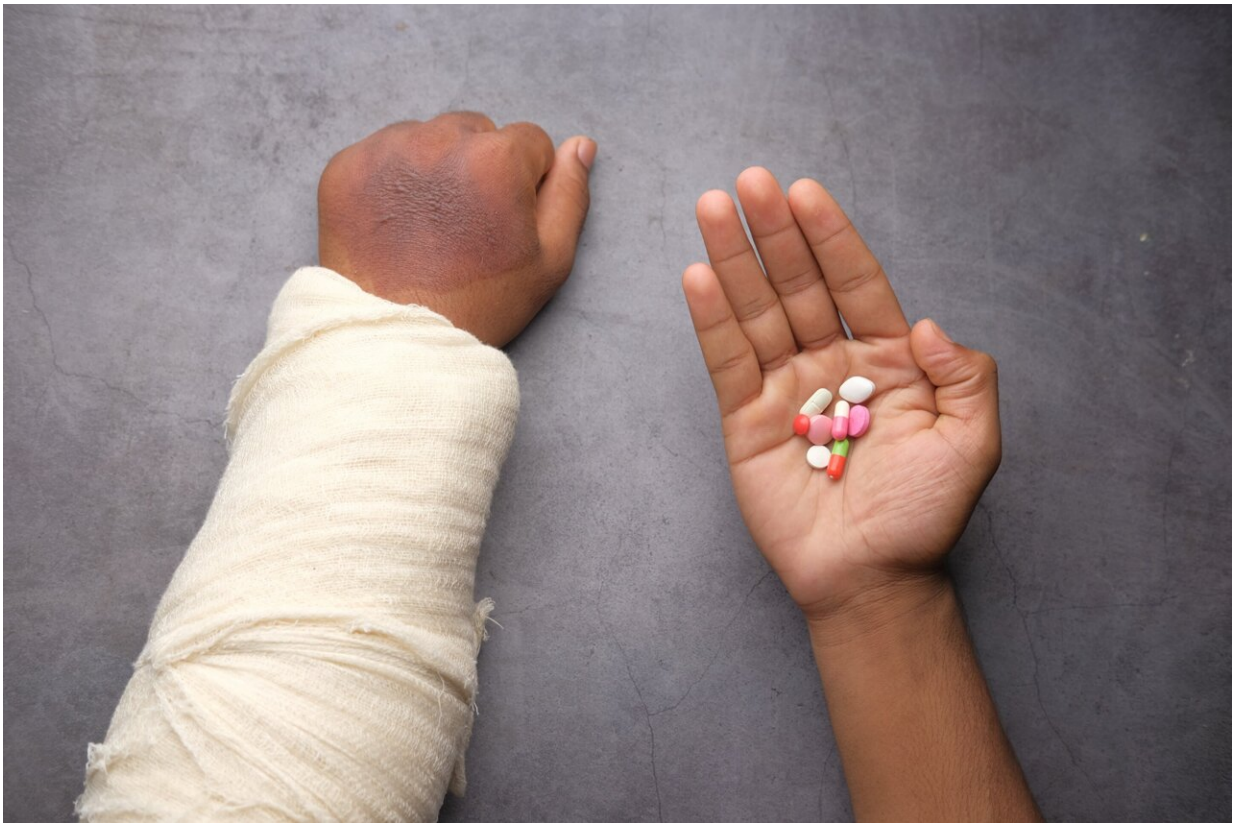
Hepatitis cases and heart valve infection deaths tied to early OxyContin marketing

July 19 2023



Credit: Unsplash/CC0 Public Domain

Decades after Purdue Pharma began to push physicians to prescribe addictive pain pills, the opioid crisis has been a slow-motion disaster, with overdoses destroying lives and families across the country.

Now, it appears the consequences of those early marketing efforts are even more devastating. In a new study, researchers at the Yale School of Public Health show that infectious disease rates in the United States also climbed as a direct long-term result of the marketing of OxyContin.

By comparing U.S. states that saw heavier OxyContin promotion with states that experienced less, the Yale study shows for the first time that this marketing caused long-term rises not only in overdose deaths but also in hepatitis diagnoses and deaths from infective endocarditis, a bacterial infection in the heart. This occurred after 2010, when many people with addiction to pills began to use intravenous opioids instead, running the risk of spreading infections through contaminated needles.

"The most shocking finding is that we're still seeing the ramifications of marketing decisions from 25 years ago," said first author Julia Dennett, a postdoctoral associate in the YSPH Department of Epidemiology of Microbial Diseases.

The findings appear on July 19 in the journal *Health Affairs*.

Reformulation spurs illicit drug use

In the mid-1990s, Purdue Pharma began to target physicians in some states with an aggressive marketing campaign for its potent opioid pain pill OxyContin.

Pharmaceutical representatives offered free meals, swag, and conference trips alongside a pitch that aimed to convince prescribers—particularly those who treated cancer patients — that the drug was also safe and appropriate for non-cancer pain, such as chronic back pain.

"There was a lot of misleading information in the advertising materials," Dennett said. "They very much downplayed the risks of addiction."

In 2010, amid growing evidence that the pills were indeed addictive and that they were often diverted and misused, Purdue reformulated OxyContin to make it harder to crush and snort. As a result, studies have found, many people with an addiction to opioid pills turned to substitute opioids in the form of intravenous heroin or fentanyl.

Intravenous drug use can spread bloodborne infections, including hepatitis and HIV. Knowing this, the researchers investigated whether states targeted for more OxyContin marketing saw more injection drug-related infections, too.

Targeted marketing

Other scientists had already found that Purdue's 1990s-era marketing push led to worse long-term health outcomes. They did so by examining differences in areas targeted by Purdue Pharma for more OxyContin marketing versus those that received less marketing investment. Areas with higher cancer rates and/or states where less paperwork was required for prescriptions received far more attention from the company.

One study demonstrated that areas with higher cancer rates later saw higher rates of death related to opioid use, even though prior to OxyContin, both high- and low-cancer areas had similar rates of opioid deaths.

Another study examined five states that required doctors prescribing opioids to complete extensive paperwork called triplicate prescribing. In these states, the researchers found, the company shied away from aggressive marketing efforts, fewer OxyContin prescriptions were written, and fewer overdose deaths occurred.

Comparative analysis

To determine whether OxyContin marketing influenced later rates of infectious disease related to substance use, the Yale team compared post-2010 injection drug use-related outcomes in states that had seen more OxyContin marketing years earlier with those that received less.

The authors compared states with a higher cancer burden against those with lower cancer rates and states requiring less prescription paperwork with those requiring more documentation. Using these distinctions, they divided states into high-, middle-, and low-marketing exposure categories. States with either triplicate prescribing or low cancer rates experienced less OxyContin marketing and served as controls.

The outcomes of interest were new infections with viral hepatitis A, B, or C, or HIV, as well as deaths related to endocarditis, a dangerous infection of the heart valves that is often related to injection drug use. The authors also examined death rates related to synthetic opioid overdose or heroin overdose.

A dramatic divergence

Prior to the reformulation of OxyContin, the authors found, rates of infections spread by intravenous drug use as well as illicit overdose deaths were similar in high- and low-marketing exposure states.

After the reformulation, however, those rates diverged. Years after initial OxyContin marketing, there was more infectious disease related to intravenous drug use in states that had been exposed to more marketing, compared to states that had received less, the researchers said.

Specifically, from reformulation in 2010 until 2020, per 100,000 residents, high-exposure states saw, on average, an additional 0.85 acute hepatitis B cases, 0.83 hepatitis C cases, and 0.62 cases of death from infective endocarditis. In addition, high-exposure states had 5.3 more

deaths per 100,000 people from synthetic opioid overdose.

"Prior to 2010, among these states, there were generally no statistically significant differences in these outcomes. After 2010, you saw them diverge dramatically," Dennett said.

Limitations of the research include limited available data on pre-2010 HIV rates and a lack of access to company marketing data. The authors were also not able to take into account all post-2010 changes in state policies that could have affected outcomes.

Regulatory controls needed

Dennett said regulatory systems need to take steps to prevent similar crises in the future, such as limiting the ability of the pharmaceutical industry to promote drugs to physicians or influence regulatory bodies.

Meanwhile, she said, it's crucial to ensure more support for communities harmed by their exposure to long-ago OxyContin marketing.

"Policymakers can promote harm-reduction services to try to reduce the spread of infectious disease and reduce overdoses, and they can also take steps to expand access to treatment for opioid use disorder," Dennett said.

Gregg Gonsalves, associate professor of epidemiology (microbial diseases) at the Yale School of Public Health, is co-author.

More information: Julia M. Dennett et al, Early OxyContin Marketing Linked To Long-Term Spread Of Infectious Diseases Associated With Injection Drug Use, *Health Affairs* (2023). DOI: 10.1377/hlthaff.2023.00146. www.healthaffairs.org/doi/10.1 … 7/hlthaff.2023.00146

Provided by Yale University