

EDITORIAL

Untreated Children's Pain Matters

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Every day, healthcare practitioners perform simple medical procedures to assess and treat sick or injured children, and can cause them significant pain and distress.^{1,2} These common procedures include intravenous cannulation, heel lances, lumbar punctures, urethral catheterizations, wound repair, and medical imaging of injured limbs. Unfortunately, fear of needles is common, and is estimated to affect one quarter of adults and almost 2/3 of children.³ Almost 1/5 Canadian caregivers report needle fear as the primary reason for immunization non-compliance.⁴ While 5–7% have mentioned needle fear as a contributing factor to their COVID-19 vaccine hesitancy. Children describe needle-related procedures, such as bloodwork and intravenous placement, as the worst and most painful part of their healthcare experience.^{2,5} Under-treated and untreated pain has both short and long-term negative consequences for children, their families, and healthcare providers.⁶ Untreated distress and pain often leads to a scared and uncooperative child, potential avoidance of vaccinations, reduced efficiency, and overall dissatisfaction with care for the patient, family and the healthcare team.⁷ In the longer-term, painful and distressing medical encounters in childhood can influence perceptions of healthcare into adulthood, sometimes resulting in increased anxiety and pain for future medical procedures and an under or overuse of healthcare services, altogether.² As minor medical procedures including childhood vaccinations form a routine and necessary part of healthcare for children, it is the responsibility of healthcare providers to optimize the experience for children to avoid unnecessary trauma.

Despite the existence of many, evidence-based guidelines to manage pain as well as hundreds of clinical trials and systematic reviews to support their use, suboptimal procedural pain care is still consistently reported for children.^{8,9} Staff cite time constraints, lack of physical resources, personnel or knowledge, as well as safety concerns, as reasons for limiting the use of known, effective strategies. Given the breadth and depth of evidence that is available for their

effectiveness and safety, coupled with the known negative consequences of not using them, it seems unethical and worthy of being labelled an adverse event not to employ simple techniques to minimize procedural pain.¹⁰ The recommended and most responsible approach to managing children's procedural pain incorporates physical, psychological, and pharmacological components.⁸

Treating the pain and distress that is associated with common medical procedures is integral to providing quality health care. A few basic principles can guide healthcare providers, whether they treat children in a mixed practice, or exclusively. The proposed techniques are inexpensive, take little time to integrate into one's practice, and generally improve efficiency. First, empowering the child and their family to have an active role is a core principle that then allows pain management to be more effective. Next, painful procedures should be minimized, batched, and employ the least invasive approaches possible. Finally, combining strategies is often more effective than using one strategy alone; this also leads to greater procedural success for healthcare providers.⁸

Physical: The physical environment of any clinic or hospital space can be adapted to be more child friendly. This can be as simple as adding colourful posters on walls or ceilings. As many minor medical procedures are performed with the child in a laying down position, such posters can be strategically placed to allow the child (with parental direction and involvement) to utilize them as distraction techniques. Parental presence during potentially distressing procedures is cost-free, highly effective, and leads to less distress and negative behavior in almost all children. Many procedures, including cast application and intravenous insertion, can be accomplished successfully with the parent sitting or lying on the stretcher holding their child. In the rare case where a parent may not be comfortable staying in the room, other staff may be able to step in for a comfort hold, if the child is amenable to the same. The parent can stay in the room and comfort their child

with calm verbal support (“I’m here for you,” “I love you”), distraction, and gentle touch (if desired by the child). Breastfeeding through procedures such as bloodwork can be very soothing for younger children; pacifiers can be used if breastfeeding is not available. There are also many condition-specific physical strategies including immobilization and ice packs for acute musculoskeletal injury, for example.

Psychological: Children over the developmental age of four years tend to appreciate simple information regarding what to expect during a medical procedure. Parents also require preparation for the procedure to best support their child and cope themselves. Parents can be told what to expect, how they can help with positioning/holding their child and how to distract their child. Parents should be counseled to avoid false reassurances such as: “It won’t hurt,” or “It’s over”. Distraction, cognitive behavioural therapy, and hypnosis are three powerful psychological therapies that have been shown to work to reduce pain and distress for children receiving medical procedures.^{8,9} Simple and inexpensive distraction techniques include bubbles, pinwheels, books, and conversation with the child. Technology-based distraction has become much more widely used in current times and can involve using a device brought by the family (e.g., iPad, iPhone) or kept in your facility (e.g., iPad, virtual reality goggles). For infants, breastfeeding, pacifiers, skin-to-skin contact, and rocking can be employed. If available at your facility, child life specialists can empower children to play an active role in their own pain management strategy by employing play therapy and providing pre-procedural psychological support, anticipatory guidance and education.

Pharmacologic: A large variety of evidence-based pharmacologic agents are available to support children through minor medical procedures. They are most effective when *combined with* physical and psychological interventions. The temptation to use them *in lieu of* other strategies should be avoided. Infants often receive multiple painful procedures even within the first 72 hours of life, and when their pain is not addressed, it can have long-term effects on their future response to pain. Oral sucrose is an effective analgesic for brief, painful procedures that works best for infants less than one month of age, including premature babies. It is given orally as a concentrated solution by a syringe (e.g., 1-2 mL of a 24% sucrose solution). If a commercially available option is unavailable, D50W can be diluted with equal parts sterile water to create D25W

as a substitute. It is important to note that, while effective and easy to use, it only reduces pain by approximately 20%, and so should not be used in isolation, but combined with other techniques. Topical anesthetics reduce the pain of procedures such as intravenous insertion, bloodwork, and lumbar puncture, and are appropriate for children of all ages. Examples include Ametop® (4% amethocaine) and LMX® (4% liposomal lidocaine), with a time to maximal effect of 30 minutes. Similarly, EMLA® (eutectic mixture of 2.5% prilocaine and 2.5% lidocaine) is also effective but requires 60 minutes to take effect. LET (lidocaine 4%, epinephrine 0.1%, and tetracaine 0.5%) is a topical anesthetic mixture, often compounded in gel form, that is used for anesthetizing open wounds. It is widely employed and safe and effective for almost all laceration repairs in children >3 months. LET is most effective for wounds that are not deeper than the subcutaneous tissues; the wound site should always be tested prior to suturing to determine if injectable local anesthetic is also required for larger or deeper cuts. LET should be applied for at least 30 to 45 minutes, with longer times (45-60 minutes) generally leading to more complete anesthesia. When treating a laceration, use of tissue adhesives (e.g., Dermabond®, Glu-Stitch®) should be preferentially chosen over sutures, if the laceration is not close to the eyes or over an area of tension. Similarly, if sutures are required, absorbable sutures should always be chosen for areas of low tension (i.e., not joints), to avoid retraumatization with suture removal.

Children's pain matters. Untreated, it has important physical and psychological consequences for children, even changing the neural pathways through which pain is experienced by infants. If we falsely believe that procedural pain is not serious enough to treat, or that such pain 'toughens up' a child, we accept that procedural pain cannot be minimized and reject the notion that untreated pain is an adverse event. In doing so, we lose the critical opportunity to address this quality-of-care issue as a systemic challenge and leave it to individual practitioners to do the right thing.¹⁰ We already know that untreated and under-treated pain has negative impacts, so how can we justify ignoring it? Pain as an adverse event may be a controversial concept to health care administrators, but I ask you to think of the families' perspective; there is NOTHING controversial about creating a better and safer experience for their children. Many, many low-cost, highly effective interventions exist to improve medical procedure experiences for children. Working to

eliminate medical procedure-related pain is a goal that our health systems must achieve. We must do it for the children. They are our future.

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