FACT SHEET No. 7

Pain Assessment in the Most Vulnerable Children

Assessing pain is widely acknowledged across pediatric healthcare disciplines as an important means to guide diagnosis and to evaluate treatment strategies.

Pain assessment involves a social communication wherein the child's personal pain experience is expressed in behavior, which is observed, interpreted, and acted on by the clinician within the context of the clinical situation. Poor assessment and misinterpretation of pain signals in children may lead to misdiagnosis, under-medication, over-medication or inappropriate treatment.

The primary source for assessment, when available, is self-report. However, the most vulnerable children cannot provide meaningful self-reports of pain because they are too young (neonates, infants, toddlers), have neurological or communication impairments, or because they have been sedated for medical purposes. For these populations, the primary basis of assessment is observation of the child's behavior supplemented by knowledge of the context, parental input, and physiological signs of pain.

Ideally, pain assessment should be multidimensional and should include, wherever possible, assessment of the following domains:

- Pain location: Identifies the potential underlying source of illness or injury and helps to differentiate localized from referred or widespread pain. Even very young or moderately impaired children may be able to point to "where it hurts."
- Pain quality or nature: Provides a qualitative description of sensory and temporal characteristics of the pain to differentiate the type of pain (nociceptive, neuropathic, vascular). Vulnerable children may have difficulty describing pain.
- Pain impact: Notes the degree to which pain interferes with daily physical and social functioning; this information may be obtained from parents.
- Pain context: The observed conditions, events and setting that influence the pain experience and more fully inform the interpretation of pain signals and reports.
- Pain intensity: Estimates the degree of severity of pain and is useful for identifying a baseline

measure and to evaluate pain relieving interventions and recovery.

Selected Assessment Tools for Children Who Cannot Self-Report Pain Intensity

These examples of observational tools are primarily structured to score facial expressions, crying or verbalizations, posture, and muscle tone or movement.

Neonates, infants, and toddlers [1,2]

- The Premature Infant Pain Profile (PIPP).
- The Neonatal Infant Pain Scale (NIPS) (also includes items that score heart rate and oxygen saturation). •
- The Toddler-Preschooler Postoperative Pain Scale (TPPPS).
- The Face Legs Activity Cry Consolability (FLACC).

Children who are neurologically impaired [3,4,5,6]

- Revised FLACC scale (r-FLACC): Caregivers can add behavioral descriptors that identify pain behaviors that are specific to the child, as many neurologically impaired children have idiosyncratic ways of responding to pain.
- Individualized Numeric Rating Scale (INRS): Supplements global 0-10 ratings with parental descriptors of child-specific pain behaviors.
- The Paediatric Pain Profile (PPP): Includes both physical observations and functional items (e.g., avoidance of eating, sleep disturbance; see www.ppprofile.org.uk)
- Non-communicating Children's Pain Checklist – Revised (NCCPC-R): A checklist of behaviors to assess in children age 3-18 years with cognitive or communication impairments.

Children who are sedated or restrained [7]

- COMFORT scale: Includes assessments of heart rate and blood pressure.
- COMFORT-Behavior (COMFORT-B): Omits physiologic items.

Assessment considerations [8]

- Observational pain scales do not differentiate pain distress from other sources of distress such as physiologic compromise or fear.
- Physiological parameters (e.g., heart rate, oxygen saturation) vary in response to pain but are less specific and reliable as indicators of pain than observed behaviors.
- Treatment decisions should consider all aspects of assessment and potential sources of distress including physiologic, developmental and psychosocial factors.
- Pain score cut-points are inappropriate for guiding medication decisions as they can lead to under- or overmedication. •
- Changes in pain intensity scores, observed pain behaviors, treatment responses and the child's

functioning are used in combination to inform treatment decisions.
- Although specific measures of pain interference or function have had limited to no testing in the most vulnerable groups of children, simple observations that include return of appetite, routine functional activities, social interactions and sleep characteristics can be readily assessed via parent interview and direct observation.
- Critically ill patients will be unable to demonstrate robust responses to pain or sustained behavioral responses.

Conclusion

The clinical approaches summarized here can help to frame pain assessment for the most vulnerable children. However, as Drs. Berde and McGrath have stressed, "It remains a clinical art to combine patients' reports, behavioral observation, and physiologic measurement with the history, physical exam, laboratory information, and overall clinical context in guiding clinical judgments and therapeutic interventions [9]."

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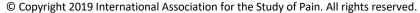**About the International Association for the Study of Pain®**

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