INTRODUCTION

The evidence-based Vessel Health & Preservation (VHP) concept of vascular access management was introduced in the US. The essence of VHP is timely, intentional, proactive patient intervention for vascular access device selection during the first 24 hours of entry into the healthcare process (and re-evaluated thereafter), followed by placement of a clinically appropriate device within 48 hours. Once placed, the focus shifts to daily maintenance and care of the device using the central line bundle and daily assessment to determine the health of patient's blood vessels as well as continued necessity of the device (Moreau, et al, 2012).

This practical framework has been developed to support practitioners to undertake vessel assessment and make decisions regarding suitable devices for vascular access and administration of medication or fluids. This is based on individual patient need and risk assessment. The framework is divided into relevant sections recognising the different stages of vascular assessment and therapy and is intended to be used either in its entirety or individual sections.

Preservation of vessels is required to minimise damage (thrombosis, stenosis and infection) and maintain the patency of the peripheral and central veins for as long as possible. This maintains good venous access for future treatments and minimises patient suffering. Further such actions have the potential to save significant staff and equipment costs to organisations providing vascular access and administration of medication or fluids.

This guidance relates to adult vascular access in acute or planned settings. It is not planned for use in emergency situations where other issues take priority and other routes of access may be appropriate e.g. interosseous infusions.

The content of the poster will be reviewed every two years and revisions taken in the light of new evidence

Please forward feedback to VHP@ips.uk.net

GLOSSARY OF TERMS

CVC - Central venous catheter

IV - Intravenous route of access

Midline - Long venous catheter inserted into arm veins which does not extend centrally

PICC - Peripherally inserted central venous catheter

TIVAD - Total implanted vascular access device (port)
Tunnelled CVC - central venous catheter which
is tunnelled away from exit site and has anchoring

VAD - Vascular access device

VHP - Vessel health and preservation

VIP - Visual Infusion Phlebitis Score (Jackson, 1997)

REFERENCES

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UK VESSEL HEALTH AND PRESERVATION

START HERE

FIRST CONSIDERATION

IS IV THERAPY REQUIRED?

HAVE ALTERNATIVE ROUTES BEEN CONSIDERED AND EXCLUDED?

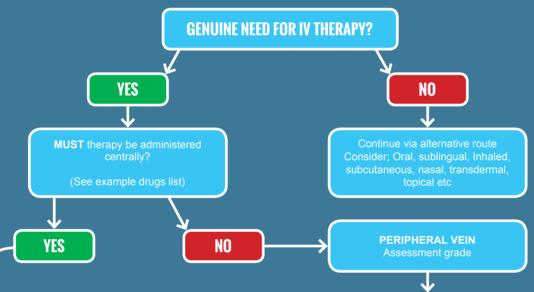
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YES

CONTINUE TREATMENT VIA ALTERNATIVE ROUTE¹

SEE DECISION TOOL

RIGHT LINE DECISION TOOL



	PI	ERIPHERAL VI	EIN ASSESSME	ENT	
	1 EXCELLENT	2 GOOD	3 FAIR	4 POOR	5 NONE IDENTIFIABLE
Outpatient / Long Term	<6 months Intermittent Therapy	<4 months Intermittent Therapy	Ok for 4-6 wks Intermittent Therapy	One off Cannulation	Not suitable for Cannulation
Inpatient / Acute	L	ess than 10 days therap	ру	One off Cannulation	Cannulation
			,		

If Peripheral Vein grade not compatible with intended treatme duration, consider other type of vascular device

ays <4 weeks⁴ >4 weeks - <6 months⁴ >4 months - <6 years⁴

Non-tunnelled CVC / PICC or Midline⁵

PICC / Midline⁵

PICC / Tunnelled CVC or TIVAD

Tunnelled CVC/TIVAD

PICC / Tunnelled CVC or TIVAD

⁴ Epic 3: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in Hospitals in England ⁵ Midlines are not a suitable option for drugs that must be given centrally

SECONDARY OUESTIONS WHICH MAY REFINE LINE CHOICE IN INDIVIDUAL PATIENTS:

Patient preference / Lifestyle issues / Body image.

Known abnormalities of vascular anatomy which limit access site.

Therapy specifics: eg intermittent vs continuous ill health of patient, extreme duration of therapy (months-years), specific indications (eg bone marrow transplant).

Local availability of vascular competency.

Need for long term dialysis with: AV fistula, avoid vein damage from PICC or Axillary / Subclavian catheters.

Relevant PMH: coagulopathy, severe respiratory dysfunction and other contraindications to central access.

Patient factors: cognitive function.

VESSEL ASSESSMENT

PERIPHERAL VEIN ASSESSMENT					
GRADE	VEIN QUALITY	DEFINITION IF VEIN QUALITY	INSERTION MANAGEMENT ²		
1	Excellent	4-5 palpable/ easily visible veins suitable to cannulate	Cannula may be inserted by trained/ authorised health care practitioner		
2	Good	2-3 palpable/visible veins suitable to cannulate	Cannula may be inserted by trained/ authorised health care practitioner		
3	Fair	1-2 palpable/visible veins suitable to cannulate. (Veins maybe small, scarred or difficult to find and require heat packs to aid vasodilation)	Cannula may be inserted by trained/ authorised health care practitioner but may require Infrared Viewer or Ultrasound		
4	Poor	Veins not palpated/ visible (requires ultra sound assistance or Infrared Viewer)	Cannula may be inserted by an experienced practitioner ³ in Cannulation. Use Infrared Viewer, Ultrasound, transillumination or other aids		
5	None identifiable	No visible (naked eye or aids) or palpable veins.	Peripheral cannulation should not be performed		

² The number of attempts for cannulation before escalation should be reflected in local policy

SUITABILITY OF DRUGS

Suitability of drugs for peripheral infusion is potentially complex and requires risk assessment for the individual drug and route of access with each treatment. In broad terms the safety of a drug infusion to prevent damage to the vessel will relate to factors like pH, osmolarity, viscosity, volume of dilution, speed of infusion, the size and fragility of the peripheral vein. General guidance should be available locally in all clinical settings. Examples include Injectable Medicines Guide (Medusa) http://medusa.wales.nhs.uk/Home.asp (Login and registration required).

Guidelines suggest peripheral cannulae and midlines are unsuitable for the following:

- Continuous vesicant chemotherapy
 Parenteral nutrition exceeding 10% dextrose and/or 5% protein
- Solutions and/or medications with pH less than 5 or greater than 9
- Solutions and/or medications with osmolarity greater than 600mOsm/l

EXAMPLE OF A DRUGS LIST

EFINITELY CENTRAL | CONSIDER CENTRAL Amiodarone (except Vancomycin (especially emergency in cardiac when more than just a few Some cancer Labetalol chemotherapy drugs Argipressin Caffeine Dopamine Epinephrine (Adrenaline) nfusion (except bolus dose in cardiac arrest) Co-trimoxazole (Noradrenaline) Potassium >40mmol/litre Dantrolene PN (unless only for first 1-2 Phenoxybenzamine

Foscarnet

Phenytoin

Gancyclovir

Pentamidine

Nitroprusside

days of therapy)

Dopexamine

Glucose >15%

Sodium Bicarbonate 4.2%

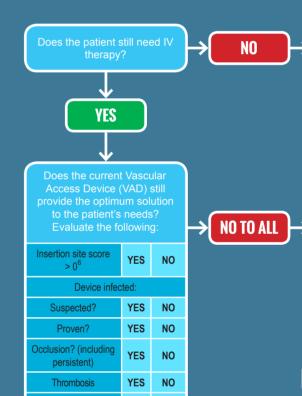
Sodium Chloride 1.8% +

Vimodipine

or 8.4%

RE-EVALUATION OF ACCESS DEVICE

Daily assessment is required to ensure the device is appropriate, preserving vessel health and comfort for the patient. The assessment should consider any complications and whether the device is still required. In addition, observation of the vascular access device insertion site should be performed each shift.



YES NO

YES NO

YES NO

YES - TO ANY

lue to device fail

Refer to local policies on management of VAD-related complications, but consider whether potential complications implies failure of the VAD and re-evaluate for escalation to an alternative type of VAD

Reapply VHP Right Line Decision Tool to re-evaluate current need for VAD incorporating patient views

⁶ Use local insertion site score - eg VIP Score for peripheral cannula









for this VAD regularly.

Has their condition changed

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³ To be determined locally