Withdrawal Assessment Tool in Pediatric Critical Care Patients

POLICY CICU
CHILDREN'S INTENSIVE CARE UNIT
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I. PURPOSE

To describe the Withdrawal Assessment Tool (WAT-1) and its use in monitoring narcotic (opioid) and/or benzodiazepine withdrawal symptoms in pediatric critical care patients.

II. REFERENCES

Linda S. Franck, PhD, RN, RGN, RSCN, FRCPCH, FAAN, Sion Kim Harris, PhD, et al (2008). ***The*** *Withdrawal Assessment Tool–1 (WAT–1): An assessment instrument for monitoring opioid and benzodiazepine withdrawal symptoms in pediatric patients*. Pediatric Critical Care Med: Vol. 9, No. 6

III. DEFINITIONS

Withdrawal Assessment Tool (WAT-1) - the WAT-1 is an 11 item/12 point scale for monitoring narcotic (opioid) and/or benzodiazepine withdrawal symptoms in pediatric patients.

Pediatric Assessment: Withdrawal assessment, especially in preverbal or nonverbal children, can be challenging. The WAT-1 is used to identify iatrogenic withdrawal syndrome. The nurse should tailor their assessments to the child's developmental level, medical status and temperament using the WAT-1.

Iatrogenic Withdrawal Syndrome - Iatrogenic withdrawal syndrome is the term used for a characteristic pattern of unpleasant signs and symptoms that typically follows too rapid tapering or abrupt cessation of narcotics (opioids), benzodiazepines or other drugs with central nervous system depressant effects. Prominent manifestations include nervous system hyperirritability, autonomic system dysregulation, gastrointestinal dysfunction and motor abnormalities.

Start of Weaning: The date and time associated with a deliberate attempt to discontinue narcotics (opioids) and/or benzodiazepines.

IV. POLICY

None.

V. PROCEDURES

A. Assessment and Documentation

1. Assess and document the patient's WAT-1 in the electronic record.
2. Start WAT-1 scoring from the **first day of weaning** in patients who have received narcotics (opioids) andor benzodiazepines by infusion or regular dosing for prolonged periods (e.g., ≥ 5 days). Continue twice daily scoring until 72 hours after the last dose.
3. The WAT-1 is completed and documented in the PICU with the SBS at least once per 12 hour shift at 06:00 and 18:00 ± 2 hours until 72 hours after the last PRN narcotic (opioid) and/or benzodiazepine dose.
4. More frequent assessment may be necessary in patients who show symptoms of withdrawal from narcotics (opioids) and/or benzodiazepines. The increased frequency of the WAT-1 assessments in these patients should follow the assessment – intervention – reassessment cycle for treating patients' withdrawal.

B. Assessment Method

1. Review the WAT-1, familiarizing yourself with the indicators and how they are scored.
2. Review nursing documentation in the previous 12 hours.
3. Complete a 2 minute observation period with the patient at rest.
4. Assess patient during a progressive arousal then assess patient during an observation period following the stimulus. Use progressive stimuli to elicit the patient's response; specifically, using a calm voice, call the patient's name. If no response, call the patient's name and gently touch the patient's body. If no response, assess the patient's response to a planned noxious procedure, e.g., endotracheal suctioning. If a noxious procedure is not planned then, using a pencil/pen, provide < 5 seconds of direct pressure to the patient's nail bed.
5. Complete a post-stimulus recovery observation period.

C. Scoring Method:

Presence and intensity of withdrawal symptoms consist of:

1. **3 indicators** obtained from the nursing documentation in the **previous 12 hours** are scored with one point:
   a. **Loose/watery stools** that are not consistent with the patient's age, medical condition or baseline stooling pattern.
   b. **Vomiting/wretching/gagging** that cannot be attributed to other causes or interventions.
   c. **Temperature elevation** that remains >37.8 more frequently than not during the previous 12 hours and not believed to be associated with an infection.
2. **5 indicators** assessed during a **2 minute observation** of the patient at rest are scored with one point:
   a. **State behavior** based on observation (asleep/awake/calm = 0 or awake/distressed = 1) or based on the SBS score for sedation in mechanically ventilated patients (SBS $\leq 0 = 0$ or SBS $\geq +1 = 1$). See SBS guidelines for instructions on completing the SBS score.
   b. **Tremors** that are moderate to severe and cannot be attributed to another clinical cause.
   c. **Sweating** that is observed and not related to an appropriate temperature regulation response..
   d. **Uncoordinated/repetitive movements** that are moderate to severe including head turning, leg or arm flailing or torso arching.
   e. **Yawning/sneezing** that is observed more than once in the 2 minute observation period.
3. **2 indicators** assessed during a **progressive arousal stimulus** scored with one point:

a. **Startle to touch** that is severe

b. **Muscle tone** that is increased

4. **1 indicator** assessed during an **observation period** following the stimulus scored with up to two points:

   a. Time to return to calm state that is greater than 5 minutes will receive 2 points. If the time to return to calm state is 2-5 minutes, it will receive 1 point.

5. The final WAT-1 score is the total sum of all indicators (0-12).

D. Interpretation:

1. A higher WAT-1 score indicates more withdrawal symptoms while a lower score indicates fewer withdrawal symptoms. WAT-1 scores should be interpreted based on their trend over time.

VI. RESPONSIBILITY

For questions regarding this policy contact the Children's Intensive Care Unit Clinical Nurse Specialist.

VII. HISTORY OF THE PROCEDURE

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Reviewed and Revised: May 2014 Shelley Diane RN MS CNS

Last Revision/Review: Aug 2017, Shelley Diane RN MSN CNS

VIII. APPENDIX

A. Withdrawal Assessment Tool Version 1 (WAT-1)

Appendix A:
WAT-1 Tool

WITHDRAWAL ASSESSMENT TOOL VERSION 1 (WAT – 1)

Patient Identifier													
	Date:												
	Time:												
Information from patient record, previous 12 hours													
Any loose /watery stools	No = 0 Yes = 1												
Any vomiting/wretching/gagging	No = 0 Yes = 1												
Temperature > 37.8°C	No = 0 Yes = 1												
2 minute pre-stimulus observation													
State	SBS[1] ≤ 0 or asleep/awake/calm = 0 SBS[1] ≥ +1 or awake/distressed = 1												
Tremor	None/mild = 0 Moderate/severe = 1												
Any sweating	No = 0 Yes = 1												
Uncoordinated/repetitive movement	None/mild = 0 Moderate/severe = 1												
Yawning or sneezing	None or 1 = 0 ≥2 = 1												
1 minute stimulus observation													
Startle to touch	None/mild = 0 Moderate/severe = 1												
Muscle tone	Normal = 0 Increased = 1												
Post-stimulus recovery													
Time to gain calm state (SBS[1] ≤ 0)	< 2min = 0 2 - 5min = 1 > 5 min = 2												
Total Score (0-12)													

WITHDRAWAL ASSESSMENT TOOL (WAT – 1) INSTRUCTIONS

- Start WAT-1 scoring from the **first day of weaning** in patients who have received opioids +/or benzodiazepines by infusion or regular dosing for prolonged periods (e.g., > 5 days). Continue twice daily scoring until 72 hours after the last dose.
- The Withdrawal Assessment Tool (WAT-1) should be completed along with the SBS[1] at least once per 12 hour shift (e.g., at 08:00 and 20:00 ± 2 hours). The progressive stimulus used in the SBS[1] assessment provides a standard stimulus for observing signs of withdrawal.

Obtain information from patient record (this can be done before or after the stimulus):

- ✓ **Loose/watery stools**: Score 1 if any loose or watery stools were documented in the past 12 hours; score 0 if none were noted.
- ✓ **Vomiting/wretching/gagging**: Score 1 if any vomiting or spontaneous wretching or gagging were documented in the past 12 hours; score 0 if none were noted
- ✓ **Temperature > 37.8°C**: Score 1 if the modal (most frequently occurring) temperature documented was greater than 37.8 °C in the past 12 hours; score 0 if this was not the case.

2 minute pre-stimulus observation:

- ✓ **State**: Score 1 if awake and distress (SBS[1]: ≥ +1) observed during the 2 minutes prior to the stimulus; score 0 if asleep or awake and calm/cooperative (SBS[1] ≤ 0).
- ✓ **Tremor**: Score 1 if moderate to severe tremor observed during the 2 minutes prior to the stimulus; score 0 if no tremor (or only minor, intermittent tremor).
- ✓ **Sweating**: Score 1 if any sweating during the 2 minutes prior to the stimulus; score 0 if no sweating noted.
- ✓ **Uncoordinated/repetitive movements**: Score 1 if moderate to severe uncoordinated or repetitive movements such as head turning, leg or arm flailing or torso arching observed during the 2 minutes prior to the stimulus; score 0 if no (or only mild) uncoordinated or repetitive movements.
- ✓ **Yawning or sneezing** > 1: Score 1 if more than 1 yawn or sneeze observed during the 2 minutes prior to the stimulus; score 0 if 0 to 1 yawn or sneeze.

1 minute stimulus observation:

- ✓ **Startle to touch**: Score 1 if moderate to severe startle occurs when touched during the stimulus; score 0 if none (or mild).
- ✓ **Muscle tone**: Score 1 if tone increased during the stimulus; score 0 if normal.

Post-stimulus recovery:

- ✓ **Time to gain calm state** (SBS[1] ≤ 0): Score 2 if it takes greater than 5 minutes following stimulus; score 1 if achieved within 2 to 5 minutes; score 0 if achieved in less than 2 minutes.

Sum the 11 numbers in the column for the total WAT-1 score (0-12).

[1]Curley et al. State behavioral scale: A sedation assessment instrument for infants and young children supported on mechanical ventilation. Pediatr Crit Care Med 2006;7(2):107-114.