



Protocol Responsibilities and Authorisation

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Target Audience	NNPs, CNSs, Registrars, SMOs & Nurses

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Protocol Review History

Version	Updated by	Date Updated	Summary of Changes
3	Arun Nair	Oct 2016	None
4	Anja Hale	Nov 2021	Name Change. Insertion of CVAD, Taping and Dressing of CVAD. Documentation of CVAD management.
5	Anja Hale	March 2022	Content updated

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1 Overview

1.1 Purpose

To provide instructions on the insertion, management, and maintenance of Central Venous Access Devices (CVADs) in the Neonatal Intensive Care Unit (NICU) when used to provide prolonged total parenteral nutrition (TPN) or drug therapy for neonates.

1.2 Scope

Te Whatu Ora Waikato staff working in Neonatal Intensive Care Unit (NICU): Consultants, Registrars, Neonatal Nurse Practitioners (NNP) & Neonatal Nurse Specialists (NNS).

1.3 Patient / client group

Neonates and Infants in NICU.

1.4 Definitions

Aseptic non-touch technique (ANTT)	Aseptic Non-Touch Technique (ANTT) is a technique that maintains asepsis and is non-touch in nature.
	The key parts of any procedure are identified and protected – this includes staff performing effective hand hygiene, instituting a non-touch technique when handling, and wearing the appropriate standard precautions.
	For the purpose of this guideline the word "STERILE" will continue to be used to describe access to the CVAD.
Bundle of care	Care bundles are groupings of best practice interventions, which individually improve care but when applied together, result in a significantly greater improvement.
CHG	Chlorhexidine gluconate
CNS	Clinical Nurse Specialist
CVAD	Central Venous Access Device
IV	Intravenous
Medical Staff	In NICU they include Neonatal Nurse Practitioner, Clinical Nurse Specialist, Registrar and Paediatricians.
NNP	Neonatal Nurse Practitioner
IVN	Intravenous nutrition used for preterm or term infants unable to tolerate enteral feeds for a prolonged period.
SMO	Senior Medical Officer

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1.5 Indications for Use

- Prolonged intravenous nutrition
- Long-term IV drug therapy
- Administration of hyperosmolar IV fluids i.e., dextrose solution >12.5%, inotropes
- Limited IV access

1.6 Contraindications

- Infection systemic or cutaneous near the proposed point of insertion
 - Occasionally a CVAD may need to be placed to assure antibiotic therapy for systemic infection.
- Anatomical irregularities in the infant's extremities or chest that could interfere with placement of the catheter.

1.7 Special considerations

- Thrombocytopenia or coagulopathy may require blood product correction prior to insertion.
- Decreased venous return- Oedema that presents due to decreased venous return may be hard to distinguish from oedema resulting from catheter complications. Choose another limb if possible.

2 Clinical Management

2.1 Competency required

• All medical staff which includes NNPs, CNSs, Paediatricians and Registrars experienced in CVAD insertion or under direct supervision from a trained professional.

CAVD insertion, line changes and dressings are high risk procedures and due care must be taken to avoid contamination of the area, by following general aseptic principles all the time. It is strongly recommended that the staff involved are not interrupted. All other staff and members of the public should keep away from the area during the procedure.

2.2 Equipment

- Trolley
- Gown pack x 1
- Masks and caps x 2
- Sterile gloves x 2
- Sterile drape
- Neonatal I.A. line tray (sterile pack), or manufacturer supplied kit

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- CVAD catheter Select the size appropriate to the infant's weight, vein size and anticipated fluids/medications to be infused
 - o Vygon Nutriline Catheter 24G (2F) 30cm.
 - This is the preferred line for all infants (i.e., most of our babies).
 - Vygon Epicutaneo Cave Silicone Catheter with blue hub 24G (2F) 30cm. (EPI cath)

This requires disconnecting the line after insertion and may increase the risk of infection.

- o Vygon Nutriline Twinflo double lumen Catheter 24G (2F) 30cm.
- o Vygon Premicath polyurethane 28G (1F) single lumen 20cm (Premi cath)
 - This should be used for infants weighing < 1000g only when a 24G line is unable to be inserted.
 - If used for any other indications, please discuss with specialist on service or on call first.
 - Maximum flow rate 10ml/hr
- Microsite or Microflash for Nutriline catheters
- BD Insyte 20 GA 30mm (pink cannula) for EPI cath or BD Insyte 24 GA 19mm (yellow cannula) for Premicath
- 3 way tap x 1
- 5ml and 10ml syringes
- · Drawing up needles
- Sodium chloride 0.9%
- Chlorhexidine gluconate 2% swabstick (alcohol free) for infants >1000g
- Sterile water for infants <1000g.
- Omnipaque for CVAD
- Tegaderm (3M™ Tegaderm™ Transparent Film Dressing 1622W) for CVAD
- Sterile Steri-strips
- Duoderm

2.3 Guideline

- 1. Discuss the procedure with parents including indication for CVAD, the risks and benefits. Gain parental consent.
- 2. Select the vein to be used and measure the required length of catheter to be inserted from point of entry to desired tip placement
 - o CVAD inserted via the leg, measure from the insertion site to Xiphisternum

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- CVAD inserted via the arm, measure from insertion site to the sternal notch
- 3. To reduce contamination of sterile field by through traffic, restrict access to nursery with door "STOP" signs and screens prior to commencing procedure
- 4. Consider methods of pain relief including
 - Swaddling of infant
 - Sucrose gel 66% if >1000g (<u>Sucrose Oral Liquid for Analgesia in Neonates and Infants</u> drug guideline)
 - Intravenous opioid (<u>Fentanyl for neonates</u> and <u>Midazolam for neonates</u> drug guidelines)
 - o Intranasal midazolam (Midazolam for neonates drug guideline)
- 5. Both clinician inserting CVAD and assistant apply hair covering and mask
- 6. Clean trolley with antiseptic wipes or Hyposal
- 7. Perform hand hygiene with soap and water or alcohol-based hand rub
- 8. Open equipment and prepare a sterile field
- 9. Perform hand wash using antiseptic soap solution for 2 minutes as per hospital hand hygiene recommendations. Dry hands with sterile towel provided. Don sterile gown and gloves (double glove).
- 10. Prepare the catheter by attaching a 10 ml syringe with 0.9% sodium chloride to catheter using a 3 way tap and flush to displace the air from the lumen and asses the integrity of the catheter prior to insertion. Flush through all lumens.
- 11. Position the infant
 - For arm insertion abduct the arm with the infant's head turned toward the intended arm for insertion. Chin to shoulder will reduce the likelihood of the catheter entering the jugular vein
 - For leg insertion you may need to manipulate at the hip to get past the venous femoral confluence
- 12. Prepare the insertion site and surrounding skin with Chlorhexidine gluconate 2% skin swabs. If <1000g use sterile water. Begin at insertion site and swab in a circular motion for 30 seconds then allow at least 2 minutes to dry. Remove first pair of gloves.
- 13. Place sterile drapes underneath and above the insertion site providing as large a sterile field as can be safely done, whilst ensuring the ability for adequate observation of infant.
- 14. Apply a sterile tourniquet 2-3 cm above insertion site if required.
- 15. Use slight tension to the skin to stabilise the vein and then insert the introducer needle or splitting cannula, bevel upwards at an angle of 20° to the skin until securely within the vein.

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- 16. When blood flow is seen in the cannula chamber gently advance a few millimetres further to ensure that the entire needle bevel is within the vein (not required with Microsite or Microflash). Remove the tourniquet.
- 17. Whilst stabilising the introducer needle to maintain its position in the vein use non toothed forceps to advance the catheter in short increments (0.5-1cm) until the desired length is inserted.
- 18. If resistance is encountered, flushing with flush solution may help the catheter advance past obstructions and valves in veins.
- 19. Aspirate for a blood return which indicates vascular placement.
- 20. If using an introducer needle completely withdraw from insertion site, keeping the needle parallel with the skin to avoid cutting the catheter. Remove the split away needle.
 - o If using a Microsite or Microflash, withdraw from insertion site and remove split cannula.
 - If using EPI-Cath detach longline at blue hub, remove cannula and reattach connection, ensuring air is not introduced. The black marker that lies over the metal insert must not be visible to avoid perforation of the line at this junction.
 - If using a Premicath and 24 G angiocath, cut cannula following insertion into vein and prior to threading catheter. Slide back up line to T-piece connection and secure with Steristrip.
- 21. A lack of blood return or inability to flush may indicate malposition. Withdraw the catheter slightly and aspirate. Continue this manoeuvre until a blood return is present, then attempt to reinsert the catheter (perform step 20 prior to any manipulation of line).
- 22. Apply pressure to the puncture site until bleeding stops. Secure at skin with Steristrip just beyond insertion site.
- 23. Verify the position of the catheter by x-ray using Omipaque (0.5 ml in 5 ml syringe)
 - The preferred tip locations are the superior vena cava (above T4) for arm placement, or the inferior vena cava outside of the heart shadow and below T9 for lower limb placement.
 - If the catheter tip is beyond the desired location, it must be withdrawn. Position should be confirmed by re x-raying.
 - Catheters that are not in far enough can only be advanced if the insertion site has remained sterile.
 - The decision to use a catheter that is not centrally placed must be made following careful consideration of the necessity of vascular access versus the higher risk of catheter complications.
 - Catheters inserted through the lower limb, in particular the left side, may enter the lumbar vein. The radiographic image is obtained whilst the Omipaque is being administered. A lateral view may provide additional information.
- 24. Secure the catheter as per 2.5

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2.4 Potential complications

- Mechanical problems such as occlusion, leaking and dislodgement
- Catheter related blood stream infection (High risk)
- Catheter migration
- Extravasation
- Myocardial perforation, effusion, or tamponade

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Prevention and management of complications is outlined in the following table (See Appendix C for troubleshooting flowchart)

Problem	Prevention	Detection	Management
Occlusion	Use positive pressure flushing techniques	Change in capacity to infuse solutions	Check catheter is not clamped
	Flush line following drug administration	Monitor for kinked CVAD or infusion lines	Attempt to reposition patient
	Always run continuous infusion of ≥1mL/hr through PICC line		Inspect catheter for knots, bends migration
	Do not sample blood via PICC line		Attempt to clear CVAD
	Correct any obvious signs of mechanical obstruction		(pulsatile flush) Troubleshoot with senior RN/ NNP/Registrar
Sepsis	Hand hygiene	Respiratory	Remove line if possible
	Minimise line access	deterioration	Obtain specimens for
	Observe for signs of inflammation	Increasing or new	culture (urine, blood)
	or discharge from insertion site (CLIP score)	apnoea/bradycardia events	Commence IV antibiotics
	Ensure dressing is intact and free of exudate Remove CVAD when no longer required	Lethargy, poor feeding, hyperglycaemia, temperature instability Altered white blood cell count	Evaluate chest x-ray
Phlebitis	Observe insertion site for warmth,	Erythema and/or	Elevate limb
	oedema and vein induration	oedema at entry site	Check chemical properties of infusion. If chemical irritation likely, consider either slower administration or further dilution
			If no improvement after 24hours or phlebitis advances consider removal of line
Thrombosis	Check tip location on x-ray	Facial, neck and chest	Treat thrombus with
	Detect inflammation and phlebitis early	wall oedema or venous distension	heparin or antithrombotic agent
	Secure catheter to prevent migration	Respiratory deterioration	Consider removal of line
		Resistance to flushing	

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Catheter migration	Maintain security of dressing Verify tip position whenever a chest x-ray is taken for another clinical reason	Atrial or ventricular arrhythmias depending on migration location Tension on catheter	Obtain x-ray and verify tip position Consider leaving in current position or pulling line back Check with x-ray following adjustment Consider removal of line
Catheter dislodgement	Maintain security of CVAD with intact dressing Ensure no tension on CVAD or dressing	Loosening of dressing following tension on line Security of dressing compromised	Obtain x-ray to check tip position Consider risks and benefits of leaving catheter in position Consider removal of line
Catheter Breakage	Maintain security of CVAD with intact dressing Provide families with information on how to move their baby safely	Evidence of blood or fluid leaking from the line Visualisation of a broken or snapped CVAD	Clamp the line Check the patient for signs of air embolism Notify Medical staff Determine if line can be repaired Implement strategies to prevent reoccurrence
Air Embolism	Use needleless access device between end of CVAD and all extension sets Clamp or briefly occlude lines during disconnection Use pumps for all infusions and ensure connections are secure Do not use alcohol to clean CVAD catheter as this may weaken the material and increase risk of line fracture	Check tubing for disconnection or air in line or extension sets Check for line fracture	Signs of air embolism can include sudden onset cyanosis, shock and cardiac arrest Place infant in left lateral head down position and seek medical assistance Administer 100% oxygen to decrease air embolism

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2.5 Securing of CVAD (See Appendix A)

- Secure external length of catheter with a slight curve as it exits the skin to minimise the risk of tension causing outwards migration. Apply skin closure strips (Steristrips) 0.5-1 cm from insertion site to allow visualisation of puncture wound.
- Loosely coil the remaining length of catheter and secure with another Steristrip preventing kinks or bends
- Cut a rectangular piece of hydrocolloid skin barrier (Duoderm) and place under catheter hub to prevent skin breakdown. Secure with Steristrips
- Position the extension set to exit the dressing distal to insertion site
- Cover the site with transparent semipermeable membrane dressing (Tegaderm) allowing for ongoing site inspection. Stretching dressings during application can cause adhesion failure. Ensure the dressing does not circumference the limb.

2.6 Documentation

Document the procedure in the clinical record and the CVAD insertion checklist including:

- indication
- brand, type, size, number of lumens and lot number (utilise sticker from CVAD packaging)
- · vein of insertion
- number of attempts at cannulation
- any complications encountered
- · length of catheter at insertion point
- · radiographic location of catheter tip and any manipulation of catheter
- · procedural medications given and infant's tolerance of procedure
- · name of clinician performing procedure

2.7 Dressing Change of CVAD

A dressing change is required in the following situations:

- Dressing integrity is compromised
- Moisture, drainage, or blood is present
- Signs of infection are present

Changing the dressing is a two-person procedure to minimise the risk of contamination.

Every time the CVAD site is accessed for dressing change or adjustment of line, it must be done aseptically. Do not access the CVAD through the port holes for this purpose, open the incubator side or raise lid fully.

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- 1. Follow steps 3-9 of insertion, preparing infant and environment
- 2. Remove the dressing by loosening the distal edge and gently stretching the dressing in a distal direction peeling the dressing back to the insertion site. Remove Duoderm and Steristrips
- 3. Clean the area beneath the dressing and the length of the catheter with Chlorhexidine gluconate 2% skin swabs. Non-alcohol based preparations must be used as alcohol may interfere with catheter integrity.
- 4. Place Tegaderm dressing ensuring full coverage of insertion site, Duoderm and securing strips.
- 5. Document in clinical notes the appearance of the site, the current marking in cm at the insertion point (noting any migration), infant's tolerance of the procedure and any problems encountered.

2.8 CVAD Line Change for Nurses

- If the line is accidentally broken into, leaks or used for emergency drugs without the prescribed asepsis precautions mentioned above, consider removal of the catheter, or if not possible to remove, replace the infusion set as soon as possible within the next 24 hours.
- For infusion set change, clean the hub and the smart site extensions and using single use swabs with CHG 2% in 70% alcohol generously, taking care that the solution does not drip on to the skin of the baby. Allow to dry before touching again.
- Use sterile drapes and non-touch technique for preparation, priming and connection of infusion set as described in the nursing protocol manual.
- Change the infusion set delivering lipid or medication infusions (except insulin) every
 24 hours.
- For IVN (Reg 96) or clear fluids (saline, insulin, or dextrose), the infusion set needs changing only **every 72 hours**.
- Lipid Solution should be changed every 24 hours.
- IVN solution should be changed every 72 hours. Electrolytes may be added to a burette using sterile technique PRN during 72 hour hang time of clear IVN fluids.
- If the catheter needs to be kept for antibiotics or for any other purpose, use saline or dextrose infusion at a minimum rate of 1 ml/hour through the CVAD Line.
- <u>Do not try and withdraw blood from CVAD and do not stop infusion during antibiotic administration.</u>
- Change the infusion set every 72 hours. (Do not use IVN or Lipids solutions for this purpose)

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3 Audit

3.1 Indicators

- CVAD infection rate (local database)
- 100% completion rate of Insertion Checklist and Record
- CVAD removed when infant's condition no longer necessitates its use or if complications require its removal.
- Extravasation rate
- Tissue injury rate from pressure areas

3.2 Tools

- Central Vascular Access Device Insertion Checklist and Record
- Documentation on level 3 observation chart.

4 Evidence base

4.1 Associated Te Whatu Ora Waikato Documents

- NICU Nursing <u>Central Venous and Umbilical Venous Line Management in Newborn</u> <u>Intensive Care Unit</u> procedure (4936)
- Fentanyl for neonates drug guideline (Ref. 2916)
- Morphine for neonates drug guideline (Ref. 2940)
- Midazolam for neonates drug guideline (Ref. 2939)
- Sucrose Oral Liquid for Analgesia in Neonates and Infants drug guideline (Ref. 2905)

4.2 References

- Guidelines for the prevention of Intravascular catheter related infections: Pediatrics 2002 Vol.110 No.5
- Strategies to prevent Central line- Associated blood stream infections in acute care hospitals. SHEA/IDSA Practice recommendation. Infection Control and Hospital Epidemiology 2008 Vol. 29, Supplement 1
- Epic2: National Evidence-based Guideline for preventing Healthcare-Associated Infections in NHS Hospitals in England: Journal of hospital infection 2007 65S, S1– S64
- Percutaneous CV Catheterisation. Chapter 31. Atlas of Procedures in neonatology III Ed Lippincott Williams & Wilkins 2002
- 5. Antiseptic Skin Preparation- First line use of CHG2%/ Alcohol 70% for all age group. Clinical guideline: Great Ormond Street Hospital for children UK.

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- 6. Aseptic non-touch technique RBP. Clinical Practice Manual, Starship Children's Health, ADHB
- 7. Peripherally Inserted Central Catheters: Guideline for Practice, 3rd edition. National Association of Neonatal Nurses.
- 8. NQIP Infection Prevention and Control. Guideline for New Zealand Hospitals. Preventing ventral venous catheter-related bloodstream infections. December 2009.
- 9. Intravascular Devices Policy. Downloaded November 2021
- 10. northdevonhealth.nhs.uk/wp-content/uploads/2020/03/intravascular-Devices-Policy-v4.0.pdf
- 11. Central Venous Access Device (CVAD) Management in Neonates in the ICU environment. Practice guideline. The Sydney Children's Hospitals Network. Published 24/03/21

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Appendix A - Securing a Longline Central Vascular Access Device

Securing a Longline Central Vascular Access Device



Step 1: Secure near insertion site



Step 2: Loop and secure the catheter



Step 3: Cut a small rectangle of duoderm



PDI cutto



Matellina

Step 5: Cover hub and line with tegaderm ensuring all tapes and insertion site covered. Not circumferential

Chan A: Bartillan	buls on duadage.	and coown with	etadetdae	Line must exit distally
Step 4: Position	HIGO ON GUDGETHI	WIND SECURE WILL	SUMPOSULIPS.	consentrate exercisions.

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Appendix B - Central Vascular Access Device Insertion Checklist & Record.

WAIKATO CHILD AN	ID YOUTH HEALTH	Patient Name date of Birth			
Waikato D	istrict Health Board	NHI			
			(or sticker)		
Cen	tral Vascular Access [Device Insertion Che	ecklist & Record	4	
CCII	trai vascalai Access i	sevice inscrition end	ckiist & necore	, a	
M	ust be completed for ALL central li	ine / Long line insertions on all r	atients (ONF per line)		
Insertion Details		,0			
Date Line inserted		Time inserted:			
Location of Procedure		Insertion Site Righ	t□ Left□		
□ NICU Waikato		☐ Saphenous	□ Jugular (int/e	xt)	
□ Theatre		☐ Cephalic	☐ Femoral		
□ other		□ Basilic			
		□UAC	□UVC		
Catheter Details					
Type 🔲 umbilical	line		□single		
☐ Nutriline		No of Lumens	LI STIIGIE		
☐ Premicath		No or Earliens	□double		
☐ Epicutan	eo Cath				
Internal Length measu	ired	Product Label			
CVAD at skin _	cm	_			
UAC at stump _	cm	_			
	cm				
	cumented in patient's clinical reco				
Placement confirmed l		Line Ready for use? Yes D] No 🗆		
Location of tip on X-Ra	<u> </u>	Signature			
Insertion Bundle (to b	e completed by observer & signed	l by proceduralist & observer		T.,	1
4.5.1	i			Yes	No
1. Environment prepar		for 2 minutes		+	
	giene using chlorhexidine 4% wash		200-1 🗆	+	-
3. Skin preparation: 4. Maximum barrier pr	chlorhexidine 2% (>1000g)	□ sterile water (<1)	лооg) <u> </u>	+	
4. Maximum barner pr	Hat			+	
	Mask			+	
	Sterile gown			+	
	sterile gloves			+	
5 Large sterile dranet	hat covers entire patient			+	
	a intained during procedure and wl	hen applying dressing		+	1
Proceduralist Name					1
Designation		Proceduralist Signature			
Observer Name					
Designation		Observer Signature			
If there is a brea	ch of sterile technique at Al and the practice must	NY time, catheter placem be corrected before reco		<u>MMEDIA</u>	TELY

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9	VAIKATO CHILD AI	KIDS NO YOUTH HEALTH		Patient Name			
	Waikato [District Health Board		date of Birth NHI			
		100		IVIII	(or sticker)	
. 20	Cor	atral Vasc	cular Access De	vice Insertion	•	•	
	Cei	itiai vast	dial Access De	vice insertion	CHECKHST &	Record	
	This	s form is to be	e completed by Medic	al Team as a daily rec	ord of CVAD man	agement	
Date Lin	e inserted	JJ		Time inserted _	_:	8	
				_	Site /		
			Purpose		observed		
	l	CVAD still	PN (Parenteral nutrition)			Date	
Date	Time	required? Y/N	Abx (antibiotics)	Dressing integrity	CLIPS	dressing changed	Signature
		'/'	FL (fluids)		Score	changed	
			M (medication)				
		-		-			
		C	LIPS (Central Line	Infection Preventi	ion Score)		
			•		,		
			Good		No sign of	infection	
	Site appears hea	llthy	Score 0		Observe & Record in:		
- Pain	one of the following of at insertion site nema at insertion site	evident?					present
	us discharge		Score 1				
				Insert	tion site infection +/- catheter	suspected blood stre	eam infection
- Inse	NY of the following e ertion site inflammat	ion (pain,	Immediate	Esca	Stop using CV alate to medical team immedia		or discharge
redn disch	ess, swelling, puruler arge	nt	Action Required		pres Obtain bloo	ent	
	thema at insertion sit ous discharge	te	Score 2		Obtain bloods Consider line remov		

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9	Mai	kids'		Patient Name					
, .	VAIKATO CHILD AN	ND YOUTH HEALTH		date of Birth					
	Waikato D	District Health Board		NHI					
				'	(or sticker)			
	Cer	ntral Vaso	ular Access De	vice Insertion	Checklist &	Record			
	This	form is to be	completed by Medic	al Team as a daily rec	ord of CVAD mana	agement.			
Date Lin	e inserted			Time inserted	:				
			Durnoso		Site /				
			Purpose PN (Parenteral nutrition)		observed		Signature		
D-4-	Ti	CVAD still	Abx (antibiotics)	Dunaniu a in ta anitu		Date dressing changed			
Date	Time	required? Y/N	FL (fluids)	Dressing integrity	CLIPS				
		',''			Score				
			M (medication)						
	1								
						<u> </u>			
Date Lin	e Removed			Reason for Remova	al				
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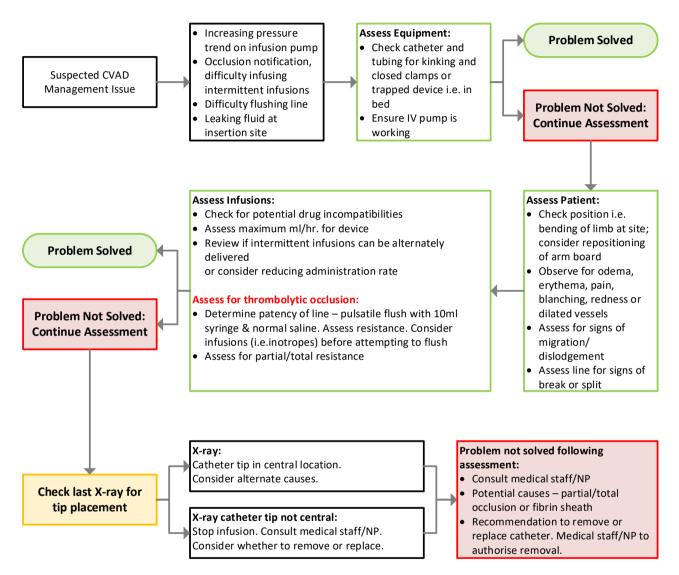
	Walkato CHILD A	KIGS ND YOUTH HEALTH District Health Board	Nular Accoss Do	Patient Name date of Birth NHI (or sticker) evice Insertion Checklist & Record					
ate Lir				al Team as a daily reco					
)ate	Time	CVAD still required? Y/N	Purpose PN (Parenteral nutrition) Abx (antibiotics) FL (fluids) M (medication)	Dressing integrity	Site observed CLIPS Score	Date dressing changed	Signature		
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Appendix C - Troubleshooting flowchart

The following flowchart is used to guide the assessment and management of central line occlusions.



Troubleshooting Flowchart Modified from Earhart (2013)

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