

## Prescription Drug Monitoring Programs and Opioid-Related Harm

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Fatal overdoses related to drug use have increased nearly 600% in the past three decades, and are now the country's leading cause of injury death. This rise has been largely driven by prescription opioid (PO) overdoses, which account for more deaths than heroin, cocaine and stimulants combined. Prescription drug monitoring programs (PDMPs), state-level databases to which pharmacy dispensers must report prescription information when certain medications are dispensed, have been advanced as tools to reduce PO-related harm. Four critical questions must be answered to determine whether PDMPs reduce PO-related harm: **(1) What is the impact of PDMPs on health outcomes?** While some studies suggest that PDMPs using best practices are effective in reducing "doctor shopping", most existing research has not examined the role of PDMPs in reducing PO-related harm, and the few that have, present inconsistent findings. **(2) Do variations in PDMP characteristics affect outcomes?** Existing research largely treats presence of a PDMP as a binary variable, without considering state variation in PDMP operational characteristics that have been recommended by experts as "best practices". **(3) Who benefits the most from PDMPs?** The benefit of PDMPs is likely concentrated among groups with a medical need for POs, and residents of more affluent areas. Both of these groups are more likely to access POs through their medical providers, and to receive referrals to evidence-based treatment in the case of PO-related harm. **(4) Can PDMPs have unintended negative outcomes?** If not implemented as part of an integrated strategy to reduce opioid-related harm, the reduction in prescriptions associated with PDMPs could potentially lead to transition to heroin use among those who abuse POs. Transitions to heroin use may be a particular concern in less affluent areas, where rates of PO-related harm are higher, and access to evidence-based treatment for PO dependence is lower.

**This study has two aims:** **(1)** to test the relation between implementation of "best practice" PDMP features and change in the rate of hospitalizations due to PO overdose (POD) and heroin overdose (HOD); and **(2)** to test whether the relationship between implementation of PDMP "best practice" characteristics and POD and HOD differed by medical need and socioeconomic characteristics of population groups. To address these aims, a typology of PDMP characteristics will be developed, including number of drug schedules reported, frequency of data reporting, proactive provision of data to authorized users, requirements for user training, registration, and data accessing, and interstate data sharing. Hospital inpatient overdose data geocoded to the zip code level will be obtained from the Healthcare Cost and Utilization Project. We will test the impact of variations in PDMP characteristics on rates of hospitalizations due to POD and HOD across 18 U.S. states with available pre- and post-PDMP hospitalization data and heterogeneity in the year of PDMP operation, and among persons living in 13,512 zip code areas within those states across 1993-2014.