

# Point of Care Testing Resources and Clotting Factor Availability in Cardiac Surgical Centres

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## Context and Problem

Coagulopathy and bleeding associated with cardiac surgery and the use of cardiopulmonary bypass, if not corrected, can lead to significant comorbidity and is associated with poor outcomes.

Over the last few years, the availability viscoelastic haemostatic assays (VHA) at the point of care and the availability of individual clotting factor concentrates have allowed a more focussed approach to correction of coagulopathy.

This survey aimed to study the availability of point of care testing (POCT) for coagulopathy and the clotting factor concentrate availability as well as trends in its usage across the cardiac surgical centres in UK.

## Methods

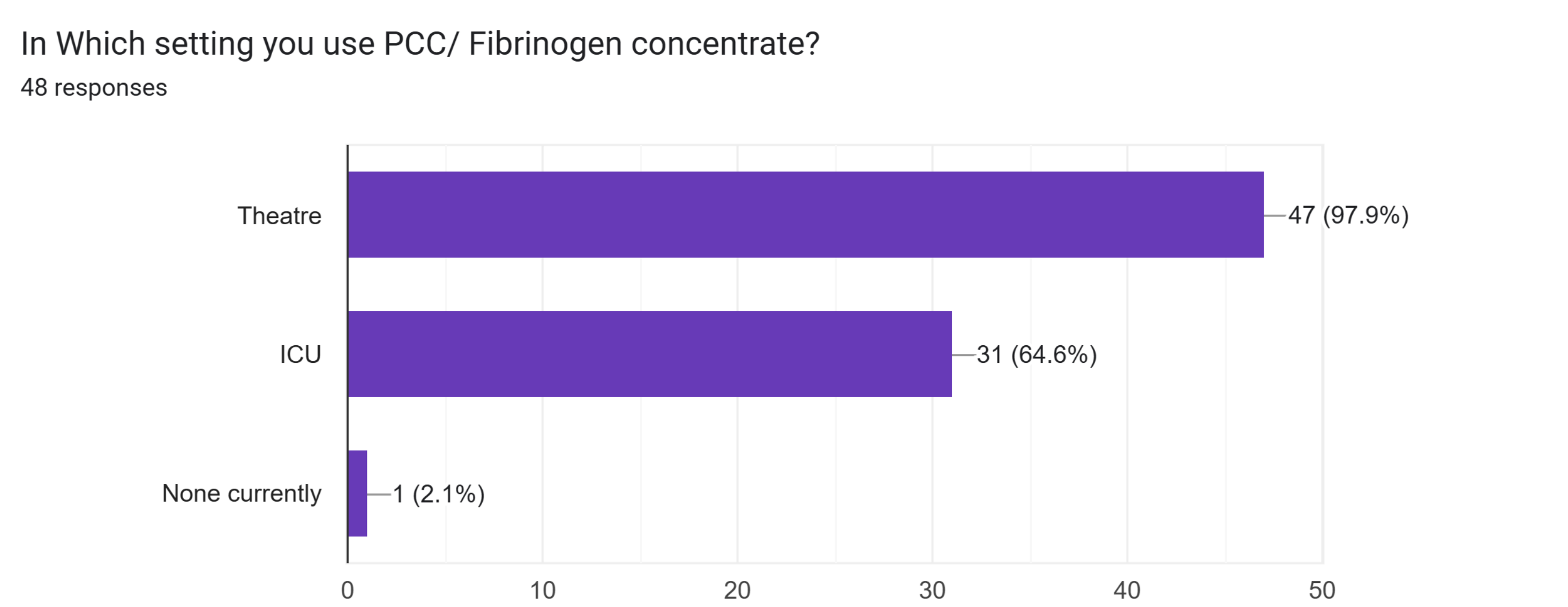
A survey consisting of 18 questions was disseminated across the cardiac anaesthetic units across the UK. The responses were gathered and evaluated. Also requested was the willingness to form a group to guide future practice with regards to VHA testing and clotting factor usage in cardiac surgery.

## Results of Survey

A total of 48 responses were received from atleast 22 cardiac anaesthetic units across the UK with most of the responses being from the consultants (44).

PCC and fibrinogen concentrates were used most in the theatres followed by the ICU. Nearly half of the participants used PCC or fibrinogen concentrates either routinely or frequently.

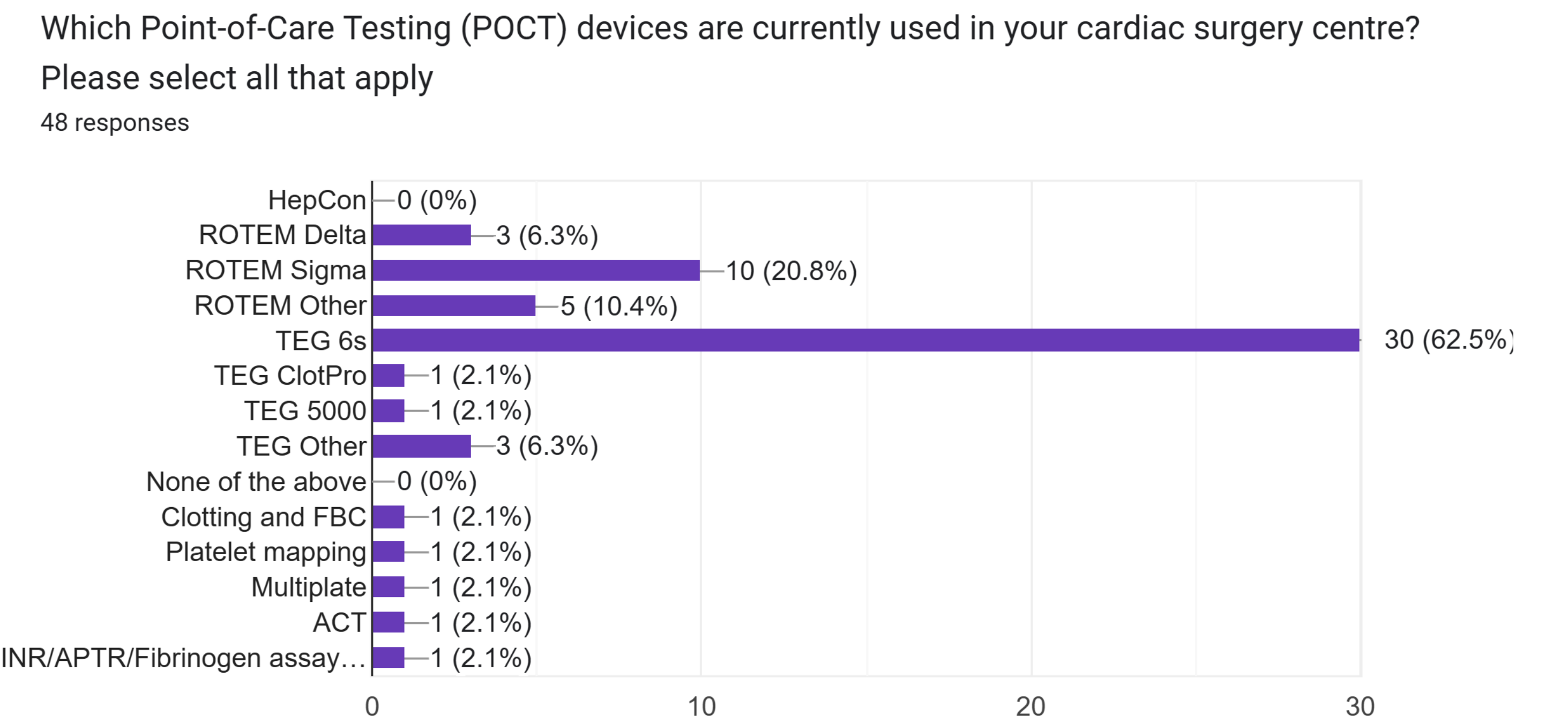
Two thirds of the participants reported having to source the concentrate products from outside the theatres/ITU environment.



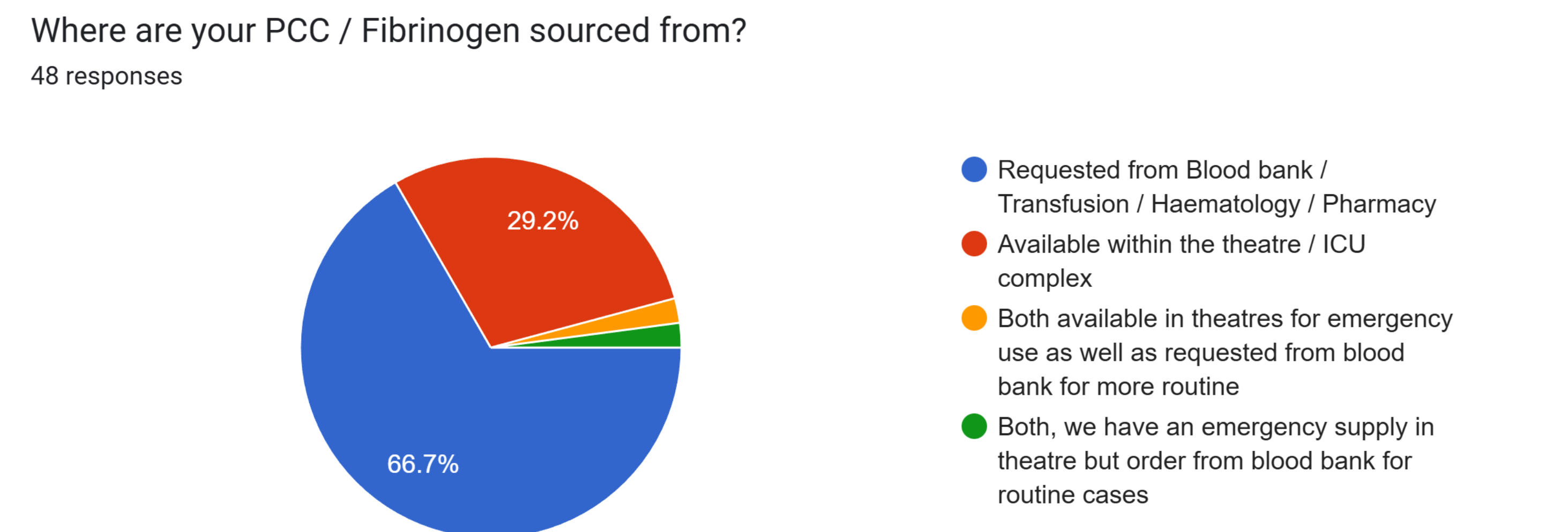
25% of the responses had no algorithms to guide their correction of coagulopathy. 10% of the participants did have an algorithm, but it did not factor in the clotting factor concentrates.

## Responses

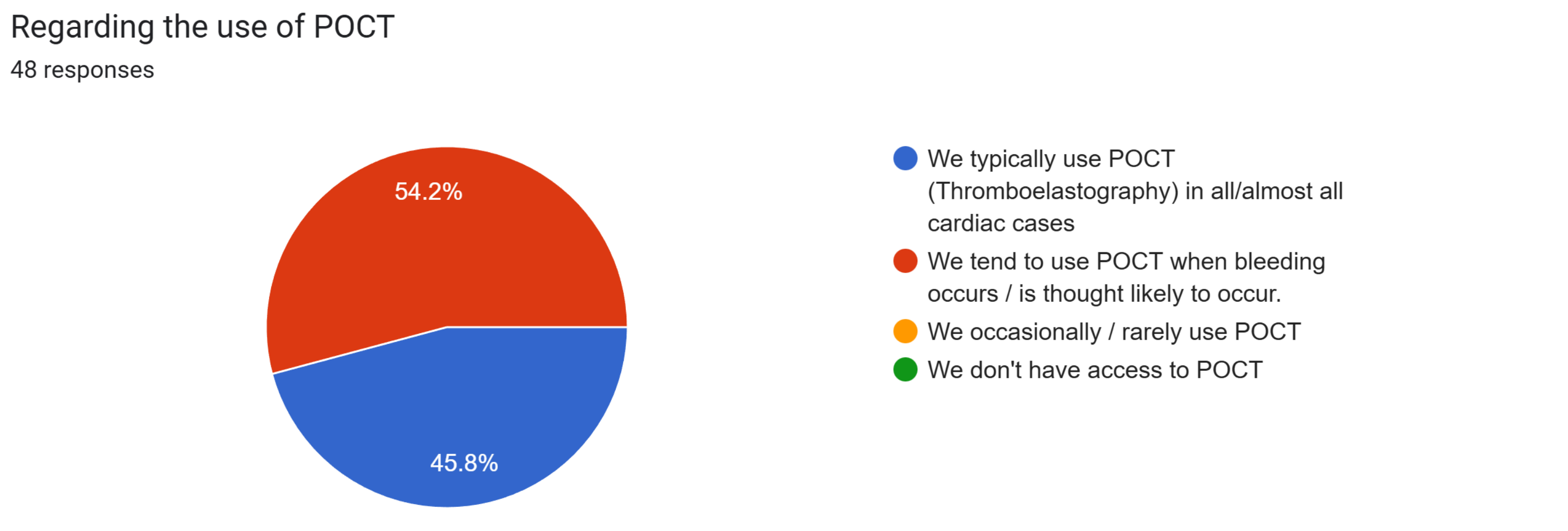
TEG6S followed by ROTEM sigma were the most used POCT VHA systems. None of the participants used Hepcon in their practice.



Over half the participants (54%) relied on VHA testing only if bleeding was ongoing or anticipated whilst the remainder used it in all cases. Of note, 2 of the responses reported having access to POCT testing only in working hours.



Post cardiopulmonary bypass coagulopathy, aortic surgery and redo surgeries were the most common scenarios where PCC was used. Redo operations, aortic surgeries and low fibrinogen levels were scenarios where fibrinogen concentrates were used. Of note, 5 participants reported using PCC and fibrinogen as part of standard therapy and 4 stated no access to fibrinogen concentrates.



Cost was the greatest barrier to the use of blood product concentrates followed by lack of an algorithmic approach, supply issues and limited familiarity and training. Another reported barrier was liaising with haematology to obtain these products. Some also mentioned unwillingness of their units to update practice as a barrier.

## Conclusions

This survey provides a snapshot into the heterogeneity in the real world with regards to POCT VHA testing and blood product concentrate usage. There remains work to be done to standardize the availability of POCT VHA testing and clotting factor usage to direct best practice and reduce disparity across cardiac surgical units across the UK..