



Improving management pathway for pregnant women with palpitations in a tertiary hospital

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Introduction

- Palpitations represent a common complaint in pregnancy
 - Causes are usually benign (e.g., physiological increase in heart rate in pregnancy, anaemia, ectopic beats)
 - Red flags indicating high risk include a history of structural heart disease, family history of sudden cardiac death, faint/syncope, chest pain or severe/sustained tachycardia
- We noted that, in the Maternity Assessment Unit (MAU) of a tertiary London hospital, investigations and management plans for pregnant women presenting with palpitations would often vary

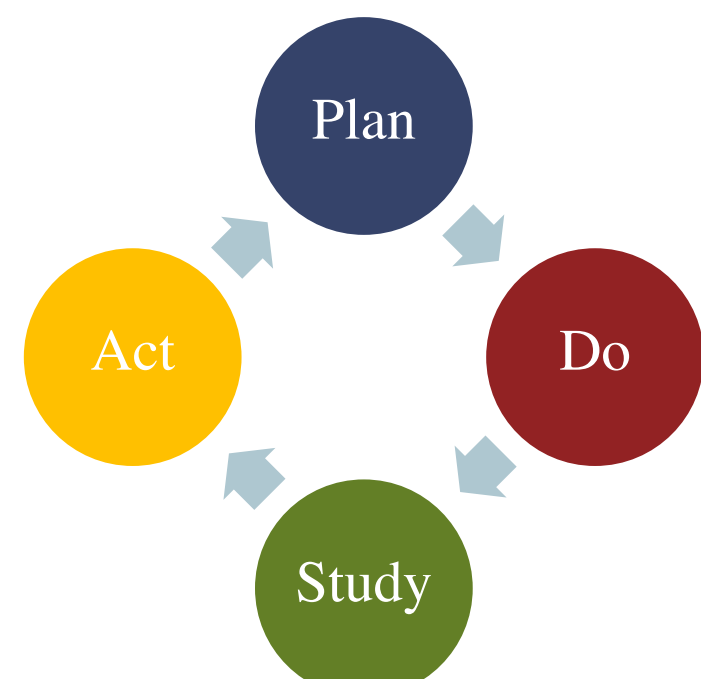
Aims

This quality improvement project aims to:

- Standardise care for women presenting to MAU with palpitations by establishing a clear pathway with steps to be followed by MAU staff
- Optimise patient care and reduce clinical variation
- Educate MAU staff (including doctors, midwives, midwifery support workers and students) on the physiology of palpitations in pregnancy, red flags and appropriate investigations and management

Design and Methods

- A quality improvement project was implemented that included collection of background data and implementation of activities. This was through following Plan-Do-Study-Act (PDSA) structure.
- A retrospective audit was performed looking into the waiting time, initial investigations and management plan for women presenting to MAU with palpitations.
 - Records of pregnant women presenting to MAU with palpitations over a 6-month period in 2020 were reviewed. Data gathered from these records included the time from presentation to being reviewed by an obstetrician, initial investigations performed for the women and management plans put in place for them.
- Separately, an anonymous staff survey was designed and distributed amongst healthcare professionals working in MAU to assess basic knowledge and confidence in investigating and managing pregnant women with palpitations.
 - The survey was distributed to doctors, midwives, midwifery support workers and medical/midwifery students. Responses were collected over 1 month period in 2021.



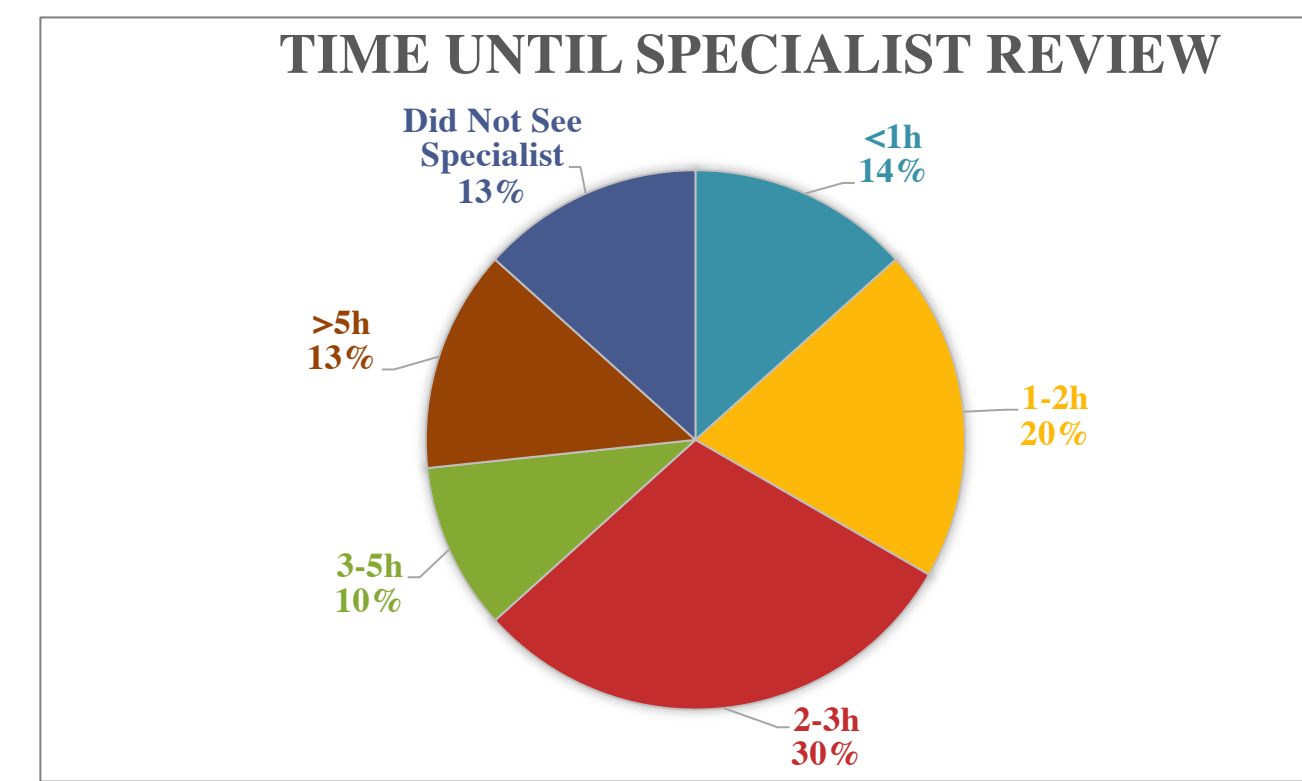
Results

Results from retrospective audit

30 patient data points were collected. Data analysis revealed large variability in waiting times to see an obstetrician, investigations performed for the patients and their management plans.

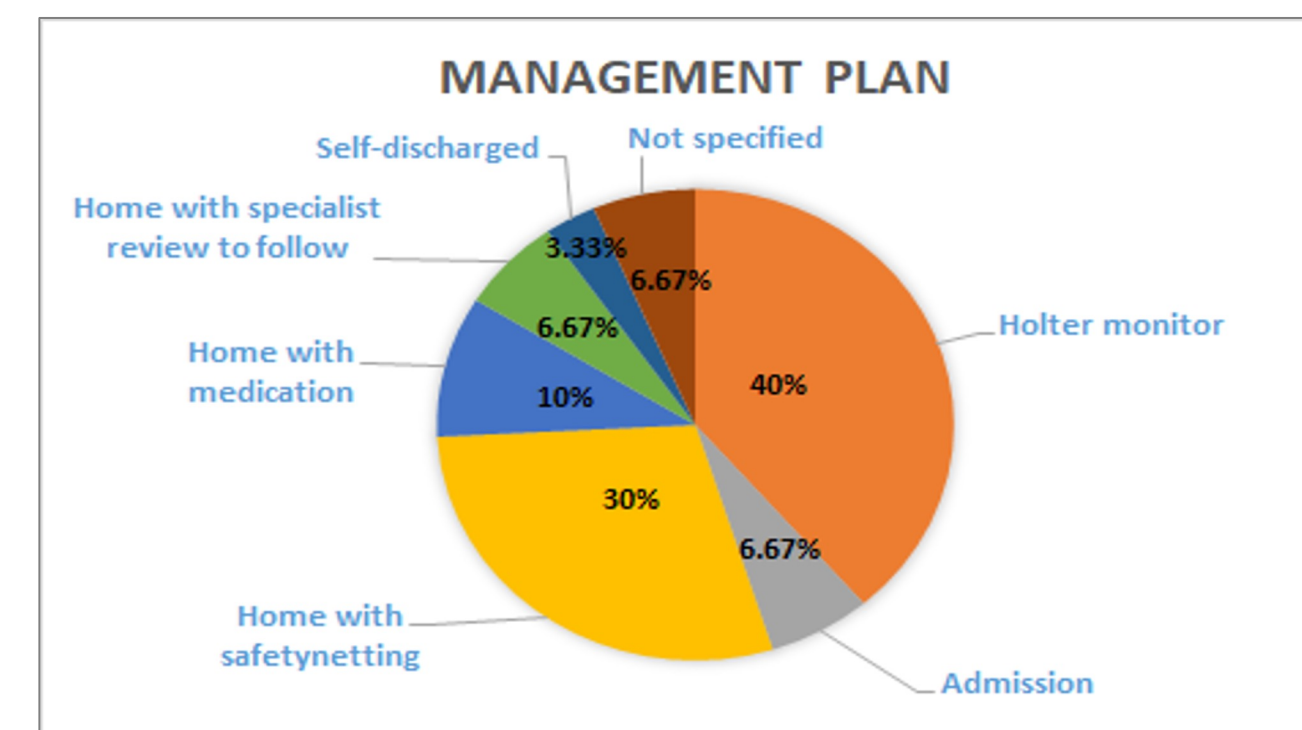
1. **Waiting time in MAU**

9 (30%) waited 2 - 3 hours to see a doctor after presenting to MAU with palpitations, and 4 (13%) waited for more than 5 hours.



2. **Investigations performed**

Most women (77%) had a full blood count sent, 17 (57%) had thyroid function tests, and various other tests were performed, as above. 6 (20%) did not have any investigations recorded.



3. **Management plan**

2 required admission and 26 were discharged home. Out of those who were discharged, 24-hour ECG (Holter) monitoring were arranged as outpatient for 12 (40%) of them. 2 were arranged obstetric medicine specialist follow up, 3 were started with medical treatment, and 9 were discharged with safety netting advice.

Results from staff questionnaire

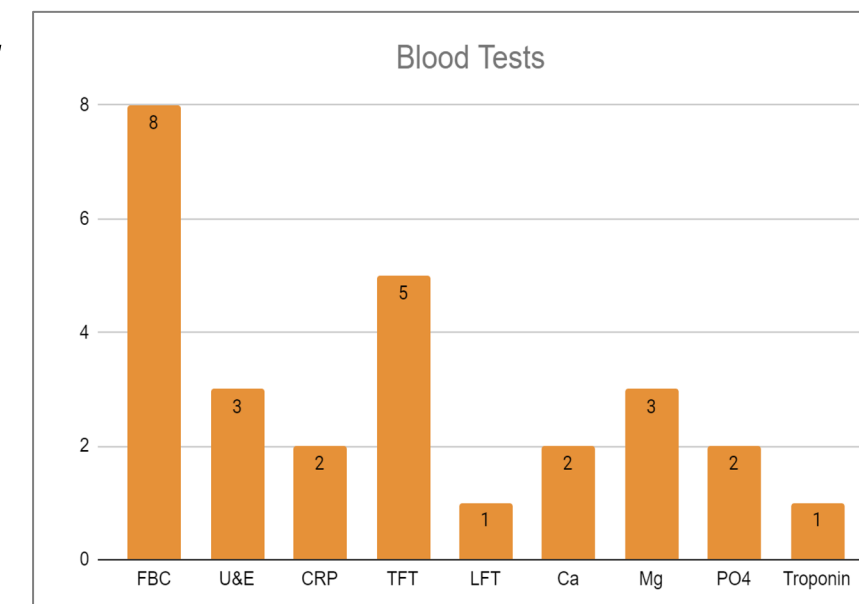
17 members of staff who work in MAU completed the anonymous questionnaire.

1. **Background knowledge**

Most (88%) participant answered correctly the physiological changes of heart rate in pregnancy.

"When a woman presents with palpitations, which investigations may you do?"

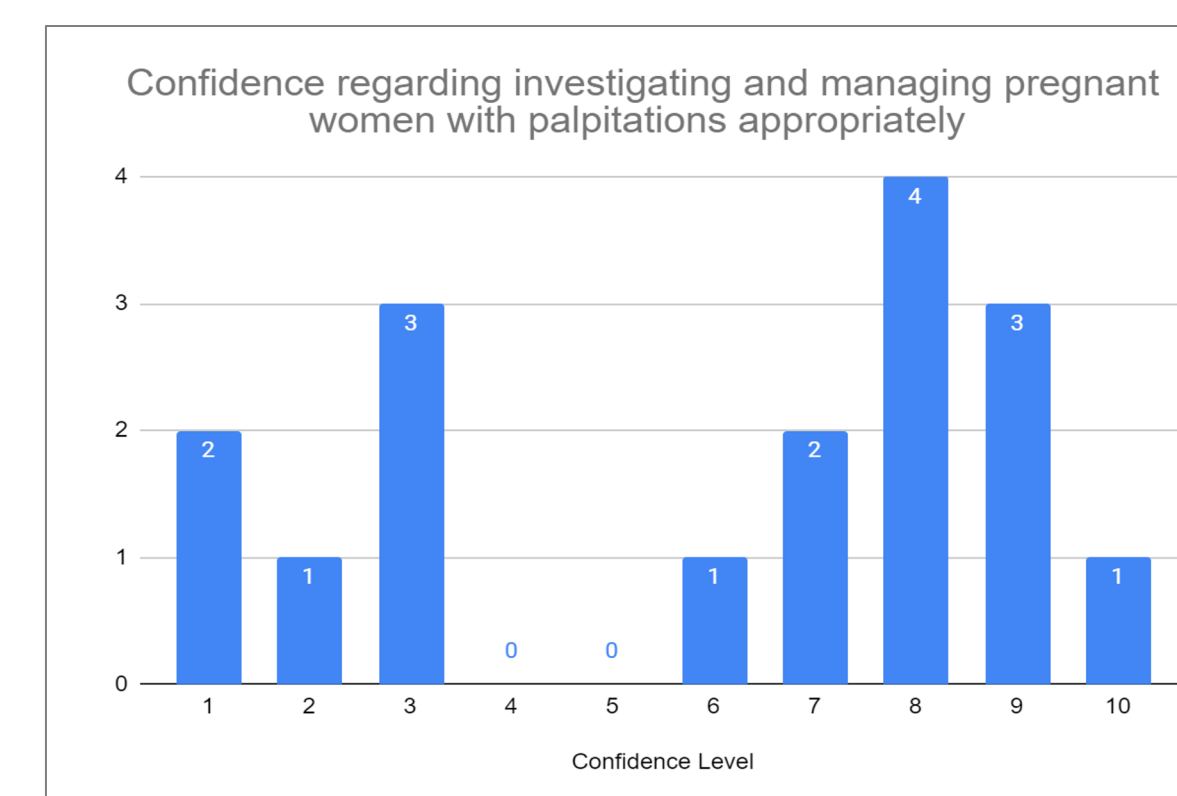
100% of respondents would do a set of basic observations, 16 (94%) would do an ECG, and 9 (52.9%) would perform blood tests. 12 would also auscultate the fetal heart rate or perform a CTG, and 2 would measure the symphysiofundal height. For participants who responded they would perform blood tests, their choice of blood test varies.



2. **Staff confidence**

"How confident do you feel investigating and managing pregnant women presenting with palpitations appropriately?"

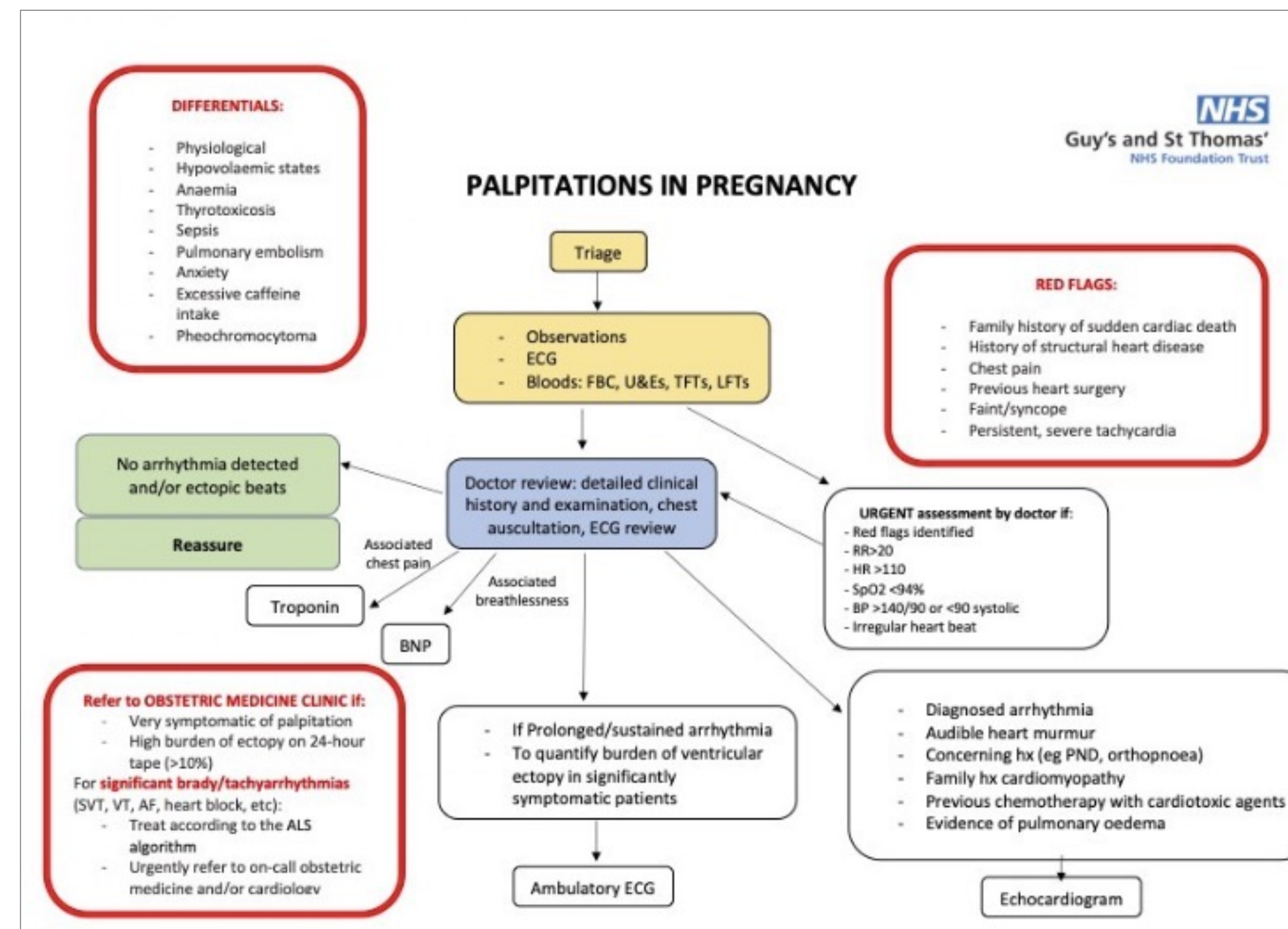
Participant responses to the question, confidence level rated from 1 (not at all confident) to 10 (extremely confident). 6 (35%) expressed a confidence level of 3 or less, whilst 8 expressed a confidence level of 8 or more. When asked about what would help to make them feel more confident, the majority (16, 94%) responded that a pathway/flowchart displayed in a visible location in MAU, showing what steps to follow when a pregnant woman presents with palpitations, would help them feel more confident. 14 (82%) also expressed that a teaching session on the topic of palpitations would help increase their confidence.



Actions

Palpitation in Pregnancy pathway of care

- Taking into account the results of the staff questionnaire, we designed a pathway to be displayed in MAU outlining the steps to be taken when a pregnant woman presents with palpitations; this also includes possible differentials and red flag symptoms/points in the clinical history to be aware of which should prompt urgent assessment by a doctor.



- Furthermore, we designed a two separate checklists for midwives and doctors, as an easy, visual reminder of what should be documented in the records of every pregnant woman presenting with palpitations, in order to standardize record-keeping

Teaching session

- We also ran a teaching session on the topic of palpitations in pregnancy, open to all healthcare professionals working in MAU, as guided by the staff survey; this ran as a hybrid event with more than 20 participants including obstetric doctors and midwives, with some joining in person and some online
- Topics covered: cardiac physiology in pregnancy, case presentation of supraventricular tachycardia and palpitation flowchart
- The teaching session was very well received and with many positive feedback.

Limitations and Future Directions

• **Inconsistent record-keeping**

Data was challenging to gather as, at times, there was no clear documentation regarding investigations and management plans (e.g., for 90% of patients, there was no documentation regarding the time an ECG was performed relative to the time of arrival of the patient, and for 46.6% of patients ECG findings were not documented); we are aiming to improve this by introducing the above mentioned checklist.

• **Staff engagement**

Very few midwives attended the teaching session on the topic of palpitations; this should be addressed by better advertising of the upcoming teaching session amongst midwives (e.g., poster in department, emails, involving the matron/head midwife who could help spread the word amongst more junior midwives). Further training sessions will be carried out to establish confidence among staffs in maternity assessment unit.

• **Re-audit**

Our next step is to re-audit waiting times to see a specialist, investigations and management plans for women presenting with palpitations, as well as re-survey staff confidence in managing pregnant women with palpitations.

Conclusions

- The finding from the retrospective audit and the staff questionnaire both highlighted the issue of **inconsistency** and **variation** in the investigation and management of women presenting with a common complaint.
- This could be contributed by the gaps of knowledge and lack of confidence in MAU staff, as well as the heavy workload in MAU, reflected by the long waiting time for review.
- The teaching session were well received to refresh knowledge and understanding of pathophysiology of arrhythmia in pregnancy. **Regular sessions** should be arranged as staffs turnover rate in the department is high (for both medical and midwifery staffs).
- The flow chart is the first step to help **streamline and optimise care** for such common presenting complaint. We hope that in future re-audit we will be able to see reduction of waiting time and improvement in the consistency in investigation and management.



References

- Royal College of Physicians - Acute care toolkit 15: Managing acute medical problems in pregnancy
- Management of palpitation and cardiac arrhythmias in pregnancy. The Obstetrician and Gynaecologist. 2019;21:263-70