












NU10.77 TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARDS


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TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARDS			
Troubleshooting- Technical problems with pump AIR/UP OCCLUSION			CARD NUMBER: 1
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital.		FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors	
Description	Result	Possible Cause	Required Action
	Infusion stops and an alarm is activated	<p>The roller or clip on the administration set is closed upstream of the pump.</p> <p>The line was not loaded correctly.</p> <p>Air is present in administration Set</p>	<ol style="list-style-type: none"> 1. Press  to cancel the alarm 2. Determine if the alarm is caused by Air or an Upstream Occlusion 3. If caused by Upstream Occlusion resolve the occlusion and press  to Reactivate the pump.
IF CAUSED BY AIR:			
<ol style="list-style-type: none"> 4. Press the  button to reactivate the pump 5. Unlock the key pad of the pump by holding down the  button until the bar on the screen goes from Locked to Unlocked and a beep is heard. 6. Press  to stop the infusion, then hold down  again to return to the Resume/Menu option screen. 7. Check and resolve the cause of the air detected in the line 8. Press  again and enter the Level 1 Access Code. Press the  button 9. Disconnect the line from the patient taking care to preserve sterility 10. Press the  button to select the Prime Function 			

11. Ensure the patient is disconnected from the Administration Set and then press the  button to begin priming.


12. Check the Administration Set to ensure all air has been removed. If necessary, scroll back to the Prime Function using the **SCROLL** button, and repeat priming until all air has been cleared from the set.

13. Press  to return to the Resume/Menu option screen


14. Press  to resume the current infusion

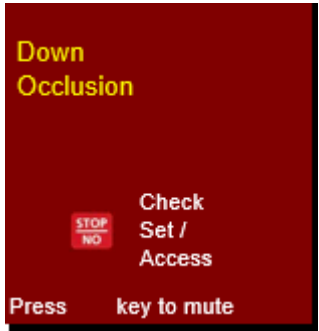



15. If prompted enter the Access Code, and press 

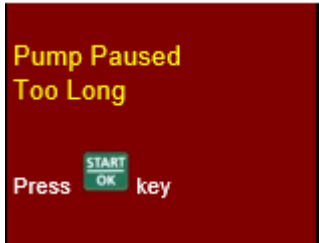

16. Review the Infusion Summary screen and

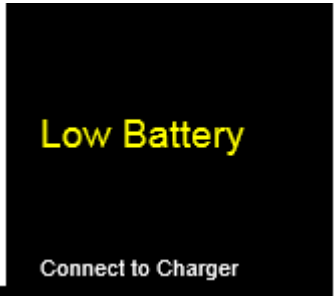
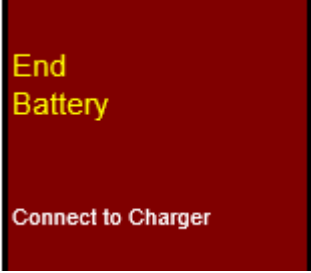
- Press  to confirm values **OR**
- Press **INFO** to change the Bag/Volume/Patient Bolus/Lockout Time









17. Press the  button to start the infusion


18. Lock the keypad of the pump by holding down the  button until the bar on the screen goes from Unlocked to Locked and a beep is heard.

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD			
Troubleshooting-Technical problems with pump DOWN OCCLUSION			CARD NUMBER: 2
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital.		FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors	
Description	Result	Possible Cause	Required Action
	<p>Infusion stops and an alarm is activated</p>	<p>The roller or clip on the administration set is closed downstream of the pump.</p> <p>Administration set is kinked.</p> <p>Cannula is blocked.</p> <p>Administration set loaded incorrectly.</p> <p>NOTE: operator may change pressure setting</p>	<p>Press  to cancel the alarm</p> <p>Open clamp/clip.</p> <p>Straighten the set.</p> <p>Change the Cannula.</p> <p>Re-load the administration line.</p> <p>Press the  button to continue the infusion</p>
NOTES:			
<ul style="list-style-type: none"> • When the infusion pump detects a problem, four things occur: • The infusion stops • An audible alarm is activated • A message appears on the display screen indicating the cause of the alarm • The LED indicator will change from green to red. Press  to cancel the alarm 			

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD			
Troubleshooting-Technical problems with pump PUMP PAUSED TOO LONG			CARD NUMBER: 3
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital.		FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors	
Description	Result	Possible Cause	Required Action
	An alarm is activated	Two minutes has elapsed without a button press during programming.	Press  to resume.
NOTES: <ul style="list-style-type: none"> • If problems cannot be resolved, use the spare pump supplied, ensuring that the programme remains the same. • If pump needs to be switched off, ensure that alternative pain relief is available. • Problems with the spare pump or when no other pump available: Contact: Hospice 03-3754274 and ask for the Clinical Nurse Specialist or Senior Medical Officer on Duty • REM Systems Technical Support (Monday-Friday 8.30-5.30pm) contact Customer Services 0508654258 or Russell Thomson 021466885 			

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD			
Troubleshooting-Technical problems with pump LOW BATTERY & END BATTERY			CARD NUMBER: 4
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital		FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors	
Description	Result	Possible Cause	Required Action
	Pump will only run for another 30 minutes if it is not connected to mains.	30 Minutes of battery life are remaining. The LED light will blink red.	Place the pump in charger and connect to mains.
	Pump operation stops. The pump cannot be used before being connected to mains.	Battery is depleted.	Place the pump in charger and connect to mains. Wait 2 minutes before operating.
<p>NOTES:</p> <p>Charge at night time</p> <ul style="list-style-type: none"> If in the community, let the power company know that there is a member of the household dependant on an electricity supply 			

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD			
Troubleshooting-Technical problems with pump END OF INFUSION			CARD NUMBER: 5
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital		FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors	
Description	Result	Possible Cause	Required Action
	Program ends, pump will turn to KVO mode	Current infusion program has been completed.	1. Press  to mute the alarm and access the Level One screen code
<p>NOTES: Ensure new prescription has been sent to hospital pharmacy well in advance Ensure new infusion has been picked up from the hospital pharmacy</p>			
<p>2. Enter the Access Code, and press the  button</p> <p>3. Use the Up and Down arrows to scroll to CHANGE BAG and then press the  button</p> <p>4. Attach the new bag to the line and press the  button</p> <p>5. Review the Infusion Summary screen and</p> <ul style="list-style-type: none"> • Press  to confirm values OR • Press INFO to change the Bag Volume/Patient Bolus/ Lockout Time <p>6. Press the  button to start the infusion</p> <p>7. Lock the keypad of the pump by holding down the  button until the bar on the screen goes from Unlocked to Locked and a beep is heard.</p>			

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD			
Troubleshooting-Technical problems with pump MISSING KEY SET/LOADING ADMINISTRATION SET			CARD NUMBER: 6
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital		FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors	
Description	Result	Possible Cause	Required Action
	Pump will not start	Administration set loaded incorrectly (the key was not located in its place correctly). A set different than the MicroSet™ was loaded in the pump.	Reload the set into the pump as per the instructions. Change the set to a MicroSet™ and load it according to instructions.
NOTES: LOADING THE ADMINISTRATION SET			
Warning: use aseptic technique. Patient infection may result from the use of non-sterile components. Maintain sterility of all disposable components and use only once, single use consumables.			
<ol style="list-style-type: none"> 1. Lift the door latch (on the right side of the door) to open the <i>BodyGuard 595 Color Vision™</i> pump door and remove the administration set from the sterile packaging leaving the end caps on the line. 2. Connect the administration set to the medication bag. 3. Hold the section of tubing with the black key (small plastic block) and make sure the flow direction is in line with the flow direction arrows inside the pump door. 4. Insert the IV tubing into the pump by placing the key into the keyway as shown by the arrow in the diagram. Insert the tubing from left to right, and avoid stretching or pulling the tubing. Check that the key located on the tube is placed in its correct position in the tubing guide. 			

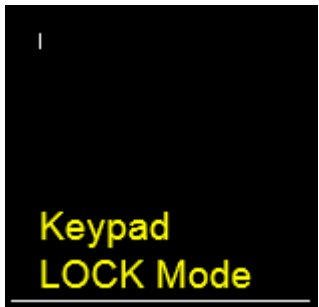
☒ **NOTE:** the key can only be fitted into the key space one way. If you are having troubles fitting it do not force it in. Try to turn the line around to ensure you have correctly lined up with the direction of flow.


5. For products equipped with Anti-Stretch locator, locate the round blue Anti-Stretch locator in the round space on the left side.
6. Verify that the distal flow valve is on the right hand side of the pump.
7. Close the pump door until the catch clicks.

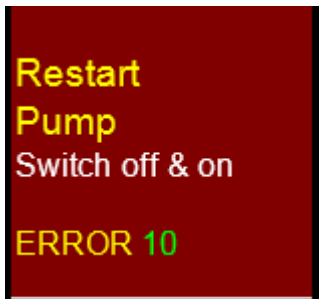
☒ **NOTE:** ensure that the tubing is inserted completely into the pumping channel.



Warning: use of any administration set, other than the MicroSet™, may impair the operation of the pump and the accuracy of the Infusion.

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD			
Troubleshooting-Technical problems with pump KEYPAD LOCK MODE			CARD NUMBER: 7
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital		FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors	
Description	Result	Possible Cause	Required Action
	Setting keys do not function	Lock Out mode is turned on.	No action required. If changing parameters is required, unlock the keys and refer to lock section for further instructions.
NOTES:			
<ul style="list-style-type: none"> • If problems cannot be resolved, use the spare pump supplied, ensuring that the programme remains the same. • If pump needs to be switched off ensure that alternative pain relief is available. • Problems with spare pump or when no other pump available: Contact: Hospice 03-3754274 and ask for the Clinical Nurse Specialist or Senior Medical Officer on Duty • REM Systems Technical Support (Monday-Friday 8.30-5.30pm) contact Customer Services 0508654258 or Russell Thomson 021466885 			

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD			
Troubleshooting- Technical problems with pump DOOR OPEN			CARD NUMBER: 8
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital		FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors	
Description	Result	Possible Cause	Required Action
	Infusion stops and an alarm is activated	The door of the pump was not closed prior to operation The door has accidentally opened during operation.	Close the door of the pump Send the pump for service
Notes: <ul style="list-style-type: none"> • If problems cannot be resolved, use the spare pump supplied, ensuring that the programme remains the same. • If pump needs to be switched off, ensure that alternative pain relief is available. • Problems with the spare pump or when no other pump available: Contact: Hospice 03-3754274 and ask for the Clinical Nurse Specialist or Senior Medical Officer on Duty • REM Systems Technical Support (Monday-Friday 8.30-5.30pm) contact Customer Services 0508654258 or Russell Thomson 021466885 			

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD			
Troubleshooting-Technical problems with pump RESTART PUMP: ERROR 10			CARD NUMBER: 9
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital		FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors	
Description	Result	Possible Cause	Required Action
	Infusion stops	Fatal internal error has occurred	Restart the pump. If the alarm does not stop pack the pump properly, in its original packaging, and send it for service. Use replacement pump
NOTES:			
<ul style="list-style-type: none"> • If problems cannot be resolved, use the spare pump supplied, ensuring that the programme remains the same. • If pump needs to be switched off, ensure that alternative pain relief is available. • Problems with the spare pump or when no other pump available: Contact: Hospice 03-3754274 and ask for the Clinical Nurse Specialist or Senior Medical Officer on Duty • REM Systems Technical Support (Monday-Friday 8.30-5.30pm) contact Customer Services 0508654258 or Russell Thomson 021466885 			

TUNNELLED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING: CHANGE PERMANENT FILTER How to change permanent filter if thread becomes worn or appears to be leaking from filter site.	CARD NUMBER: 10
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital	FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors
ASSESS Patient	
<p>Please note, the filter attached to the intrathecal line does NOT need to be changed at each dressing change unless the thread becomes worn and/or leaking. However if needed to be changed must be done as part of a complete dressing change.</p> <p>Nurse 1 – Sterile Nurse 2 - Clean</p>	<p>If it is necessary to change the permanent filter, the dressing technique should be observed. The priming stage is when the clean filter is attached.</p> <p>Ensure filter remains on sterile field and is only handled by Nurse 1 at all times.</p> <ul style="list-style-type: none"> • N1 connects new permanent filter to new inline filter of which both remain in the sterile field • N2 handles inline filter connection to bag only. • Priming commences as per priming infusion (See Action Card #17). • N1 removes existing permanent filter and discard. • N1 immediately attaches new primed filters and line as per dressing procedure. • Complete dressing. • Patient will require a clinician assisted bolus of 1ml to replace the medications in the catheter or they will have a delay in receiving medications of up to at least 2 hours
ACTION/NOTES:	
After the dressing is completed ensure all clamps are off and the BodyGuard 595™ pump has started and running correctly – complete pump check list.	

Responsibility of:

Authorised By:

Issue Date: June 2019

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING: FLUID LEAKAGE FROM TUBING OR EXIT SITE	CARD NUMBER: 11
SETTING : Community (Patients Home, Hospice, Residential Care Facility), and Hospital	FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors
ASSESS PATIENT:	
History: <ul style="list-style-type: none"> - Where is fluid collecting? - Duration of leakage - Estimation of volume of leaking fluid - Assess pain – has there been a reduction in analgesia from the pump? - Do bolus doses work? 	Examination: <ul style="list-style-type: none"> - Check intrathecal exit site and tubing for site of leakage or collection of fluid under dressings - Has the line been dislodged?
ACTION / NOTES:	
<ul style="list-style-type: none"> • CSF may leak through the hole where the dura was punctured. This is because the pressure in the CSF is higher than the epidural space. Fluid may collect under the skin over the spine where the needle was inserted. This is called a hygroma and is usually self-limiting and not of clinical concern. This fluid should not be aspirated due to the risk of introducing infection. • CSF may track along the tunnelled catheter and leak around the exit point. This usually settles after a few days. Large volumes of leakage or symptoms of postdural puncture headache may require a blood patch, dural repair or repositioning of catheter. Discuss with palliative care SMO in the first instance. • If the leakage appears to be coming from the tubing external to the patient remove the dressings under aseptic technique (see Card numbers 10 & 13), and check the connections between the tubing and filters. These may come loose and allow fluid to leak. If tightening does not help try replacing the inline filter. • If patient is in pain give a bolus dose and watch the line and filters carefully to see if a site of leakage can be identified. This may need to be done with the dressings off. • If the leakage is coming from the line rather than the connections discuss with Dr Jordon Wood. The catheter may need to be shortened or replaced. 	

TUNNELLED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING: TAKING A SAMPLE OF CEREBROSPINAL FLUID (CSF)	CARD NUMBER: 12
SETTING: Hospital only	FOR USE BY: Hospital Medical and Nursing Staff
INDICATION: Suspected meningitis or catheter infection	
ACTION/NOTES:	
<p>To take a sample of CSF the dressing procedure should also be performed. Two staff are required to carry out this procedure.</p> <p>Assemble the dressing equipment required plus:</p> <ul style="list-style-type: none"> • New 0.2 micron filter • 2x1ml syringes • Sterile specimen pottle <p>To take the CSF sample:</p> <ul style="list-style-type: none"> • A new permanent filter must be attached to the new tubing and primed before the sample is collected. Ensure this new filter remains on sterile field and is only handled by the sterile nurse during the procedure. • Remove and discard the existing permanent filter attached to the catheter • Attach 1ml sterile syringe directly to catheter connector • Gently withdraw 1ml of fluid and discard • Attach a new 1ml sterile syringe and gently withdraw 1ml of CSF and then attach new primed filter and tubing (with inline filter) • Transfer CSF to appropriate culture jar and assistant can organise transfer of sample to the laboratory • Complete dressing (see Action Card # 18) • Reattach the tubing to the catheter with the clean permanent filter attached and primed • Patient will require a clinician assisted bolus of 1ml to replace the medications in the catheter or they will have a delay in receiving medications of up to 2 hours. 	

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING UNWELL PATIENT, COMMUNITY SETTING	CARD NUMBER: 13
SETTING : Community – Patient’s home, residential care facility or hospice	FOR USE BY: District nurses, palliative care specialist nurses, hospice and residential care nursing staff, General Practitioners
ASSESS PATIENT:	
<p>History:</p> <ul style="list-style-type: none"> - Fever, chills, rigors - Drowsiness - Headache, photophobia - Neck pain or stiffness - Confusion / delirium - Pain: Any worse? Same location or new pain? - Leg weakness or reduced position sense - Sensory changes in legs <p>Check Obs:</p> <ul style="list-style-type: none"> - Pulse - BP - Oxygen saturations - Respiratory rate - Temperature 	<p>Examination:</p> <ul style="list-style-type: none"> - Check intrathecal exit site, tunnel track and spine over insertion site for swelling, redness or tenderness
ACTION / NOTES:	
<ul style="list-style-type: none"> • If patient is febrile, drowsy, confused or systemically unwell this may indicate sepsis. THIS MUST BE RESPONDED TO AS AN EMERGENCY and urgent transfer to hospital arranged. • Phone the on call Palliative Medicine SMO to advise that the patient is being transferred to hospital. • If the patient is unwell but not showing signs suggestive of sepsis phone the on call palliative medicine SMO for further advice. 	

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING: UNWELL PATIENT, HOSPITAL SETTING	CARD NUMBER: 14
SETTING : Acute hospital: Emergency department or ward	FOR USE BY: Medical and nursing staff
ASSESS PATIENT:	
<p>History:</p> <ul style="list-style-type: none"> - Fever, chills, rigors - Drowsiness - Headache, photophobia - Neck pain or stiffness - Confusion / delirium - Pain: Any worse? Same location or new pain? - Leg weakness or reduced position sense - Sensory changes in legs <p>Check Obs:</p> <ul style="list-style-type: none"> - Pulse - BP - Oxygen saturations - Respiratory rate - Temperature 	<p>Examination:</p> <ul style="list-style-type: none"> - Thorough examination to identify possible infective source - Neurological examination of lower limbs - Check intrathecal exit site, tunnel track and spine over insertion site for swelling, redness or tenderness <p>Investigations:</p> <ul style="list-style-type: none"> - Full septic screen if fever or any other suggestion of sepsis – Bloods, blood cultures, urine sample and CXR - CSF culture if any suspicion of meningitis or catheter infection (See Action Card # 12) - Swab catheter exit swab if any part of catheter tunnel or exit site appear infected - URGENT MRI if worsening back pain and increasing neurological deficit. This may indicate epidural haematoma or abscess, or spinal cord compression unrelated to the intrathecal.
ACTION / NOTES:	
<ul style="list-style-type: none"> ● Possible sepsis in a patient with an intrathecal must be regarded as an emergency and responded to immediately. ● The on call palliative care SMO is should be notified about any deterioration or concern in a patient with an intrathecal. Palliative care will review the patient within 	

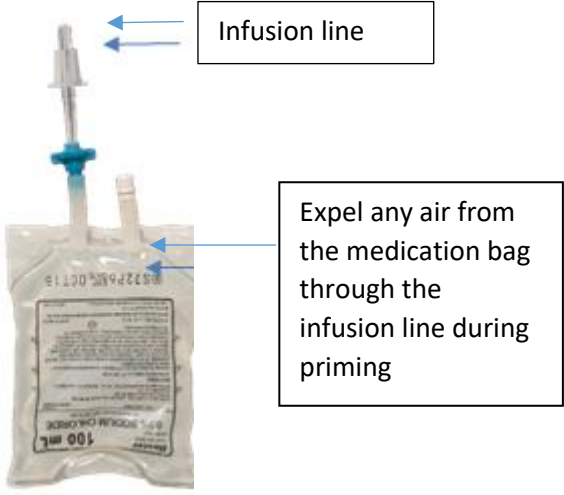

working hours, and may be available to see the patient out of hours if urgent review is necessary.

- The risk of meningitis with an intrathecal catheter is approximately 3%. If this is suspected urgent CSF and blood cultures are required followed by IV antibiotics. Consult with Infectious Diseases team regarding choice of antibiotic.
- If there is evidence of exit site or tunnel infection but no evidence of systemic infection antibiotics should be started after swabs have been taken. It may still be necessary to do a CSF culture but this should be discussed with the palliative care specialist first.

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING LOSS OF ANALGESIA OR INCREASED PAIN	
CARD NUMBER: 15	
SETTING : Community (Patient’s home, residential care facility, hospice), or hospital	FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors
ASSESS PATIENT:	
<p>History:</p> <ul style="list-style-type: none"> - Pain location and intensity. - Is this the same pain the patient had the intrathecal inserted for or is this a new problem? - Any benefit from bolus doses? - Any new or worsening neurological symptoms such as weakness, decreased sensation or altered bowel or bladder function? 	<p>Examination:</p> <ul style="list-style-type: none"> - Check intrathecal exit site and tubing for leakage - Check line – has it been pulled out or dislodged? - Check pump is functioning correctly (See action cards 1-11). - Neurological examination – any weakness, decreased sensation or decreased proprioception - Other clinical examination as guided by pain if this is different or new
ACTION / NOTES:	
<ul style="list-style-type: none"> • If repeated bolus doses improve the pain the patient may need an increase in the basal intrathecal infusion rate or an increased dose of medication in the next bag. Discuss with palliative care for further advice. • If there is a mechanical problem with the line such as dislodgement or leakage it may need repair or replacement. Discuss with palliative care in the first instance. • If repeated bolus doses do not improve severe pain analgesia may need to be given by an alternate route. Please contact palliative care for advice regarding drug route of administration and doses. • Intrathecal granuloma is a rare complication of intrathecal analgesia. An inflammatory mass forms at the tip of the catheter, usually weeks to months after catheter insertion. This typically presents with decreased therapeutic response to medications. Neurological signs and symptoms may also be present. MRI is the investigation of choice. • If there are signs or symptoms suggestive of spinal cord compression or any new neurological signs or symptoms see card 16. 	

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING: NEUROLOGICAL SYMPTOMS WEAKNESS, DECREASED SENSATION, DECREASED POSITION SENSE OR BLADDER/BOWEL DYSFUNCTION	CARD NUMBER: 16
SETTING : Community (Patients Home, Hospice, Residential Care Facility), and Hospital	FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital and residential care nursing staff, and doctors
ASSESS PATIENT:	
<p>History:</p> <ul style="list-style-type: none"> - Duration and onset of symptoms - Is there any new back pain or increase in pre-existing back pain? - Is the patient unwell with fevers or symptoms suggestive of infection? - Is there urinary retention or incontinence? - Is there faecal incontinence or new constipation? <p>Check Obs:</p> <ul style="list-style-type: none"> - Pulse - BP - Oxygen saturations - Respiratory rate - Temperature 	<p>Examination:</p> <ul style="list-style-type: none"> - Spinal tenderness - Detailed neurological examination of lower limb power, tone, sensation and reflexes - Is there a sensory level? - Is there altered position sense? - Rectal examination (tone) and perianal sensation <p>Investigation:</p> <ul style="list-style-type: none"> - Blood tests including coagulation profile - Blood cultures and CSF culture (See Action card #12) if any suggestion of infection - URGENT MRI SCAN if any suspicion of epidural abscess, epidural haematoma or metastatic spinal cord compression (see below)
ACTION / NOTES: (Continued over page)	
<ul style="list-style-type: none"> • The main differential diagnoses for new neurological signs and symptoms in a patient with an intrathecal are sensory or motor block due to bupivacaine, epidural abscess, epidural haematoma and intrathecal granuloma. • Notify the on call palliative care SMO regarding any new neurological symptoms in a patient with an intrathecal. Palliative care will review the patient within working hours, and may be available to see the patient out of hours if urgent review is necessary. 	

- If symptoms thought to be due to excess bupivacaine, contact palliative care for advice on cessation of pump or dose reduction. Neurological side effects are unlikely with bupivacaine doses of less than 15mg /24 hours
- Neurological signs and symptoms may also be due to spinal cord compression due to bone or spinal cord metastases unrelated to the intrathecal.
- If neurological signs are already present and do not resolve with a reduction in bupivacaine this must be investigated urgently and appropriate treatment instigated in order to prevent permanent neurological dysfunction.

TUNNELLED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING: PRIMING THE INFUSION SET	CARD NUMBER: 17
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital	FOR USE BY: District nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors
INDICATION: UPON BAG CHANGE Note: Bodyguard infusion sets cannot be primed by gravity due to the check valve in the set	
ACTION/NOTES:	
<ol style="list-style-type: none"> 1. When connecting the new medication bag to the infusion set, the bag should be held vertically with the connection port at the top to exclude air entering the line. (Fig. 1) 2. Load the infusion set into the Bodyguard pump 3. Turn the bodyguard pump on 4. Press 'stop/no' for menu and enter Level 1 access code to open main menu 5. The infusion line filter should also be held vertically during priming to allow it to fill from the bottom up. (Fig. 2) 6. Select 'prime' from the menu and press 'start/ok'. Bodyguard prompts you to ensure pump is disconnected from the patient 7. Press 'start/ok' again to commence priming. You may stop priming at any stage by pressing 'stop/no' or repeat the last 2 steps if the infusion set is not completely primed after first attempt. 8. Pump returns to main menu and 'select protocol'. If all air is expelled from the infusion set, connect to the patient. If not expelled, repeat steps 3-5. 	
 <p>Fig. 1</p>	 <p>Fig. 2</p>

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING: WEEKLY DRESSING/BAG CHANGE	CARD NUMBER: 18
SETTING : Inpatient setting- hospice/hospital Outpatient setting- community	FOR USE BY: Two health professionals should perform this procedure so one can maintain sterility of equipment. (Community based - preferably district nurse plus specialist palliative care nurse)
ASSESS PATIENT:	
<p>Wash hands and prepare sterile area This is a sterile procedure</p> <p>Use forceps to hold catheter in place then discard forceps</p> <p>Clean exit site with alcohol-chlorohexidine swab sticks in circular motion working outwards allowing 30 seconds between swabs and cleaning</p> <p>Ensure the filter end remains on the sterile field. Disconnect old tubing and hand to second nurse and sterile nurse attaches new tubing</p>	<p>Open the dressing pack, outer packets of gauze, Tegaderm CHG dressing, biatain and extra tegaderm, pump tubing and small 0.2 line filter and place on sterile area</p> <p>Carefully remove the outer dressing ensuring the catheter is not withdrawn</p> <p>Remove the old tubing from the pump</p> <p>Insert new bag and tubing to pump as per instructions, prime tubing ensuring air is removed from line (refer to Action Card No 17).</p> <p>Check prescription settings are correct on pump with both nurses. Discard old filter and tubing</p>





ACTION / NOTES:

ONLY the small filter is changed with tubing and dressing changes (Codan BC 684). The first filter is left permanently attached to the catheter. After dressing change both nurses should ensure all clamps are off and the pump is restarted and running correctly. The patient may require a bolus of medication after the dressing change as the pump will have been stopped.

EQUIPMENT REQUIRED FOR DRESSINGS

- 1 dressing pack
- 1 packet of (5) gauze squares
- 3 large (or 3 small) alcohol-chlorehexidine
- 1 Pump tubing and 0.2 micron filter (Codan BC 684)
- 1 Tegaderm CHG 10x12 dressing
- Extra tegaderm or opsite
- Sterile gloves
- New Medication Bag is required
- Biatain if required



TUNNELLED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING: CHECKING SHIFT/DAILY TOTALS	CARD NUMBER: 19
SETTING: Community (Patients Home, Hospice, Residential Care Facility), and Hospital.	FOR USE BY: District Nurses, palliative care specialist nurses, hospice, hospital, residential care nursing staff, and doctors
INDICATION: To record the amount of medication delivered	
ACTION/NOTES:	
<p>In the hospital, immediately after insertion till patient is on a stable dose of medication, record hourly totals twice per shift</p> <ol style="list-style-type: none"> 1. Press  to stop the infusion 2. Press the  button repeatedly to view the bolus attempted and given and volume infused hour by hour 3. Use arrow keys to scroll through the hours 4. Pump records the previous 24 hours information only 5. Press  to resume the infusion when you return to the 'STOP' screen <p>In the community, or in hospital once patient is on a stable dose of medication, record the 24 hour total AT THE SAME TIME EACH DAY. The patient/carer may be able to be taught to do this.</p> <ol style="list-style-type: none"> 1. There is no need to stop the infusion 2. Press the  button repeatedly till the current infusion total is displayed 3. Record the 24 hour total on the recording chart 4. The pump will continue running, no need to restart 	

TUNNELLED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD

TROUBLESHOOTING-

- ORDERING AND RESTOCKING OF COMMUNITY DRESSING SUPPLIES
- PREPARED MEDICATION BAG COLLECTION

CARD NUMBER: 20

SETTING: Community: Patients Home, Hospice, Residential Care Facility.

FOR USE BY: Medical and nursing teams in community.

SUPPLIES

Supply requirements

Discharging unit will provide 2 weeks of dressing products to the district nursing community/ residential care team on discharge of the patient from hospital/hospice.

The DN team will then order ongoing supplies via their usual ordering system.

The residential facility will order ongoing supplies via their usual ordering system.

A complete set of dressing products is required in house if an unscheduled dressing change is required.

MEDICATIONS

Medication collection for routine bag change:

Family are responsible to collect the prepared medication bag from Christchurch hospital pharmacy prior to bag change. With family also responsible for the safe storage of this medication.

If the family is unable to collect medication, then Blue Star taxi service will provide a delivery service with prior arrangement from Christchurch Pharmacy to delivery point. There is a charge out rate for this service which will be directed back to family.

TUNNELED EXTERNALISED INTRATHECAL CATHETERS GUIDELINES ACTION CARD	
TROUBLESHOOTING WHO TO CONTACT	
CARD NUMBER: 21	
SETTING: Community: Patients Home, Hospice, Residential Care Facility, and Hospital.	FOR USE BY: Patients/Relatives/District Nurses/Residential, Care Staff/G.P's.
<p>During Working Hours:</p> <ul style="list-style-type: none"> • Patient to call Nurse Maude (03-3754200) and ask to speak to the District Nurse Coordinator for their area. • The Coordinator will send out a member of their District Nursing Team to the patient's house. • District Nurse to troubleshoot as per the 'Troubleshooting Action Cards" and escalate if needed as per instructions on the cards. • If queries remain contact Nurse Maude Hospice on (03-3754274) and ask for the Clinical Nurse Specialist (CNS) or Community Care Senior Medical Officer (SMO) for that area. 	
<p>Outside of working hours:</p> <ul style="list-style-type: none"> • Patient to call Nurse Maude on (03-3754200) and ask for the District Nurse on call. • A member of the District Nursing Team to visit the patients home • District Nurse to troubleshoot as per the 'Troubleshooting Action Cards" and escalate if needed as per instructions on the cards. • If queries remain contact Nurse Maude Hospice on (03-3754274) and ask to speak to the Palliative Care Senior Medical Officer (SMO)/ Nurse Practitioner on call (2nd on call) • An on-call doctor (1st or 2nd on call) MAY be able to perform a home visit depending on the patients location and other clinical commitments 	

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