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## 23. CHANGES IN MARIJUANA AND CANNABINOID USE IN PATIENTS TREATED FOR TRAUMATIC INJURY BEFORE, DURING AND AFTER THE PROCESS OF LEGALIZATION

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**Background:** Marijuana use may be a factor in the risk of traumatic injury as well as in its treatment. The legal status of the substance has evolved rapidly in recent years, with unknown consequences for trauma systems. In the state of Michigan, marijuana was legalized for medical use in 2008; possession was decriminalized in the city of Detroit in 2012; it was legalized for recreational use statewide in 2018. The purpose of this study was to examine whether changes occurred in the rate of positive screening for marijuana use among emergency trauma patients corresponding with these legal changes.

**Methods:** Trauma registry data from a single high-volume urban trauma center located in Detroit, Michigan from 2003 to 2019 were used to examine changes in the likelihood of having a positive urine screening for cannabinoids during time periods corresponding changes in the legal status of marijuana. Changes in demographics in patients testing negative and positive for cannabinoid use were also examined.

**Results:** After adjusting for demographic differences in the population of trauma patients between time periods, significant differences in the likelihood of a positive test for cannabinoids were detected. Compared with the baseline period when marijuana was fully illegal, trauma patients tested positive for cannabinoids at a significantly lower rate after medical legalization (OR = 0.73, 95% CI [0.68, 0.73]), but at significantly higher rates after decriminalization (OR = 1.21, 95% CI [1.14, 1.28]) and after recreational legalization (OR = 1.57, 95% CI [1.41, 1.74]).

**Conclusion:** The rate of positive tests for cannabinoids fell modestly in the period after marijuana was legalized for medical use, and then rose above the baseline level after decriminalization, and again after recreational legalization. The process of marijuana legalization may be associated with changes in cannabinoid exposure among patients presenting with traumatic injuries. Hospital policy may need to consider potential changes following emerging legal developments in substance legalization.

