MACEP Pediatric Committee Newsletter

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It's All Coronavirus

The MACEP Pediatric Committee would like to first start the newsletter by thanking you, as a Massachusetts emergency clinician, for what you do on the frontlines of healthcare delivery in our state.

The past weeks have been challenging, with the promise of more challenges ahead. Many meetings and gatherings have been canceled, including the New England Emergency Medical Services for Children Foundations of Pediatric Preparedness Forum and the ACEP Advanced Pediatric Emergency Medicine assembly. We will work to provide the resources that are created in place of these educational events in the months to come.

There has been a lot of discussion in the national pediatric emergency (PEM) community about how we can be of help in the upcoming weeks to months, with the prediction of many potentially seriously ill adults that will require care in our state. The MACEP Pediatric Committee hopes to provide ongoing support via pediatric resources as we move forward in this unprecedented crisis.

From the limited data we have from other countries already significantly affected by COVID-19, it seems clear that although children become infected with COVID-19, the vast majority of pediatric patients do not become nearly as sick as adults. The reasons for this are not known at present. There has been a wealth of information- websites, emails, and podcasts- offering help with the management of COVID-19. We have decided to get this newsletter out quickly to share with you helpful resources related to COVID-19 and the pediatric patient. As our understanding of COVID-19 changes on a day-to-day basis, we hope that these resources can continue to be of value in the days and weeks ahead.

COVID-19 Pediatric Resources

ACEP Pediatric Emergency Medicine Section, Update on Covid-19 and Pediatric Patients for Emergency Department Physicians, excellent overview: LINK

OPENPediatrics COVID-19 Resources, compendium of resources, articles, videos: LINK

Pediatric Emergency Medicine Database, up to date articles on COVID-19: LINK

Don't Forget the Bubbles, evidence based summary of pediatric COVID-19 literature: LINK

EM:RAP Online Textbook Chapter on COVID-19, free and constantly updated, with section on pediatrics: LINK

EMSC Innovation & Improvement Center, pediatric and pre-hospital preparedness for COVID-19: LINK

MMWR, 4/6/20, COVID-19 in Children (Hot off the press update): LINK

Emerging Infectious Diseases – Reflections from a Pediatric Emergency Physician

Charles G. Murphy, MD, Attending Physician
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From 1346-1353, the Bubonic Plague (*Yersinia pestis*) spread across Europe. The resulting number of estimated deaths ranges from 75 to 200 million people worldwide, including up to 60 percent of the population of Europe at the time. What started as an initial outbreak in Central Asia in 1346, took over 2 years, by 1348, to reach London, England. Jump forward – December 30th, 2019 – the WHO (World Health Organization) office is notified of a "pneumonia of unknown cause" in Wuhan, China. By January 13th, 2020, this now identified "novel" coronavirus is diagnosed in a patient in Thailand, the first case noted outside of mainland China. Within three weeks, cases are being diagnosed in Europe, North America and throughout Asia. While we relish in our now modern-day ability to be anywhere on the planet within 24 hours, air travel also yields an alarming ability for emerging pathogens to spread across the globe with daunting speed.

By the mid-twentieth century – with the influenza pandemic of 1918 firmly behind us - we were feeling much more confident – medical knowledge had progressed rapidly over the previous 50 years. In 1962 Nobel Prize-winning virologist Sir McFarland Burnett stated, "By the end of the Second World War it was possible to say that almost all of the major practical problems of dealing with infectious disease had been solved." [International Journal of Epidemiology 2003; 32:684–686] At the time, this statement seemed reasonable: infection control and prevention measures had decreased the incidence of many infectious pathogens, new anti-microbial medications were rapidly being developed as well as new vaccines.

Many infectious processes present in markedly different ways in children versus adults. The level of contagiousness, incubation period and the risk of progression to the active disease of tuberculosis is just one such example. The varicella virus can frequently vary in patients, often having a rather benign clinical course in children, but at times devastating effects in adults. The current coronavirus (SARS-CoV-2) strain has already shown significant signs of clinical differences in children versus adult patients. This adds increased challenges for the emergency physician. Much of the initial medical information regarding disease transmission, symptoms, progression and even potential therapies is often based on data from adult populations. As new disease processes emerge, we must have a heightened level of awareness of such potential differences in our pediatric population.

I have a good friend who has said a line for years that I have always remembered, "if you want to build up your immune system --- have children." For those who have children or work with them – we know that there is some real truth to this sentiment. Despite even the most aggressive attempts to keep children out of school when ill, we all know that for the school nurse, it is an upward battle. Influenza moves briskly through the school system every winter. With that spread come the parents, teachers and daycare workers of these children, and from them further spread to their co-workers and families. What better breeding ground for infection than at school – a closed-in population of patients with still developing immunity and little regard for personal hygiene!

At the time of an emerging infectious outbreak, the challenge for an emergency physician to identify patients with a new disease process can be daunting on many levels. Information and misinformation runs rampant. The ability of public health departments to keep up to date on disease progression, symptomatology and testing is challenged on a daily basis. For us as providers on the front line, the ability to identify patients with new emerging infectious processes can be equally formidable. At the very peak of influenza season, it is not infrequent that the diagnosis can be made from just the triage note, vitals and glancing at the child from the hall. But how do you catch the child who has a potential novel coronavirus infection that will spread throughout the school if not detected. A similar conundrum presents in gastroenteritis season, it is easy to "ZoPoGo" (Zofran, PO Trial and Go) every child that presents with vomiting when you have seen hundreds of children with gastroenteritis symptoms over the past few weeks. Is it possible that your guard could be down to catch the one child who has DKA, increased ICP or intussusception?

I am confident that the current coronavirus pandemic will stabilize over time. Disease progression will plateau, vaccines will be developed and lessons will be learned -- and terms such as "social distancing" will live on as a marked memory for our generation. However, I also write with similar confidence that this will not be the last "novel" virus or emerging infectious process to challenge our world health and local public health resources. The impact of such an emerging infection has much different implications today than it did in 1918, or certainly 1346; not only in the speed in which infection can spread, but as we have seen – the entire world economy hinges on how we deal with and react to these emerging infectious processes. It is imperative that we continue to learn from each of these experiences, have the utmost respect for our still limited defenses for new disease strains and never sit too confidently or complacent on our "modern-day" medical knowledge.

Stay Safe!

Provincetown Jetty
Taken Feb 7, 2020
by Emory Petrack