Protocol For The Administration Of Oral / Rectal Ibuprofen By Nursing Staff at Triage in Children’s Health Ireland Emergency Department / Urgent Care Centre @ Crumlin, Temple Street and Connolly

Version 1

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Group Review of Terms of Reference 6 month Pilot

Committee Review History

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1.0 Introduction

Pain is a common symptom among Paediatric patients presenting for triage in Emergency Departments or Urgent Care Centers and early pain management can improve the quality of the patient experience while waiting for acute assessment and management. In addition, early administration of antipyretics in children presenting with a fever ≥ 38° Celsius can increase patient comfort and reduce parent anxiety.

1.1 Aim of the protocol

The aim of this protocol is to expedite antipyretic/analgesia therapy for children presenting to a Paediatric Emergency Department (PED) or Urgent Care Centre (UCC) in the Children’s Health Ireland (CHI) with mild to moderate pain and/or pyrexia and to establish a standard of best practice for the safe preparation and administration of oral/rectal ibuprofen at triage by nursing staff.

1.2 Scope of the protocol

This protocol sets out the guidance for the preparation and administration of oral / rectal ibuprofen by triage nurses in a PED or UCC.

2.0 Applicable to

This protocol is applicable to:

- Nurses that fulfill the following criteria:
  - Registered nurse (RGN and/or RCN)
  - Have successfully completed Irish Children’s Triage System training and competencies in the Department of Paediatric Emergency Medicine
  - Have received training and competencies for the ‘Protocol for the Administration of Paracetamol by Nursing Staff in Triage’ (At the discretion of the CNF/CEF and CNM3 in the Department of Paediatric Emergency Medicine)
  - Has up-to-date certificate in medication safety management training

- Clinical Nurse Managers, Clinical Nurse Facilitators/ Educators, Community Liaison Nurses, Shift Leaders in the CHI Department of Paediatric Emergency Medicine
- Advanced Nurse Practitioners in the CHI Department of Paediatric Emergency Medicine
- Consultant and NCHD staff in the CHI Department of Paediatric Emergency Medicine

This protocol does not apply to:

- Nursing students
- Internship nursing students
- Higher Diploma in Children’s Nursing students
- Staff other than those in the Department of Emergency Medicine
Definitions and Abbreviations:
Abbreviations used in this protocol include:
- mg – milligram
- g – gram
- mL – millilitre
- kg - kilogram

3.0 Authorisation
This protocol is authorised for use by CHI Department of Paediatric Emergency Medicine staff only.

4.0 Specific Staff Responsibilities

a. Staff included within the scope of this protocol, as outlined above, are responsible for the administration of the medication.
b. A validated pain assessment tool (Appendix 1) must be utilised in triage if using ibuprofen to manage pain.
c. It is important for the nurse to consider the use of other non-pharmacological techniques to relieve pain. These may include immobilization, elevation of a limb or cryotherapy.
d. Use of ibuprofen as an antipyretic agent should be considered in children with a fever who appear distressed or unwell. However, paracetamol is recommended as first line analgesic / antipyretic and should be administered first line. Please refer to the Protocol for the administration of oral/rectal paracetamol by nursing staff at triage in the CHI Department of Emergency Medicine.
e. Parents/guardian should be advised to inform the nurse if any adverse effects are experienced post administration.

5.0 Procedure for Administration of Ibuprofen

5.1 Inclusion Criteria
- **One single dose ONLY** is permitted to be administered in accordance with this protocol.
- Patients must ≥ 3 months
- No other ibuprofen or other non-steroidal anti-inflammatory containing product has been administered in the previous 6 hours and the maximum daily dose has not/will not be exceeded.
- Temperature ≥ 38° Celsius OR where relevant, a pain score is identified on a validated pain score tool translating to mild to moderate pain (<6/10) (Appendix 1).
- Patient does not have an existing co-morbidity or receiving any regular prescribed medication
5.2 Exclusion Criteria

- Patients with varicella zoster infection (chicken pox) due to the increased risk of adverse skin reactions with non-steroidal anti-inflammatory agents.
- Allergy to ibuprofen or any of the excipients in product used.
- Patients who have previously shown hypersensitivity reactions (e.g. asthma, rhinitis, angioedema or urticaria) in response to ibuprofen, aspirin or other non-steroidal anti-inflammatory drugs (NSAIDs).
- Active or a history of recurrent peptic ulcer/haemorrhage (two or more distinct episodes of proven ulceration or bleeding).
- Patients receiving either anticoagulant (e.g warfarin, tinzaparin, enoxaparin, unfractionated heparin) or anti-platelet medications (e.g aspirin, clopidogrel) due to the increased risk of bleeding.
- If the nurse has any concerns regarding the administration of ibuprofen to a patient, he/she should contact a medical practitioner/registered nurse prescriber regarding appropriate therapy.
- Patients with existing co-morbidities or those receiving regular prescribed medication.
- Patients with any degree of / suspicion of renal impairment.
- Dehydration.

5.3 Cautions

Drug Interactions:
Despite the exclusion of patients on concurrent regular medications, the following drug interactions should be noted:
Avoid in patients receiving aminoglycosides, ACE inhibitors / Angiotensin II Antagonists, cardiac glycosides, diuretics, lithium, methotrexate, ciclosporin, probenecid, oral hypoglycaemic agents, zidovudine, corticosteroids and SSRIs (selective serotonin reuptake inhibitors).

This list is not exhaustive. For full details contact Pharmacy or see SPC www.hpra.ie

Potential Adverse effects:
Gastro-intestinal disturbances including discomfort, nausea, diarrhoea, and occasionally bleeding and ulceration may occur.

All NSAIDs have the potential to worsen asthma, either acutely or as a gradual worsening of symptoms.

Hypersensitivity reactions, headache, dizziness, vertigo, hearing disturbances such as tinnitus, photosensitivity, and haematuria. Blood disorders have also occurred. Fluid retention may occur (rarely precipitating congestive heart failure); blood pressure may be elevated.
Renal failure may be precipitated, especially in patients with pre-existing renal impairment.

**Overdose:**
Immediate medical advice should be sought in the case of overdose.

For specific management of ibuprofen overdose consult the National Poisons Information Centre 01 8092566. Information is also available on Toxbase © via the National Poisons Information Centre Website https://www.poisons.ie/Professionals.

**Action in event of adverse reaction:**
- Inform relevant doctor on duty of adverse reaction. The patient should be reviewed by the relevant doctor and a plan of action documented and completed.
- Monitor patient closely and record vital signs as necessary.
- Document adverse reaction in patient notes.
- Inform the patient and/or parent/guardian of what has happened.
- Refer to CHI medication policy
- A medication incident form should be completed.

**Action in even of an error or near miss:**
Complete incident form and follow local medication error reporting process.

### 5.4 Preparation and Administration of Ibuprofen

- Patient must be ≥ 3 months
- The patient must be weighed
- The triage nurse then makes a clinical decision if the patient reaches the criteria for inclusion under this protocol.
- The triage nurse must determine:
  - the patient’s allergy status and if there is any contraindication to ibuprofen (see exclusion criteria) that the patient has not taken ibuprofen in the last six hours, or three times in the last 24 hours (or another NSAID in the last 8 hours (or has not taken ibuprofen 3 times in the last 24 hours)
- The triage nurse calculates dose of ibuprofen (as outlined in Table 1 & Table 2 below).
- In discussion with the child/parent, a decision is made as to whether to administer ibuprofen
• The triage nurse documents clearly: Date, time amount of medication administrated to the patient either electronically on symphony or manually on ED document medication section of the medication in the triage section in Symphony as follows: / paper triage Kardex in ED
• The triage nurse obtains the medication from the locked medication cabinet in triage room.
• The triage nurse confirms the patient’s identification with the patent/guardian and the identification wristband by checking a minimum of three identifiers: full name, date of birth and medical record number (MRN). The patient’s name and date of birth are confirmed with the parent/guardian (and in addition with the patient where appropriate).
• The triage nurse administers the appropriate medication to the patient
• The triage nurse gives an explanation to patient and/or parent/guardian regarding the use of ibuprofen:
  - Advice to parent(s)/carer(s) if purchasing ibuprofen to not exceed the stated dose.
  - Parent(s)/carer(s) should be advised not to administer other ibuprofen containing products or other non-steroidal anti-inflammatory medications concurrently.
  - Advice given that if the patient has any reaction to the ibuprofen to attend their GP or an Emergency Department/Urgent Care Centre.
• Any incidents / good catches / near misses should be reported via Respond

Any patient who falls within the exclusion criteria or who declines ibuprofen should be referred to a doctor on duty to have appropriate analgesia/antipyretic prescribed. This must be documented clearly to ensure complete and accurate record of all doses administered.

5.5 Dosage

• A single dose (MAX DOSE) may be administered in accordance with this protocol.
  • Liquid ibuprofen medicines should be given with a suitable measuring device (graduated oral syringe).
  • Suppositories must not be cut.
  • Weight-banded doses detailed in Table 1 (Oral Doses) & Table 2 (Rectal Doses) below
  • All oral doses are in the range 5 – 10mg/kg, in accordance with licensing.
  • No dose exceeds 10mg/kg as per CHI at OLCHC formulary
Table 1: Oral Ibuprofen Dosing

<table>
<thead>
<tr>
<th>Weight (kg)</th>
<th>Dose of oral Ibuprofen</th>
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<tr>
<td>5 to &lt;10kg</td>
<td>50mg</td>
</tr>
<tr>
<td>10 to &lt;17kg</td>
<td>100mg</td>
</tr>
<tr>
<td>17 to &lt;20kg</td>
<td>150mg</td>
</tr>
<tr>
<td>20 to &lt;40kg</td>
<td>200mg</td>
</tr>
<tr>
<td>40kg to &lt;60kg</td>
<td>300mg</td>
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<tr>
<td>60kg and over</td>
<td>400mg</td>
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Table 2: Rectal Ibuprofen Dosing

<table>
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<tr>
<th>Weight (kg)</th>
<th>Dose of Rectal Ibuprofen</th>
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<tr>
<td>6 to &lt;12kg</td>
<td>60mg (Nurofen® suppository)*</td>
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<tr>
<td>≥12kg</td>
<td>Not suitable. See Footnote**</td>
</tr>
</tbody>
</table>

*For infants 6 – 8kg, no further dose should be given for eight hours
For infants 8 – 12kg, no further dose should be given for six hours

**Available suppositories (60mg) are suitable for children < 12kg. For children >12kg, an alternative NSAID (e.g. diclofenac) is available. This will require a prescription to be written. Administration of an alternative NSAID is not covered as part of this medication protocol.

Products Available:
- Nurofen® for children 100mg/5mL
- Melfen 200mg tablets
- Melfen 400mg tablets
6.0 Instruction for Storage and Handling of Ibuprofen
To be stored in a locked cabinet in the triage room or locked medicine cabinet in the PED or the automated dispensing cabinet in the UCC; triage nurses to hold the key or swipe access as applicable.

7.0 Roles and Responsibilities
7.1 Nurses
Nurses must fulfill the following criteria:
- Registered nurse (RGN and/or RCN)
- Have successfully completed Irish Children’s Triage System training and competencies in the Department of Paediatric Emergency Medicine
- Have received training and competencies for the ‘Protocol for the Administration of Paracetamol by Nursing Staff in Triage’ (At the discretion of the CNF/CEF and CNM3 in the Department of Paediatric Emergency Medicine)
- Has up-to-date certificate in medication safety management training

7.2 Clinical Nurse Managers
It is the responsibility of all Clinical Nurse Managers in the Department of Paediatric Emergency Medicine to:
- Ensure that nurses are aware of this protocol
- Ensure that all nurses within their area(s) of responsibility attend all relevant training prior to using this protocol

8.0 Implementation and Education Plan
This protocol will be disseminated using existing communication structures within the CHI

9.0 Evaluation and Audit
As a pilot, an audit will be carried out within 6 months of commencement to validate adherence to this protocol and evaluate metrics and safety. This audit will be carried out in collaboration by Pharmacy and Nursing from the participating departments.
Appendix 1:
Pain Assessment Tools to be used –, FLACC, Wong Baker Faces, Manchester Pain Ladder

### FLACC BEHAVIOURAL PAIN ASSESSMENT TOOL FOR USE IN CHILDREN 2 MONTHS to 7 YEARS

<table>
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<th>CATEGORIES</th>
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<tr>
<td>FACE</td>
<td>No particular expression or smile</td>
<td>Occasional grimace or frown withdrawn, disinterested</td>
<td>Frequent to constant quivering chin, clenched jaw</td>
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<td>LEGS</td>
<td>Normal position or relaxed</td>
<td>Uneasy, restless, tense</td>
<td>Kicking, or legs drawn up</td>
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<tr>
<td>ACTIVITY</td>
<td>Lying quietly, normal position, moves easily</td>
<td>Squirming, shifting back and forth, tense</td>
<td>Arched, rigid or jerking</td>
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<tr>
<td>CRY</td>
<td>No cry (awake or asleep)</td>
<td>Moans or whimpers; occasional complaint</td>
<td>Crying steadily, screams or sobs, frequent complaints</td>
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<tr>
<td>CONSOLABILITY</td>
<td>Content, relaxed</td>
<td>Reassured by occasional touching, hugging or being talked to, distractible</td>
<td>Difficult to console or comfort</td>
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*Figure 1: FLACC Behavioural Pain Assessment Tool*
Figure 2: Wong-Baker FACES Pain Rating Scale

Figure 3: Manchester Pain Ruler Scale
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