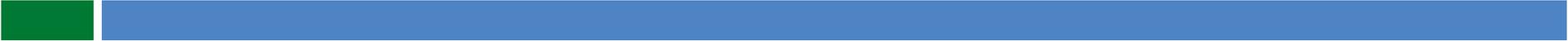




Vermont Marijuana Health Impact Assessment

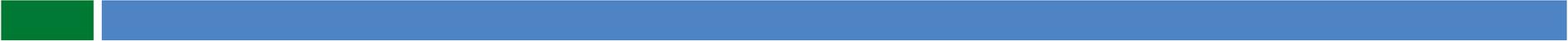
Public Health Approach



Health in All Policies: Identify which decisions outside the health domain have the potential to impact health

Data Driven Decision Making: Lead with science and use the best available data to inform policy discussions and decisions

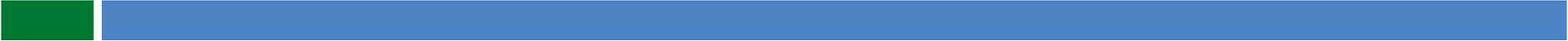
Overarching Questions



What are the potential health impacts of legalizing marijuana use?

What lessons can be learned from tobacco policy?

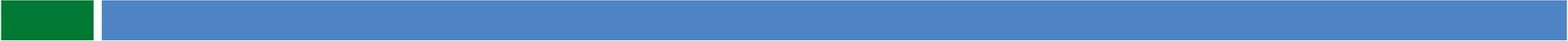
What is a Health Impact Assessment?



- A process to evaluate plans or policies based on their potential effects on the health of a population, and the distribution of those effects within the population.

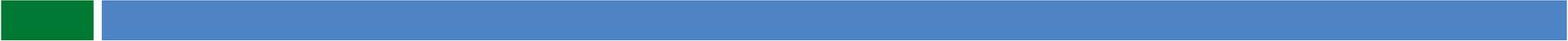
International Association for Impact Assessment, 2006 and Centers for Disease Control and Prevention

Health Impact Assessment Process

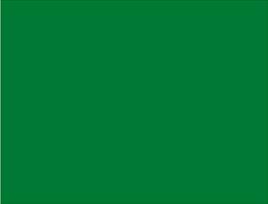


- Stakeholder leadership
- Screening
- Scoping
- Assessment
- Recommendations
- Reporting
- Monitoring

Literature Review



- ❑ Systematic search of PubMed and PsychINFO
- ❑ Searched for any mention of [marijuana or cannabis] and [health or youth or driving]
- ❑ Search included positive, negative and neutral health outcomes
- ❑ Did not include medical marijuana
- ❑ Over 180 articles reviewed



Findings

From the Literature Review: Strong Evidence

Impact of non-medical marijuana use on health indicator	Does indicator get better, worse, or stay the same?	Strength of evidence on the indicator
Psychosis/Psychotic symptoms	Worse	Very strong evidence
Psychosocial functioning	Worse	Strong evidence
Motor vehicle accidents	Worse	Very strong evidence
Short-term air flow	Better	Strong evidence
Chronic bronchitis	Worse	Strong evidence
Pregnancy	Worse	Strong evidence
Future dependence	Worse	Very strong evidence
Academic performance	Worse	Strong evidence
Dependence on marijuana	Worse	Strong evidence

From the Literature Review: Less Evidence

Impact of non-medical marijuana use on health indicator	Does indicator get better, worse, or stay the same with non-medical marijuana use?	Strength of evidence on the indicator
Depression	Worse	Fair evidence
Schizophrenia	Worse	Fair evidence
Anxiety	Worse	Fair evidence
Brain function	Worse	Fair evidence
Child poisoning	Worse	Not well researched
Skiing safety (snowboarding)	No studies	No research
Long-term air flow	Worse	Fair evidence
Cancer	Unclear	Fair evidence
Cancer (non-lung)	Unclear	Not well researched
Stroke/heart attack	Worse	Fair evidence

From the Literature Review: Very Little Evidence

	Does indicator get better, worse, or stay the same under marijuana regulation?	Strength of evidence on the indicator
Impact of <i>regulation</i> on youth		
Access	Increases	Fair evidence
Use	Unclear	Not well researched
Impact of <i>regulation</i> on adults		
Dual use	Worse	Fair evidence
Treatment	Unclear	Not well researched
Future use	Unclear	Not well researched

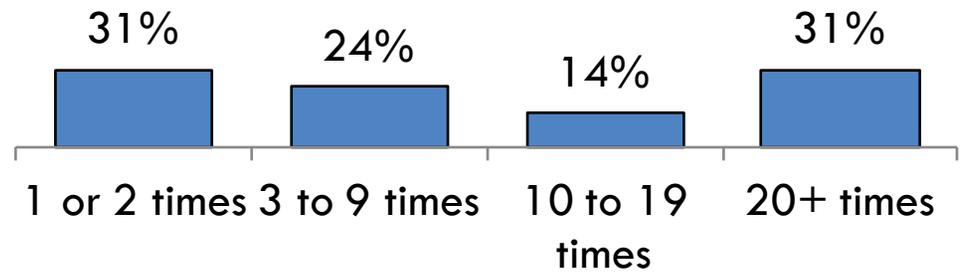
Estimating health impact under regulation

- Critical unknowns:
 - ▣ Age at which consumers begin using
 - ▣ Number of consumers
 - ▣ Number of days each consumer uses
 - ▣ Number of times a day each consumers uses
 - ▣ Potency of dose each consumer uses

What would happen to the prevalence of marijuana use if Vermont taxed and regulated marijuana?

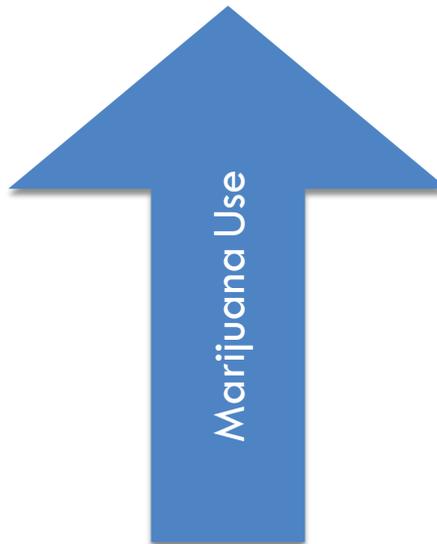


Of those high school students who report past 30 day marijuana use, the frequency with which they reported using marijuana



50%

increase in use among adults

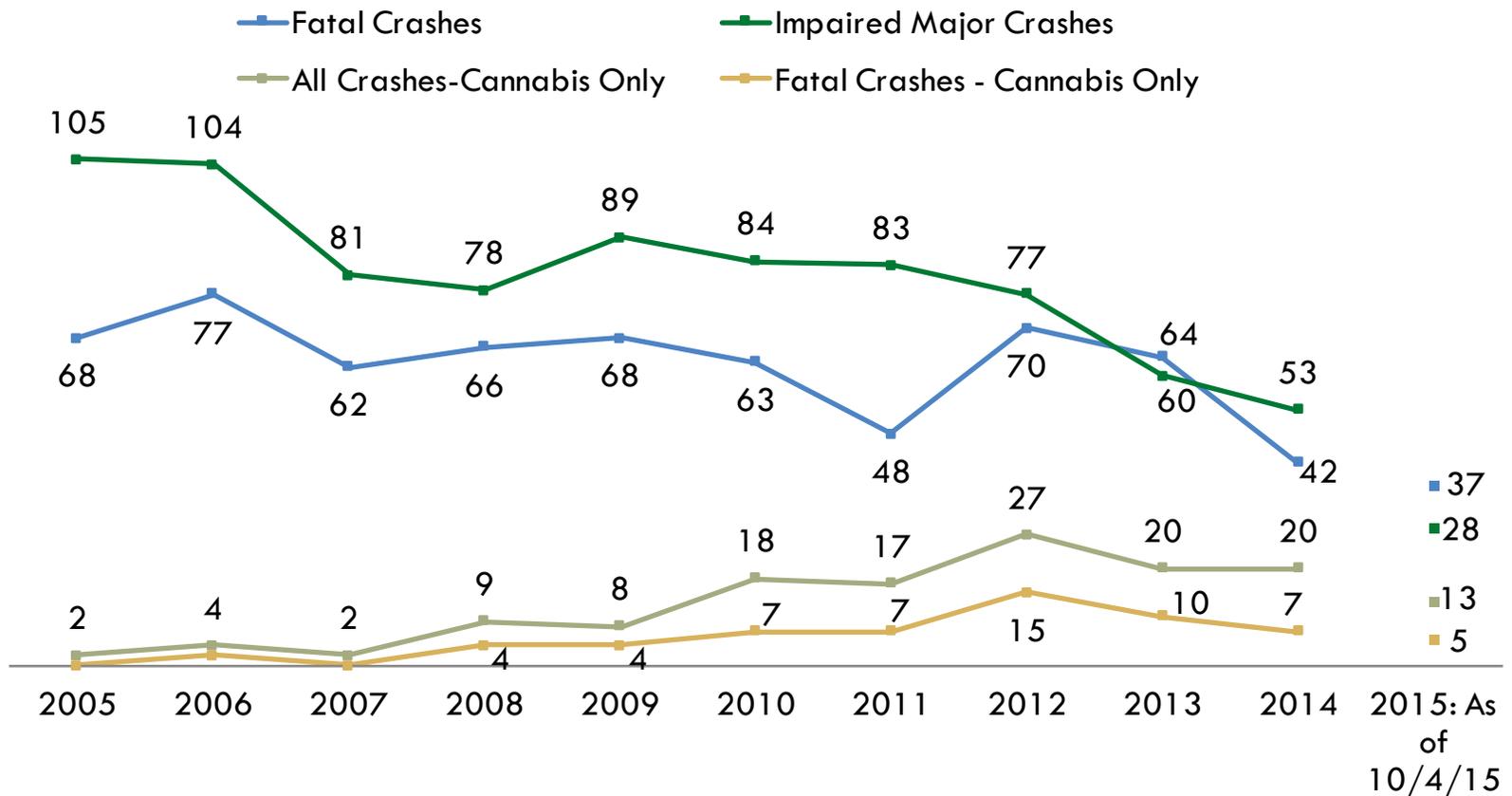


5.6%

increase in use among high school seniors?

Would traffic safety change if Vermont taxed and regulated marijuana?

**Major Crashes:
Crash Comparison vs. Cannabis Crashes 2005-2015 (to date)**



What would be the impact on mental health be if Vermont regulated and taxed marijuana?

- Early and persistent use of marijuana can lead to the development of anxiety disorders later in life. It may lead to development of depressive disorders. Among individuals at risk for the development of some psychotic disorders, marijuana use may increase the risk or mean that onset of those disorders begins earlier in life.
- Marijuana use may impact the physical structure of the brain. The exact effect, whether it is reversible, and what the potential health implications are, remains unknown.

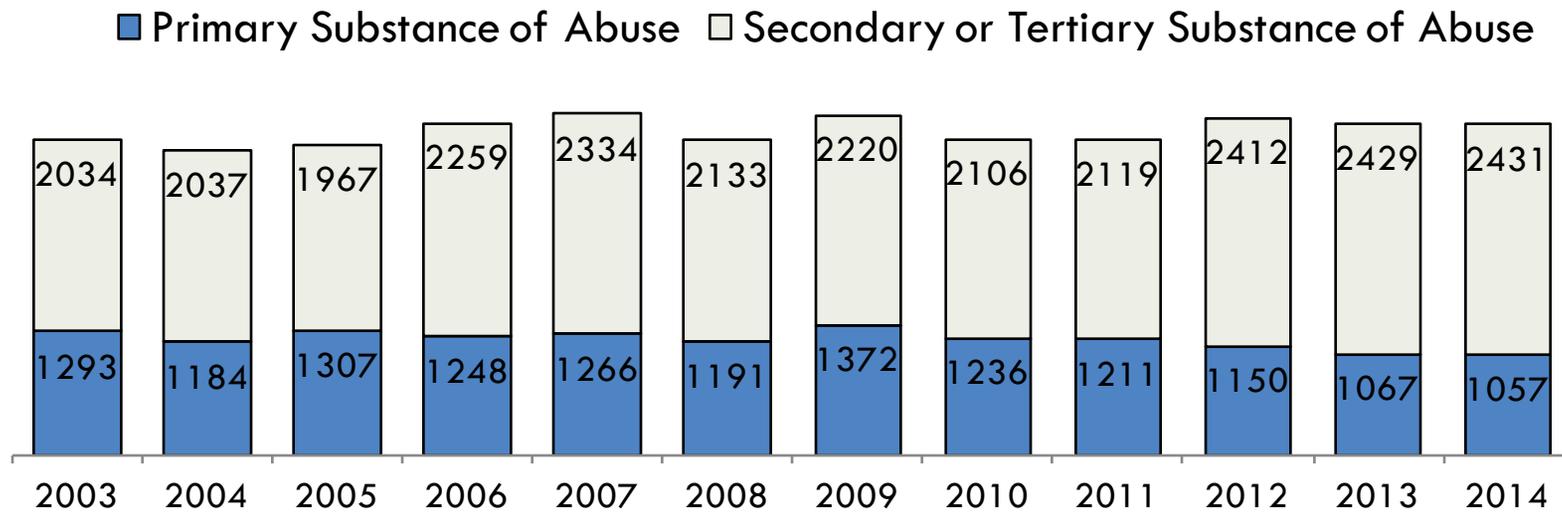
What would change in psychosocial outcomes (e.g. life satisfaction, interpersonal relationships) if Vermont regulated and taxed marijuana?

- Studies all found significantly increased risk of:
 - not completing high school
 - not enrolling or completing college
 - low educational achievement level
 - lower income
 - unemployment and welfare dependence as an adult
 - premature work force retirement due to disability
 - reduction in IQ in middle adulthood

What might change in other substance use disorders and treatment if VT regulated and taxed marijuana?

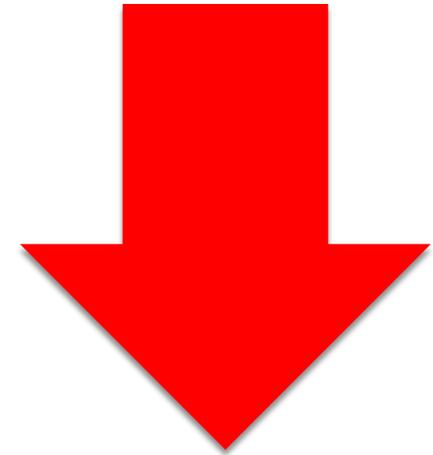
- 1 in 10 users become dependent
- 1 in 6 young users become dependent

Number of Vermonters using marijuana or hashish admitted for treatment by fiscal year and age

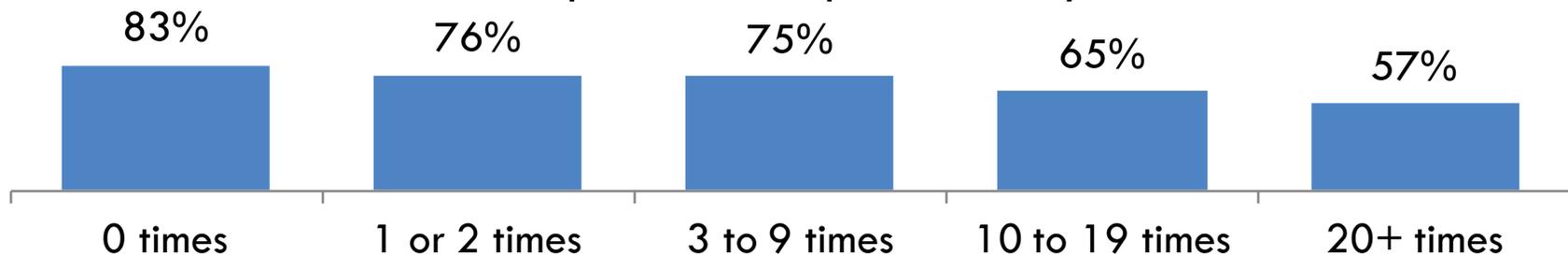


What might change in academic outcomes if Vermont regulated and taxed marijuana?

- Using marijuana decreases a student's academic achievement.
- Education is a primary social determinant of health.

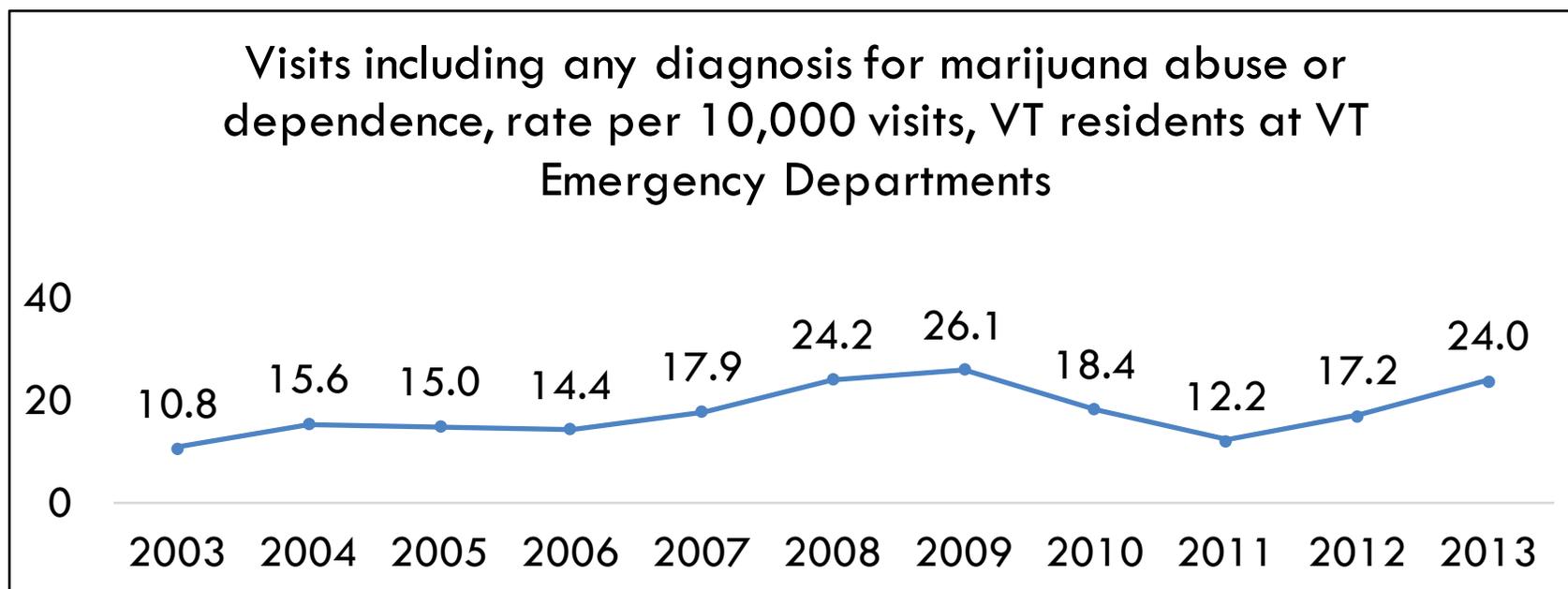


Percent of high school students reporting that they received As or Bs in school by the number of times they used marijuana in the past 30 days



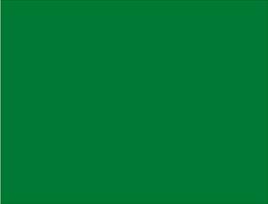
Would emergency department admissions change if Vermont regulated and taxed marijuana?

- Based on Colorado's estimates within the first year of legalization, Emergency Department visits would increase from 581 visits in 2013 to approximately 750 visits in 2014.



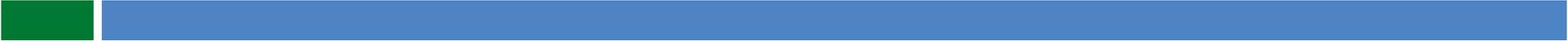
Lessons from Tobacco and Alcohol that Could Apply to Marijuana Regulation

- ❑ Smoke-free policies/open container restrictions
- ❑ Limiting access (where, how, when, age)
- ❑ Increasing taxes
- ❑ Allowing local control
- ❑ Child-resistant packaging
- ❑ Limiting tobacco and alcohol advertising
- ❑ Enforcing laws



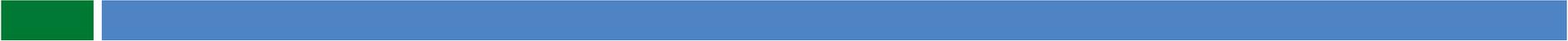
Recommendations

Infrastructure



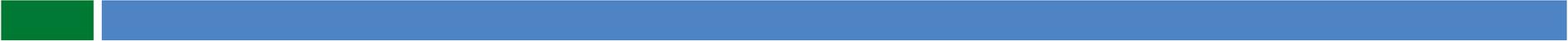
- ❑ Put infrastructure in place before sales begin.
- ❑ Expand Existing Tobacco Laws.
- ❑ Do not allow use of marijuana in public places.
- ❑ Fully fund enforcement and oversight.
- ❑ Standardize and test packaging and potency.

Protect Youth and Young Adults



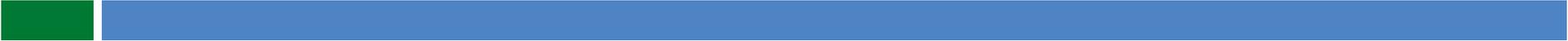
- ❑ Restrict Age of Access.
- ❑ Fund Prevention.
- ❑ Restrict Advertising.
- ❑ Do not allow infused products on the regulated market.
- ❑ Never allow infused products that could appeal to children.

Prevent Motor-Vehicle Crashes



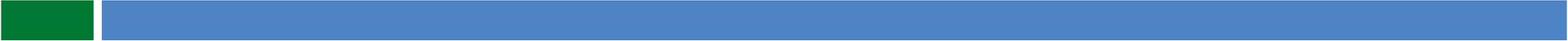
- ❑ Set a blood level operating limit for THC.
- ❑ Build driver testing infrastructure.
- ❑ Implement a public education strategy about the dangers of driving under the influence of THC.

Reduce Access and Protect Local Control



- Limit sales to adult-only outlets statewide.
 - ▣ Allow local governments to further restrict sale, outlet density/location and advertising.
- Consider statewide “buffer zones”.

Protect Adults & Monitor the Future



- Expand screening in primary care practices.
- Get providers the information they need.
- Fund surveillance and research.

Thank you