

# Reduction in opioids prescribed after total joint arthroplasty as a result of statewide registry prescribing protocol

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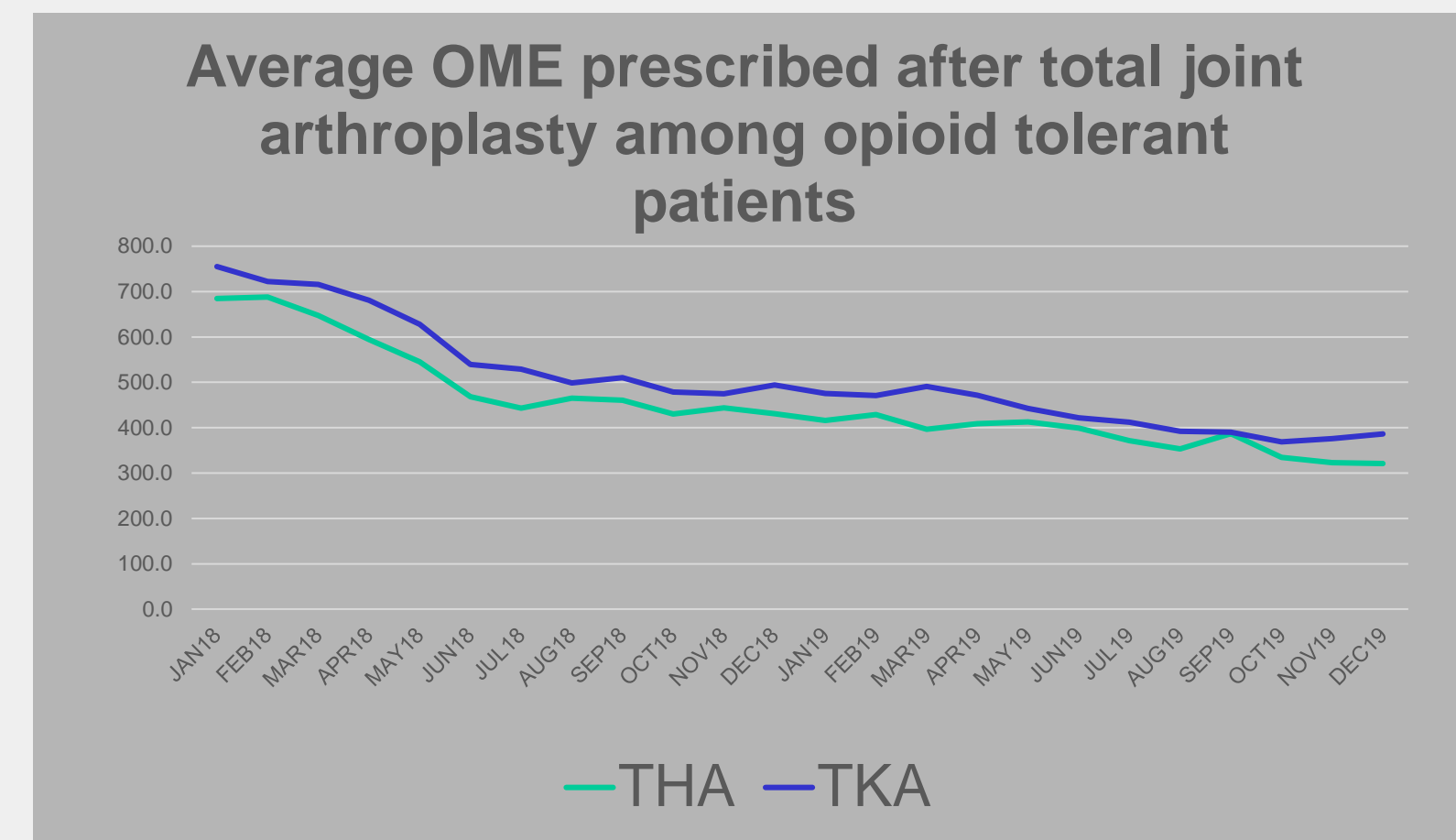
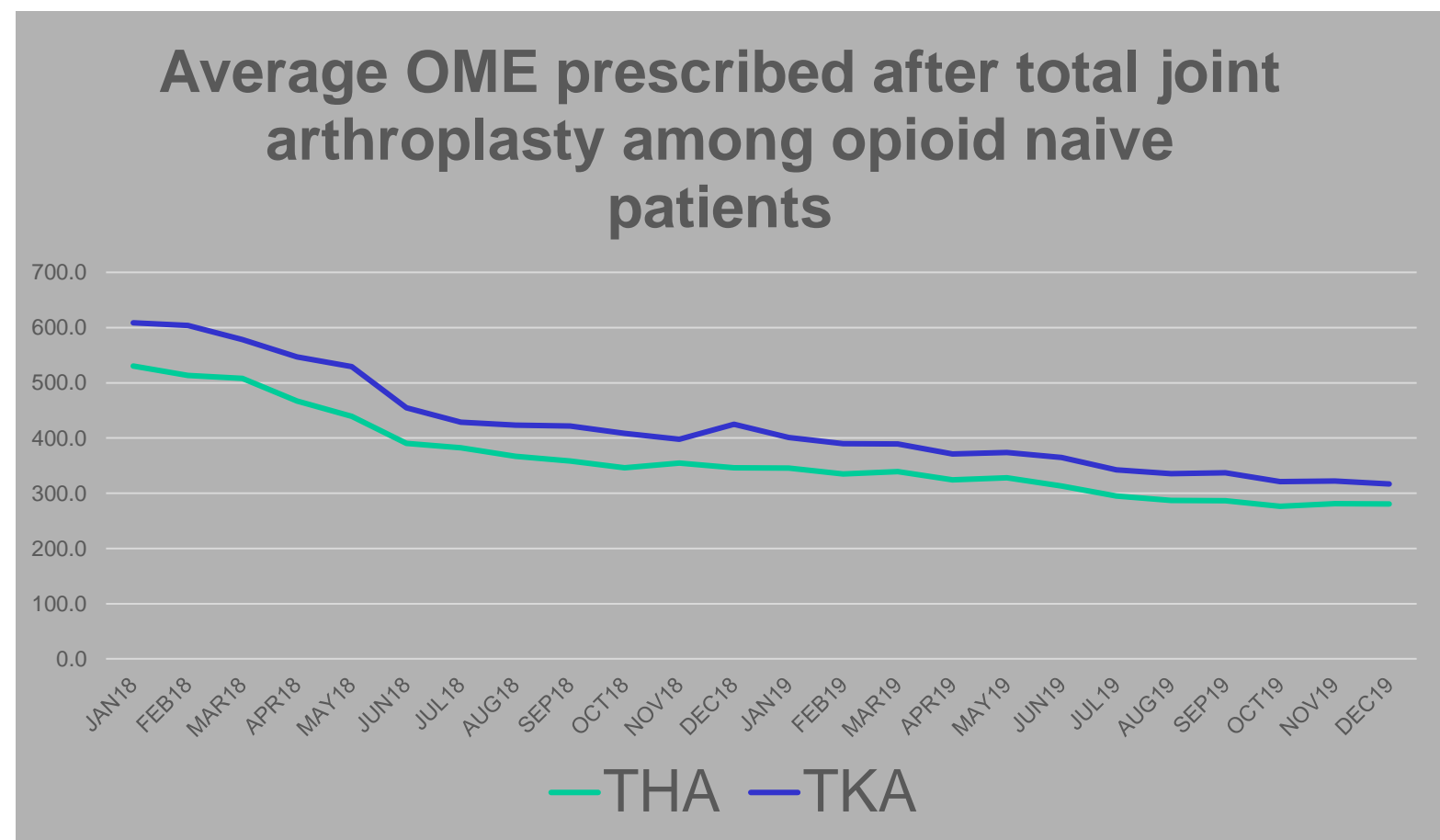


## Introduction/Significance

- Chronic prescription opioid use continues to be a major public health challenge.
- There is considerable variability within physician prescribing patterns of opioids following total joint arthroplasty.
- The safe reduction in the quantity of opioids prescribed postoperatively holds great potential for decreasing opioid addiction, side effects, and diversion.
- The Michigan Arthroplasty Registry Collaborative Quality Initiative (MARCQI) is a statewide arthroplasty registry that includes over 95% of all arthroplasties performed statewide.

## Objective

- To evaluate the effect of adding conformance to opioid prescribing guidelines as a performance measure in a statewide arthroplasty registry on overall opioid prescriptions after total joint arthroplasty.



## Methods

- Data were limited to primary elective total hip (THA) and total knee (TKA) arthroplasty procedures performed between 1/1/2018 and 12/31/2019 in MARCQI (Michigan Arthroplasty Registry Collaborative Quality Initiative)
- Oral morphine equivalents (OME) prescribed at discharge were collected as a part of the standard data abstraction as performed by MARCQI.
- In the MARCQI database, opioid naïve is defined as not taking opioids 30 days prior to surgery. If opioids were taken within 30 days of surgery, patients are identified as opioid tolerant
- Trends in the reduction of opioid prescriptions for primary hip and knee arthroplasty were monitored using Shewhart control charts. All statistical analyses were performed in SAS software version 9.4 (SAS Institute Inc., Cary, NC, USA).

## Results

- 85,614 total joint arthroplasties were included in this study from a two year period of MARCQI data spanning one year prior to and following a published opioid prescribing protocol.
- 22,840 THA among opioid naïve patients, 9,144 THA among opioid tolerant patients, 41,311 TKA among opioid naïve patients and 12319 TKA among opioid tolerant patients.
- The mean reduction in OME prescribed for each of these groups was 249.8, 363.9, 292.1, and 368.9 respectively.

## Discussion

- Providing recommendations for prescription size after joint arthroplasty can effectively reduce excess opioid prescriptions
- Over the course of this study the average patient prescription for opioid pain medications after total hip and knee arthroplasty in opioid naïve patients went down almost 50%.
- This reduction in OME is the equivalent of approximately 40 oxycodone 5 mg tabs per patient which adds up to over 2 million less tabs per year prescribed in the state of Michigan.
- If a similar reduction were able to be produced nationwide, this would correlate to approximately 40 million less tablets per year in the United States based on current trends in utilization of THA and TKA.

## Conclusion

- Publication of an evidenced based opioid prescribing guideline within a state joint replacement registry, when combined with its inclusion as a performance measure, resulted in a roughly 50% reduction of opioid prescriptions after total joint arthroplasty in opioid-naïve patients.