

Appendix 5 (as supplied by the authors): Sample tools for pain mitigation

Health Care Provider Intervention Documentation Tool

Use this document to track pain mitigation strategies used during vaccination and their effectiveness. Use this to prepare for the next vaccination.



| Name of individual: | Infants | | | | | Toddlers | | School Age | Adolescents > 12 - 17 years | | | | | Adults | | Other Vaccinations (flu, travel...) | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|
| | Birth | 2 mos | 4 mos | 6 mos | 12 mos | 15 mos | 18 mos | 4-6 years | Age: | Age: | Age: | Age: | Age: | Age: | Age: | Age: | Age: | Age: | |
| Vaccines Administered | | | | | | | | | | | | | | | | | | | |
| Interventions: | | | | | | | | | | | | | | | | | | | |
| Caregiver presence | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Breastfeeding OR | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sweet tasting solution | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Positioning: skin to skin contact | <input type="checkbox"/> | | | | | | | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| holding | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-nutritive sucking | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Topical anesthetic | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Injection without aspiration | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Multiple injections: most painful vaccine last AND/OR | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Simultaneous injection | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Inject in vastus lateralis | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Positioning - upright/sitting | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Distract – toy, video | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Distract - music, video, breathe with toy, verbal distraction | | | | | | | | <input type="checkbox"/> | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Vibrating device with cold | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Breathing method - cough, breathhold | | | | | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Vapocoolant spray | | | | | | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Neutral verbal signal of procedure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Muscle Tension (if history of fainting) | | | | | | | | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Post-vaccination assessments (age-appropriate): | | | | | | | | | | | | | | | | | | | |
| Provider-rated distress: MBPS (child ≤18 months); FLACC (child >18 months); r-FLACC (child with cognitive impairment/CI); CNPI (adults with CI) | | | | | | | | | | | | | | | | | | | |
| Scale 0-10 (MBPS, FLACC/r-FLACC) | | | | | | | | | | | | | | | | | | | |
| Scale 0-6 (CNPI) | | | | | | | | | | | | | | | | | | | |
| Parent-rated distress: NRS or VAS (child ≤ 3 years or child with CI); (NCCPC-PV for parents of children with CI available at pediatric-pain.ca/our-measures) | | | | | | | | | | | | | | | | | | | |
| Scale 0-10 (NRS, VAS) | | | | | | | | | | | | | | | | | | | |
| Scale 0-81 (NCCPC-PV) | | | | | | | | | | | | | | | | | | | |
| Child self-reported pain: Pieces of Hurt Tool (child 3-6 years); FPS-R (child ≥ 5 years); NRS (child ≥ 8 years) | | | | | | | | | | | | | | | | | | | |
| Scale 0-4 (Pieces of Hurt) | | | | | | | | | | | | | | | | | | | |
| Scale 0-10 (FPS-R, NRS) | | | | | | | | | | | | | | | | | | | |
| Child self-reported fear: CFS or verbal descriptor scale (child 5-12 years); NRS (child ≥ 8 years) | | | | | | | | | | | | | | | | | | | |
| Scale 0-4 (CFS, descriptor) | | | | | | | | | | | | | | | | | | | |
| Scale 0-10 (NRS) | | | | | | | | | | | | | | | | | | | |
| Adult self-reported pain: NRS | | | | | | | | | | | | | | | | | | | |
| Scale 0-10 | | | | | | | | | | | | | | | | | | | |
| Adult self-reported fear: NRS; FAS (critically ill adults) | | | | | | | | | | | | | | | | | | | |
| Scale 0-10 (NRS) | | | | | | | | | | | | | | | | | | | |
| Scale 1-5 (FAS) | | | | | | | | | | | | | | | | | | | |
| Fainting response? Prodromal - dizzy, light headed, nauseated, sweaty. Actually fainted? | | | | | | | | | | | | | | | | | | | |
| Prodromal? Fainted? | | | | | | | | | | | | | | | | | | | |

* MBPS = Modified Behavioural Pain Scale (0-10); FLACC = Face Legs Activity Cry Consolability and r-FLACC = revised version (0-10); NCCPC-PV: Noncommunicating Children's Pain Checklist-Postoperative version 0-81; CNPI = Checklist of Nonverbal Pain Indicators; CI = cognitive impairment; NRS = Numerical Rating Scale (0-10); VAS = Visual Analog Scale (0-10); Pieces of Hurt Tool (0-4); FPS-R = Faces Pain Scale - Revised (0-10); CFS = Children's Fear Scale (0-4); FAS = Faces Anxiety Scale (1-5). See reverse side for description of these scales and scores; NCCPC-PV available separately at pediatric-pain.ca/our-measures

Health Care Provider Pain, Distress and Fear Assessment Tools

HEALTH CARE PROVIDER-RATED DISTRESS

| Modified Behavioural Pain Scale (MBPS) For Children ≤ 18 Months | |
|--|----------------------------|
| FACIAL EXPRESSION | |
| Definite positive expression: smiling | <input type="checkbox"/> 0 |
| Neutral expression | <input type="checkbox"/> 1 |
| Slightly negative expression: for example, grimace | <input type="checkbox"/> 2 |
| Define negative expression: that is, furrowed brows, eyes closed tightly | <input type="checkbox"/> 3 |
| CRY | |
| Laughing or giggling | <input type="checkbox"/> 0 |
| Not crying | <input type="checkbox"/> 1 |
| Moaning, quietly vocalizing, gentle or whimpering cry | <input type="checkbox"/> 2 |
| Full lunged cry or sobbing | <input type="checkbox"/> 3 |
| Full lunged cry, more than baseline cry: to be scored only if infant crying at baseline | <input type="checkbox"/> 4 |
| MOVEMENTS | |
| Usual movements/activity, or resting/relaxed | <input type="checkbox"/> 0 |
| Partial movement or attempt to avoid pain by withdrawing the limb where puncture is done | <input type="checkbox"/> 2 |
| Agitation with complex movements involving the head, torso or the other limbs, or rigidity | <input type="checkbox"/> 3 |
| TOTAL SCORE (0-10) | _____ |

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| Face Legs Activity Cry Consolability (FLACC) For Children >18 Months | | | |
|--|---|---|---|
| Categories | 0 | 1 | 2 |
| Face | No particular expression or smile | Occasional grimace or frown, withdrawn, disinterested | Frequent to constant quivering chin, clenched jaw |
| Legs | Normal position or relaxed | Uneasy, restless, tense | Kicking, or legs drawn up |
| Activity | Lying quietly, normal position moves easily | Squirming, shifting back and forth, tense | Arched, rigid or jerking |
| Cry | No cry, (awake or asleep) | Moans or whimpers; occasional complaint | Crying steadily, screams or sobs, frequent complaints |
| Consolability | Content, relaxed | Reassured by occasional touching hugging or being talked to, distractible | Difficulty to console or comfort |
| TOTAL SCORE (0-10) | _____ | | |

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| Revised-FLACC For Children With Cognitive Impairment | | |
|--|--|--|
| Category | 0 | Scoring 1 2 |
| Face | - No particular expression or smile | - Occasional grimace/frown; withdrawn or disinterested; appears sad or worried |
| Individualized behaviour: | | - Consistent grimace or frown; frequent/constant quivering chin, clenched jaw; distressed-looking face; expression of fright or panic |
| Legs | - Normal position or relaxed; usual tone & motion to limbs | - Uneasy, restless, tense; occasional tremors |
| Individualized behaviour: | | - Kicking, or legs drawn up; marked increase in spasticity, constant tremors or jerking |
| Activity | - Lying quietly, normal position, moves easily; regular, rhythmic respirations | - Squirming, shifting back and forth, tense or guarded movements; mildly agitated (e.g., head back & forth, aggression); shallow, splinting respirations, intermittent sighs |
| Individualized behaviour: | | - Arched, rigid or jerking; severe agitation; head banging; shivering (not rigors); breath holding, gasping or sharp intake of breaths, severe splinting |
| Cry | - No cry/verbalization | - Moans or whimpers; occasional complaint; occasional verbal outburst or grunt |
| Individualized behaviour: | | - Crying steadily, screams or sobs, frequent complaints; repeated outbursts, constant grunting |
| Consolability | - Content & relaxed | - Reassured by occasional touching, hugging or being talked to. Distractible. |
| Individualized behaviour: | | - Difficult to console or comfort; pushing away caregiver; resisting care or comfort measures |
| TOTAL SCORE (0-10) | _____ | |

| Checklist of Nonverbal Pain Indicators for Adults with Cognitive Impairment | |
|--|-------|
| Behavior (all scored 0 = not present; 1 = observed) | |
| 1) Vocal complaints: nonverbal (sighs, gasps, moans, groans, cries) | |
| 2) Facial grimaces/winces (furrowed brow, narrowed eyes, clenched teeth, tightened lips, jaw drop, distorted expressions) | |
| 3) Bracing (clutching or holding onto furniture equipment, or affected area during movement) | |
| 4) Restlessness (constant or intermittent shifting of position, rocking, intermittent or constant hand motions, inability to keep still) | |
| 5) Rubbing (massaging affected area) | |
| 6) Vocal complaints: verbal (words expressing discomfort or pain [e.g., "ouch", "that hurts"]); cursing during movement; exclamation of protest [e.g., "stop", "that's enough"]) | |
| TOTAL SCORE (0-6) | _____ |

CNPI figure has been reproduced from <https://www.healthcare.uiowa.edu/igcc/tools/pain/nonverbalPain.pdf> Feldt KS. The checklist of nonverbal pain indicators (CNPI). Pain Management Nursing 2000;1:13-21.

r-FLACC figure has been reproduced from Pediatric Anesthesia, 16, Malviya S, Voelpel-Lewis T, Burke C, Merkel S, Tait AR. The revised FLACC observational pain tool: improved reliability and validity for pain assessment in children with cognitive impairment, 258-265, Copyright 2006, with permission from Wiley.

PARENT-RATED DISTRESS (Children ≤ 3 Years; Should Be Used in Combination with Self-Report in Children 3-7 years)*

Numerical Rating Scale (NRS)

"Tell me how much distress you think your child had from the vaccine injection from 0 to 10, where 0 is no distress and 10 is the worst distress possible."

Visual Analog Scale (VAS)



INDIVIDUAL SELF-REPORTED PAIN AND FEAR

| Pieces of Hurt Tool for Children 3-6 Years* |
|---|
| 1. Say to the child: "I want to talk to you about the hurt you may be having right now." |
| 2. Align the pieces of hurt (e.g., poker chips) horizontally in front of the child on the bedside table, a clipboard, or other firm surface. |
| 3. Tell the child, "These are pieces of hurt." Beginning at the chip nearest the child's left side and ending at the one nearest the right side, point to the chips and say, "This (first chip) is a little bit of hurt and this (fourth chip) is the most hurt you could ever have." For a young child or for any child who may not fully comprehend the instructions, clarify by saying, "That means this (one) is just a little hurt, this (two) is a little more hurt, this (three) is more yet, and this (four) is the most hurt you could ever have." |
| o Do not give children an option for zero hurt. Research with the Pieces of Hurt Tool has verified that children without pain will so indicate by responses such as, "I don't have any." |
| 4. Ask the child, "How many pieces of hurt do you have right now?" |
| o After initial use of the Pieces of Hurt Tool, some children internalize the concept "pieces of hurt". If a child gives a response such as "I have one right now", before you ask or before you lay out the chips, proceed with instruction 5. |
| 5. Record the number of chips on the Pain Flow Sheet. |
| 6. Clarify the child's answer by words such as, "Oh, you have a little hurt? Tell me about the hurt." |

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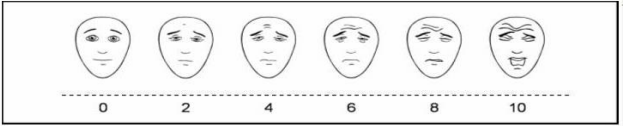
| Faces Pain Scale - Revised (FPS-R) for Children ≥ 5 Years* |
|---|
| In the following instructions, say "hurt" or "pain," whichever seems right for a particular child. These faces show how much something can hurt. This face [point to left-most face] shows no pain. The faces show more and more pain [pain to each from left to right] up to this one [point to right-most face] - it shows very much pain. Point to the face that shows how much you hurt [right now]. Score the chosen face 0, 2, 4, 6, 8, or 10, counting left to right, so '0' = 'no pain' and '10' = 'very much pain.' Do not use words like 'happy' and 'sad'. This scale is it intended to measure how children feel inside, not how their face looks. www.iasspain.org/fpsr |
|  |

Figure reproduced with permission of the International Association for the Study of Pain® (IASP®). Hicks CL, et al. The Faces Pain Scale - Revised: toward a common metric in pediatric pain measurement. Pain. 2001;93:173-183.

Numerical Rating Scale (NRS) For Children ≥ 8 Years and Adults

Pain: "Tell me how much pain/hurt you had from the vaccine injection from 0 to 10, where 0 is no pain/hurt and 10 is worst pain/hurt possible."

Fear: "Tell me how scared you were during the vaccine injection from 0 to 10, where 0 is not scared at all and 10 is the most scared possible."

Fear Verbal Descriptor Scale for Children 5-12 Years*

Tell me how scared you were during the needle: not at all, a little bit, a medium amount, a lot, or very very much/most possible?

Children's Fear Scale (CFS) for Children 5-12 Years*

These faces are showing different amounts of being scared. This face [point to the left-most face] is not scared at all, this face is a little bit more scared [point to second face from left], a bit more scared [sweep finger along scale], right up to the most scared possible [point to the last face on the right]. Have a look at these faces and choose the one that shows how scared you were during the needle.

(Score the faces from 0 on the far left to 4 on the far right)



Faces Anxiety Scale (FAS) for Critically ill Adults

These faces are showing different levels of anxiety. This face shows no anxiety at all, this face shows a little bit more, a bit more [sweep finger along scale], right up to extreme anxiety. Have a look at these faces and choose the one that shows how much anxiety you felt during the needle.

(Score the faces from 1 on the far left to 5 on the far right)



Figure reproduced with permission of the author. <http://ppch.psy.uoguelph.ca/index.php/the-childrens-fear-scale/> McMurtry CM, et al. Children's fear during procedural pain: preliminary investigation of the Children's Fear Scale. Health Psychology. 2011;30:780-788.

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*Children < 7 years may not be reliable in their self-report; ratings from multiple people are recommended (e.g., caregivers, healthcare providers, child)