

UK VESSEL HEALTH AND PRESERVATION 2020

This revised UK VHP framework is based on published evidence and guidelines (Moureau et al, 2012, Hallam et al, 2016). Evaluation studies of the original VHP Framework to date have included the uptake of the VHP Framework (Burnett et al, 2018) and a small-scale pilot study exploring the impact of using the framework on the insertion and management of VADs (Weston et al, 2017).

The framework has been developed to facilitate a complex adaptive systems approach to VAD insertion and management and is intended for adult vascular access in acute or planned settings. Whilst the principles of VHP should be incorporated into any emergency situation, it is recognised that other issues may take priority dependent on the condition of the patient and availability of vascular access expertise therefore other immediate routes of access may be more appropriate e.g. intraosseous access.

The evidence for each of the sections with references and signposting to further information can be accessed via the Quick Response (QR) code.

Vessel Health and Preservation: The Right Approach for Vascular Access edited by Nancy Moureau, is available on open access

www.springer.com/f-book/9783030031480



For further information

GLOSSARY OF TERMS

CVAD – Central vascular access device

CVC – Central venous catheter

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

IV - Intravenous route of access

PICC – Peripherally inserted central venous catheter

PIVC – Peripheral intravenous catheter

Tunnelled CVC - central venous catheter which is tunnelled away from exit site and has anchoring cuff

VAD - Vascular access device

VIP - Visual Infusion Phlebitis Score

VHP - Vessel health and preservation

REFERENCES

Burnett, E., Hallam, C., Curran, E. et al. (2018) Vessel Health and Preservation Framework: Use of the outcome logic model for evaluation. *Journal of Infection Prevention*, 19, pp.228-234

Chopra, V., Flanders, S.C., Saint, S. et al. (2015) The Michigan Appropriateness Guide for Intravenous Catheters (MAGIC): Results from a Multispecialty Panel Using the RAND/UCLA Appropriateness Method. *Annals of Internal Medicine*, 15 pp.S1-40

Hallam, C., Weston, V., Denton, A., Hill, S., Bodenham, A., Dunn, H., Jackson, T. (2016) Development of the UK Vessel Health and Preservation (VHP) framework: a multi-organisational collaborative. *Journal of Infection Prevention*, 17, pp.65-72

Loveday, H.P., Wilson, J.A., Pratt, R.J. et al. (2014). Epic3: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals. *Journal of Hospital Infection*, 86, ppS1-S70

Moureau, N.L., Trick, N., Nifong, T. et al. (2012). Vessel health and preservation (Part 1): a new evidence-based approach to vascular access selection and management. *Journal of Vascular Access*, 13, pp.351-356

Ray-Barruel, G., Cooke, M., Chopra, V., Mitchell, M., Rickard, C. M. (2020). The I-DECIDED clinical decision-making tool for peripheral intravenous catheter assessment and safe removal: a clinimetric evaluation. *BMJ Open*, 10, pp.1-20. Downloaded from <https://bmjopen.bmj.com/content/bmjopen/10/1/e035239.full.pdf> Last accessed March 2020

Royal College of Nursing (RCN). (2016). *Standards of Infusion therapy 4th Edition* RCN. London

Taxbro, K., Hammarskjöld, F., Thelin, B. et al. (2019) Clinical impact of peripherally inserted central catheters vs implanted port catheters in patients with cancer: an open-label, randomised, two-centre trial. *British Journal of Anaesthesia*, 122, pp.734-741

van Loon, F., van Hooff, L., de Boer, H. (2019) The Modified A-DIVA Scale as a Predictive Tool for Prospective Identification of Adult Patients at Risk of a Difficult Intravenous Access: A Multicenter Validation Study. *Journal of Clinical Medicine*, 8, pp.1-14

Weston, V., Nightingale, A., O'Loughlin, C. et al. (2017) The implementation of the Vessel Health and Preservation framework. *British Journal of Nursing (IV Therapy Supplement)*, 26, pp.18-22

FIRST CONSIDERATION

GENUINE NEED FOR IV THERAPY?

YES

SEE RIGHT LINE DECISION TOOL
(OVERLEAF)

NO

CONTINUE TREATMENT
VIA ALTERNATIVE ROUTE*

*Alternative routes of therapy include: topical, sublingual, rectal, scutaneous, transcutaneous, inhaled, nasal and others.

PERIPHERAL VEIN ASSESSMENT

SUITABLE VEIN DEFINITION; VISIBLE AND COMPRESSIBLE, 3MM OR LARGER⁴

GRADE	NUMBER OF SUITABLE VEINS	INSERTION MANAGEMENT ⁵
1	4-5 Veins	Insertion by trained competent healthcare practitioner (HCP)
2	2-3 Veins	Insertion by trained competent HCP
3	1-2 Veins	Insertion by trained competent HCP
4	No palpable visible veins	Ultrasound guided cannulation, by trained competent HCP, once only cannulation
5	No suitable veins with ultrasound	Refer for alternative vascular access device ⁶

Known difficult IV access patient must be referred to an IV specialist and will require an individualised pathway

⁴van Loon et al (2019)

⁵The number of attempts for cannulation before escalation should be reflected in local policy

⁶Referral process to be determined locally

SUITABILITY OF MEDICINES

The most important principle to use when assessing suitability for an infusion to be administered via a peripheral intravenous catheter (PIVC) is that **ALL** intravenous medicines potentially pose a threat to vessel health.

In broad terms the safety of a medicine infusion to prevent damage to the vessel will relate to factors such as:

- pH
- Osmolarity
- Viscosity
- Volume of dilution
- Speed of infusion
- Size and fragility of the peripheral vein

A central vascular access device (CVAD) should be the preferred device to administer infusions of vesicant chemotherapy and parenteral nutrition.

For some infusions, use of a CVAD is the preferred or essential route, for example, vasoconstrictor medicines (e.g. adrenaline and noradrenaline).

Many medicines administered by IV injection have a high osmolarity Diluting the injection with sodium chloride 0.9% or glucose 5% before administration will reduce the osmolarity).

Note: The use of a CVAD is specified for some medicines in the Summary of Medicine Product Characteristics (SmPC). Where this is the case the recommendation should be follow

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