



## KANSAS HEALTH INSTITUTE

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### **House Committee on Health and Human Services**

February 17, 2015

### **A Health Impact Assessment on Legalization of Medical Marijuana in Kansas (in progress)**

House Bill 2282

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*To improve the health of all Kansans by supporting effective policymaking, engaging at the state and community levels, and providing nonpartisan, actionable and evidence-based information.*

***Informing Policy. Improving Health.***

Chairman Hawkins and Members of the Committee:

My name is Tatiana Lin and I am a senior analyst and strategy team leader at the Kansas Health Institute, where I lead work on community health improvement. KHI is a nonprofit, nonpartisan health policy and research organization based here in Topeka, founded in 1995 with a multiyear grant from the Kansas Health Foundation.

Thank you for the opportunity to make a brief presentation and provide information on the ongoing health impact assessment – or HIA – surrounding the issue of legalization of medical marijuana in Kansas. The Kansas Health Institute does not take positions on legislation, and therefore we are not here to speak either for or against HB 2282. Rather, we want to inform the decision-making process by providing evidence-based findings in order to maximize the potential positive health effects of a policy decision, while mitigating the potential negative health impacts.

The HIA study assesses how the legalization of medical marijuana in Kansas could affect access to and consumption of marijuana, property and violent crimes, driving under the influence, traffic accidents, accidental ingestion and associated health outcomes (e.g., injury, mortality, mental health, quality of life). To date, the HIA has included a review of existing literature, data analysis for Kansas and states that have legalized medical marijuana, and interviews with stakeholders around the state.

The ongoing study assesses potential health effects associated with the legalization of medical cannabis as proposed in SB 9 and its House version (HB 2011). As such, our analysis has primarily focused on the states that legalized all forms of medical marijuana.

As we understand it, the intent of HB 2282 is to legalize cannabis oil for seizure disorders in Kansas. In 2014, 10 states passed legislation specific to the use of cannabis oil for seizure disorders. Because these laws were passed within the last year, to the best of our knowledge, there hasn't been any published research about the impacts associated with the passage of these laws. Therefore, our HIA findings might not fully apply to HB 2282, as potential health impacts associated with legalization of cannabis oil might be somewhat different from health impacts associated with legalization of other forms of medical marijuana.

We have reviewed laws similar to HB 2282 and would like to offer the following information about states with similar laws, which are considered “restrictive” for medical marijuana.

### States with Restrictive Laws:

- Some states have passed more restrictive laws, including placing requirements on the type of marijuana allowed for medical purposes (e.g. oils only) and for the types of conditions or symptoms patients must have (e.g. epilepsy only).
- These include the following 10 states: Alabama, Florida, Iowa, Kentucky, Mississippi, Missouri, North Carolina, South Carolina, Tennessee, Utah and Wisconsin.
- Most of the states define cannabidiol or “cannabis oil” (CBD) as a (nonpsychoactive) cannabinoid found in the plant *Cannabis sativa* L. or any other preparation thereof that is essentially free from plant material, and has a THC<sup>1</sup> level of no more than 3 percent.
- Most of these states limit the dispensing of marijuana for medical use to university medical centers or allow a small number of dispensaries to operate.
- All 10 of these states approve medical use of marijuana for either epilepsy or seizures.
- All 10 of these states limit the content of marijuana that can be used for medical purposes, ranging from requiring zero to less than three percent THC in the product.
- Seven out of 10 states have minimum requirements (between 5 and 98 percent CBD) for the amount of cannabidiol (CBD) concentration<sup>2</sup>.
- All 10 of these states allow use of cannabis oil by minors.

Now I would like to discuss some preliminary findings from our health impact assessment to help inform your discussion on this issue. The findings presented in **Table 1** primarily focus on health impacts associated with the legalization of medical marijuana in all forms. Please note, if HB 2282 passes, positive and negative health impacts may be different due to the forms and conditions allowed under the proposed legislation.

**Table 1** in your materials includes findings regarding consumption, crime, driving under the influence, traffic accidents and ingestion/overdose. At this time, the table does not describe the related health impacts. We plan to share the projected health impacts (and associated recommendations) for these findings and additional results early next month.

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<sup>1</sup> Two of the principal chemicals found in cannabis are cannabidiol (CBD) and tetrahydrocannabinol (THC). Different preparations of cannabis materials may contain these chemicals in different concentrations. The levels of CBD and THC present in a cannabis preparation can change the drug’s effects upon consumption. THC is the main psychoactive component of cannabis and causes the ‘high’ often associated with recreational use. Limiting the amount of THC present in cannabis preparations can limit its psychoactive effects. However, clinical studies also suggest that THC also has therapeutic effects and may alleviate chronic pain and effects of multiple sclerosis.

<sup>2</sup> CBD has also been studied for its therapeutic potential and, in contrast to THC, is non-psychoactive.

Table 1. Preliminary findings

<b>Preliminary HIA findings: February 17, 2015</b>	
<b>Question 1: How many people with qualifying conditions could be eligible to receive access to medical marijuana? How many people with qualifying conditions would be eligible to receive access to cannabis oil?</b>	
Data	<p>Approximately 50,000<sup>3</sup> Kansans could be eligible to apply and receive a medical marijuana card based on the approved medical conditions in SB 9 and its House version. These conditions include: cancer, glaucoma, HIV/AIDS, Hepatitis C, ALS, Crohn’s disease, agitation of Alzheimer’s disease and nail patella. Additionally, SB 9 lists a number of approved symptoms, including cachexia/wasting syndrome, severe pain, severe nausea, seizures/muscle spasms. Due to the lack of data, we were not able to estimate the total number of people in Kansas with these symptoms.</p> <p>Under the HB 2282, the qualifying medical condition listed is “a condition causing seizures, including those characteristic of epilepsy.” Based on estimates from the national Epilepsy Foundation there are, between 14,000 and 24,000 people in Kansas with some form of epilepsy. These estimates do not capture people with seizure disorders other than epilepsy. The bill also allows for adding conditions through a public petition to the Kansas Department of Health and Environment’s Advisory Council.</p>
<b>Question 2: What would be the impact of medical marijuana legalization on consumption of marijuana for the general population and youth?</b>	
Literature review	<p>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 allowed 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.</p>
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>

<sup>3</sup> Estimates of the number of Kansans with qualifying medical conditions were made based on the following sources: Centers for Disease Control (CDC) for prevalence information on HIV/AIDS, Hepatitis C, ALS, and Crohn’s Disease; Kansas Department of Health and Environment (KDHE) for information on Cancer and Alzheimer’s disease; Visionproblemsus.org for glaucoma; and Medscape.com for nail patella.

<b>Preliminary HIA findings: February 17, 2015</b>	
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.
<b>Question 3: What would be the impact of medical marijuana legalization on violent crime and property crime?</b>	
Literature review	<p>The association between legalization of medical marijuana and violent and property crime are usually discussed in the following context: 1) individuals who do not have a medical marijuana card trying to acquire marijuana for their own use by engaging in property and violent crime; 2) individuals who consume marijuana may commit crimes due to being under the influence. However, some argue that being under the influence of marijuana may make a person less prone to violence.</p> <p>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.</p>
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 (compassion centers) might experience increases in crime.
<b>Question 4: 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, particularly in states with dispensaries.
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.

**Preliminary HIA findings: February 17, 2015**

**Question 5: What would be the impact of medical marijuana legalization on accidental ingestion?**

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 testing 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	Due to limited research in this area, it is unclear how Kansans could be impacted if medical marijuana was legalized.

**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, these analyses do not control 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 Analyses:** 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*.

If you have any questions regarding today’s information or the health impact assessment, please contact Tatiana Lin at (785) 233-5443 or [tlin@khi.org](mailto:tlin@khi.org)

Enclosures: Attachment 1: KHI Medical Marijuana HIA Study Pathway Diagram