saying, "Can you turn your head to me?" say, "Look at me."
- Allow the person extra time to respond. Sometimes responses are inconsistent, do not always occur, or are not correct.
- Have one person speak at a time.
- Tell the person who you are, where they are, why they are in the hospital, and what day it is.
- Speak in concrete terms. Discuss things that are happening near the person.
- Bring in favourite belongings and pictures of family members and close friends.
- Discuss with treating team options for bringing in familiar activities, such as favourite music, talking about family and friends, reading favourite magazines or books out loud, watching favourite TV shows or videos to stimulate senses and memory.
- Gently massage lotion on the person's arms, legs, back and stomach. This not only increases the person's tactile awareness but helps prevent skin breakdown.
- Touch the person on the face, arm, or leg with various textures like a wash cloth, fuzzy toy, flannel, plastic, rubber, etc. for sensory stimulation.
- Use a variety of soaps, fragrances and lotions to stimulate smell.
- Keep a notebook nearby for family and visitors to sign. Instruct them to log in any noticeable responses to stimuli.
- Limit the number of visitors to 2-3 at a time.
- Limit visiting times where appropriate.
- Keep the room calm and quiet.
- Maintain rest periods.
- Always assume the person with brain injury can understand what is being said. Never discuss subjects that may be upsetting in front of the person.

Strategies for Nursing Staff Intervention for Ranchos Level IV

Family members should not interpret the agitation and confusion as regression, but rather as progress. The individual is not aware of what he/she is doing and is likely to remember little of this period of time.

When relating to a person at Rancho Level IV, therapists, nursing staff, family and friends should:

- Tell the person where they are and reassure them that they are safe.
- Bring in family pictures and other personal items. These may make the person feel more comfortable as well as stimulate memory.
- Allow the person as much movement as is safely possible; Take person for rides in a wheel chair, if ambulatory take the person for short walks in a safe environment, if permitted.
- Do not force the person into activities; allow the person to choose activities, listen to them and follow their lead, as safely as possible.

- Provide frequent rest breaks and change activities to minimize episodes of increased restlessness and agitation.
- Keep the room quiet and calm. For Example turn off the TV and radio, don't talk too much and use a calm voice.
- Experiment to find familiar activities that are calming to the person such as listening to music, eating etc.
- Limit visitors to 2-3 at a time.

Strategies for Nursing Staff Intervention for Ranchos Level V

When relating to a person at Rancho Level V, therapists, nursing staff, family and friend should:

- Avoid a tendency to reward or play into inappropriate behaviour.
- Use redirection and distraction to stop inappropriate behaviour. Due to cognitive limitations, reasoning at this stage is not successful, but redirection is often easy and effective, since the patient is so easily distracted.
- Positively reinforce/ recognise appropriate behaviour.
- Repeat questions or comments as needed. Not assume that the person will remember what you tell them. Persons at Rancho Level V often require frequent repetition.
- Keep comments and questions short and simple.
- Remind the person of day, date, name and location of the hospital; as well as why they are in the hospital.
- Help the person get organised for tasks and activities.
- Bring in familiar pictures and personal objects from home.
- Limit visitors to 2-3 at a time.
- Give patient frequent rest periods when they have trouble paying attention.
- Limit the number of questions you ask. Try not to 'test' the patient by asking a lot of questions.
- Help the patient connect what they remember with what is currently going on with their family, friends and favourite activities.
- Get the family to reminisce about familiar and fun past activities.

Strategies for Nursing Staff Intervention for Ranchos Level VI

When relating to a person at Rancho Level VI, therapists, nursing staff, family and friends should:

- Expect the person to be unaware of their deficits and the need for increased supervision and rehabilitation. They may insist nothing is wrong with them and that they can go home and resume their usual activities.
- Realise that redirection is not always effective and arguments can be frequent and prolonged.
- Understand that the person may react to their head injury in a non-emotional manner and may appear not to care that they are injured. Family should know that this behaviour is related to their stage of recovery.
- Realise frequent repetition may be necessary.
- Repeat things. Discuss things that have happened during the day to help the person improve their ability to recall what they have been going and learning.
- Encourage the patient to repeat information that they need and want to remember.
- Write down in a diary/ journal daily and encourage the patient to write down something about what they have done each day.

- Help with starting and continuing activities.
- Encourage the patient to participate in all therapies, they may not fully understand the extent of their problems and the benefits of therapy.

Strategies for Nursing Staff Intervention for Ranchos Level VII and VII

When relating to a person at Rancho Level VII and VIII, therapists, nursing staff, family and friend should:

- Encourage socialisation.
- Consider patient attending hospital school.
- Rehab to be scheduled with focus on reintegration to routine

- Treat the patient in the same way as they did before the brain injury. For example, provide guidance and assistance in decision-making but respect the individual's opinions.
- Speak with normal speech patterns and vocabulary. Simple words or phrases are no longer needed.
- Be careful about teasing or using slang, as the individual may misperceive intentions. Sometimes humour is not understood.
- Talk through problems about the person's thinking skills, problem solving or memory challenges without criticising. Reassure the individual that problems may persist because of the brain injury.
- Encourage person to use note taking to help with memory deficits.
- Discuss situations where the patient may have had difficulty controlling emotions.
- Talk with the patient about feelings and offer outside support such as counselling and/or support groups.
- Encourage the patient to do their self-cares and other activities of daily living.
- Talk with the patient about their feelings.

Appendix 2: Clinical Audit Tool

(**National Standard 1:** 1.7.2 The use of agreed clinical guidelines by the clinical workforce is monitored)

Criterion no.	Criterion	Exceptions	Data source	Frequency	Position Responsible
1	To minimise the risk of further injury or harm to children with a severe traumatic brain injury, their families and the staff involved in their care.	None	IIMS data	12 monthly	Paediatric Brain Injury CNC