

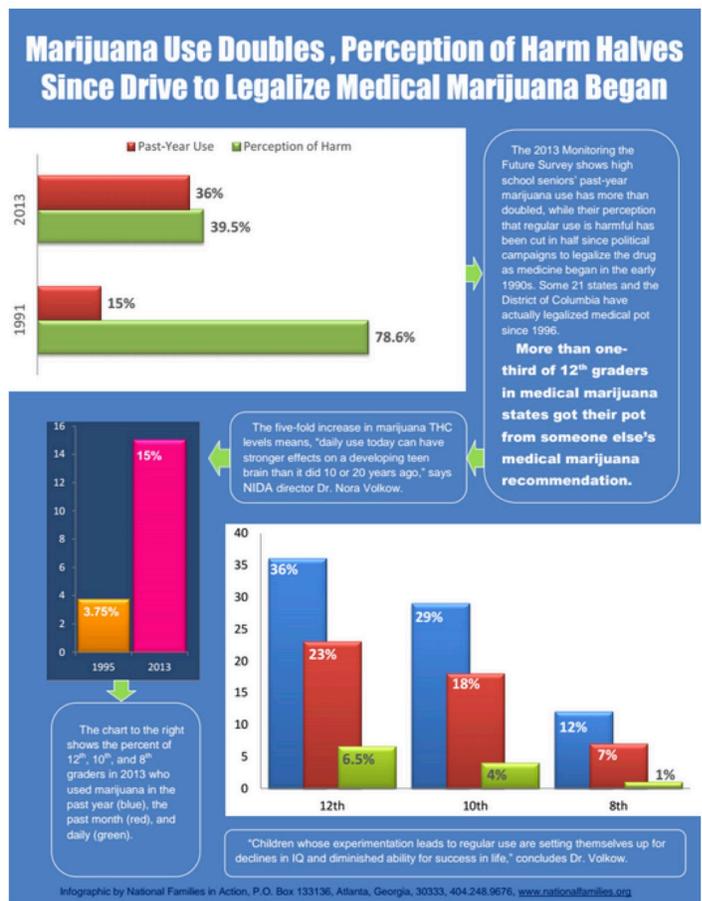
Mike Elliott, the Executive Director of the Medical Marijuana Industry Group (MMIG) issued a list of 33 references to suggest that, “*marijuana reform leads to decreases in teen marijuana use, traffic fatalities, and crime, and increases in overall public health.*”

In the following, **DUID Victim Voices** corrects the misleading statements and distortions included in Elliott’s communication. See Elliott’s original communication to retrieve missing [here](#) links.

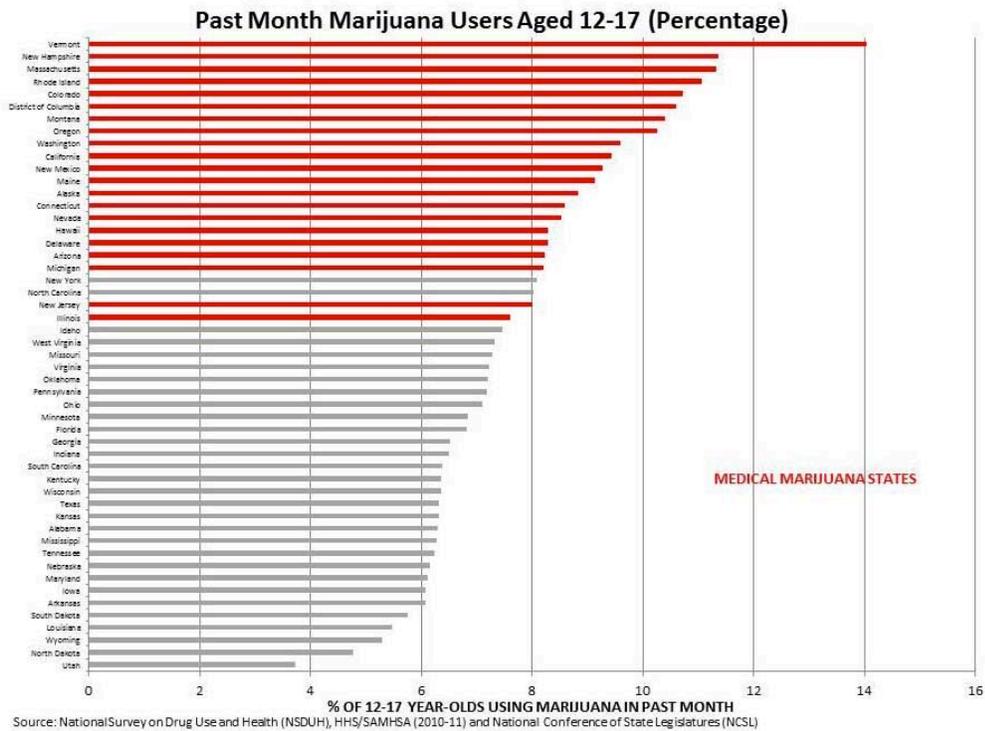
Teens:

1. **MMIG:** According to federal data compiled by the Center for Disease Control, fewer Colorado teens are using marijuana now that Colorado has regulated and licensed medical marijuana businesses.
 - a Source: Youth Risk Behavior Surveillance System (YRBSS), compiled by the Center for Disease Control and Prevention (CDC).

DVV: Short-term swings (2 years in the CDC case) aren’t particularly meaningful in assessing trends. Trends are best measured over many years. Short-term studies may be indicative, but are not often reliable indicators of trends. It’s best to use either large sample sizes or large number of years to determine trends, or both, if possible. Until the studies extend beyond just a few years, a reader could make incorrect inferences from the data, as MMIG has done. Note, in contrast, the results below, showing results over a 12-year period:



One must also be cautious about inferring causality to a mere correlation. For example, the following 2010-2011 data from NSDUH shows that Colorado has the 5th highest use of marijuana in the nation by those aged 12-17. It is tempting to conclude from this chart that medical marijuana causes increased teen use. But that would be a misuse of statistics. It would be just as valid to conclude that cultural attitudes that cause increased teen use also lead to adoption of medical marijuana. What we can say from the following chart is that there is a strong association between medical marijuana and teen use. And that Colorado has a very high teen use rate.



2. **MMIG:** Colorado sees largest decrease in teen marijuana use in US.
 - a From 2009 to 2011 -- a time when youth marijuana use increased nationally -- the percentage of Colorado teens using marijuana dropped more than any other state in the country and is now below the national average. Click [here](#).

DVV: The headline reports simple average numbers, but neglects to do the statistical test of significance that the referenced website invites the reader to perform. The drop shown in the data quoted from 2009 to 2011 is statistically insignificant. The MMIG summary statement is therefore misleading and inaccurate.

3. **MMIG:** Fewer Colorado Teens Using Marijuana: Since Colorado allowed for the sale of medical marijuana through licensed and taxed businesses, Colorado's teen marijuana usage rate decreased almost 3% (2009 to 2011), dropping below the pre-dispensary average, and below the national average.
 - a. Colorado: Click [here](#)- Youth marijuana usage in Colorado went down 2.8% (24.8% to 22%) from 2009 to 2011.

DVV: Same comment at above. The data conclusively show there is no statistical difference between the two years.

- b. **MMIG:** National: Click [here](#) - Youth marijuana usage nationwide went up 2.3% (20.8% to 23.1%) from 2009 to 2011.

DVV: Same comment as above. With a p value of .04, there is an increase in teen use, but it's only modestly significant.

- c. **MMIG:** National v. Colorado: Click [here](#) - Youth usage in Colorado fell below the national average in 2011 (23.1% US v. 22.0% CO).

DVV: Same comment as above. With a p value of .44, there is no statistical difference.

- d. **MMIG:** Colorado's current rate lower than the pre-dispensary rate: Click [here](#) - Colorado's current teen marijuana usage rate is below what it was in 2005, the time immediately before dispensaries.

DVV: Same comment as above. The data conclusively show no statistical difference.

4. Availability of drugs in Colorado schools down:

- a. **MMIG:** Colorado: Click [here](#) - Availability of drugs on school grounds in Colorado went down 5% (22.7% to 17.2%) from 2009 to 2011.

DVV: Here there is a sound statistical difference. But that may be because the availability of marijuana to teens comes from elsewhere, not from the school grounds. See confirmation of this idea in the comments to 5b, below.

- b. **MMIG:** National: Click [here](#) - Availability of drugs on school grounds went up nationally almost 3% (22.7% to 25.6%) from 2009 to 2011.

DVV: With a p value of .05, it's barely significant. A good analysis would be to look at medical marijuana states vs. those that don't permit medical marijuana. That hasn't been done.

- c. **MMIG:** National v. Colorado: Click [here](#) - Availability of drugs on school grounds nationwide is 8.4% higher than in Colorado (25.6% to 17.2%)

DVV: This is highly significant. But why bother to get your drugs on school grounds when they are more readily available in dispensaries? See 5b, below.

5. Nationwide, MMJ Laws Lead to Reduced Teen Usage:

- a. **MMIG:** Click [here](#) to see a new research paper with data showing that medical marijuana laws may be responsible for decreased teen marijuana usage.

DVV: That is not what this paper says. It points out the same thoughts mentioned above: that there doesn't seem to be any significant relationship between the two, at least using the YRBS data set cited.

- b. **MMIG:**

http://blogs.phoenixnewtimes.com/valleyfever/2013/01/teen_use_of_marijuana_decreases.php

DVV: This study suffers from the same complaint as above - the time sequence is too short. There is insufficient data to calculate the p value, but the numbers are so small,

that it would be surprising if the differences shown were significant. Use increased in 10th- 12th graders, and declined with younger students. More telling, perhaps is the referenced notation that teens now get their marijuana from medical marijuana card holders, rather than from other students on the school grounds. This is completely in accordance with the speculation in 4a and 4c, above.

6. **MMIG:** New Study: "eliminating punishments for possession for personal use is not associated with higher drug use"
 - a. <http://www.ncbi.nlm.nih.gov/pubmed/23298650>

DVV: This is completely consistent with the approach taken by Smart Approaches to Marijuana (www.learnaboutsam.com) and Smart Colorado (www.smartcolorado.org). There are those who believe our choice is between legalization and incarceration. There is a wiser third way that is being ignored.

7. **MMIG:** Teen marijuana use hasn't exploded amid boom in legalization support, drug survey find. Click [here](#)

DVV: This article from US News is really silly. Legalization hasn't happened yet, so current comparisons to assess the impact of legalization are meaningless. MMIG fails to mention what is relevant in the study, which is that youth perception of the risk of marijuana has decreased markedly. This portends a dramatic future increase in DUID. It is widely recognized that alcohol impairs driving. This is a marked change from the 1950s and 1960s when drunk driving was more socially acceptable, amidst the common refrain, "I drive better with a few under my belt." Today's belief in the safety of marijuana seems to mirror that of alcohol several decades ago. Colorado's legislature even heard testimony from marijuana users last year that they drove safer after having consumed marijuana! This has been proven wrong by literally thousands of reports (<http://www.bmj.com/content/344/bmj.e536>). Unfortunately, Colorado does not collect or report data on DUID in the state, including that of driving under the influence of marijuana. So we have no reliable local data to refute this nonsense.

Traffic Safety

1. **MMIG:** New Study: Per Se laws do not improve public safety - click [here](#)

DVV: This study doesn't even qualify as bad science. The thesis is that DUID *per se* laws show little or no impact on traffic deaths. But as Jeff Michael of NHTSA points out, "Failing to find an impact is not the same as finding that there is no impact, especially with a study that lacks controls or sensitivity to isolate the impact of other factors." The authors pooled FARS data from all states with DUID *per se* laws, irrespective of the wide variability in the structure of the laws, something that is statistically indefensible. Alcohol *per se* laws have proven their worth, as have the zero tolerance drug laws for commercial drivers. This report is utter nonsense. For a more detailed analysis, see (www.duidvictimvoices.org/references "Do drug per se laws work", or www.ncbi.nlm.nih.gov/pubmed/22239141)

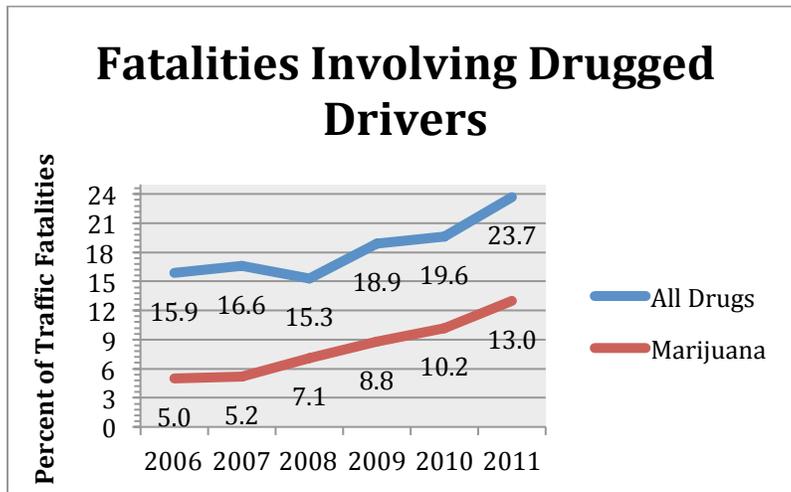
2. **MMIG:** New Study: Medical Marijuana laws reduce traffic fatalities an average of 9% due to decreases in drunk driving deaths - click [here](#)

DVV: This is another fiction piece written by the same authors as the above reference. The authors claim, "Specifically, we find that traffic fatalities fall by nearly 9 percent after the legalization of medical marijuana." This is true, but incidental. Traffic fatalities have dropped nationwide even more than that, due to better highway design, safer cars, better education and enforcement, and alcohol *per se* laws. Furthermore, registered MMJ patients

in the studied states varied between 0.5 and 3% of the population. Who could possibly believe that these numbers account for a 9% drop in traffic fatalities?
(www.ibhinc.org/pdfs/IBHCommentaryMarijuanaImpairedDriving12811.pdf)

3. **MMIG:** Colorado Department Of Transportation Data Shows Decreases in Traffic Fatalities in Years Since State Allowed Medical Marijuana Businesses - click [here](#) and [here](#)

DVV: This is another misleading use of statistics. The claim is true, but the cause is due to a decrease in DUI alcohol fatalities, a consequence, in part, of strict DUI *per se* laws. At the same time, traffic fatalities due to drugged drivers have increased. Why does MMIG ignore this fact?



4. **MMIG:** Why medical marijuana laws reduce traffic deaths
 - a. <http://healthland.time.com/2011/12/02/why-medical-marijuana-laws-reduce-traffic-deaths/print/>

DVV: This is a mainstream media summary of the flawed study above (number 2) and deserves to be ignored for the same reasons listed above.

Crime down:

1. **MMIG:** Dispensaries not linked to neighborhood crime
 - a. http://www.usnews.com/news/articles/2012/06/06/report-medical-marijuana-dispensaries-not-linked-to-neighborhood-crime_print.html

DVV: This is a mainstream media report with no scientific or statistical validity. The recent raids on dispensaries and interception of the export of 3 1/2 tons of marijuana from Colorado to neighboring states belie this report. If the MMJ industry believes this statement, why is it so concerned about the lack of banking services to dispensaries?

2. **MMIG:** Violent crime down in Colorado
 - a. http://www.denverpost.com/breakingnews/ci_23583878/violent-crime-fell-3-4-percent-colorado-2012

DVV: That's cause to celebrate. But who in his right mind thinks this is because of marijuana?

Health

1. **MMIG:** CNN Chief Medical Correspondent Sanjay Gupta Changes Mind, Supports Medical Marijuana

- a. http://www.cnn.com/2013/08/09/health/gupta-weed-reaction/index.html?hpt=hp_t3

DVV: Gupta may be a qualified medical reporter, but he's no scientific researcher. His report sloppily confuses marijuana with a drug. It's not. It's a plant that contains scores of different compounds, some of which are legitimate drugs. No drug is prescribed to be smoked. The reason marijuana is classified as a schedule 1 drug isn't because of its danger to the user, but because its contents are so variable from one strain to the next that it defies scientifically controlled testing. That's a reason many of the tests that have been performed show mixed or no clinical utility. There are, however, compounds in marijuana that have medical utility. THC, for example, has analgesic, anti-spasmodic, anti-tremor, anti-inflammatory, appetite stimulant and anti-emetic properties and is available as *Marinol*. CBD has anti-inflammatory, anti-convulsant, anti-psychotic, anti-oxidant, neuroprotective and immunomodulatory effects. This is the compound that is noted for providing relief to some forms of childhood epilepsy. It is not psychoactive and is available as a legitimate drug, *Epidiolex*. These are relevant facts that Gupta ignored in his television report.

2. **MMIG:** Federal Agency Announces Medical Use for Marijuana:

- a. <http://washingtonindependent.com/106943/federal-agency-proclaims-medical-use-for-marijuana>

DVV: The title above mischaracterizes the report. The actual CDC statement merely recognizes that some physicians recommend use of marijuana to cancer patients to relieve symptoms of cancer and/or its treatment.

3. **MMIG:** New Study: Economists predict marijuana legalization will product 'public health benefits.'

- a. <http://reason.com/blog/2013/11/01/economists-predict-marijuana-legalization>

DVV: This is a report based on the debunked Anderson and Rees papers cited above (Traffic Safety #1 and #2), and is therefore irrelevant.

4. **MMIG:** New Study: Alcohol more damaging to teen brain than marijuana

- a. http://www.huffingtonpost.com/2012/12/21/teens-marijuana-brain-tissue-alcohol_n_2331779.html?view=print&comm_ref=false

DVV: This study shows that alcohol does have long-term impairing effects on the developing brains of teenagers, which has been known for decades. The study further notes that similar studies on marijuana have varied results, in part because marijuana isn't a drug, but is rather a plant with variable constituents, depending on the strain. Strains high in THC that is coveted by recreational users uniformly cause long term damage to developing brains. Once the brain has fully developed, typically in the mid-20s, any insult caused by THC no longer causes permanent brain deterioration. MMIG seems to imply that marijuana doesn't harm developing brains in teenagers, but that's simply not true.

5. **MMIG:** Legal marijuana reduces teen binge drinking

- a. <http://www.rawstory.com/rs/2013/07/10/aussie-expert-legalize-marijuana-to-protect-teens-from-binge-drinking/>

DVV: This is another mischaracterization of the real story, which is someone's opinion that legalization would reduce teen binge drinking. Everyone is entitled to an opinion.

6. **MMIG:** New Study: States that legalized medical marijuana have seen on average a 5% decrease in suicides.
 - a. <http://coloradoindependent.com/113824/suicide-rates-fall-when-states-legalize-medical-marijuana-says-new-study>

DVV: This is another nonsensical report brought to you by the authors of Traffic Safety 1 & 2, above. After recognizing that most MMJ states prohibit dispensing marijuana to the mentally ill, the authors proceed with another meaningless correlation calculation between total population suicide figures, and the existence of MMJ laws.

7. **MMIG:** New Data: Prescription Drug Overdoses Now Outnumber Traffic Fatalities
 - a. <http://articles.latimes.com/print/2011/sep/17/local/la-me-drugs-epidemic-20110918>

DVV: So?

8. **MMIG:** Occasional marijuana use does not appear to have long-term adverse effects on lung function, according to new research published in the Journal of the American Medical Association.
 - a. <http://abcnews.go.com/Health/occasional-pot-smoking-harm-lung-function-time-study/story?id=15331989#.UOcP5W871OwFinances>

DVV: It's not clear what comparing cigarette smokers who smoke an average of 8 cigarettes per day with pot smokers who light up 3 times a month is supposed to prove.

9. **MMIG:** Second hand marijuana smoke is hazy except for the most popular urban myth.
 - a. <http://www.krdo.com/news/second-hand-marijuana/-/417220/22663402/-/1363e65/-/index.html>

DVV: OK, the jury is still out on the effects of second hand pot smoke. So what?

10. **MMIG:** New Study: Marijuana Consumers more knowledgeable about the plants health effects than non-users
 - a. <http://www.thedailychronic.net/2013/25131/study-marijuana-consumers-more-knowledgeable-about-the-plants-health-effects-than-non-users/>

DVV: So?

11. **MMIG:** Cannabis compounds reduced cigarette consumption
 - a. <http://norml.org/news/2013/07/03/study-cannabis-compound-reduces-cigarette-consumption-in-tobacco-smokers>

DVV: Note that this study refers to only the use of non-psychoactive CBD, not THC.

12. **MMIG:** Harvard study shows marijuana use doesn't cause schizophrenia
 - a. <http://psychcentral.com/news/2013/12/10/harvard-marijuana-doesnt-cause-schizophrenia/63148.html>

DVV: The referenced researchers also said that cannabis use may affect the age of onset of schizophrenia. More importantly, the 2013 American Psychiatric Association

statement on Marijuana as Medicine says, "There is no current scientific evidence that marijuana is in any way beneficial for the treatment of any psychiatric disorder. In contrast, current evidence supports, at minimum, a strong association of cannabis use with the onset of psychiatric disorders. Adolescents are particularly vulnerable to harm, given the effects of cannabis on neurological development."

Public Support

DVV: Polls (and even elections) don't reflect wisdom. If they did, we wouldn't have the politicians in office that we have today. With that in mind, DVV refrains from refuting any of the following comments.

1. Attorney General Eric Holder is calling for major drug sentencing reforms,
 1. <http://www.npr.org/2013/08/07/209253516/with-holder-in-the-lead-sentencing-reform-gains-momentum>
 2. "The war on drugs is now 30, 40 years old," Holder said. "There have been a lot of unintended consequences. There's been a decimation of certain communities, in particular communities of color."
 3. Some of the items are changes Holder can make on his own, such as directing U.S. attorneys not to prosecute certain kinds of low-level drug crimes, or spending money to send more defendants into treatment instead of prison. Almost half of the 219,000 people currently in federal prison are serving time on drug charges.
2. Majority of American Parents Support Medical Marijuana
 1. http://www.huffingtonpost.com/2013/07/17/parents-support-medical-marijuana_n_3611822.html
3. 1000 Mayors Tell Feds, Leave Local Pot Laws Alone
 1. <http://www.alternet.org/1000-mayors-tell-feds-leave-local-pot-laws-alone?akid=10638.23935.t-Kl4q&rd=1&src=newsletter861929&t=11&paging=off>
4. Can Marijuana save the Republican Party?
 1. <http://www.theweedblog.com/can-marijuana-save-the-republican-party/>
5. More States considering Marijuana Reform
 1. <http://www.bloomberg.com/news/2013-10-08/legal-marijuana-trend-spreads-as-more-states-weigh-votes.html>
6. Poll: Majority of democrats and independents support legalization
 1. <http://reason.com/blog/2013/12/18/poll-majorities-of-democrats-and-indepe2>
7. Only Six Percent of Americans Think Marijuana Possession Should Be Punished With Jail Time
 1. <http://reason.com/blog/2013/05/17/reason-rupe-majority-of-americans-suppor>
8. Former Mexican President Vicente Fox Urges Marijuana Legalization
 1. <http://news.yahoo.com/former-mexican-president-fox-urges-marijuana-legalization-004257130.html>