



## What research and people are saying

- Murphy et al 2015 revealed that **82.1%** of the 369 coagulation tests were inappropriate<sup>1</sup>.
- Gursoy et al. 2015; a prospective study on coagulation tests performed showed that **53.2%** were inappropriate<sup>2</sup>.
- A number of these requests did not influence a change in treatment.
- It has been reported at some hospitals that coagulation tests are used inappropriately. At best, these reports have been anecdotal.

## BACKGROUND

Coagulation tests are requested as part of Accident & Emergency (AE) admission tests to support diagnosis. They comprise of Prothrombin Time (PT) test/International Normalised ratio (INR) and Activated partial Thromboplastin Time (APTT) test.

## Aim

To evaluate the appropriateness of AE coagulation test requests at PAH.

## DESIGN AND METHODOLOGY

26,084 retrospective patients' coagulation tests requests spanning a period of one year (1st January to 31st December 2020) were retrieved from Laboratory Information Management System (LIMS) - TD synergy. Of these, 200 test requests were randomly selected and analysed using Microsoft Excel.

The Royal College of Emergency Medicine (RCEM) 2018 recommendation<sup>3</sup> was employed as the standard for appropriateness.

At the time of the study, there were no BSCH or NICE guideline covering coagulation test requests.

## RESULTS

Based on the RCEM 2018 recommendation **36 (18%)** were found to be appropriate and **73% (146)** of the test requests were inappropriate.

**18 (9%)** out of the 200 audited samples were rejected due to pre-analytical variables<sup>4</sup>.

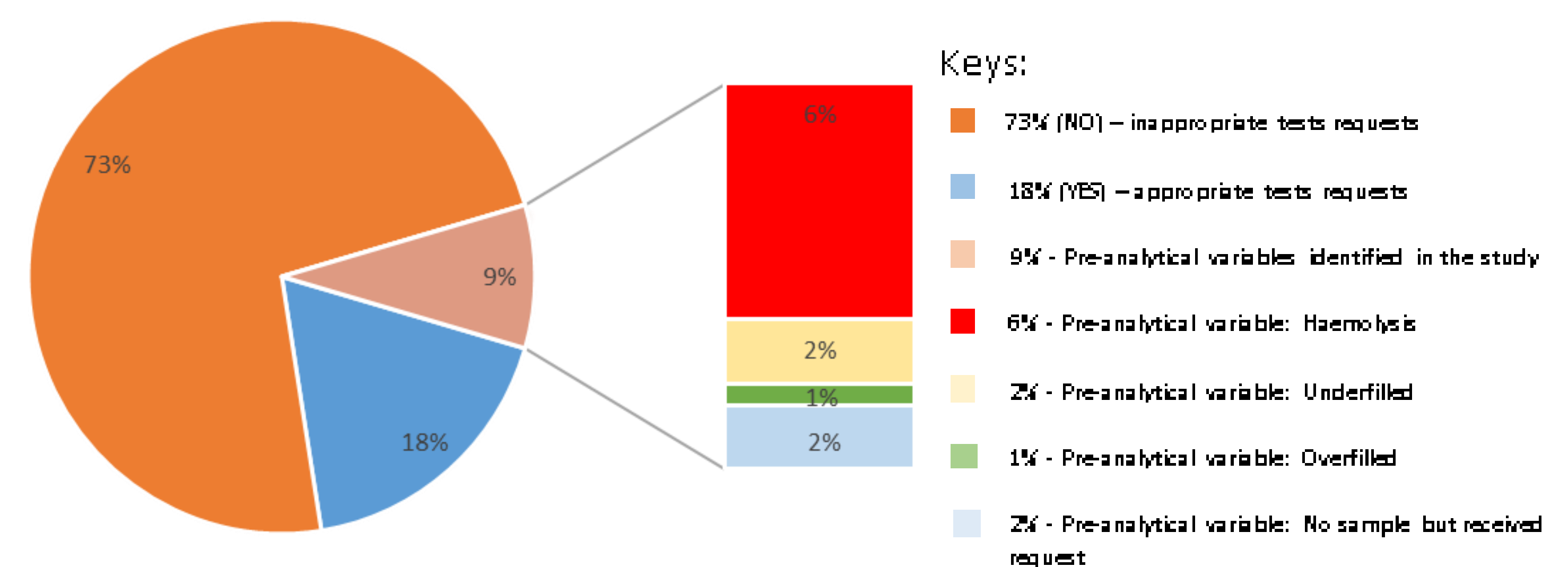


Figure 1: Pie-chart showing appropriateness of PT/INR and APTT Tests ordered in AE Admission at PAH (including the pre-analytical variables identified in the study)

## CONCLUSION

This study indicated the inappropriate use of coagulation screen as reported in literature and also at the Princess Alexandra Hospital NHS Trust.

Inappropriate tests accounted for £1,045.36 (excluding the indirect costs to patients and other indirect costs) to the Trust. The cost per coagulation screen at PAH is £7.16.

Effectively implementing standards to guide coagulation test requests in AE could result in improving patient experience and direct cost savings- potentially £1,045.36 for every 200 requests.

1. Murphy et.al. 2015 (PDF) A novel approach to improving coagulation sample ordering in an emergency department [Internet]. ResearchGate. 2020. Available from: [\(PDF\) A novel approach to improving coagulation sample ordering in an emergency department \(researchgate.net\)](#) [Accessed 25 October 2020]
2. Gursoy et. al 2015: The impact of coagulation testing on patient management in the emergency department [Internet]. ResearchGate. 2020. Available from: [\(PDF\) The impact of coagulation testing on patient management in the emergency department \(researchgate.net\)](#) [Accessed 25 October 2020]
3. Recommendations - Choosing Wisely UK [Internet]. Choosing Wisely UK. 2020. Available from: <https://www.choosingwisely.co.uk/i-am-a-clinician/recommendations/#1572878789681-15fe4ba5-dd0e> (Recommendations - Choosing Wisely UK, 2021) [Accessed 17 October 2020]
4. Gosselin, R. and Marljar, R., 2019. Preanalytical Variables in Coagulation Testing: Setting the Stage for Accurate Results. *Seminars in Thrombosis and Hemostasis*, 45(05), pp.433-448. (Gosselin, et. al 2019) [Accessed April 2021]

