



Trends in Opioid Dispensing among Youths with Sickle Cell Disease in Michigan

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Background

- Children with sickle cell disease (SCD) frequently experience debilitating acute and chronic pain.
- Opioid analgesics are a standard home treatment for pain in individuals with SCD.
- Prior research suggests that opioid dispensing rates among children with SCD are declining.
- There is limited understanding of the drivers of these declining trends.

Objective

- Describe trends in opioid dispensing among children with SCD in Michigan.

Methods

- The Michigan Sickle Cell Data Collection (MiSCDC) program is a multi-data source public health surveillance system funded by the CDC.
- Children <19 years of age with SCD were identified through the MiSCDC program using validated methods.
- Children were included for each year of continuous enrollment in Michigan Medicaid from 2018-2022.
- Dispensed opioid prescriptions and type of opioid (long- or short-acting) were identified using validated National Drug Codes.
- The proportion of children with any dispensed opioid was calculated annually, overall and by age groups.
- Logistic regression models using generalized estimating equations were used to investigate changes in likelihood of any opioid dispensing across years and age groups.
- Among person-years with ≥1 dispensed opioid prescription, trends in the total days' supply and averages of number of prescriptions and days' supply per prescription were modeled by year and age group using linear mixed effects regression models.

Results

- A total of 1,200 children with SCD contributed 4,371 years of observation (mean age 8.9 years, SD=5.2; 50.6% female).
- 50.4% (605) children were dispensed at least 1 opioid between 2018-2022; 97.2% of dispensed opioids were short-acting and 2.8% were long-acting.

Figure 1. Proportion of children with any dispensed opioid in a year by age group, Michigan, 2018-2022

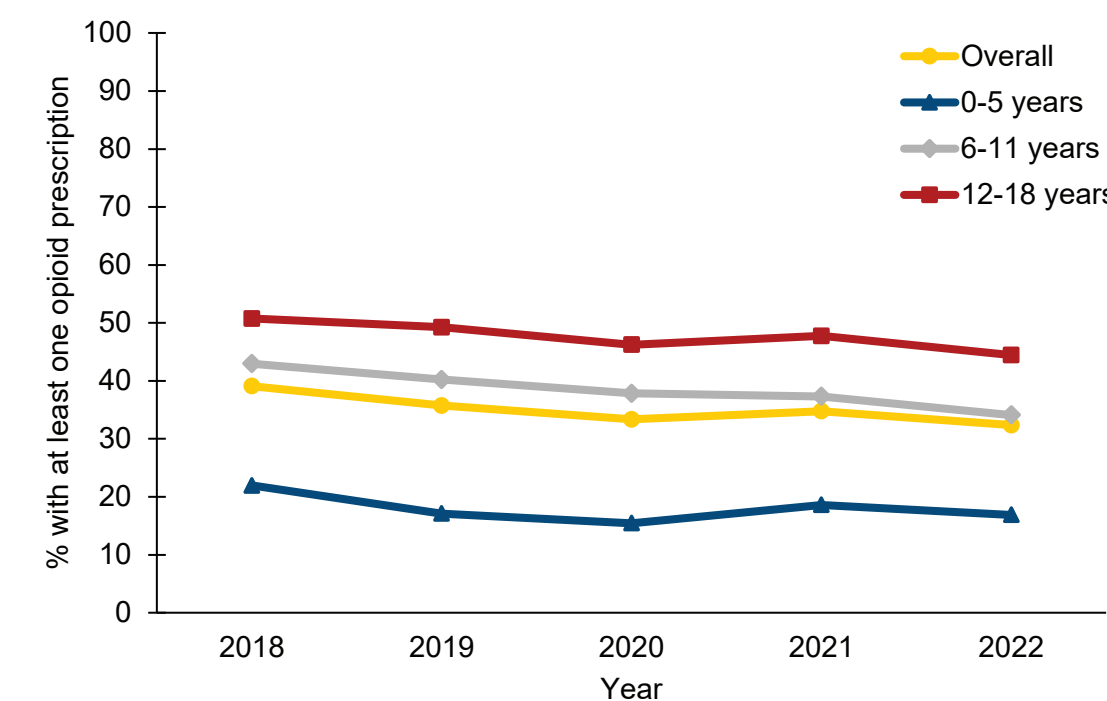


Figure 2. Average annual number of dispensed prescriptions among person-years with at least 1 dispensed opioid by age group and overall, Michigan, 2018-2022

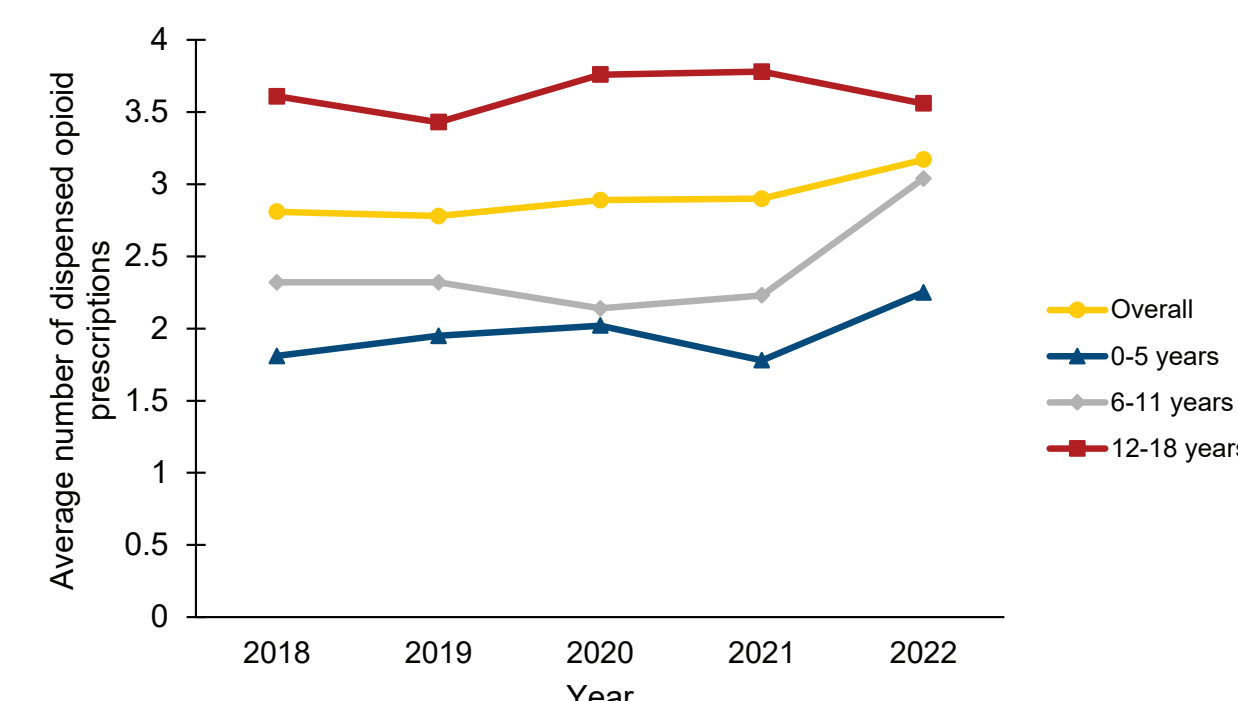


Figure 3. Total days' supply per year by age group, Michigan, 2018-2022

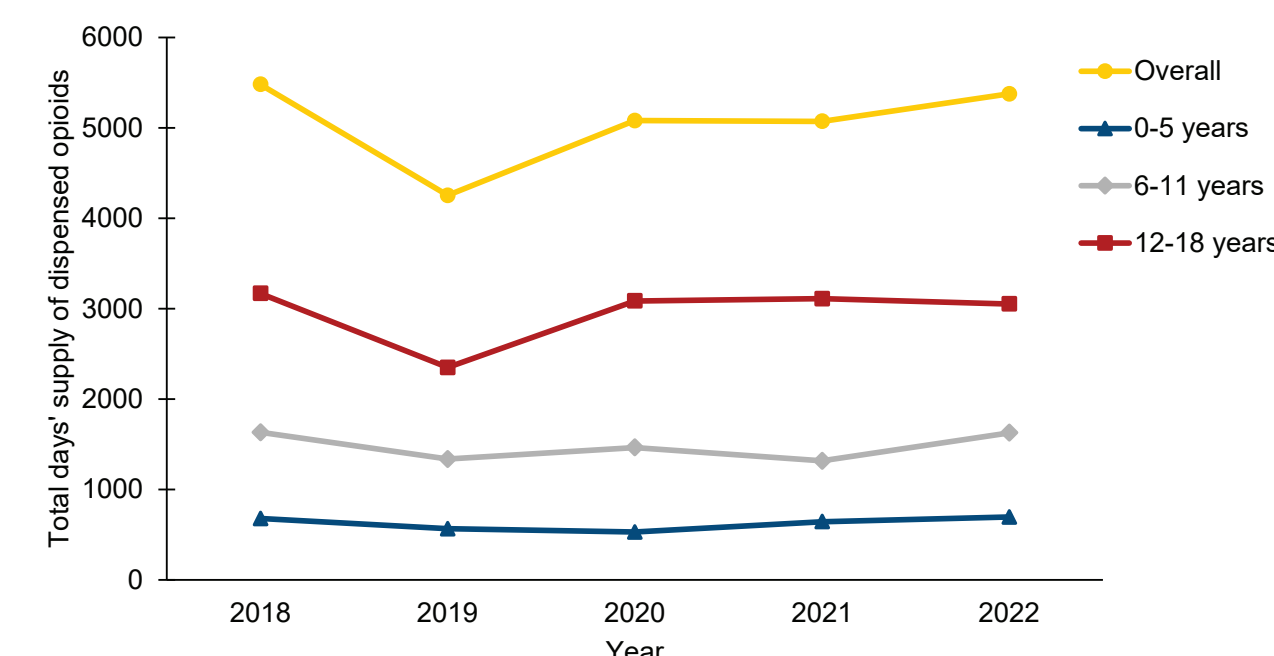
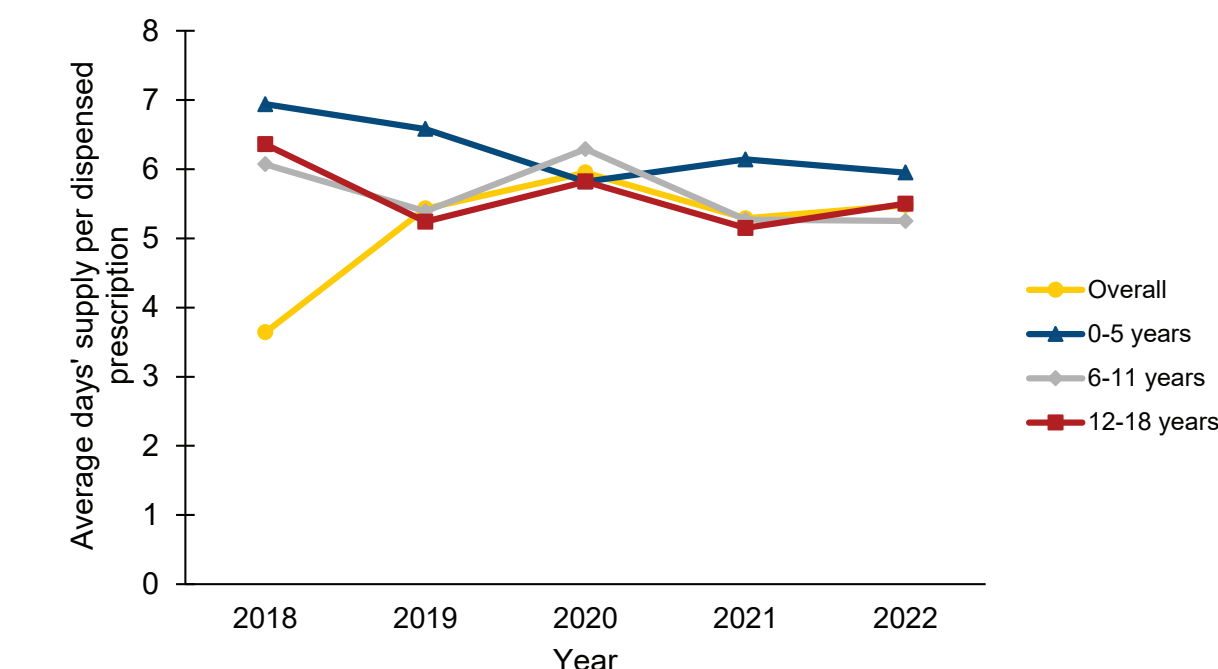


Figure 4. Average days' supply per prescription among person-years with at least 1 dispensed opioid by age group and overall, Michigan, 2018-2022



- From 2018-2022, the proportion of children with any dispensed opioid in a year decreased non-significantly (p-value=0.07). Decreasing trends over time were consistent across age groups (Figure 1; interaction p-value=0.58).
- Average number of dispensed prescriptions among person-years with ≥1 dispensed prescription significantly increased over time (p-value=0.007) consistently among all age groups (Figure 2).
- Total days' supply per year did not significantly change over time (p-value=0.32) in any age group (Figure 3).
- Average days' supply per prescription among person-years with ≥1 dispensed opioid significantly decreased over time (p<0.001; Figure 4).

Conclusions

- Overall rates of opioid dispensing did not significantly change among children with SCD in Michigan between 2018-2022.
- Among children with ≥1 dispensed opioid, there was a decrease in number of days' supply per prescription with a concurrent increase of number of filled prescriptions.
- Changes in prescribing practices during the COVID-19 pandemic may have affected trends in child opioid dispensing.
- Further investigation is warranted regarding changes in physician prescribing behaviors.

Contact Information



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