

A look back at the past two decades in pediatric pain

This issue of *Pediatric Pain Letter* marks 20 years since the inaugural issue was published under the editorship of Patrick McGrath, PhD and Allen Finley, MD. To commemorate this auspicious occasion we chose to reflect on the many accomplishments and achievements that have advanced our field over this time. We asked pediatric pain experts to respond in 100 words or fewer to the question, “*In your opinion what are the 1 or 2 greatest achievements in the field of pediatric pain in the past 20 years?*” The following is a selection of responses we received. – Editor’s Note

For me, the greatest achievement has been the opening of conversations about children with pain - conversations which have crossed all boundaries to raise awareness, improve recognition and ultimately improve the quality of analgesia for children. Twenty years ago, we only had questions: do babies and children feel pain? Is this a problem? Now we share knowledge, pool resources and discuss options - have conversations between children, parents and professionals of all disciplines, unfettered by geographical location. Think of the Paediatric Pain Travelling Club in the UK or the Pediatric Pain Mailing List from Canada - there are more: local, national and international. Come and join the conversation!

Alison Bliss
Chair, Pain in Children SIG of the British Pain Society, Consultant in Paediatric Anaesthesia & Pain Management and Clinical Lead, Children's Pain Service, Leeds General Infirmary, Leeds, UK

It has been incredible to watch our evidence-base in pediatric pain grow so tremendously over the last 20

years. So many important discoveries have been made in the areas of pain assessment and management. But there are still many questions to be answered and problems to solve. One of our biggest challenges moving forward is ensuring that what we do know actually gets translated into improved pain care for children.

Christine T. Chambers, PhD, RPsych
Professor of Pediatrics and Psychology & Neuroscience, Dalhousie University and IWK Health Centre, Halifax, NS, Canada

Two important initiatives come to mind around nursing care at the bedside, in the clinic and in community settings:

1. Ability to provide a variety of options for decreasing procedural pain in children from infancy through adolescence with strong research evidence undergirding these interventions from sucrose to local use of lidocaine; developmentally appropriate distraction techniques; positioning for comfort; and engaging parents/guardians in coping assistance for their child.

2. Increased understanding of the neurobiology and physiology of pain with attention especially to preterm infants; research focused on adequate assessment and management of that pain and on the consequences of unrelieved pain in such a vulnerable population.

Beth Ely, RN, PhD
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Only in the mid-80's was neonatal pain response measured using behavioural observations and physiological monitoring. Measurement of cortical activity in response to pain has begun. The 'gold standard' for measuring of pain in neonates has yet to be found and, may not exist. Research continues, focused on tailoring measures. Opiates, the standby in older populations, was found to have negative sequelae in neonates which lead to studies on non-pharmacological comfort measures. Driving the need for appropriately managing pain in neonates has been the discovery that the burden of pain in this population has long lasting effects well into childhood.

Celeste Johnston RN, DEd, FCAHS
Emeritus Professor in the Ingram School of Nursing at McGill University, Montreal, QC and Scientist at the IWK Health Centre, Halifax, NS, Canada

The greatest achievement in the past 25 years has been the attitude shift from "What do you mean, 'children have pain'?" to "Pain is important; we really should do something", to "This is what we're doing about children's pain."

In the 1990s, I knew personally almost everybody who was doing serious work in the field. Now thousands of research papers have been published, great pain care is a common goal, and I'm continually delighted to meet new researchers, clinicians, and activists from all over the world. We've done a good thing!

Allen Finley, MD
Professor, Department of Anesthesia, Pain Management & Perioperative Medicine, Dalhousie University and Medical Director, Pediatric Pain Service, IWK Health Centre, Halifax NS, Canada

Modern thinking about pediatric pain was in its infancy when the Pediatric Pain Letter began. The most important advance has been that pain in children is now usually not taken for granted. It is mainstream now to study and practice pediatric pain.

Much research is needed in the basic biological and psychosocial sciences, in clinical sciences and in health system sciences. The goal that every child in the developed and developing world benefit from the best pain prevention and management remains to be fulfilled. It sounds strange, but it is now normal to be against pain suffered by children.

Patrick McGrath, PhD
Professor of Psychology, Pediatrics, and Psychiatry, Dalhousie University and Vice President Research, Innovation and Knowledge Translation, IWK Health Centre and the Nova Scotia Health Authority, Halifax NS, Canada

1. We now have evidence that chronic pain occurs just as commonly in childhood as adulthood, that chronic pain has wide-reaching impact on children and their parents, and that there are substantial economic costs of pediatric chronic pain, together which demonstrate the critical need for prevention and treatment of childhood chronic pain.

2. Significant progress has been made in developing psychological therapies for pediatric chronic pain, with a robust literature documenting promising effects on reducing pain and disability. Investigators have now successfully expanded opportunities for providing psychological therapies for chronic pain to children and families using information and communication technologies.

Tonya Palermo, PhD
Professor of Anesthesiology, Pediatrics and Psychiatry, University of Washington and Associate Director, Center for Child Health Behavior and Development, Seattle Children's Research Institute, Seattle, WA, USA

It has been inspiring to watch the growth of the discipline of pediatric pain management expand dramatically over the past 20 years. In my mind, two concepts were seminal. First, the recognition by a number of investigators (Anand, Fitzgerald, Grunau, Taddio, among others) that there were short and long term consequences to inadequately treated pain gave urgency to the need for more research into this previously ignored area and fueled the avalanche of pediatric pain research that we

have witnessed. The second concept was the substitution of the bio-psycho-social model for the highly reductionistic medical model. This eliminated the false dichotomy that pain was either “real” or “psychological” as well as the notion that one was “entitled” to a set amount of pain for a given injury and gave rise to the inclusive collaborative multidisciplinary field that exists today.

Neil Schechter MD
Director, Chronic Pain Clinic, Boston Children’s
Hospital and President and CEO, ChildKind
International, Boston, MA, USA

From Mayday’s perspective, the cooperation between and interdependence of researchers in pediatric pain is exemplary. This has moved the field forward and has simultaneously advanced the goal of creating greater public awareness of how a child’s pain might be identified and treated. A second advance is the increased use of technology and networks to accelerate the dissemination of evidence-based knowledge and tools so that geographic and temporal boundaries are less determinant of quality of care. Congratulations on all the progress of 20 years!

Christina Spellman
Executive Director, Mayday Fund, New York, NY,
USA

In the past 20 years, we have gained new knowledge to debunk the myths that infants do not feel pain and it is of little consequence. Leading research from neuroscientists has illuminated how pain is processed in the infant brain and its effect on future development when if untreated. We have also determined the effectiveness of physical and behavioral interventions (e.g. skin-to-skin care, breastfeeding and sweet solutions) in minimizing procedural pain and maximizing comfort. Our greatest challenge is to accelerate our understanding of the validity of behavioral and cortical pain indicators to achieve a "gold standard" for pain measurement and to determine effective knowledge translation strategies to bridge the research to practice gap.

Bonnie Stevens, RN, PhD, FAAN, FCAHS
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In our opinion, the 1 or 2 greatest achievements in the field of pediatric pain in the past 20 years are:

1. Evidences of scientific approval of long term consequences which increase awareness of pediatric pain.
2. Emerging of relevant studies to assess, prevent and manage pediatric pain.

Suwannee Suraseranivongse, MD
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Faculty of Medicine, Siriraj Hospital, Mahidol
University, Bangkok, Thailand

There’s a web of connections growing around the world over the past 20 years, linking people concerned about understanding, preventing, and relieving children's pain. A big contributor has been the [pediatric-pain mailing list](#) founded by Allen Finley. We can also credit organizations such as the IASP [Special Interest Group on Pain in Childhood](#), [ChildKind International](#), [Pain in Child Health](#), and [Pédiadol](#), as well as the seven well-attended [International Symposia on Pediatric Pain](#) we have held since 1996. There has been tremendous growth in opportunities for international and interdisciplinary consultation and knowledge transfer, which will eventually ease the lives of children in pain.

Carl von Baeyer, PhD
President, IASP Special Interest Group on Pain in
Childhood

Major achievements:

1. Recognizing procedural pain and distress to be clinically significant and improving prevention and treatment. When I started in the field, children and adolescents with cancer underwent invasive

procedures (e.g. bone marrow aspirates and biopsies, lumbar punctures) with only a little local anesthesia. While this was a great opportunity to hone one's skills with hypnosis, the circumstances were still quite barbaric. Today in most sites, children are deeply sedated or anesthetized.

2. Inclusion of pediatric populations in clinical trials focused on pain. The Best Pharmaceuticals for Children Act and the Pediatric Research Equity Act serve as the FDA's carrot and stick, respectively, to facilitate studies of safety and effectiveness for children and adolescents.

Gary Walco, PhD, ABPP
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Adjunct Professor of Pediatrics and Psychiatry,
University of Washington School of Medicine and
Director of Pain Medicine, Seattle Children's
Hospital, Seattle, WA, USA

One of the most important achievements during my career has been the increased collaboration between pediatric psychologists and physicians. This is evident in the appointment of pediatric psychologists to faculty positions in medical schools, co-authorship of papers by pediatric psychologists and physicians, participation of pediatric psychologists in pediatric sub-specialty organizations, integration of pediatric psychologists into pediatric primary care and multidisciplinary clinics, involvement of pediatric psychologists in medical education, and NIH funding of research that depends on the strengths of both pediatric psychologists and physicians. These activities are

commonplace now, but novel (and in some cases controversial) twenty years ago.

Lynn Walker, PhD
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of Adolescent and Young Adult Health, Vanderbilt
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USA

Understanding through structural and functional brain imaging sites and mechanisms of chronic pain, especially connectivity differences with response to specific behavioral interventions. (An example is the work on CRPS by Laura Simons.) The second big achievement is the development of practical cognitive behavioral interventions that are family focused in children with chronic pain. (An example is the CBT parent studies by Rona Levy.)

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The greatest achievement in the field of chronic pain in children and adolescents is the invention of multimodal and interdisciplinary treatment programs that base their work on a bio-psycho-social pain concept and the proof of their efficacy.

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