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BD

Managing the patient with peripheral IV access

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Peripheral IV Access

- Peripheral IV Cannula
- Longer Length PIVC
- Short Midline
- Standard Midline

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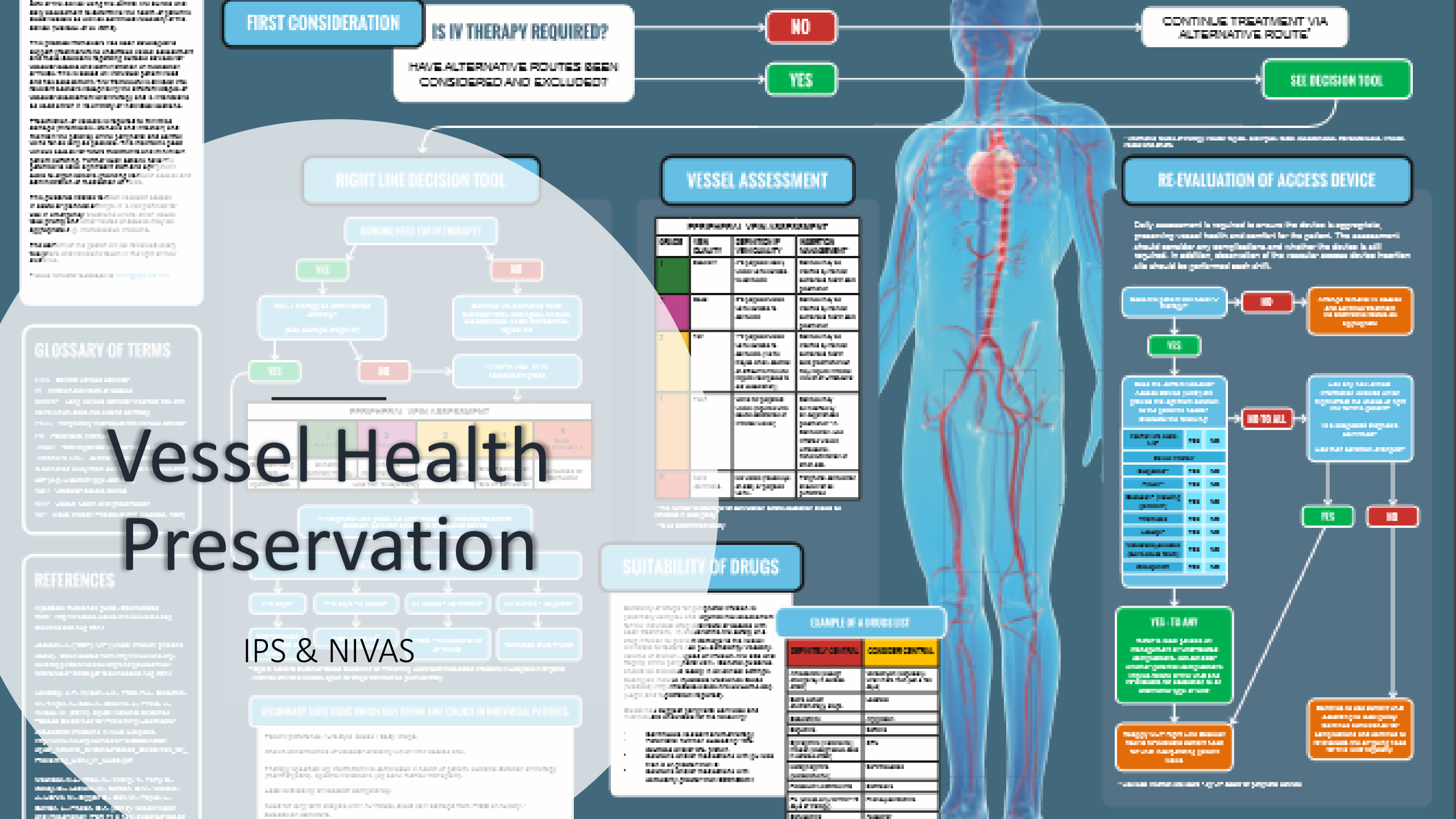
Vessel Health Preservation

IPS & NIVAS



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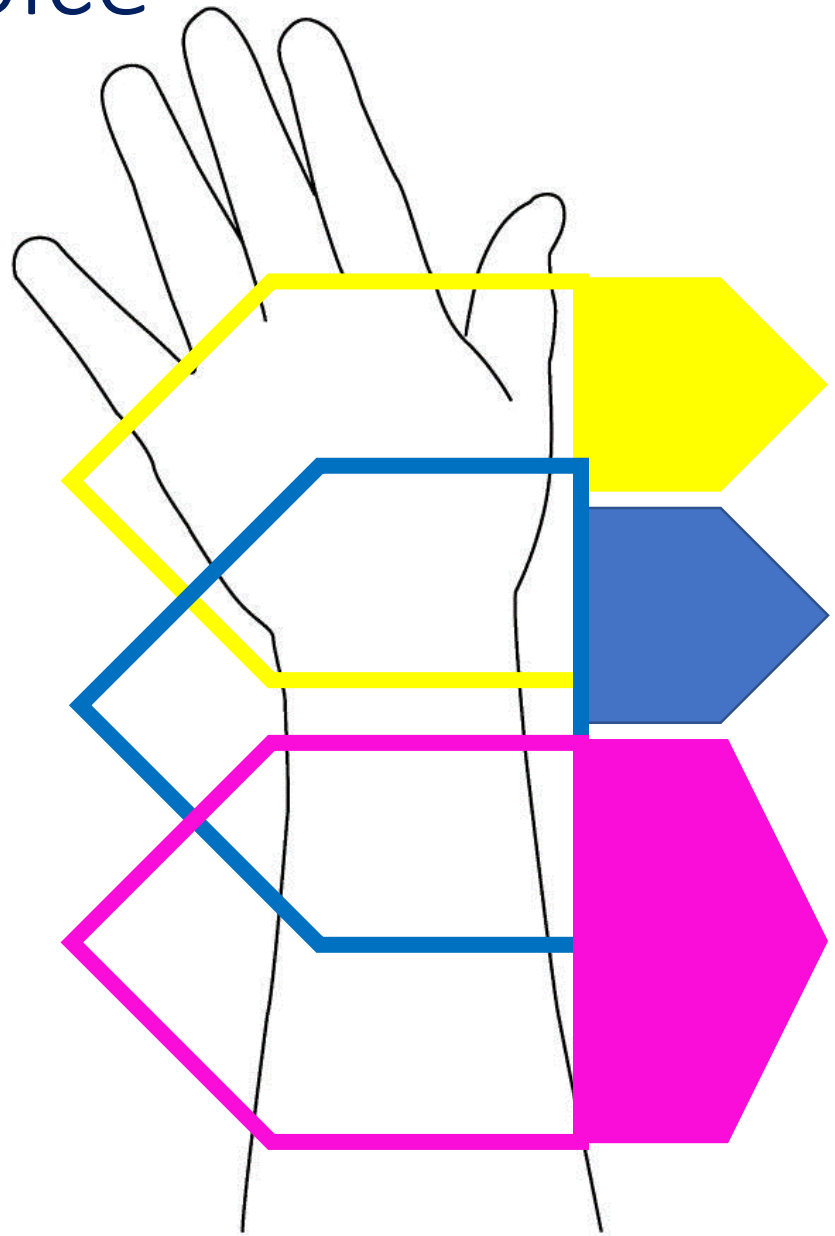
11 attempts

Cannulation site choice

- Choose the appropriate site
- Priority is vessel health
- Smallest cannula possible
- As far down the arm/hand
- Joints and points of flexion a last resort



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A Guide to Choosing the Correct Cannula for your Patient

		Approximate Flow Rates (l/hr)			
Colour	Common Applications	Size Gauge	Crystalloid	Plasma	Blood
Orange	Used in theatres or emergency for rapid transfusion of blood or viscous fluids	14G	16.2	14.2	12.9
Grey	Used in theatres or emergency for rapid transfusion of blood or viscous fluids	16G	14.1	10.9	10.0
Green	Blood transfusions, parenteral nutrition, stem cell harvesting and cell separation, large volume of fluids	18G	6.1	5.2	3.8
Pink	Blood transfusions, large volumes of fluids	20G	4.0	2.7	2.5
Blue	Blood transfusions, most medications and fluids	22G	2.5	1.6	1.4
Yellow	Medications, short term infusions, fragile veins, children	24G	0.8	0.7	0.5

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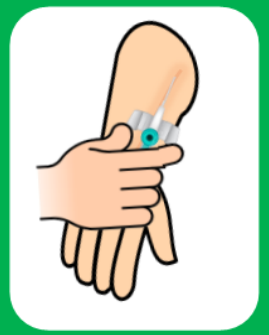
Peripheral Cannulation
Difficult Vascular Access Guidance

Vein Visible

Vein Palpable



Attempt Cannulation

2 Failed attempts

2nd practitioner 2 Failed attempts

5th attempt Refer

No Veins

Consider Vein location technology

Refer to IVAS Ext 2668
Bleep 651, 879, 894

Out of Hours
NNP Bleep 454
On-Call Anaesthetist
via Switch

Difficult Vein Access

Use Vein Location Technology

Ultrasound
Veins below 5mm

Infrared
Veins up to 7mm

Vein Stimulation
Enlarges and stabilise peripheral arm veins

Consider local/topical anaesthetic

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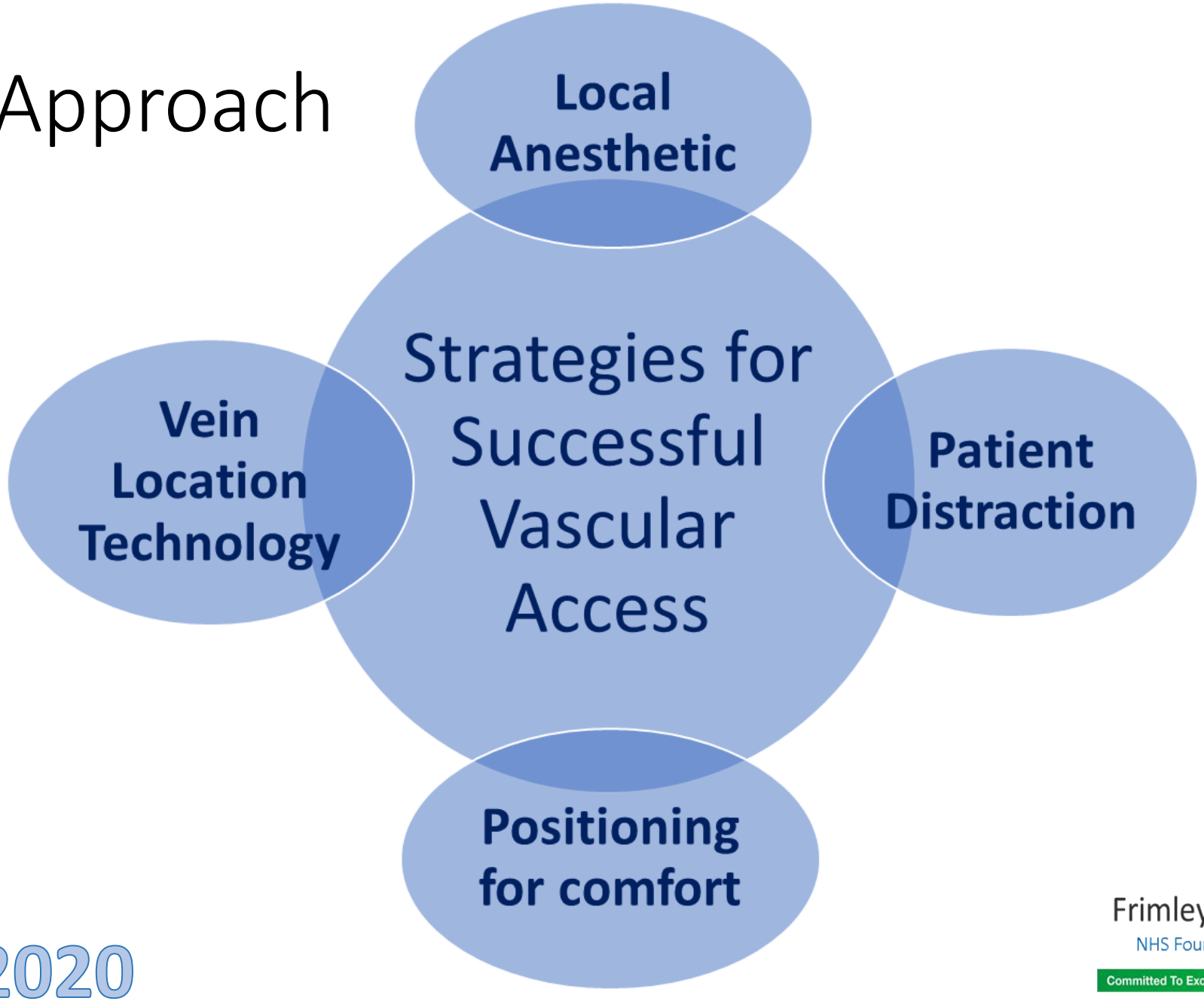
- Vein Preparation Technology
  - Heat
  - Electricity
  - Hydration
- Vein Location Technology
  - Ultrasound
  - Infrared
  - Illumination Lights

4 Step Approach



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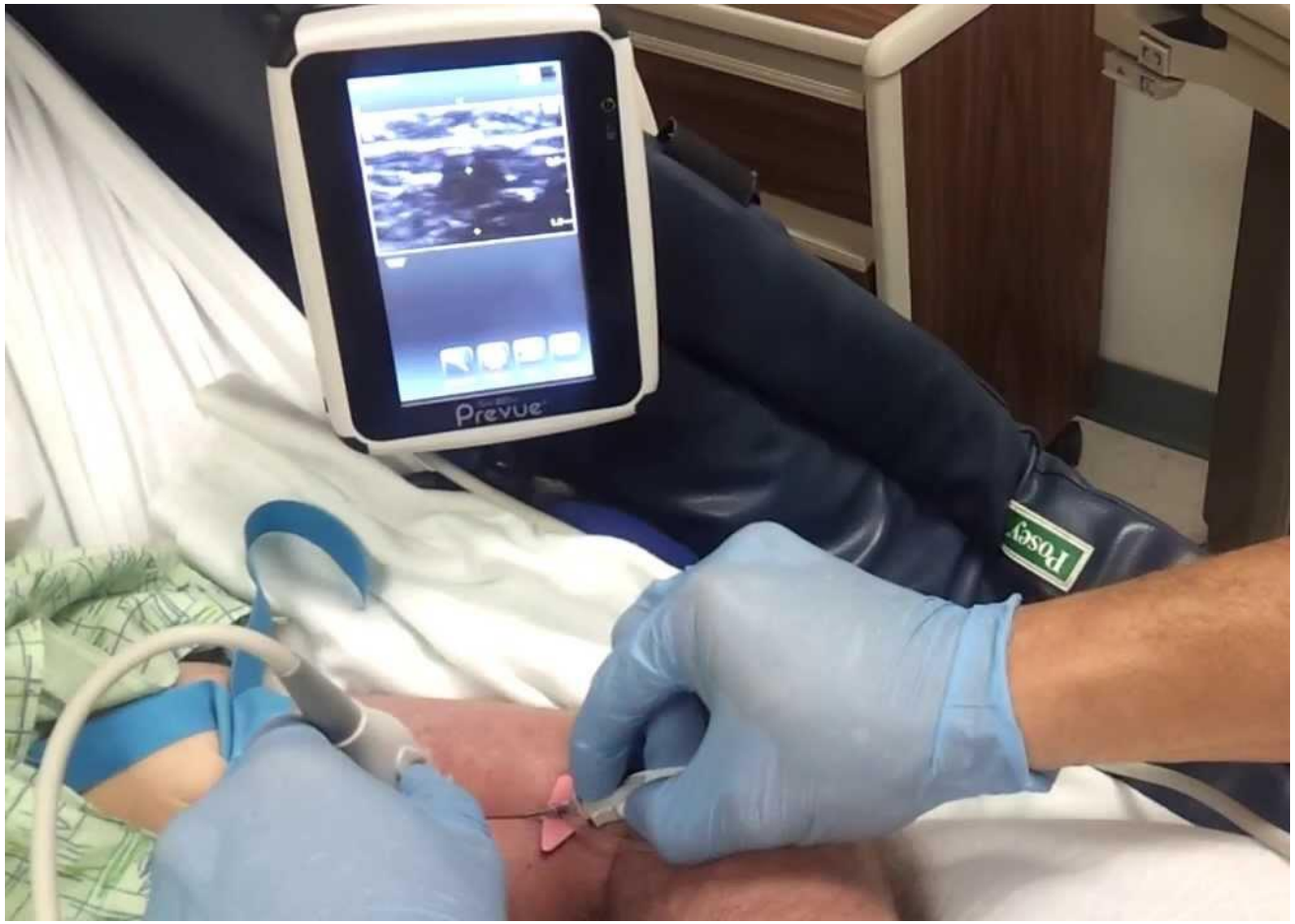
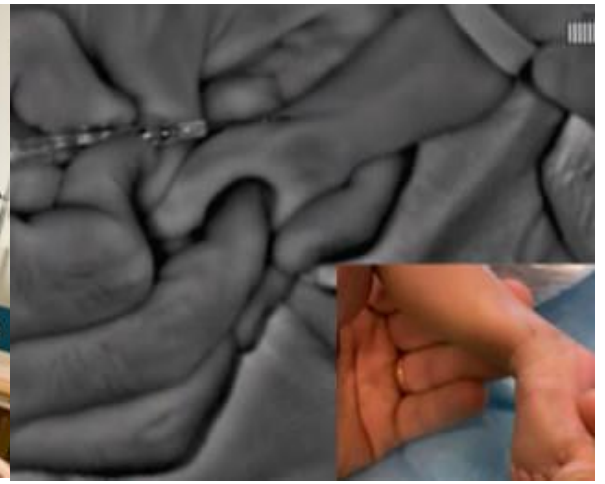
Vein Location Technology





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Ultrasound

- First attempt success rates over 95%
- Can reduce waste
- Confidence that cannula is sited in the vessel.
- Less painful and traumatic for the patient.
- Preserves vessels.
- Less complications caused through catheter malposition

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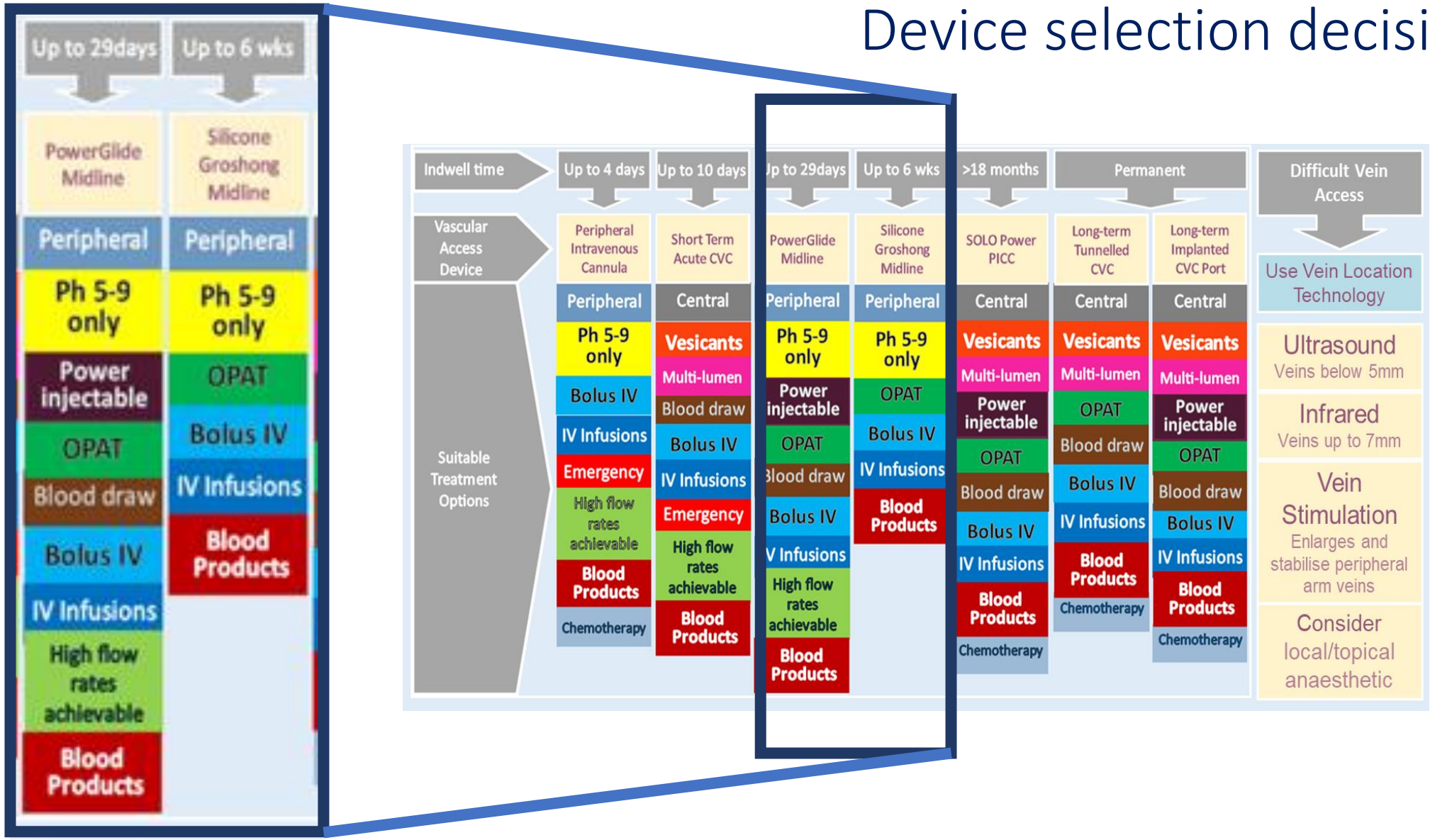
Device selection decision tool



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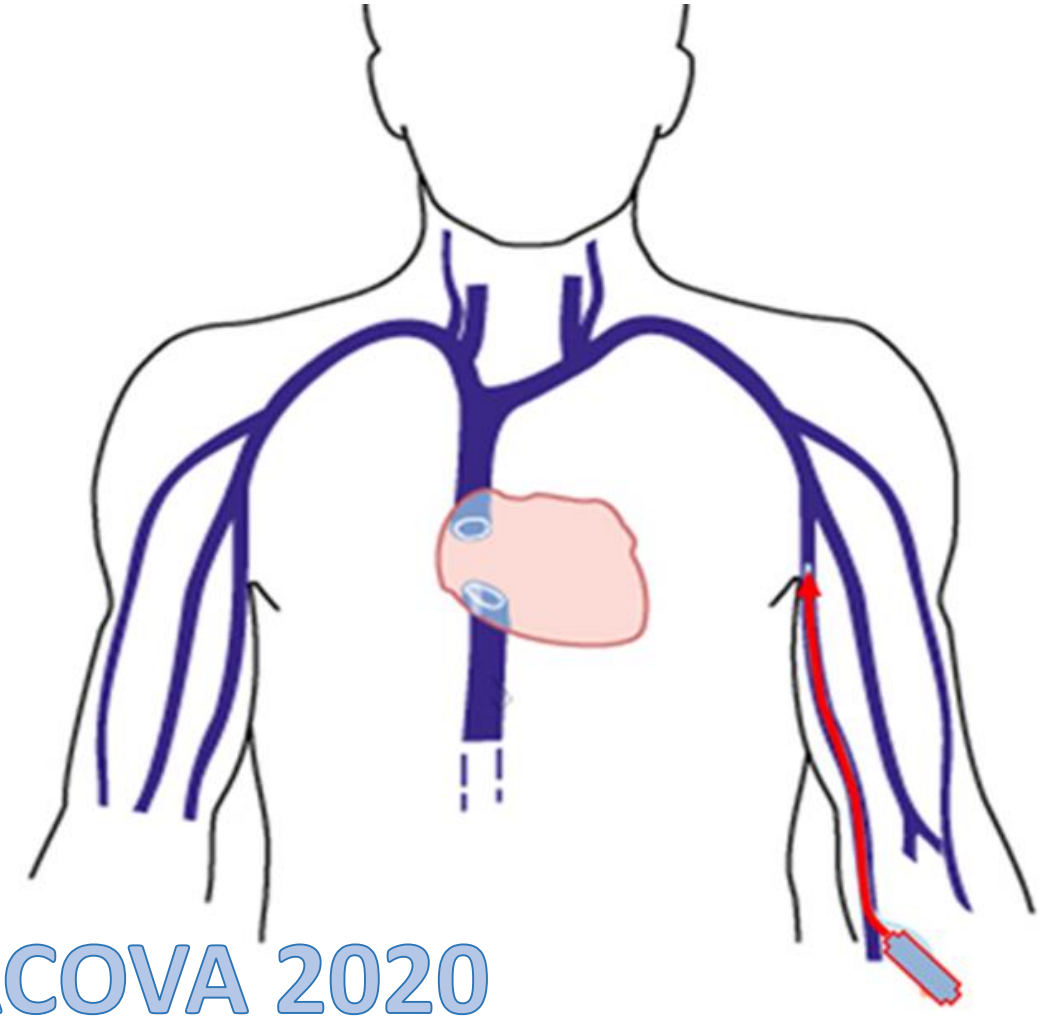
Longer PIVCs

- 18 gauge available in 1.25” and 1.75”
- 20 gauge available in 1”, 1.25”, and 1.75”
- 22 gauge available in 1” and 1.75”

Midline Catheters



- Peripheral catheters
- Long or short
- Tip terminates before the axillary crease
- For IV therapy with pH between 5-9
- Indwell time 4-6 weeks

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Midline features

- Power Injectable
- Silicone Groshong valve
- Single and double lumen
- 4-6 weeks indwell
- Integrated all in one PowerGlide

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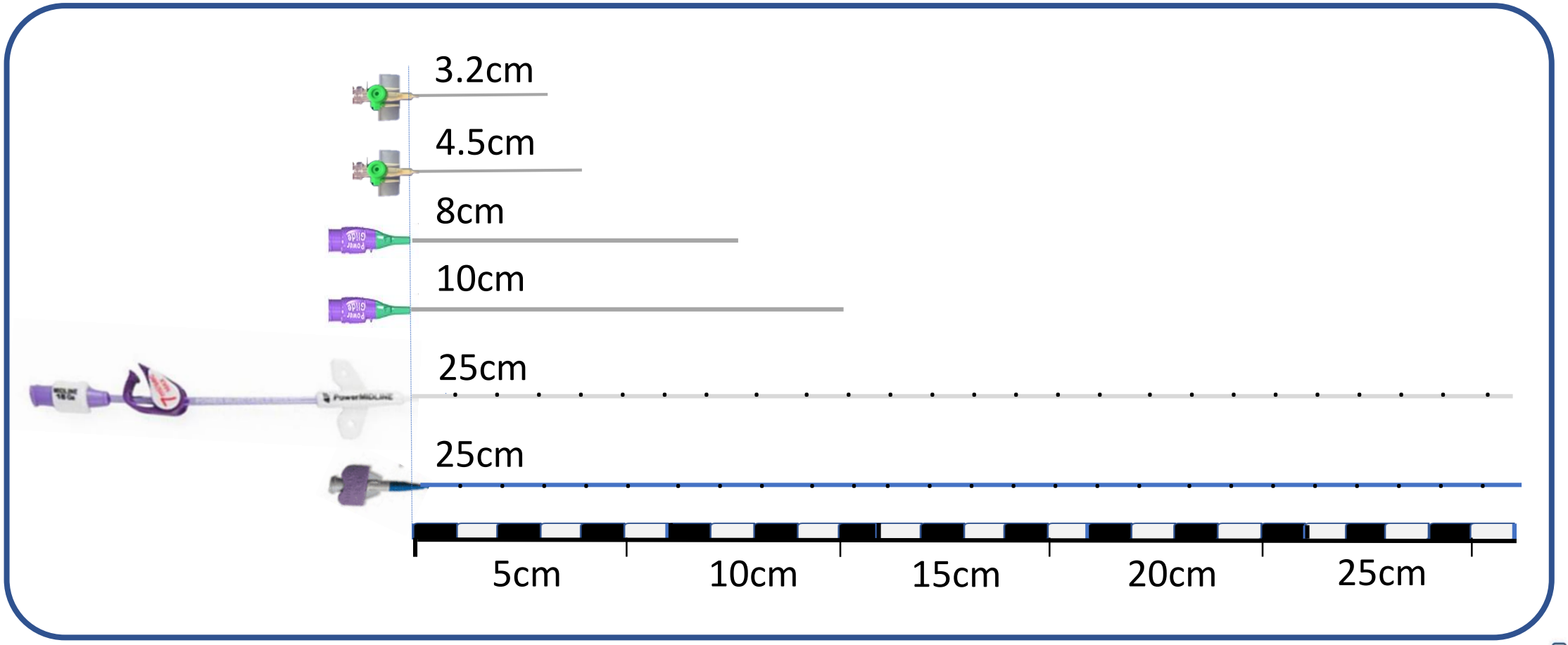
18g Peripheral Catheter Lengths



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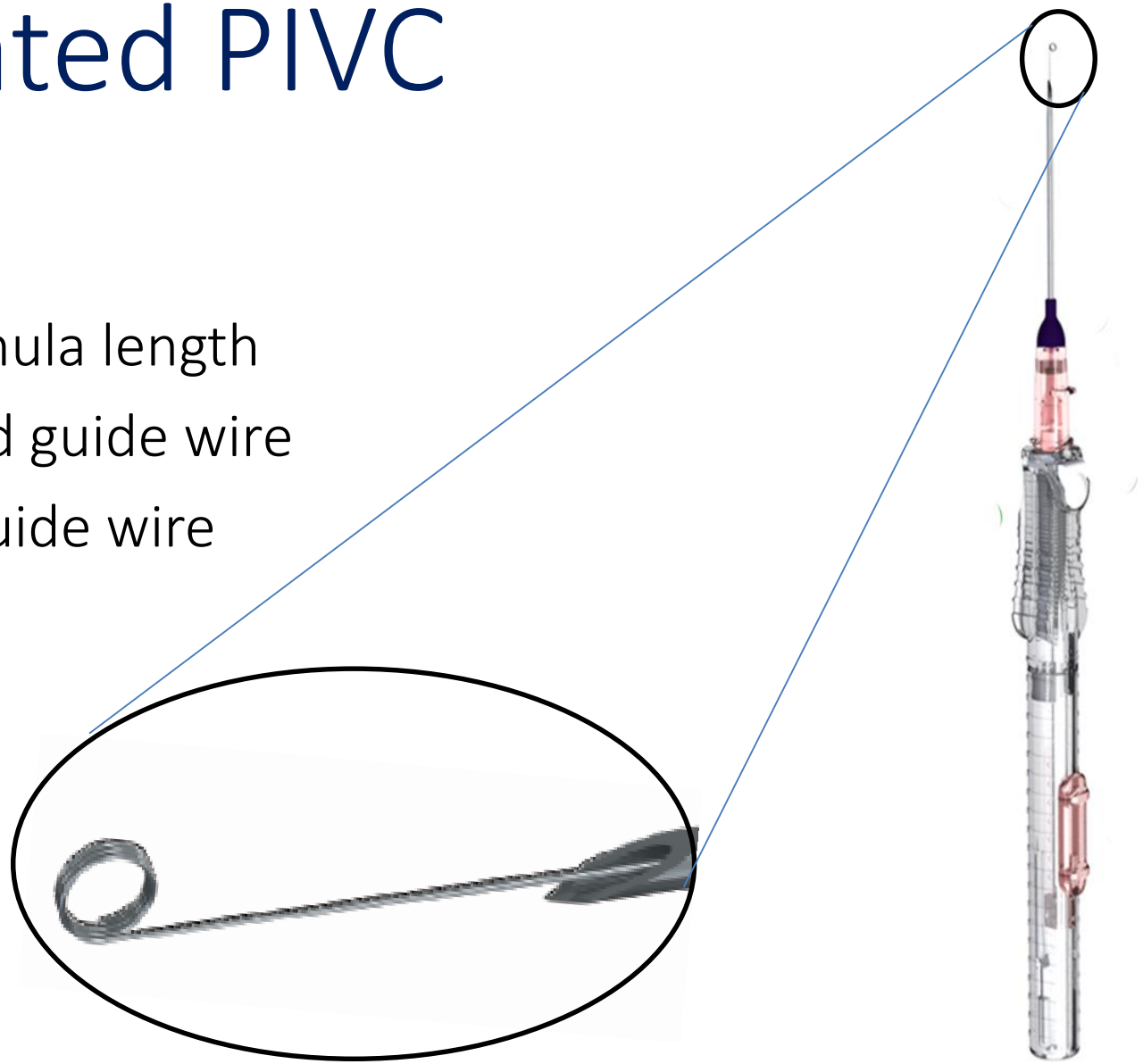
Integrated PIVC

- Long cannula length
- Integrated guide wire
- Curl tip guide wire



AccuCath Ace™
Intravascular Catheter

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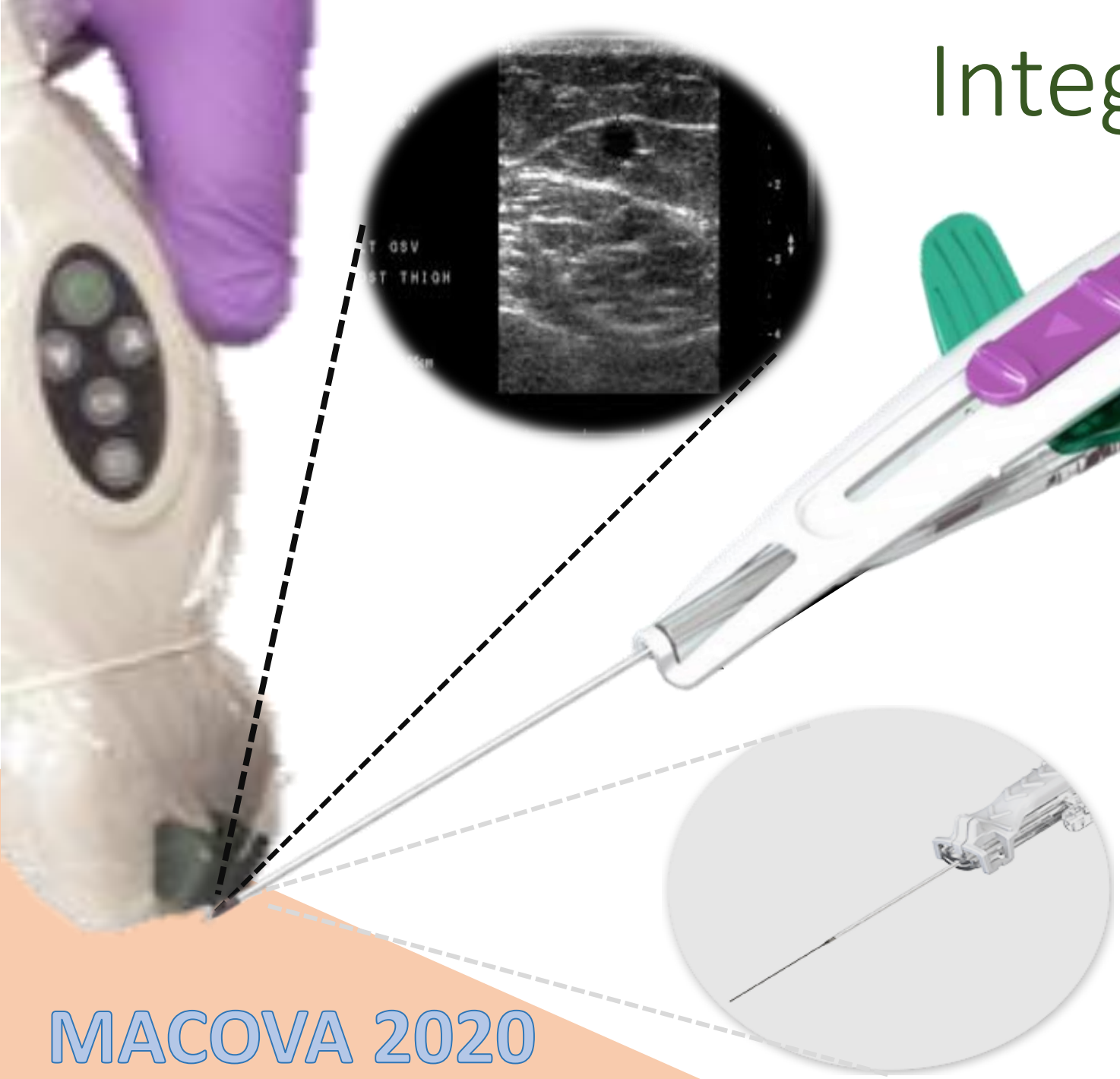
Device Features

- Power Injectable
- Up to 29 days of access with a single catheter
- An integrated all-in-one placement
- High flow rates
- Long PIV / short midline – 8cm to 10cm
- More reliable for blood sampling

Integrated Guidewire



Guidewire
.018" x 1.3" nitinol (18G)
.014" x 1.3" nitinol (20G)

TIP:
Guide the catheter into the centre of the vesseland lower the device before deploying the guide wire

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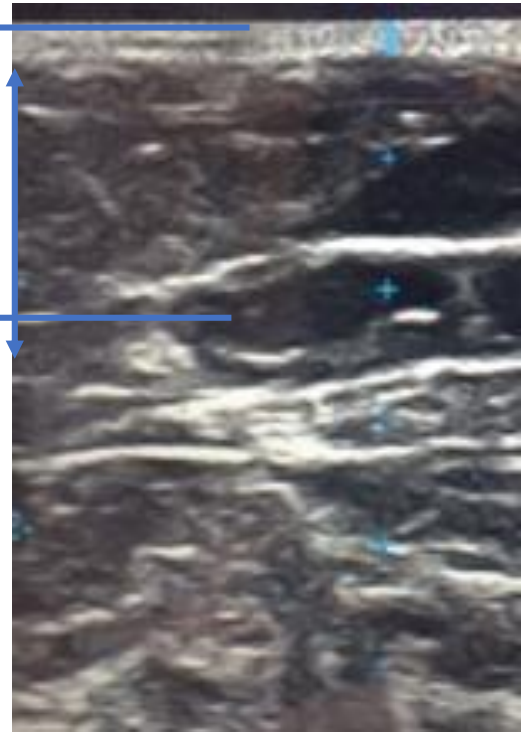
6.5cm

Utrasound

1.1cm



Aim for 80% Catheter in vessel

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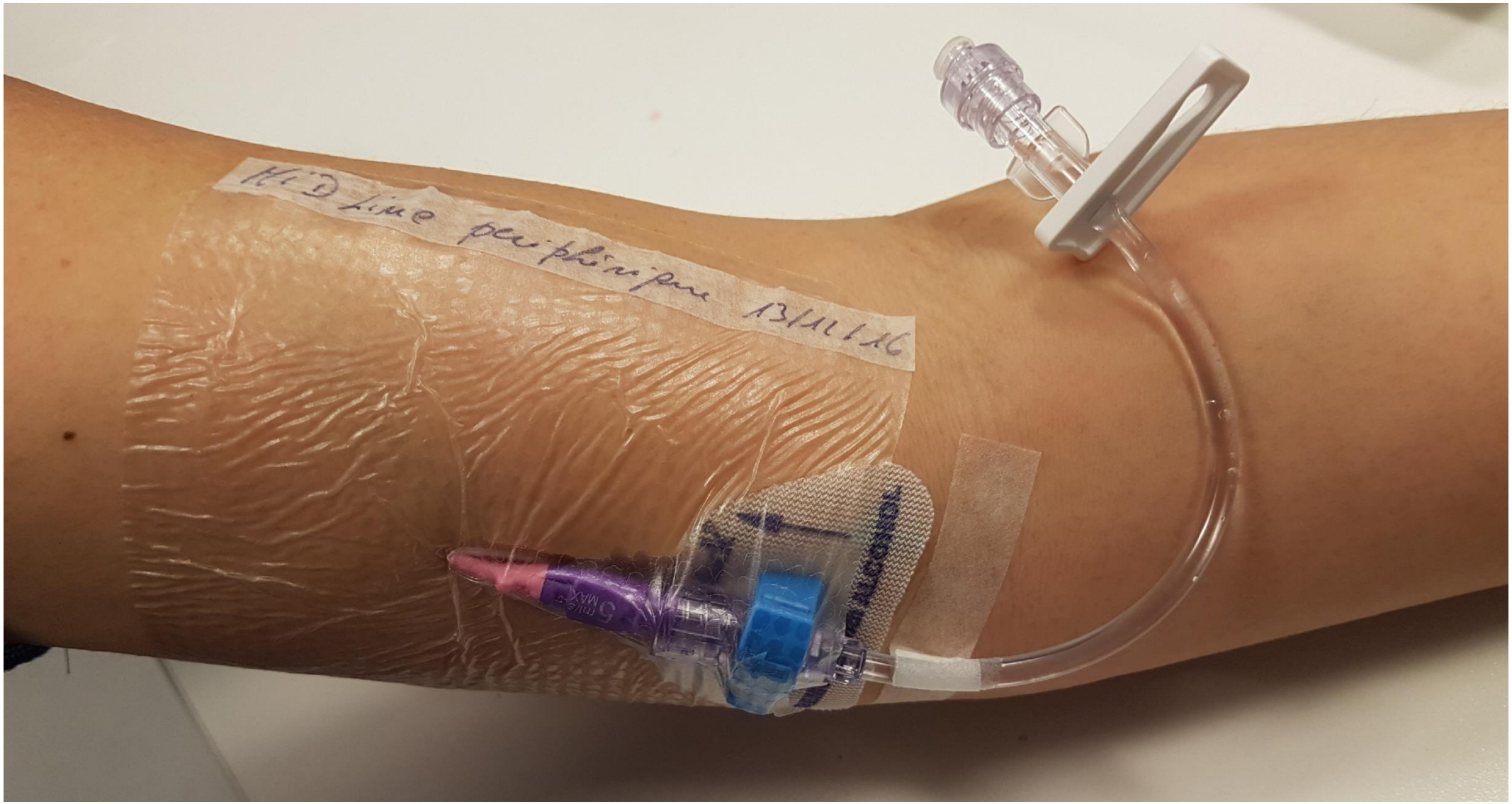

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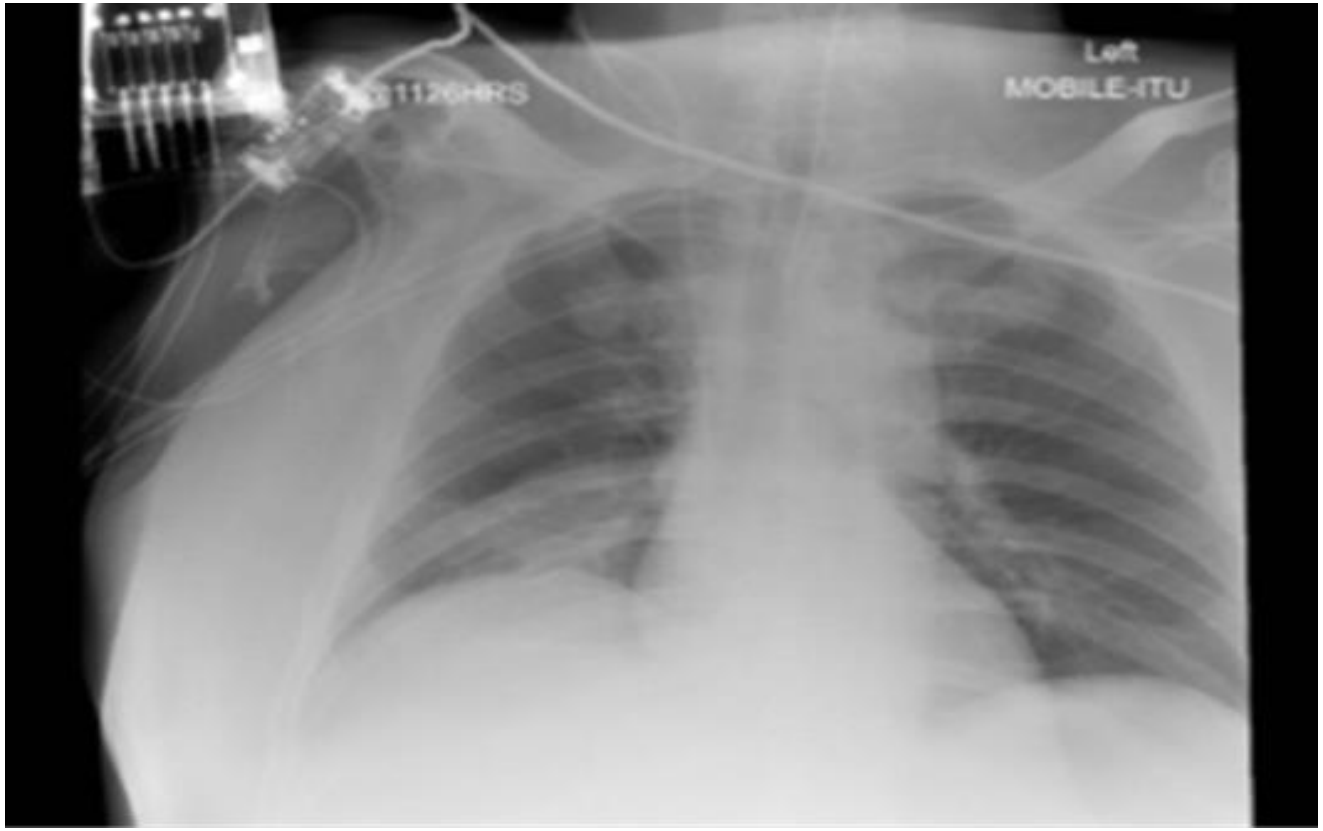
Case study

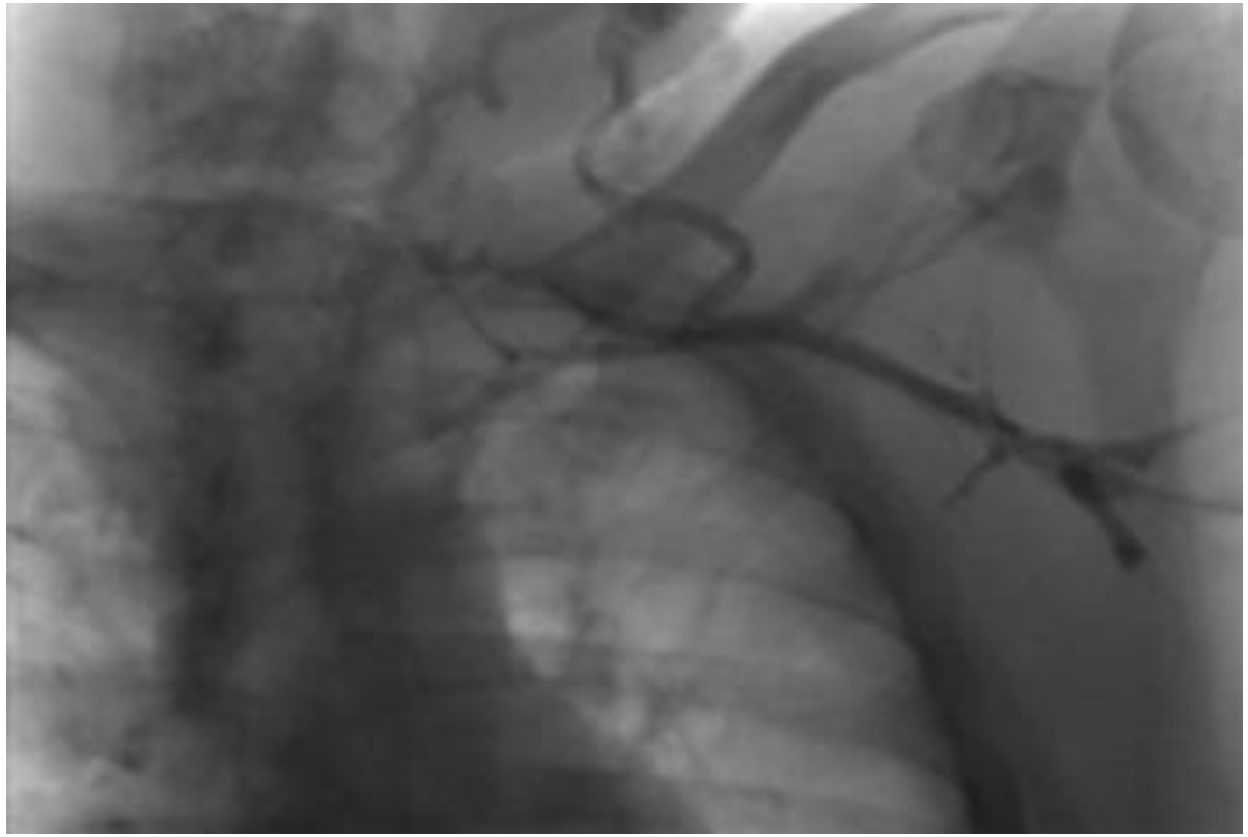


- 52 year old male.
- Traumatic right arm amputated from the shoulder, he also sustained head and right hip trauma
- Admitted to the ICU where a short non-tunnelled CVC was placed to his left IJ – right IJ not viable for **CVC**

Patient discharged to the surgical ward after 2 month stay in the ICU

Case study

Patient deteriorate on the surgical ward and required vascular access for ongoing IV therapy for acute kidney injury



- Patient had multiple CVC lines in ICU
- Referred for new PICC
- Previously had 2 PICC's sited in the left arm over a 4 week period
- Both PICC's pulled out by mistake one after the other
- Unable to place PICC due to stenosis

Case study

Patient deteriorating and needed IV access

- IV fluids urgently required for fluid balance
- Unable to cannulate peripherally
- Neck CVC attempted unsuccessfully
- Femoral access high risk for infection
- Patient was considered for readmitted to the ITU
- Patient reviewed one final time by vascular access team

Case study

- Ultrasound assessment discovered the lower cephalic vein which appeared to be patent and appropriate for an 8cm 18g PowerGlide

Case study

Preparing the ultrasound probe tip to be sterile

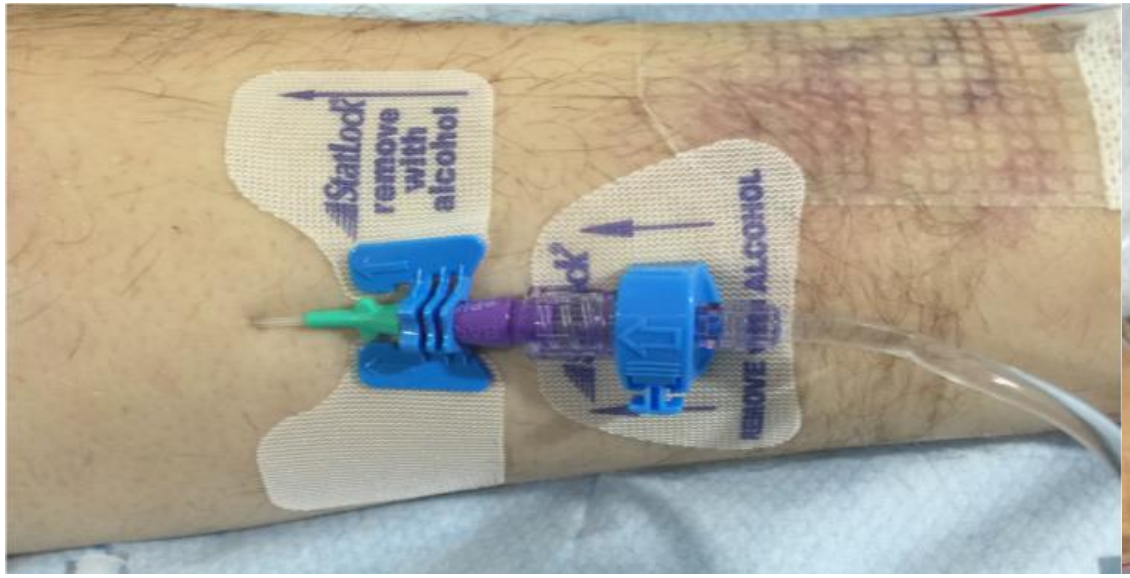
Case study

18g 8cm PowerGlide midline inserted into the vessel

Case study

- Guidewire successfully deployed
- Catheter aspirated and flushing well

Case study



- PowerGlide midline prevented readmission to the ICU and stabilised the patient by providing reliable vascular access.

Case study

- 45yr old female with learning difficulties, unable to hyper extend arm for PICC and had 15 PIV attempts
- Required 2 weeks of intravenous antibiotics for aspiration pneumonia
- PowerGlide placed with Ultrasound on first attempt

Catheter Fixation

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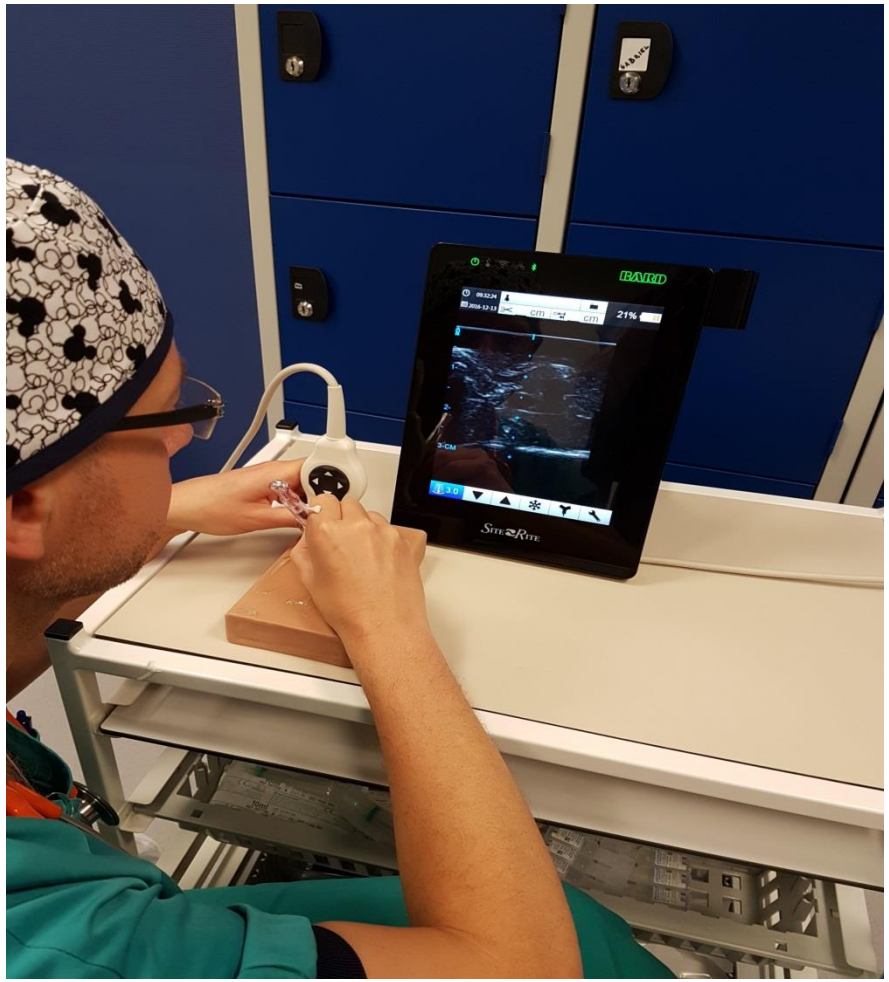
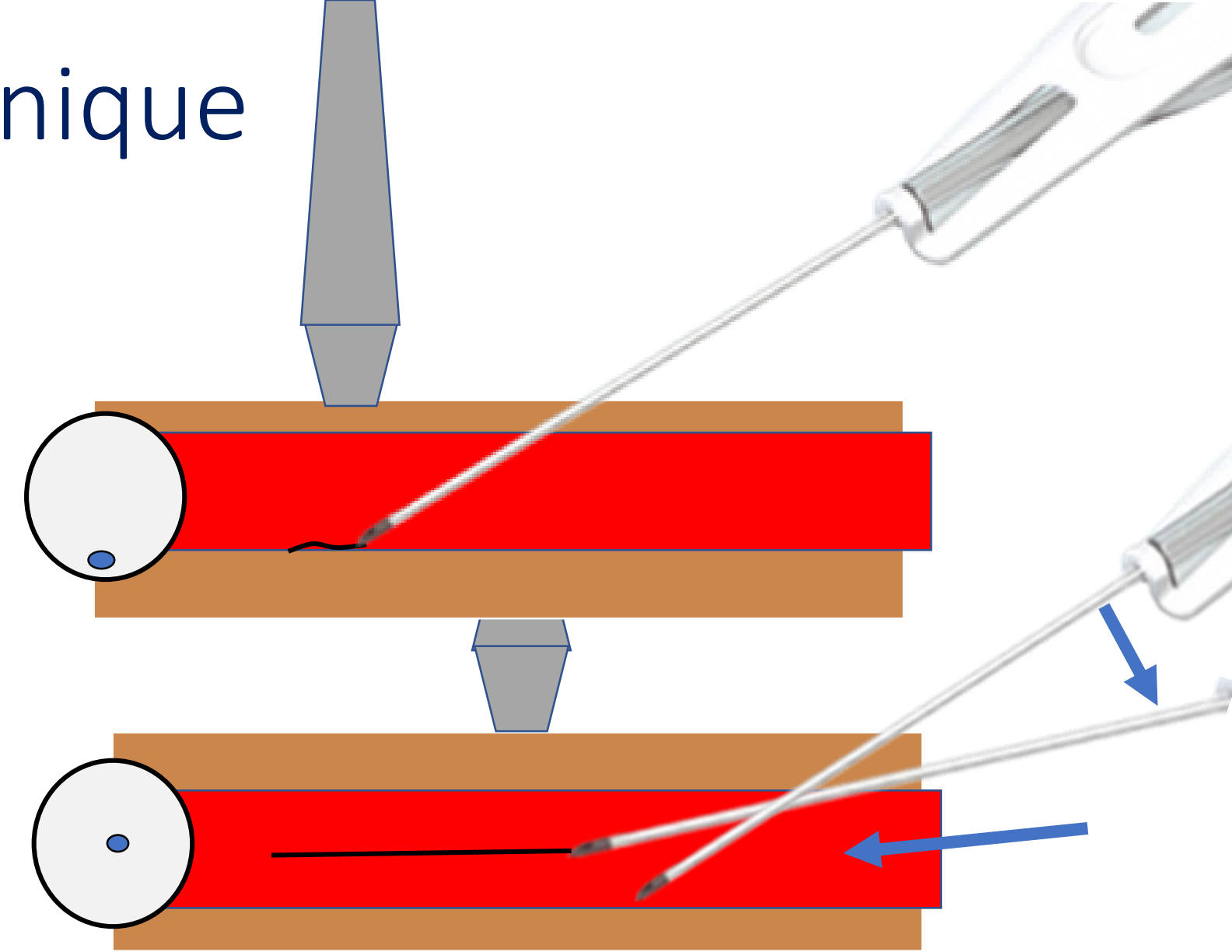
Our Success with PowerGlide

- No complications reported after insertion
- No infections post insertion
- Occlusion rate low less that 10%
- So far the longest required indwell time has been 24 days
- Our insertion success rate 98% on first attempt
- Units will refer patients for PowerGlide as first choice device

Insertion Technique





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Considerations

- Therapies not appropriate for a Midline catheter including those therapies requiring central venous access.
- Safe pH drug administration range 9-5
- Use a reliable passive displacement needle free connector
- Ensure a good flushing regime
- Care bundles are key

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Patient Name:
DoB:
ID No:
NHS:

MIDLINE Insertion Record

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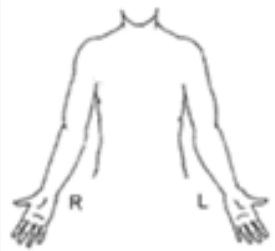
NHS Foundation Trust
Intravenous Vascular Access Services

Procedure Date:	Time:	Operator:
Patient Location:		Reason for MIDLINE Line:
Consent Obtained: Yes/Unable	Action if unable:	
Verbal:	Written:	
Procedure explained:		
Allergies:		POWER INJECTABLE: **Yes / No** Maximum-5mls/Sec
Relevant Blood Results:		Micro-Introducer used: Yes/No
MRSA Status/ICP actions:		Ultrasound used: Yes/No
Local Anaesthetic used – Lidocaine 1% 2mg: Yes / No		Line Aspirated with blood: Yes/No
Sign:.....		Line Flushed with:

MIDLINE USED: **Groshong PowerGlide Other**

Midline Gauge.....Device Length.....

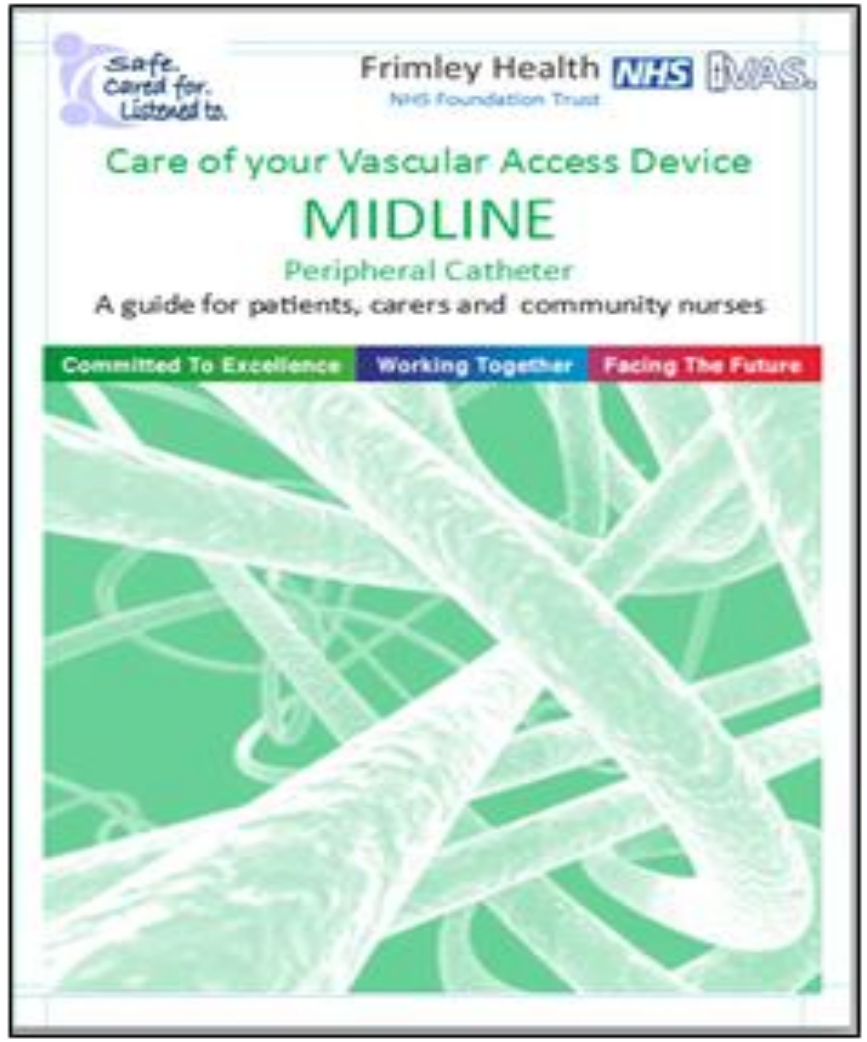


Vein Accessed	
Insertion Length	
External Length	
Guide wire removed	
Asepsis maintained	
Chlorhexidine Skin Prep used: 1.5ml or 3ml	

Device requested by:	Film Dressing Used:
Referral documented: Yes/No—if No why not?:	Securement device used: IV extension used:
Ward nurse advised to please remove the gauze dressing after 24 hours and apply a single large IV3000 or Tegaderm IV dressing. MIDLINE Passport given Yes/No Care pathway commenced Yes/No	Insertion Comments: Bleeding: Hematoma: Swelling:

Midline is flushing freely and is safe to use. Yes/No

Operator Name:..... Signature:.....



Surname .....

First name ..... Male / Female

Date of Birth D	M	Y	Hospital No:	
			NHS No:	

PERIPHERAL CANNULA CARE PATHWAY

ONE PATHWAY PER CANNULA

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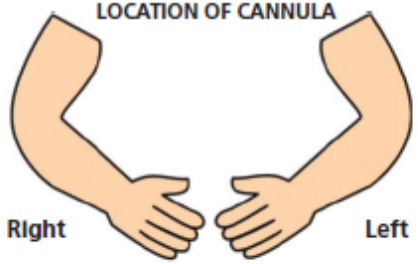
Ward:

- GLOVES must be worn for peripheral cannulation
- ANTT must be observed
- Chloraprep 1.5ml application must be used to clean the skin prior to Cannulation
- Disposable tourniquets must be used
- Cannulation of the feet is not allowed
- VIP should be assessed every 8 hours
- Indwell time is max 96 hours with a VIP of 0

INSERTION RECORD

Date & time of insertion	Cannula No.	Hand hygiene before & after insertion	Correct PPE used & disposed of	Skin prep using 2% Chloraprep applicator	Sterile semi-permeable transparent IV dressing applied	Reason for Insertion	No of attempts (max 2)	Documented insertion on picture	Signature & designation of competent professional inserting cannula
		Y / N	Y / N	Y / N	Y / N			Y / N	

LOCATION OF CANNULA



MAINTENANCE RECORD

	Date & Time		VIP Score	Connector cleaned with 2% chlorhexidine in alcohol (clinical wipe) before use	Dressing dry, intact & adherent (if No, specify actions taken)	Dressing removed	Is cannula still required	Actions taken & justification for cannula to remain in situ	Print and Sign Name
Day 1		Early		Y / N	Y / N	Y / N / NA	Y / N		
		Late		Y / N	Y / N	Y / N / NA	Y / N		
		Night		Y / N	Y / N	Y / N / NA	Y / N		
Day 2		Early		Y / N	Y / N	Y / N / NA	Y / N		
		Late		Y / N	Y / N	Y / N / NA	Y / N		
		Night		Y / N	Y / N	Y / N / NA	Y / N		
Day 3		Early		Y / N	Y / N	Y / N / NA	Y / N		
		Late		Y / N	Y / N	Y / N / NA	Y / N		
		Night		Y / N	Y / N	Y / N / NA	Y / N		
Day 4		Early		Y / N	Y / N	Y / N / NA	Y / N		
		Late		Y / N	Y / N	Y / N / NA	Y / N		
		Night		Y / N	Y / N	Y / N / NA	Y / N		
		Early		Y / N	Y / N	Y / N / NA	Y / N		

VIP Score action

VIP Score 0
continue to use cannula 96hrs

VIP Score 1
Remove at once

DO NOT COVER OR BANDAGE CANNULA
DO NOT CANNULATE FEET

REMOVE CANNULA AFTER 96 Hours or if the VIP score is 1. If infection suspected send tip for MC&S and swab site

Date & time of removal	Reason cannula removed	Signature & designation of competent professional removing cannula	

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MIDLINE CATHETER CARE BUNDLE— GROSHONG OR POWERGLIDE

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Name:
NHS Number:
Hospital No:
DOB: Ward:

- GLOVES must be worn when handling/accessing vascular access device and ANTT must be observed.
- Chloraprep 1.5ml application must be used to clean the skin during dressing change
- Needle free connectors must be used on all hubs and changed every 7 days or 200 activations
- The film dressing must be changed after 24hrs and the gauze pad removed then changed every 7 days—document which day the dressing is on.
- VIP should be assessed every 6 to 8 hours on this chart.
- The device should be removed if no longer required

DEVICE:	GROSHONG MIDLINE: 3FR 4FR			POWERGLIDE MIDLINE: 18G 20G 8CM 10CM	
Insertion date:		Site of device:		Length of external device after insertion:	

PowerGlide MIDLINE catheters can be used in the same way as green peripheral cannulas and are power injectable. Blood can be drawn from PowerGlide catheters. MIDLINES are ONLY SUITABLE FOR DRUG ADMINISTARTION WITH PH BETWEEN 5 to 9. Groshong Blue MIDLINES are NOT power injectable. Indwell time: Groshong MIDLINE 6 weeks—PowerGlide 29 days

DATE:																					
Assessment every 6 to 8 hourly E/L/N	E	L	N	E	L	N	E	L	N	E	L	N	E	L	N	E	L	N	E	L	N
Visual assessment—VIP score:																					
Dressing in situ—day number:	DAY:			DAY:			DAY:			DAY:			DAY:			DAY:			DAY:		
Dressing clean an intact—if not please change dressing and document:																					
Dressing dated with insertion date:																					
Needle free connectors present on all lumens:																					
Device lumens all flushing and patent:																					
Needle free connectors replaced every 7 days or after 200 activations:	DAY:			DAY:			DAY:			DAY:			DAY:			DAY:			DAY:		
Needle-free bungs cleaned before each use: (2% Chlorhexidine wipe)																					
Microbial contamination prevention followed (see bullet points above):																					
Discuss with team, device still required– if no please remove:																					
IVI lines labeled with date/time*:																					
External measurement once per week on dressing day—document measurement:			cm			cm			cm			cm			cm			cm			cm
PRINT NAME:																					

* IVI giving sets should be labelled with date and time stickers—TPN line 24hrs; clear fluids 72hrs; blood after transfusion.

Date & time of removal	Reason for removal	Signature & designation of competent professional removing device

DAY 7 CHANGE DRESSING, FIXATION DEVICE AND NEEDLE FREE CONNECTORS

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