

# Racial Inequalities in the Delivery of Pain Medication in Pediatric Orthopaedics and a Call to Action

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## Introduction

The murder of George Floyd and subsequent racial unrest has motivated our country to re-examine issues of racial justice, equity, diversity, and inequality in every sphere of society. Healthcare is not spared from this self-examination. Racial disparities in the United States healthcare system are endemic and persistent throughout medical and surgical specialties.<sup>4,6,7</sup> These disparities can manifest as lack of access, delays in diagnosis and care, and poor health outcomes.<sup>2,16</sup>

Children are disproportionately affected by disparities in care,<sup>12</sup> and the downstream effects can contribute to increased morbidity and mortality in adulthood. In 2018, 22% of the U.S. population was under 18 years old and children of color accounted for 49.7% of children.<sup>17</sup>

Therefore, as pediatric orthopaedic surgeons, in a specialty that traditionally prides itself on providing compassionate and competent care, we must be at the forefront of ensuring care equity. We are learning that success demands that all of us must work together to understand and address these issues, and achieving these goals will not only enhance the care of all children but also provide greater fulfillment for all providers.

The purpose of our report is to focus on racial inequity in the delivery of care to underrepresented minorities, in particular, opioid administration in the postoperative care of children to provide an example of how existing research projects can be re-focused to include

issues of racial inequity and to challenge us to look for areas of inequality in care, even in areas we do not suspect it to exist.

## Pain Medication and Delivery to Underrepresented Minorities

Perioperative pain management protocols can have a significant impact on early surgical outcomes and recovery, especially for larger surgeries, such as hip reconstruction performed on children with cerebral palsy and hip dysplasia. Postoperative pain control is particularly crucial in this group of patients who often undergo extensive surgery, such as bilateral proximal femoral and pelvic osteotomies as well as additional soft tissue releases.<sup>1,10,11</sup>

The Institute of Medicine released a report in 2003 titled *Unequal Treatment: Confronting Race and Ethnic Disparities in Healthcare* which concluded that "Racial and ethnic disparities in healthcare exist, and because they are associated with worse outcomes in many cases, are unacceptable."<sup>15</sup> Hidden and often unintentional bias can affect our perspective and patient care.<sup>3</sup> Many patients and families understand this and as is the case in this study, rightfully challenge us to assess our own practices.

A number of studies have shown that non-white children receive less opioids in the ambulatory emergency care setting.<sup>5,9,18</sup> One study looked specifically at opioid

prescription patterns for emergency department discharges in children with fractures<sup>5</sup> and found that white non-Hispanic status was associated with increased opioid prescribing. Another study focused on postsurgical pain medication after tonsillectomy and found that African American children had a higher burden of pain as evidenced by higher pain scores and morphine consumption than the Caucasian children.<sup>14</sup> Two studies have shown that white/Caucasian children may receive less opioid medication but similar overall analgesia.<sup>8,13</sup> Few studies have specifically focused on racial disparities in the treatment of orthopaedic postoperative pain in the pediatric population.

### **Do Frequency and Dose of Opioids Differ by Race in Children with Cerebral Palsy Undergoing Hip Surgery?**

Early surgical outcomes and recovery are significantly impacted by postoperative pain management. This is especially critical in children undergoing major surgery such as children with cerebral palsy undergoing hip reconstruction. Disparities in narcotic administration by race have been well-documented in the emergency care setting. Recently, a well-informed mother of one of our patients felt we were not providing her child with pain medication due to her race. Her insight prompted a review of narcotic administration (discharge medications) by race in children with cerebral palsy after they underwent major hip surgery.

We reviewed 61 children with cerebral palsy undergoing hip reconstruction. Fifteen were non-white/non-Caucasian (NW) and 46 were white/Caucasian (W). Our primary focus was on the average days' supply of pain medicine given at discharge and total dose by weight, and we compared this administration by race. This was a refocus of a primary initiative that compared the use of fascia iliaca blocks (FI) versus continuous lumbar epidurals (LE) for postoperative pain in the same population.

All had similar postoperative in-hospital pain management, which consisted of supervised care by a pain management team and a postoperative protocol which

transitioned over time from either a continuous lumbar epidural to fascia iliaca blocks. The demographics, procedures, length of stay, doses prescribed upon discharge, and pain scores were collected and compared for each group and were not found to be significantly different.

We found that the outpatient opioid prescribing regimen, the average days' supply, and the total mg/kg for the NW and W groups were not different between the two groups as a whole. Surprising to us, when we subdivided our groups between fascia iliaca (FI) blocks and lumbar epidural (LE), there were differences in the days' supply of opioid (but not amount of opioid) for patients undergoing epidurals (but not FI blocks). Those in the NW group were given 5.6 days versus 7.8 for the W group [(p=0.031) one tailed t-test equal variance, Microsoft Excel]. The finding was surprising to us, as postoperative home prescriptions are written by many providers who support our inpatient care. This difference then disappeared when we transitioned to the IF block. This transition to FI block also incorporated a set protocol for the number of days of opioid administration.

Our experience demonstrates the importance of actively looking for racial disparities in pain management. It demonstrated that racial disparities occurred in outpatient pain medication prescribing and that the incorporation of protocols can decrease the variation and potentially eliminate these disparities. It also demonstrates how a clinical outcome study looking at the effectiveness of postoperative pain protocols can be refocused to challenge ourselves to ask the question, Are we treating all children equitably?

Our introspection was initiated as a response to a query from a patient's family member who felt we were not providing their child, who is non-white, with the same amount of pain medication as our white patients. We certainly felt that this was not the case, but after review of the literature, it is clear that variations are seen in narcotic administration between non-white and white patient populations.<sup>14,18</sup>

This review assesses a uniform patient population undergoing similar surgery and asks a simple question, Did we provide more opioid pain medication to white children versus non-white children? Although we found no differences in the summary information, we did see differences in days of opioid administration by nearly 2 days when we subdivided our data by block type and looked only at the patients that had a lumbar epidural. This finding could be explained by our unconscious bias as the majority of our providers are white.<sup>3</sup>

When we shifted our postoperative pain protocol to fascia iliaca blocks, we did so for all patients and also incorporated a more robust postoperative pain protocol including discharge medications. This protocol established only 5 days of postoperative opioid pain medication and eliminated discrepancies between the NW and W groups. It also demonstrates the importance of establishing and practicing clear protocols for equitable patient care.

## Summary

The purpose of our self-examination was to determine if racial disparity which exists in medicine, also exists in our management of pain in the postoperative cerebral palsy population. As surgeons, we direct perioperative care, pain control, and we stand unified to do our part in preventing racial disparities in our comprehensive management of these patients. Bias is often subconscious and to fight this, we have to be attentive to patient and family concerns and in this case, the mother's feeling that her child was not treated fairly. We decided to approach the issue proactively as an opportunity to evaluate for the existence of disparity and to assure accountability of equity in the management of these patients henceforth. While our surprise findings in this case could be chance variation, the adoption of comprehensive guidelines of equity and empathy going forward will hopefully establish universal standards of care to prevent the very potential existence of unjust disparate management on our service. Accountability for prevention of disparate care and installation of well-validated guidelines in treatment is a more effective proactive

methodology than corrective repair of a disparate environment. In the words of Martin Luther King Jr., "Of all the forms of inequality, injustice in healthcare is the most shocking and inhumane." It is incumbent on all of us to identify and change these inequalities.

## Additional Link

Implicit Association Test (IAT) featured in the book *Blindspot*: <https://implicit.harvard.edu/implicit/user/agg/blindspot/tablet.htm>.

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