EASING ANXIETY AND PAIN OF PEDIATRIC PROCEDURES

Pediatric Pain Resource Nurse Curriculum

The MAYDAY Fund

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Objectives

- Compare your organizations approach to painful medical procedures performed on pediatric patients and the guidelines established by national professional societies, such as the American Academy of Pediatrics, American Society for Pain Management Nursing, and others.
- Formulate processes and policies to ensure the organization's approach to painful medical procedures acknowledges the need to be sensitive to children's pain and optimize pain and anxiety treatment with the first and every procedure
- Engage in developmentally-appropriate evidence-based strategies to ease anxiety and pain of common medical procedurals performed on pediatric patients.

page **3** — *Prevalence and Significance of Pediatric Procedural Pain*

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Do We Still Hurt Newborn Babies?

Simons SH, et al. (2003)

Pediatric procedural pain management guidelines

The American Society for Pain Management Nursing (ASPMN) believes individuals who undergo potentially painful procedures have a right to optimal pain management before, during and after the procedure and should have a plan in place to address potential pain and anxiety before the initiation of any procedures. (Czarnecki, et al., ASPMN, 2011).

Regardless of age, gender, race, ethnicity, or socioeconomic status, pediatric patients often endure procedural pain that could potentially be minimized if not eliminated with currently available pain management strategies [AAP/APS] (2001).

Procedural sedation must be performed only by healthcare professionals experienced and knowledgeable with this technique and airway management [AAP/AAPD, 2006].

- **The American Society for Pain Management Nursing (ASPMN)** Czarnecki ML, Turner HN, Collins P, Doellman D, Wrona S, & Reynolds J. (2011). Procedural Pain Management A Position Statement with Clinical Practice Recommendations, *Pain Management Nursing, 12* (2): 95-111
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List all the procedures performed on your clinical unit or in your specialty area on any given day.

Type your answer here.

Yes. We Do.

(Manworren, 2017)

Pediatric procedural pain prevalence

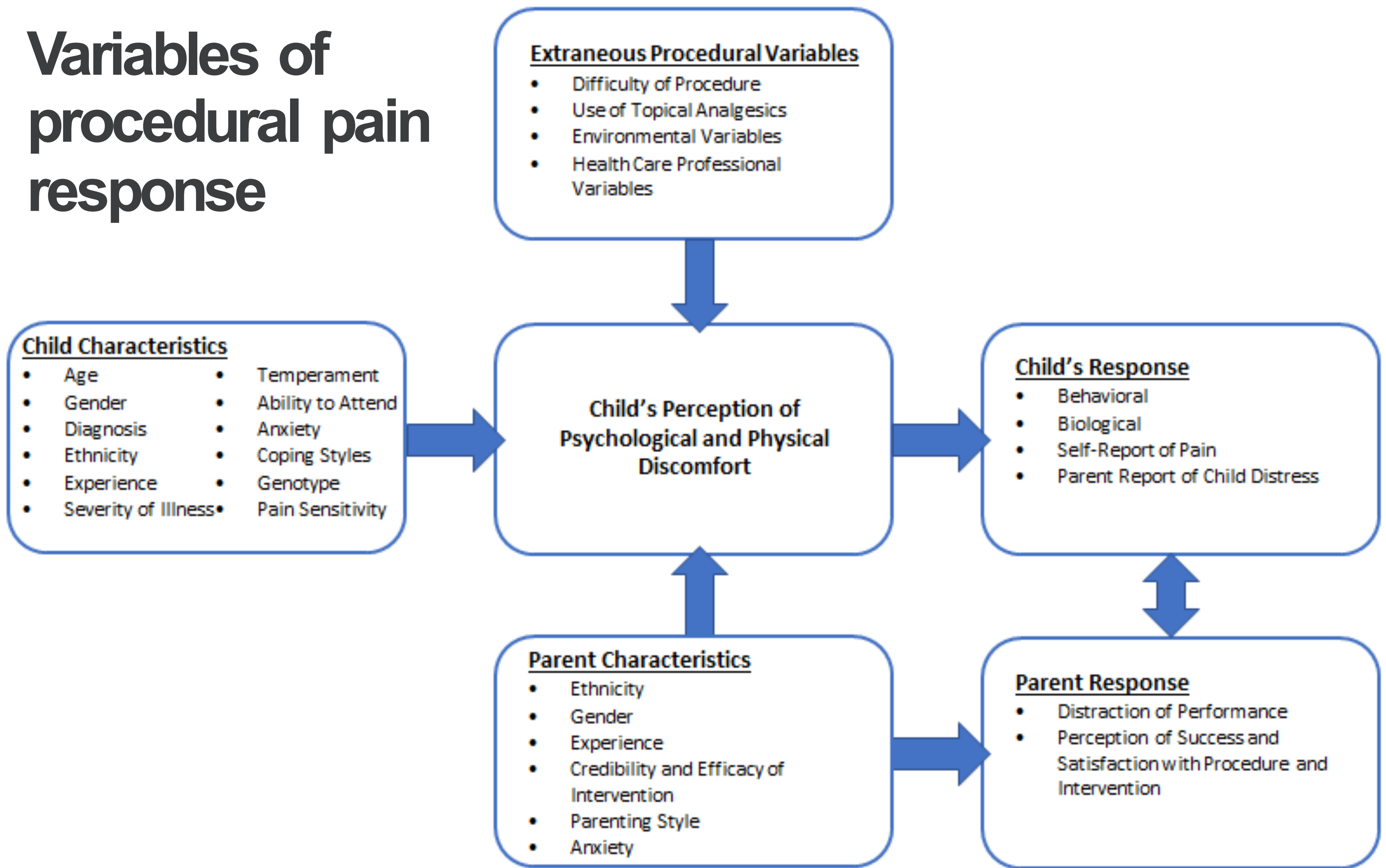
Painful procedures are plentiful in all healthcare settings

- Children receive up to 20 immunizations by their 2nd birthday
- In NICU, babies experience and average of 7.5-17.3 painful procedures per day. Common procedures include heel lance, suctioning, and venipuncture.
- In the PICU, children experience about 6 times more painful procedures per day than children in general medical-surgical units (Stevens, et al, 2011); a mean of 9.7, and a range of 0 to 71 (LaFond, Hanrahan, Peirce, Perkounkova, Weinberg & McCarthy, under review, 2018).
- Pediatric patients experience 1 to 50 procedures per day (Stevens, et al., 2011); and a median of 2 procedures per day on general medical-surgical units (Cruz, Fernandes & Oliveira, 2016)

Consequences of Pediatric Procedural Pain

Pain events can also lead to a more intense pain response to future procedures and an increased need for analgesics for future surgeries.

The Problems with Untreated Pain	
Immediate	• Physiologic responses • Behavioral and emotional distress • Behavioral distress can make the procedure more difficult and last longer.
Long-term	• Increased pain sensitivity • Increased need for analgesics for future surgeries • Increased avoidance behavior • Social hypervigilance • Higher anxiety with subsequent painful procedures



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Yes. We Do.
Why?
(Manworren, 2017)

Take a minute to reflect…

What barriers prevent optimal procedural pain management on your unit and in your hospital?

Type your answer here.

Opportunities for Improvement

If healthcare providers fail to acknowledge that pain exist during or after medical procedures, they cannot anticipate, prevent and manage pain.

Barriers to Procedural pain prevention and treatment

- *Lack of awareness of policies, procedures, guideline*
- *Failure to realize there is a "better way"*
- *Failure to recognize some common procedures as painful (such as removal of adhesive, suctioning, repositioning, and other less invasive procedures)*
- *Poor team communication*
- *Lack of input from patients and families*
- *Inconvenience of topical anesthetics*
- *Lack of time, bad timing*
- *Lack of medication orders when needed*

Who is responsible?

Role of Nurse in procedural comfort management:

- Continuing education
- Follow organizational policies and procedures
- Communicate with the healthcare team the child's status and tolerance of the procedure
- Document assessments, interventions and evaluation of the procedure
- Participate in quality improvement activities

Parents bring special knowledge of their children's needs to the health care team.

Parents are very important partners in their children's pain management.

Therefore, parents should be involved in helping plan appropriate procedural pain treatment, which may include medicine or other biobehavioral pain management therapies.

Role of Parent in procedural comfort management:

- Ask the healthcare team members what to expect
- Help to assess child's pain, anxiety and other discomforts
- Help develop a comfort plan individualized to child
- Help select pain management options

Who is responsible?

Role of Prescriber in procedural comfort management:

- Follow organizational policies and procedures
- Select and order medications for the to prevent or relieve procedural pain
- Communicate with the patient (and family if applicable) and the registered nurse to develop the expectations, plan, and pain management for the procedure

Role of Health Care Organization in procedural comfort management:

- Ensure interdisciplinary policies and procedures regarding procedural comfort management are developed and used
- Ensure that RN's role is consistent with state nurse practice laws and institutional policies and procedures
- Ensure prescriber's have access to known medications that prevent and relieve procedural pain
- Provide a means of documenting the procedure, comfort measures used, and an evaluation of the procedure
- Provide ongoing education for healthcare professionals about procedural pain management
- Develop and maintain a system for evaluating procedural pain management

Clinical Practice Guidelines for Managing Pediatric Procedural Pain

(Czarnecki,ASPMN,2011)

Every procedure, every time

Optimal comfort and management of pain and anxiety with the first procedure is critical for positive long-term healthcare utilization

The healthcare team must consider every procedure as potentially painful and anxiety provoking, NOT just a task to quickly be completed for the real work of healthcare to begin.

American Society for Pain Management Nursing (ASPMN) Clinical Practice Guideline Recommendations:

1. Create an individualized comfort management plan before a procedure begins
   - Choose interventions based on the individual patient, procedure and situation
   - Create a procedural pain and anxiety plan that is multimodal
2. Promote a family-centered approach
   - Engage patients and families in decisions
   - Guide parents in effective strategies

One voice

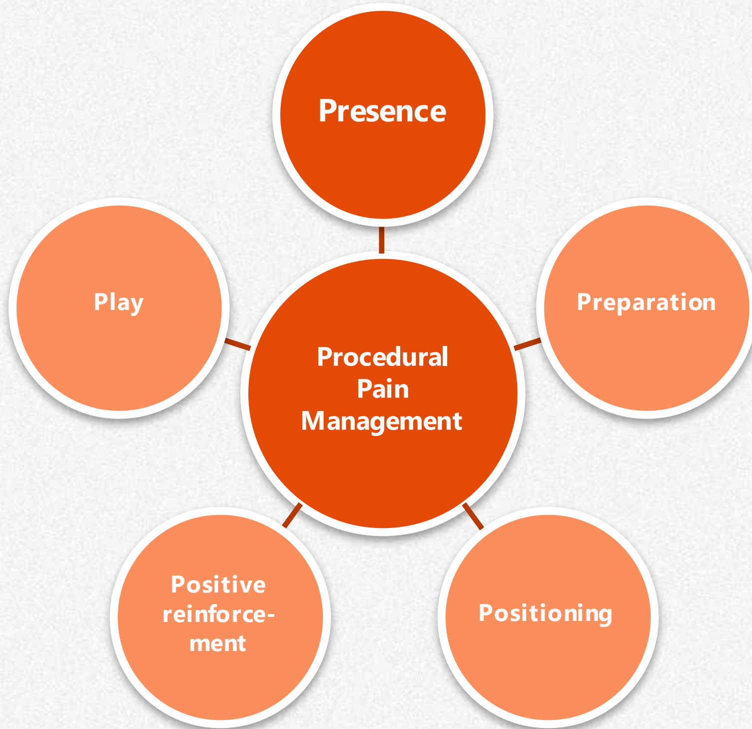
The ONE VOICE can be a parent or healthcare provider

ONE VOICE includes a number of strategies

One voice or one person coaching and giving the child information during the procedure

O	One voice or one person coaching and giving the child information during the procedure.
N	Need parent involvement
E	Educate patient before the procedure about what is going to happen
V	Validate the child with words
O	Offer the most comfortable, non-threatening position
I	Individualize the game plan
C	Choose appropriate distraction to be used
E	Eliminate unnecessary people not actively involved in the procedure

5 P's of procedural pain management



***Presence** supports developmental needs*

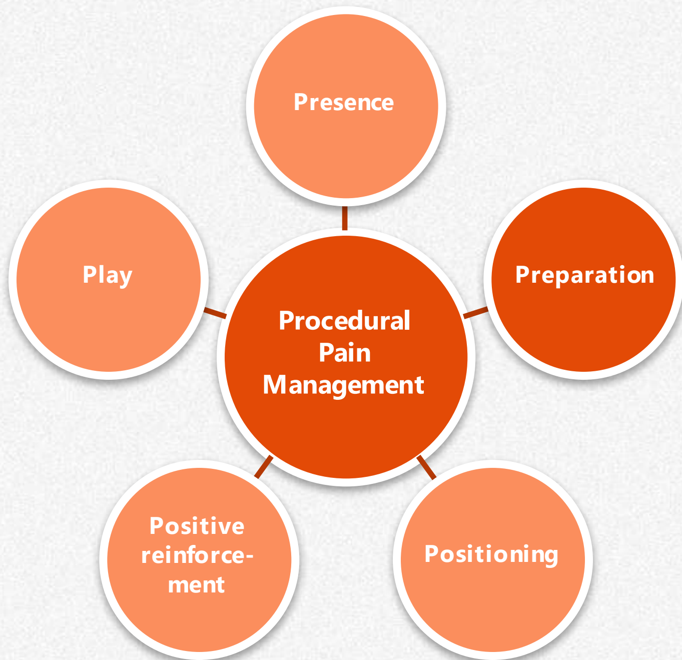
Parental Presence/Familiar Person

- Minimize number of staff present
- Include parents or a familiar person in preparations for procedures, comfort holds, and distraction/support to allow child to feel safe
- Allow adolescent to choose who is present; respect privacy and vulnerability

Security Objects

- Allow child to have security or favorite objects from home close, such as blankets, favorite toys

5 P's of procedural pain management



Provide developmentally appropriate preparation before the procedure to support developmental needs

- Provide sensory information and opportunity for medical play shortly before procedure
- Use developmentally appropriate words
- Allow adolescents to speak directly with medical team to understand reasoning behind procedure or treatment, involvement with decision-making, and ask questions

Offer choice when there is one

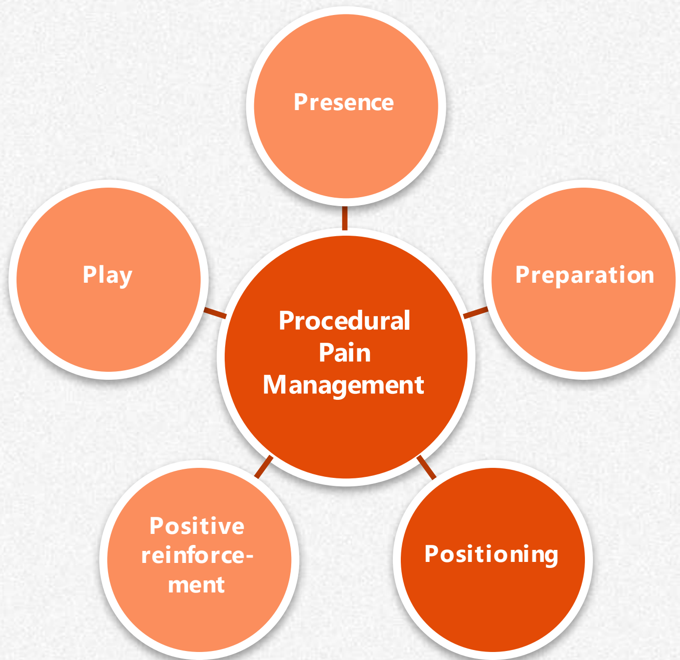
- Watch or not watch the procedure
- Sit on chair or caregiver's lap
- Green or red cast

Assess the child's coping style

"Do you want to look and see or look away? "

Look	Look Away
• Allow visual line to watch • Provide information as needed • Encourage distraction, but allow checking in on procedure • Re-engage in distraction as needed	• Engage in distraction • Create a visual shield between the child and the procedure site (e.g. block view with at a book or pillow) • Provide information as needed • Re-engage in distraction as needed

5 P's of procedural pain management



Comfort Positions reduce "fight or flight" stress and promote a developmentally appropriate parent-child interaction and response to a planned procedure

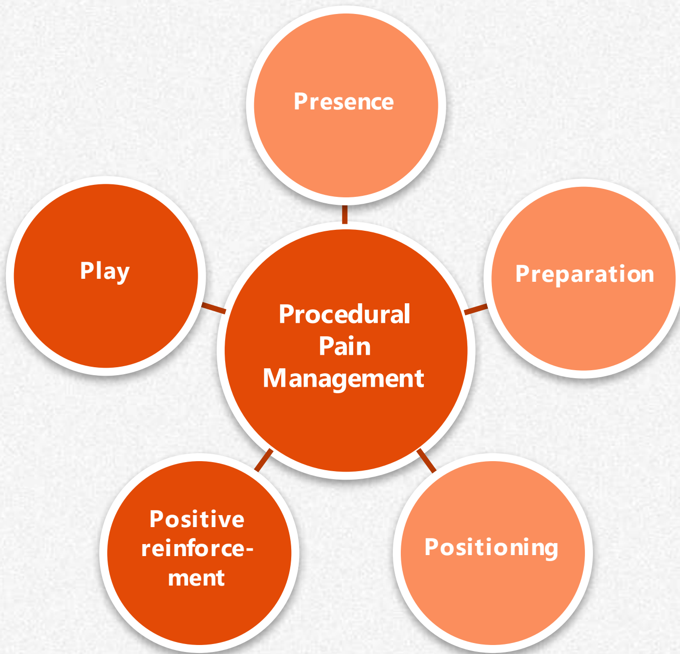
- Provide a supportive hold versus restraining the child. Position the support person to provide comfort during procedures.
- Infants and children feel more in control and less helpless when upright during a poke (instead of lying down).
- Having physical contact with their parent is calming and reassuring.

"The Hugging Hold"

This position allows for the child and adult to be in a "hugging hold". The hold can be used facing the procedure or facing away, using distraction (give the child the choice to look or to be distracted).

Infants	Parent holds over their shoulder or chest to chest
Young child	Parent and child sit chest to chest. Have the child straddle the parent. The parent gives the child a hug during the procedure
School-aged child	Parent sits with the child in their lap or between their legs and the child's back to them. The parent gives the child a hug during the procedure
Older child	Can choose a position of comfort and may just want to hold a parent's hand

5 P's of procedural pain management



Positive Reinforcement supports developmental needs using principles of operant conditioning

- Limit excessive noise
- Allow for one voice to be heard
- Encourage appropriate verbalization of pain
- Continue to use simple language throughout procedure: "small poke", "great listener"
- Praise adaptive behaviors
- Don't reassure or apologize
- Offer reward or tangible item

Play opportunities before and after the procedure help children to process information, allow healthcare professionals to clarify misconceptions, and allow children to act out and verbalize their fears and pain.

Before the procedure

Huddle:
Establish a plan and prepare the team

Establish a plan

- Select multimodal interventions
- Chose interventions based on the individual patient, procedure, and situation
- Engage patients and families in decisions

Prepare

Patient and family with education and training specific to the procedure, plan, and patient and family needs

Timing and location of procedure to ensure adequate space, privacy, lighting, supplies, and access to medications.

Medications and monitoring: analgesics, topical anesthetics, anxiolytics, sedation as needed

Materials for interventions : music, distraction supports, other comfort items

Patient, family and staff for their roles

For positioning of patient and family

Healthcare team: Discuss what will be done, anticipated distress, parent and staff roles, comfort plan and goal

During the procedure

Take time out for safety. Assure you have the right patient, right procedure, right plan

Initiate comfort plan interventions before beginning the procedure.

Maintain roles.

Coach as needed:

- Staff may need coaching to maintain roles.
- Parents may need coaching to stay calm or prompt distraction.
- Child may need coaching to engage in breathing, distraction, or other coping techniques.

Perform procedure competently and efficiently.

Assess pain and anxiety, procedural tolerance:

- Evaluate if other interventions are needed.
- Stop and re-set if needed.

Maintain calming environment.

Indications to stop and re-set

- Raised or strained voices
- Confusion; too many people trying to lead
- Behavioral distress (screaming, flailing, need for restraint) disrupting procedure
- Poor family coping
- Urgency to “get it over with” instead of calming performing procedure

After the procedure

- Discuss and de-brief as needed
- Document the procedure and patient' subjective and objective responses and behaviors.
- Continue post-procedural comfort management plan
- Modify procedural plan as needed for future procedures

Reward the child for appropriate behaviors.

Developmental Procedural Pain Prevention and Management

Infants

Venipuncture is less painful than heel sticks.

Create a soothing environment

- Dim the lights, pull the shades
- Reduce noise
- Maintain adequate room temperature
- Hold or swaddle the baby
- Allow security object (for example a blanket or toy)
- Consider music
- Consider light up toys

Interventions build on infant needs

- Sucrose: 2 minutes before and during as needed
- Swaddling
- Facilitated tuck
- Non-nutritive suck
- Breastfeeding: during procedure
- Skin-to-skin care: 30 minutes before and during procedure

Bundle interventions

Toddlers

- Gain trust with patient before procedure through play
- Provide developmentally appropriate preparation before the procedure
- Try to maintain patients daily schedule when timing procedure
- Create a comfortable, safe, and soothing environment during and after the procedure (keep security object close).
- Coach and encourage parents in a supportive role during procedure
- Offer real choice when possible (left or right arm?)
- Offer distraction: bubbles, music, videos, light up toys
- Provide comfort holds during procedure
- Provide simple explanations

Non-painful procedures may be distressing.

Takes cues from parents

Empathetic attention may escalate distress: Coach don't apologize!

Preschoolers

Gain trust with patient before procedure through play

Provide developmentally appropriate preparation before the procedure

- Use concrete terms to explain the procedure
- Be truthful and realistic
- Allow expression of feelings through talk and play

Try to maintain patients daily schedule when timing procedure

Create a comfortable, safe, and soothing environment during and after the procedure (keep security object close)

Encourage child to participate

Remind the child of steps and techniques practiced

- Offer support and distraction during procedures: bubbles, favorite object, sing, music, videos, jokes

Coach and encourage parents in a supportive role during procedure

Provide comfort holds during procedure

Non-painful procedures may be distressing.

Takes cues from parents

Empathetic attention may escalate distress: coach don't apologize

School-aged children

Empathetic attention may escalate distress: Coach, don't apologize.

Provide developmentally appropriate preparation before the procedure

- Explain what to expect before, during, and after procedure
- Identify and correct any misconceptions
- Needle-play may be appropriate

Offer choices when possible

- Create a comfortable, safe, and soothing environment during and after the procedure
- Respect modesty

Encourage child to participate in care

- Remind the child the steps and techniques practiced during preparation
- Offer support and distraction during procedures: bubbles, favorite object, sing, music, videos, jokes, encouragement

Coach and encourage parents in a supportive role during procedure

Provide comfort holds during procedure

Adolescents

Adolescents fear loss of control, but may not be able to make independent decisions

Provide developmentally appropriate preparation before the procedure

- May be prepared for procedure days in advance
- Identify and correct any misconceptions

Offer choices when possible; for example does adolescent want parent present?

Create a comfortable, safe, and soothing environment during and after the procedure. Respect modesty

Encourage participation in care

- Remind the adolescent of the steps and techniques practiced during preparation
- Offer support and distraction during procedures: sing, music, videos, video games, virtual reality, jokes, encouragement
- Respect quiet adolescent

Coach and encourage parents in a supportive role during and after procedure

Procedure-Specific Recommendations

Needle procedures: venipuncture, IV, IM, SQ, LP

Minimize needle procedures.

Avoid IM unless no other route is appropriate and effective (for example immunizations)

Avoid needle procedures in patient rooms or beds, unless this is an older child's or adolescent's expressed preference.

Interventions recommended for infants

- Topical anesthetics
- Non-nutritive suck
- Sweet solutions
- Breastfeeding
- Swaddling/facilitated tucking
- Skin-to-skin (Kangaroo care)
- Holding and rocking

Interventions recommended for Toddlers, Pre-schoolers, Children

- Topical anesthetics, intradermal anesthetics
- Multimodal therapy
- Mixed evidence for effectiveness of distraction, music, virtual reality, guided imagery, hypnosis, parent coaching, comfort positions, perioperative suggestion, deep breathing, relaxation, massage

No evidence for effectiveness of preparation and information.

Orthopedic sprain or non-operative fracture reduction

Avoid restraining the child.

If restraint anticipated or needed, use sedation instead.

Recommended interventions

- NSAID in triage, if not contraindicated by other injuries or co-morbid conditions (may be more effective then opioids)
- Treat for pain before obtaining x-rays
- Opioids may or may not be needed for splinting or casting, consider response to NSAID and examination
- Sedation for fracture reduction and Beir block
- Multimodal therapy
- Mixed evidence for effectiveness of: distraction, music, virtual reality, guided imagery, hypnosis, parent coaching, comfort positions, deep breathing, relaxation

Opioids are rarely needed after immobilization.

No evidence for effectiveness of preparation and information

Urinary catheterization

- Lidocaine 2% with syringe or "Urojet"
- Multimodal therapy
- Mixed evidence for effectiveness of: deep breathing, distraction, music, virtual reality, guided imagery, hypnosis, parent coaching, relaxation

No evidence for effectiveness of preparation and information.

Lacerations

Recommended interventions

Consider skin glue instead of sutures, if closure needed.

- LET (Lidocaine, Epinephrine, Tetracaine)
- Topical anesthetics
- Intradermal anesthetics
- Multimodal therapy
- Mixed evidence for effectiveness of: distraction, music, virtual reality, guided imagery, hypnosis, parent coaching, comfort positions, deep breathing, relaxation, massage

No evidence for effectiveness of preparation and information.

Avoid restraining the child.

If restraint anticipated or needed, use sedation instead.

Dressing change

- Minimize frequency
- Dressing should not be used to debride wound (wet-to-wet, never wet-to-dry)
- Consult certified wound nurse for non-painful dressing options
- Topical anesthetics
- Topical opioids
- Multimodal therapy
- Mixed evidence for effectiveness of: distraction, music, virtual reality, guided imagery, hypnosis, parent coaching, comfort positions, deep breathing, relaxation, massage

No evidence for effectiveness of preparation and information

Neonatal circumcision

Review ASPMN position statement and references

Recommended interventions

- Topical anesthetics
- Dorsal Penile block or Ring block
- Multimodal therapy
- Warmed cleansing solution
- Seated position or breastfeeding
- If not breastfeeding, sucrose or glucose 2 minutes before and during procedure
- Non-nutritive suck
- Music

Other commonly performed painful procedures?

Nitrous Oxide Or Sedation?

Nitrous Oxide

Sedation is beyond the scope of this curriculum, but the use of Nitrous Oxide for minimal procedural sedation may be a unique case.

It may be appropriate for:

- IV starts
- Urinary catheter insertions
- VCUGs
- Lumbar punctures
- Laceration repairs

In some states it is within Registered Nurses' scope of practice to deliver nitrous oxide as a single agent for minimal procedural sedation.

Advantages	Disadvantages
• Does not require extended NPO time • Can follow commands and participate in procedure • Mild analgesic • Amnestic • Quick recovery (3-5 minutes)	• Mild analgesic so concomitant use of topical anesthetics required for painful procedures • Not effective in some children • Not recommended for victims of abuse due to potential for flash-backs • Nausea and vomiting most common adverse effect (8% prevalence, increased with higher concentrations and longer NPO time)

In Summary…

Key Points

Having a pain treatment plan allows the team to work together better.

- There are short and long-term effects of unmanaged procedural pain in children.
- Managing procedural pain includes treating pain, anxiety (fear) and behavioral distress .
- Parents want to be involved and have a role in procedural pain management.
- Decreasing child distress can increase procedural success (fewer pokes).
- Consider Nitrous oxide or procedural sedation

Appendix

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