

Maternity Early Warning System



Factsheet for clinicians – supplemental oxygen

Pregnant, or recently pregnant (up to and including 42 days later), women who require supplemental oxygen to maintain their oxygen levels are at increased risk of deterioration. A need for supplemental oxygen scores '2' in the maternity early warning system (MEWS) score on the national maternity vital signs chart (MVSC). Oxygen is prescribed for the relief of hypoxaemia, not breathlessness.¹

Oxygen is a drug with specific indications and contraindications. As such, you must prescribe it on the national medication chart and administer it using appropriate equipment for the prescribed flow rate to achieve a targeted oxygen saturation range.

There are risks for women who receive either too much or too little supplemental oxygen. For example, too much oxygen can cause increased infarct size in patients who have had a myocardial infarction; atelectasis may worsen due to administration of high-concentration oxygen; and respiratory depression may worsen in patients with hypoxaemic respiratory drive.² Too little oxygen will reduce oxygen delivery to tissues, worsening cellular hypoxia and contributing to multiple organ dysfunction.

This factsheet provides guidance to clinicians on modifying the MEWS score trigger for women receiving supplemental oxygen.

Administering supplemental oxygen

Only prescribe supplemental oxygen for pregnant or recently pregnant women for specific conditions rather than as a matter of routine. For example, if you administer supplemental oxygen as part of acute resuscitation at a postpartum haemorrhage, you should review its use or discontinue it as soon as possible.

Administering oxygen routinely

Routine oxygen administration occurs in specific situations, often according to historical custom and practice. For example, in many hospitals women receiving opiates via epidural or patient-controlled analgesia routinely receive a low dose of oxygen even if they are not hypoxaemic. In this situation, the woman's MEWS score will be increased by two points even if she is physiologically stable. The appropriate action may be to stop administering supplemental oxygen while continuing to monitor for signs of respiratory depression or hypoxaemia.

Modifying the MEWS score triggers

You may modify the MEWS score triggers for individual women when existing physiology or other factors cause their vital signs to fall outside of the normal ranges on the MVSC.

When making modifications, you must consider the clinical risk to the woman if vital sign abnormality is normalised. You can mitigate clinical risk by discussing modifications with a senior clinician and reviewing them at regular intervals, so they remain appropriate as the woman's condition changes.

Anaesthesia or sedation

Women recovering from general anaesthesia or sedation may require short-term administration of supplemental oxygen until they are normoxic and awake. It may be appropriate to modify the supplemental oxygen trigger so that it does not contribute to an elevated MEWS score. You must have a time limit for all modifications to ensure that an unexpected ongoing oxygen requirement does trigger escalation and review from an appropriately skilled responder.³ Figure 1 shows an appropriate modification.

Figure 1: An example of score modification for supplemental oxygen after anaesthesia

Vital sign (use abbreviation)	Accepted values and modified MEWS	Date and time	Duration (hours)	Name and contact details
O ₂	MEWS=0 if 2L/min or less	20/3/19 11:30	4 hours	N. Rivera #6132
Reason:	Post-anaesthesia			

Chronic disease

Very few pregnant or recently pregnant women will suffer from chronic disease and require continuous supplemental oxygen throughout an acute hospitalisation. Examples of the women who could be in these rare circumstances include women with cystic fibrosis or pulmonary hypertension. For these women, supplemental oxygen may not be a useful indicator of acute deterioration. In these rare circumstances, you may need to modify the score throughout the time of the woman's admission.

Flow rate and delivery device

You should prescribe supplemental oxygen flow rate, delivery device, and target saturation range on the national medication chart in the 'Oxygen and medical gases' section (see Figure 40 in the *National Medication Chart User Guide*²). If a woman is not achieving the target saturation range with the prescribed supplemental oxygen flow rate or delivery device, you will need to further assess the woman and alter the prescription. Oxygen saturation contributes to a woman's total MEWS score and will trigger escalation of care if deterioration occurs.

Summary

A need for supplemental oxygen is a marker of a woman's deterioration. In some conditions, however, the need may not be related to deterioration, and escalation would be inappropriate. The MVSC allows you to modify the MEWS score trigger in such situations. Use modifications with caution as they have the potential to cause harm by preventing the appropriate escalation of the woman's deterioration.

- 1 Beasley R, Chien, J, Douglas J, et al. 2015. Thoracic Society of Australia and New Zealand oxygen guidelines for acute oxygen use in adults: swimming between the flags. *Respirology* 20(8): 1182-91.
- 2 Health Quality & Safety Commission. 2015. *The National Medication Chart User Guide* (second edn). Wellington: Health Quality & Safety Commission. URL: www.hqsc.govt.nz/our-programmes/medication-safety/publications-and-resources/publication/93/ (accessed 11 February 2019).
- 3 Health Quality & Safety Commission. 2017. *Factsheet: Capabilities for recognising and responding to acute deterioration in hospital*. Wellington: Health Quality & Safety Commission. URL: www.hqsc.govt.nz/our-programmes/patient-deterioration/publications-and-resources/publication/3528 (accessed 11 February 2019).