Variation in management of suspected deep vein thrombosis in UK emergency departments
SAMPSON FC, GOODACRE SW, MASON S. (Medical Care Research Unit, University of Sheffield, 30 Regent Street, Sheffield S1 4DA)

Introduction
Without treatment, deep vein thrombosis (DVT) can lead to potentially fatal pulmonary embolus, and long-term complications, such as post-thrombotic syndrome. Treatment with anti-coagulation can reduce the risk of these adverse outcomes, but increases the risk of haemorrhage. Rapid and accurate diagnosis of DVT is therefore important, but the optimal diagnostic approach and management strategy for DVT remains unclear. As part of a wider systematic review of non-invasive diagnostic tests for DVT, we carried out a survey of emergency departments (EDs) in the UK to find out how DVT is currently diagnosed and managed.

Methods
We undertook a postal survey of 255 EDs in the UK in April 2003. The questionnaire asked about algorithms or protocols to aid diagnosis and tests used to investigate suspected DVT

Results
The response rate was 73% (186/255). Patient investigations favour non-invasive testing methods such as ultrasound, which was available in 95% of EDs (178/186). Contrast venography, the invasive 'gold standard' is no longer routinely used, being unavailable in 35% (65/186) of EDs.

Three-quarters (135/180, 75%) of EDs said they have a protocol or algorithm to guide diagnosis. Of those that sent a copy of their protocol (61/135), 16 were treatment or management protocols and could not be used to aid diagnosis. There was considerable difference between the protocols, with no two protocols identical.

The gold standard for the definitive diagnosis of DVT was ultrasound in most departments, while many required a follow-up ultrasound or invasive venography where the initial ultrasound was negative, notably in high-risk patients. In contrast, there were a variety of different criteria used to rule out DVT. Most algorithms used a combination of negative D-Dimer and either low or low and medium risk score to rule out DVT, but some required all patients to receive ultrasound or venography.

Conclusions
There is wide variability in the current management of suspected DVT within the UK. While diagnosis of DVT has moved away from the invasive gold standard, there is still uncertainty as to whether an ultrasound alone should be considered a gold standard, or whether further investigation should be required. While EDs need to avoid costly investigations such as ultrasound for all patients, there is not yet consensus as to how DVT can be ruled out. Evidence-based protocols for non-invasive diagnostic testing of DVT need to be created for cost-effective and safe management of suspected DVT.