

# Preliminary Evaluation of Cardiology Support Service at the Royal National Orthopaedic Hospital, Stanmore

J Sambhani<sup>1</sup>, P Flynn<sup>1</sup>, M Fennelly<sup>1</sup>, P Gunning<sup>1</sup>, R Baumber<sup>1</sup>, H Nouriel<sup>2</sup>, A Bakhai<sup>2</sup>

<sup>1</sup> Department of anaesthesia and critical care, RNOH, Stanmore

<sup>2</sup> Department of cardiology, RNOH and Royal Free London NHS Trust, London

## Introduction

ESC guidelines for cardiovascular assessment for non-cardiac surgery advocate referral of selected patients with cardiac disease undergoing low-and intermediate-risk non-cardiac surgery for cardiac evaluation and medical optimization by anaesthetists. (level IIb recommendation).

The RNOH, a single speciality tertiary orthopaedic centre has introduced cardiology support services in 2015. Consultant Cardiologists are available three times a week for consultation. The purpose was to establish a direct route of referral for preoperative cardiovascular assessment, optimisation and postoperative management of adverse cardiac events.

## Objectives

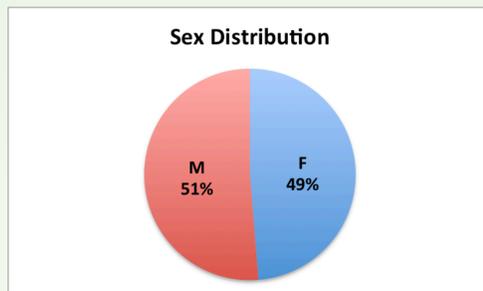
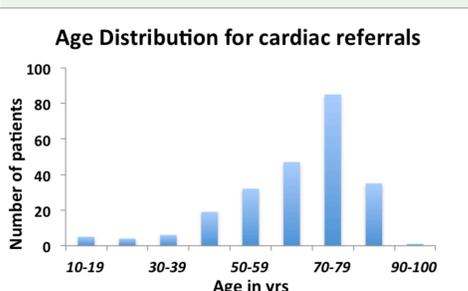
We undertook a service evaluation of the cardiology support service to assess the impact on cardiac outcomes of patients at a tertiary-care orthopaedic centre.

## Materials and Methods

We retrospectively reviewed all cardiology referral details for the initial 8 months of this new service. We looked at the reasons for the referral, patient demographics and cardiac outcomes for these patients.

## Results

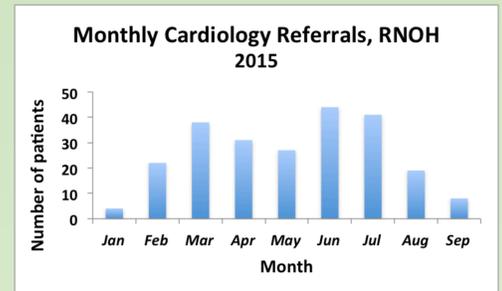
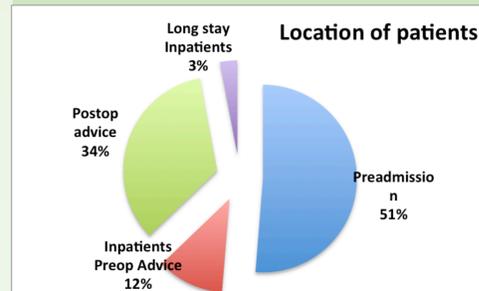
There were total of 234 referrals over a 8 month period from the start of the service in January 2015. There was near equal distribution of male (51%) and female patients (49%). Majority were above 50 years of age.



62% of referrals were for preoperative advice. Majority were from the preoperative assessment unit. Inpatients requiring preoperative cardiology advice included urgent tumours and patients transferred from other hospitals for surgery at the RNOH.

*Preoperative advice was sought for:*

- ECG changes
- Management of arrhythmias
- Decision regarding cardiac risk
- Optimisation of cardiac function
- Anticoagulation and anti-platelets management
- Pacemaker management
- Pulmonary hypertension
- Pulmonary embolism



34% referrals were for postoperative inpatients for intraoperative or postop cardiac abnormalities.

*Reasons for postoperative referrals were:*

- Onset of arrhythmias
- New ST changes on ECG
- Anticoagulation and anti-platelets management
- Pulmonary oedema
- Myocardial infarction
- Pulmonary embolism

During this period only two patients needed postoperative angiography and management for acute ischaemia, both who were not referred preoperatively. One patient was detected to have severe pulmonary hypertension preoperatively and was transferred to a cardiac centre to have surgery. Surgery was deferred in one patient with severe LV dysfunction after a risk benefit discussion.

## Limitations

This is a service evaluation of the introduction of this new cardiology support service. We have not analyzed the cost-effectiveness of this service. Follow up of patients postoperatively for a year may reveal the actual benefits, which we plan to do.

## Conclusions

Orthopaedic Surgery at the RNOH can be grade 3 to grade 4 surgery with at least intermediate and above cardiac risk. Patients also have limitations to exercise as well as limited functional capacity to assess their cardiac fitness. Patients at risk need further cardiac evaluation as per ESC guidelines for non cardiac surgery.

Preliminary evaluation shows that the introduction of a cardiology support service at the RNOH has proven to be very valuable.

Adverse postoperative cardiac events were reduced because of improved identification of at risk patients and planning their perioperative management.

We recommend a cardiology support service for any perioperative setting in keeping with the ESC guidelines.

## References

*ESC/ESA Non-Cardiac Surgery Guidelines - Eur Heart J (2014) 35, 2383-243*