

Does Medical Marijuana Reduce Prescription Opiate Deaths?

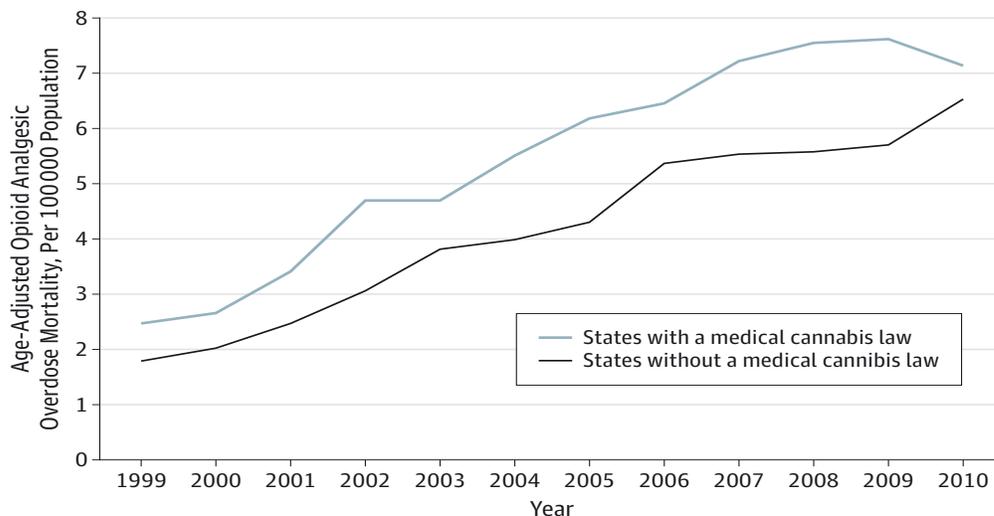
Kevin A. Sabet, PhD (Director) and Stacy Salomonsen-Sautel, PhD

A recent article in the Journal of the American Medical Association claims that medical marijuana laws (MMLs) are associated with significantly lower state-level opioid mortality rates. However, the methods employed and conclusions drawn call for a serious re-analysis of the data. Here's why:

- (1) **As the study authors conceded, the raw data showed that medical marijuana states had higher rates of opiate deaths.** When the authors introduced four possible reasons for this, the rate completely flipped. This is a major red-flag, signifying that possibly one of those four reasons alone may have influenced the death rate, and could be a sign of what researchers call a “spurious relationship” between MMLs and death rates.

JAMA Article Figure 1 Showing Higher Rates of Rx Deaths in MMJ States:

Figure 1. Mean Age-Adjusted Opioid Analgesic Overdose Death Rate



- (2) **The study lumped together states with small and restricted marijuana distribution with states that have open, widespread distribution and commercialization, possibly biasing the results.** In peer-reviewed, published research, Pacula and Sevigny (forthcoming in the *Journal of*

Policy Analysis and Management) and Sabet (2014, published in the *Journal of Adolescent Health*) emphasize the importance of understanding critical differences among MMLs and not lumping together states like Colorado with states like New Mexico. It is very possible that smaller MML states show lower rates of opiate deaths (for reasons unrelated to MMLs), but bigger MML states might not.

- (3) **The study did not take into account the true implementation of MMLs; it simply looked at when laws were passed and a handful of years before and after those laws were passed.** For example, when examining Colorado, study authors should have included that 2009 was the true implementation date of the state's 2001 law. It would have been beneficial, then, to examine rates in Colorado before 2009 and after 2009.
- (4) **Though the study did control for some other possible explanations for the lower opiate death rate in medical marijuana states, it left out some of the most critical possible alternative explanations.** The study failed to examine the influence of expanded methadone and buprenorphine programs in states, or the possible influence of major law enforcement interventions (e.g. pill mill shut downs and major operations by DEA in states like Florida), or even Naltrexone utilization. The study also did not take into account prevention campaigns or strategies.
- (5) **The study authors found that heroin overdose – even if no other opiate was used – was also lower in medical marijuana states.** Heroin use is not typically used for pain management – offering more evidence that the authors stated connection between lower opiate deaths and MMLs might represent a spurious relationship.
- (6) **If MMLs are reducing opiate deaths, shouldn't we also see reduced prescription drug emergency room mentions and treatment admissions in those MML states?** The authors fail to examine these possibilities.

In summary: Much more research must be done before making the sweeping conclusion that MMLs reduce opiate overdose deaths. Though that connection may be intrinsically appealing – some could view the idea that people might use a milder drug versus an opiate as an improvement – too many uncertainties lie in this JAMA analysis.