
Combatting the Opioid Crisis



A team at Massachusetts General Hospital has designed a data-driven simulation model to help policymakers address the opioid crisis. The research is published in [PNAS](#).

Over the past 21 years, opioid overdose has caused over half a million deaths in the U.S. Opioid deaths have consistently increased since 2013 and claimed 70,000 victims in 2020 alone. The crisis is primarily driven by the illicit spread of fentanyl, which can be mixed with heroin and can have a lethal effect. Numerous people suffer from opioid use disorder, and the opioid crisis is responsible for severe health, social, and economic consequences.

The model is known as SOURCE (Simulation of Opioid Use, Response, Consequences, and Effects). It presents details of the opioid crisis by capturing the evolution and interconnections between stages of prescription and illicit opioid use.

SOURCE is a dynamic simulation tool that presents the trajectory of the opioid crisis. It can serve as a framework to project future scenarios and inform public policy planning. The model incorporates data on opioid use from 1999 to 2020 and tracks stages of use and misuse of opioids - from use initiation and treatment to relapse and death. SOURCE replicates the risks of opioid misuse over time in response to behavioural and other factors and predicts how these risks may change in the future. It thus provides a platform for projecting and analysing policy impacts and solutions.

Among the factors driving these changes are social influence and risk perception. SOURCE also quantifies the impact of increased distribution of naloxone, the overdose reversal drug and the proliferation of fentanyl on death rates. According to the SOURCE model, deaths from opioid overdose will increase over the next few years before trending downward as opioid use disorder decreases.

SOURCE can be used to examine strategies to address the opioid crisis as part of an ongoing modelling effort. While the model predicts eventual decline, opioid deaths over the next ten years will still exceed half a million, report the researchers, and the unregulated use and supply of fentanyl will continue to be a problem.

Source: [Massachusetts General Hospital](#)

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Published on : Tue, 7 Jun 2022