Patient Assessment Triangle and SpO2 Monitoring

Patient Assessment Triangle

According to the American Heart Association, the three components of the PAT that reflect the child's overall physiologic status include:

- appearance
- work of breathing
- circulation to skin

How Do I Perform Patient Assessment Triangle?

Patient assessment triangle should be completed within 30 seconds and can be performed starting across the room. Pediatric providers should initiate their PAT the minute they visualize the child/infant.

Appearance

The child's general appearance is reflective of the child's perfusion and central nervous system functioning.

TICLS is an acronym which can be utilized to monitor appearance by assessing tone, interactiveness, consolability, look/gaze in an infant, and speech/cry in an infant.

Work of Breathing

The child's work of breathing is reflective of the child's current respiratory rate, work of breathing, and audible breathing noises. This particular stage of the 30 second PAT does not require auscultation with a stethoscope. It is a hands-off approach to assessment which is performed very quickly by the pediatric provider.

Circulation to Skin

The child's circulation to the skin is reflective of the child's current perfusion and adequacy of cardiac output. Pallor, mottling, or cyanosis are abnormal appearances which require intervention by the pediatric care provider. Begin supplemental oxygenation and determine causes of inadequate perfusion.

Pulse Oximeter Monitoring: What is it and Why is it Important?

Oxygen saturation monitoring can be an invaluable tool in assessing how well a child is oxygenating. After performing your Patient assessment triangle obtain a pulse oximetry reading. Pulse oximetry measures the percentage of hemoglobin saturated. It is a reflection of oxygenation status. A pulse oximetry reading greater than 94% in a child on room air indicates good oxygenation. If a child is bioxing less than 94% on room air or exhibits signs of increased work of breathing, consider supplemental oxygen.

Always utilize your pulse oximetry reading in combination with your child's clinical picture, including work of breathing, appearance, and circulation. It is important to note that pulse oximetry reflects hypoxia. It will not measure ventilation status or carbon dioxide retention but can be a useful tool when combined with the PAT for a child's overall status and response to therapies.

Pulse oximetry should not be utilized as an accurate reading when carbon monoxide poisoning is suspected, as the probe will detect hemoglobin saturated with oxygen and carbon monoxide. As well, a child who is severely anemic will not maintain enough circulating red blood cells to produce a reliable Sp02 monitor reading or reliable waveform.

How Do I Perform Pulse Oximetry Monitoring in a Pediatric Patient?

1. Obtain equipment in the appropriate size. While explaining your task to the child/parent, place the accurate sized probe on a fingertip, toe, at the wrist to detect radial waveform, or on the foot/sole of an infant, depending on the type of probe utilized. Be sure to place on intact skin.
2. For the most accurate readings the LED emitter and reading diode typically need to be aligned opposite each other.
3. Connect the probe to the monitor and monitor waveform.
4. Observe if the waveform is correlating with the child's/infant's heart rate.

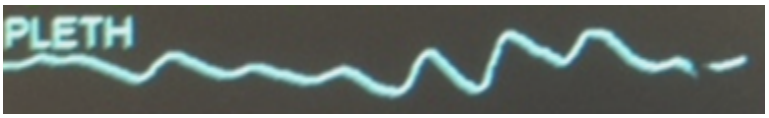
Be careful to interpret the results of Sp02 Monitoring in conjunction with a careful assessment. A hypoxic child with an increased respiratory rate may be compensating.

Interpreting Pulse Oximetry

Monitor the waveform to determine if the results are correlating with the patient's pulse rate. Is the wave form consistent, correlating, and putting out a good pleth waveform? Remember wave forms are affected by a variety of factors. Always assess your child's clinical status in conjunction with the waveform and oxygen saturation.

An Example of a Correlating pulse oximetry waveform

An Example of a Non-Correlating pulse oximetry waveform



Is the patient's overall clinical picture correlating with the patient's waveform and Sp02?

Use this information in combination to determine which interventions to implement.

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