

SESLHD PROCEDURE COVER SHEET



Health
South Eastern Sydney
Local Health District

NAME OF DOCUMENT	Implantable Intrathecal Drug Delivery System
TYPE OF DOCUMENT	Procedure
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FORMER REFERENCE(S)	SESLHDPR/294 August 2016 - Implantable Intrathecal Drug Delivery System
EXECUTIVE SPONSOR or EXECUTIVE CLINICAL SPONSOR	Dr Greg Keogh SESLHD Clinical Stream Director of Surgery, Perioperative and Anaesthetics
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POSITION RESPONSIBLE FOR THE DOCUMENT	CNC Pain Management POWH
KEY TERMS	Intrathecal, Medtronic SynchroMed® II Pump, IsoMed® Pump
SUMMARY	This procedure refers to direct intrathecal drug delivery via an implantable system, for chronic pain management and severe chronic spasticity of spinal cord origin.

COMPLIANCE WITH THIS DOCUMENT IS MANDATORY

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1. POLICY STATEMENT

This policy relates to intrathecal drug delivery via an implantable system and may be performed on an inpatient or outpatient. This system is used for management of chronic pain and management of severe chronic spasticity of spinal cord origin.

The policy addresses:

- a. the procedure for safe refilling of the implanted system
- b. the safety precautions in relation to undergoing Magnetic Resonance Imaging (MRI).

2. DEFINITIONS

Implantable drug delivery is a system consisting of an infusion pump in a titanium shell (which includes two access ports) and a spinal catheter. The reservoir fill port is used for medication refill. The catheter access port is used for direct access to the intrathecal space for diagnostic purposes. Medications must not be injected via this port. The pump is generally implanted subcutaneously in the left or right abdominal wall.

Medtronic SynchroMed® II Pump – an implantable, programmable, battery powered device that stores and delivers medications intrathecally according to instructions received from the programmer.

IsoMed® Pump – A gas-filled chamber provides a constant flow rate within the pump which exerts a constant pressure on the drug reservoir. This pushes a predetermined volume of medication through the catheter into the intrathecal space. The dose of medication can be changed by altering the medication concentration within the pump.

Tesla - is the unit of magnetic field strength or magnetic flux density, commonly denoted as T.

3. RESPONSIBILITIES

- Medical Officers (MO)
- Registered Nurses (RN)
- MRI Medical Radiation Scientists (Radiographers).

4. PROCEDURE

4.1 Indications for refilling an intrathecal pump

- Reservoir volume is low or the pump is empty
- Medication has changed
- The length of time between each refill depends on drug concentration, drug stability, pump reservoir volume, daily dose, and various treatment considerations.

4.2 Medications used

Number of drugs can be used alone or in combination. Any intrathecal medications administered must be free of preservatives.

- **Opioids**
 - Morphine
 - HYDROMORPHONE
 - Fentanyl
 - Methadone.

- **Local anaesthetics**
 - Bupivacaine
 - Ropivacaine.
- **Adjuvants**
 - Clonidine.
- **Antispasmodics**
 - Baclofen.

The patients must pick-up medications from pharmacy and keep the medications until the refill procedure commences.

4.3 Prescribing

Intrathecal pump refill must be prescribed on the **Intrathecal prescription and pump refill record (excluding cytotoxic medications)** (Appendix 4) in accordance with [NSW Health PD2013_043 Medication Handling in New South Wales Public Hospitals](#). The **Intrathecal prescription and pump refill record (excluding cytotoxic medications)** form Product code is NHSIS0833.

4.4 Equipment Required

- Medtronic refill kit (includes two non-coring 22G needles, extension tubing with clamp, filter and template)
- Use 10mL and 5mL Leur-lock syringes for IsoMed pump - depending on volume of pump
- Use 20mL Leur-lock syringes for Medtronic SynchroMed® II pump - depending on volume of pump
- Antiseptic to swab skin such as 1% chlorhexidine gluconate in 75% ethanol
- Dressing pack
- Drawing up needle
- Three-way tap
- Fenestrated towel
- 21G needle (if clonidine or methadone required)
- Sterile gloves
- Intrathecal medications as ordered by the MO (which the patient must keep with them until given to the RN immediately before procedure), or as per hospital site specific protocol
- Sodium chloride 0.9% ampoules if required
- If local anaesthetic required for local infiltration add 2mL syringe, drawing up needle, 25G needle, and prescribed local anaesthetic
- Adhesive dressing, e.g. BandAid®
- Neutral detergent for cleaning trolley
- Sharps disposal bin for immediate disposal at the point of care
- Clinician programmer for the computerised pumps
- Non-sterile template to locate refill access port in SynchroMed® II pump.

4.5 Refill Precautions

- Refill procedure must be performed by trained MO or RN who has been assessed as competent in the refill procedure. A MO should be present whilst refill is being undertaken. In the absence of MO, the more experienced RN will access the pump and second RN will witness and assist.
- Check patients Intrathecal prescription and pump refill record (excluding cytotoxic medications) form for specifications of the pump, i.e. pump model, flow rate and reservoir size
- Injection of the medication during the refill procedure must be done only through the centre reservoir fill port
- The timing of refill intervals must be carefully calculated to prevent depletion of drug reservoir and drug withdrawal
- Strict aseptic technique to be maintained at all times.

4.6 Refill Procedure

- MO or RN does the procedure with another MO or RN as a witness
- Prepare patient in accordance with Level 2 pre-procedure requirements as per [NSW Health PD2017 032 - Clinical Procedure Safety](#)
- The 5 Moments of Hand Hygiene must be observed throughout the procedure
- Perform telemetry/interrogate the pump to check current pump status and determine the volume remaining in the reservoir
- Palpate the pump area to confirm the general pump location and catheter access port orientation. For SynchroMed® II pump use the clean, non-sterile template to outline the pump's position
- Check medication with second RN or MO against prescription
- Open dressing pack, adding equipment required for refill procedure
- Person attending the refill to perform procedural hand wash using antiseptic liquid soap and water prior to donning sterile gloves
- Swab pump site with skin disinfectant, 15cm area using a circular motion. Do not go over the same area twice with the same swab
- Allow at least 20 seconds for skin to completely dry naturally
- Assemble the needle, extension tubing, three-way tap and empty 10ml syringe
- Draw up required medications into appropriate syringe size. Attach the 0.22 micron filter to the syringe and prime the filter with the prescribed medication
- Confirm that the volume of the prescribed fluid does not exceed the reservoir capacity of the pump
- Place sterile fenestrated towel over the patient, exposing the pump site
- Place and centre the sterile template over the marked area. Confirm pump's position by palpating around the pump area and aligning the edges of the template with the edges of the pump. Locate the refill port septum at the centre of the template
- Insert needle through the centre of the refill port until the needle touches the needle stop. This metal needle stop will damage the needle tip if excessive force is used. Be certain the centre reservoir fill port is being accessed and not the side catheter access port
- For SynchroMed® II pumps use gentle negative pressure to withdraw the fluid from the reservoir and empty completely eg, until bubbles are present in the extension tubing. For IsoMed pumps the pressurised backflow will automatically empty the

residual volume, wait approximately five seconds to ensure all fluid is removed and the pump is empty

- The amount withdrawn should approximately equal the reservoir volume on the pump status screen (SynchroMed® II) or the calculated residual dose (IsoMed) \pm 25% of the expected reservoir volume. Failure to withdraw all residual solution from the pump may lead to overpressurisation of the pump reservoir
- If there is no or minimal fluid withdrawn eg, < 1mL, the placement of the needle must be checked by injecting 10 mL sodium chloride 0.9%. Withdrawing back the same amount confirms the needle is placed in the pump's reservoir
- Close the clamp and remove the syringe used to obtain residual pump medication. Discard the withdrawn medication
- The witnessing clinician must record the amount of medication withdrawn on the Intrathecal prescription and pump refill record (excluding cytotoxic medications) form
Note: if decreasing concentration or changing medications, rinse the reservoir twice with 10mL sodium chloride 0.9% using the refill and emptying procedures described
- Attach the syringe with the prescribed medication and filter to the extension tubing set
- Open the clamp and slowly (no faster than 1mL/3 seconds) inject the fluid into the reservoir. Do not force the injection
- When filling is complete close the tubing clamp and carefully remove the needle from the pump
- Remove the template and apply firm pressure to injection site for a few seconds with a gauze pad
- Remove excessive cleansing agent from the skin and apply adhesive dressing
- Keep gloves on and dispose of all sharps into sharps bin. Remove gloves and repeat hand hygiene
- Terminate procedure as per Level 2 post-procedure requirements [NSW Health PD2017_032 - Clinical Procedure Safety](#)
- For SynchroMed® II pumps program the appropriate new parameters and perform telemetry to update the pump
Note: if changing concentration or changing medications program, prescription should include a Bridge Bolus to prevent under dosing or over dosing
- Print out the updated patient session and attach to the patient's medical record
- Document all appropriate information in patient's medical record.

4.7 Post-procedure Care

- Give the patient written handout reminding them to stay in the clinic area for 30 minutes following procedure, in order to detect any adverse effects of the pump refill
- Ensure the next refill appointment is booked about one week prior to expected pump empty date. This may vary.

4.8 Investigation of Pump Function

- Investigation of the delivery system function is performed in Medical Imaging Department using iodinated contrast
- Catheter aspiration - Before injecting fluids through the catheter access port, aspirate approximately 1 to 2 mL from the catheter. A significant amount of drug may be present in the catheter access port and catheter, and failure to remove the drug during

catheter access port injections can result in a clinically significant or fatal drug overdose

- To determine if the aspirated fluid is cerebral spinal fluid (CSF), it can be tested for presence of glucose, by using a urine test strip. If reading at 30 seconds is positive for glucose eg, trace (5.5mmol/L) or more, the aspirate is positive for CSF
- Contrast medium - When injecting contrast medium into the intraspinal space, use ONLY contrast medium indicated for intraspinal use. Using nonindicated contrast medium can result in adverse events including, but not limited to, extreme pain, cramps, seizures, and death. Inject contrast medium through the catheter access port only.
- Patients with an allergy or contraindication to the contrast may be assessed utilising radiotracer imaging in Nuclear Medicine. ¹

4.9 Patients with intrathecal pump requiring MRI

- Patients with Medtronic SynchroMed® II pump must have the appointment made on days when pain clinic is open, to allow for interrogation of the pump post the MRI scan
- Prior to MRI, the referring MO should determine if the patient can safely be deprived of drug delivery. If the patient cannot be safely deprived of drug delivery, alternative delivery methods for the drug can be utilised during the time required for the MRI scan. If any health concerns arise during MRI procedure then the MRI staff will activate escalation procedure as per hospital policy (Refer to checklist in Appendix 1 for patients with SynchroMed® II pump).
- A MRI Screening Safety Checklist and Checklist for patients with implanted intrathecal system requiring MRI at POWH (appendix 1) must be completed before an appointment can be scheduled
- The details of the type of implant, manufacturer, make, model and serial number for compatibility are required before a booking is made. This will include SynchroMed® II models, 8637-20 (20mL) or 8637-40 (40mL), as well as the IsoMed model: 8472-35-05 35mL @ 0.5mL/day or, 8472-60-10 IsoMed @ 1.0mL/day.

Management of Patient with Medtronic SynchroMed® II and IsoMed® pump

- SynchroMed® II can undergo a MRI with a 1.5T or 3T closed bore, max spatial gradient of 19T/m, max slew rate 200 T/m/s and First level controlled operating mode however IsoMed® 8472 still has a 1.5T limit
- Prior to MRI, the MRI Radiographer and / or RN should ensure that the pump is not oriented 90° with respect to the z axis of the MRI scanner (see Appendix 2)
- The magnetic field of the MRI scanner will temporarily stop the rotor of the pump motor and suspend drug infusion for the duration of the MRI exposure. The pump should resume normal operation upon termination of MRI exposure; however, there is the potential for an extended delay in pump recovery after exiting the MRI magnetic field.
- While extended delays in pump recovery are unlikely, reports have indicated that there is the potential for a two to 24 hour delay in return to proper drug infusion after completion of an MRI scan
- Medtronic does not recommend programming the SynchroMed® II pump to "*stopped pump mode*" prior to an MRI because of the possibility of an increased delay in the detection of an extended motor stall
- The SynchroMed® II pump detects motor stall and motor stall recovery. These events are recorded in the pump event log and can be reviewed using the clinician

programmer. A motor stall will also cause the pump alarm to sound (two tone alarm).
Note: in some cases, the SynchroMed® II pump event log may not register motor stall recovery until after the pump has been interrogated a second time due to the effect of Electromagnetic Interference (EMI) on the pump.

Post MRI interrogation instructions

- Upon completion of the MRI scan, or shortly thereafter, clinicians from pain management must confirm that therapy has properly resumed by interrogating the pump with the clinician programmer. For pumps programmed to deliver at least 0.048mL/day, detection of the motor stall should occur within 20 minutes of MRI exposure. Detection of the motor stall recovery and recording of the recovery in the pump event log will typically occur within 20 minutes of the removal of the pump from the magnetic field of the MRI.
- **Note:** both the detection of the *motor stall* and detection of the *motor stall recovery* may each take up to 90 minutes if the pump is programmed to minimum rate mode (0.006mL/day). In the unlikely event that electromagnetic interference from the MRI scan causes a change to “safe state”, the pump will automatically switch to minimum rate mode (infusion at 0.006mL/day). The pump must be reprogrammed in order for proper drug infusion to resume.
- Patient to wait in Adult Outpatient Department waiting room (if prearranged) for programmable pump to be checked for motor stall recovery
- At least 20 minutes after completing MRI exposure interrogate the pump.
 If using the 8840 N’Vision clinician programmer:
 - select the check box to download event logs (see Appendix 2), press “OK”
 - close the status screen by pressing “X” in the top right corner
 - select the toolkit icon (the last tab on the top of the screen)
 - select event log (the last subtab) and press “OK”.
 If using the Clinician Programmer Tablet:
 - Interrogate the pump.
 - Tap the Settings  button in the action bar (beside home button)
 - Select Logs.
- If the event log states “Motor Stall Occurred” and “Motor Stall Recovery Occurred”, normal function of the pump has returned (see Appendix 4 for 8840 N’Vision)
- If event log **does not** show stall and recovery, wait 20 minutes after the initial interrogation, re-interrogate the pump using the clinician programmer, and review the event logs again. This will address the potential for event logging delays due to Electromagnetic Interference (EMI) from the MRI magnetic field
- If the event log states “Motor Stall Occurred” and **does not** state “Motor Stall Recovery Occurred”, there is a potential for an extended motor stall due to temporary gear binding. Contact Medtronic Toll Free: 1800 668 670 for further troubleshooting
- In all other cases, the pump has resumed its normal operation.

4.10 Post-Mortem Pump Explant

- Contact Medtronic Toll Free: 1800 668 670 to obtain code (which is date and device specific) to stop and silence intrathecal pump permanently

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- If the body is to be cremated the pump must be explanted because the pump will explode at high temperatures.

5. DOCUMENTATION

- Intrathecal prescription and pump refill record (excluding cytotoxic medications)
- Medical record/electronic Medical Record (eMR)
- Implant MRI Compatibility Check, MRI Department.
- MRI Screening Safety Checklist.

6. AUDIT

N/A

7. REFERENCES

- Assessing Intrathecal Drug Delivery Systems with ^{99m} Technetium – DTPA Radiotracer Imaging – Personal Communication
- Shellock Frank G. Reference Manual for Magnetic Resonance Safety, Implants, and Devices: 2007 Biomedical Research Group. Los Angeles, CA
- Medtronic Australasia Pty Ltd, MRI Guidelines for Neurological Products, NTN 04-03 Rev 3, IsoMed® Technical Manual (220666-001) November 2005
- [NSW Health PD2013_043 Medication Handling in New South Wales Public Hospitals.](#)
- [NSW Health PD2017_032- Clinical Procedure Safety](#)
- SynchroMed® Programmable Infusion Systems, Clinical Reference Guide, Medtronic. 2014
- SynchroMed® II information for prescribers, Medtronic. 2017
- SynchroMed® II Clinician Programmer, Clinician Programming Guide, Medtronic. 2018
- The Effects of Magnetic Resonance Imaging (MRI) on Medtronic Drug Infusion Systems. Neurological Technical Services Department. August 2008.

8. REVISION AND APPROVAL HISTORY

Date	Revision No.	Author and Approval
Nov 2009	1	Susie Kerr NM Pain Management in consultation with SESIAHS Senior Pain Management Nursing and Medical Staff
Feb 2010	1	Forwarded to "Draft for Comment" for consultation / feedback
Mar 2010	1	Approved by the Area Drug Committee
Jul 2010	1	Approved by the Area Patient Safety and Clinical Quality Committee Approved by the Area Clinical Council
Jun 2013	2	Amendments made by Grazyna Jastrzab NM Pain Management in consultation with SESLHD Senior Pain Management Nursing and Medical Staff
Aug 2013	2.5	Amendments made by Grazyna Jastrzab NM Pain Management in

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		consultation with relevant SESLHD Senior Management Nursing and Medical Staff
Oct 2013	2.5	Approved by Executive Clinical Sponsor, Dr Gregory Keogh.
Jun 2014	2.5	Page Number for Chronic Pain Nurse updated as requested by Author.
Feb 2016	3	Review undertaken – Approved by Executive Sponsor, Dr Gregory Keogh
August 2016	3	Submitted to Quality Use of Medicines Committee for approval
October 2016	3	Approved by Quality Use of Medicines Committee
November 2016	4	Minor update endorsed by Executive Sponsor
December 2016	4	Endorsed by Quality Use of Medicines Committee
September 2019	5	<p>Minor review with the main changes to:</p> <ul style="list-style-type: none"> • Patients with intrathecal pump requiring MRI <ul style="list-style-type: none"> ○ SynchroMed® II programmable pump can undergo a MRI with a 1.5T or 3T closed bore, max spatial gradient of 19T/m, max slew rate 200 T/m/s and First level controlled operating mode however IsoMed® 8472 still has a 1.5T limit. • Investigation of Pump Function <ul style="list-style-type: none"> ○ Catheter aspiration - Before injecting fluids through the catheter access port, aspirate approximately 1 to 2 mL from the catheter. A significant amount of drug may be present in the catheter access port and catheter, and failure to remove the drug during catheter access port injections can result in a clinically significant or fatal drug overdose ○ Contrast medium - When injecting contrast medium into the intraspinal space, use ONLY contrast medium indicated for intraspinal use. Using no indicated contrast media can result in adverse events including, but not limited to, extreme pain, cramps, seizures, and death. Inject contrast medium through the catheter access port only. • Appendix 3: Access Pump Activity Logs <ul style="list-style-type: none"> ○ Updated appendix to reflect the new clinician programmer tablet logs • Addition of Appendix 4: Intrathecal Prescription and Pump Refill Record (excluding cytotoxic medication).
September 2019	5	Processed by Executive Services prior to publishing.
November 2019	5	Approved by Quality Use of Medicines Committee. Published by Executive Services.

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Appendix 1

Checklist for patients with implanted intrathecal system requiring MRI at POWH

1. Referral to MRI - Referring MO to consider the following

The MRI is not using greater than 1.5 Tesla horizontal, closed-bore scanners for Isomed® pump and no greater than 3 Tesla for SynchroMed® pump	Yes/No
The pump is not oriented 90° with respect to the z axis of the MRI scanner (see appendix 2)	Yes/No
The patient can safely be deprived of drug delivery	Yes/No
No need for alternative delivery methods for the drug during the time required for the MRI scan	Yes/No
No medical supervision required while the MRI is conducted	Yes/No
Details are provided of the type of implant, manufacturer, make, model and serial number for compatibility check eg, SynchroMed® II models, 8637-20 (20mL) or 8637-40 (40mL) or IsoMed model: 8472-35-05 35mL @ 0.5mL/day or, 8472-60-10 IsoMed @ 1.0mL/day	Yes/No

2. Appointment for MRI is made. Patient completes MRI Safety Checklist.

Patients with **Medtronic SynchroMed® II pump** must have the appointment made on days when pain clinic is open, to allow for interrogation of the pump post the MRI scan.

Booking officer	
The anticipated completion time of MRI scan is: Tuesday 13.30-15.30, Wednesday 8.30-15.30 or Friday 8.30-10.30	Yes/No
One of the following nursing staff has been contacted to confirm suitability of appointment (day and time): Chronic Pain Nurse p.45228, Clinical Nurse Consultant p.44378 or Nurse Manager p.44642	Yes/No
Pain Nurse	
Appointment documented in the Pain Clinic planning diary	Yes/No
Patient's medical records ordered	Yes/No

3. Post MRI scan

MRI Nurse / MRI Radiographer	
One of the following nursing staff has been contacted and notified about time patient's scan was completed: Chronic Pain Nurse p. 45228, Clinical Nurse Consultant p.44378 or Nurse Manager p.44642	Yes/No
Patient directed to Pain Clinic in Outpatient Department POWH	Yes/No
Pain Nurse	
Interrogates the pump at least 20 min post MRI. Note: there is a potential for a two to 24 hour delay in return to proper drug infusion after completion of an MRI scan	Yes/No
Motor stall and recovery detected and documented	Yes/No
Infusion rate checked against previous documentation in medical records	Yes/No

If the answer to any of the above is NO, the issue needs to be discussed with the referring MO

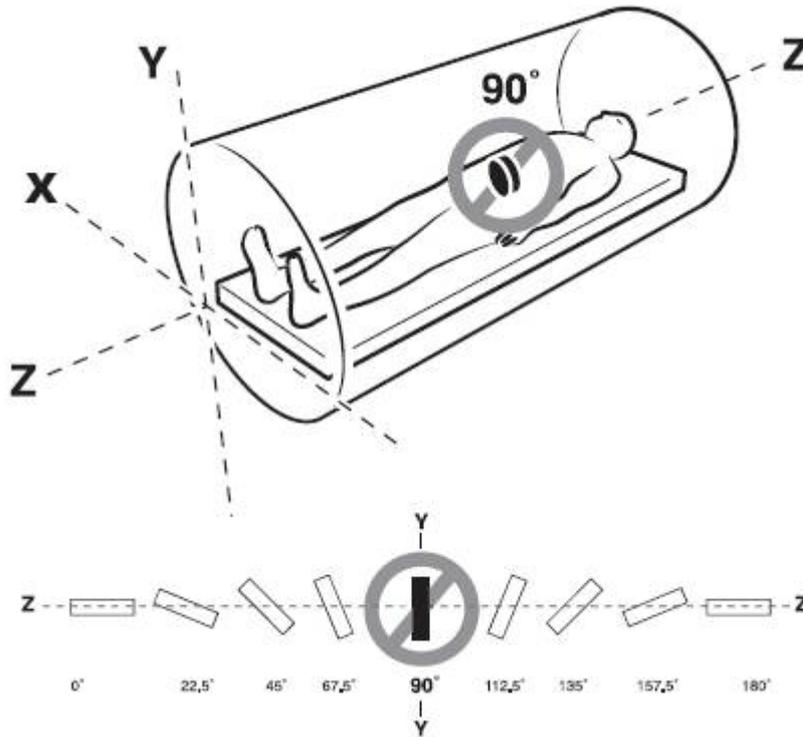
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Appendix 2

Pump positions in relation to z-axis MRI orientations



Appendix 3: Access Pump Activity Logs

Clinician Programmer Tablet:



Select Settings button in action bar

To view the Pump Activity Logs

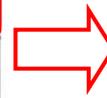
1. Re-interrogate the pump.
2. Tap the **Settings** (⚙️) button in the action bar.
3. Select **Logs**.

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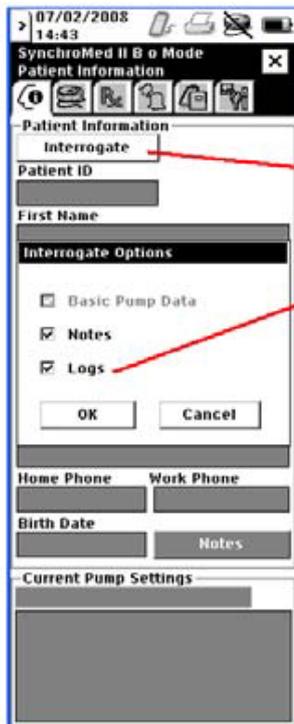
8/16/18	5:30 PM	1A	Pump Motor Stall Recovery (1A)
8/16/18	5:25 PM	03	Critical Alarm - Pump Motor Stall Occurred (03)
8/16/18	4:35 PM	1A	Pump Motor Stall Recovery (1A)
8/16/18	4:28 PM	03	Critical Alarm - Pump Motor Stall Occurred (03)
8/16/18	3:24 PM	1A	Pump Motor Stall Recovery (1A)
8/16/18	1:47 PM	03	Critical Alarm - Pump Motor Stall Occurred (03)
8/16/18	3:09 AM	1A	Pump Motor Stall Recovery (1A)
8/16/18	12:40 AM	03	Critical Alarm - Pump Motor Stall Occurred (03)
8/16/18	12:28 AM	1A	Pump Motor Stall Recovery (1A)
8/15/18	11:15 PM	03	Critical Alarm - Pump Motor Stall Occurred (03)
8/15/18	10:59 PM	1A	Pump Motor Stall Recovery (1A)
8/15/18	10:54 PM	03	Critical Alarm - Pump Motor Stall Occurred (03)



Pump Motor Stall Occurred 08/16/18 5:25 PM

Pump Motor Stall Recovered 08/16/18 5:30 PM

8840 N'VISION



Press the "Interrogate" button

Select "Logs" check box in the option window that opens

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<p>S 02/21/2006 NGV007562N SynchroMed II B.3 SynchroMed II.B.3.R43, SN NHF013212N,SN Session Data Report 8840 SynchroMed II B Programming Session Patient Information First Name Last Name Notes 2 ALARM LOW OK 3 ALARM FLOW OK 4 ALARM FLOW OK 5 ALARM FLOW OK Pump Serial Number NGV007562N Pump Model Number 8637-40 40 mL Cal. Constant 113 Catheter Information Catheter Model Other Total Catheter Volume 0.250 mL Current Pump Settings Examined At 02/21/2006 MMDD/YYYY 11:54 Last Change 02/18/2006 MMDD/YYYY 11:57</p>	<p>Event Log System MMDD/YYYY hh:mm 02/18/2006 13:09 (1A) Motor Stall Recovery Occurred 02/18/2006 12:38 (08) Motor Stall Occurred 02/18/2006 11:58 (16) Pump Restarted Due to Restart Command 02/18/2006 11:58 (26) Infusion Bolus Command Received 02/18/2006 11:58 (23) Infusion (Prescription) Change Occurred 02/18/2006 11:58 (24) Patient Configuration Change Occurred 02/18/2006 11:58 (14) Pump Stopped Due to Stop Command 02/18/2006 11:58 (21) Pump Refill Occurred ===== PA 88 = PA Request 89 = Rejected PA Request</p>	<p>'Event Log' section</p> <p>stall recovery on 2/18/2006 at 13:09</p> <p>stall detected on 2/18/2006 at 12:38</p>
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Appendix 4: Intrathecal Prescription and Pump Refill Record (excluding cytotoxic medication).

Holes Punched as per AS2828.1: 2012
BINDING MARGIN - NO WRITING

SEI130037

<p>S0833 290617</p> <p>Health South Eastern Sydney Local Health District Warrara Shoalhaven Local Health District</p> <p>Facility:</p>	<p>Attach ADR Sticker</p> <p>ALLERGIES & ADVERSE DRUG REACTIONS (ADR) <input type="checkbox"/> Nil known <input type="checkbox"/> Unknown (tick appropriate box or complete details below)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Drug (or other)</th> <th style="width: 30%;">Reaction/Date</th> <th style="width: 30%;">Initials</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> <p style="text-align: center; border: 1px solid red; font-weight: bold;">COMPLETE ALERT SHEET IN MEDICAL RECORD</p> <p>Sign _____ Print _____ Date _____</p>	Drug (or other)	Reaction/Date	Initials													<p>FAMILY NAME _____ MRN _____</p> <p>GIVEN NAMES _____ <input type="checkbox"/> MALE <input type="checkbox"/> FEMALE</p> <p>D.O.B. ____/____/____ M.O. _____</p> <p>ADDRESS _____</p> <p>LOCATION / WARD _____</p> <p style="text-align: center; font-weight: bold;">COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE</p>
Drug (or other)	Reaction/Date	Initials															
INTRATHECAL PRESCRIPTION AND PUMP REFILL RECORD (EXCLUDING CYTOTOXIC MEDICATION)																	
Prescription																	
Date	Time	Medication (Print Generic Name)	Dose (mg or microg)	Volume (mL)	Route	Final Concentration per mL	Prescriber Signature & Print Your Name										
					Intrathecal												
					Intrathecal												
					Intrathecal												
					Intrathecal												
					Intrathecal												
Pump Type <input type="checkbox"/> IsoMed <input type="checkbox"/> SYNCHROMED II				Total Volume (mL)													
Local Anaesthetic Skin Infiltration																	
Date	Medication and Strength		Volume(mL)	Route	Prescriber Signature & Print Your Name												
Program																	
<input type="checkbox"/> Simple Continuous Infusion				<input type="checkbox"/> Patient Activated Bolus dose			<input type="checkbox"/> Flex Infusion										
Primary Drug	Daily Dose microg Or mg/24 hours	Daily Dose microg Or mg/24 hours	Daily Dose microg Or mg/24 hours	Bolus Dose	Bolus Duration	Lock Out Interval	Maximum 24 hour boluses										
From ____ hrs To ____ hrs Dose: _____				From ____ hrs To ____ hrs Dose: _____													
Prescriber Signature & Name: _____ Date: _____				Prescriber Signature & Name: _____ Date: _____		Prescriber Signature & Name: _____ Date: _____											

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