

**NHS Lothian  
University Hospitals Division  
Royal Infirmary Edinburgh Critical Care  
Protocol for Intrathecal Medicines**

## **1. Introduction**

In the UK there have been fatal errors associated with the administration of intrathecal drugs. Administration of the wrong drug or wrong dose of drug by the intrathecal route is likely to be fatal.

Adherence to this document aims to minimise the risk to patients receiving intrathecal injections within Critical Care at RIE.

This local protocol complies with the Lothian Universities Hospitals Division's (LUHD) Intrathecal Injections section of the Policy and Procedures for Safe Use of Medicines version 2.14 which in turn complies with the Scottish Executive Health Department's 'Guidance on the safe handling of intrathecal and intraventricular injections' (HDL (2006 11), which was issued in February 2006. This local protocol and HDL will be available on the Critical Care intranet site under the neurological section.

<http://intranet.lothian.scot.nhs.uk/Directory/CriticalCare/Pages/Neurological.aspx>

All references to the intrathecal route in this protocol should be read as equally applicable to the intraventricular route.

This protocol does not cover intrathecal cytotoxic chemotherapy.

## **2. Critical Care, RIE protocol**

All ward staff must be aware of the protocol for intrathecal medicines and understand its impact on practice.

This protocol and the Lothian policy for intrathecal injections must be adhered to at all times. If anyone, at any stage, has any doubts regarding his/her responsibilities, then (s)he should contact his/her line manager immediately to seek clarification and further training. Staff must challenge colleagues who are not adhering to the protocol and if necessary report their concerns to their line manager.

Only trained and authorised staff may prescribe, order, collect, deliver, administer or verify the administration of intrathecal medicines.

A list of intrathecal medicines and their usual doses, which are supplied to ward 116/118 from pharmacy can be found in Appendix 1. Intrathecal medicines requested from pharmacy, which are not on this list, require additional pharmacy checks and clinical management team approval, and therefore are subject to negotiable delay in supply.

### 3. Education and Training ([See SOP](#))

Medical and nursing staff on ward 116/118 and supporting neurosurgical staff will receive training appropriate to their level of involvement, in the prescribing, ordering, collecting, delivering or administering of the intrathecal medicines relevant to their area of work. Training plans for all professionals will be held locally by the responsible designated trainers (see below). Information regarding intrathecal therapy will be included in all nurse and doctor induction packs.

As part of their training, staff will be made aware of the dangers associated with the inadvertent administration of intravenous drugs by the intrathecal route, and be made aware of good practice recommendations by reading the following reference:

- The Scottish Executive Health Department's guidance on the safe handling of intrathecal and intraventricular injections HDL (2006) 11 issued in February 2006.

Intrathecal training for doctors and nurses within ward 116/118 is the ultimate responsibility of the Medical Director and Chief Nurse, respectively. However, delegation of this responsibility has been given to a named Critical Care consultant for the training of Critical Care and neurosurgical medical staff involved in the prescribing and administration of intrathecal medicines, and to the senior charge nurse, Critical Care, RIE for the training of nursing staff.

Trainer and trainee will formally document training. The training will cover theory and practice. Once the trainee has been assessed as competent, their name will be placed on the intrathecal register (Appendix 2) by the responsible trainer.

An up-to-date register (accessible via the NHS Lothian Intranet) of personnel authorised to be involved with intrathecal medicines, will be maintained by the responsible trainers for each of their areas. The register will be subject to strict document control.

<http://intranet.lothian.scot.nhs.uk/Directory/MedicinesManagement/DrugsTherapeutics/Intrathecal/Critical%20Care%20Adult%20Intrathecal%20Registers>

It is the responsibility of the trainers to ensure regular review and update of the list of accredited intrathecal practitioners within their area of responsibility.

Personnel on the register must be re-accredited every 2 years.

### 4. Prescribing Intrathecal Medicines ([See SOP](#))

Intrathecal therapies may only be initiated by authorised personnel, namely a consultant intensivist or consultant neurosurgeon who is on the intrathecal register.

On occasion, with the consent of an intensive care (ICU) consultant, a doctor from another area who is on the intrathecal register in their own area, may prescribe and administer an intrathecal in the intensive care unit. However their competency to do so (i.e. whether they are on an intrathecal register) should be checked by the ICU consultant. The neurosciences registers are located below.

<http://intranet.lothian.scot.nhs.uk/Directory/neurology/Pages/neurosurgery.aspx>

Prescriptions for an intrathecal medicine must be written by an ICU consultant authorised to prescribe, and whose name appears on the critical care intrathecal register, or a neurosurgical consultant or registrar, whose is authorised to prescribe and whose name appears on the neurosurgical intrathecal register.

Where continuation of ongoing therapy requires transcription onto a new prescription and administration chart, this must be done by an ICU consultant named on the critical care intrathecal register and authorised to prescribe, or by a neurosurgical consultant or registrar named on the neurosurgical registrar and authorised to prescribe.

Prescriptions must be written on the patient's main in-patient prescription and administration record.

The prescription should clearly state the route of administration i.e INTRATHECAL and should not be abbreviated.

Extra vigilance is required when prescribing intrathecal antimicrobials, as some patients may require the same drug to be given concomitantly, at different doses, by different routes. Wherever possible, the intrathecal injection should be prescribed at a different time from intravenous therapies.

## **5. Preparation of Intrathecal Injections**

Intrathecal injections for spinal anaesthesia and analgesia may be prepared in operating departments by an authorised anaesthetist whose name appears on the intrathecal register.

All other intrathecal medicines must be prepared by the hospital Pharmacy Department, and will be supplied in a ready-to-use form.

## **6. Ordering of Intrathecal Injections from Pharmacy**

Working hours:

Monday to Friday the relevant clinical pharmacist should be contacted to order an intrathecal:

- ICU pharmacist on bleep 8005/5128/5129 between 8am and 4.30pm
- Saturday 9.30am to 2.30pm, Sunday 9.30am to 2.30pm, call Pharmacy on extension 22911 or 22912.

**Intrathecal will not be available from Pharmacy outwith usual working hours.**

## **7. Delivery / Receipt of Intrathecal Medicines from pharmacy ([See SOP](#))**

Intrathecal medicines will only be issued by and to an authorised member of staff whose name appears on the intrathecal register.

The member of pharmacy staff issuing the intrathecal medicine must check that each intrathecal medicine matches the aseptic intrathecal medicines request form, and then sign and print the "issued from" section of the intrathecal request form. The member of ward staff accepting the intrathecal medicine must check that each intrathecal medicine matches the aseptic intrathecal medicines request form, and then sign and print the "received by" section of the intrathecal

request form. The completed intrathecal request form will be retained by pharmacy staff in the aseptic department.

Ideally the intrathecal medicine should be received by the appropriate clinical area at the time it is due to be administered, and therefore used immediately.

If it is not possible to administer the injection immediately: ([See SOP](#))

- Appropriately authorised nurses, band 5 or above may receive intrathecal medicines from Pharmacy, and sign them into the intrathecal fridge/cupboard.
- Stored intrathecal medicines should be removed from storage by an authorised nurse band 5 or above and given directly to the administering practitioner at the time of administration; both must sign out the intrathecal in the intrathecal storage record book (Appendix 3).
- The authorised person removing the intrathecal must check that the administering practitioner is on the relevant intrathecal register, and both should check the intrathecal medicine being removed against the prescription and administration record to ensure that both the product and patient details match.
- Stored intrathecal medicines which have expired or are no longer required should be destroyed in the clinical area and the destruction and reason for destruction documented in the relevant storage record by: 1) a nurse band 5 or above who is authorised to store intrathecal medicines 2) if controlled drugs are involved, a pharmacist witnessed by a registered nurse.

## **8. Administration of intrathecal medicines**

Practitioners preparing to administer an intrathecal medicine must verify details to ensure that the correct medicine and the correct dose are given to the correct patient by the correct route. These details must be verified by a second person and the checks made recorded on the prescription and administration chart. Both parties must be named on the intrathecal register and authorised to administer and check as appropriate. The second person must remain present and witness the administration of the intrathecal medicine.

Within ward 116/118, administration of intrathecal medicines should only be carried out by consultant intensivists, named on the critical care register as being authorised to administer the particular intrathecal medicine, and neurosurgical consultants or registrars, named on the neurosurgical register as being authorised to administer the particular intrathecal medicine.

Similarly, only consultant intensivists, neurosurgical consultants or registrars, and senior nursing staff (Band 6 and 7 or senior band 5), named on their respective registers as being authorised to verify and witness the administration of an intrathecal medicine, may verify and witness the administration of an intrathecal medicine in ward 116/118.

Administration must not take place if the required authorised staff members are not available.

For intrathecal antibiotics, the procedure within the Policy for the Administration of Intrathecal Antibiotics should be followed. This is available in the neurological section on the Critical Care site on the intranet.

Intrathecal alteplase will not be given by ICU consultants nor checked by ICU nurses but given by the neurosurgical team.

Policy for Intrathecal Medicines	
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## Appendix 1

Intrathecal medicines and adult doses commonly used and prepared in the pharmacy department aseptic unit within the Royal Infirmary, Edinburgh for use within ward 116/118.

### Medicines licensed for intrathecal use:

<b>Gentamicin in treatment of CNS infections</b>	<b>Form prepared by pharmacy aseptic</b>	<b>Dose</b>	<b>Frequency</b>
<b>Gentamicin 5mg / ml ampoule</b>	<b>0.6ml undiluted in a syringe</b>	<b>3mg</b>	<b>Daily</b>
<b>Gentamicin 5mg / ml ampoule</b>	<b>0.8ml undiluted in a syringe</b>	<b>4mg</b>	<b>Daily</b>
<b>Gentamicin 5mg / ml ampoule</b>	<b>1ml undiluted in a syringe</b>	<b>5mg</b>	<b>Daily</b>

### Licensed medicines used off-licence for intrathecal use:

<b>Vancomycin in treatment of CNS infections</b>	<b>Form prepared by pharmacy aseptic</b>	<b>Dose</b>	<b>Frequency</b>
<b>Vancomycin</b>	<b>in 2ml sodium chloride 0.9%</b>	<b>20mg</b>	<b>Daily</b>
<b>Vancomycin</b>	<b>in 1ml sodium chloride 0.9%</b>	<b>10mg</b>	<b>Daily into each of two external ventricular drainage instillation ports</b>

<b>Alteplase in treatment of cerebral ventricular catheter occlusion</b>	<b>Form prepared by pharmacy aseptic</b>	<b>Dose</b>	<b>Frequency</b>
<b>Alteplase</b>  <b>Only to be given and checked by neurosurgical team</b>	<b>In 2ml water for injections</b>	<b>2mg</b>	<b>Two separate bolus doses as per protocol</b>

## Appendix 2

**NHS Lothian**  
**University Hospitals Division**  
**RIE**  
**Register of Medical Personnel**  
**Authorised to be Involved in the Prescribing and Administration of Intrathecal Therapy**

<u>Name</u>	Grade	Intrathecal Medicines / Category	Tasks authorised to perform				Date Certified	Certified By	Reassessment Date
			1	2	3	4			

**TASKS AUTHORISED TO PERFORM:**

- 1.Training & Certification
- 2.Direct administration of intrathecal medicines
- 3.Prescribing of intrathecal medicines
- 4.Checking of intrathecal medicine dosage.

**CATEGORY OF MEDICINE**

- a.Antibiotic / infection
- b.Imaging agent / diagnostic imaging
- c.Palliative / control of symptoms
- d.Baclofen / spasticity
- e. Alteplase / ventricular catheter occlusion
- f. Pentosan / CJD

## Appendix 2

**NHS Lothian**  
**University Hospitals Division**  
**RIE**  
**Register of Nursing Personnel**  
**Authorised to be Involved in the Administration of Intrathecal Therapy**

Name	Grade	Intrathecal Medicines / Category	Task authorised to perform			Date Certified	Certified By	Reassessment Date
			1	2	3			

**Tasks Authorised to Perform**

1. **Training & Certification**Receipt of Intrathecal Therapy into Designated Storage Area
2. **Issue of Intrathecal Therapy from Designated Storage Area to Medical Practitioner**
3. **Administration Check with Medical Practitioner**

**Category of medicine / Clinical Indication**

- a. **Antibiotic / infection**
- b. **Imaging agent / diagnostic imaging**
- c. **Palliative / symptom control**
- d. **Baclofen / spasticity**
- e. **Alteplase / ventricular catheter occlusion**
- f. **Pentosan / CJD**



### **Appendix 3 - Storage Record for Intrathecal Medicines (for indications other than Cancer)**

**ALL named members of staff must be on the intrathecal register and authorised for the relevant task and category of medicine**

Received into storage area by Nurse Band 5 or above (sign and print) :		If collected from pharmacy by Band 4 or below (please also sign and print) :		Patient's name:		
Date and time:		Date and time:		CHI number or DoB :		
Intrathecal Medicine: please select <input checked="" type="checkbox"/>		Expiry date(s) and time(s) :	Removed from storage by: (sign and print)		Reason for removal:	
			Nursing staff	Administering practitioner	Administration	Destruction
Gentamicin (fridge) <input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
Vancomycin (fridge) <input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
Sodium Chloride (fridge) <input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
Baclofen <input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
Iohexol <input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
Other..... <input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
NB. Preparations containing a Controlled Drug must be stored in the CD cupboard and written through the "Patient's Own CD register"						

Where a dose has been destroyed, please provide details / reason : .....