

Immunizing Children – Suggested Best Practice Tips for BC Community Pharmacists

This document has been adapted from the BC Centre for Disease Control (BCCDC) Chapter 2: Immunization, Appendix D – Reducing Immunization Injection Pain.

GENERAL CONSIDERATIONS

Certified pharmacists in British Columbia may administer an injection to a child 5 years and older; and may administer a drug by intranasal route to a child 2 years old and older.¹

Improving the immunization experience for children has the potential to improve patient satisfaction and increase immunization rates. Negative experiences have the potential to delay or withhold further vaccinations.

There are many strategies that pharmacists and parents/guardians can use before and during the immunization appointment to:

- Reduce pain and anxiety for the patient.
- Prevent development of needle fears.
- Promote patient satisfaction.
- Promote trust in pharmacists.
- Ensure a positive experience for the child and family.
- Prevent vaccine hesitancy.
- Help increase immunization rates.

A comprehensive approach to each immunization encounter includes, at a minimum:

- Use of effective strategies to prevent and reduce pain and anxiety.
- A comfortable environment.
- Preparation of the child and/or parent/guardian before the procedure.
- Presence of calm adults who can coach children during the immunization.
- A positive attitude, focused on the child, and interactive with the child throughout.

PRIOR TO THE APPOINTMENT

- Educate/provide resources to parents/guardians on strategies to prepare for an immunization:
 - For infants and young children: ImmunizeBC [Preparing for a positive experience](#).
 - For school-age children and teens: ImmunizeBC [Preparing for a positive experience](#).
 - HealthLinkBC [A Better Immunization Experience for your Child](#).
 - CANImmunize [Immunization Pain Management](#) (includes videos for parents/guardians).
 - [ImmunizeCanada](#) – information on immunizations for the public.
 - [CANImmunize app](#) – encourage individuals to record their immunizations.
- Advise parents to discuss the immunization procedure with their child >2 years of age, close to actual administration.
- Advise parents to use a matter of fact, calm and supportive approach. Use words that lessen anxiety e.g., you may feel pressure, squeezing or poking (not pain/hurt/sting).
 - E.g., you can say *“You need the vaccine to stay healthy. The medicine will be put in your arm with a needle. You will feel a quick poke.”*

¹ The College of Pharmacists of BC [HPA Bylaws Schedule F – Part 4 – Certified Practice – Drug Administration by Injection and Intranasal Route Standards, Limits and Conditions](#).

- Advise parents/guardians to not apologize before the immunization e.g., “I’m really sorry you have to go through this” – this is associated with increased stress in the child, since it cues the child to realize something unpleasant is about to happen.

AT THE APPOINTMENT

- Establish an environment that fosters trust and mutual respect.
- If parent/guardian presents with more than one child, immunize the most anxious ones first (usually the eldest).
- Provide privacy and prepare the immunization out of sight of the child. If the child asks to see the needle, explain you will show it after the procedure.
- Enquire about the child’s previous experience with needles – this information can be helpful in planning how to approach the immunization.
- Use strategies to minimize discomfort (see page 3 Strategies to Reduce Pain and Anxiety).

	Example language to use
<ul style="list-style-type: none"> • Acknowledge the child’s feelings and encourage parents to do the same. 	<ul style="list-style-type: none"> ✓ “You look worried” or “Let’s talk about some of things we can do to make this better for you.”
<ul style="list-style-type: none"> • Communicate with the child and parents/guardian during the immunization process. Important elements of information include: <ol style="list-style-type: none"> 1. What will be done (i.e. steps involved in the procedure). 2. How it will feel. 	<ul style="list-style-type: none"> ✓ Use words that are explanatory without evoking anxiety e.g. pressure, squeezing and poking. ✗ Not pain/hurt/sting/shot. ✓ Use honest statements e.g. “There may be a pinch and some pressure that will last a few seconds.” ✗ Do <u>not</u> use words that focus the child’s attention on the needle e.g. “It will be over soon, and you will be ok.” ✗ Do <u>not</u> give false reassurance and say “it won’t hurt” – this is ineffective at reducing pain and may lead to distrust between the child and pharmacist.
<ul style="list-style-type: none"> • Provide limited, realistic choices and let the child decide – this creates a setting where the child can maintain some personal control and contributes to an atmosphere of mutual respect. 	<ul style="list-style-type: none"> ✓ “Would you like to use your right or left arm?” or “Would you like to look at this book while I give you the vaccine?”
<ul style="list-style-type: none"> • Provide a signal, using neutral language, about the impending procedure – this helps prevent sudden movements and allows the patient to initiate coping strategies. 	<ul style="list-style-type: none"> ✓ “Here I go.” ✗ Not “here comes the sting.”
<ul style="list-style-type: none"> • It is appropriate for parents and pharmacist to briefly acknowledge child’s pain right after the needle. Use normal tone of voice. • Use other strategies e.g. distraction to help the child regulate more quickly. 	<ul style="list-style-type: none"> ✓ “It’s okay” or “I know it hurts”
<ul style="list-style-type: none"> • Pharmacists and parents to use distraction techniques e.g. talk about things that can focus the child’s attention on a fun event e.g. outing, home/school-activity. 	<ul style="list-style-type: none"> ✓ Use humour!



AFTER THE IMMUNIZATION

- Acknowledge the child's efforts and perseverance.
- Positive recognition after the immunization will help a child feel good about the skills they learned during the procedure.
- Counsel on any mild/normal reactions that might happen after the immunization e.g., fever within 24 to 48 hours, and steps to relieve symptoms e.g., acetaminophen, if appropriate.

STRATEGIES TO REDUCE PAIN AND ANXIETY

The following strategies are evidence-based and reflect best practice in 5 domains:

1. Procedural interventions (e.g., injection techniques, order of injections)
2. Physical interventions (e.g., positioning of child)
3. Pharmacological interventions (e.g., topical anesthetics)
4. Psychological interventions (e.g., distraction, verbal communication of information)
5. Process interventions (e.g., education of pharmacists, clients, and parents)

1. PROCEDURAL INTERVENTIONS (E.G., INJECTION TECHNIQUES, ORDER OF INJECTIONS)

Inject the most painful vaccine last

Inject the most painful vaccine last when administering multiple vaccine injections sequentially. Studies have indicated that when 2 vaccines were injected sequentially, injection of the least painful vaccine first not only reduced pain from the first injection, but also reduced pain from both injections.

Examples (brand-specific):

- Give INFANRIX hexa[®] and NEISVAC-C[®] before PREVNAR[®]13.
- Give PREVNAR[®]13 before MMR II[®].

There is limited evidence-based information regarding painfulness of many vaccines.

2. PHYSICAL INTERVENTIONS (E.G., POSITIONING OF CHILD)

Positioning

- Advise children to sit up during immunizations.
 - Do not have child in supine position, unless there is a history of fainting during or following immunization, in which case they should be supine.
- Parents may hold the young child on their lap in a seated or semi-seated position during immunization.
- Ensure the position is comfortable for both the child and parent, and the arm to be immunized is in an appropriate position.
- The age and developmental stage of the child are important considerations when assessing the appropriate use of "comforting restraint."





- A discussion of the strategies that will be used to reduce pain during the immunization is an important step for anxious children, but children may still need assistance to remain still.
- The situation in which a child is being forcibly restrained to receive an immunization presents an ethical dilemma. It is not ethical or compassionate, and could at times be unsafe, to force an individual to receive the immunization. Pharmacists should assess the situation and appropriateness of the restraint being provided.

3. PHARMACOLOGICAL INTERVENTIONS (E.G., TOPICAL ANESTHETICS)

Topical anesthetics have been well-studied and found to be safe and effective in reducing vaccine injection pain in individuals ≤ 12 years of age. There is moderate evidence supporting their use in individuals > 12 years of age.

Examples products that can be recommended for purchase include:

- Lidocaine/prilocaine (e.g. EMLA[®] patch or cream)
- Tetracaine (e.g., Ametop[™] gel)
- Lidocaine (e.g., Maxilene 4[™], Maxilene 5[®] cream)

Directions:

1. Refer to [page 11 BCCDC Table 1 Summary of considerations for use of topical anesthetics](#)
2. Ensure the patient or parent/guardian applies the product according to manufacturer's instructions (usually within 30-60 minutes before immunization).
3. After application, advisable to use a pen to trace edges of the product so the pharmacist can see where product was applied.
4. Possible side effect: transient local skin reactions (e.g., pallor and/or erythema).
 - This does not affect the effectiveness of the topical anesthetic.
 - Counsel parents that this reaction is not a local reaction to the vaccine.

Instructions for parents/guardians: HealthLinkBC [Numbing Creams and Patches for Immunizations](#).

4. PSYCHOLOGICAL INTERVENTIONS (E.G., DISTRACTION, VERBAL COMMUNICATION OF INFORMATION)

Pharmacist and/or parent distraction is an effective evidence-based strategy with all ages.

- **Verbal distraction** – coach parents to distract their child e.g. by talking, counting, discussing objects in room.
- **Young children ≥ 2 years of age** - include toys, bubbles, singing, directing them to something in the environment that may be of interest to them, video, computer screen, or hand-held device.
- **School-age** – toys, stories, videos, books, joking, music, counting, directing the child's attention to something in the environment and/or non-procedural talk, e.g., discuss something of interest and enjoyment for the child e.g. favourite toy, superheroes.
- **Adolescents** – games, videos, joking, music (personal headphones), non-procedural talk.
- **Breathing exercises +/- a toy, children ≥ 3 years of age**. Examples include:
 - Have child engage in slow, deep breathing/blowing out during immunization.
 - Have child blow a party blower, pinwheel, or bubbles.
 - Ask child to "show me how to blow out candles on a birthday cake."
- **Cold vibrating devices - children 3-17 years of age**. Distraction tools may include e.g., a vibrating device, with cold pack attached, applied to the site just above the injection site during immunization – this has demonstrated a positive effect on pain reduction e.g. [Buzzy[®]](#). Another tool is a vapocoolant (not to be used alone).

WHEN TO STOP THE IMMUNIZATION AND RE-EVALUATE

Example challenging situations:

1. Manage the time and set limits. If the child is visibly upset and cannot calm him/herself, acknowledge their effort and offer a rest period.
 - If there is no other alternative, reschedule the immunization.
2. Parent's behaviours e.g., threatening, bribing, shaming, or manipulating the child, may increase child's distress.
 - Offer empathy to the parent, state a neutral fact/principle and offer hope e.g., *"This must be frustrating for you. Immunizations are important but are not emergencies. I think we can work this out."*
 - If the child is extremely distressed, and you are uncomfortable with the behaviour of the parent towards the child, stop the immunization and re-evaluate.

It is the pharmacist's responsibility to know when to stop the immunization, re-evaluate and adjust the plan. This may include:

- Assessing the techniques that have been used to this point and determine if additional/different techniques may be more effective.
- Deferring the immunization temporarily.
- Making a plan with the parent regarding how/when they will return with the child.
- Consider with the parent the option of having another healthcare provider do the immunizations in a different setting.

If parent/guardian resists the above suggestions and insists upon having the child immunized that day, explain that as a healthcare provider you are bound by the code of ethics that prohibits you from providing care under these circumstances.

TECHNIQUES TO REDUCE THE RISK OF FAINTING (SYNCOPE)

To reduce the likelihood of fainting (and the possibility of injuries), consider the following measures to lower stress in those awaiting immunization:

- Seat every patient prior to immunization.
 - If child has history of fainting with previous immunization, have them lie down for the immunization if possible.
- Maintain a comfortably cool room temperature and if possible, plenty of fresh air.
- Avoid long line-ups in immunization clinics.
- Prepare vaccines out of view of child.
- Provide privacy during immunization.
- If child appears pale and displays signs of fainting pre-immunization:
 - advise them to lie down with legs elevated, if possible.
 - apply a cold wet cloth to their face.



Muscle tension

- Suggest muscle tension as an option for individuals ≥ 7 years of age with a history of fainting.
- Muscle tension has been demonstrated to be effective in preventing fainting.
- The purpose of muscle tension is to increase blood pressure and cerebral blood flow in the event of a vasovagal response associated with an immunization. Fainting during immunization is primarily attributed to a vasovagal response which is usually associated with an extreme fear of blood and needles.

Provide instructions prior to immunization:

1. It should begin before the immunization and continue for several minutes after the immunization or until the individual is no longer feeling prodromal signs of fainting.
2. Muscle tension may involve cyclically tensing and releasing a set of muscles repeatedly until the perceived sensation of fainting is reduced or hold the tension as long as possible or until symptoms of fainting diminish.
3. Examples include:
 - a. Leg tensing, leg crossing (i.e., crossing legs and tensing leg, buttock, abdominal muscles).
 - b. Arm tensing (i.e., tensing both arms by one hand gripping the other and abducting).
 - c. Hand grip (i.e., tightly gripping a ball or other object in dominant hand).

Other Resources:

- Reducing the Pain and Anxiety of Vaccination in Children <https://www.quebec.ca/en/health/advice-and-prevention/vaccination/reducing-pain-and-anxiety-of-vaccination-children/>