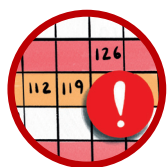




The APT-Sepsis Programme



Module 3a:

Suspect sepsis, start FAST-M



Version 1.0 | 15 SEPT 2023



Module 3a outline

By the end of this module, you should be able to:

1

Define sepsis and know why it is a medical emergency

2

Understand the importance of monitoring

3

Know which vital signs to monitor

4

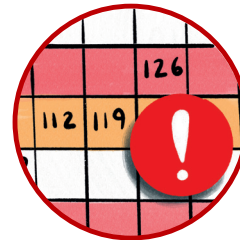
Record vital signs on the MEOWS Chart and identify vital signs that are abnormal

5

Use the FAST-M Decision Tool to identify women with suspected sepsis

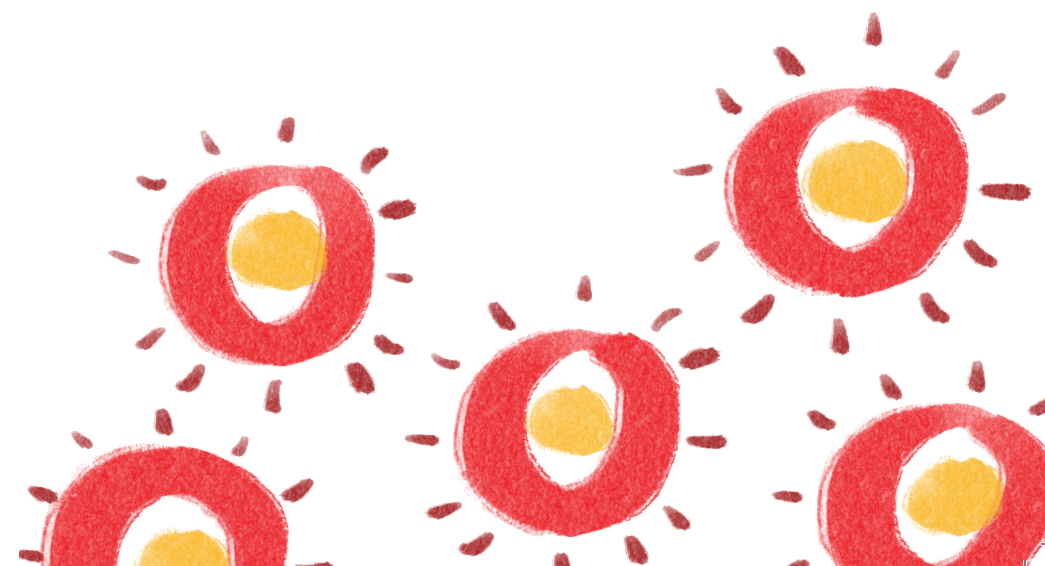
Module 3a: Suspect sepsis, start FAST-M





MODULE 3A: PART ONE

What is sepsis and why is it so important to recognise?



What is Maternal Sepsis?

Can you think how you would define Maternal Sepsis? How might a woman with Sepsis appear on examination?



What is sepsis and why is it so important to recognise?



Sepsis is...

Sepsis is when infection becomes so serious, it causes organ dysfunction and is life threatening

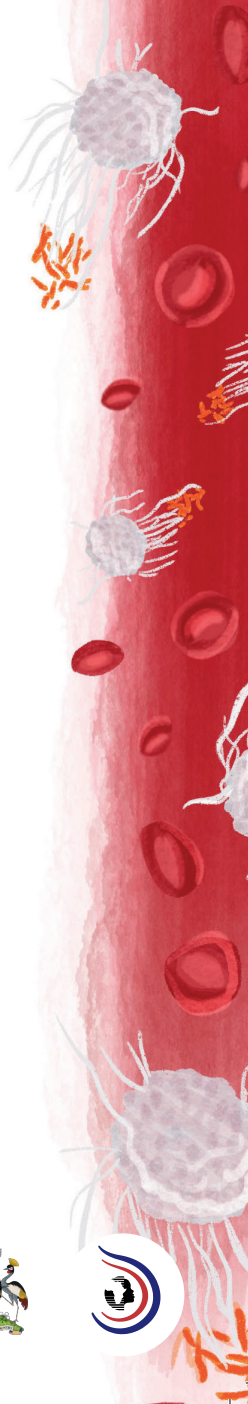
Sepsis during or after pregnancy is called 'maternal sepsis'

If the body is failing to fight off the infection, the body's response starts to cause problems


Blood vessels become dilated and leaky, the blood pressure and oxygen supply to tissues is reduced

This leads to organ dysfunction, and without treatment can progress to death

Let us all detect sepsis early, so we can treat it and save lives



What is Maternal Sepsis?



Sepsis = Infection + Organ Dysfunction
Sepsis is life threatening

1

Any infection can cause sepsis if it becomes severe enough

2

Maternal sepsis is not only 'puerperal sepsis' or from genital tract infections

3

Organ dysfunction can be hard to detect without extra tests but is likely if we have 'Red Flag' Vital Signs

What is sepsis and why is it so important to recognise?



Module 3a: Suspect sepsis, start FAST-M



Red Flag Vital Signs

Suspect sepsis and act immediately if there are Red Flag Vital Signs.

- **Respiratory rate**
25 breaths per minute or more
- **Heart rate**
120 beats per minute or more
- **Systolic blood pressure**
89 mmHg or less
- **Diastolic blood pressure**
39 mmHg or less
- **Not passed urine**
in over 18 hours (less than 0.5 ml/kg/hr if catheterised)
- **Mental state**
Not alert/Confused/Unconscious



What is sepsis and why is it so important to recognise?



Why do we monitor women under our care?

What is sepsis and why is it so important to recognise?

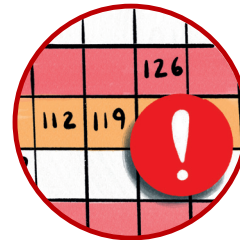
In healthcare, we need to be prepared to recognise deteriorating patients, as women under your care can become unwell quickly

Every woman's journey through pregnancy is different, and the situation can change quickly

We need to be able to establish how unwell a woman is when her care is started, but also monitor her on a regular basis to make sure she hasn't become more unwell

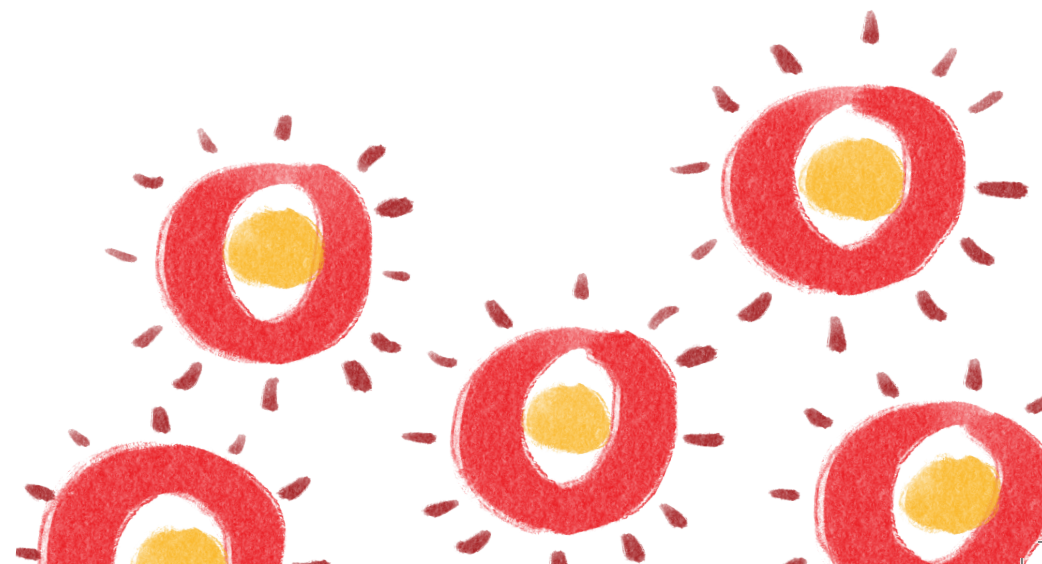
Monitoring women under our care by taking their vital signs at least once a day can help identify deteriorating patients and allows us to maximise their care





MODULE 3A: PART TWO

How to take and record vital signs



Vital signs to monitor

1

Respiratory rate

Count the number of breaths a patient makes in 60 seconds

2

Temperature

Measured best using a digital thermometer (e.g. axillary)

3

Heart rate

Measure the radial or a central pulse for 60 seconds

4

Blood pressure

Both systolic and diastolic, measured best using a digital blood pressure machine

5

Urine output

When was the last time the patient passed urine? Are they passing more than 0.5ml per hour?

6

Mental State

Does the patient have a normal or altered mental state?

7

Does the patient look unwell?



The Modified Obstetric Early Warning Score (MEOWS) Chart

- Taking the vital signs when a patient first presents to your healthcare facility for care is important to help assess how unwell they are
- However, monitoring is a continuous process: it is also important to determine if a patient is getting better, stable or deteriorating
- An early warning score chart is a way to record the vital signs and determine trends, designed to detect deterioration quickly and reliably
- The Modified Obstetric Early Warning Score (MEOWS) Chart is a specially designed vital sign chart for the maternity setting

MODIFIED EARLY OBSTETRIC WARNING CHART (MEOWS CHART)

APT-SEPSIS

Patient ID: _____ DOB / Age: _____

Patient: _____ Date: _____ Time: _____

Initials: _____

WRITE VALUES IN BOXES PROVIDED

Vital Sign	Normal Range	Normal	Yellow	Red
Respiratory rate (breaths per minute)	11 - 20	11 - 20	21 - 24	25 or more
Temperature (°C)	36.0 to 37.9	36.0 to 37.9	37.5 or less	38.0 or more
Heart rate (beats per minute)	50 - 99	50 - 99	100 - 119	120 or more
Systolic blood pressure (mmHg)	90 - 99	90 - 99	100 - 139	140 - 159
Diastolic blood pressure (mmHg)	39 or less	39 or less	40 - 89	90 - 109
Urine output (litres since patient last passed urine (tick box))	18 hours or more OR less than 0.5 ml/kg/hour	18 hours or more OR less than 0.5 ml/kg/hour	12 - 18 hours	12 hours or less
Mental state (tick box)	Normal	Normal	Altered	Altered
Looks unwell (tick box)	No	No	Yes	Yes

TOTAL YELLOW FLAGS _____

TOTAL RED FLAGS _____

ACTION TAKEN (IF REQUIRED) Yes (Y) / No (N) _____

If there are ANY RED or TWO OR MORE YELLOW flags, CALL FOR HELP and start the FAST-M Decision Tool.

SUSPECT SEPSIS, START FAST-M



How to complete the MEOWS Chart

1 Patient details, date, time, and initials.

Patient	Mr. H. J.
Date	2/6 3/6
Time	14:06 12:15
Initials	TL T

2 Vital signs and flags.

YELLOW	106
NORMAL	60
YELLOW	
RED	

3 Count the number of RED and YELLOW flags and put the number in the box at the bottom of the column.

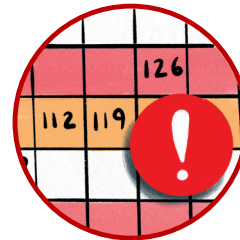
No	Yes
TOTAL YELLOW FLAGS	
TOTAL RED FLAGS	
TAKEN (IF REQUIRED) Yes	
If there are	

4 Action must be taken immediately if the patient has ANY RED or TWO OR MORE YELLOW flags by using the FAST-M Decision Tool.

1	3	4	1	3
0	0	1	4	2
1	4	4	4	4
TOTAL YELLOW FLAGS				
TOTAL RED FLAGS				

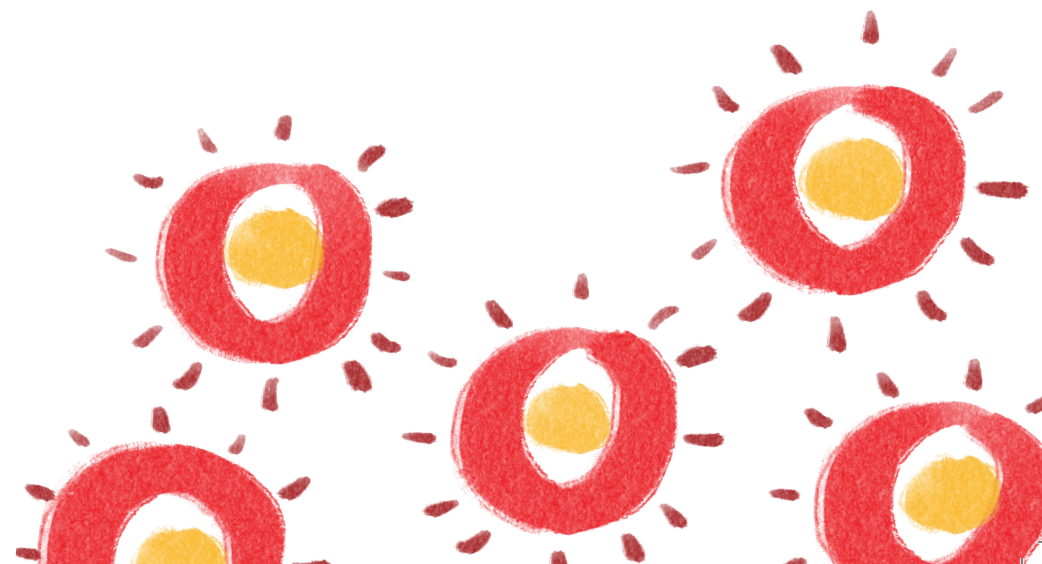
SUSPECT SEPSIS, START FAST-M





MODULE 3A: PART THREE

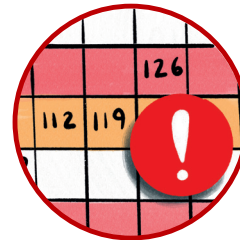
What is FAST-M?



FAST-M

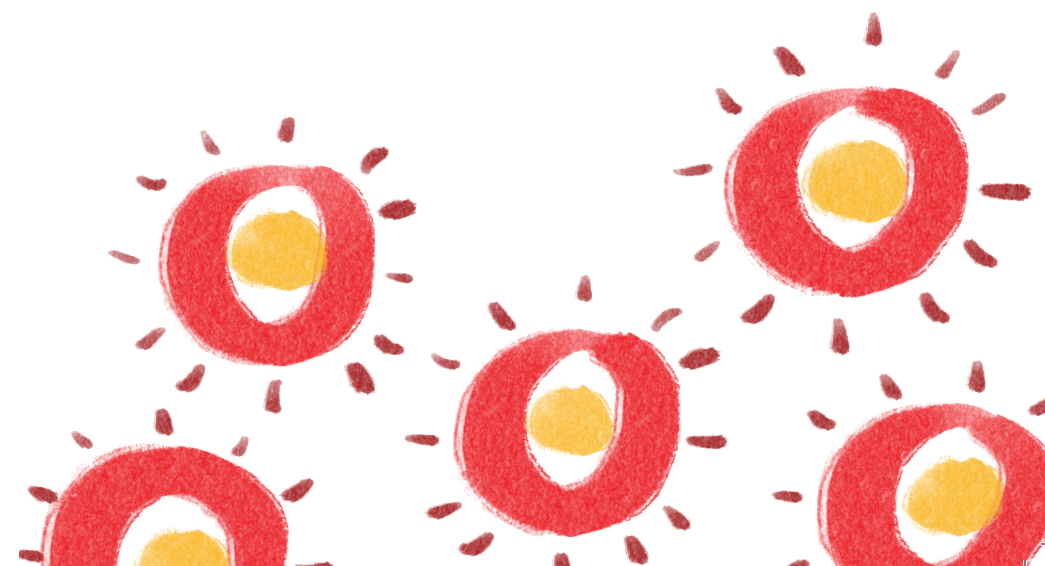
- FAST-M is a clinical approach design to detect suspected sepsis and start treatment urgently to save lives
- It consists of a FAST-M Decision Tool, used to diagnose suspected sepsis when a patient triggers **ANY RED** or **TWO OR MORE YELLOW** flags on the MEOWS Chart or when there is clinical suspicion for infection
- The FAST-M Treatment Bundle includes the main actions required to treatment of sepsis: **F**luids, **A**ntibiotics, **S**ource control, **T**ransfer if required and **M**onitoring
- Treatment should be given as soon as possible, and certainly within 1 hour





MODULE 3A: PART FOUR

When and how to use the FAST-M Decision Tool



Vital signs in sepsis

	26	28	30	30	
21					

The **respiratory rate** can rise as the body needs more oxygen and also uses the lungs to control the body's pH (acid) balance. A rising respiratory rate can be an early sign of infection. In very late disease the respiratory rate can fall as the body is shutting down

		38.3	38.9	
36.8	37.8			

The **temperature** can rise in infection and sepsis, but can also fall lower than normal (below 36 degrees Celsius) in 'cold' sepsis

			128
	102	118	
89			

The **heart rate** can rise as the body fights infection and sepsis, delivering more blood to the organs that need support. In very late disease the heart rate can fall as the body is shutting down

120	115		
		92	
			74

The **blood pressure** in infection and sepsis can sometimes remain normal in early infection, but starts to fall in sepsis as the patient goes into septic 'shock'. A low blood pressure must be managed quickly with fluids, as it is a sign that the body is unable to keep up with demand

When and how to use the FAST-M Decision Tool



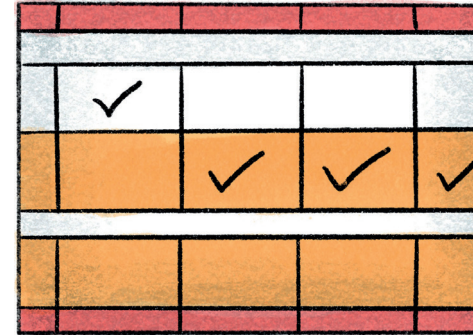
Vital signs in sepsis



The **urine output** can decrease, or even stop, in sepsis as the blood pressure falls and the kidneys do not receive enough support



When the brain does not receive enough blood due to low blood pressure, or when bacteria affect the brain or nervous system, patients can have an **altered mental state**



If **a patient looks generally unwell** with any changes in their vital signs – it is important to think whether this can be caused by sepsis

Vital signs	Yellow flags (abnormal vital signs but not as severe as red flags):	Red flags (very abnormal vital signs):
Respiratory rate:	21–24 breaths each minute	25 or more and 10 or less breaths each minutes
Temperature:	38 or more and 35.9 or less degrees Celsius	–
Heart rate:	100–119 or 40–49 beats each minute	120 or more and 39 or less beats each minute
Systolic blood pressure:	140–159 or 90–99 mmHg	160 or more and 89 or less mmHg
Diastolic blood pressure:	90–109 mmHg	110 or more and 39 or less mmHg
Hours since last passed urine:	12–18 hours	18 hours or less
Urine output	–	Less than 0.5ml/kg/hr
Observe the patient:	The patient looks unwell	The patient is not alert

All these findings lead to **RED** and **YELLOW** flags which trigger the use of the FAST-M Decision Tool, to help diagnose suspected sepsis

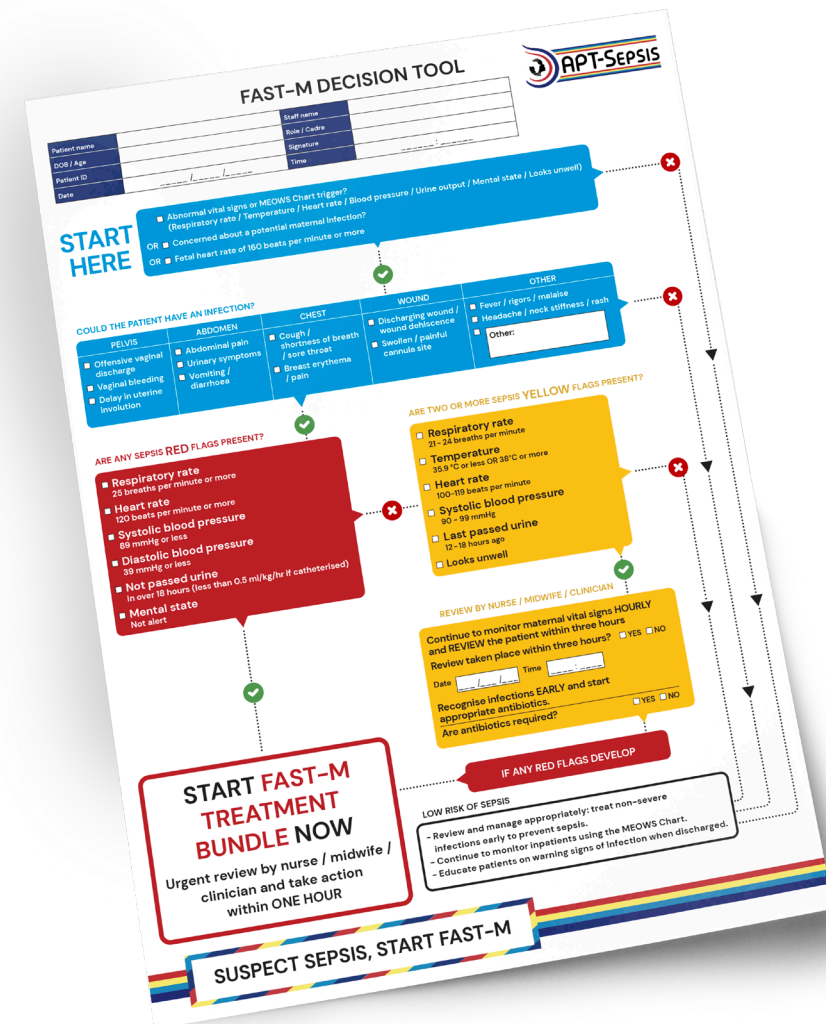
When and how to use the FAST-M Decision Tool



When to use the FAST-M Decision Tool

- 1 Abnormal vital signs scoring **ANY RED** or **TWO OR MORE YELLOW** flags on the MEOWS Chart
- 2 If you have a concern that your patient might have an infection, based on her clinical signs and symptoms, even if she does not trigger any red or yellow flags on the MEOWS Chart
- 3 If the fetal heart rate is greater or equal to 160 beats per minute

Any of these in the context of suspected infection could be due to sepsis and must be acted upon using the FAST-M Decision Tool

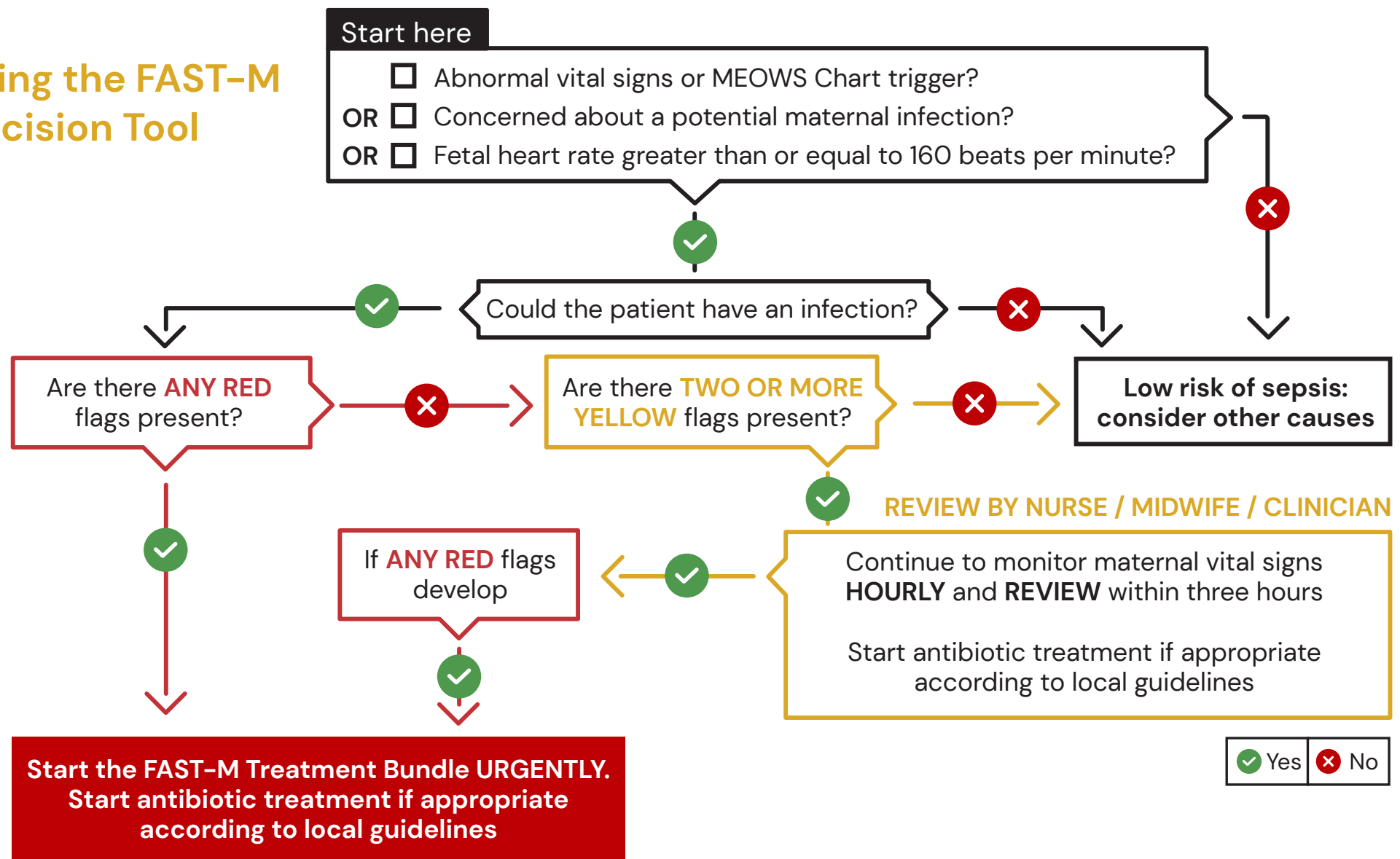


When and how to use the FAST-M Decision Tool



How to use the FAST-M Decision Tool

Using the FAST-M Decision Tool




When and how to use the FAST-M Decision Tool



Frequency of vital sign monitoring using the MEOWS Chart

- All women should have their vitals signs recorded on admission and then at least once every 24 hours during their stay in your healthcare facility
- If **ANY RED FLAGS** or sepsis suspected, the FAST-M Treatment Bundle recommends vitals signs are taken every 30 minutes until decided otherwise on review
- If **TWO OR MORE YELLOW FLAGS**, the FAST-M Decision Tool recommends vital signs are taken every 60 minutes with clinical review within 3 hours

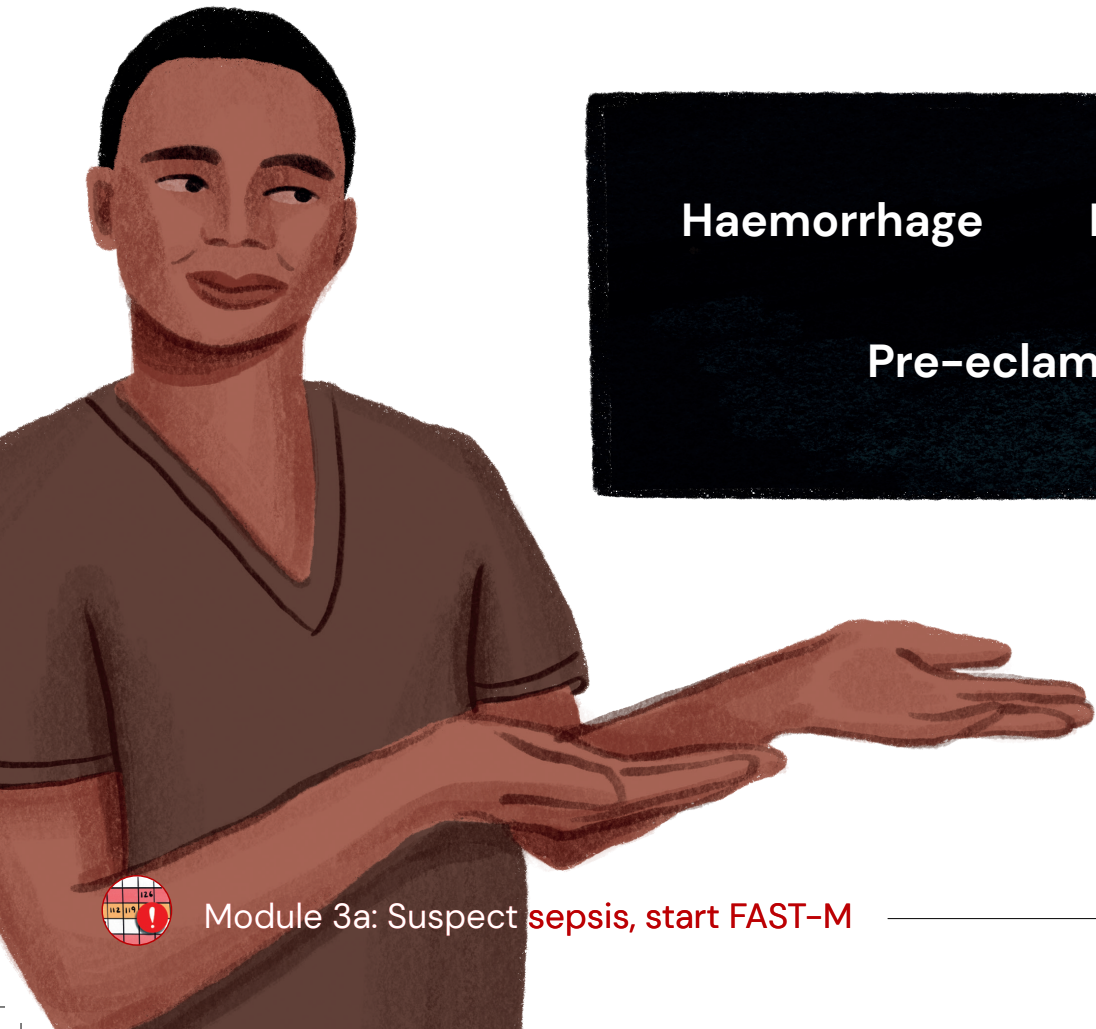


If capacity allows, taking vital signs more often than every 24 hours as standard is better: 2 or 3 times a day allows faster detection of deterioration



Other reasons for abnormal vital signs

- Conditions other than sepsis can cause abnormal vital signs and trigger **RED** and **YELLOW** flags on the MEOWS Chart
- If there are no signs of infection, consider these conditions as differential diagnoses



Haemorrhage

Pulmonary embolism

Heart failure

Pre-eclampsia

Hypoglycaemia



We have now covered what sepsis is and why it is a medical emergency, how to record vital signs on the MEOWS Chart and how to use the FAST-M Decision Tool

*Let's see what
we remember!*





Questions about APT-Sepsis?

Please contact your local central APT-Sepsis hub team if you have any questions or suggestions about the APT-Sepsis Programme

Malawi:

Regina Makuluni: rmakuluni@mlw.mw

Uganda:

Peace Okwaro: POkwaro@idi.co.ug

