6 PRESENTATION TO A SPOKE HOSPITAL

In total, 138/330 (41.8%) patients had attended a spoke hospital before being transferred to a vascular hub. There were 72/138 (52.2%) patients taken by ambulance and ALI was mentioned on the patient report form (PRF), where it was available, for 29 patients. For 22 patients ALI was not mentioned on the PRF. This suggests that ambulance bypass protocols for ALI are not universal or that existing protocols are not being followed. More importantly, it highlights a simple opportunity to reduce delays in the ALI patient pathway. Case reviewers believed that 31/72 patients would have benefited from being taken directly to a vascular hub.

In the organisational questionnaire, 21/55 vascular hubs reported that an ambulance bypass protocol was in use, but only one ambulance trust that responded stated a bypass protocol was used. However, it should be noted that clinical assessment and discussion with the patient should be considered to prevent transfers that offer no clinical benefit.

The clinicians at the hospital also identified delays in the patient presenting to their local hospital in 31 instances, with patients delaying seeking help being the most common reason (T6.1).

Table 6.1 Reasons for the delay in the patient presenting to a hospital	Number of patients
Patient delayed seeking help	22
Patient sought help from primary/ambulatory care was misdiagnosed and discharged home	5
Patient presented to primary care - referred to spoke hospital	5

Answers may be multiple; n=31

Clinician questionnaire data

In the view of the reviewers there was a delay in the triage/streaming process for 18/138 (13.0%) patients and a delay in the initial assessment in 21/138 (15.2%). Misdiagnosis (6/19) was the most common reason for delay. This highlights the need for further information for patients as well as for the healthcare professionals involved in assessment/triage.

A brief education document describing ALI assessment, management and differential diagnoses was made available to all healthcare professionals in 2022 by the Royal College of Emergency Medicine.[27]

In the spoke hospital, 113/138 (81.9%) patients had all necessary assessments completed. Where omissions were identified, they were in the recording of limb power and/or pulses (six) and imaging/Doppler ultrasound in nine patients.

Delays were reported in the examination/investigations in 17/138 (12.3%) patients. Imaging should not delay a transfer but if it can be performed quickly without causing a delay, it can be beneficial for planning treatment in advance. Although, this applies only if imaging can be shared electronically; otherwise, it may pose an unnecessary risk of repeated imaging at the vascular hub.

Rutherford classification

A Rutherford category was recorded in the notes of only 6/138 (4.3%) patients, indicating either a lack of awareness of it or a lack of confidence in using it by non-vascular specialists. According to the clinician survey, 31/32 emergency medicine/acute care physicians recorded the '6Ps' but only 1/32 routinely recorded a Rutherford category, despite 31/32 receiving postgraduate or workplace training in the assessment of ALI. When a Rutherford category was not recorded, the reviewers estimated the Rutherford category based on the patient history and examination in the hospital notes (where they were able).

The Rutherford category for the patients attending the spoke hospital indicated that 30/106 (28.3%) required revascularisation within six hours of their development of sensory-motor symptoms, while 8/106 (7.5%) probably required a primary amputation (T6.2). In total, at least 38/106 (35.8%) patients were in a hospital where the treatment they required could not be provided, suggesting that many vascular networks are missing the organisational opportunities to improve the care of ALI.

Table 6.2 Rutherford category in the spoke hospital (combination of recorded in notes and estimated by reviewers)	Number of patients	%
Rutherford I	13	12.3
Rutherford IIa	55	51.9
Rutherford IIb	30	28.3
Rutherford III	8	7.5
Subtotal	**106**	
Unable to calculate	32	
Total	**138**	

Case review data

A total of 36/138 (26.1%) patients were admitted to a medical ward in the spoke hospital before they were transferred to the vascular hub, including 3/36 patients initially misdiagnosed as having a deep vein thrombosis. Admission to a ward did not appear to be influenced by those with viable limbs or inevitable amputations.

Patients with threatened but salvageable limbs accounted for 25/36 ward admissions. Emergency transfer to a vascular hub was indicated in these patients. The decision to admit a patient or keep them in the emergency department pending transfer should always be clinically driven. It is likely that transfer from a ward would be slower than from the emergency department. Patients with ALI who require care in a vascular hub should receive that care as quickly as possible and not be admitted to a ward.

A record of the discussion with the vascular hub was evident in 118/138 (85.5%) cases reviewed, while 9/23 (39.1%) respondents in the clinician survey identified difficulties contacting the vascular surgical team as a barrier to care.