

Hitting the Right Note for Pediatric Pain Management

Kaitlin Pounders, MSN, RNC-NIC, C-ELBW, NEA-BC, CPPS, Elizabeth Pasternak, MS, RN, CHPPN, and Meredith Irvine, MHA, MT-BC, NICU-MT

C.S. Mott Children's Hospital, University of Michigan Health, Ann Arbor, Michigan



Introduction

C.S. Mott Children's Hospital (Mott), located in Ann Arbor, Michigan, is a leading pediatric hospital within the University of Michigan's academic medical center.



With 347 licensed beds, Mott is a national referral center and provides specialized care for infants, children, and adolescents facing a wide range of complex medical conditions.

In 2022, Mott became the **first ChildKind-certified hospital in the state of Michigan**, pledging a commitment to children's pain relief and prevention.

Importance

Consequences of under-treated pediatric pain include:



Psychological

- Stress, anxiety, and depression
- Needle phobia
- Medical care avoidance
- Sleep disturbances



Physiological

- Delayed healing
- Decreased mobility
- Delayed return to normal function
- Changes to pain responsivity
- Increased risk of progression to chronic pain
- Increased risk of post-op complications



Social

- Decreased interactions with friends
- Lost participation in extracurricular activities and play
- Social development delays
- Increased missed school days



Financial

- Increased length of stay
- Delay in transfer out of ICU or other high acuity units
- Increased readmissions
- Increased costs to the healthcare system
- Loss of potential wages

Collaborative Approach to Pain Management

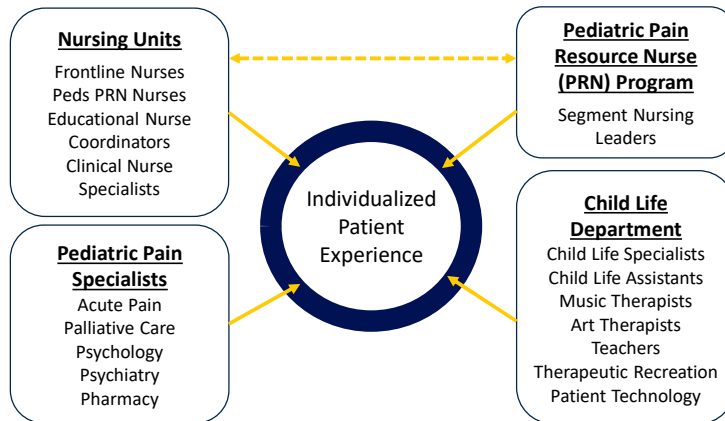


Figure 1: C.S. Mott Children's Hospital Multi-Disciplinary Approach to Pain Management

Patient Story

Birth	Name: Evie Birthplace: China Anophthalmia: a rare birth defect characterized by the complete absence of one or both eyes.	Adoption	Age 4 Weight: 11 pounds Severe malnutrition Difficulty walking/standing
	Present		Age: 8 Concern for neurologic and endocrine disorders Suspected seizure activity Recommendation to undergo an electroencephalogram (EEG)

Plan of Care

Pre-Procedure

- EEG deemed medically necessary to evaluate for a neurologic disorder in the presence of suspected seizure activity
- Initial testing appointment scheduled in an outpatient setting

During Procedure

- Heightened anxiety influenced by an unknown level of past medical trauma
- Music therapy provided Evie with positive distraction, anxiety reduction, and physiological stability
- Positive impact on staff efficiency

Post-Procedure

- Reinforced parental advocacy for music therapy as an effective anxiety-reducing intervention

"She (Evie) was so anxious that caregivers weren't sure they could complete the procedure." - Mostafavi, 2019



Video 1: How music therapy helps sick children cope



Patient and Family Response

Patient Response

- Immediate reduction in anxiety and distress
- Increased cooperation and procedural compliance
- Emotional regulation and comfort
- Decreased perception of pain and discomfort
- Enhanced patient experience
- Positive association with healthcare
- Neurobiological and psychological relaxation

Parental Response

"Music therapy is a must for kids like Evie. I hope and pray that through positive experiences connecting medicine to what she loves most – music – she will someday be OK going to see a doctor. Music is medicine."

- Katie H., Evie's Mom



Video 2: 8-yr-old Patient's Remarkable Response to Music



Implications for Practice

Interprofessional Collaboration in Pain Management

Nurses play a vital role in interprofessional teams, working alongside healthcare professionals to develop individualized pain management plans. Parallel use of pharmacological and non-pharmacological pain management strategies optimizes pain relief and enhances patient outcomes.

Psychosocial and Developmental Considerations in Pediatric Care

Pediatric pain management should incorporate developmentally appropriate interventions such as child life services, music therapy, and family-centered care to reduce anxiety and distress.

Education initiatives, such as Pediatric Pain Resource Nurse Programs, should reinforce strategies for managing actual and perceived pain, therefore reducing medical trauma and fostering effective interprofessional collaboration.

Integration of Music Therapy into Pediatric Patients' Plans of Care

Incorporating music therapy into pediatric care supports a holistic approach that addresses both psychological and physiological needs of young patients.

Music therapy enhances coping strategies, improves procedural compliance, and fosters positive associations with healthcare settings, potentially reducing long-term medical anxiety.

Conclusion

Evie's story highlights the importance of interprofessional collaboration in healthcare, showcasing how **music therapists and nursing professionals work together** to develop personalized pain management interventions.

References

- Blok, A. C., Alexander, C. C., Tschannen, D., & Milner, K. A. (2022). Quality improvement engagement: Barriers and facilitators. *Nursing Management*, 16-24. <https://doi.org/10.1097/01.NUMA.0000821708.46746.6f>
- childkind (2025). *Children's pain matters*. Retrieved March 1, 2025, from <https://childkindinternational.org/childrens-pain-matters/>
- Krott, D., Krater, C., MacLean, J., Robertson, K., Stegenga, K., & Robb, S., L. (2022). Music therapy for children with oncology & hematological conditions and their families: Advancing the standards of psychosocial care. *Journal of Pediatric Hematology/Oncology Nursing*, 39(1), 49-59. <https://doi.org/10.1177/109725252011059726>
- Manworren, R. B., & Basco, M. (2022). Effectiveness and dissemination of the interprofessional pediatric pain PRN curriculum. *The Journal of Continuing Education in the Health Professions*, 42(2), 135-143. <https://doi.org/10.1097/JCEH.0000000000000410>
- Manworren, R. B., & Laprise, J. (2021). Development of the pediatric healthcare provider's knowledge and attitudes survey regarding pain. *Pediatric Nursing*, 47(6), 275-291.
- Mostafavi, B. (2019). Music therapy helps 8-year-old girl cope with medical visits. *Michigan Medicine Health Lab*. <https://www.michiganmedicine.org/health-lab/music-therapy-helps-8-year-old-girl-cope-medical-visits>
- Scheufler, A., Wallace, D. P., & Fox, E. (2020). Comparing three music therapy interventions for anxiety and relaxation in youth with amplified pain. *Journal of Music Therapy*, 58(2), 177-200. <https://doi.org/10.1093/jmt/tnaa021>
- U.S. Department of Health and Human Services. (2019). *Pain management best practices inter-agency task force report: Updates, gaps, inconsistencies, and recommendations*. U.S. Department of Health and Human Services. <https://www.hhs.gov/sites/default/files/painmt-final-report-2019-05-23.pdf>