



# ABSTRACTS IN URGENT CARE

- Language Barriers and Treating Children
- Ibuprofen and Pediatric Ankle Sprains
- Facial Palsy and Leukemia
- Fentanyl and Midazolam for Younger Patients

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- Are Hypotonic Fluids Safer in Acutely Ill Children?
- Comparing Symptoms of COVID-19 and Flu
- Examining COVID-19 in Children
- Pandemic Resource Limitations—and Burnout

## Extra Care Needed when Dealing with Families where English Use Is Limited

- **Key point:** Children of parents with limited comfort with English (LCE) are twice as likely to suffer adverse medical events during interactions with medical teams. Understanding this issue will help clinicians take the steps necessary to avoid pitfalls and bridge any language barriers that may exist.
- **Citation:** Khan A, Yin HS, Brach C, et al. Association between parent comfort with English and adverse events among hospitalized children. *JAMA Pediatr.* 2020;174(12):e203215.
- **Relevance:** Children with parents who have LCE have been noted to have an increased incidence of adverse events during hospitalization.
- **Study summary:** This was a multicentered prospective cohort study involving pediatric inpatient units of seven North American teaching hospitals between December 2014 and January 2017. Parents who primarily spoke Arabic, Chinese, English, or Spanish were included as they represented the most commonly spoken languages across the study sites. The authors analyzed 2,750 admissions during which 217 adverse events (13.0 per 100 admissions) were noted, including 142 preventable adverse events (8.5 per 100 admissions). Children of parents with LCE had twice the likelihood of experiencing an adverse event compared with children of parents comfortable with English, despite the availability of interpreter services. Other factors acknowledged by the authors contributing to

the increased adverse event risk in children whose parents had LCE included systemic racism, implicit bias, microaggressions, immigration status, mistrust, and marginalization.

- **Limitation:** The study was conducted in academic teaching institutions, which may limit generalizability. The health literacy of the parents was not considered in this study. ■

## PRN Is as Good as Regular Ibuprofen in the Treatment of Acute Ankle Sprains in Children

- **Key point:** There is no additional benefit to administering ibuprofen on a schedule compared with as-needed (PRN) dosing in the treatment of acute ankle sprains in children.
- **Citation:** Lim R, Sangha G, Lepore N, et al. Comparison of regularly scheduled ibuprofen versus 'pro re nata' for ankle sprains in children treated in the emergency department: a randomized controlled trial. *Pediatr Emerg Care.* 2020;36(12):559-563.
- **Relevance:** The knowledge of the best schedule for administering anti-inflammatory medication in children who sustain ankle sprains will help inform clinicians treating patients and parents with the condition.
- **Study summary:** This was a prospective, randomized, single-blinded trial involving a sample of children with acute ankle sprain presenting to a dedicated pediatric emergency department based in Ontario, Canada. Patients were taken through the initial pain scoring system and followed up on 4 days later via telephone to assess recovery and any ongoing pain and disability. The authors' findings were based on 99 patients who completed the 4-day follow-up. No significant difference was found in levels of ankle pain between

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groups (scheduled vs PRN ibuprofen). There was also no significant difference in the degree of disability between the groups assessed. There were more reports of adverse effects in the group receiving scheduled dosing, although this was not statistically significant, with the most common reported adverse effects being nausea and abdominal pain.

- **Limitation:** There was a potential for selection bias as recruitment was predicated on the availability of the research assistant. The short follow-up schedule of 4 days does not take into consideration potential longer-term benefits and return to full activities of the participants. ■

### Consider Leukemia as a Potential Cause for Facial Palsy in Children

- **Key point:** Consider a complete blood count (CBC) as part of the routine work-up for children presenting with peripheral facial palsy as a method for screening for leukemia.
- **Citation:** Babl FE, Kochar A, Osborn M, et al. Risk of leukemia in children with peripheral facial palsy. *Ann Emerg Med.* 2020 Aug 9; 50:196-0644(20)30491-1.
- **Relevance:** Understanding the signs of childhood leukemia helps in the identification of the condition and allows for appropriate further management to be undertaken without delay.
- **Study summary:** This is an early subset analysis from an ongoing study which is a triple-blinded, randomized, placebo-controlled trial of prednisolone for the treatment of Bell’s palsy in children (Bell’s Palsy in Children trial) at 11 EDs in Australia and New Zealand. In the initial study, a retrospective review of charts revealed that a CBC was only obtained in 16% of patients who presented to the ED with facial palsy without any other cause identified. The study protocol included a mandatory CBC as part of the work-up. Since the study began, five of the 644 patients presenting with isolated facial palsy were found to have leukemia. Of those, four did not have any prior history of leukemia. The authors therefore conclude, from this early subset analysis, that in children with acute-onset peripheral facial palsy leukemia should be considered in addition to ear pathology-related diagnoses.

- **Limitation:** Given this is a subset analysis of an ongoing research project, this finding may be related to random sampling error, but still merits notice. ■

### Safe Use of Intranasal Fentanyl and Midazolam in UC

- **Key point:** Intranasal (IN) administration of fentanyl and midazolam can be given safely (at appropriate doses) to treat anxiety and pain in children in urgent care centers.
- **Citation:** Williams JM, Schuman S, Regen R, et al. Intranasal fentanyl and midazolam for procedural analgesia and anxiolysis in pediatric urgent care centers. *Pediatr Emerg Care.* 2020 Sep;36(9):e494-e499.
- **Relevance:** The use of IN analgesia and anxiolysis can allow clinicians to provide care for more children in urgent care, avoiding unnecessary referrals to the ED.
- **Study summary:** This was a retrospective study investigating the use of IN fentanyl and midazolam at an urgent care center located within Le Bonheur Children’s Hospital (LBCH) and two affiliated off-site UC centers in Memphis, TN. The authors assessed 490 patients, with 143 patients receiving IN fentanyl alone, 92 receiving IN midazolam alone, and 255 receiving both. Lacerations and incision and drainage were the primary procedures that required IN medication use in this study. The majority of patients undergoing laceration repair were administered a combination of midazolam and fentanyl (69% of 191 patients). The other procedures where IN medication was administered included burn wound care; casting, splint, or sling placement; eye irrigation; foreign body removal; joint reduction; surgical dressing changes; suture or staple removal; and tooth extraction. There were no major adverse drug reactions noted with the administration of the IN medication or with the administration of IN midazolam in combination with an oral opioid at weight-appropriate dosing.

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- **Limitation:** Minor adverse reactions were not routinely documented within the clinical system of the organization and therefore not able to be considered in this study. ■

### Hypotonic Fluids Appear to Be Safer in Acutely Ill Children

- **Key point:** Isotonic intravenous (IV) fluid administration in acutely ill children may result in significantly higher risk of developing electrolyte disturbances. Care and ongoing monitoring should be taken when administering such fluids to patients.
- **Citation:** Lehtiranta S, Honkila M, Kallio M, et al. Risk of electrolyte disorders in acutely ill children receiving commercially available plasma-like isotonic fluids: a randomized clinical trial. *JAMA Pediatr.* Online ahead of print October 26, 2020.
- **Relevance:** There has been a recent shift in recommendations by the American Academy of Pediatrics regarding isotonic IV fluid administration in children. However, there is little evidence on the outcomes associated with this change. This is one of the first studies to address this question.
- **Study summary:** This prespecified, unblinded, randomized, pragmatic clinical trial was conducted at the pediatric ED of Oulu University Hospital in Finland. Participants were between 6 months and 12 years of age, requiring hospital admission and deemed to require IV fluids by the treating physician. Patients were randomly assigned in a 1:1 ratio to receive isotonic or moderately hypotonic fluid therapy. The isotonic fluid was a commercially available product containing contained 140 mmol/L of sodium in 5% dextrose, 5 mmol/L of potassium, 1.5 mmol/L of magnesium, 98 mmol/L of chloride, 23 mmol/L of acetate, and 23 mmol/L of gluconate while the moderately hypotonic solution contained 80 mmol/L of sodium chloride and 20 mmol/L of potassium chloride in 5% dextrose based on the existing recommendations in pediatric textbooks. The authors found that 61 out of 308 patients (20%) in the isotonic group had clinically significant electrolyte disorders compared with nine out of 304 (2.9%) patients in the hypotonic group. Likewise, there was a higher rate of severe hypokalemia in the isotonic group (2.6%) compared with the modified group (0.9%). Electrolyte disorders were not prevented by the open study design, which allowed physicians to change fluid therapy during hospitalization. The length of stay in hospital did not differ between the treatment groups.
- **Limitation:** This was a single-center study based in Finland, which may not have the same heterogeneous population base as elsewhere in the world. The statistical power of the

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study was insufficient to assess mortality and neurologic sequelae. ■

### COVID-19 Literature Reviews

#### Comparing Symptoms of COVID-19 and Seasonal Influenza A and B in U.S. Children

- **Key point:** Children with COVID-19 and influenza do have similar presenting symptoms of fever and cough. However, patients with COVID-19 also report other symptoms such as diarrhea or vomiting, headache, myalgia, or chest pains.
- **Citation:** Song X, Delaney M, Shah RK, et al. Comparison of clinical features of COVID-19 vs seasonal influenza A and B in U.S. children. *JAMA Network Open.* 2020;3(9):e2020495.
- **Relevance:** Having the ability to distinguish between COVID-19 and seasonal influenza will enable better care and use of resources for patients with variations of viral syndromes.
- **Study summary:** This was a cohort study which compared symptomatic patients with laboratory-diagnosed COVID-19 between March and May 2020 and patients diagnosed with laboratory-confirmed influenza between October 2019 and June 2020 at the Children’s National Hospital in Washington, DC. The authors compared data from 315 patients who had a positive COVID-19 test with data from 1,402 patients with influenza A or B. They found that children hospitalized with COVID-19 were generally older than those with influenza (median 9.2 vs 4.2 years of age). Patients with COVID-19 and those with seasonal influenza had similar hospitalization rates, ICU admission rates, and mechanical ventilator use. Compared with children hospitalized with seasonal influenza, a greater proportion of patients hospitalized with COVID-19 had underlying medical conditions and reported fever, diarrhea or vomiting, headache, body ache or myalgia, or chest pain. They also noted an abrupt decrease in influenza cases during the study, corresponding with the government requirements for school closures and stay-at-home orders to combat the spread of COVID-19.
- **Limitation:** This was a single-center study with small numbers of ICU admissions, which limits the ability to statistically identify risk factors for severity of disease. ■

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### Epidemiological Review of COVID-19 Cases in the U.S. Pediatric Population

- **Key point:** There is a low incidence of COVID-19-related acute respiratory syndrome in children. However, special consideration should be given when assessing patients with complex medical conditions and those from underrepresented minority populations.
- **Citation:** Bailey LC, Razzaghi H, Burrows EK, et al. Assessment of 135,794 Pediatric Patients Tested for Severe Acute Respiratory Syndrome Coronavirus 2 Across the United States. *JAMA Pediatr.* Online ahead of print November 23, 2020.
- **Relevance:** Understanding the epidemiology of COVID-19-related acute respiratory illness in the pediatric population will help clinicians treat children presenting to urgent care and emergency rooms with viral illness during the COVID-19 pandemic.
- **Study summary:** This was a cohort study retrospectively assessing medical records of 135,794 patients presenting to seven large pediatric health systems within the PEDSnet network from sites across the U.S. Data were reviewed for patients <25 years of age with a positive COVID-19 PCR test between January and September 2020 within the network of hospitals. The authors found that 13% of the patients were under the age of 1 year, 25% were between 1 and 4 years old, 27% were between 5 and 11 years of age, 25% were 12 to 17 years old, and 10% were between 18 and 24 years of age. Four percent of all the patients tested positive for COVID-19. Patients who tested positive were more likely to be minorities (African-American, Hispanic or Asian), to be tested in the ED, and to have public health insurance (eg, Medicaid). Of the 5,374 patients that tested positive for COVID-19, 7% were diagnosed with severe illness involving cardiovascular, respiratory, or COVID-19-specific illness. The authors noted that pre-existing chronic disease such as diabetes (type 1 and 2) was associated with higher likelihood

of seeking COVID-19 testing and that patients with these conditions were more likely to seek testing when symptomatic. They suggest that this may lead to higher rates of detection of COVID-19 within these patient groups, due to more tests being performed.

- **Limitation:** The data collection for the study was reliant on the input from the ICD-10 and SNOMED-CT computing systems which could potentially result in selection bias. ■

### Clinicians’ Perspectives of Resource Limitations in the COVID-19 Pandemic

- **Key point:** Expanding institutional planning beyond crisis capacity will help support clinicians in providing care and address moral distress/burnout during the present pandemic.
- **Citation:** Butler CA, Wong SPY, Wightman AG, O’Hare AM. U.S. clinicians’ experiences and perspectives on resource limitation and patient care during the COVID-19 pandemic. *JAMA Netw Open.* 2020;3(11):e2027315.
- **Relevance:** Clinicians’ perspectives regarding resource limitations in times of crisis is important for minimizing burnout.
- **Study summary:** This was a qualitative study using inductive analysis of interviews conducted among a group of U.S. clinicians involved in institutional planning with or without clinical care responsibilities during the COVID-19 pandemic. The interviews were conducted between March and April 2020 and involved physicians and nurses from a variety of roles in different clinical settings in 15 states throughout the U.S., with affiliations to 29 different hospitals or clinics. The authors discovered three distinct areas of concern which emerged from the clinicians’ perspectives: inadequate planning for crisis capacity, challenges in adapting to resource limitations, and multiple unprecedented barriers to care delivery.
 

Clinicians went to great lengths to develop alternative treatment options in order to avoid treatment denial. This practice, in some cases, left clinicians to grapple with what constituted acceptable standards of care, leading to some elements of moral distress and self-doubt.
- **Limitation:** The authors acknowledge that their study may not capture the perspectives of clinicians in other parts of the world or regions of the U.S. There was also a lack of perspective from pediatricians. There may be newer challenges with the dynamic nature of the pandemic that were not considered by this study. ■