

EDITORIAL

# Risking life and limb: no hiding from failure

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## Introduction

Acute limb ischaemia (ALI) is one of the few vascular emergencies where time is quite literally tissue. Delays to treatment risk permanent limb impairment or amputation and death. With that in mind, the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) report *Risking Life and Limb (2025)*<sup>1</sup> makes uncomfortable reading. Despite firm principles of care, avoidable delays and missed opportunities have been exposed throughout the patient pathway. Dissecting the report reveals the need for an urgent care pathway revolution.

## How common is common?

One of the most striking findings is that ALI is both common and poorly characterised. There is no specific ICD-10 code<sup>2</sup> or national registry dataset, and thus no consistent national data collection. As a result, the true incidence of ALI is unknown. This is extraordinary for a condition associated with such high morbidity and mortality. The NCEPOD study cohort included 330 adults admitted to vascular hubs as emergencies in early 2024 and demonstrates that ALI is not confined to the very elderly. The mean age was 71 years, but nearly one quarter of patients were aged 60 or younger and females accounted for over a third of cases. Nearly half were managing well without frailty. Almost 80% were current or former smokers, over 70% had multiple comorbidities, and 40% of patients with atrial fibrillation were not anticoagulated. These findings are concerning and perhaps signal that some ALI episodes are not random events. In some instances they are predictable and possibly preventable vascular events occurring in high-risk populations. In many cases ALI is the culmination of undertreated

cardiovascular disease, with poor compliance with best medical therapy recommendations.

## Inadequate recognition

A sobering statistic is that only 23% of patients presented within six hours of symptom onset, while over half presented more than 24 hours later. For Rutherford IIb limbs, where revascularisation within six hours is considered essential for optimal salvage, only one-third presented within that window. The report identifies that the most frequent contributor to delayed presentation is lack of patient awareness. This is not surprising. Unlike stroke ('FAST')<sup>3</sup> or myocardial infarction (heart attack), ALI has no national awareness campaign, no simple public messaging and no widely recognised trigger for urgent action.

The '6Ps' are taught to medical students; however, across the modes of presentation documentation was inconsistent, perhaps the devil in the detail being that not all the 6Ps must be present to trigger the suspicion of ALI and consequently some cases were missed. Peripheral pulses were recorded in only a third of primary care assessments, and a Rutherford category was never or rarely recorded across all points of patient presentation (4% of cases in 'spoke' hospitals). ALI was often misdiagnosed as deep vein thrombosis, cellulitis, stroke or vasculitis at first healthcare contact.

It is important to recognise that communication barriers (language, hearing, learning disability and post-stroke impairments), reported in one in 10 cases, may contribute to delays in recognition. Additional attention is warranted when considering the diversity of the cohort studied; 97% were of a white British

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ethnicity, 15% higher than the national census data.<sup>4</sup> Does ALI discriminate or are there endemic barriers to accessing care from within ethnic minority groups? Educational and public awareness initiatives must therefore be appropriately targeted and accessible to all.

The report makes a clear recommendation that awareness must go beyond vascular specialists. Emergency clinicians, general practitioners, community teams, ambulance services, NHS 111 call handlers and patients themselves must recognise ALI as an emergency equivalent to stroke or myocardial infarction.

### **Lack of a connected network**

The UK vascular hub-and-spoke model has improved outcomes for many complex procedures.<sup>5</sup> However, for ALI it has exposed a vulnerability, with 42% of patients first attending a spoke hospital before transfer to a vascular hub. The median time from arrival at a spoke hospital to arrival at a hub was >8 hours, which exceeds the recommended treatment window for immediately threatened limbs. Worryingly, more than one quarter of patients were admitted to a ward before transfer, including patients with threatened limbs. Another barrier preventing smooth flow of information was the inconsistent electronic patient record and imaging sharing between spoke and hub. These findings reveal a fundamental concern that we have centralised the expertise but not optimised the pathway to share access or information.

Ambulance bypass protocols for ALI were inconsistent, which represents a straightforward opportunity for improvement. If a patient with chest pain and ST-elevation can be triaged directly to a cardiac catheter laboratory for intervention or patients with a suspected ruptured abdominal aortic aneurysm bypass spoke hospitals, why is a patient with motor and sensory loss in a limb not sent directly to a vascular hub?

### **What missing guideline?**

Unlike stroke or myocardial infarction, there is no comprehensive national guideline covering the entire ALI pathway from community recognition to definitive treatment and aftercare. While the European Society of Vascular Surgery guidelines provide recommendations and an evidence base for specialist clinical practice,<sup>6</sup> comprehensive written guidance was absent in many hospitals and primary care settings. The NCEPOD recommendation for a complete national guideline should be considered an essential urgent priority as, without standardised recommendations, variation ensues and, critically, in the case of ALI this is not without consequence. In the NCEPOD report the 30-day mortality was 12.7% and the major amputation rate was 18.5% in patients undergoing an operative intervention.

Any guidance should include:

- Clear triage criteria based on the Rutherford score (sensory and motor impairment)
- Defined ambulance bypass criteria
- Imaging and data sharing standards between hub and spokes

- Explicit targets for Rutherford IIb limbs

This is about creating a time-critical pathway and providing education across the breadth of the healthcare system.

### **How can we know what is happening?**

The powerful recommendation to capture focused ALI data within the National Vascular Registry (NVR) is noteworthy. Both the NCEPOD programme and the NVR are commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the national programme of audits (NCAPOP), and we can only urge our commissioning colleagues to take heed of these recommendations. Without this data improvement is anecdotal but, with data, it becomes specific and measurable. ICD-11 includes specific codes for acute arterial occlusion (BD30) subdivided into upper and lower limb and presents a future opportunity.<sup>7</sup> However, as yet there is no time scale for its adoption in the NHS. We must ensure ALI is not captured under the same umbrella as chronic limb-threatening ischaemia or lost within procedure coding. If we cannot measure the mode of presentation, time to presentation, time to revascularisation, fasciotomy rates, amputation rates, mortality and functional outcomes nationally, we cannot benchmark or improve outcomes for ALI patients equitably.

### **From report to revolution**

The NCEPOD findings are not unique to ALI. They mirror past lessons from stroke and myocardial infarction: late recognition, disjointed pathways, regional variation, that all lead to delays which worsen the ALI injury. Stroke and myocardial infarction underwent transformation through a national strategy, public campaigns, data sharing and pathway redesign.<sup>8</sup> ALI requires the same level of ambition.

The report outlines five clear achievable priorities:

1. Raise public and professional awareness.
2. Risk-stratify (by Rutherford) and transfer high-risk patients directly to vascular hubs.
3. Organise networks for timely specialist access.
4. Develop a national guideline (beyond simply the interventions).
5. Capture registry data to push quality improvement.

### **Do or do not. There is no try . . .**

ALI is an unforgiving emergency with catastrophic consequences. The NCEPOD report demonstrates that outcomes could be enhanced not just by improvements in technical skill but by reducing lost time and variation. The vascular community, commissioners, emergency services and public health bodies must now respond with the urgency that the condition deserves. We have centralised services. We have advanced endovascular and surgical techniques. There is growing clinical evidence, including an imminent national randomised controlled trial.<sup>9</sup> What is required now is an ALI pathway that moves at the pace of ischaemia. The clock is already ticking.

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