

The Effect Of Medicaid Expansion On Rates Of Carpal Tunnel Release: An Interrupted Time Series Analysis

Alexander N. Khouri, MD; Trista M. Benitez, MPH; Zhongzhe Ouyang, MS; Lu Wang, PhD; Kevin C. Chung, MD, MS

University of Michigan, Section of Plastic Surgery and Department of Biostatistics, Ann Arbor, MI

BACKGROUND

Medicaid expansion through the Affordable Care Act (ACA) has been associated with greater utilization of surgical services in underserved patients. The purpose of this study was to evaluate the association between New York State adoption of the ACA and carpal tunnel release (CTR) procedural volume in Medicaid beneficiaries.

METHODS

We conducted a pooled cross-sectional analysis of adult patients who underwent CTR in New York from 2010-2018 using the Healthcare Cost and Utilization Project State Ambulatory Surgery Database. We performed a two-step analysis to evaluate monthly changes in CTR procedural volume for Medicaid beneficiaries and uninsured individuals prior to and following ACA implementation in January 2014.



Step 1

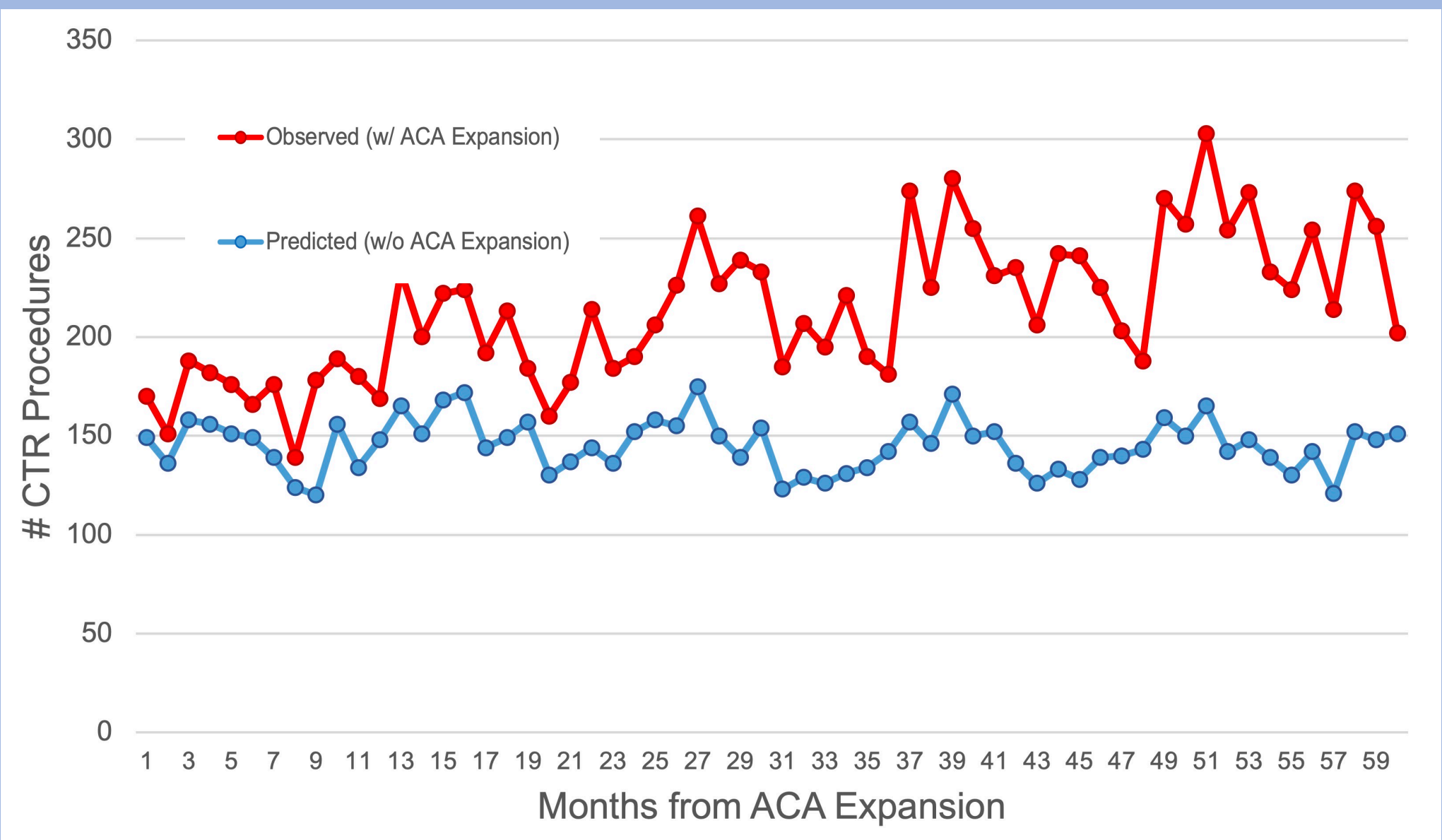
Multivariable logistic regression to predict the adjusted probability of Medicaid insurance or uninsurance in CTR recipients



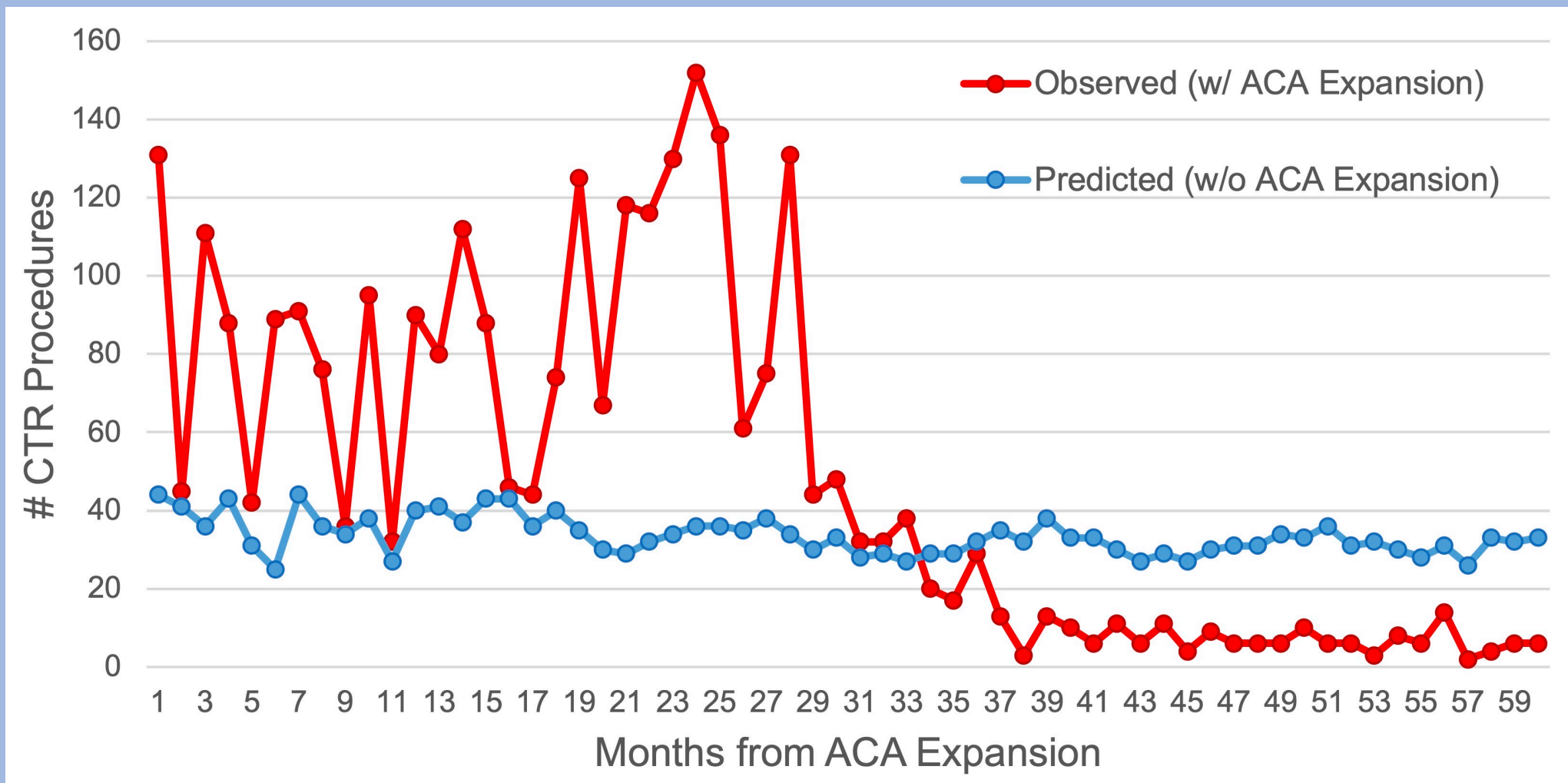
Step 2

Interrupted time series analysis using an autoregressive integrated moving average (ARIMA) model to determine the association of expansion on immediate and long-term changes in CTR procedural volume

RESULTS

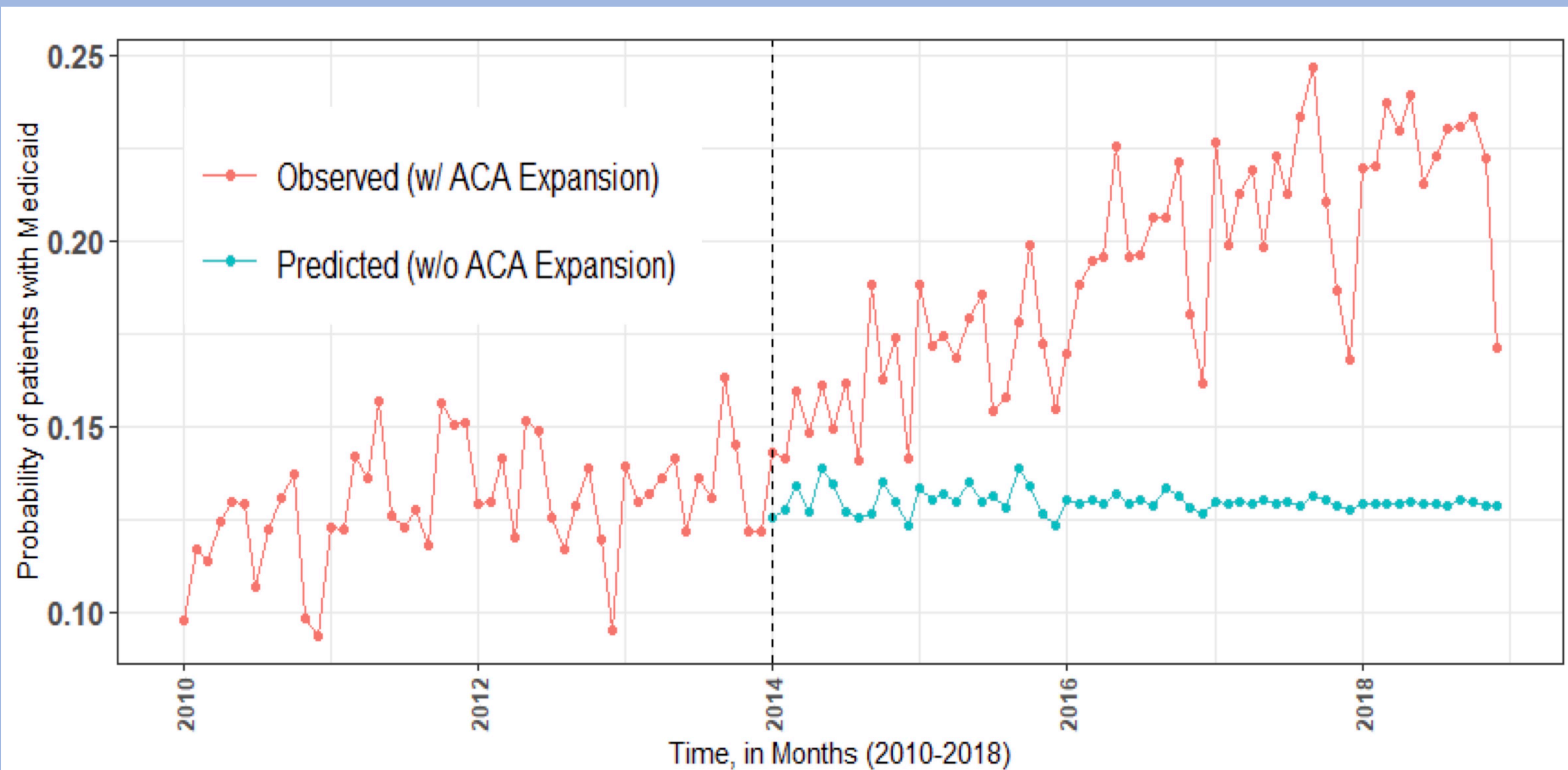


ACA expansion resulted in **4,190 additional CTRs** in Medicaid patients.



Additional 906 CTRs performed in uninsured patients following ACA.

- 13% of CTR patients had Medicaid prior to expansion, compared to 19% after expansion.
- **33-month implementation lag**, which correlated with uninsured patients acquiring insurance coverage and undergoing CTR.



We observed an **immediate 1.8% increase** ($p<0.001$), followed by an **annual 1.7% increase** ($p<0.001$) in the probability that CTR patients had Medicaid insurance compared to all other insurances after ACA expansion in January 2014.

CONCLUSIONS

ACA Medicaid expansion in New York was associated with an increase in CTR among Medicaid beneficiaries, representing both newly treated patients and those who were previously uninsured. We also observed an eventual decline in the proportion of uninsured patients undergoing CTR. Our study lends support to the positive impact of Medicaid expansion in promoting access to elective hand surgical care.