National Institute for Health and Care Excellence

IP1071/2 VA ECMO for severe acute heart failure in adults

IPAC date: 14/08/2025

Com. no.	Consultee name and organisation	Sec. no.	Comments	Response Please respond to all comments
1.	Consultee 1 British Cardiovascular Society	1	The British Cardiovascular Society supports the recommendations made.	Thank you for your comment.
2.	Consultee 6 Clinical	1	No comments but I agree with the recommendations	Thank you for your comment.
3.	Consultee 7 Clinical	1	No comments but I agree with the recommendations	Thank you for your comment.
4.	Consultee 8 Professional expert	1	No comments but I agree with the recommendations	Thank you for your comment.
5.	Consultee 2 Company Medtronic	1	Medtronic Limited agrees that the draft recommendations represent a sound and suitable basis for guidance to the National Health Service (NHS).	Thank you for your comment.

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			We do not foresee any aspects of these recommendations inducing unlawful discrimination in the provision of healthcare services. All relevant evidence appears to have been identified and included in the evidence review and the summaries of clinical effectiveness appear to be a reasonable interpretation of the evidence base.	
6.	Consultee 3 Professional expert	1	The recommendations (2.1, 2.2, 2.3) have considered the appropriate evidence and in my opinoin, have reached an entirely appropriate conclusion. I support the recommendations	Thank you for your comment.
7.	Consultee 4 Professional expert	Lay description	I think a more accurate description than "VA ECMO aims to do the work of the heart to provide oxygenated blood to the body while the heart recovers or as a bridge to a treatment." Would be: "VA ECMO aims to do the work of the heart to provide oxygenated blood to the body while the heart and/or lungs recovers or as a bridge to a treatment."	Thank you for your comment. The lay description has been changed in response to the comment.
8.	Consultee 4 Professional expert	Lay description	Just to offer an alternative description of what VA ECMO actually does, if not too technical for the document? VA ECMO is not a treatment for severe acute heart failure. It is a short-term intervention that provides oxygenated blood flow to the	Thank you for your comment. The wording in 'why the committee made these recommendations' has been

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			other organs while the patient's heart recovers or before they have a heart transplant or an implanted LVAD.	changed, citing 'it is a short-term intervention **that provides oxygenated blood to organs** while **the person's** heart recovers or before they have a heart transplant or an implanted LVAD.'
9.	Consultee 4 Professional expert	2.2	"People may be given a continuous infusion of an anticoagulant, usually heparin, to prevent blood clotting in the extracorporeal system." I have added the words "may be" as there are some post cardiotomy (after cardiac surgery) scenarios where no anti coagulation is used to prevent post operative bleeding.	Thank you for your comment. Section 2.2 has been changed to 'People are **usually** given a continuous infusion of an anticoagulant, usually heparin, to prevent blood clotting in the extracorporeal system.'
10	Consultee 4 Professional expert	3.12	May be more accurate to say: "The committee noted the incidence of limb ischaemia, when the femoral artery is used, but that this has reduced since distal limb perfusion has been in use."	Thank you for your comment. Section 3.12 has been changed in response to the comment.
11	Consultee 5 Professional expert	2.1	There is a severe mismatch between demand for heart transplantation and supply of suitable donor organs in the UK. In the last six months, there have typically been 30-40 patients on the urgent heart transplant waiting list. Patients on VA ECMO are afforded the highest priority for heart transplantation (called the super-urgent list). If more patients are supported with VA ECMO as a bridge the heart transplant, then patients on the urgent waiting	Thank you for your comment. This falls outside the scope of the IP guidance. Allocation for heart transplantation should follow heart transplant allocation policy.

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			list will become less likely to be transplanted and more likely to die. Many patients on the urgent waiting list have complex congenital heart disease and are not able to receive temporary mechanical circulatory support in order to 'compete' on the super-urgent waiting list.	
12	Consultee 5 Professional expert	1.3	Research is needed to give clinicians tools to identify patients in whom VA ECMO support will be futile.	Thank you for your comment. The guidance states that more research is needed on patient selection.
13	Consultee 5 Professional expert	3.11	When patients are too sick to transfer (which often happens) then the alternative is that a team from the specialist centre goes to assess patient, support them with VA ECMO and then bring them back to the specialist centre on VA ECMO. This model already exists for severe acute respiratory failure (VV ECMO) and would be needed to avoid geographical inequity in access to treatment.	Thank you for your comment. Section 3.11 has been changed in response to the comment.
14	Consultee 9 Royal Papworth Hospital	General	1. Patient and Disease Selection: o Criteria for patient selection: Early identification of appropriate patients with good chance of meaningful recovery is vital. We worry about patients with poor neurological prognosis on mechanical devices without a way out. This is ethically challenging. The worse outcome is when a patient is awake and there is no exit strategy except palliation.	Thank you for your comment. Extra wording has been added to section 1.2, highlighting when the potential of functional recovery is low or uncertain, and a heart transplant or implanted LVAD is not suitable.

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			o Types of diseases/conditions we believe could be suitable for support (with variable existing levels of evidence): Septic cardiomyopathy and severe respiratory failure - Acute myocarditis as bridge to recovery. Some drug overdoses as bridge for clearance. Massive PE with RV dysfunction. Selected post Ischaemic cardiomyopathy patients, as part of a wider MCS management approach e.g. ECPELLA 2.0 etc.	This IP guidance only refers to the indication of severe acute heart failure.
15	Consultee 9 Royal Papworth Hospital	What this means in practice	2. Decision Making: o Decision-making process: We would advocate for a multidisciplinary team approach involving Intensive Care, Cardiology, Transplant (surgical and physician), We have found video based shock calls with the referring team to be very effective in supporting the team and developing appropriate management strategies for these complex patients	Thank you for your comment. The guidance states, 'patient selection should be done by a multidisciplinary team…"
16	Consultee 9 Royal Papworth Hospital	What this means in practice	3. Training and Expertise: o There is a learning curve for initiation and management of VA-ECMO patients and therefore we would advocate for the care of these patients in an expert high volume centre. We would highlight the high level of nursing expertise required to manage these patients and the high risk of limb ischaemia. o Given the rapid onset nature of cardiogenic shock in some patients, it may be the case that local centres could be supported in the initiation of pVA-ECMO by an expert centre, with the patient	Thank you for your comment. Section 3.14 has been added, highlighting the need for the high level of nursing expertise and the input from a perfusionist. Section 3.12 states, 'The committee noted the risk of limb ischaemia, **when then femoral**

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			being retrieved by the expert centre as soon as possible. However the risks/benefits of this approach would need careful assessment.	**artery is used**, but that this has reduced since distal limb perfusion has been in use.' 'what this means in practice', sections 3.8 and 3.11 have been changed.
17	Consultee 9 Royal Papworth Hospital	What research is needed	4. Research: o Unfortunately, there is limited evidence in this population and given the small numbers there will never be a simple RCT conclusion. o ECLS-shock studied a good tool (VA ECMO) in the wrong patient's population (CS secondary to AMI). o We can learn from VV-ECMO and Severe Acute Respiratory Failure which is also an evidence sparse area, but we have shown that appropriately selected patients with care delivered in an expert centre have an improved chance of survival over conventional care. o Ongoing research should focus on good data collection, early adoption of a UK network approach and registry and application of adaptive and novel trials methodologies to look at specific patient populations and evolution of management strategies.	Thank you for your comment. The guidance states, 'More research is needed on VA ECMO for severe acute heart failure in adults when the potential of functional recovery is low or uncertain, and a heart transplant or implanted LVAD is not suitable and a heart transplant or implanted LVAD is not suitable, before it can be used in the NHS'. The guidance also describes 'what research is needed' and highlights the need for 'auditing of outcomes'.

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18	Consultee 2 Company Medtronic	General	While not within the remit of the Interventional Procedures Guidance programme, we would also like to highlight the potential benefits of VA ECMO for organ donation. There is a growing evidence base suggesting that organs from donors after ECMO can be successfully utilised, expanding the organ pool with high graft and recipient survival; a systematic review by Rajsic et al. identified 20 studies comprising 147 donors and 360 organ donations.[1] The most frequently donated organs were kidneys (68%, n=244/360) and livers (24%, n=85/360). In total, 98% (n=292/299) of recipients survived with preserved graft function (92%, n=319/347) until follow-up within a variable period of up to 3-years. References 1. Rajsic S, Treml B, Innerhofer N, Eckhardt C, Spurnic AR, Breitkopf R. Organ Donation from Patients Receiving Extracorporeal Membrane Oxygenation: A Systematic Review. Journal of cardiothoracic and vascular anesthesia. 2024 Mar 20.	Thank you for your comment. Section 3.15 has been added in response to the comment.

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