Vincristine and other Vinca Alkaloids Management Policy

SDMS Id Number: Policy ID (as assigned by Corporate Document and Information Services)
Effective From: June 2014
Replaces Doc. No: Document title and number
Custodian and Review Responsibility: SPP – Medication Strategy and Reform
Contact: Director, Medication Strategy and Reform
Applies to: THO-North, THO-South, THO-North West
Policy Type: DHHS Wide Policy
Review Date: June 2017
Keywords: Vincristine, vinca alkaloid, chemotherapy, safety, medication administration
Routine Disclosure: Yes

Approval

<table>
<thead>
<tr>
<th>Prepared by</th>
<th>Medicines Policy Officer</th>
<th>Approved by</th>
<th>Approved by title</th>
<th>Amendment notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suli Newbold</td>
<td></td>
<td>61661029</td>
<td>16 May 2014</td>
<td></td>
</tr>
<tr>
<td>Through</td>
<td>Senior Specialist Pharmacist – Quality Use of Medicine</td>
<td>61661086</td>
<td>16 May 2014</td>
<td></td>
</tr>
<tr>
<td>Through</td>
<td>THO-N Medication Management and Safety Committee</td>
<td></td>
<td>16 May 2014</td>
<td></td>
</tr>
<tr>
<td></td>
<td>THO-NW Medication Safety &amp; Improvement Committee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>THO-S Quality Use of Medicine Committee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleared by</td>
<td>THO-N Chief Executive Officer</td>
<td></td>
<td>6 June 2014</td>
<td></td>
</tr>
<tr>
<td></td>
<td>THO-NW Acting Chief Executive Officer</td>
<td></td>
<td>2 June 2014</td>
<td></td>
</tr>
<tr>
<td></td>
<td>THO-S Acting Chief Executive Officer</td>
<td></td>
<td>3 June 2014</td>
<td></td>
</tr>
</tbody>
</table>

Revision History

<table>
<thead>
<tr>
<th>Version</th>
<th>Approved by name</th>
<th>Approved by title</th>
<th>Amendment notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Position Title</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Position Title</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Position Title</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This Policy may be varied, withdrawn or replaced at any time. Compliance with this directive is mandatory for the Agency (Department of Health and Human Services and Tasmanian Health Organisations). PLEASE DESTROY PRINTED COPIES. The electronic version of this Policy is the approved and current version and is located on the Department of Health and Human Services’ Strategic Document Management System. Any printed version is uncontrolled and therefore not current.
Purpose

• This policy establishes the requirements for prescribing, dispensing, storage, transport and administration of vincristine and other vinca alkaloids to ensure safe administration of these medications in Tasmanian public hospitals.

• Vincristine, vinblastine and vinorelbine (vinca alkaloids) are cytotoxic medications that are administered intravenously for the treatment of various forms of cancer, including leukaemia and lymphoma. Vinca alkaloids can be fatal if administered by the wrong route. Vincristine is highly neurotoxic and inadvertent intrathecal administration of vincristine is a catastrophic event with a fatal outcome in 85% of cases\(^1\) and devastating neurological effects in the nonfatal cases\(^2\).

Mandatory Requirements

• The prescribing, dispensing, distribution, transport, storage and administration of intravenous vincristine (and other vinca alkaloids) in Tasmanian public hospitals must be in accordance with the principles described in this policy.

Prescribing

• Vincristine and other vinca alkaloids must only be prescribed by clinicians with appropriate skills, training and qualifications in the management of cancer, as per the Clinical Oncology Society of Australia (COSA) guidelines\(^3\).

Dispensing

• Mini-bags cannot be connected to a spinal needle. Providing vincristine and other vinca alkaloids in mini-bags therefore creates a physical barrier to inadvertent administration via the intrathecal route.

• For all adult patients, vincristine and other vinca alkaloids must be prepared and supplied in a mini-bag containing a total volume of 50mL or more.

• For paediatric patients 10–16 years of age, vincristine and other vinca alkaloids must be prepared and supplied in a mini-bag containing a total volume of 20mL or more.

• For paediatric patients less than 10 years of age under the care of a paediatrician, where an individual risk assessment has determined that use of a 20mL mini-bag is inappropriate, the vincristine or other vinca alkaloid may be supplied in a syringe with a volume of 20mL or more. This assessment must be documented in the patient’s medical records.

Note: Inadvertent administration of vincristine via the intrathecal route has occurred when supplied in a syringe despite dilution to 10mL or 20mL. There is no record in the literature of inadvertent administration of vincristine via the intrathecal route when supplied in a mini-bag.

• All products containing vincristine or another vinca alkaloid, including any outer packaging, must be labelled with the following:

  FOR INTRAVENOUS USE ONLY

---

This Policy may be varied, withdrawn or replaced at any time. Compliance with this directive is mandatory for the Agency (Department of Health and Human Services and Tasmanian Health Organisations). PLEASE DESTROY PRINTED COPIES. The electronic version of this Policy is the approved and current version and is located on the Department of Health and Human Services’ Strategic Document Management System. Any printed version is uncontrolled and therefore not current.
Vincristine and other vinca alkaloids must not be dispensed at rural hospitals, community health centres or multipurpose centres.

**Distribution and Transport**

- To avoid inadvertent intrathecal administration, vincristine and other vinca alkaloids must never be sent to theatre or recovery areas.
- Vincristine must be transported according to the Society of Hospital Pharmacists of Australia Standards of Practice for the transportation of Cytotoxic Drugs from Pharmacy Departments. Included in this standard is that all staff, including ward aides, are aware of the potential hazards and the procedure to follow in the event of a spill.
- Chemotherapy intended for intravenous administration, including all vinca alkaloids, must never be dispensed or transported with chemotherapy intended for intrathecal administration.
- Vincristine and other vinca alkaloids must never be distributed or transported to rural hospitals, community health centres or multipurpose centres even if the facility meets the criteria stipulated in the High Risk Intravenous Infusions in Rural and Community Services/Facilities Policy.

**Administration**

- Staff involved in the administration of vincristine and other vinca alkaloids must:
  - be appropriately trained and assessed as competent to administer chemotherapy
  - have current training in the management of hazardous chemical spills.
  - be aware of the procedure for preventing and treating extravasation, including the specific management of extravasation of vincristine and other vinca alkaloids.
- Staff must only administer vincristine or another vinca alkaloid for patients who have a current order, which has been signed by a haematology, oncology or paediatric consultant in accordance with the minimum requirements of the Cancer Nurses Society of Australia.
- Vincristine and other vinca alkaloids supplied in a minibag must be administered over 5-10 minutes.
- The patient must not be left unattended while vincristine or another vinca alkaloid is being administered.
- All intravenous lines that are to be used for intravenous administration of vincristine must be labelled as “INTRAVENOUS” as detailed in the ACSQHC’s “National Recommendations for User-applied labelling of Injectable Medicines Fluids and Lines”.
- Vincristine and other vinca alkaloids must not be administered in rural hospitals, community health centres or multipurpose centres.
- This is a statewide policy and must not be re-interpreted so that subordinate policies exist. Should discreet operational differences exist, these should be expressed in the form of an operating procedure or protocol.
- Failure to comply with this policy, without providing a good reason for doing so, may lead to disciplinary action.

---

This Policy may be varied, withdrawn or replaced at any time. Compliance with this directive is mandatory for the Agency (Department of Health and Human Services and Tasmanian Health Organisations). **PLEASE DESTROY PRINTED COPIES.** The electronic version of this Policy is the approved and current version and is located on the Department of Health and Human Services’ Strategic Document Management System. Any printed version is uncontrolled and therefore not current.
Roles and Responsibilities/Delegations

- Individual hospitals are responsible for implementing this policy within their hospital.

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secretary DHHS or delegate</td>
<td>Ensure that the policy is implemented across DHHS facilities.</td>
</tr>
<tr>
<td>DHHS Departmental Unit (Medication Strategy &amp;</td>
<td>Create, review and audit the policy in collaboration with clinical staff.</td>
</tr>
<tr>
<td>Reform)</td>
<td></td>
</tr>
<tr>
<td>Tasmanian Health Organisation Executive</td>
<td>Ensure that the policy is implemented and supported across their area of responsibility.</td>
</tr>
<tr>
<td>Medical, Pharmacy and Nursing Managers</td>
<td>Ensure that the policy is disseminated to applicable staff.</td>
</tr>
<tr>
<td></td>
<td>Provide resources to implement the policy.</td>
</tr>
<tr>
<td></td>
<td>Provide training and competency assessment of all staff involved in the delivery of vincristine and other vinca alkaloid therapy.</td>
</tr>
<tr>
<td></td>
<td>Maintain a record of staff that have been trained and assessed as competent to perform the duties required by their department in regards to vincristine and other vinca alkaloids.</td>
</tr>
<tr>
<td></td>
<td>Participate in auditing of the policy as required.</td>
</tr>
<tr>
<td>Staff</td>
<td>Follow the policy and report noncompliance to management and in the Electronic Incident Monitoring System (EIMS).</td>
</tr>
</tbody>
</table>

Risk Implications

- Patients with leukaemia or lymphoma may require intrathecal chemotherapy to prevent or treat central nervous system involvement of their disease. This is in addition to the patient’s standard chemotherapy which may include intravenous vincristine. Vincristine is highly neurotoxic and inadvertent intrathecal administration of vincristine is a catastrophic event with a fatal outcome in 85% of cases\(^1\) and devastating neurological effects in the nonfatal cases\(^2\).

- The lethality of intrathecal vincristine has been known since 1968 when the first death from intrathecal vincristine was reported. Over the last 40 years, at least 58 cases of intrathecal vincristine errors are known to have occurred\(^6\). Three of these cases occurred in Australia. Two had fatal outcomes and the latest (in 2004) involving a 27-year old patient, resulted in permanent quadriplegia\(^1\).

- In December 2005 the Safety and Quality Council, now the Australian Commission on Safety and Quality in Healthcare (ACSQHC), released an alert detailing recommendations for reducing the risk of this error occurring\(^1\). The first recommendation was that vincristine and other vinca alkaloids be

---

This Policy may be varied, withdrawn or replaced at any time. Compliance with this directive is mandatory for the Agency (Department of Health and Human Services and Tasmanian Health Organisations). **PLEASE DESTROY PRINTED COPIES.** The electronic version of this Policy is the approved and current version and is located on the Department of Health and Human Services’ Strategic Document Management System. Any printed version is uncontrolled and therefore not current.
administered in a minibag except in children less than 10 years of age where an individual risk assessment has determined use of a mini-bag to be inappropriate.

- In 2007, following the death of a 21-year old female in Hong Kong the World Health Organisation also released an alert warning that vincristine and other vinca alkaloids should only be given intravenously via a mini-bag\(^7\).
- Mini-bags are not compatible with a spinal needle, and thus create a physical barrier to vincristine and other vinca alkaloids being inadvertently administered via the intrathecal route.
- Some clinicians believe that diluting syringes of vincristine and other vinca alkaloids to 10mL or 20mL will prevent inadvertent intrathecal administration\(^2\). This however has proven an unsuccessful technique as vincristine has been administered via the intrathecal route despite such dilutions\(^1\).

This policy contributes to the DHHS’ action on the National Safety and Quality Health Service Standards (NSQHS Standards) Medication Safety criterion 4.1.2, 4.2.1, 4.2.2, 4.3.1, 4.3.2, 4.3.3, 4.4.1, 4.4.2, 4.5.1 and 4.5.2.

Training

- Individual hospitals will be responsible for ensuring all staff involved in the handling, dispensing, and administration of vincristine (and other vinca alkaloids) are appropriately trained, and records of training completion, and competence, are maintained.

Audit

- This policy will be included in the work program of the DHHS Internal Audit function. This work program is approved by the Audit and Risk Committee and will assess underlying systems and procedures for compliance with the requirements of this policy. The overall focus of this assessment will be one of continuous improvement to DHHS activities.
- Individual hospitals are responsible for auditing compliance with this policy.
- Any instances of noncompliance to this policy must be reported through the agency’s approved incident reporting system (Safety Reporting and Learning System (SRLS)).
- Hospital’s records of trained and competency tested staff are to be audited for currency.
- The prescribing, dispensing, distribution, transport and administration of vincristine in Tasmanian public hospitals complies with this policy to ensure its safe and appropriate use. Compliance with this policy can be measured by:
  - **nil incidents** occurring in which vincristine is administered by an incorrect route.
Secondary measures of adherence to the policy include **nil incidents** occurring in which:

- Vincristine or another vinca alkaloid prescribed by clinicians who do not have the appropriate skill, training, or qualifications.
- Vincristine or another vinca alkaloid being transported to theatre or recovery areas.
- Inappropriate prevention and/or management of extravasation.
- Vincristine or another vinca alkaloid prescribed or administered in a syringe, except when this is to a paediatric patient less than 10 years of age, and where an individual risk assessment has been performed. This risk assessment must be documented in the patient’s medical record.
- Vincristine or another vinca alkaloid administered by staff who are not appropriately trained to do so.
- Vincristine or another vinca alkaloid prescribed at, dispensed at, transported to or administered at a rural hospital, community health centre or multipurpose centre.

**Attachments**

Nil.

**Related Documents/Useful Resources**


This Policy may be varied, withdrawn or replaced at any time. Compliance with this directive is mandatory for the Agency (Department of Health and Human Services and Tasmanian Health Organisations). PLEASE DESTROY PRINTED COPIES. The electronic version of this Policy is the approved and current version and is located on the Department of Health and Human Services’ Strategic Document Management System. Any printed version is uncontrolled and therefore not current.


10 High Risk Intravenous Infusions in Rural and Community Services/Facilities Policy.

11 Cytotoxic Management in Rural and Community Health Sites Protocol (3.2.15)

Glossary

1 Extravasation refers to injury caused by the leakage of a solution from the vein into the surrounding tissue space associated with intravenous injection of an irritant medication.

2 mL – millilitres.

3 Mini-bag refers to an intravenous infusion bag which contains 20mL or more of fluid.