Preparation, distribution and administration of intrathecal and intraventricular chemotherapy

Policy
To set out practice to ensure the safe preparation, distribution and administration of intrathecal and intraventricular chemotherapy

Purpose
- To ensure the safety of patients requiring intrathecal and intraventricular chemotherapy
- To provide training to all staff involved with intrathecal and intraventricular chemotherapy
- To document staff training and responsibilities

Audience/Scope
- Nurses trained in chemotherapy administration
- Health practitioners prescribing or administering intrathecal and intraventricular chemotherapy
- Pharmacy staff preparing or distributing intrathecal and intraventricular chemotherapy

Reference
- NZ Healthcare Pharmacists’ Association: Draft recommendations for the safe administration of intrathecal chemotherapy and intravenous vinca alkaloids

Further reading

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Contents
1. Background ............................................................................................................. 3
2. Summary .................................................................................................................... 3
3. Register ..................................................................................................................... 3
4. Training ..................................................................................................................... 4
5. Prescribing ............................................................................................................... 5
6. Preparation and labelling ......................................................................................... 5
7. Issue and distribution ............................................................................................... 6
8. Administration .......................................................................................................... 6
1. **Background**

Accidental administration of intrathecal or intraventricular vinca alkaloids and bortezomib is usually fatal or results in permanent quadriplegia. Guidelines for preparation, distribution, storage and administration of intrathecal and intraventricular chemotherapy have been recommended following reviews in several countries. This policy documents the local implementation of the guidelines written by the New Zealand Healthcare Pharmacists’ Association and endorsed by DHBNZ Safe and Quality Use of Medicines Group. These guidelines reflect current international best practice.

2. **Summary**

The policy details the local implementation of all steps from prescribing to final administration under the following headings:

- The register of trained personnel and their competencies
- Training (induction training and continued competence)
- Prescribing
- Preparation, labelling and storage in pharmacy
- Issue and transfer to ward area
- Administration including final bedside check
- Designated areas for administration of cytotoxic intrathecal and intraventricular chemotherapy

3. **Register**

A register of staff members who are competent to be involved with any aspect of intrathecal and intraventricular chemotherapy will be kept by the CDHB. The register details the trained staff and their areas of competence.

The CDHB register documents competence in local practices. Staff moving from another hospital will not automatically be entered into the CDHB register without local training and assessment of competency.

The master copy of the register will be kept by the Haematology Pharmacist and delegates, on behalf of the CDHB. The Haematology Pharmacist will be responsible for maintenance of the register.

A copy of the register can be viewed on the intranet by following the link:

4. Training

All staff involved with any aspect of intrathecal or intraventricular chemotherapy must be aware of the consequences of accidental administration of intravenous chemotherapy by the intrathecal or intraventricular route.

New staff will receive induction and training specific to their role in the prescribing, dispensing, checking and administration of intrathecal and intraventricular chemotherapy.

Intrathecal and intraventricular chemotherapy will be prescribed and administered by a Specialist or doctor in specialist training whose name is on the CDHB register for this purpose. Nurse practitioners or a CNS on the nurse practitioner pathway may be approved to administer intrathecal and intraventricular chemotherapy at the discretion of their supervising physician. They must be signed off by one of the personnel accredited to give authorisation for administration on the intrathecal and intraventricular chemotherapy register.

Induction training will include:

- A short introduction by a senior staff member on the register
- A DVD presentation (Just an Ordinary Day, Department of Health, UK)
- The trainee must read the NZ Healthcare Pharmacists’ Association draft recommendations for the safe administration of intrathecal chemotherapy and intravenous vinca alkaloids
- Completion of competency multiple choice assessment
- Observation of competence in intrathecal chemotherapy relevant to their role on the register

The trainer and trainee will formally document training prior to entry onto the intrathecal register. This documentation will be filed with the master register as proof of training.

Training will be delegated to senior members of the relevant departments, e.g. medical, nursing, pharmacy. These trainers will ensure that trainees are competent to fulfil their designated role and undertake regular review of the registered staff within their area of responsibility.

Staff already on the register will undergo refresher training every three years and sign to confirm they have read the current version of the CDHB intrathecal and intraventricular chemotherapy policy. It is the staff member’s responsibility to ensure they remain competent for the duration of this three year period.
5. **Prescribing**

A purpose designed intrathecal chemotherapy prescription sheet which is visually distinct from chemotherapy for other routes of administration is used within CDHB.

Prescriptions for intrathecal cytotoxic chemotherapy must be written on the 'Intrathecal Chemotherapy Medication Chart' (document control number C160016) and signed by a Specialist or doctor in specialist training whose name is on the CDHB register for this purpose.

Prescriptions for intraventricular chemotherapy must be written on the 'Intraventricular Chemotherapy Medication Chart' (document control number C260118) and signed by a Specialist or doctor in specialist training whose name is on the CDHB register for this purpose.

Abbreviations must not be used, i.e. intrathecal or intraventricular must be written out in full.

Inpatients should not be scheduled to receive intrathecal or intraventricular injections on the same day as intravenous bolus chemotherapy. Where this is unavoidable the reason should be clearly documented.

Pharmacy will supply the intrathecal or intraventricular drug once written confirmation that all intravenous doses for any patient in that clinical area have been given or if the intravenous chemotherapy remains quarantined in pharmacy or if the intravenous chemotherapy is yet to be manufactured.

All prescriptions for intrathecal and intraventricular chemotherapy must be verified and signed by a clinical pharmacist on the CDHB register prior to dispensing.

If a treatment is delayed to another day, the first chart should be disposed of and a new prescription should be written.

6. **Preparation and labelling**

Intrathecal and intraventricular chemotherapy must be prepared in facilities licensed to manufacture cytotoxic drugs and dispensed by the Pharmacy cytotoxic production unit.

Intrathecal doses are transported in small rigid containers to differentiate them from drugs for other routes. All intrathecal doses are clearly labelled:

**FOR INTRATHECAL USE**
Intraventricular doses are transported in small rigid containers to differentiate them from drugs for other routes. All intraventricular doses are clearly labelled:

**FOR INTRAVENTRICULAR USE**

As an added safety mechanism, all intravenous vinca alkaloids will be supplied in small volume infusion mini-bags and are labelled with the following warning:

**FOR INTRAVENOUS USE ONLY – FATAL IF GIVEN BY OTHER ROUTES**

If it is impossible for stability reasons to formulate the product in a mini-bag, e.g. for extremely small children, the product may be manufactured in a large syringe (30mL) in order to distinguish it from the smaller syringes used for intrathecal administration.

7. **Issue and distribution**

Intrathecal and intraventricular chemotherapy will either be collected from Pharmacy by the administering health practitioner or taken to the ward by a member of nursing or pharmacy staff whose name appears on the register and handed directly to the administering doctor. No other injectable medication may be collected/delivered at the same time. Intrathecal and intraventricular chemotherapy must NEVER be stored in clinical areas.

The member of pharmacy staff issuing the intrathecal and intraventricular chemotherapy and members of staff collecting the drug must sign the appropriate section of the prescription.

8. **Administration**

Intrathecal and intraventricular chemotherapy must be administered by a Specialist or doctor, Nurse Practitioner or CNS on the Nurse Practitioner pathway. They must be trained in the administration of intrathecal chemotherapy and be on the CDHB intrathecal and intraventricular chemotherapy register.

Intrathecal and intraventricular chemotherapy should only be administered in a clinical area designated for this use (see Appendix).

There must be no intravenous doses of cytotoxic drugs in the intrathecal or intraventricular administration area at the time that
intrathecal chemotherapy is given. This applies to ALL patients in the area and not just the patient receiving the intrathecal or intraventricular chemotherapy.

Scheduling of intrathecal and intraventricular chemotherapy should take account of the availability of trained staff and should take place during the normal working day. Only in cases of exceptional clinical need and on the authority of the Specialist in charge should administration be out of hours or at weekends.

To avoid clashes with intravenous chemotherapy administration, intrathecal or intraventricular chemotherapy to be administered on the Medical Day Unit should be planned as far in advance as possible. Paediatric in-patients will be transported to an approved area off the CHOC ward, usually theatres, for the duration of the procedure including post anaesthesia observation.

A Specialist or appropriately trained trainee from the register must ensure the patient is fit for treatment, the correct tests have been conducted and the correct chemotherapy has been prescribed.

Prior to administration patients and/or carers should be told the nature of the procedure, route of administration and the drug being given.

Immediately prior to administration the person administering the intrathecal or intraventricular chemotherapy AND another doctor or nurse on the register must verify the prescription, complete the checklist on the intrathecal or intraventricular chemotherapy prescription chart and both must then sign the prescription chart. The person performing the final bedside check must witness the intrathecal chemotherapy being administered.
Appendix 1
Areas where intrathecal and intraventricular chemotherapy is administered

- BMTU
- Interventional Radiology (IRAD)
- Paediatric Outpatient Department
- Operating Theatres
- Medical Day Unit

Document History Log

<table>
<thead>
<tr>
<th>Status of Document</th>
<th>Issue Date</th>
<th>Reviewers</th>
<th>Reason for review</th>
</tr>
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<tbody>
<tr>
<td>Original Issue 1</td>
<td>Feb 2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issue Number 2</td>
<td>Jan 2012</td>
<td>Dr Andrew Butler, Dr David Gibbs, Dr Amanda Lyver, Bevan Harden, Sharron Ellis</td>
<td>Amendments</td>
</tr>
<tr>
<td>Issue Number 3</td>
<td>Apr 2015</td>
<td>Dr Andrew Butler, Dr Amanda Lyver, Dr Kate Gardner, Bevan Harden, Fiona Stone, Hannah Soper, Sharron Ellis, Wendy Ellery, Jan Millar</td>
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</tr>
<tr>
<td>Issue Number 4</td>
<td></td>
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