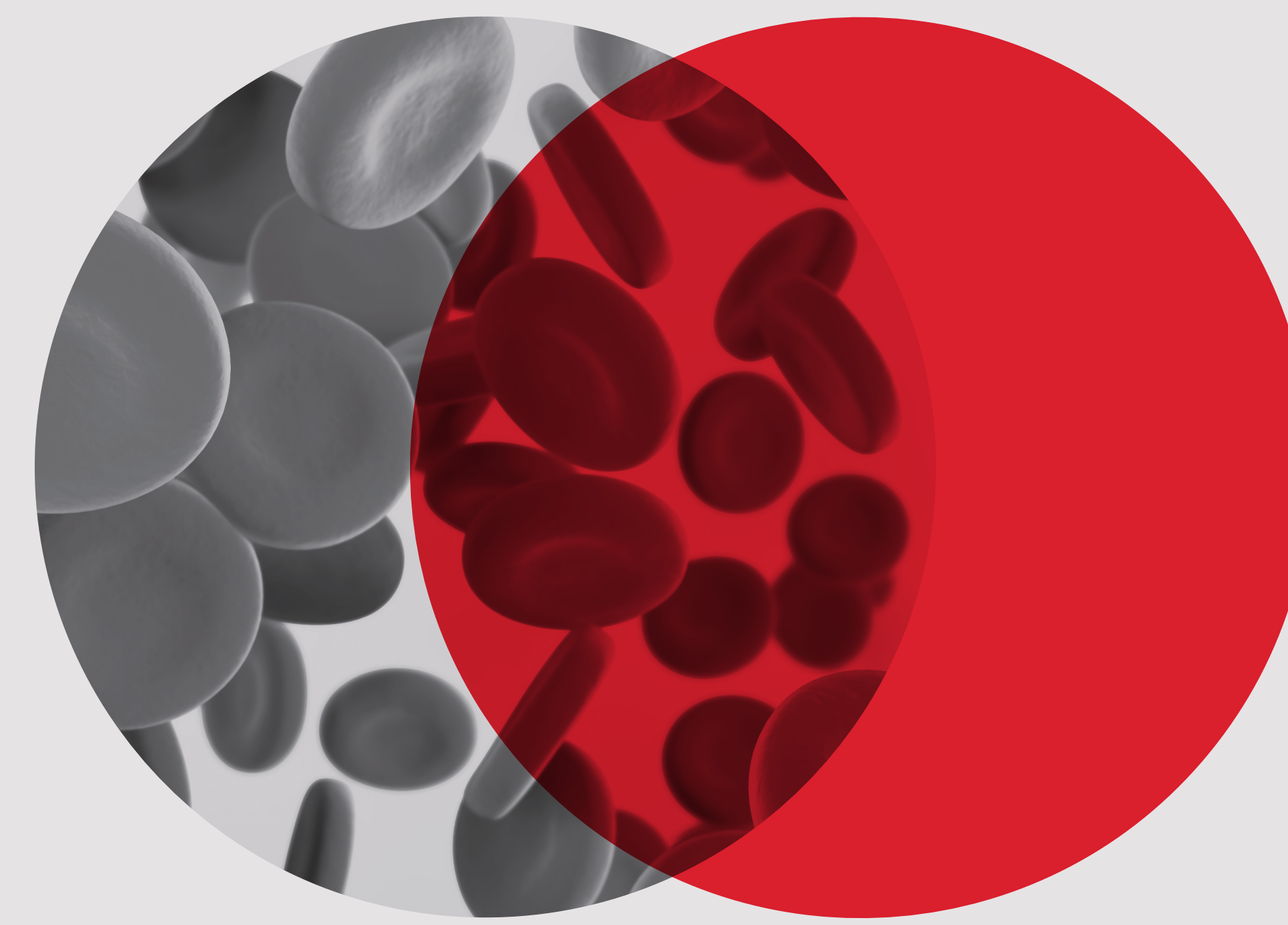


Unfractionated Heparin monitoring with Activated Partial Thromboplastin Time – RCPAQAP Questionnaire review



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Introduction

Unfractionated Heparin (UFH) is an anticoagulant used in treatment of thrombotic disorders. Due to the unpredictable pharmacokinetics of UFH, monitoring of patients is recommended to maintain therapeutic range¹. The Activated Partial Thromboplastin Time (APTT) is commonly used by laboratories to monitor these patients. The Anti-Xa heparin assay is also recommended, as a more specific method, to determine the level of anticoagulant present in plasma².

Methods

The RCPAQAP offers two External Quality Assurance (EQA) programs, the general haemostasis and UFH program to enable labs to assess against their peer group for APTT testing. The UFH program, includes both APTT and Anti-Xa. The RCPAQAP conducted a questionnaire in 2018 to gauge how laboratories are monitoring patients on UFH and their involvement in an EQA program.

Results

The questionnaire was sent to all participants enrolled in the general haemostasis program and a very low response rate of 20% was received.

75% of respondents indicated their lab offered APTT, Anti-Xa or both to monitor UFH and 10% use a different assay. In contrast, 14% have either indicated that APTT was not used to monitor UFH or a central laboratory would monitor UFH patients (See Figure 1).

Laboratories were also asked how many APTT tests are performed in their laboratory in a week to monitor these patients. Of the respondents who use APTT, 37% perform 1-10 tests, 17% perform 11-20 tests, 11% perform 21-30 tests and 34% perform more than 30 APTT tests per week (See Figure 2).

80% (33/41) of laboratories responded that they are enrolled in an EQA for UFH monitoring. 20% (8/41) indicated they were not enrolled in a related EQA program, however, recognising that 4 of these referred their APTT samples to a central laboratory (See Figure 3).

Discussion

This questionnaire was distributed to RCPAQAP participants with the aim of identifying how laboratories are monitoring patients on UFH and to gauge if the importance in enrolment of an appropriate EQA is known. From the responses received it was evident that laboratories are monitoring their UFH treatment patients using APTT and/or Anti-Xa, with 80% enrolled in an appropriate EQA. However, it is of concern that 20% of respondents do not participate in an EQA which is tailored for UFH monitoring, particularly given the known variable sensitivity of APTT reagents^{3,4}. Laboratories who are monitoring patients on UFH by performing an APTT only, and enrolled in the general haemostasis program, need to be aware that we recommend enrolling in the UFH program. The UFH program will provide relevant comparison of APTT test performance as these survey samples are designed to mimic Heparinised patients. Participating in an appropriate EQA would provide insight to the test performance of a peer group, exposing areas that need improvement in the test and/or the procedure.

Conclusion

The majority of participants responding to this questionnaire indicated they are enrolled in an appropriate EQA program for UFH monitoring. However, this questionnaire has revealed that a significant number of laboratories are not in a related EQA. We recommend that those laboratories who are not enrolled in an EQA but perform APTT and/or Anti-Xa to monitor UFH patients, review their laboratory quality management system to ensure their patient results are reliable for patient safety.

References

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Originality Statement

The data presented under this abstract are from responses of RCPAQAP participants and solely original and no part has been copied.

UNFRACTIONATED HEPARIN MONITORING RESPONSES

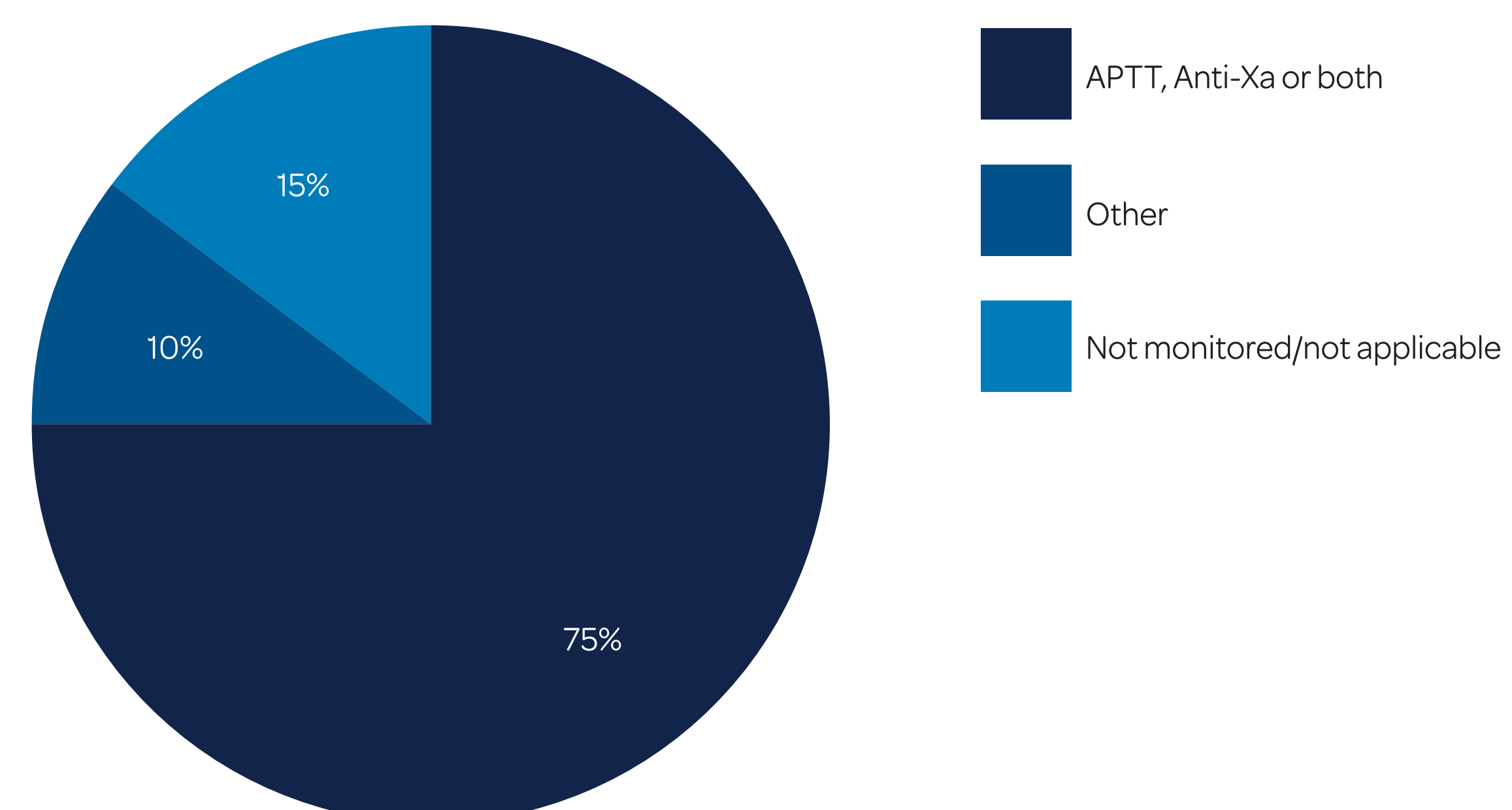


Figure 1. Summary of responses received for how patients on Unfractionated Heparin are monitored

ACTIVATED PARTIAL THROMBOPLASTIN TIME TESTS PERFORMED PER WEEK

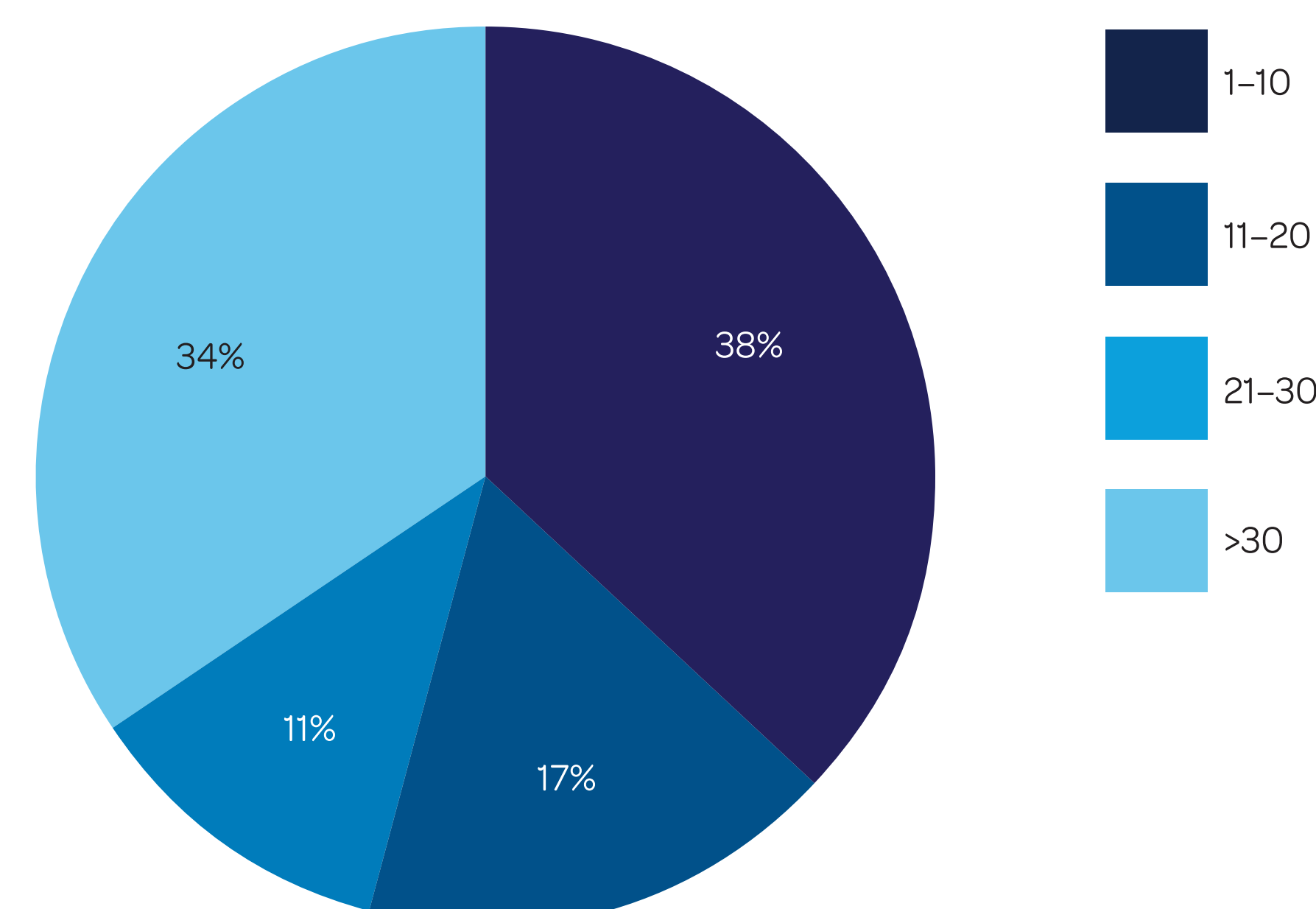


Figure 2. Summary of number of APTT tests performed in a week by laboratories to monitor patients on Unfractionated Heparin

ENROLMENT IN AN EXTERNAL QUALITY ASSURANCE PROGRAM

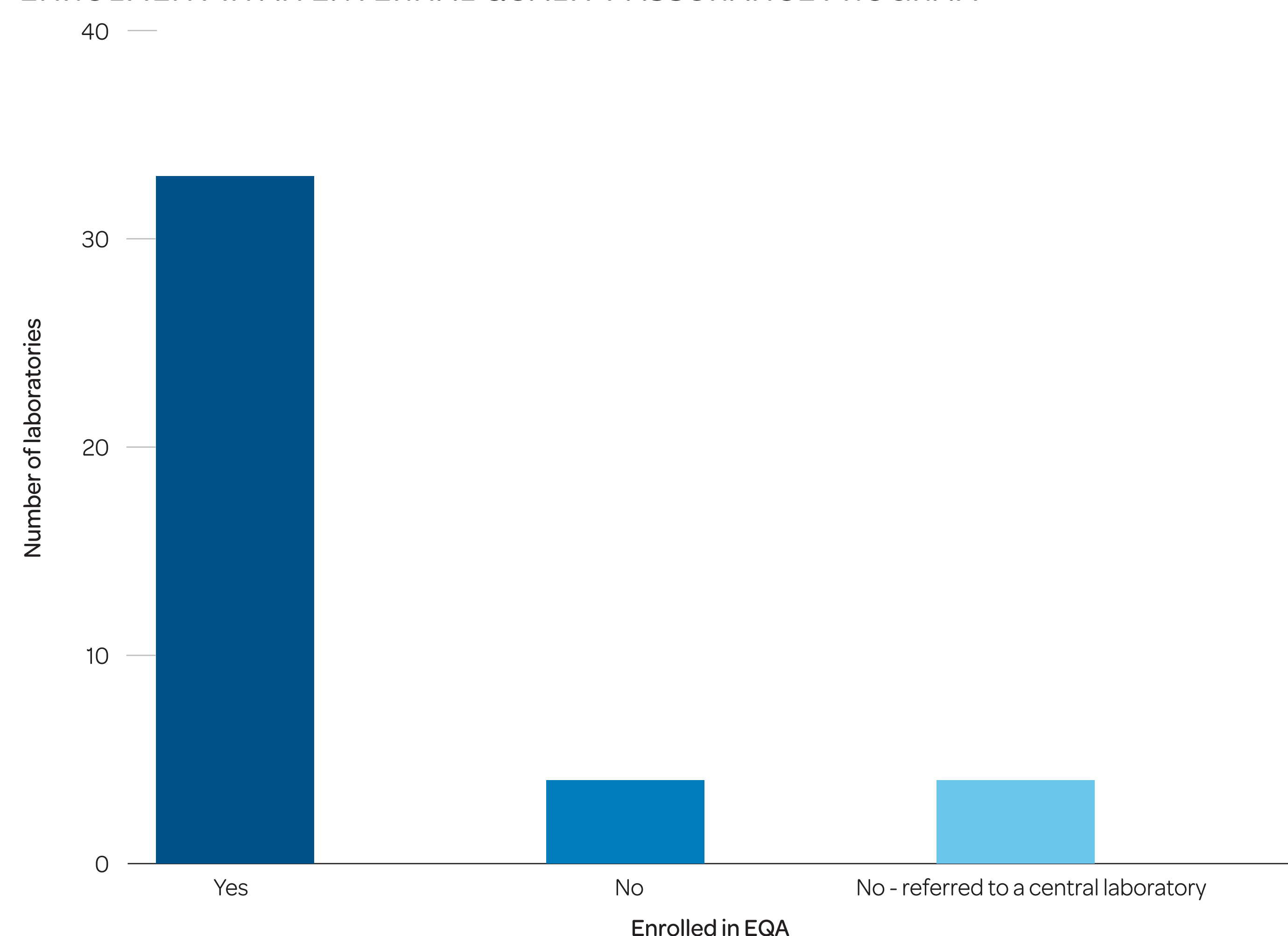


Figure 3. Response for enrolment in an External Quality Assurance Program for Unfractionated Heparin monitoring