

## Attachment 2: HIA Findings and Recommendations

<b>HIA Findings and Recommendations</b>	
<b>Question 1: What would be the impact of medical marijuana legalization on consumption of marijuana for the general population and youth?</b>	
Literature review	Overall, the majority of reviewed literature found mixed results as to whether or not legalizing medical marijuana would have an impact on consumption of marijuana for the general population. Legalization of medical marijuana may impact illegal consumption among at-risk youth and people with qualifying medical conditions. It is important to note that change in youth consumption would also depend on regulation policies and other state-level factors, such as cultural norms and law enforcement practices. Additionally, findings from the literature review suggest that the medical marijuana distribution model (e.g., self-grow, compassion centers) could impact consumption of marijuana.
Data	<p>The data show that states with medical marijuana laws generally have higher marijuana consumption rates than states that didn't pass such laws. However, the trend data indicate that these states had higher marijuana consumption rates before the passage of these laws. As a result, legalization of medical marijuana might not have impacted consumption.</p> <p>Additionally, there was no increase in youth consumption (as measured by lifetime or past-month marijuana use) or age of initiation for any of the states that have legalized marijuana, with the exception of Colorado, where a significant increase in youth (past-month) use was found. However, Kansas county-level regression results show that a perception of easy access to marijuana is highly correlated with youth consumption. Two states of five (CO and MI) saw a statistically significant increase in adult consumption (measured by lifetime use) after medical marijuana was legalized.</p>
Findings	Based on data and literature reviewed, the legalization of medical marijuana may result in little to no impact on consumption of marijuana among the general population in Kansas. However, some increase in marijuana consumption for at-risk youth and individuals with approved medical condition may occur, but the level of change in youth consumption would depend on regulation and law enforcement practices.
Recommendations	<ul style="list-style-type: none"> <li>• Require dispensaries to limit advertising of services and products to the public.</li> <li>• Require educational materials to be provided at dispensaries regarding the importance of not sharing marijuana.</li> <li>• Increase accountability of healthcare providers regarding their prescription recommendations (K-TRACS).</li> </ul>
<b>Question 2: What would be the impact of medical marijuana legalization on violent crime and property crime?</b>	
Literature review	The literature review found mixed results as to whether or not legalizing medical marijuana would have an impact on property and violent crime. The literature review did not indicate that medical marijuana itself was associated with criminal activities. However, the review also showed that in some cases, dispensary location was correlated with increased crime. This could be due to the fact that dispensaries may be more likely to open in areas with higher crime.

<b>HIA Findings and Recommendations</b>	
Data	In almost all cases, rates of violent and property crimes remained unchanged or decreased after medical marijuana was legalized. Only one state of the 14 studied, Vermont, saw an increase in violent crimes after legalization. It is important to note that decreases in property and violent crimes might be attributed to other factors (e.g., economic conditions).
Findings	Based on data and reviewed literature, the legalization of medical marijuana may have no impact on violent and property crime. However, areas that are located in close proximity to dispensaries might experience increases in crime.
Recommendations	<ul style="list-style-type: none"> <li>• Monitor changes in crime rates in areas where dispensaries are located.</li> <li>• Require dispensaries to implement safety measures to defer crime, such as video surveillance.</li> <li>• Implement zoning requirements for dispensaries stipulating minimum distances to certain entities including schools, universities, child care and correctional facilities.</li> </ul>
<b>Question 3: What would be the impact of medical marijuana legalization on driving under the influence and traffic accidents?</b>	
Literature review	Studies consistently show that marijuana use could impair driving. Literature that examined whether legalization of medical marijuana would increase or decrease driving under the influence and/or traffic accidents showed mixed results. However, studies leaned toward an increase.
Data	Nationally, the rate of marijuana-related traffic fatalities has increased over time. In more than half of the states studied (7 out of 13), the increase was significant post-legalization. However, some literature suggests that the legalization of medical marijuana may prompt law enforcement to test for marijuana in crash victims more frequently.
Findings	Based on data and reviewed literature, the legalization of medical marijuana may result in an increase in driving under the influence of marijuana and related traffic accidents.
Recommendations	<ul style="list-style-type: none"> <li>• Increase testing and reporting for marijuana in drivers.</li> <li>• Educate the public on marijuana-related impairment.</li> <li>• Require medical marijuana products to have labels with detailed usage and warning information.</li> </ul>
<b>Question 4: What would be the impact of medical marijuana legalization on accidental ingestion?</b>	
Literature review	The literature suggests that accidental exposure could increase. Specifically, children could be at increased risk of accidental ingestion. States with medical marijuana laws experienced slight increases in accidental exposures among children, prompting Colorado to establish child-proof packaging for marijuana. Observed increases could be due to several factors such as individuals are more likely to seek treatment for accidental ingestion and health care providers are more likely to test patients for cannabinoids. Literature findings for adults are mixed. Additionally, one study suggested that states with medical marijuana laws observed a decrease in opioid analgesic overdose age-adjusted mortality.
Findings	Based on reviewed literature, accidental ingestion could increase, specifically for children. Increase in accidental ingestion of marijuana might be relatively minimal compared to accidental ingestion of opioids.

### HIA Findings and Recommendations

- Monitor emergency department visits for accidental ingestion of marijuana, especially among children under age of 5.
- Enact regulations for child-proof packaging in order to prevent accidental ingestion of marijuana.
- Limit number and type of edibles, and require those that are allowed to be less attractive to children and youth

**Note:** Comparison of these measures across states and examination of patterns of correlation between various indicators may be useful in identification of possible relationships. However, this analysis does not control for other factors and cannot conclusively determine whether changes are caused by legalization of medical marijuana.

**Literature Review:** Searches of PubMed, PsychINFO, and Google Scholar were conducted in September of 2014 using keywords “medical marijuana” and “medical cannabis.” Searches were limited to journal articles, dissertation, theses, research institute (e.g., RAND) reports, documents published in English, focused on human populations, studies conducted in the United States (U.S.), and published in the past ten years or 2004 through 2014. A total of 67 articles were identified for literature review.

**Data Analysis:** T-tests were conducted to test the equality of the means of indicators before and after the legalization of medical marijuana in states that legalized prior to 2012. Where possible, data for five years before and five years after legalization were used. Years of data analyzed for Colorado didn’t overlap with the passage of recreational marijuana in the state.

**Data Sources:** Youth Behavioral Risk Survey (1995-2013), National Survey on Drug Use and Health (2002-2011), Uniform Crime Reporting Statistics (1995-2013), Fatal Accident Reporting System (1990-2013), Kansas Department of Transportation (2000-2012).

Source: *KHI HIA Medical Marijuana Project, 2015.*