

2022-2023



# ANNUAL REPORT


Translating Emergency Knowledge for  
Kids (TREKK)



Find credible, easy to access resources for children's health emergencies.

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de notre rapport  
annuel 2022-2023

# About TREKK

Most acutely ill and injured children in Canada will first go to emergency departments that are not part of a children's hospital. Difficulties in getting the right resources and training are known barriers to providing the best possible and most consistent care in these settings. This has resulted in variable levels of emergency care for children throughout our country. TREKK launched in 2011 as a knowledge mobilization network through the Government of Canada's Networks of Centres of Excellence Knowledge Mobilization Initiative to address these critical knowledge gaps. We are a not-for-profit network that aims to improve emergency care for children across Canada.



Learn more about us at [trekk.ca](http://trekk.ca)

# Message from our Leadership Team

2022-23 continued to build our resiliency as the COVID-19 pandemic persisted. We proudly promoted and distributed new infographics and short videos for parents and families from our partners at [Translating Evidence in Child Health to Enhance Outcomes \(ECHO\)](#) and [Alberta Research Centre for Health Evidence \(ARCHE\)](#), including [COVID-19 and Parenting a Child Who May Have COVID](#), [COVID-19 and Vaccines for Children](#), and [COVID-19 and your Child's Social World](#). Over 217,000 people sought out [our YouTube channel](#) for reliable healthcare information throughout this past year.

We welcomed new team members to our administrative centre and Board of Directors (pg. 5). With the dedication and hard work of our staff, committee members, and content experts, we created or updated healthcare resources and tools on 8 topics ([Status Epilepticus](#), [Acute Otitis Media](#), [Procedural Pain](#), [Pain Treatment](#), [Severe Head Injury](#), [Intussusception](#), [Anaphylaxis](#), [Diabetic Ketoacidosis](#)). We have also been working hard to redesign our website to make it easier to find our resources. Along with the new website will come an updated logo and branding. Our new user- and mobile-friendly website is expected to launch at the end of 2023, so stay tuned for this exciting announcement.

We are proud to support families and healthcare professionals with free, easily accessible, evidence-informed resources and tools. We look forward to bringing you new resources in the coming year and sharing lessons learned. Together, we can improve emergency care for all children across Canada and beyond.



Doug Sinclair  
Board Chair



Terry Klassen  
Director



Lisa Hartling  
Co-Director



Mona Jabbour  
Co-Director



David Johnson  
Co-Director



Lisa Knisley  
Executive Director



Shannon Scott  
Co-Director

# Who We Are

## Administrative Team



Chelsea Bowkett  
Network Coordinator



Megan Bale-Nick  
Knowledge Broker



Mary-Anne Nurmi  
Knowledge Broker



Savanna Lubimiv  
(On Leave)  
Communications  
Coordinator



Mateja Carevic  
(On Leave)  
Knowledge Broker



Kristina Wakfer  
Interim  
Communications  
Coordinator

## 2022/23 Board Members

Dr. Richard Fleet, Dr. Terry Klassen, Dr. Doug Sinclair, Dallas Smith,  
Dr. Sharon Straus, Carrie Costello, Naomi Liu, Karen Thomson,  
Dr. Stephen Freedman, Dr. Peter Nickerson

Find out more  
about our  
Board  
Members here

## Thank You & Welcome!

We would like to thank Dr. Stephen Freedman of Alberta Children's Hospital and Dr. Peter Nickerson of the University of Manitoba for their invaluable time and support on our Board of Directors. They both stepped down from the Board in October 2022.

We would also like to welcome Dr. Brett Burstein from Montreal Children's Hospital and Pediatric Emergency Research Canada (PERC), as he joins the Board this year. Welcome to the team, Dr. Burstein!



Dr. Brett Burstein

Did you know we have over 100+ committee members and content experts who contribute their expertise to developing our resources? Find out more using the links below:

[See the full list of our Content Experts here](#)

[Knowledge Mobilization Advisory Committee Members](#)

[Steering Committee Members](#)

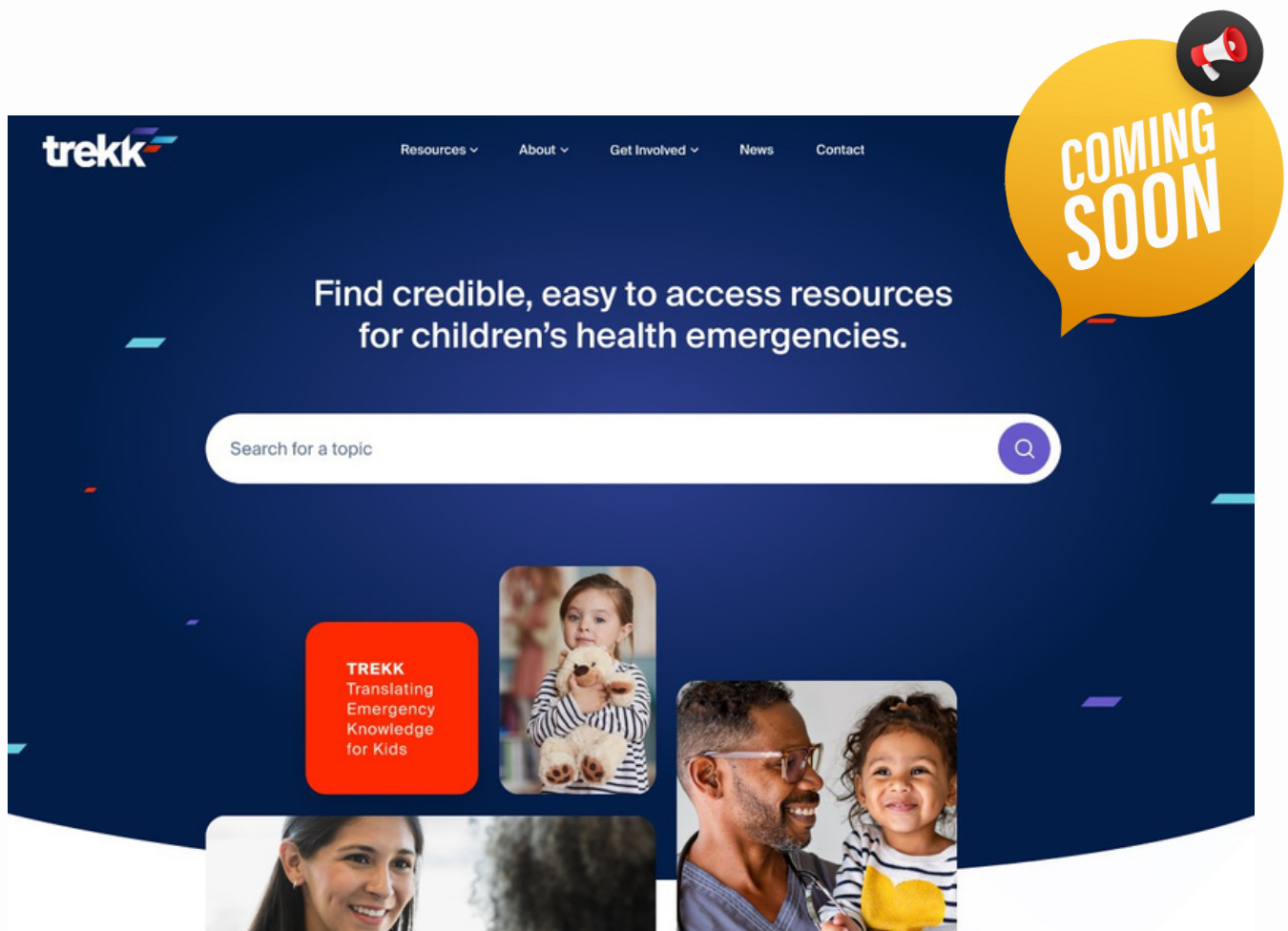
[Editorial Committee Members](#)



# Website Redesign

This year, we've been working with web design and branding agency, The Hatchery, to redesign the TREKK website and refresh our branding. This new website will feature a more user-friendly, intuitive experience, modern layout and design, and will be entirely mobile-friendly.

The new website and our updated logo and branding are scheduled to launch by the end of 2023. To help everyone have a seamless experience transitioning from the app to the mobile-friendly website, we will have a user guide available to demonstrate how to add a shortcut to your phone and continue to have a direct link to our resources.



# French Resources

## RECOMMANDATIONS DE BASE

### Anaphylaxie



L'anaphylaxie est une réaction d'hypersensibilité sévère, d'apparition rapide, et possiblement mortelle.<sup>1</sup> L'incidence de l'anaphylaxie est la plus élevée chez les enfants et les adolescents. Les trois principaux déclencheurs de l'anaphylaxie sont les aliments, les piqûres d'insectes, et les médicaments. Au Canada, l'allergie alimentaire représente environ une visite à l'urgence toutes les 10 minutes.<sup>2</sup> Chez l'enfant, certains aliments, soit les arachides, les noix, et le lait, déclenchent jusqu'à 80 % des réactions.<sup>3</sup>

Voir l'[Algorithme TREKK sur l'anaphylaxie](#) pour le traitement émergent et le dosage des médicaments.

## RECOMMANDATIONS DE BASE

### Traumatisme crânien sévère



L'enfant qui présente à l'urgence avec un **score  $\leq 8$**  sur l'Échelle de coma de Glasgow (GCS) ([bébé/enfant](#)) est considéré avoir un traumatisme crânien sévère, dont les lésions sont souvent visibles à la neuroimagerie. Si les blessures sont la principale cause de décès chez l'enfant d'âge  $> 1$  an, les traumatismes crâniens sont la cause de décès et d'invalidité la plus importante à tout âge.<sup>1</sup>

#### Considérations pédiatriques

## RECOMMANDATIONS DE BASE

### Invagination intestinale



L'invagination intestinale (ou intussusception) se produit lorsqu'un segment d'intestin pénètre à l'intérieur d'un segment adjacent de l'intestin, souvent par la valvule iléo-colique (la jonction entre l'intestin grêle et le côlon). Le processus occlut l'apport sanguin et pourrait évoluer en ischémie tissulaire, allant jusqu'à la nécrose/perforation. La cause est généralement idiopathique, mais pourrait être causée par différentes pathologies.

L'invagination est l'urgence abdominale la plus fréquente chez les enfants en bas âge. Dans la majorité des cas (80 %), l'enfant est âgé de moins de 2 ans, le plus fréquemment d'âge 5-10 mois.<sup>1</sup> Très rarement, l'invagination survient dans les 7 jours suivant le vaccin contre le rotavirus (1-3 cas par 100,000 vaccinations).<sup>2</sup>

We sat down with Dr. Laurence Baril to learn more about the importance and process of having all TREKK resources translated into French. Dr. Laurence Baril is an emergency physician at Centre Hospitalier de l'Université Laval in Quebec. Early in Dr. Baril's life, emergency medicine sparked her interest. From a young age, she had the chance to have great mentors who taught her about the field of emergency medicine. She took a special interest in medicine because of the mix of human interaction and science.

The dedication Dr. Baril has for healthcare moved her to pursue her one-year fellowship in medical education at Queens University in Kingston, Ontario. Her desire for medical transparency and the emphasis she puts on the importance of continued research and development for better resources are directly reflected in the work she does for TREKK. The passion she has for creating and teaching comes from her devotion to becoming a better physician herself. For Dr. Baril, teaching and sharing knowledge are essential components of providing high-quality healthcare. By imparting knowledge to other healthcare providers, they can better understand the patient's needs and provide both medical and emotional support.

# French Resources



**Dr. Laurence Baril**



**Dr. Matthieu Vincent**



**Dr. Ariane Boutin**

Healthcare providers from hospitals across Canada access TREKK resources, therefore it would be inequitable if these resources weren't accessible to the French-speaking communities. This is where Dr. Laurence Baril, along with Dr. Matthieu Vincent and Dr. Ariane Boutin, both of Centre Hospitalier Universitaire Sainte-Justine Montreal, lend their expertise. They review each professionally translated resource to ensure it includes language that is actively used by clinicians and with patients and families.

Trouvez la  
version  
française de ce  
rapport ici

With the right funding, Dr. Baril would like to get more practitioners involved in the French translation process. She would also travel to emergency departments to share TREKK tools, provide education sessions to ensure clarity and gather feedback on use to inform improvements.

We extend our sincerest thanks to Drs. Baril, Vincent, and Boutin for their invaluable contributions to ensuring our resources are available to French-speaking clinicians. Their dedication and expertise have undoubtedly made a significant and appreciated impact to TREKK. Thank you for your hard work and commitment to improving healthcare.



# Getting Ready for Respiratory Season

Respiratory season is here and we have updated a series of resources for healthcare professionals. Stay tuned for new resources coming soon on pneumonia and respiratory distress. [Sign up for our email updates](#) to be notified of their release.

## BOTTOM LINE RECOMMENDATIONS



### Asthma Exacerbations

For Children Aged  $\geq 12$  months

Approximately one-third of children with asthma presenting to the emergency department (ED) have moderate respiratory distress, and less than 5% will have a severe exacerbation. Refer to TREKK's [Severe Asthma Exacerbation Algorithm](#) for emergent management. There are some differences between provincial asthma pathways with regards to PRAM scores and treatment. Pathways are hyperlinked below and provide additional management information:

[Alberta](#) [British Columbia](#) [Ontario](#) [Quebec \(Sainte-Justine\)](#)

#### Classifying asthma severity

- » Use of the [Pediatric Respiratory Assessment Measure \(PRAM\)](#) to classify severity of respiratory distress in children with asthma exacerbations improves use of evidence-based medications and lowers hospitalization rates.<sup>1</sup>
- » Regardless of their PRAM score, children with lethargy, cyanosis, decreasing respiratory effort and/or rising pCO<sub>2</sub> should be considered to have **impending respiratory failure**.

You can view our [Asthma Bottom Line Recommendations](#) here.

Thank you to content experts, Dr. David Johnson (Alberta Children's Hospital) and Dr. Jennifer Turnbull (McGill & Montreal Children's Hospital).

## BOTTOM LINE RECOMMENDATIONS



### Bronchiolitis

Bronchiolitis is a common viral illness. It is usually caused by Respiratory Syncytial Virus (RSV) and typically occurs during the late fall and winter months. Children less than 2 years of age are most affected, with the largest burden of illness being in infants less than 12 months of age.

**The illness is characterized by** acute inflammation in the airways, edema & necrosis of epithelial cells lining the small airways, bronchospasm, and increased mucus production.

**Clinical signs and symptoms include** coryza, cough, wheezing, crackles, increased respiratory effort, and fever.

**Patient-level risk factors for severe bronchiolitis** include less than 2 months of age, history of prematurity, and presence of underlying cardio-respiratory disease or immunodeficiency.<sup>1</sup>

#### Diagnosis

- » Bronchiolitis is a clinical diagnosis based on the patient's history and physical exam.
- » Typically made for a first episode of wheezing in children less than 24 months of age in winter months.
- » Routine laboratory tests and chest x-rays are **NOT** helpful in diagnosing or managing bronchiolitis; use of chest x-rays is associated with inappropriate use of antibiotics.<sup>2</sup>
- » Viral testing by PCR should **only** be performed for cohorting infants admitted to hospital. Consider rapid influenza testing for high-risk patients who may benefit from antiviral treatment.<sup>3</sup> COVID-19 viral testing should follow local public health policies.
- » Refer to [TREKK's Fever in Young Infants Recommendations](#), for infants 0-60 days with febrile bronchiolitis.

You can view our [Bronchiolitis Bottom Line Recommendations](#) here.

Thank you to content experts, Dr. Amy Plint (Children's Hospital of Eastern Canada (CHEO) & University of Ottawa) and Dr. Gabrielle Freire (The Hospital for Sick Children (SickKids) and University of Toronto).

## BOTTOM LINE RECOMMENDATIONS



### Croup

Croup is the most common cause of upper airway obstruction in children. It is characterized by acute onset of barking cough +/- stridor. The typical age of presentation is between 6 months and 5 years with a peak around 2 years. Consider other causes of upper airway obstruction such as bacterial tracheitis, epiglottitis and retropharyngeal abscess in children presenting with severe symptoms and a transient or lack of response to croup treatment.

- » X-rays are rarely necessary to confirm the diagnosis of croup.
- » Because croup symptoms are triggered by a viral infection, antibiotics are **not** effective.
- » A single dose of **dexamethasone** 0.15 to 0.6 mg/kg (MAX 12 mg/dose) PO should be given to **ALL** children who present to the emergency department (ED) with croup.
- » Minimize interaction and place the child in a position of comfort (e.g., caregiver's lap), as agitation can precipitate significant respiratory distress.

You can view our [Croup Bottom Line Recommendations](#) here.

Thank you to content experts, Dr. Georgina Eagleson (McGill & Montreal Children's Hospital), Dr. David Johnson (Alberta Children's Hospital), and Dr. Jennifer Turnbull (McGill & Montreal Children's Hospital).

# New Resources & Tools for Healthcare Professionals

Did you know all our resources are peer-reviewed by a national Editorial Committee made up of pediatric emergency physicians, nurses, pharmacists, and researchers? Our resource development process also includes an evidence review, under the leadership of Dr. Lisa Hartling at the Alberta Research Centre for Health Evidence (ARCHE).

Thanks to the support from pharmacists Danica Irwin at CHEO and Tracy Furst at the HSC Winnipeg Children's for their time, expertise, and hard work in developing our drug dosing binder. We would also like to thank Dr. Mona Jabbour at CHEO and Dr. Darcy Beer at HSC Winnipeg Children's Hospital for their continued support and guidance for this project.

TREKK has recently updated our Drug Dosing Binder. Please email [trekk@chrim.ca](mailto:trekk@chrim.ca) for more information.

Most of our resources are available in French. Head to [trekk.ca](http://trekk.ca) to see more.

View all healthcare professionals' resources on our website [here](#).



# Updated Topics

Thank you to all our content experts who contributed to new and updated resources in 2022/2023

## Status Epilepticus

Dr. Katherine Muir & Dr. Sarah Buttle (CHEO); Dr. Manish Shah (Texas Children's Hospital)

## Acute Otitis Media

Dr. Nicole Le Saux (CHEO)

## Procedural Pain & Pain Treatment

Dr. Samina Ali (University of Alberta), Dr. Amy Drendel (Children's Wisconsin Emergency Department Trauma Center, Medical College of Wisconsin), Dr. Corrie Chumpitazi (Baylor College of Medicine, Texas Children's Hospital), Dr. Naveen Poonai (Schulich School of Medicine & Dentistry, Child Health Research Institute)

## Severe Head Injury

Dr. Suzanne Beno (The Hospital for Sick Children, University of Toronto), Dr. Joe Nemeth (McGill University, Montreal General Hospital, Montreal Children's Hospital)

## Intussusception

Dr. Blake Bulloch (Phoenix Children's Hospital), Dr. Zebulon Timmons (Children's Nebraska)

## Anaphylaxis

Dr. Waleed Alqurashi (CHEO), Dr. Anne Ellis (Kingston General Hospital)

## Diabetic Ketoacidosis

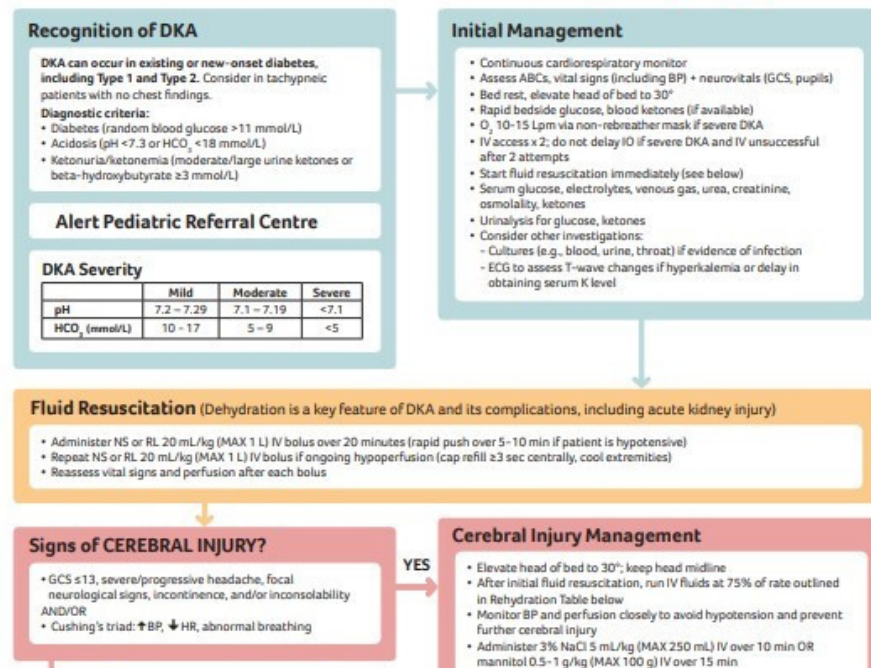
Dr. Sarah Reid (CHEO, University of Ottawa), Dr. Karen Gripp (HSC Winnipeg Children's, University of Manitoba), Dr. Sarah Lawrence (CHEO, University of Ottawa)

# Resource Spotlight

## Diabetic Ketoacidosis

We've updated our [Diabetic Ketoacidosis \(DKA\) resources](#) to align with new international and Canadian guidelines and to create clear, concise resources for emergency healthcare providers.

### Pediatric Diabetic KetoAcidosis (DKA) Algorithm



#### Key updates:

- Dehydration is a key component of DKA pathophysiology
- All patients with DKA should receive a 20 mL/kg IV bolus of normal saline or Ringer's lactate over 20 minutes at the initiation of treatment. This can be repeated if the patient remains hypoperfused
- Ongoing fluids in DKA should be weight-based and account for the significant fluid deficit, with an increased maximum of 500 mL/hr
- Every patient in DKA is at risk of cerebral injury before and during treatment, especially if DKA is more severe. Assess every patient with DKA for signs of cerebral injury and follow the TREKK DKA algorithm

# Resource Spotlight

## Diabetic Ketoacidosis

Dr. Sarah Reid and Dr. Karen Gripp led the update of our [DKA resources](#) to reflect new guidelines and highlight the significant differences between the treatment of DKA in children versus adults. They aimed to create resources that would help emergency healthcare providers feel more confident in their treatment methods and care plans.

Dr. Sarah Reid holds the position of Assistant Professor at the University of Ottawa, serving in both the Departments of Pediatrics and Emergency Medicine, and is a Pediatric Emergency Physician at the Children's Hospital of Eastern Canada (CHEO).



"After years of careful fluid restriction in children with DKA, this is a significant change in the approach. We now recognize that dehydration plays a major role in the pathophysiology of this condition."

Dr. Karen Gripp is a Pediatric Emergency Physician, Associate Professor at the University of Manitoba, and Section Head of Emergency Medicine at the Health Sciences Centre Children's Hospital (HSC Children's).



"We are always learning more about the best way of treating DKA, and sometimes very small changes can make a big difference. Patients with DKA need a great deal of fluid replacement and we can now give them what they need without worrying about making their condition worse."



# New Resources & Tools for Parents & Families

TREKK keeps parents and families informed of the latest evidence and information when it comes to caring for children. We collaborate with multiple organizations, researchers, healthcare professionals and parents across Canada to create useful and relevant resources to support worried families.

In December 2022, our partners at [Translating Evidence in Child Health to Enhance Outcomes \(ECHO\)](#) and [Alberta Research Centre for Health Evidence \(ARCHE\)](#) released [3 new infographics](#) and [3 short videos for parents and families about children and the COVID-19 pandemic.](#)

These resources include infographics and videos on:

- [COVID-19 and Parenting a Child Who May Have COVID](#)
- [COVID-19 and Vaccines for Children](#)
- [COVID-19 and your Child's Social World](#)

These resources were funded by the Canadian Institutes of Health Research and the Stollery Children's Hospital Foundation through the Women and Children's Health Research Institute.

TREKK was proud to help ECHO and ARCHE distribute and promote these helpful and important resources to our audiences. You can find these resources [on our website](#) and [on ECHO's website.](#)



# New Resources & Tools for Parents & Families

Dr. Lisa Hartling ([Alberta Research Centre for Health Evidence \(ARCHE\)](#)) and Dr. Shannon Scott ([Translating Evidence in Child Health to Enhance Outcomes \(ECHO\)](#)) have been working diligently alongside parent and family advisory groups to create resources for parents to help them better understand common childhood conditions. They have led the development of nine new tools in 2022-23 (3 infographics and 3 short videos on [COVID-19](#); an infographic and short video on [fractures](#); and an infographic on [chronic pain](#)). In addition, they updated 2 tools (a short video and an infographic) on [acute otitis media](#) to reflect the latest evidence and an updated infographic about [visiting the emergency department](#).

Learn more about their research and parent tools [here](#). To read their publications on the co-creation of parent tools, developing parent advisory groups, and the cultural adaptations of parent tools, [visit the ECHO website](#).



Dr. Shannon Scott



Dr. Lisa Hartling

Our parent videos on the TREKK YouTube channel were viewed [over 217,999 times](#) in 2022/2023.

Check out the TREKK YouTube channel [here](#).

Help us share these tools with your patients!

We have a range of available resources, including posters and magnets, so please get in touch with TREKK's administrative office to order these tools.



# Spotlight on our Atlantic Canada Team

The importance of and need for resources being available to both families and non-pediatric clinicians is what motivates many to be part of the TREKK network. Eleanor Fitzpatrick has been an enthusiastic member of the TREKK network since the beginning. During her years as a pediatric emergency nurse, Eleanor often encountered non-pediatric emergency clinicians who were fearful of looking after sick children. She views TREKK as an important bridge to help alleviate those fears and provide comprehensive resources to aid in caring for pediatric patients in the Emergency Department (ED).



**Dr. Shannon MacPhee**



**Eleanor Fitzpatrick**

To that end, Eleanor (TREKK Atlantic Coordinator) and Dr. Shannon MacPhee (TREKK Atlantic Nodal Leader) have taken IWK Pediatric ED staff to regional EDs throughout the Maritimes. There they have provided a day of teaching (including simulations) and introduced clinicians to TREKK and its resources. Through a generous donation, they created three parent and family videos that are available in four languages - English, French, Arabic, and Mi'kmaq:

- [Hand, Foot and Mouth Disease](#)
- [Procedural Sedation](#)
- [Febrile Seizure](#)

# Spotlight on our Atlantic Canada Team

Highly motivated by the recent deaths of three university students from meningitis in Nova Scotia, including the [tragic death of 19-year-old Kai Matthews](#), the TREKK Atlantic team is creating a 'pediatric package' of resources on [meningitis](#) for clinicians, families and the community. Resources include tools that will assist clinicians in recognizing early signs of meningitis, an evidence-based treatment pathway, bottom line recommendations, a podcast and learning modules. Resources for the community will include general information about meningitis in the community and for families in the ED, and a video to explain what to expect if their child is being treated for suspected meningitis.

Throughout this project, the [IWK Foundation](#) and [thistledown Foundation](#) have been strong supporters of developing and improving healthcare resources for recognizing and treating meningitis. The generous gift from thistledown Foundation that was facilitated through the IWK Foundation has been instrumental in the creation of these vital resources. We would like to acknowledge and thank the IWK Foundation and thistledown Foundation for their continued support of this important work.

## BOTTOM LINE RECOMMENDATIONS

# Meningitis



Most cases of childhood meningitis are caused by an enterovirus. Bacterial meningitis is less common, with 90% of cases occurring in children less than 5 years of age. Bacterial meningitis has a mortality rate of 20% in infants and 2% in children; neurologic sequelae occur in approximately one-third of children who survive their infection. Early diagnosis and treatment of bacterial meningitis is associated with better outcomes. Viral meningitis is a diagnosis of exclusion.

- » If vaccinations are incomplete, children are at higher risk of *N. meningitidis*, *S. pneumoniae* and *H. influenzae*.
- » Consider Lyme meningitis (in an endemic area) if there is a history of tick exposure, erythema migrans or a facial palsy, though these symptoms are not always present.
- » Parechovirus, herpes simplex, varicella-zoster and arboviruses are more frequently associated with encephalitis.

### Clinical Features



Making the diagnosis of meningitis can be difficult, especially in infants. The symptoms of meningitis can look similar to those of viral illnesses.

- » **Infants:** Fever or hypothermia may be the only symptoms in neonates, progressive lethargy, irritability (often worse with handling), inconsolable crying, bulging fontanelle, poor feeding, hyper/hypotonia, vomiting, diarrhea, and/or seizures.
- » **Children/Adolescents:** The classic triad of fever, neck stiffness and headache is found in **less than half of meningitis cases** in children/adolescents.
  - » Non-specific symptoms as in infants (above), headache, altered LOC, photophobia, and/or nausea.
  - » Signs include neck stiffness (likelihood ratio (LR) for confirmed meningitis 4.00 [2.6–6.3]), Kernig's sign (LR 3.50 [2.1–5.7]) and Brudzinski's sign (LR 2.50 [1.8–3.6]).<sup>2</sup> The absence of meningeal signs **does not** exclude meningitis.

# Research Projects

## Knowledge to Action in Pediatric Emergency Care during the COVID-19 Pandemic



This study, funded by the [Canadian Institutes of Health Research](#), brings together world-leading child health researchers, parents, and emergency healthcare providers to share the latest information and wider impacts of COVID-19.

Qualitative and survey methods are being used to learn more about the information needs and preferences of emergency healthcare providers. Through this study we have updated six resources ([Bronchiolitis](#), [Croup](#), [Diabetic Ketoacidosis](#), [Asthma](#), [Aerosol Generating Medical Procedure](#), and [COVID-19](#)) and are developing four new resources ([Respiratory Distress](#), [Pneumonia](#), [Eating Disorders](#) and [Anxiety Disorders](#)).

A selection of the updated and new resources are being tested through online surveys and interviews to gain insight into how healthcare providers are using them.

**FACT SHEET**  
 Intended for emergency department healthcare providers

**Aerosol Generating Medical Procedures**
May 2023

**What is an Aerosol Generating Medical Procedure (AGMP)?**

Aerosol Generating Medical Procedures (AGMPs) are procedures that can generate aerosols when an infected person's airway is manipulated.<sup>1</sup> The risk of viral transmission (including SARS-CoV-2) during AGMPs is likely increased as a larger burden of respiratory aerosols are either generated from the infected person or the virus is spread over a greater distance than would occur with natural dispersion patterns.<sup>2</sup>

**What procedures constitute an AGMP?**

Currently, there is some debate in the literature as to what constitutes an AGMP. Much of the existing knowledge comes from studies during the Severe Acute Respiratory Syndrome (SARS), H1N1, and SARS-CoV-2 (Covid-19) viral outbreaks or through experimental laboratory studies. Current evidence continues to evolve.

**BOTTOM LINE RECOMMENDATIONS**

**Diabetic Ketoacidosis (DKA)**

Diabetic ketoacidosis (DKA) is a serious complication of new-onset or existing Type 1 or Type 2 diabetes. Dehydration and metabolic derangements associated with DKA are treated with liberal fluid resuscitation, insulin infusion, and close monitoring of neurological, metabolic, and fluid status. Episodes of pediatric DKA **must** be treated according to a pediatric-specific protocol (refer to [TREKK's Pediatric DKA Algorithm](#)) in close communication with a pediatric diabetes specialist.

**Make the diagnosis and determine severity**

- » Diabetes (either new-onset or existing): random blood glucose of >11 mmol/L **AND**
- » Acidosis: pH <7.3 or HCO<sub>3</sub> <18 mmol/L on venous or capillary blood gas **AND**
- » Ketonuria/ketoneuria: moderate/large urine ketones or serum beta-hydroxybutyrate ≥3 mmol/L

	DKA Severity		
	Mild	Moderate	Severe
pH	7.2-7.29	7.1-7.19	<7.1
HCO <sub>3</sub> (mmol/L)	10-17	5-9	<5

Parents and youth have also provided invaluable insight into what is important for healthcare providers to communicate when treating children and youth.

We want to help emergency healthcare providers feel better prepared to give the best possible care to children. Study results will be available over the coming year.



# Research Projects

## Pediatric Emergency Readiness

Dr. Aregbesola (University of Manitoba) is leading a study team that is working with emergency departments to assess and improve their level of pediatric readiness, which will include improving access to TREKK tools and resources. A 17-site Randomized Controlled Trial has commenced in Manitoba.

Learn more about the study [here](#).

### Manitoba Métis Federation



We are proud to partner with the Manitoba Métis Federation on a project to support Red River Métis families' access to meaningful and appropriate materials when seeking emergency care for their children. We have spoken with Red River Métis parents and Elders in Manitoba to learn about their child health information needs and preferences. Together, we will be adapting some of our existing parent tools to better meet their needs.

More information can be found in our scoping review, published in BMJ Open. Our findings will also inform the CIHR-funded Cultural Adaptations Methods Working Group (led by Drs. Sarah Elliot, Lisa Hartling and Shannon Scott at the University of Alberta).

### POPCORN - Pediatric Outcome imProvement through COordination of Research Networks



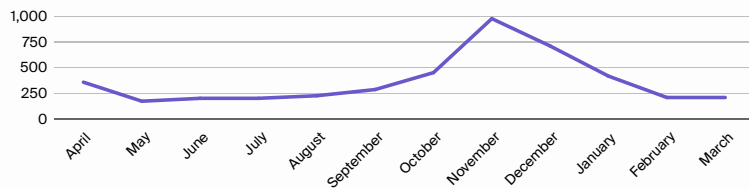
## POPCORN

POPCORN brings together researchers, clinicians, decision-makers, and patient partners to form a pan-Canadian pediatric research network and answer important questions in child health.

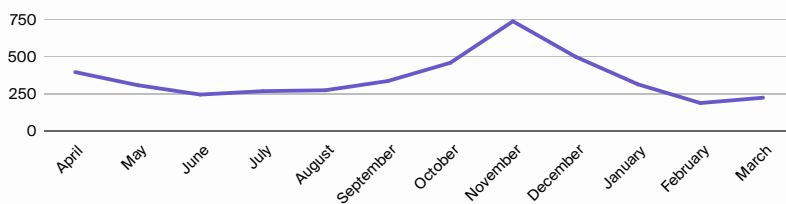
We are proud to be part of POPCORN and lead its knowledge mobilization (KM) pillar. For the past year, the KM pillar has been working in collaboration with the patient engagement team, knowledge users (e.g. Public Health Agency of Canada (PHAC)), project leads, and coordinating centre (Maternal Infant Child and Youth Research Network (MICRYN)) to establish a network that can respond rapidly to health emergencies and pandemics. We are developing a communications plan to connect researchers and knowledge users (patient partners and decision-makers) to identify research priorities, establish research questions, interpret results, and share study findings.

While created in response to COVID-19, the platform will provide the infrastructure to prepare for future pandemics. For more information, please contact [POPCORN](#).

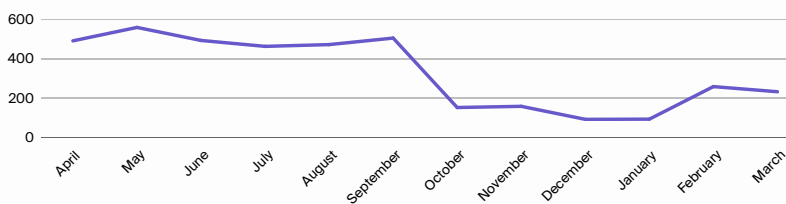
# Top Downloaded Resources in 2022-23



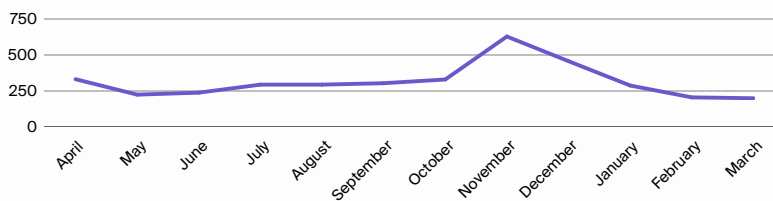
**+4400 downloads**  
**Bronchiolitis**  
**Bottom Line Recommendations**



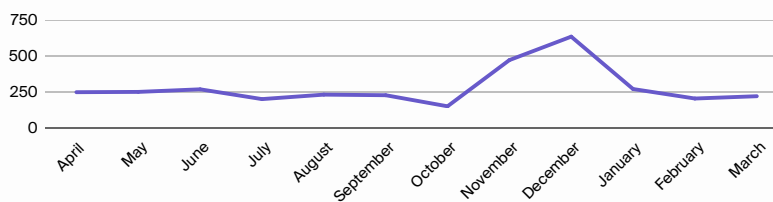
**+4200 downloads**  
**Croup**  
**Bottom Line Recommendations**



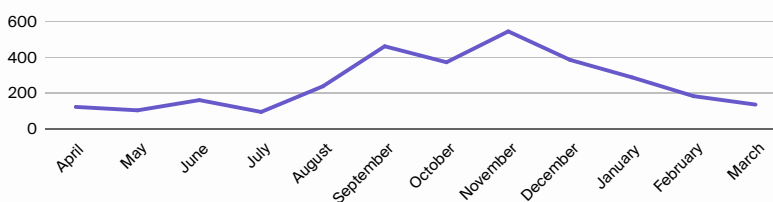
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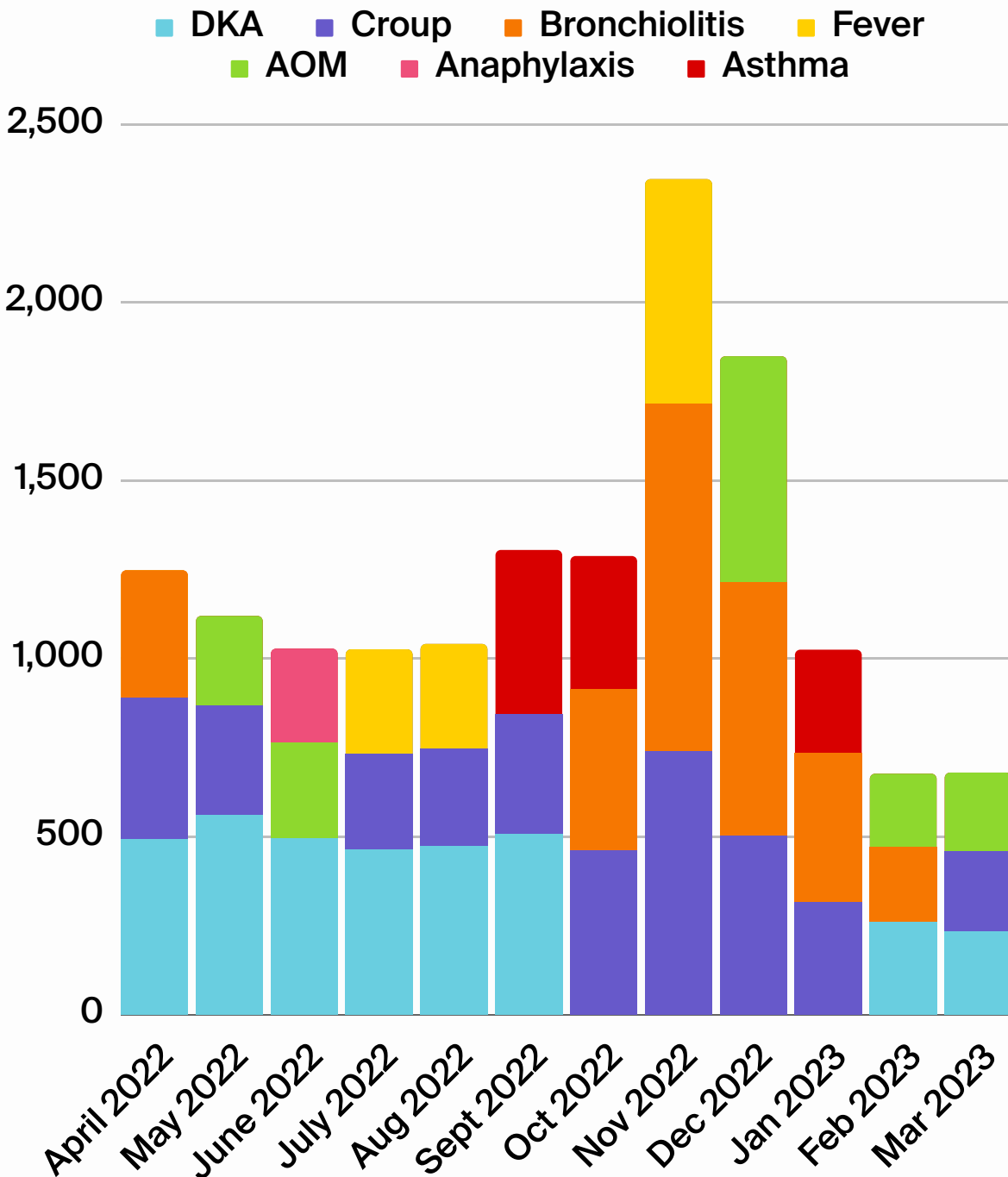


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