

Improvement of Maternity Day Assessment Triage following introduction of the Birmingham Symptom Specific Obstetric Triage System (BSOTS©)

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1. INTRODUCTION

- The Maternity Day Assessment Unit (MDAU) at UHS assesses approximately 10,000 antenatal and postnatal women for unscheduled care every year.
- A **delay of ≥30 minutes** between presentation and triage is considered a 'red flag'¹.
- Local incident review has associated delays in MDAU assessment with 'near misses' and poor outcomes.
- A local MDAU audit in 2017 demonstrated delays with only 48% of women being triaged in ≤15 minutes.
- Triage systems maintain patient safety by prioritising assessment and management based on clinical need.
- The 2011 confidential enquiry into maternal deaths² highlighted the need for **standardised maternity triage systems** and recommended dedicated assessment areas (away from labour ward) for unscheduled pregnancy-related attendances.
- In January 2019, BSOTS©, a validated maternity triage system³ based on the Manchester Triage system⁴, was introduced at UHS.

2. AIM AND STANDARDS

AIM – To assess MDAU triage at Princess Anne Hospital (UHS) following introduction of BSOTS©

STANDARDS

All MDAU presentations to be triaged in ≤15 minutes from time of arrival
(**standard – 100%**)

Time from triage to initial assessment/initial assessment to medical review to meet BSOTS© triage-specific timeframes
(**standard – 100%**)

Green – within 4 hours
Yellow – within 1 hour
Orange – within 15 minutes
Red - IMMEDIATE

3. METHODS

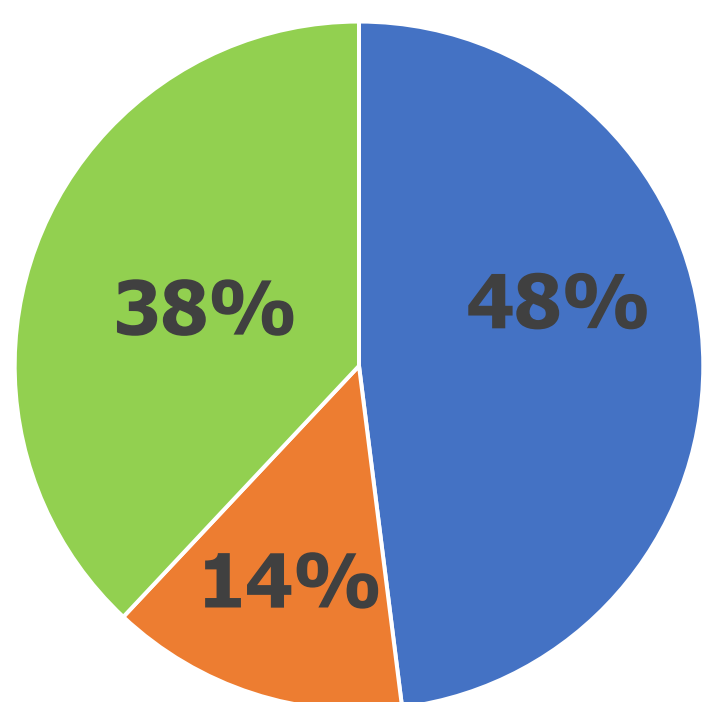
Retrospective case note review of **173** randomly selected MDAU attendances from January to March 2019, with a re-audit of **175** randomly selected MDAU attendances from January to March 2020.

Where possible data is compared to previous audit data from 2017 (pre-BSOTS© introduction). Cases were excluded from audit if no triage paperwork was available on the patient electronic database.

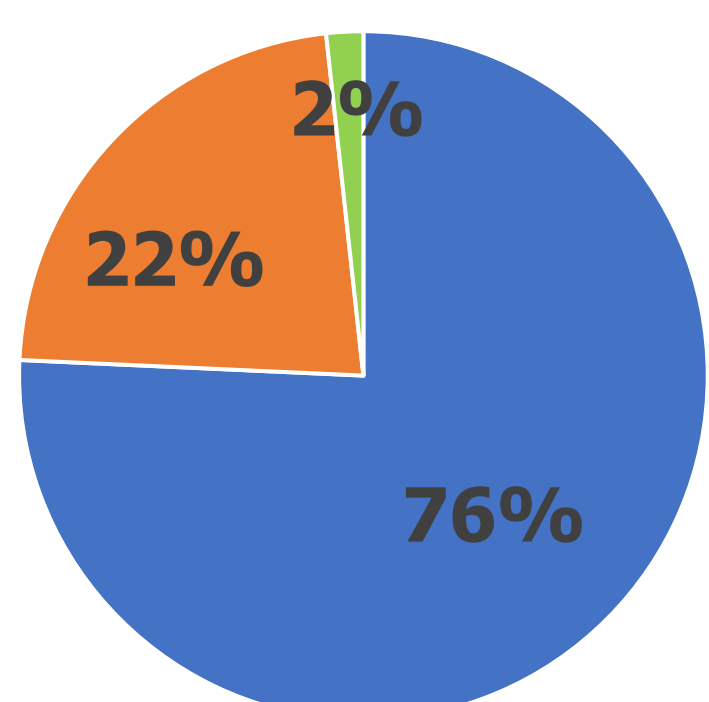
4. RESULTS

Triaged in ≤15 minutes of arrival

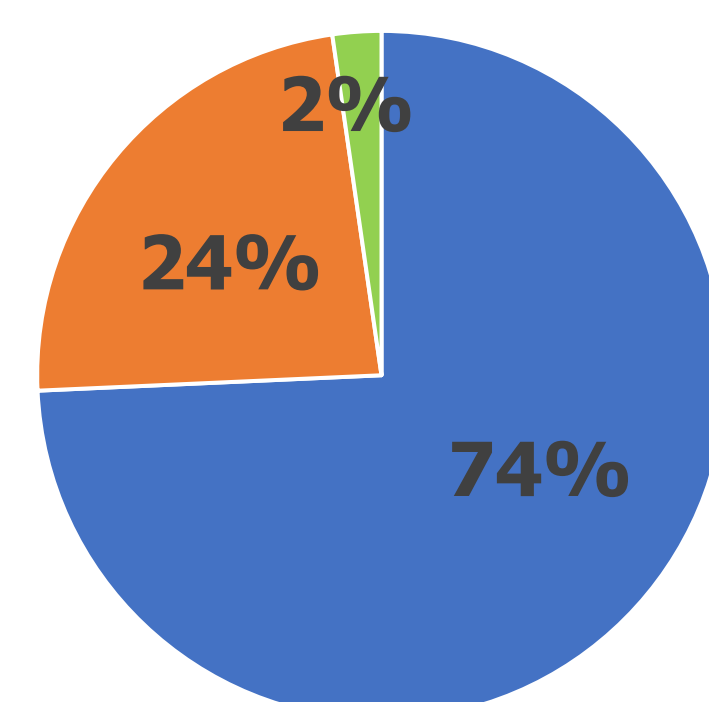
2017 (pre-BSOTS©)



2019 (BSOTS© audit)



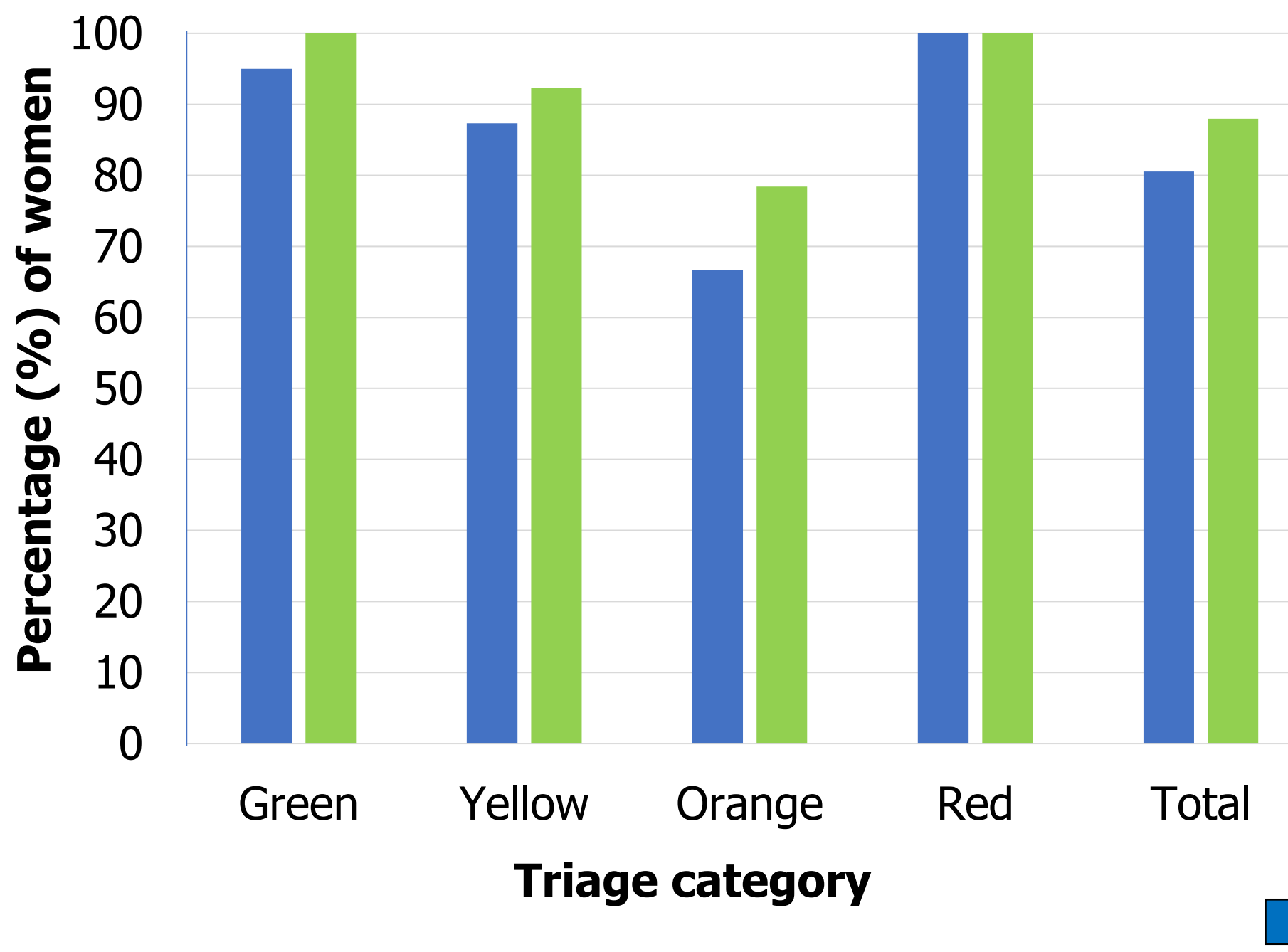
2020 (BSOTS© re-audit)



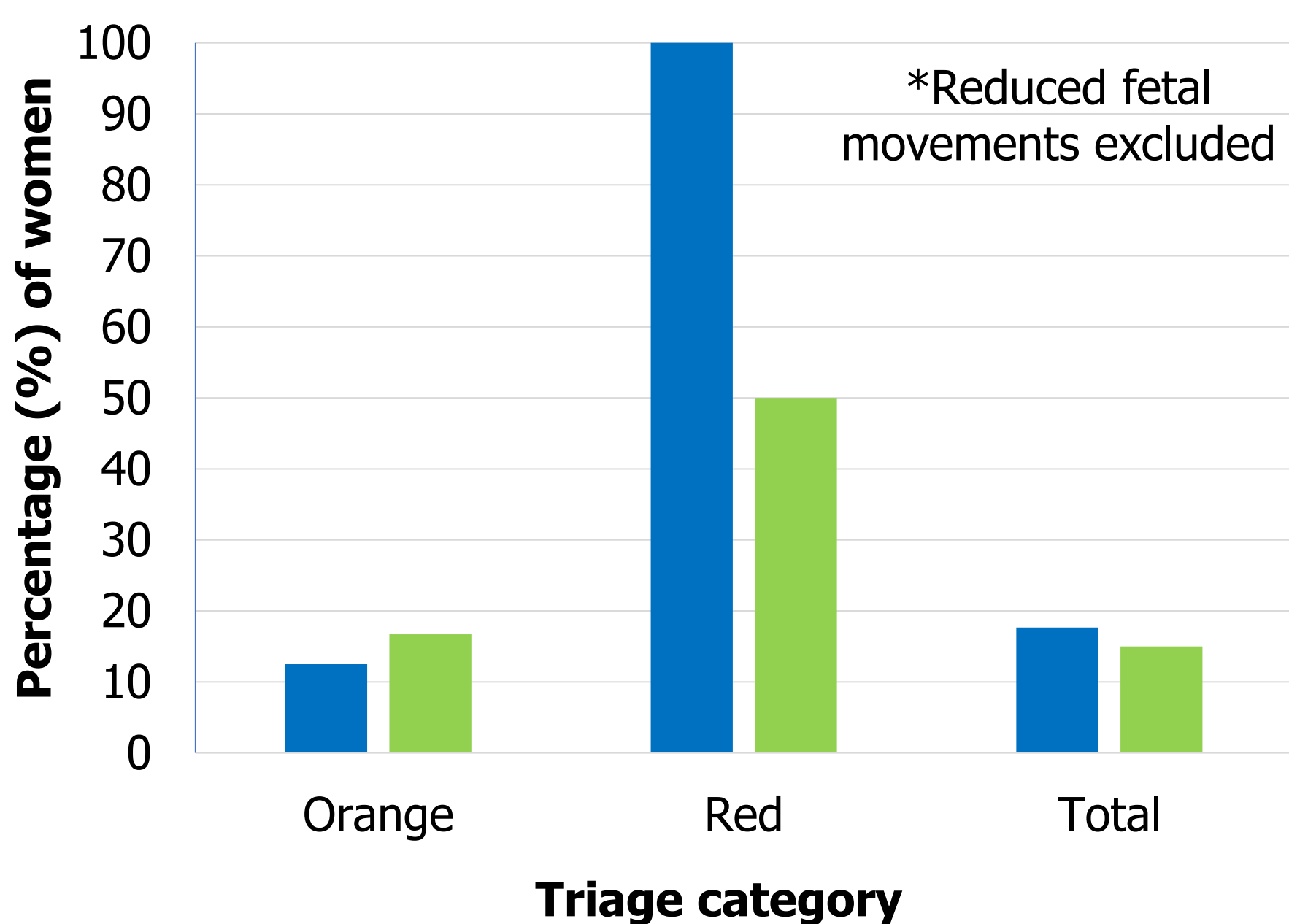
Not documented
Yes
No

Average triage time
(2019): 11 minutes
(2020): 12 minutes

Percentage of women with a documented triage category receiving initial assessment within BSOTS© timeframes



Percentage of women with a documented triage category receiving medical review (if needed) within BSOTS© timeframes*



*Reduced fetal movements excluded

Summary table of standards met

Criteria	Standard	Findings		
		2019	2020	2017
MDAU presentations should be triaged within ≤15 minutes from time of arrival	100%	76%	74%	48%
Time from triage to initial assessment should meet BSOTS© triage-specific timeframes	100%	81%	88%	-
Time from initial assessment to medical review should meet BSOTS© triage-specific timeframes	100%	18%	15%	-

5. DISCUSSION

- There was a **significant** and **maintained improvement** in triage time after BSOTS© introduction in 2019.
- >80%** of women received their initial assessment within BSOTS© timeframes.
- 100%** of **highest risk category** (red) had an immediate initial assessment.

- Highlighted lack of guaranteed medical staffing on MDAU.
- Dip in documentation of triage categories in 2020 compared to 2019.
- Inconsistent documentation was highlighted as an issue.

Suggested improvements:

- Introduction of an electronic patient record (Badgernet©), incorporating the BSOTS© triage system, to address documentation issues.
- Introduction of statutory and mandatory training and re-education of doctors and midwives using the BSOTS© system.
- Review of senior medical workforce covering MDAU.
- Review of local protocol to allow experienced senior midwives more discharging capacity for attendances triaged as low risk.

6. REFERENCES

- ¹National institute for Health and Care Excellence (NICE) Guideline. Safe midwifery staffing for maternity settings; NG4.2015. Accessed: 13/05/2022.
- ²Centre for Maternal and Child Enquiries (CMACE). *Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer: 2006–08. The Eighth Report on Confidential Enquiries into Maternal Deaths in the UK.* BJOG 2011;**118**:1–203.
- ³Kenyon S, Hewison A, Dann SA, *et al.* The design and implementation of an obstetric triage system for unscheduled pregnancy related attendances: a mixed methods evaluation. *BMC Pregnancy Childbirth* 2017;**17**: 309.
- ⁴Mackway-Jones K. Emergency triage: Manchester triage group. London: BMJ Publishing Group, London, UK, 1996. ISBN: 9780727911261.