

## **Patient and Prescriber Responses to Supply-Side Drug Policy During the Opioid Epidemic**

We study prescriber and patient behavior in response to supply-side restrictions during the opioid epidemic. To curtail prescription drug abuse, U.S. states have implemented Electronic Prescription Drug Monitoring Programs (PDMPs). Using administrative claims data from the largest commercial insurance association in the U.S., we find that PDMPs limit the proliferation of prescription opioids. Physicians respond to monitoring entirely on the extensive margin, limiting the number of patients they prescribe opioids to without adjusting the dosage or duration of prescriptions. This behavior cuts drug supply to chronic opioid users. In response, consumers try to evade the supply restrictions by acquiring prescriptions from out-of-state prescribers. Drug users substitute prescription opioids with heroin, causing a surge in heroin overdoses. The changing consumption patterns also affect health care utilization, reducing hospitalizations due to abuse of prescription drugs while increasing hospitalizations due to heroin abuse. The composition change is not cost-neutral: hospitalization costs increase by 3%. The drug substitution effects are persistent and of first-order magnitude.