



Crumlin | Temple Street | Tallaght | Connolly

**Children's Health Ireland Nursing Standard Operating Procedure  
for Ambulatory Hyper hydration in the National Children's Cancer Services**

<b>Area of use:</b>	All of organisation <input type="checkbox"/>	CHI at Connolly <input type="checkbox"/>	CHI at Crumlin <input checked="" type="checkbox"/>
		CHI at Tallaght <input type="checkbox"/>	CHI at Temple Street <input type="checkbox"/>
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<b>Approved by &amp; title:</b>	Nursing Documentation Approval Committee		
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**Version History**

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Please note practice variation

## Contents

1.0	Introduction .....	3
2.0	Purpose of the guideline .....	3
3.0	Definition of terms .....	3
4.0	Applicable to .....	3
5.0	SOP .....	3
6.0	Implementation plan.....	6
7.0	Monitoring and evaluation.....	7
8.0	Key Stakeholders.....	7
9.0	Communication and training.....	7
10.0	References .....	8

## 1.0 Introduction

This document details the standard operational policy (SOP) management for the provision of ambulatory hydration for selected eligible patient cohorts within the National Children’s Cancer Services (NCCS) at Children’s Health Ireland (CHI) at Crumlin. Using Ambulatory Care for hyperhydration of patients will facilitate the post medication hyperhydration of suitable patients, allowing them to be cared for at home or closer to home.

## 2.0 Purpose of this SOP

The purpose of this SOP is to guide staff in this RANP led Multidisciplinary initiative that will provide an ambulatory home hydration infusion programme for hyperhydration in suitably assessed patients in the Haem-oncology service initially. Supporting the patient in their care at home or closer to home has been seen to be popular and positively evaluated by previous users (Carecentrix, 2018)

## 3.0 Definition of terms

AC	Ambulatory Care
CHI	Children’s Health Ireland
CTCAE	Common Terminology Criteria for Adverse Events
HODU	Haemoncology Day Unit
IV	Intravenous
MDT	Multidisciplinary Team
NCCS	National Childrens Cancer Services
NCI	National Cancer Institute
PEWs	Paediatric Early Warning System
QOL	Quality of Life
RANP	Registered Advanced Nurse Practitioner
SOP	Standard Operating Procedure

## 4.0 Applicable to

Information contained within this SOP is applicable to many multi-disciplinary team (MDT) members across the NCCS team including medical, nursing, pharmaceutical compounding staff and also Departments of Clinical engineering and Procurement within CHI at Crumlin and as detailed within Table 1.0 as illustrated in Appendix A

## 5.0 SOP

### Requirements

- Infusion pump ( stored in St Johns/HODU store room)
- Backpack for transportation
- 3 litre of IV fluids prescribed and supplied

Action	Rationale and reference
<b>Pre patient enrolment.</b>	
Patients for inclusion will be selected by the consultant	Suitable candidates must be determined to ensure safety and success which requires a balance between clinical assessment and patient/parent/guardian acceptance and willingness (Dit Hawasli et al, 2021).
Initially the patients will be taken from the Haem-oncology service and the service extended. The RANP will go through the process with the patient/parent/guardian.	
<b>Patient Enrolment</b>	
The patient will be admitted as usual for their first dose of medication – high dose methotrexate. Enrollment will commence when a patient has completed their first inpatient course of chemotherapy with no adverse events noted.	To commence the process for the first time in hospital and assist with the education of patients/parents/guardians.
Patient will be admitted the night prior to planned Methotrexate infusion (as is standard of care) and will receive Methotrexate infusion as directed and prescribed the following morning with concurrent hydration (as is standard of care).	
Patient will then commence post hydration regime in 24 hour cycles as directed.	As per usual process flowing the administration of High dose Chemotherapy
Patient and parent will receive verbal, practical and written education pre discharge with relevant contact details provided should they have any questions. Each participant and family will receive a pump Manufacturer Handbook.	To ensure they are aware of how to manage the process the Rep will be in site when first patients commence the programme. Patients will be selected individually based upon capabilities and wishes to participate.
Patient will be discharged later that day following medical and/or RANP review.	
Patients and parent will reside at identified hospital accommodation or at home if residing within the Greater Dublin area for the duration of their treatment in AC. Patients must have a mobile phone, be contactable at all times and have 24hr access to a companion who could drive them into CHI if and when required.	To ensure they are not too far away if they need any help or support or if something goes wrong.
Patient and parent will receive education from Pharmacy staff pertaining to the use of oral medications which must be taken as instructed and to be responsible for the self-administration of their medications whilst being treated in AC. Daily nursing review will include ensuring that medication adherence has been followed as prescribed on the patients' drug chart.	

<p>Pump will be programmed by nursing staff to facilitate continuous 24 hour hyper hydration as prescribed within Systemic Anti-Cancer Therapy protocols as per individual patients at weekly MDT prescribing chart rounds. NB: Pumps can only be accessed by nursing staff.</p>	
<p>The patient parent/guardian will receive all the medication, fluids and equipment they will need to carry out the care in AC</p>	
<p><b><u>Ambulatory Care.</u></b></p>	
<p>Ambulatory care (AC) will be operated within the Haematology Oncology Day Unit (HODU) Monday to Friday from 0800 to 2000. A specific time slot will be provided for daily review with RANP in HODU within a designated area of RANP clinic room. If delays are expected to occur relating to the patient's AC treatment, if appropriate, the patient should be given an appointment to return later that day.</p>	
<p>Daily review will include:</p> <ul style="list-style-type: none"> <li>• PEWS score assessment.</li> <li>• Advanced health assessment.</li> <li>• Weight.</li> <li>• Fluid balance.</li> <li>• Urine analysis (specifically urinary PH).</li> <li>• Biochemistry.</li> <li>• Methotrexate serology levels (at 24/48 and 72 hrs and as indicated thereafter).</li> </ul>	<p>To ensure the patient is tolerating the hyperhydration and that there are no concerns regarding overhydration or fluid overload such as oedema, hypertension or bounding pulse.</p> <p>Assessment of toxicity as per National Cancer Institute (NCI) Common Terminology Criteria for Adverse Events (CTCAE) tool.</p>
<p>All information will be recorded within patient healthcare record and in ambulatory care daily review assessment record.</p>	<p>(NMBI 2015)</p>
<p>If the patient is deemed unwell or their clinical condition deteriorates, he/she will be admitted to the ward to continue care within the in-patient setting.</p>	
<p style="text-align: center;"><b><u>Troubleshooting.</u></b></p>	
<ul style="list-style-type: none"> <li>• Patients and their parent/guardians will have 24 hour access to nursing and medical advice via a direct phoneline to HODU and/or Haematology/Oncology inpatient Services.</li> <li>• At the end of operating hours, RANP will hand over an AC folder listing current AC patients with a short up to date report to shift leader on duty.</li> <li>• Any AC out-of-hours calls will be documented in the Ambulatory hydration folder including any advice given on the handover sheet.</li> <li>• Every morning the nurse holding the AC notes will verbally hand over information along with the handover sheet to RANP.</li> </ul>	
<p><b><u>Safety Considerations.</u></b></p> <ul style="list-style-type: none"> <li>• AC patients will be provided with hospital identity wristbands which are expected to be worn at all times when receiving treatment in ambulatory day care.</li> </ul>	

- If a patient is unwell or requires advice, patients and their companion will be advised to initially contact RANP.
- In the event of an emergency, patients and parents/guardians will be advised to call an ambulance via 999 for urgent medical attention.
- AC patients may be able to participate in activities and events on the unit, depending on their treatment regimen. Participation in any social activity must be agreed by the medical team.
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### **Procedure for Taking Out-of-Hours Calls**

Patients will be assessed daily by RANP to determine whether they are well enough to return to home or [use](#) alternative accommodation overnight. It is however impossible to anticipate all events. Some patients may become unwell overnight and require admission outside of AC working hours.

All AC patients are given the following advice:

Patients are advised to observe and be aware of the following:

- A temperature of 38.5°C on one occasion or temperature >38°C and < 38.4°C on two occasions taken at least 1 hour apart in a 24 hours period.
- Shivers or hot flushes.
- Persistent nausea and or vomiting.
- Persistent diarrhea.
- Reduced urine output.
- Pain around central line site.
- Urinary pH reading of < 7.

Patients are asked to contact the hospital nursing staff if they experience any of the above symptoms, generally feel unwell, or require advice. If the patient feels well enough, they can make their own way to hospital with their carer/companion. If patients feel too unwell to make their way to the hospital, they or their parents/guardians are advised to dial 999 for emergency assistance.

### **Procedure for Patients who DNA.**

- Where possible, every effort will be made to provide AC appointment slots that are mutually convenient for the patient and AC team.
- If patients are unable to meet their appointment time, AC staff will advise them to inform the unit as soon as possible.

## **6.0 Implementation Plan**

- Implementation planning for a new intervention requires effective pre planning and guidance informed by research synthesis and primary data study (local and contextual evidence) (Powell et al, 2015).

Demonstration of knowledge including project and research design, evidence of expertise and experience can assist in positively influencing proposed research (Powell et al, 2015). Planning must be designed in collaboration with knowledge users, providing effective implementation guidance practices (Powell et al, 2015).

- Communication of this SOP and associated documentation will be provided to relevant stakeholders within NCCS with hard written copies provided on St Johns Ward, HODU and within RANP office.
- Education specific to this project has been provided to MDT staff and will continue when the programme commences.

### 7.0 Monitoring and evaluation

Data will be collected with the use of semi structured face to face, one on one interviews and small numbered focus groups with patients, parents and various groups of multi-disciplinary staff involved in the proposed project such as nursing (front line, middle and senior nursing management), consultant paediatric haemato-oncologists and pharmaceutical staff.

This will be performed by RANP leading the project, in collaboration with nursing colleagues based within Ambulatory Services.

### 8.0 Key stakeholders

Name	Grade	Location
Rosemary Clerkin	Clinical Placement Coordinator	CHI Crumlin
Carmel Gallagher	Post Registration Coordinator	CHI Crumlin
Nicola O’ Shea	Senior Librarian	CHI Crumlin
Fionnuala O’ Neill	NPDC	CHJI
Approved at CHI Nurse Practice Committee November 20 <sup>th</sup> 2023		

### 9.0 Communication and training

MDT training has been ongoing with Pump Rep over several months and will continue when the programme commences in collaboration with RANP Project Lead.

## 10.0 References

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## Appendices

Steering Team member	Role
Registered Advanced Nurse Practitioner (RANP)	Project lead of the proposal, senior stakeholder and policy maker. Can positively influence on adoption of intervention into clinical practice (Rogers et al, 2020). Providing early engagement ensures effective dissemination (Greenhalgh et al, 2004) and is vital to success (Proctor et al, 2012).
Consultant Haem-Oncologists	Provision of medical cover, senior stakeholder and policy maker. Can positively influence on adoption of intervention to clinical practice (Rogers et al, 2020).
Assistant Director of Nursing	ADON assigned to haem-oncology directorate. Currently direct line manager of project lead, senior stakeholder and policy maker. Can positively influence on adoption of intervention to clinical practice (Rogers et al, 2020).
Clinical nurse manager 3: Ambulatory services	Involved in the daily operations within ambulatory services, senior stakeholder and policy maker. Can provide positive influence on adoption of intervention to clinical practice (Rogers et al, 2020).



Clinical nurse manager 2: Ambulatory services	Involved in the daily operations within ambulatory services, senior stakeholder and policy maker. Can provide positive influence on adoption of intervention to clinical practice (Rogers et al, 2020).
Patient flow bed manager	Responsible for the logistics of inpatient and ambulatory patient capacity, senior stakeholder and policy maker. Can provide positive influence on adoption of intervention to clinical practice (Rogers et al, 2020).
Clinical Nurse Specialist (CNS)	Is a direct point of contact for patients and families. May liaise with project lead regarding potential patients eligible for this model of care. Can provide positive influence on adoption of intervention to clinical practice (Rogers et al, 2020).
Inpatient ward-based shift leaders	May be a point of contact providing 24 hour ward cover if there are any queries pertaining to this model of care. Can provide positive influence on adoption of intervention to clinical practice (Rogers et al, 2020).
Ward based and ambulatory nursing staff	May be a point of contact providing 24 hour ward cover if there are any queries pertaining to this model of care. Can provide positive influence on adoption of intervention to clinical practice (Rogers et al, 2020).
Clinical Nurse Education Facilitators	May provide education in absence of project lead, senior stakeholder and policy maker. Can provide positive influence on adoption of intervention to clinical practice (Rogers et al, 2020).
Pharmacy staff	Responsible for the procurement and provision of intravenous hyperhydration fluids, senior stakeholder and policy maker. Can provide positive influence on adoption of intervention to clinical practice (Rogers et al, 2020).
Clinical engineering	Responsible for the sourcing of CADD pumps, backpacks and intravenous infusion sets.
Practice Development	Senior policy maker. Must be informed when there is a change within current clinical practice.
Procurement department	Responsible for the application and potential sourcing of funding for the project.
Social work	Will be required to assist with the procurement of accommodation if patients are non-local.
Parent accommodation services	As above
Patient and parent representatives (past and present)	Principle users and potential benefactors of this project who are considered senior stakeholders influencing policy making. The importance of the engagement with and obtaining and understanding their preferences are of utmost value to the successful implementation of the project. Can provide positive influence on adoption of intervention to clinical practice (Rogers et al, 2020).