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Pulse oximeter - trouble shooting

Annex 2 – Respiratory assessment

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Annex 2 – Respiratory assessment

Problem	Cause	Prevention	Action
Poor tracing or inconsistent reading	<p>Sensor reading can be affected by movements such as shivering, seizures or tremors (Levine, 2007; Moore, 2007).</p> <p>Inconsistent reading can be affected by direct light, nail polish or false nails and some medical conditions e.g. methemoglobinemia, corboxyhemoglobin. (Jubran, 2015) (Yont, Korhan & Dizer, 2014)(Moore, 2007)(Zhu et al., 2016)(E).</p>	<p>Encourage the patient to keep as still as possible. If poor tracing consists, consider using a different site with less movement, for example earlobe. (Levine, 2007)(Moore, 2007).</p> <p>The correct site for the age of the patient should be chosen. The toe has the lowest accuracy of pulse oximetry tracing (Hamber et al., 1999)(E).</p> <p>Avoid performing a pulse oximetry measurement under direct sunlight as this can interfere with the infra-red sensor (Howell, 2002).</p>	<p>If finger site was chosen, take radial pulse and compare pulses. If different, then the oxygen saturation reading will be inaccurate and further investigations into the patient's clinical situation need to be done, example arterial blood gases if available (Levine, 2007).</p> <p>The pulse oximetry reading should always be cross-checked with the patient's clinical signs.</p> <p>If the patient is wearing nail polish or false nails, an attempt should be made to remove it (Jubran, 2015) (Yont, Korhan & Dizer, 2014)(Moore, 2007)(Zhu et al., 2016)(E).</p>
Low saturation results which do not correlate with the patient's clinical condition	<p>Poor choice of site due to inadequate blood perfusion or cold extremities (Adam and Osborne, 2005). Light sensor interference due to excessive environmental lighting (Médecins Sans Frontières, 2018b).</p>	<p>Proper assessment before probe placement and choosing appropriate site for the age of the patient. The site needs to have good proximal pulse, be warm and have a rapid capillary refill.</p> <p>Avoid performing a pulse oximetry measurement under direct sunlight.</p>	<p>Reposition sensor to new site or warm the limb. Shield the sensor with a towel or blanket.</p> <p>If it remains low, arterial blood gases may need to be considered (Adam & Osborne, 2005)(Médecins Sans Frontières, 2018b).</p>
Pulse reading does not correlate with manual pulse	<p>Not all pulsations are being detected by pulse oximeter.</p>	<p>Proper assessment before probe placement and choosing appropriate site for the age of the patient. The site needs to have good proximal pulse, warmth and rapid capillary refill.</p>	<p>Try another probe or pulse oximeter machine (Moore, 2007).</p>

<p>No reading</p>	<p>Absence of reading may be related to positioning of the probe, issues with the device, or patient's circulatory condition (shock) (E).</p>	<p>Proper assessment before probe placement and choosing appropriate site for the age of the patient. The site needs to have good proximal pulse, warmth and rapid capillary refill.</p> <p>Check proper functioning of equipment/batteries prior to use or on regular basis.</p> <p>Please refer to biomedical protocol for user maintenance for more information.</p>	<p>Verify the position of the probe and ensure there is contact with the patient's nail bed or skin (E).</p> <p>Verify that the connection between the device and the cable and between cables. Wiping the probe with an alcoholic solution may help remove any particles disrupting the reading. If problem persists, try another probe or pulse oximeter machine (Moore, 2007)(E).</p>
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