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## **Reducing opioid utilization after ureteroscopy in a statewide quality improvement collaborative**

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**INTRODUCTION AND OBJECTIVE:** Since its inception in 2016, the Michigan Urological Surgery Improvement Collaborative (MUSIC) Reducing Operative Complications from Kidney Stones (ROCKS) initiative has implemented multifaceted efforts to reduce postoperative opioid utilization after ureteroscopy, including patient education and standardized prescriber guidance for opioid-free multimodal pain management. Post-ureteroscopy opioid prescribing in Michigan fell dramatically from 2016-2021, yet it remains unknown whether this was the direct result of MUSIC ROCKS efforts, or larger national trends including increased public awareness of the opioid epidemic and regulatory changes which occurred over the same time period.

**METHODS:** MUSIC ROCKS clinical registry data were used to tabulate post-ureteroscopy opioid urologist prescribing at time of ureteroscopy patterns from 2016-2021. These data were compared to Optum's Clinformatics Data Mart (CDM) administrative health claims for adult members and their dependents of large commercial and Medicare Advantage health plans. We identified patients who underwent ureteroscopy defined by CPT codes and calculated the proportion who had post-ureteroscopy opioid prescription fills within 14 days of surgery from their pharmacy claims defined by drug class and generic name. We report opioid fill rates within the state of Michigan and across the rest of the United States. The proportion of ureteroscopies with opioid prescriptions out of all ureteroscopies are reported by year for each cohort.

**RESULTS:** The rate of postoperative opioid prescriptions after ureteroscopy in the MUSIC ROCKS collaborative declined sharply from 2016 to 2021 (86% to 20%) (Figure). This was also reflected in the CDM prescription fill claims for the state of Michigan (55% to 20%). By contrast, postoperative opioid fills across the remainder of the United States declined far more modestly over the same period (56% to 47%).

**CONCLUSIONS:** Opioid prescribing after ureteroscopy in the state of Michigan declined sharply between 2016 and 2021. This decline occurred on a national scale over the same period but was far more modest in scale. This work demonstrates that dedicated efforts by large-scale quality improvement collaboratives such as MUSIC can drive meaningful changes in health care delivery.

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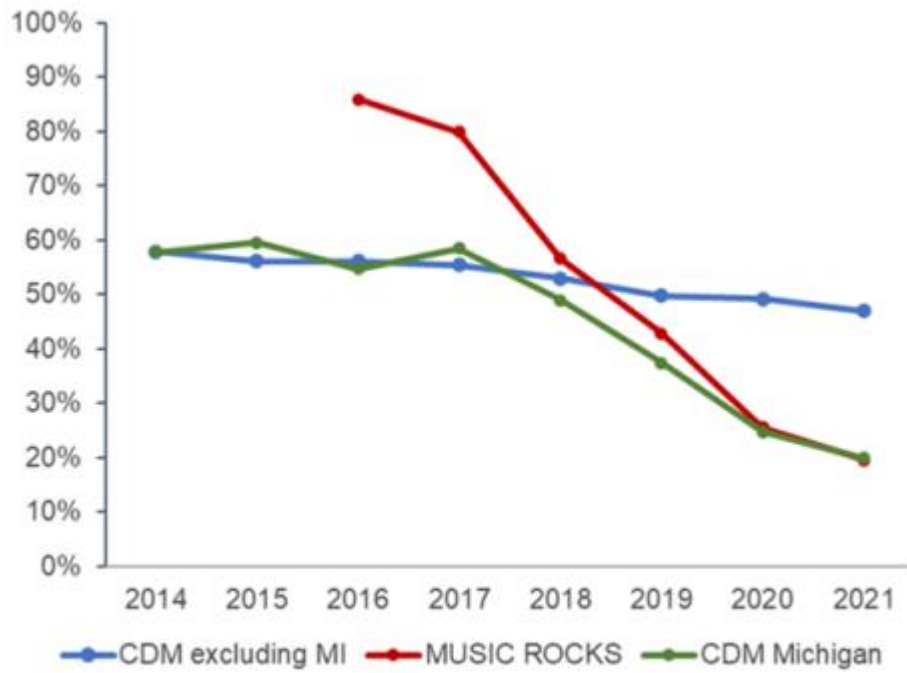


Figure. Temporal trends in postoperative opioid utilization following ureteroscopy within the state of Michigan (MUSIC ROCKS, red; and CDM Michigan, green), versus the remainder of the United States (CDM excluding Michigan, blue).

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